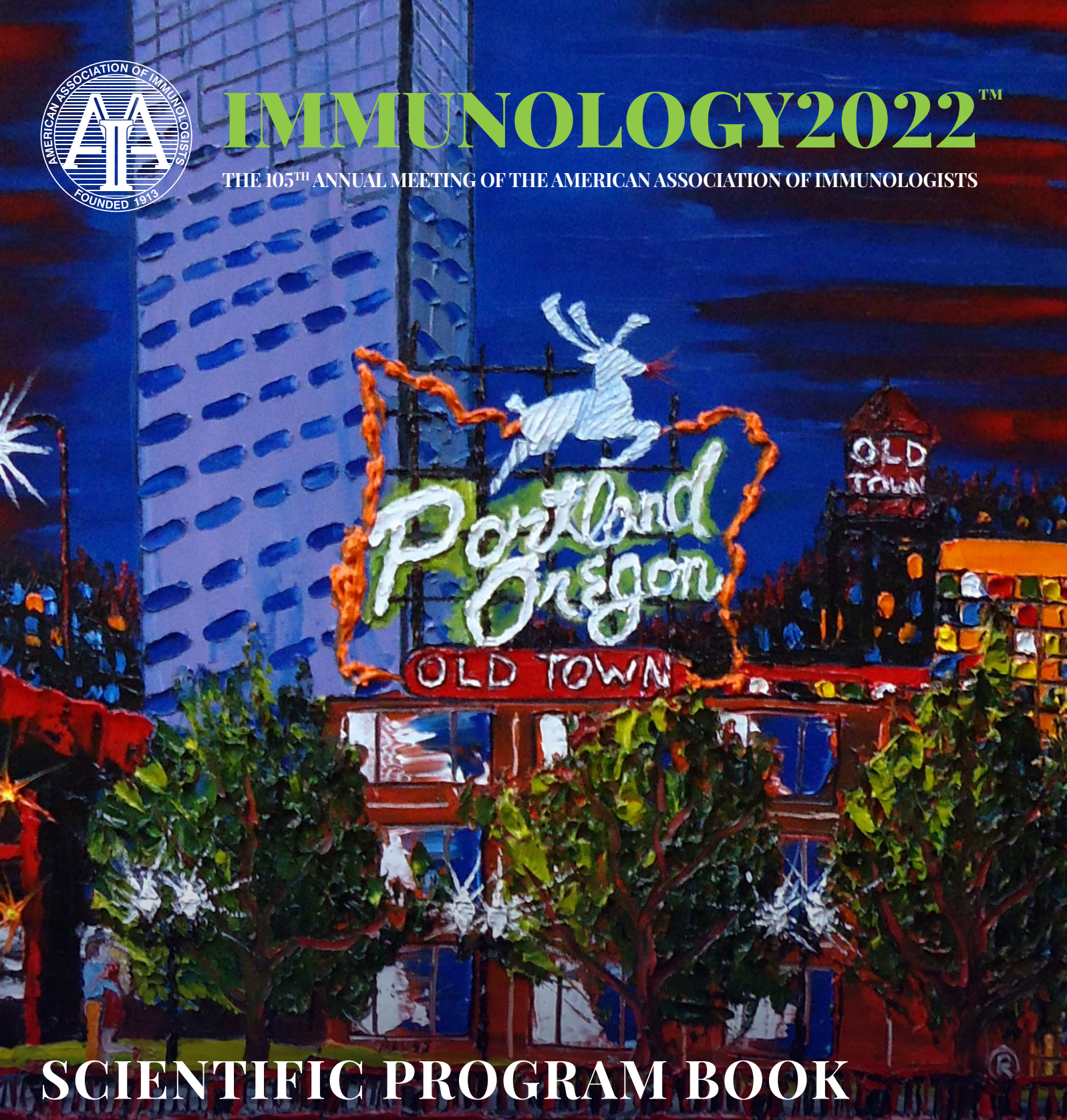
IMMUNOLOGY2022™

THE 105TH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS



SCIENTIFIC PROGRAM BOOK

May 6–10, 2022

Portland, OR

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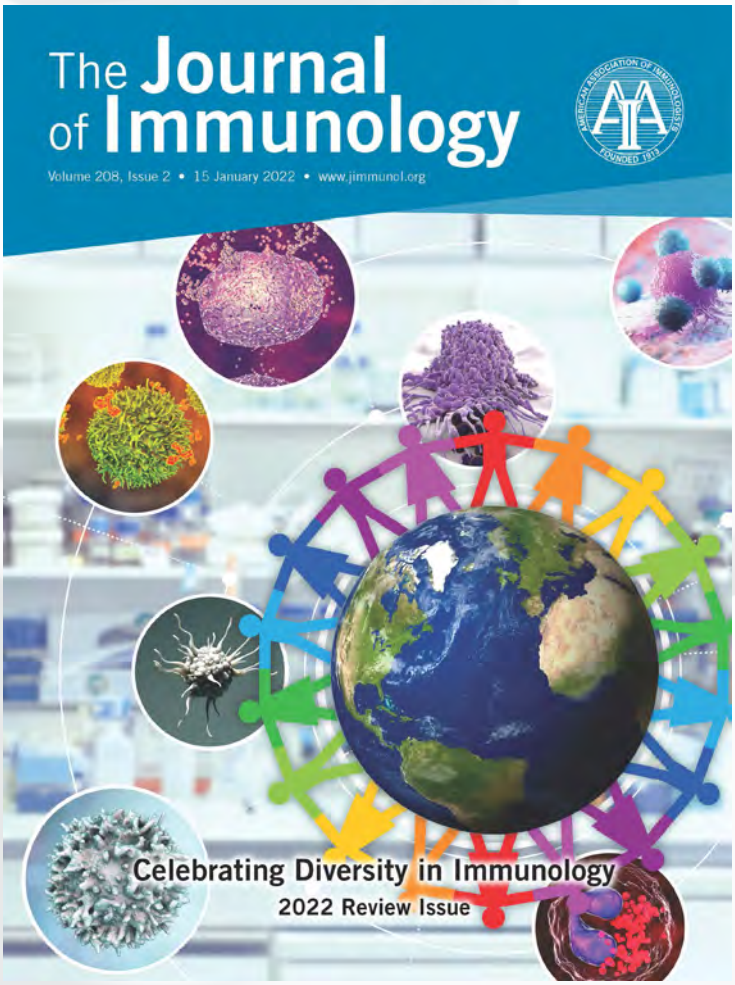
The Journal of Immunology

2022: Celebrating Diversity in Immunology

A collection of Brief Reviews by guest editors De'Broski R. Herbert, Ph.D., University of Pennsylvania, and Irene Salinas, Ph.D., University of New Mexico, that celebrates diversity, equity, and inclusion and showcases authors representing diverse career stages, gender identities, ethnicities, racial identities, and disciplines in immunology.



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Scientific Program Book

IMMUNOLOGY2022™

The 105th Annual Meeting of the American Association of Immunologists

May 6–10, 2022

Oregon Convention Center

Portland, Oregon

TABLE OF CONTENTS

Sessions appear in chronological order

IMMUNOLOGY2022™

May 6 – 10, 2022 • Portland, Oregon

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FRIDAY AFTERNOON

MAY 6

1. BACK TO SCHOOL: A REVIEW OF FOUR FAST-MOVING FIELDS

Committee-Sponsored Session

Sponsored by the AAI Program Committee

FRI. 2:00 PM—OREGON BALLROOM 204

CHAIRS: *C.R. NAGLER, G.E. HAMMER*

2:00 Epitranscriptomics. **S.L. Gaffen.** Univ. of Pittsburgh.

2:30 Cellular responses to mRNA vaccines. **S. Crotty.** La Jolla Inst. for Immunology.

3:00 Trained immunity. **S. Naik.** New York Univ. Grossman Sch. of Med.

3:30 Modeling: what it can do for you. **A.M. Smith.** Univ. of Tennessee Hlth. Sci. Ctr.

2. ANTIGEN PROCESSING AND PRESENTATION I

Block Symposium

FRI. 2:00 PM—ROOM A107–109

CHAIRS: *L. SANTAMBROGIO, M. RAGHAVAN*

2:00 Germinal center expansion but not plasmablast differentiation is directly proportional to peptide-MHCII density via CD40-CD40L signaling strength. **Z. Jing, M.J. McCarron, M.L. Dustin and D.R. Fooksman.** Albert Einstein Col. of Med., Genentech and Univ. of Oxford, United Kingdom. **(102.05)**

2:15 Distinct myeloid antigen presenting cells dictate differential fates of tumor-specific CD8 T cells in pancreatic cancer. **A.L. Burrack, Z. Schmiechen, M. Patterson, E. Miller, E.J. Spartz, M. Rollins, J. Raynor, J. Mitchell, T. Kaisho, B.T. Fife and I. Stromnes.** Univ. of Minnesota and Wakayama Med. Univ., Japan. **(102.06)**

2:30 Metabolic insults elicit epitope-dependent immune autoreactivity aggravating hepatic damage in type 2 diabetes. **L. Santambrogio, C.C. Clement, P. Nanaware and L. Stern.** Weill Cornell Med. and Univ. of Massachusetts Med. Sch. **(102.07)**

2:45 Profiling MHC-I and MHC-II canonical and out-of-frame epitopes from SARS-CoV-2 and seasonal human coronavirus infected human cells. **P.P. Nanaware, A. Becerra-Artiles, J. Cruz, J.M. Calvo-Calle, M. Khaja, S.A. Shaffer and L.J. Stern.** Univ. of Massachusetts Chan Med. Sch. **(102.14)**

3:00 WITHDRAWN

3:15 Dissecting the role of H-2Db class I molecule in the development of brain atrophy during Theiler's murine encephalomyelitis virus infection. **K.M. Wininger, E. Goddery, R. Khadka, Z.P. Tritz, C. Fain, K. Ayasoufi, F. Jin, M. Hansen and A.J. Johnson.** Mayo Grad. Sch. of Biomed. Sci., Mayo Clin. and Mayo Clin. Grad. Sch. of Biomed. Sci. **(102.16)**

3:30 Mechanism of peptide loading as revealed by structure of tapasin/MHC-I complex. **J. Jiang, D.K. Taylor, E. Kim, L.F. Boyd, P. Cresswell, M.G. Mage, D.H. Margulies and K. Natarajan.** NIAID, NIH, Massachusetts Inst. of Technol and Yale Sch. of Med. **(102.19)**

3:45 Investigating the potential binding partners of H2-O to further elucidate its role in MHCII antigen presentation. **J. Dobkin, T. Golovkina and L.K. Denzin.** Rutgers, The State Univ. of New Jersey and Univ. of Chicago. **(102.22)**

3. HSCs AND MYELOPOIESIS

Block Symposium

FRI. 2:00 PM—ROOM B117–119

CHAIRS: *A. BEAUDIN, J. BEDNARSKI*

2:00 *Bclaf1* promotes hematopoietic stem cell repopulating capacity and self-renewal. **S. Crowley, L.S. White, Y. Li, W. Yang, J.A. Magee and J.J. Bednarski.** Washington Univ. Sch. of Med. in St. Louis. **(47.01)**

2:15 HSC-independent definitive lymphopoiesis persists into adult life. **M. Yoshimoto, H. Cheng, C. Nishida, A. Latorre and M. Kobayashi.** McGovern Med. Sch., Univ. of Texas Hlth. Sci. Ctr., Houston. **(47.02)**

2:30 IL-18R signaling impairs hematopoietic recovery after severe, shock-like infection. **J.E. Howard and K.C. MacNamara.** Albany Med. Col. **(47.03)**

2:45 The X-linked gene for the helicase DDX3X is required for lymphoid differentiation and MYC-driven lymphomagenesis. **M. Lacroix, H. Beauchemin, J. Ross, J. Fraszczak, P. Shooshtarizadeh, R. Chen and T. Moroy.** IRCM, Canada, McGill Univ., Canada and Univ. of Montreal, Canada. **(47.05)**

3:00 Vhl deficiency in Dmp1-expressing cells affects myeloid development and erythropoiesis: possible effects on myeloerythroid metabolism. **B.J. Chicana, J. Emery, H. Taglinao, C. Donham and J. Manilay.** Sch. of Natural Sci., Univ. of California, Merced. **(47.06)**

3:15 Ablation of cDC2 lineage specification by mutations within the −165 kb *Zeb2* enhancer. **T. Liu, S. Kim, P. Desai, D-H. Kim, X. Huang, S.T. Ferris, R. Wu, F. Ou, T. Egawa, S.J. Van Dyken, M.S. Diamond, M. Kubo, T.L. Murphy and K.M. Murphy.** Washington Univ. Sch. of Med. in St. Louis and Tokyo Univ. of Sci., Japan. **(47.09)**

3:30 Cellular and molecular mediators of thymic DC homeostasis and activation. **J. Srinivasan, B. Helm, Z. Su, S. Yi, Q. Liu, K. Lau and L.I.R. Ehrlich.** Univ. of Texas, Austin and Vanderbilt Univ. Med. Ctr. **(47.10)**

3:45 Maternal immune activation impairs neonatal lung ILC2 establishment, function, and airway hyperresponsiveness. **D.A. Lopez, A. Griffin and A.E. Beaudin.** Univ. of Utah Sch. of Med. **(47.16)**

4. PULMONARY, VASCULATURE, AND SKIN IMMUNITY

Block Symposium

FRI. 2:00 PM—ROOM B110–112

CHAIRS: *E. CORMET-BOYAKA, E. DARRAH*

2:00 Interstitial lung disease patients exhibit augmented germinal center responses in lung lymph nodes and increased serum reactivities to novel autoantigens. **Y.M. Yoon, T. Velez, V. Upadhyay, S. Vazquez, C.T. Lee, K. Blaine, D. Decker, R. Guzy, A. Adegunsoye, M. Strek, I. Noth, M.S. Anderson, J. DeRisi, A. Shum and A.I. Sperling.** Univ. of Chicago, Univ. of Virginia and Univ. of California, San Francisco. **(48.01)**

2:15 Differential response of dendritic cells and macrophages to signals from airway epithelial cells in humans: changes with age. **A. Agrawal, S. Agrawal and C. Monteiro.** Univ. of California, Irvine and Federal Univ. of the State of Rio de Janeiro, Brazil. **(48.02)**

2:30 *Candida albicans* induces foaming and inflammation in macrophages through FABP4: its implication for atherosclerosis. **F. Alrashed, M. Haider, Z. Albaqsumi, K. Alobaid, R. Alqabandi, F. Al-Mulla and R. Ahmad.** Dasman Diabetes inst., Kuwait, Kuwait Univ., Kuwait, Dasman Diabetes Inst., Kuwait and Kuwait Ministry of Hlth., Kuwait. **(48.03)**

2:45 Tobacco smoke activated fibrogenic MARCKS/AXL complex promotes macrophage reprogramming and pulmonary fibrosis. **D.C. Yang, J. Zhang, J-M. Li, C-W. Chu, S-W. Hsu and C-H. Chen.** Univ. of California, Davis. **(48.04)**

3:00 Pathological metabolic adaptation of neutrophils recruited to cystic fibrosis airway microenvironment cannot be reversed by modulator therapy. **A. Cammarata-Mouchtouris, G.L. Collins, S.O. Kim, D. Moncada, R. Tirouvanziam and J.D. Chandler.** Emory Univ. Sch. of Med. **(48.05)**

3:15 Lymphotoxin β receptor signaling mediates the formation of high endothelial venule-like vessels in atopic dermatitis-like skin lesions in mice. **S. Kanameishi, S. Ono, Y.H. Keith, R. Asahina, T. Honda and K. Kabashima.** Kyoto Univ., Japan, Hamamatsu Univ., Japan and Singapore Immunology Network, Singapore. **(48.06)**

3:30 Epithelial mesenchymal transition of epithelial cells induced by TGF-β signaling in lymphedema. **H.J. Park, R.P. Kataru, J.P. Shin and B.J. Mehrara.** Mem. Sloan Kettering Cancer Ctr. **(48.07)**

3:45 Discovery of antigen specific CD4+ T cells in anti-3-hydroxy-3-methylglutaryl coenzyme A reductase immune mediated necrotizing myopathy. **E. Tiniakou, A. Mammen and E. Darrah.** Johns Hopkins Univ. and NIAMS, NIH. **(48.08)**

5. IMMUNOREGULATION—GENERAL

Block Symposium

FRI. 2:00 PM—ROOM C123–124

CHAIRS: *G. DEBES, R. LOCHHEAD*

2:00 Myosin 18A is a novel checkpoint regulator in B cell differentiation and antibody-mediated immunity. **N. Gupta, M.B. Cheung, G.M. Enyindah-Asonye, K. Matsui, I. Kosik, N. Dvorina, W.M. Baldwin and J.W. Yewdell.** Cleveland Clin. and NIH. **(53.04)**

2:15 Secreted IgM modulates the pool of IL-10 producing B cells. **S.E. McGettigan, L.E. Aira, G. Kumar, N. Baumgarth and G.F. Debes.** Thomas Jefferson Univ. and Univ. of California, Davis. **(53.02)**

2:30 scRNA-Seq analysis of human $CD5^+$ innate-like B cells identifies AHR expression as a marker of human $CD9^+$ $IL\text{-}10^+$ $B_{Regulatory}$ cells. **L.K. Blevins, R.B. Crawford, P.W.F. Karmaus and N.E. Kaminski.** Michigan State Univ. and Natl. Inst. of Envrn. Hlth. Sci. **(53.01)**

2:45 Alloprimed antibody-suppressor $CD8^+$ T cells preferentially kill alloprimed germinal center B cells. **J.M. Zimmerer, S. Chaudhari and G.L. Bumgardner.** Wexner Med. Ctr., The Ohio State Univ. **(53.06)**

3:00 Fibrinogen depletion ameliorates inflammation and vision loss in mouse models of diabetes. **A.E. Cardona, B. Sarker, S.M. Cardona, K.A. Church, D. Vanegas, P. Velazquez, D. Rodriguez, A. Mendiola, T. Kern, I. Muzzio and R. Stephens.** Univ. of Texas, San Antonio, Gladstone Inst. of Neurological Dis, Univ. of California, Irvine and Univ. of Texas Med. Br., Galveston. **(53.11)**

3:15 SHIP-2 inhibits human microglia-like cell function in a TREM2 independent manner. **G.S. Ramakrishnan and M.B. Humphrey.** Univ. of Oklahoma Hlth. Sci. Ctr. **(53.15)**

3:30 Tolerogenic markers on lung dendritic cells reversibly decrease following cigarette smoke exposure in mice. **D.T.A. Mengistu, M. Toma, B. Anderson, J. Curtis and C. Freeman.** Univ. of Michigan. **(53.20)**

3:45 Activation of TLR9 signaling in fibroblastic reticular cells enhances anti-tumor immunity in peritoneal tumor via suppressing peritoneal resident macrophage retention. **M. Deng.** Wexner Med. Ctr., The Ohio State Univ. **(53.19)**

6. IMMUNOREGULATION—MECHANISM OF ACTION

Block Symposium

FRI. 2:00 PM—ROOM A105–106

CHAIRS: *R. HERRO, G. HELOU*

2:00 Chronic stress results in intrahepatic accumulation of a mononuclear myeloid-derived suppressor cell-like population. **M. Ninkov, P.T. Rudak, R. Rashu and S.M.M. Haeryfar.** Univ. of Western Ontario, Canada. **(54.24)**

2:15 Lipin-1 restrains lipid synthesis to promote proresolving macrophage function and disease resolution. **T.T. Bamgbose, R.M. Schilke, C.M.R. Blackburn and M.D. Woolard.** Louisiana State Univ. Hlth. Sci. Ctr., Shreveport and Univ. of Virginia. **(54.23)**

2:30 Triggering receptor expressed on myeloid cells-1 plays important roles in UVB induced immune suppression and cutaneous carcinogenesis. **C.A. Mier Aguilar, M.A. Sherwani, Y. Tsuruta, H. Rashid, D.K. Crossman, N. Yusuf and H. Xu.** Univ. of Alabama at Birmingham. **(54.21)**

2:45 A new mechanism of T_{reg} cell dysfunction during HIV infection and propensity to oral cancer in people living with HIV. **P. Pandiyan.** Case Western Reserve Univ. **(54.05)**

3:00 WITHDRAWN

3:15 Tregs suppress antigen-specific $CD8^+$ T cells in vivo by depleting pMHC-I complexes from dendritic cells. **M.N. Mansoori, O. Kamenyeva, J. Kabat and E.M. Shevach.** NIAID, NIH. **(54.10)**

3:30 Protective role of tissue-resident regulatory T cells in a murine model of beryllium-induced disease. **S.M. Atif, D. Mack, A. Martin and A.P. Fontenot.** Univ. of Colorado Anschutz Med. Campus. **(54.04)**

3:45 A potential monocyte-regulatory T cell axis in neurorestoration following ischemic stroke. **S. Rahimpour, W. Zheng, K.L. Monaghan and E.C.K. Wan.** West Virginia Univ. **(54.13)**

7. MEMORY T CELL DIFFERENTIATION, FUNCTION, AND MAINTENANCE

Block Symposium

FRI. 2:00 PM—OREGON BALLROOM 202

CHAIRS: *N. SCHULDT, Y. HUANG*

2:00 Normal microbial experiences accelerate memory T cell compartment maturation in infants. **T.D. Stenger, S. Burger, M. Pierson, M. Huggins, S. Hamilton and N.J. Schuldt.** Univ. of Minnesota Med. Sch. and Univ. of Minnesota. **(57.09)**

2:17 Helpless CD8 T cell memory explained: prolonged antigen presentation drives a temporal rather than terminal defect. **V. van der Heide, B. Davenport, K. Jhun and D. Homann.** Icahn Sch. of Med., Mount Sinai. **(57.12)**

2:34 CXCR6 is required for tissue resident memory T cell formation across diverse peripheral non-lymphoid tissues. **T. Heim, M.M. Steele, T. Mudianto and A.W. Lund.** New York Univ. Langone Med. Ctr. **(57.01)**

2:51 Dendritic cells instruct differentiation of tissue resident memory T cells in the skin to promote durable tumor immunity. **A. Mohamed, J. Vella, M.J. Turk and Y. H. Huang.** Geisel Sch. of Med. at Dartmouth. **(57.14)**

3:08 Cell-intrinsic expression of the hemichannel pannexin-1 promotes effector and memory $CD8^+$ T cells via distinct metabolic pathways. **H. Borges da Silva, T. Vardam-Kaur, M. Zhou, B. de Gois Macedo, S. Van Dijk and S.C. Jameson.** Mayo Clin. and Univ. of Minnesota. **(57.07)**

3:25 Human T cells in barrier sites exhibit site-specific characteristics and clonal compartmentalization. **D.P. Caron, M.M.L. Poon, Z. Wang, W. Meng, N. Lam, P.A. Szabo, S.B. Wells, P. Thapa, P. Dogra, B. Lee, M. Kubota, R. Matsumoto, A. Rahman, E.T. Luning Prak, P. Sims, Y. Shen and D. L. Farber.** Columbia Univ. Med. Ctr., Univ. of Pennsylvania Perelman Sch. of Med. and Icahn Sch. of Med., Mount Sinai. **(57.11)**

3:42 Epigenome accessibility changes before and after activation reveal distinct and progressive differentiation for human memory T cell subsets. **J.R. Rose, A.R. Rahmberg, M.D. Powell, C.D. Scharer and J.M. Boss.** Emory Univ. Sch. of Med. and NIAID, NIH. **(57.02)**

8. IMMUNE-BASED THERAPEUTICS FOR NEUROLOGICAL DISEASE

Block Symposium

FRI. 2:00 PM—ROOM B113–116

CHAIRS: *G. RAIMONDI, A. CASTILLO*

2:00 Non-classical anti-inflammatory drugs ameliorates brain inflammation and improves memory in Alzheimer's diseases mice model. **M.J. Islam, Y-J. Koh, C.Y. Chung and S-Y. Seong.** Seoul Natl. Univ. Col. of Med., South Korea and Shaperon, South Korea. **(60.15)**

2:15 Alpha-synuclein peptides presented on chimeric MHC class Ib molecules prevent loss of substantia nigra neurons in an animal model for Parkinson's disease. **J. Wischhusen, J. Wu, F. Ahsan, R. McFleder, A-K. Karl, S. Mamatha Jayaram, H. Wecklein, A. Nienaber, D. Brünnert, V. Bruttel and C.W. Ip.** Univ. Hosp. Wuerzburg, Germany. **(60.16)**

2:30 Novel gene immunotherapy prevents Aquaporin-4 mediated neuroinflammation and demyelination in a mouse model of multiple sclerosis. **K.G. Senior, I. Cote, A.S. Sagadevan, C.D. Gaddie, G.D. Keeler, D. Min, M.T. Main, M.N. Rechdan, S. Assakawa and B.E. Hoffman.** Univ. of Florida Col. of Med. and Univ. of Florida. **(60.17)**

2:45 Aging impairs regulatory T cells to affect late-onset (aged) multiple sclerosis: with the model of experimental autoimmune encephalomyelitis. **W. Wang, R. Thomas, J. Oh and D-M. Su.** Univ. of North Texas Hlth. Sci. Ctr., Alcon Res., LLC and Univ. of Texas Southwestern Med. Ctr. **(60.12)**

3:00 CSF-1 maintains pathogenic but not homeostatic myeloid cells in the central nervous system during autoimmune neuroinflammation. **D. Hwang, M.S. Seyedsadr, L.L.W. Ishikawa, A. Boehm, Z. Sahin, G. Casella, S. Jang, M.V. Gonzalez, J.P. Garifallo, H. Hakonarson, W. Zhang, D. Xiao, A. Rostami, G-X. Zhang and B. Ciric.** Thomas Jefferson Univ. and Univ. of Pennsylvania. **(60.14)**

3:15 A GABA-producing probiotic for the protection of CNS demyelinating inflammation. **J. Ochoa-Reparaz, K. Hoffman, T. Long, W.J. Doyle, H.M. Kohl, K. Staben, A. Sargent, R. Linton, M. Ristig, R. Harris, X. Shi, K.M. Gibson, J-B. Roullet and A.R. Castillo.** Eastern Washington Univ. and Washington State Univ. **(60.11)**

3:30 Deficiency in B cell maturation antigen reveals sex differences in experimental autoimmune encephalomyelitis. **G. Kumar, R.M. Ko, N. Bhatt and R.C. Axtell.** Oklahoma Med. Res. Fndn. **(60.13)**

3:45 Tolerogenic artificial antigen presenting cells for selective tolerance in autoimmune disease. **G. Raimondi, K. Rhodes, S. Tzeng, M. Igleasias Lozano, D. VanDyke, S. Neshat, J. Spangler and J. Green.** Johns Hopkins Univ. Sch. of Med. **(60.18)**

9. TUMOR IMMUNOTHERAPY

Block Symposium

FRI. 2:00 PM—OREGON BALLROOM 203

CHAIRS: *B. TAMBURINI, E. DAVILA*

2:00 CAR T cells targeting olfactory receptor OR2H1 are an effective immunotherapeutic option in human epithelial tumors. **S. Biswas, A. Martin, C.M. Anadon Galindo, J. Mine, K.K. Payne, G. Mandal, R. Chaurio, J.J. Powers, K. Sprenger, K.E. Rigolizzo, P. Innamarato, C. Harro, S. Mehta, B.A. Perez, R.M. Wenham and J.R. Conejo-Garcia.** Moffitt Cancer Ctr. and Res. Inst. **(117.16)**

2:15 Cell membrane-anchored and tumor-targeted IL-12-T cell therapy for eliminating large and heterogeneous solid tumors. **J. Hu, Q. Yang, W. Zhang, H. Du, L. Dao, X. Xia, N. Fowlkes, K. Mahadeo, R. Gorlick, G. Dotti and S. Li.** MD Anderson Cancer Ctr. and Univ. of North Carolina at Chapel Hill. **(117.13)**

2:30 Enriching for tumor-reactive CD8 TIL (AGX148) leads to effective tumor clearance in a patient-derived xenograph model. **C.J. Thalhofer, E.A. Ballinger, R.D. Montler, N.P. Morris, J.F. Rios, T. Moudgil and A.D. Weinberg.** AgonOx Inc. and Earle A Chiles Res. Inst., Providence Cancer Inst. **(117.06)**

2:45 A novel linked TCR: MyD88 receptor improves anti-tumor responses while maintaining antigen specificity. **J.C. Magno, J. Guo and E. Davila.** Univ. of Colorado Anschutz Med. Campus. **(117.17)**

3:00 PD-1 and ICOS co-expression identifies tumor-reactive CD4 Th cells in human solid tumors. **T. Duhen, R. Duhen, O. Fesneau, K. Samson, A. Frye, M. Beymer, V. Rajamanickam, E. Tran, B. Bernard and A.D. Weinberg.** Earle A. Chiles Res. Inst. and AgonOx Inc. **(117.02)**

3:15 Targeting the high-affinity IL-2R with high-dose mIL-2/CD25 induces effective antitumor responses. **K.M. Laporte, R. Hernandez and T.R. Malek.** Univ. of Miami. **(117.12)**

3:30 Complement downregulation promotes an inflammatory signature that renders colorectal cancer susceptible to immunotherapy. **S. Guglietta, L.M. Weber, B. Fosso, G. Hardiman, M.M. Olcina, M. Marzano, M.D. Robinson and C. Krieg.** Med. Univ. of South Carolina, The Johns Hopkins Bloomberg Sch. of Public Hlth., Consiglio Nazionale delle Ricerche, Italy, Queens Univ. Belfast, Univ. of Oxford, United Kingdom and Univ. of Zurich, Switzerland. **(117.08)**

3:45 Targeting autophagy with carbon-monoxide reprograms anti-tumor T cells with robust immunometabolic phenotype. **P. Chakraborty, R.Y. Parikh, S. Choi, M. Mehrotra, E.N. Maldonado, H. Wang, J.A. Diehl, V.K. Gangaraju and S. Mehrotra.** Med. Univ. of South Carolina and Case Comprehensive Cancer Ctr. **(117.18)**

10. VACCINES AND IMMUNOBIOLOGICS AGAINST VIRUSES

Block Symposium

FRI. 2:00 PM—OREGON BALLROOM 201

CHAIR: *F.G. TAFESSE*

2:00 Preventing neonatal herpes: protection after maternal mRNA-lipid nanoparticle vaccination equals or exceeds that from prior maternal genital infection in murine models. **A. Desmond, P.C. LaTourette, S. Awasthi, K.P. Egan, L.M. Hook, A.K. Brice, J.M. Lubinski, A.M. Naughton, B. Fowler, M. Beattie, N. Pardi, G.H. Cohen, D. Weissman and H.M. Friedman.** Children's Hosp. of Philadelphia, Univ. of Pennsylvania Perelman Sch. of Med., Univ. of Pennsylvania Sch. of Vet. Med., Acuitas Therapeutics, Inc., Canada and Sch. of Dent. Med., Univ. of Pennsylvania. **(64.10)**

2:15 A live-attenuated mutant CVB3 vaccine virus protects against multiple coxsackievirus B infections. **N. Lasrado, M.T. Rasquinha, M. Sur, A. Gangaplara, C. Massilamany, R. Arumugam, D. Steffen and J. Reddy.** Univ. of Nebraska, Lincoln. **(64.11)**

2:30 Robust efficacy and long-lasting humoral immunity induced by a respiratory syncytial virus prefusion F-based nanoparticle vaccine in genetically diverse animal models. **L. Stephens, K.A. Ross, J. S. McLellan, B. Narasimhan and S.M. Varga.** Univ. of Iowa, Iowa State Univ. and Univ. of Texas, Austin. **(64.14)**

2:45 Conserved-region MVA vaccines can shift HIV T cell immunodominance in PWH on ART: the M&M Study. **Y. Xu, S. Samir, A.M.K. Weideman, S. Kallon, S. Conrad, F. Shaw, J. Warren, M.A. Fernandez, L. Fox, D.M. Margolis, M.G. Hudgens, T. Hanke, J. Kuruc, C. Gay and N. Goonetilleke.** Univ. of North Carolina at Chapel Hill, NIAID, NIH and Univ. of Oxford, United Kingdom. **(64.15)**

3:00 Control of established, CNS-resident lyssavirus infection by an adaptive immune response stimulated by single-dose monoclonal antibody therapy. **C. Huaman, K.E. Mastraccio, S.A. Coggins, I. Hussain, L. Yan, A.E. Ahmed, T. Ho, I.L. Smith, W. Markotter, D. Weir, E.D. Laing, C.C. Broder and B.C. Schaefer.** Uniformed Services Univ., CSIRO, Australia, Univ. of Pretoria, South Africa and Naval Med. Res. Ctr. **(64.20)**

3:15 T cell programming by the cytomegalovirus MHC class I homologue UL18. **H. Taher, D. Malouli, S.G. Hansen, M. Mansouri, R. Iyer, C. Papen, J.B. Schell, H. Cleveland-Rubeor, M.R. McArdle, C.M. Hughes, K.T. Randall, A. McNett, L.J. Picker and K. Früh.** Oregon Hlth. & Sci. Univ. **(64.21)**

3:30 Influenza virus-like particle-based hybrid vaccine containing RBD induces immunity against influenza and SARS-CoV-2 viruses. **R. Bommireddy, S. Stone, N. Bhatnagar, P. Kumari, L.E. Munoz, J. Oh, J.L. Berry, K.M. Jacobson, L. Jafaar, S-H. Naing, A.N. Blackerby, T.V.d. Van der Gaag, C.N. Wright, K-H. Kim, L. Lai, C.D. Pack, S. Ramachandiran, M.S. Suthar, S-M. Kang, M. Kumar and P. Selvaraj.** Emory Univ. Sch. of Med., Georgia State Univ. and Metaclipse Therapeutics Corp. **(64.01)**

3:45 Genetic analysis of differential responses to adjuvanted influenza vaccination. **M.C. Cruz Cisneros, B. Parotti, K. Noll, T.A. Bell, P. Hock, M.T. Heise and M.T. Ferris.** Univ. of North Carolina at Chapel Hill. **(64.08)**

12. OPENING SESSION AND PRESIDENT'S PROGRAM

Fri. 5:00 pm—Portland Ballroom 252–255

5:00 **WELCOME TO IMMUNOLOGY2022™. M.M. Hogan.** AAI Chief Executive Officer

5:05 **INTRODUCTION OF G.A. KORETZKY, Cornell Univ. and Weill Cornell Med., AAI President**.

Introduction: **A. Weiss**, HHMI, Univ. of California, San Francisco.

5:10 **AAI LIFETIME ACHIEVEMENT AWARD PRESENTATION**

The AAI Lifetime Achievement Award is the highest honor bestowed by the AAI Council upon an AAI member. This award recognizes a deserving member for a career of scientific achievement and for contributions to AAI and fellow immunologists.

Introduction and Award Presentation: **G.A. Koretzky**, Cornell Univ. and Weill Cornell Med., AAI President.

Recipient: **A.H. Sharpe**, Harvard Med. Sch.

5:20 **PRESENTATION OF THE DISTINGUISHED FELLOWS OF AAI CLASS OF 2022**

The Distinguished Fellows of AAI annually recognizes members for distinguished careers and outstanding scientific contributions as well as their service to AAI and the immunology community.

Presentation: **G.A. Koretzky**, Cornell Univ. and Weill Cornell Med., AAI President.

5:25 **AAI PRESIDENT'S ADDRESS**
Generously supported by 10x Genomics

Immunology: Building on the Past to Meet the Moment. **G.A. Koretzky**. Cornell Univ. and Weill Cornell Med., AAI President.

13. WELCOME BACK! RECEPTION

Social Event

Fri. 6:00 pm—Convention Center Plaza (across MLK Blvd.)

SATURDAY MORNING

MAY 7

15. MAJOR SYMPOSIUM A: DEVELOPMENT OF THE IMMUNE SYSTEM

Major Symposium

SAT. 8:00 AM—PORTLAND BALLROOM 252–253

CHAIRS: *A. BHANDOOLA, E.V. ROTHENBERG*

8:00 Transcriptional and epigenetic regulation of single-cell decisions to enter the T cell developmental pathway. **E.V. Rothenberg.** Caltech.

8:35 Mechanisms of divergence during dendritic cell development. **K.M. Murphy.** Washington Univ. Sch. of Med. in St. Louis.

9:10 An ILC2-specific Gata3 enhancer. **A.S. Bendelac.** Univ. of Chicago.

9:45 Development of microbiota specific T cells. **G.E. Diehl.** Mem. Sloan Kettering Cancer Ctr.

10:20 A dish of T: in vitro models of human T cell development. **G.M. Crooks.** Univ. of California, Los Angeles.

10:55 Transcriptional control of thymic epithelial cell development and its impact on T cell function. **A. Bhandoola.** NCI, NIH.

16. MAJOR SYMPOSIUM B: MACROPHAGE BIOLOGY, DIVERSITY, AND INFLAMMATION

Major Symposium

SAT. 8:00 AM—PORTLAND BALLROOM 254–255

CHAIRS: *M. GUERAU-DE-ARELLANO, C.V. JAKUBZICK*

8:00 Resident macrophage diversity in the lung. **C.V. Jakubzick.** Geisel Sch. of Med. at Dartmouth.

8:35 Defining the contribution of RNA-binding proteins to macrophage activation and innate immune gene expression. **K.L. Patrick.** Texas A&M Univ.

9:10 Diversity, function, and mysteries of peritoneal macrophages. **G.J. Randolph.** Washington Univ. Sch. of Med. in St. Louis.

9:45 Regulation of innate immunity by E3 ubiquitin ligases. **J. Zhang.** Univ. of Iowa.

10:20 Targeting innate immunity and PANoptosis for the treatment of inflammatory and infectious diseases. **T-D. Kanneganti.** St. Jude Children's Res. Hosp.

10:55 Coordination of macrophage metabolism with tissue repair. **E.B. Thorp.** Northwestern Univ.

17. INTERNATIONAL SOCIETY OF NEUROIMMUNOLOGY (ISNI) SYMPOSIUM: NEUROIMMUNE INTERACTIONS IN THE CNS AND BEYOND

Guest Session

SAT. 8:00 AM—OREGON BALLROOM 204

CHAIRS: *F.J. QUINTANA, A.V. MOLOFSKY*

8:00 Metabolic control of CNS inflammation and neurodegeneration. **F.J. Quintana.** Brigham and Women's Hosp. and Harvard Med. Sch.

8:24 Type I interferon-responsive microglia in brain development. **A.V. Molofsky.** Univ. of California, San Francisco.

8:48 Innate lymphoid cell regulation of neuroinflammation. **G. Sonnenberg.** Weill Cornell Med.

9:12 The lymphopoietic niche at the CNS border. **M. Colonna.** Washington Univ. Sch. of Med. in St. Louis.

9:36 TAMpering with memories. **C. Rothlin.** Yale Univ.

18. REGULATION OF B AND T CELLS IN AUTOIMMUNE DISEASES

Block Symposium

SAT. 8:00 AM—ROOM B110–112

CHAIRS: *H.M. TSE, V. SHAPIRO*

8:00 Lupus susceptibility gene *Pbx1* regulates STAT3 in T cells via JAK2/STAT3 signaling pathway. **T.A. Roach, S-C. Choi, Y.P. Park and L. Morel.** Univ. of Florida. **(103.01)**

8:15 mTORC2 contributes to murine lupus associated immunopathology. **H. Zeng, X. Zhou, Y. Li and A. Davidson.** Mayo Clinic Col. of Med. and Sci., Mayo Clin and Feinstein Inst. for Med. Res., Northwell Hlth. **(103.02)**

8:30 B cell subsets contributing to the autoreactive plasma cell pool in Lyn-/- mice. **A.B. Satterthwaite, J. Schneider and K. Ottens.** Univ. of Texas Southwestern Med. Ctr. **(103.03)**

8:45 NADPH oxidase-derived superoxide promote autoreactive T cell infiltration into islets of prediabetic NOD mice. **S.I. Blum, J. Barra, R. Baker and H.M. Tse.** Univ. of Alabama at Birmingham and Univ. of Colorado Anschutz Med. Campus. **(103.06)**

9:00 Intra-islet $CD8^+$ T cells are restrained by an exhaustion program that can be partially reversed in the absence of LAG3. **S.J. Grebinoski, Q. Zhang, A.R. Cillo, S. Manne, H. Xiao, E. Burnazzi, T. Tabib, C. Cardello, C.G. Lian, G.F. Murphy, R. Lafyatis, E.J. Wherry, J. Das, C.J. Workman and D.A.A. Vignali.** Univ. of Pittsburgh Sch. of Med., Boston Children's Hosp. and Harvard Med. Sch., Univ. of Pennsylvania Perelman Sch. of Med. and Brigham and Women's Hosp. and Harvard Med. Sch. **(103.07)**

9:15 B cell-mediated antigen presentation is required to induce functional pathogenicity of CD4 T cells in a proteolipid protein mouse model of multiple sclerosis. **A.W. Boyden, C.R. Wilhelm, M. Updahye and N.J. Karandikar.** Univ. of Iowa Carver Col. of Med., Iowa City Veterans Affairs Med. Ctr. and Univ. of Iowa. **(103.08)**

9:30 Regulation of inflammatory bowel disorder by ST8Sia6. **S.B. Crotts, R. Antonetti, M.J. Shapiro, M. Rajcula, K. Theodore, H.S. Kim Lee and V. Shapiro.** Mayo Clin. **(103.09)**

9:45 Phenotype of CD39/CD73 expressed on T cells in a mouse model of IPEX syndrome. **Y. Liu, S.A. Armbrister, B. Okeugo, R.C. Daniel and J.M. Rhoads.** McGovern Med. Sch., Univ. of Texas Hlth. Sci. Ctr., Houston. **(103.13)**

19. THEY COME AND THEY GO: A LEUKOCYTE MIGRATION EXTRAVAGANZA

Block Symposium

SAT. 8:00 AM—ROOM C123–124

CHAIRS: *J. CANNON, M. GERNER*

8:00 The tetraspanin CD53 as a novel regulator for B cell trafficking. **Z.J. Greenberg, W. Li and L.G. Schuettpelz.** Washington Univ. Sch. of Med. in St. Louis. **(105.10)**

8:15 Inflammation depletes humoral immunity by limiting plasma cell access to the bone marrow survival niche. **T. Aaron, Z. Benet and D. Fooksman.** Albert Einstein Col. of Med. **(105.12)**

8:30 CXCR4 promotes the stop signal and degranulation of cytotoxic T cells infiltrating influenza-infected lungs. **P. Mrass, J. Byrum, D. Torres and J.L. Cannon.** Univ. of New Mexico and Northern New Mexico Col. **(105.20)**

8:45 CCR2 identifies two subtypes of pathogenic human type 17 Th cells and has a non-redundant role in their transendothelial migration. **F. Parween, S.P. Singh, N. Kathuria, H. Zhang and J.M. Farber.** NIAID, NIH. **(105.31)**

9:00 PD-1 licenses activated Treg for lymphatic migration. **W. Piao, L. Li, V. Saxena, K. Hippen, B. Bruce, L. Riella and J. Bromberg.** Univ. of Maryland Sch. of Med., Univ. of Minnesota and Massachusetts Gen. Hosp. **(105.04)**

9:15 Dendritic cells regulate innate cell trafficking into lymph nodes during inflammation. **M.Y. Gerner, Y. Wu and J.Y. Huang.** Univ. of Washington. **(105.09)**

9:30 A new β_2 integrin activation reporter mouse reveals localized intra- and extra-vascular neutrophil integrin activation in vivo. **L. Wen, A. Marki, Z. Wang, M. Orecchioni, J. Makings, K. Kim, W.B. Kiosses, Z. Mikulski and K. Ley.** La Jolla Inst. for Immunology. **(105.07)**

9:45 Mechanical stress modulates NLRP3 pathway in macrophages. **H. Joshi, A. Almgren-Bell, E.M. Todd and S.C. Morley.** Washington Univ. Sch. of Med. in St. Louis. **(105.35)**

20. MOLECULAR MECHANISMS OF CYTOKINE FUNCTION

Block Symposium

SAT. 8:00 AM—OREGON BALLROOM 203

CHAIRS: *L.E. HARRINGTON, G. BISHOP*

8:00 Common gamma chain-dependent cytokines drive antigen-independent proliferation of circulating and resident memory $CD8^+$ T cells. **N.N. Jarjour, K.M. Wanhainen, C.M. Peng, H. Borges da Silva, R.J. Martinez, T.S. Dalzell, M.A. Huggins, J.F. Urban, Jr., S.E. Hamilton Hart and S.C. Jameson.** Univ. of Minnesota Med. Sch., Mayo Clin and USDA-ARS Beltsville Human Nutrition Ctr. **(45.03)**

8:15 Distinct super-enhancer elements differentially control *Il2ra* gene expression in a cell-type specific fashion. **R. Spolski, P. Li, V. Chandra, B. Shin, C. Liu, J. Oh, E. West, P. Vijayanand, E. Rothenberg and W. Leonard.** NHLBI, NIH, La Jolla Inst. for Immunology and California Inst. of Technol. **(45.04)**

8:30 Regulation of IL-2- and IL-6-dependent signaling in human Tregs by CISH and SOCS3. **M. Vujanac, Y. Ding and T.R. Malek.** Univ. of Miami Miller Sch. of Med. **(45.05)**

8:45 TRAF3 enhances type I interferon receptor signaling in T cells through modulation of the phosphatase PTPN22. **E. Hornick, A.M. Wallis and G.A. Bishop.** Univ. of Iowa. **(45.07)**

9:00 Transient receptor potential ankyrin 1 mediates IL-1 β-induced thermoregulation. **H.A. Silverman, A. Tynan, E.H. Chang, J.H. Li, D.A. Thompson, K.J. Tracey and S.S. Chavan.** The Feinstein Inst. for Med. Res., Northwell Hlth., Donald and Barbara Zucker Sch. of Med., Hofstra/Northwell, Northshore Univ. Hosp., Northwell Hlth. and The Elmezzi Grad. Sch. of Molec. Med., Northwell Hlth. **(45.08)**

9:15 Interferon kappa in keratinocytes is critical for normal wound repair and is decreased in diabetic wounds. **S. Wolf, C.O. Audu, A.D. Joshi, A. denDekker, W.J. Melvin, X. Xing, R. Wasikowski, L.C. Tsoi, J.E. Gudjonsson, J.M. Kahlenberg and K.A. Gallagher.** Michigan Med., Univ. of Michigan. **(45.09)**

9:30 M Loss of ten-eleven translocation 2 reduces CCR6 expression and increases B1 B cell number in the peritoneal cavity. **E.A. Dennis, S.V. Bontha, M.A. Marshall, P. Srikakulapu, J. Garmey, C.M.R. Blackburn and C.A. McNamara.** Univ. of Virginia. **(45.10)**

9:45 Sustained NPSLE development in the absence of systemic lupus-like disease in TLR7-deficient B6.Nba2. **A. Kwun, J. Sullivan, G. Mey, T.M. DeSilva and T.N. Jorgensen.** Cleveland Clin. Fndn and Case Western Reserve Univ. **(46.16)**

21. TECHNOLOGICAL INNOVATIONS IN IMMUNOLOGY I

Block Symposium

SAT. 8:00 AM—ROOM A105–106

CHAIRS: *Y. SYKULEV, A.M. BURKHARDT*

8:00 A human ectopic-lymphoid-follicle-on-a-chip for testing vaccines and adjuvants. **Y. Zhai, G. Goyal, P. Prabhala, A. Patil, M.S. Kim, A. Junaid, M.W. Ku, G. Mahajan, B. Bausk, T. Gilboa, R. Lazarovits, S. Sharma, L. Cohen, T. Ferrante, D.R. Walt and D.E. Ingber.** Wyss Inst. for Biologically Inspired Engin. at Harvard Univ., Brigham and Women's Hosp. and Harvard Med. Sch. and Boston Children's Hosp. and Harvard Med. Sch. **(116.01)**

8:17 3D-IBEX: achieving multiplex 3-dimensional imaging for deep phenotyping of cells in tissues. **A.J. Arroyo-Mejías, H. Ichise, C. Chu, J.L. Hor, Z. Yaniv, J. Kabat, J. Croteau, B. Lowekamp, A.J. Radtke and R.N. Germain.** NIAID, NIH, Univ. of Briston, United Kingdom and BioLegend, Inc. **(116.23)**

8:34 CD16 and NKG2D co-clustering facilitates quality of primary NK cell responses. **Y. Sykulev, O. Tsygankova, N. Anikeeva, N. Maskalenko and K. Campbell.** Thomas Jefferson Univ. and Fox Chase Cancer Ctr. **(116.06)**

8:51 Generation of large numbers of functional NK cells without feeders or serum. **T. Le Fevre, E. Ang, A.W. Wognum, S.J. Szilvassy, A.C. Eaves, S.A. Louis and N. Tabatabaei-Zavareh.** STEMCELL Technologies, Inc., Canada and Terry Fox Laboratory, BC Cancer. **(116.08)**

9:08 A feeder cell-free activation and expansion strategy to generate memory-like NK cells sufficient for off-the-shelf multi-dose adoptive cell therapy. **H.C. Wong, M.J. Dee, N. Shrestha, P. Chaturvedi, G.M. Leclerc, X. Zhu, B. Liu, L. Kong, C.A. Echeverri, L. You, J.O. Egan, J-A. Jiao, P.R. Rhode, M.K. Becker-Hapak, M.M. Berrien-Elliott, E. McClain, M. Foster, P. Pence, C.C. Neal, S. Kersting-Schadek and T.A. Fehniger.** HCW Biologics and Washington Univ. Sch. of Med. in St. Louis. **(116.16)**

9:25 Leveraging mouse genetics to generate heavy-chain only antibodies for therapeutic application. **T.C. Borbet, A. Perault, J. Ilmain, K-W. Chan, C.C. Luo, A.M. Bryan, M. Kirilov, W. Wang, P. Sheiffele, X-P. Kong, D. Ekiert, V. Torres and S.B. Koralov.** NYU Sch. of Med. and Ingenious Targeting Laboratory. **(116.07)**

9:42 Discovery of potently-neutralizing antibodies against SARS-CoV-2 using barcode enabled antigen mapping. **M.J.T. Stubbington, B. Adams, D. Reyes, A. Royall, M. Song, S. Marrache, P. Shahi, F. Tsai, P. Finnegan, T. Vollbrecht, T. Khadilkar, D. Jaffee, R. Ramenani and W. McDonnell.** 10x Genomics. **(116.09)**

22. MECHANISMS OF RESISTANCE TO THERAPY

Block Symposium

SAT. 8:00 AM—ROOM B113–116

CHAIRS: *J. SONG, W. LU*

8:00 β-Adrenergic signaling modulates the development and activity of erythroid suppressor cells. **A.K. Chawla, J. Nevin, M. Moussa, R. Geyer, I. Mandoiu and P.K. Srivastava.** UConn Hlth., Yale Sch. of Med. and Univ. of Connecticut. **(119.07)**

8:17 Remodeling of the tumor microenvironment via disrupting effector Treg activity augments response to checkpoint blockade. **J.W. Leavenworth, M.L. Dixon, L. Luo, S. Ghosh, J.M. Grimes and J.D. Leavenworth.** Univ. of Alabama at Birmingham. **(119.14)**

8:34 BHLHE40: required for regulation of effector T cells and remodeling of tumor microenvironment during immune checkpoint therapy. **A.J. Salmon, A.S. Shavkunov, Q. Miao, N.N. Jarjour, S. Keshari, C.D. Williams, A.M. Highsmith, J.E. Pineda, K. Chen, B.T. Edelson and M.M. Gubin.** Univ. of Texas MD Anderson Cancer Ctr. UTHealth Grad. Sch. of Biomed. Sci., MD Anderson Cancer Ctr., Univ. of Minnesota Med. Sch. and Univ. of Washington Sch. of Med. **(119.01)**

8:51 TNF-α blockade improves immunotherapy efficacy by altering the tumor microenvironment and enhancing tumor-specific T cell function in pancreatic ductal adenocarcinoma. **A.L. Burrack, Z. Schmiechen, E. Miller and I. Stromnes.** Univ. of Minnesota. **(119.10)**

9:08 Lymph node colonization promotes distant tumor metastasis through the induction of tumor-specific immune tolerance. **N.E. Reticker-Flynn, W. Zhang, J.A. Belk, P.A. Basto, A. Satpathy, S.K. Plevritis and E.G. Engleman.** Stanford Univ. Sch. of Med. **(119.04)**

9:25 Targeting LSD1 rescues MHC class I antigen presentation and promotes immune checkpoint blockade response in small cell lung cancer. **E.M. Nguyen, H. Taniguchi, A. Chow, T. Sen and C.M. Rudin.** Mem. Sloan Kettering Cancer Ctr. and Weill Cornell Grad. Sch. of Med. Sci. **(119.13)**

9:42 Tumors bearing defective transcription elongation are immune hot but resistant to immune checkpoint inhibitors. **V. Modur and F. Guo.** Cincinnati Children's Hosp. Med. Ctr. **(119.11)**

23. ENGINEERING IMMUNORECEPTOR AND CYTOKINE SIGNALING FOR THERAPEUTICS

Block Symposium

SAT. 8:00 AM—OREGON BALLROOM 201

CHAIRS: *I. STROMNES, C. WARE*

8:00 Overcoming barriers to solid tumor immunotherapy using natural killer cell therapies designed to mimic intraepithelial group 1 innate lymphoid cells. **N.B. Horowitz, J. Hickey, G.P. Nolan and J.B. Sunwoo.** Stanford Univ. **(122.10)**

8:15 Adoptive transfer of *Trac*-targeted T cell receptor engineered T cells with defective *Tgfbr2* signaling promotes pancreatic cancer eradication. **M.R. Rollins, A.L. Burrack, E. Miller and I. Stromnes.** Univ. of Minnesota Med. Sch. and Univ. of Minnesota. **(122.11)**

8:30 Directing T cell alloreactivity against solid tumors through tumor antigen dependent TCR expression. **K.M. Christie, S. Zhang, T.A. Schwarz and Z. Ma.** Univ. of Delaware and Nemours Children's Hosp. **(122.12)**

8:45 Combination of αPD-1 and extended half-life IL-2 is effective against the GL261 glioma and uniquely reverses GBM-associated immunosuppression. **Z.P. Tritz, K. Ayasoufi, C.S. Malo, B. Himes, A. Zastrow, D. Wolf, E. Goddery, R. Khadka, C. Fain, M. Chen, L.T. Yokanovich, F. Jin, M. Hansen, C. Wang, K. Moynihan, D.J. Irvine, K.D. Wittrup, I.F. Parney and A.J. Johnson.** Mayo Clin. Grad. Sch. of Biomed. Sci., Mayo Clin, Mayo Grad. Sch. of Biomed. Sci. and David H. Koch Inst. for Integrative Cancer Res., Massachusetts Inst. of Technol. **(122.09)**

9:00 Glycolipid-loaded nanoparticle immunotherapy cooperates with checkpoint inhibitors to harness iNKT cells for tumor control. **T.J. Shute, E.A. Dudley, K. Nash and E.A. Leadbetter.** UT Hlth. San Antonio and Univ. of Texas, San Antonio. **(122.13)**

9:15 A tumor-targeted cytokine/antibody fusion protein to stimulate anti-cancer immunity. **A.B. Silver and J. Spangler.** Johns Hopkins Bloomberg Sch. of Public Hlth., Johns Hopkins Univ. Sch. of Med. and Johns Hopkins Univ. **(122.14)**

9:30 BET inhibitors synergize with anti-PD1 by rescuing TCF1+ progenitor exhausted T cells in acute myeloid leukemia. **K.A. Romine, H-j. Cho, Y. Kosaka, P. Flynn, K.H. Byrd, J.L. Coy, M.T. Newman, J. Scott, C. Loo and E.F. Lind.** Oregon Hlth. & Sci. Univ. **(122.15)**

9:45 Dissecting molecular mechanisms underlying T cell co-potentiation when targeting the TCR/CD3 complex with anti-CD3 Fab fragments. **H.T. Huynh, C.M. Puthanapura, A.D. Nelson, L.R.E. Becher, M. Abergel, S. Hu, B. Alarcon, A. Schrum and D. Gil Pages.** Univ. of Missouri, Columbia, Mayo Clin and Univ. Autonoma de Madrid, Spain. **(122.16)**

24. FROM SHARKS, FISH, AND FROGS TO MAMMALS: FASCINATING IMMUNOLOGICAL DISCOVERIES

Block Symposium

SAT. 8:00 AM—ROOM A107–109

CHAIRS: *R. GOURAPURA, R. MILLER*

8:00 Optimization of expansion techniques for adoptive NK cell transfer in dogs with cancer. **A. Razmara, S.J. Judge, C. Dunai, W.J. Murphy, R.B. Rebhun, M.S. Kent and R.J. Canter.** Univ. of California, Davis. **(124.02)**

8:15 The biology of the unconventional γμ T cell in the opossum *Mondodelphis domestica*. **K.A. Morrissey, L. Bu and R. Miller.** Univ. of New Mexico. **(124.01)**

8:30 Plant derived nano-11 particle adsorbed with stimulator of interferon genes adjuvant and split influenza virus antigens elicits the cross-protective immunity in pigs. **R.J. Gourapura, V. Patil, J.F. Hernandez-Franco, G. Yadaigiri, D. Bugybayeva, S. Dolatyabi, N. Feliciano-Rúiz, J. Schrock, J. Hanson and H. HogenEsch.** The Ohio State Univ. and Purdue Univ. **(124.12)**

8:45 B cell ontology in a model marsupial. **J.M. Sampson, K.A. Morrissey and R.D. Miller.** Univ. of New Mexico. **(124.05)**

9:00 scRNA-Seq profiling of stickleback fish splenocytes: expansion of myeloid and B cells on immunization. **A. Attaya, B. Lohman and N. Steinel.** Univ. of Massachusetts, Lowell and Huntsman Cancer Inst. **(124.06)**

9:15 Flt3 and its ligand as an ancient regulators of dendritic cells: evidence in the amphibian *Xenopus laevis*. **M. Paiola, S. Roy, S. Ma, C. Patrick, M. Pavelka, E.J. Adams and J. Robert.** Univ. of Rochester Med. Ctr. and Univ. of Chicago. **(124.11)**

9:30 B cell selection sites in the nurse shark spleen may represent evolutionary precursors of mammalian germinal centers. **H.C. Matz and H. Dooley.** Univ. of Maryland, Baltimore and Inst. of Marine and Envrn. Technol. **(124.14)**

9:45 Characterization of cellular subpopulations and their gene expression by single-cell RNA sequencing in canine atopic dermatitis. **Y. Drechsler, B.A.T.E. Sparling, N.G. Moss, G. Kaur and R.D. Hawkins.** Western Univ. of Hlth. Sci. and Univ. of Washington. **(124.15)**

25. HOW TO CONVERT YOUR CV INTO A RÉSUMÉ

Career Development Session

SAT. 9:00 AM—ROOM B117–119

CHAIR: *M.T. LITZINGER*

For anyone seeking a job outside of academe, how you present yourself on paper is critical. A well-prepared résumé can make all the difference in securing that interview. This session will focus on the important elements of a professional résumé, the differences between a résumé and the standard academic curriculum vitae, and the information needed to make a good impression. Small breakout sessions for individual consulting will follow. Bring your CV!

9:00 How to convert your CV into a résumé. **D.J. Haseltine.** Hertz Fndn.

26. ARPA-H: WHAT YOU NEED TO KNOW AND HOW IT MAY IMPACT FEDERAL FUNDING OF BIOMEDICAL RESEARCH

Committee-Sponsored Session

Sponsored by the AAI Committee on Public Affairs

SAT. 10:15 AM—ROOM A105–106

CHAIR: *P.E. JENSEN*

Last year, President Biden formally proposed creating a new entity called the Advanced Research Projects Agency for Health (ARPA-H). ARPA-H, which is to be modeled after the Defense Advanced Research Projects Agency (DARPA), would support high-risk, high-reward research and, according to a concept paper developed by the Administration, might initially focus on "mak[ing] pivotal investments in breakthrough technologies and broadly applicable platforms, capabilities, resources, and solutions that have the potential to transform important areas of medicine and health for the benefit of all patients and that cannot readily be accomplished through traditional research or commercial activity."

Although President Biden recommended an initial three-year budget of $6.5 billion for ARPA-H, Congress appropriated $1 billion in fiscal year 2022 to launch this new agency. Congress and the White House continue to work toward the development of legislation that will further determine how ARPA-H will operate, including how it will establish research priorities and whether it will be part of NIH or an independent entity with the Department of Health and Human Services.

This session will feature a distinguished panel of experts who will explain the vision for this new agency. They will also address critical issues about how it might operate, including how immunologists could apply for and use ARPA-H funds, and whether federal investment in ARPA-H could adversely affect funding for the regular NIH budget, including its investigator-initiated basic research portfolio. The formal presentations will be followed by an ample question-and-answer period.

10:15 ARPA-H: a new paradigm for propelling use-driven, high-impact biomedical and health research. **T.A. Schwetz.** Acting Principal Deputy Director, NIH

Insights and advice from a DARPA program manager. **A. Jenkins.** Program Manager, Defense Advanced Res. Projects Agency (DARPA).

My experience as a DARPA performer. **A.M. Jamieson.** Associate Professor, Brown Univ.

27. CHINESE SOCIETY OF IMMUNOLOGY, TAIWAN (CSIT) SYMPOSIUM: METABOLIC INSTRUCTION OF IMMUNITY

Guest Session

SAT. 10:15 AM—ROOM A107–109

CHAIRS: *H-K. SYTWU, H-Y. YANG*

10:15 Metabolic immunomodulation for autoimmune disease. **H-Y. Yang.** Chang Gung Mem. Hosp., Taiwan.

10:45 Multiomic analyses reveal the central role of the pentose phosphate pathway in resident thymic macrophages to cope with efferocytosis-associated stress. **C-L. Hsu.** Nat. Yang Ming Chiao Tung Univ., Linkou Br. Taiwan.

11:15 BPI overexpression suppresses Treg differentiation and induces exosome-mediated inflammation in systemic lupus erythematosus. **H-C. Chuang.** Immunology Res. Ctr., Natl. Hlth. Res. Inst., Taiwan.

11:45 T cell-restricted c-Maf SUMOylation deficiency shapes gut microbiota-modulated metabolomic profiling to ameliorate colitis. **C-Y. Hsu.** Nat. Defense Med. Ctr., Taiwan.

28. AUTOIMMUNITY

Block Symposium

SAT. 10:15 AM—OREGON BALLROOM 203

CHAIRS: *V. TANEJA, H-J. WU*

10:15 The role of skin-derived IFN-kappa in the development of systemic autoimmunity. **J.W.S. Martens, J. Liu, M. Maz and J.M. Kahlenberg.** Univ. of Michigan. **(108.01)**

10:30 XIST is a source of TLR7 ligands underlying the sex bias in systemic lupus erythematosus. **J.D. Crawford, H. Wang, C.C. Talbot, A.M. Curran, D.W. Goldman, M. Petri, B. Antiochos and E. Darrah.** Johns Hopkins Univ. Sch. of Med. **(108.02)**

10:45 A snap shot of complement gene expression and pPresence of complement proteins in synovial biopsies from early rheumatoid arthritis patients. **N.K. Banda, K.D. Deane, J. Seifert, C. Strickland, E. Bemis, K. Jordan, K. Goldmann, Accelerating Medicines Partnership (AMP) RA/SLE Network, B.P. Morgan, M.J. Lewis, C. Pitzalis, L.W. Moreland and V.M. Holers.** Univ. of Colorado Anschutz Med. Campus, Ctr. for Exptl. Med. & Rheumatology, William Harvey Res. Inst., Barts & The London Sch. of Med. & Dent., Queen Mary Univ. of London, United Kingdom and Syst. Immunity URI, and UK DRI Cardiff, Sch. of Med., Cardiff Univ., United Kingdom. **(108.03)**

11:00 Proteogenomic immune signatures delineate the landscape of pediatric acquired demyelinating syndromes. **D.A. Espinoza, I. Mexhitaj, J. Smiler, F. Mafra, R. Pellegrino Da Silva, G. Fadda, E.A. Yeh, R.A. Marrie, D.L. Arnold, R. Li, B. Banwell and A. Bar-Or.** Immunology Grad. Group, Univ. of Pennsylvania Perelman Sch. of Med., Univ. of Pennsylvania Perelman Sch. of Med., Children's Hosp. of Philadelphia, Univ. of Toronto, Canada, Univ. of Manitoba, Canada and McGill Univ., Canada. **(108.04)**

11:15 Old mice and elderly humans make increased autoimmune antibodies, inflammation and SASP from aged-increased B cells (ABCs in mice and DN in humans) which are hypermetabolic. **B. Blomberg, A. Diaz, M. Romero and D. Frasca.** Univ. of Miami Miller Sch. of Med. **(108.05)**

11:30 CD8 T cell exhaustion is reduced in subjects with autoimmune-associated DR4 risk alleles. **S.A. Long, B. Jones, V. Wall, V. Muir, A. Ylescupidez, H. Uchtenhagen, P.S. Linsley and J.H. Buckner.** Benaroya Res. Inst. **(108.06)**

11:45 Metabolic dysfunction governs regulatory T cell inflammatory response during inflammatory bowel disease. **A. Bamidele, M. Sagstetter, P. Hirsova, G.P. Ramos, M. Westphal and W.A. Faubion, Jr.** Mayo Clin., Rochester. **(108.07)**

12:00 Differential therapeutic modulation of exhaustion among autoreactive and global CD8 T cells in type 1 diabetes. **A.E. Wiedeman, C. Acosta Vega, E. Serti, J. Nepom and A. Long.** Benaroya Res. Inst and Immune Tolerance Network. **(108.23)**

29. MOLECULAR AND CELLULAR CONTROL OF HUMORAL IMMUNITY

Block Symposium

SAT. 10:15 AM—ROOM C123–124

CHAIRS: *W. LUO, P. GEARHART*

10:15 Follicular B cells from old mice are hyper-responsive and produce non-specific antibodies. **C.J. Ticas Rodas, B.D. Greer, R.W. Maul and P.J. Gearhart.** NIA, NIH. **(112.10)**

10:30 PD-L1 plays a B cell-intrinsic role in suppressing the antibody response and anti-tumor immunity. **C. Cervantes, M. Khan, M. Fernandez, Z. Liu, Z. Hakeem, S. Viswanadhapalli, H.B. Gupta, T.J. Curiel, H. Yan, R. Vadlamudi and Z. Xu.** Univ. of Texas Hlth. Sci. Ctr., San Antonio. **(112.11)**

10:45 Blimp1 controls GC B cell expansion and exit through regulating cell cycle progression and key transcription factors BCL6 and IRF4. **W. Luo, L. Conter, D. Callahan, S. Smita and M.J. Shlomchik.** Indiana Univ. Sch. of Med. and Univ. of Pittsburgh Sch. of Med. **(112.06)**

11:00 Targeting intrinsic regulators of antibody and B cell memory to control chronic viral infection. **K. Good-Jacobson, A. Di Pietro and L. Cooper.** Monash Univ., Australia. **(112.05)**

11:15 Differential serological immune imprinting following SARS-CoV-2 infection, vaccination, and breakthrough infection. **W. Voss, Y. Huang, J. Marchioni, A. Seeger, C. Paresi, J. Kain, D. Townsend, J. Munt, R. Baric, G. Georgiou, J. Lavinder and G. Ippolito.** Univ. of Texas, Austin and Univ. of North Carolina at Chapel Hill. **(112.09)**

11:30 The plasma cell proteome initiates early in B cell activation in advance of Blimp-1. **B.T. Gaudette and D. Allman.** Univ. of Pennsylvania Perelman Sch. of Med. **(112.12)**

11:45 Tet2-mediated programing balances T follicular helper cell and T helper 1 cell differentiation. **J.S. Hale, A. Baessler, C.L. Novis, Z. Shen, J. Perovanovic, M. Wadsworth, L.M. Sircy, M. Harrison-Chau, K.E. Varley and D.R. Tantin.** Univ. of Utah Sch. of Med. and Huntsman Cancer Inst. **(112.24)**

12:00 A temporal switch in T follicular helper cells controls the output of the GC response to influenza. **N.M. Arroyo, H. Bachus, A. Papillion, A.F. Rosenberg, J.E. Bradley, B. Leon-Ruiz and A. Ballesteros-Tato.** Univ. of Alabama at Birmingham. **(112.22)**

30. TISSUE IMMUNITY AT BARRIER SITES

Block Symposium

SAT. 10:15 AM—OREGON BALLROOM 204

CHAIRS: *G.E. HAMMER, S. VAISHNAVA*

10:15 Leveraging resident memory T cells to fortify oral immunity.
M. Stolley and D. Masopust. Univ. of Minnesota. **(114.27)**

10:30 RAMP3 unexplored relevance for innate-T cell immunity. **G.A. Ascui-Gac, A. Mendis, E. Phung, S. Chandra, J. Han, K. Caron and M. Kronenberg.** La Jolla Inst. for Immunology, Univ. of California, San Diego and Univ. of North Carolina at Chapel Hill. **(114.26)**

10:45 Intranasal, not parenteral, vaccination induces the formation of tissue-resident memory CD8 T cells in nasal mucosa that rapidly clear influenza virus infection. **C. Matysiak, S. Kazer, J. Ordovas-Montanes and U.H. von Andrian.** Harvard Med. Sch. and Boston Children's Hosp. and Harvard Med. Sch. **(114.17)**

11:00 Bystander CD8 T cell memory responses partially protect mice against lethal vaginal HSV-2 challenge. **T. Arkatkar, V. Dave, I. Talavera, M. Prlic and J.M. Lund.** Univ. of Washington and Fred Hutchinson Cancer Res. Ctr. **(114.16)**

11:15 Sensing and alarm function of vaccine-elicited SIV-gag specific CD8 T_{RM} in the reproductive mucosa of rhesus macaques. **V. Joag, C. Quarnstrom, A. Soerens, J.M. Stolley, J.M. Schenkel, K. Fraser, V. Vezys, P.J. Skinner, E. Hunter, B. Bimber, R.R. Amara and D. Masopust.** Univ. of Minnesota, Brigham and Women's Hosp. and Harvard Med. Sch., Takeda Pharmaceuticals, Emory Univ. and Oregon Hlth. & Sci. Univ. **(114.15)**

11:30 The miseducation of T cells in autoimmunity. **E. Kouame, P. Brigleb, K. Sangani, T.S. Dermody and B. Jabri.** Univ. of Chicago and Univ. of Pittsburgh Sch. of Med. **(114.05)**

11:45 Parenteral vaccination strategies target protective immunity to the small and large intestine mucosa. **Z. Chen, F. Tierney, B. Raposo, R. Gonzalez, I. Sadeghi, A. Schudel, Q. Hu, J. Garcia, R. Langer, A. Jaklenec and U.H. von Andrian.** Harvard Med. Sch. and Massachusetts Inst. of Technol. **(114.10)**

12:00 The autophagy gene *Epg5* promotes susceptibility to enteric viral infection. **G. Kalugotla, S. Lee, L. Schriefer, L.A. Casorla Perez, H. Huang, Q. Lu, A. Orvedahl, G. Silverman, S. Pak, D. Wang and M.T. Baldridge.** Washington Univ. Sch. of Med. in St. Louis, Brown Univ. and Yunnan Univ., China. **(114.13)**

31. TUMOR IMMUNOTHERAPY

Block Symposium

SAT. 10:15 AM—OREGON BALLROOM 201

CHAIRS: *K.T. BYRNE, I. KINJYO*

10:15 Enhancing the antitumor response of $CD8^+$ T cells by 4-1BB (CD137) co-stimulation with distinct inactivation of the type 2 adenosine receptors. **J. Ahn, S. Chen, J. Fan and B. Zhang.** Feinberg Sch. of Med., Northwestern Univ. **(176.08)**

10:32 Glycogen synthase kinase (GSK-3) synergizes with PD-1/PDL1 blockade to generate super-armed CD8 killers against tumors. **M.E. Issa, J. Krueger, A. Kazanova, A. Taylor and C.E. Rudd.** Univ. of Montreal, Canada and Univ. of Leeds, United Kingdom. **(176.07)**

10:49 Complement C3 deficiency enhances anti-CD47 efficacy in murine ovarian cancer model. **S. Suzuki, T. Giridharan, A.N.M.N. Khan, T.R. Emmons, M.B. Yaffe, K. Weiskopf, M. Das, K.H. Eng, E. Zsiros and B.H. Segal.** Roswell Park Comprehensive Cancer Ctr., David. H. Koch Inst. for Integrative Cancer Res., Massachusetts Inst. of Technol, Whitehead Inst., Massachusetts Inst. of Technol and Apellis Pharmaceuticals, Inc. **(176.14)**

11:06 Evaluation of checkpoint inhibitor therapies using a mixed lymphocyte reaction assay. **J.E. Trigg, K. McBain, Z. Liu, T. Dale and C. Szybut.** Sartorius, United Kingdom. **(176.09)**

11:23 Treatment with exogenously added catalase promotes differentiation and function of central memory $CD8^+$ T cells. **N.E. Patsoukis and H-I. Aksoylar.** Beth Israel Deaconess Med. Ctr., Harvard Med. Sch. **(176.02)**

11:40 DNA-PK inhibition plus immune adjuvants promotes CD8 TIL infiltration, neoantigen presentation, and diversifies the tumor-reactive TCRβ repertoire in B16 melanoma. **A. Christians, A. Sanchez, G. Albert, X.G. Bradeen, D. Geng, J. Chen, D. Gonzalez-Rivera and E. Davila.** Univ. of Colorado Anschutz Med. Campus. **(176.01)**

11:57 PARP-inhibition with IFNg in the ovarian tumor microenvironment induces immunogenic cancer cell death for sustained anti-tumor immunity. **I. Kinjyo and S.F. Adams.** Univ. of New Mexico. **(176.15)**

32. PATHOGENESIS OF SARS-COV-2 INFECTION

Block Symposium

SAT. 10:15 AM—OREGON BALLROOM 202

CHAIRS: *A. PINTO, M. KAZEMIAN*

10:15 Metabolic syndrome enhances viral disease severity and reduces vaccine efficacy in mice. **E. Geerling, D.H. Carpenter, K.E. Schwetye, B. DeBosch and A. Pinto.** St. Louis Univ., Sch. of Med. and Washington Univ. in St. Louis Sch. of Med. **(125.42)**

10:30 Eicosanoid signaling as a therapeutic target in middle-aged mice with severe COVID-19. **J. Zheng, L-Y. R. Wong, K. Wilhelmsen, K. Li, M.E. Ortiz, N.J. Schnicker, A. Thurman, A.A. Pezzulo, P.J. Szachowicz, P. Li, R. Pan, K. Klumpp, F. Aswad, J. Rebo, S. Narumiya, M. Murakami, S. Zuniga, I. Sola, L. Enjuanes, D.K. Meyerholz, K. Fortney, P.B. McCray and S. Perlman.** Univ. of Iowa, BioAge Lab, Kyoto Univ., Japan, Univ. of Tokyo, Japan and Campus Univ. Autónoma de Madrid, Spain. **(125.05)**

10:45 Galectin-9 protects humanized-ACE2 immunocompetent mice from SARS-CoV-2 infection. **S.T. Yeung, T.A. Premeaux, T. Niki, S.K. Pillai, K.M. Khanna and L.C. Ndhlovu.** Weill Cornell Grad. Sch. of Med. Sci., Kagawa Univ., Japan, Vitalant Res. Inst and New York Univ. Langone Med. Ctr. **(125.04)**

11:00 SARS-CoV-2 drives JAK1/2-dependent local complement hyperactivation. **B. Yan, T. Freiwald, D. Chauss, L. Wang, E. West, C. Mirabelli, C.J. Zhang, E-M. Nichols, N. Malik, R. Gregory, M. Bantscheff, S. Ghidelli-Disse, M. Kolev, T. Frum, J.R. Spence, J.Z. Sexton, K.D. Alysandratos, D.N. Kotton, S. Pittaluga, J. Bibby, N. Niyonzima, M.R. Olson, S. Kordasti, D. Portilla, C.E. Wobus, A. Laurence, M.S. Lionakis, C. Kemper, B. Afzali and M. Kazemian.** Purdue Univ., NIDDK, NIH, NHLBI, NIH, Univ. Hosp. Frankfurt, Goethe-Univ. Germany, Univ. of Michigan, GlaxoSmithKline, United Kingdom, Michigan Med., Univ. of Michigan, Ctr. for Regenerative Med. of Boston Univ. and Boston Med. Ctr., Boston Univ. Sch. of Med., NCI, NIH, Norwegian Univ. of Sci. and Technol., Norway, King's Col. London, United Kingdom, Guy's Hospital, United Kingdom, Univ. of Virginia, Univ. of Oxford, United Kingdom, NIAID, NIH and Univ. of Lübeck, Germany. **(125.39)**

11:15 Children with multi-system inflammatory syndrome develop functionally competent T cell memory against SARS-CoV-2 following recovery. **K. Rybkina, M.C. Bradley, J.N. Bell, W. Meng, M.P. DiLorenzo, B.R. Anderson, K. Pethe, E. Luning-Prak, D.L. Farber and T.J. Connors.** Columbia Univ. Med. Ctr. and Univ. of Pennsylvania Perelman Sch. of Med. **(125.43)**

11:30 Exploration of shared antibody motifs in Kawasaki Disease and COVID-19 related multisystem inflammatory syndrome of childhood. **Z. Rahman and M. Hicar.** Univ. at Buffalo Jacobs Sch. of Med. and Biomed. Sci. and Univ. at Buffalo, SUNY. **(125.13)**

11:45 Identifying distinct T cell subsets in the context of pediatric ARDS. **B.L. Clark, T. Flerlage, S.A. Schattgen, E.K. Allen, D.F. Boyd, J.C. Crawford and P.G. Thomas.** St. Jude Children's Res. Hosp. **(125.11)**

12:00 SARS-CoV-2 mRNA vaccination induces polyfunctional T cell responses in healthy and immunocompromised individuals. **Y. Gao, C. Cai, D. Wullimann, J. Niessl, O.R. Ballesteros, J. Lange, P. Bergman, O. Blennow, L. Hansson, S. Mielke, P. Nowak, G. Bogdanovic, S. Muschiol, A. Grifoni, D. Weiskopf, A. Sette, F. Hellgern, K. Loré, M.S. Chen, P. Ljungman, J. Sandberg, H.G. Ljunggren, S. Aleman and M. Buggert.** Karolinska Inst., Sweden and La Jolla Inst. for Immunology. **(125.45)**

33. IMMUNOLOGY TEACHING INTEREST GROUP: ENHANCING YOUR IMMUNOLOGY TEACHING

Career Development Session

Sponsored by the AAI Education Committee

SAT. 11:00 AM—ROOM B117–119

CHAIRS: *W.H. CARR, M. SNYDER*

Are you looking for new ideas to enliven and improve your teaching? If so, please join us for this special interest group, which will focus on strategies that instructors can use to successfully convey immunology concepts to students at the undergraduate and graduate level. The session will explore teaching techniques through talks and structured breakout discussion groups. Current educators, new faculty, and trainees with an interest in teaching are welcome.

SPEAKERS:

11:00 To lab or not to lab, that is the question. **S.B. Redmond.** Radford Univ.

11:15 Improving the effectiveness of combining PowerPoint presentations and review games. **J.K. Cusick.** California Northstate Univ.

11:30 The zombie pirate invasion: an introduction to immunology concepts. **K.C. Smith.** Saba Univ. Sch. of Med., Dutch Caribbean.

11:45 Problem-based learning approach as a tool to teach immunology. **T. Barichello.** Univ. of Texas Hlth. Sci. Ctr., Houston.

BREAKOUT SESSIONS (concurrent):

12:05 Incorporating immunology into the undergraduate curriculum to promote interdisciplinary science education. **L.B. Justement,** Univ. of Alabama at Birmingham, **R.T. Taylor,** Frostburg State Univ., and **S. Pandey,** Minnesota State Univ., Moorhead.

12:05 Leveraging Flipgrid to drive social belonging and more durable learning in immunology courses. **K.R. Lukin,** Western Governors Univ., Univ. of Colorado.

12:05 Using team-based learning to solidify immunology concepts. **H. Turula,** Western Michigan Univ. Homer Stryker MD Sch. of Med., and **T. Bauler,** Western Michigan Univ. Homer Stryker MD Sch. of Med.

34. CAREERS ROUNDTABLES AND SPEED NETWORKING SESSION

Career Development Session

Sponsored by the AAI Minority Affairs Committee

SAT. 12:00 PM—PORTLAND BALLROOM 251

CHAIR: *T.J. WEBB*

Ticket required. **Registration Fee: $30** *(includes box lunch)*. Networking skills have never been more crucial to ensure success for early/mid-career scientists, including those traditionally under-represented in biomedical research. At this session, take advantage of the opportunity to meet in a small-group format with accomplished, senior immunologists and others to hear how they have handled the career challenges you now face, and learn what solutions may assist you. Then, practice networking in a relaxed environment offering a structured exercise and personalized feedback on communicating your scientific interests/objectives most effectively. Scientists and trainees of all backgrounds are encouraged to attend! *Space is limited. To check availability and sign up for session, please go to the Registration Desk*.

Discussion Topics:

- Grad Student: Finding a Mentor, Setting Sights on Postdoc Training
- Navigating Challenges Unique to International Graduate Students
- Postdoc: Finding a Mentor, Setting Sights on a Faculty Position
- Junior Faculty: Preparing for Promotion and Tenure
- Maintaining Research Productivity at a Primarily Undergraduate Teaching Institution
- Academia or Industry: How to Decide (or Switch Sides)
- Government Agency Careers
- Non-Bench Research Science Careers: Entrepreneurship
- Non-Bench Research Science Careers: Nonprofits/ Foundations
- Non-Bench Research Science Careers: Research Technology
- Non-Bench Research Science Careers: Science Policy
- Non-Bench Research Science Careers: Scientific Publishing

35. IMMUNOMODULATION AND IMMUNOTHERAPY: LESSONS TO IMPROVE HEALTH

Committee-Sponsored Session

Sponsored by the AAI Veterinary Immunology Committee

SAT. 12:30 PM—ROOM A107–109

CHAIRS: *J.C. TELFER, R.J. GOURAPURA*

12:30 *Xenopus* as nonmammalian experimental organism for investigating host interactions with non-TB mycobacteria. **J. Robert.** Univ. of Rochester Med. Ctr.

1:00 Immunomodulation by mesenchymal stem cells: mechanisms, clinical implications, and future directions. **A.K. Berglund.** North Carolina State Univ. Col. of Vet. Med.

1:30 Immunomodulation and immunotherapy: the dawn of novel therapies in animal health. **D. Mwangi.** Zoetis.

2:00 Nature of vaccine delivery vehicle determines the Th1- and Th2-based immunity to intranasal influenza vaccine in a pig model. **R.J. Gourapura.** The Ohio State Univ. Col. of Food Agr. & Envrn. Sci.

36. GERMAN SOCIETY FOR IMMUNOLOGY (DGfI) SYMPOSIUM: ANTIGEN-SPECIFIC T CELL RESPONSES TO SARS-COV-2

Guest Session

SAT. 12:30 PM—ROOM C123–124

CHAIRS: *M. SESTER, C. WATZL*

12:30 $CD4^+$ T cell responses and the role of pre-existing immunity for COVID-19 and SARS-CoV-2 infection. **C. Giesecke-Thiel.** Max Planck Inst. for Molec. Genetics, Germany.

1:00 The role of pre-existing immunity and age in $CD4^+$ T cell responses to SARS-CoV-2 infection and vaccination. **P. Bacher.** Universitätsklinikum Schleswig-Holstein, Germany.

1:30 T cell responses to SARS-CoV-2 infection and vaccination. **M. Sester.** Universität des Saarlandes, Germany.

2:00 $CD8^+$ T cell responses to SARS-CoV-2 infection. **M. Hofmann.** Universitätsklinikum Freiburg, Germany.

37. SOCIETY FOR IMMUNOTHERAPY OF CANCER (SITC) SYMPOSIUM: UNDERSTANDING THE TUMOR-REACTIVE T CELL REPERTOIRE IN CANCER PATIENTS

Guest Session

SAT. 12:30 PM—OREGON BALLROOM 204

CHAIRS: *A.D. WEINBERG, P.F. ROBBINS*

12:30 Identifying tumor-reactive $CD8^+$ TIL in patients with solid malignancies: clinical implications. **A.D. Weinberg.** Earle A. Chiles Res. Inst., Providence Portland Med. Ctr.

1:00 Clonal dynamics of tumor-infiltrating T cells in response to checkpoint blockade immunotherapy. **K.E. Yost.** Whitehead Inst.

1:30 Harnessing the personalized antitumor T cell response to treat cancer. **A. Gros.** Vall d'Hebron Inst. of Oncology, Spain.

2:00 Isolating and characterizing neo-antigen reactive T cells in patients with solid tumors. **P.F. Robbins.** NCI, NIH.

38. THE INS AND OUTS OF AIRWAY INFLAMMATION

Block Symposium

SAT. 12:30 PM—OREGON BALLROOM 202

CHAIRS: *R. MARTIN, D. HERBERT*

12:30 Sensory neurons shape allergic type 2 inflammation in the sinonasal tract. **J.F. Ortiz-Carpena, C. Pastore, L-Y. Hung, M.A. Kohanski, A.E. Vaughan, N.A. Cohen and D.R. Herbert.** Univ. of Pennsylvania Perelman Sch. of Med., Univ. of Pennsylvania Sch. of Vet. Med., Univ. of Pennsylvania Hlth. Syst and Corporal Michael J. Crescenz VA Med. Ctr. **(109.01)**

12:45 Mouse model of late-onset neutrophilic asthma reveals an epithelium-lymphocyte-neutrophil communication circuit underlying destructive airway neutrophilia. **A.T. Shenoy, F. Korkmaz, C. Lyon De Ana, C. Odom, K. Barker, W. Goltry, A. Ramanujan, I. Martin, F-Z. Shao, M. Jones, L. Quinton, A. Fine, F. Chen, A. Belkina and J. Mizgerd.** Boston Univ. **(109.03)**

1:00 GPR43 signaling in lung eosinophils suppresses neutrophilic airway inflammation in asthma. **J. Yu, S. Kim and Y-M. Kim.** Korea Advanced Institute of Sci. and Technol., South Korea. **(109.04)**

1:15 TSLP and IL-33 distinctively modulate the allergic response by differentially modulating Th2 cells and ILC2s. **R.K. Gurram, J. Zhu and W.J. Leonard.** NHLBI, NIH and NIAID, NIH. **(109.12)**

1:30 Blockade of dendritic cell glutaminolysis induces allergic asthma desensitization via suppression of Tfh13 polarization. **A. Tharakan, J. Liu, A. Cowart and R. Martin.** Virginia Commonwealth Univ. Sch. of Med. **(109.19)**

1:45 T_H9-derived IL-9 promotes CCR2-dependent mast cell accumulation in the allergic lung. **A. Pajulas and M.H. Kaplan.** Indiana Univ. Sch. of Med. **(109.08)**

2:00 Interrogating mechanisms of CD8 T cell dysfunction in obese asthma. **C. Hay, S. Sayed, P. Conrey, J. Campos, C.F. Pastore, S. Sengupta, D. Herbert and S.E. Henrickson.** Immunology Grad. Group, Univ. of Pennsylvania Perelman Sch. of Med., Children's Hosp. of Philadelphia, Univ. of Pennsylvania Sch. of Vet. Med. and Univ. of Pennsylvania Perelman Sch. of Med. **(109.06)**

2:15 The NLRP3 inflammasome inhibitor OLT1177® ameliorates experimental allergic asthma in mice. **L.P. Lunding, D.B. Skouras, C. Vock, C.A. Dinarello and M. Wegmann.** Res. Ctr. Borstel, Germany, Olatec Therapeutics LLC and Univ. of Colorado, Denver AMC. **(109.02)**

39. IMMUNOREGULATION—INFECTION AND IMMUNITY

Block Symposium

SAT. 12:30 PM—ROOM A105–106

CHAIRS: *B. HURRELL, O. AKBARI*

12:30 Macrophage inflammatory response increases in adult female exposed to neonate stress. **K. Bouchard, D. Patoine, S. Fournier, O. Lerdu, D. Marsolais, R. Kinkead, E. Bissonnette and J-F. Lauzon-Joset.** Quebec Heart and Lung Inst., Univ. Laval, Canada and Fac. of Med., Univ. Laval, Canada. **(110.21)**

12:47 Tim-3 deletion on Treg increases virus-specific T cell response and reduces viral burden in chronic LCMV infection. **H.M. Nieves-Rosado, H. Banerjee and L.P. Kane.** Univ. of Pittsburgh Sch. of Med. **(110.13)**

1:04 Robust homotypic and heterosubytpic immunity against influenza A virus in mice lacking Th1/Tc1 transcriptional machinery. **K. Dhume, S. Gallahan and K.K. McKinstry.** Univ. of Central Florida. **(110.08)**

1:21 Immune determinants of cardiometabolic risk in pre-existing type-2 diabetes severe COVID-19 patients. **M.G.B. Gunasena, Y. Wijewantha, E. Bowman, A. Kumar, K. Weragalaarachchi, J. Furay, T. Skladany, S-l. Liu, A. Vilgelm, J. Bednash, D. Kasturiratna, T. Demberg, N. Funderburg and N. Liyanage.** The Ohio State Univ., The Ohio State Univ. Col. of Med., Northern Kentucky Univ. and NIH. **(110.11)**

1:38 Ena/VASP protein-mediated actin polymerization contributes to naive $CD8^+$ T cell activation and expansion by promoting T cell-APC interactions in vivo. **M.M. Waldman, J.T. Rahkola, B.A.S. Willett, J.W. Chung, A.L. Sigler, R.S. Friedman, R.M. Kedl and J. Jacobelli.** Univ. of Colorado Anschutz Med. Campus, Barbara Davis Ctr. and Denver Veterans Affairs Med. Ctr. **(110.17)**

1:55 Core fucosylation of N-linked glycans: a novel player in memory $CD8^+$ T cell differentiation following acute viral infection. **M. Abdelbary, J. Harbour, S. Fancher, T. Nappi and J.C. Nolz.** Oregon Hlth. & Sci. Univ. **(110.10)**

2:12 Archived antigen boosts CD8 T cell memory responses during an unrelated infection. **T.A. Doan and B. Tamburini.** Univ. of Colorado Anschutz Med. Campus. **(110.18)**

40. IMMUNITY TO MICROBIAL, PARASITIC, AND FUNGAL INFECTIONS II

Block Symposium

SAT. 12:30 PM—ROOM B113–116

CHAIRS: *D. HERBERT, T. LAMB*

12:30 *Plasmodium* infection elevates risk of severe secondary bacterial disease by altering the immunological landscape of the lung. **J. Reed, D. Cornwall, N. Jacobs, B.D. Evavold and T.J. Lamb.** Univ. of Utah Sch. of Med. and Emory Univ. Sch. of Med. **(170.30)**

12:45 Mice infected with *Mycobacterium tuberculosis* are resistant to secondary infection with SARS-CoV-2. **O. Rosas Mejia, E.S. Gloag, J. Li, M. Ruane-Foster, T.A. Claeys, D. Farkas, L. Farkas, G. Xin and R.T. Robinson.** The Ohio State Univ. Col. of Med. and The Ohio State Univ. **(58.15)**

1:00 IL-23 signaling limits ferroptosis-driven immunopathology during systemic fungal infection. **N.O.J. Millet, N.V. Solis, D. Aguilar, M.S. Lionakis, R.T. Wheeler, N. Jendzjowsky and M. Swidergall.** Div. of Infectious Dis., Harbor-UCLA Med. Ctr., The Lundquist Inst. for Biomed. Innovation, Harbor-Univ. of California Los Angeles Med. Ctr., NIAID, NIH, Univ. of Maine and David Geffen Sch. of Med., Univ. of California, Los Angeles. **(58.11)**

1:15 Single-cell profiling identifies ACE^+ granuloma macrophages as a non-permissive niche for intracellular bacteria during persistent *Salmonella* infection. **T.H.M. Pham, Y. Xue, S.M. Brewer, S. Quake and D. Monack.** Stanford Univ. Sch. of Med. and Stanford Univ. **(170.18)**

1:30 HIV compromises Th17 and Th22 immunity in a humanized mouse model of tuberculosis and HIV co-infection. **Y.B. Martinez-Martinez, M.B. Huante, M. Files, B.B. Gelman, M. Endsley and J.J. Endsley.** Univ. of Texas Med. Br., Galveston. **(58.16)**

1:45 Exploring cutaneous neuro-immune networks during helminth infection. **E.E. Jean, H. Rossi and D. Herbert.** Univ. of Pennsylvania Sch. of Vet. Med. **(170.34)**

2:00 Type I interferon remodels intrahepatocytic signaling to promote T cell dysfunction during liver stage *Plasmodium* infection. **N.K. Minkah, L. Reynolds, V. Okolo and S. Kappe.** Seattle Children's Res. Inst and Univ. of Washington Sch. of Med. **(170.36)**

2:15 Cellular dynamics of immune evasion during *Leishmania major* infection. **R. Zayats, Z. Mou, A. Yazdanpanah, W.H. Koh, P. Lopez, J.E. Uzonna and T. Murooka.** Univ. of Manitoba, Canada. **(170.24)**

41. IMMUNITY TO SARS-COV-2

Block Symposium

SAT. 12:30 PM—OREGON BALLROOM 201

CHAIRS: *E. HEMANN, P. THOMAS*

12:30 Endogenous interferon-lambda signaling restricts virus replication and disease severity in a murine model of SARS-CoV-2 infection. **A. Solstad, A.D. Kenney, A. Zani, J.S. Yount and E.A. Hemann.** The Ohio State Univ. **(125.08)**

12:45 ADAM-17 protease promotes inflammation and mortality while decreasing viral burden in a COVID-19 mouse model. **J.F. Hedges, D.T. Snyder, A. Robison, H. Walk, K. Havlak, K. Shepardson, D. Kominsky, A. Rynda-Apple, B. Walcheck and M.A. Jutila.** Montana Sate Univ. and Univ. of Minnesota. **(125.44)**

1:00 A longitudinal study of humoral immune responses to SARS-CoV-2 spike proteins in gamma-interferon-inducible lysosomal thiol reductase deficient mice. **X. He, L. Guo, H. Dai and P.E. Jensen.** Univ. of Utah. **(125.40)**

1:15 The human *IGHD3-22* encoded motif contributes to broad reactivity of anti-SARS-CoV-2 antibodies. **H. Liu and I.A. Wilson.** The Scripps Res. Inst. **(125.02)**

1:30 Integrated immune networks in SARS-CoV-2 infected pregnant women reveal differential NK cell and unconventional T cell activation. **J.R. Habel, B.Y. Chua, L. Kedzierski, K.J. Selva, T. Damelang, E.R. Haycroft, T.H.O. Nguyen, H-F. Koay, S. Nicholson, H. McQuilten, X. Jia, L.F. Allen, L. Hensen, W. Zhang, C.E. van de Sandt, J.A. Neil, F. Amanant, F. Krammer, K. Wragg, J.A. Juno, A.K. Wheatley, H-X. Tan, G. Pell, J. Audsley, A. Reynaldi, I. Thevarajan, J. Denholm, K. Subbarao, M.P. Davenport, M. Hogarth, D.I. Godrey, A.C. Cheng, S.Y.C. Tong, K. Bond, D.A. Williamson, F. James, N.E. Holmes, O.C. Smibert, J.A. Trubiano, C.L. Gordon, A.W. Chung, C. Whitehead, S.J. Kent, M. Lappas, L.C. Rowntree and K. Kedzierska.** Univ. of Melbourne, Australia, Global Station for Zoonosis Control, Global Inst. for Collaborative Res. and Educ., Hokkaido Univ., Japan, Fac. of Vet. and Agr. Sci., Univ. of Melbourne, Australia, The Royal Melbourne Hosp., Australia, Icahn Sch. of Med., Mount Sinai, Grad. Sch. of Biomed. Sci., Icahn Sch. of Med. at Mount Sinai, ARC Ctr. of Excellence in Convergent Bio-Nano Sci. and Technol., Univ. of Melbourne, Australia, Mercy Perinatal Res. Ctr., Mercy Hosp. for Women, Australia, Kirby Inst., Univ. of New South Wales, Australia, Victorian Infectious Dis. Service, The Royal Melbourne Hosp., Australia, World Hlth. Organization Collaborating Ctr. for Reference and Res. on Influenza, Australia, Burnet Inst., Australia, Central Clin. Sch., Monash Univ., Australia, Sch. of Public Hlth. and Preventive Med., Monash University, Australia, Menzies Sch. of Hlth. Res. and Charles Darwin Univ., Australia, Royal Melbourne Hosp., Australia, Austin Hlth., Australia, Data Analytics Res. and Evaluation Ctr., Austin Hlth. and Univ. of Melbourne, Australia, Ctr. for Antibiotic Allergy and Res., Austin Hlth., Australia, Peter McCallum Cancer Ctr., Australia, Natl. Ctr. for Infections in Cancer, Peter McCallum Cancer Ctr., Australia, Austin Hlth., Univ. of Melbourne, Australia, Pregnancy Research Ctr., The Royal Women's Hosps., Australia and Obstetrics, Nutrition and Endocrinology Group, Univ. of Melbourne, Australia. **(125.10)**

1:45 Spike BATTLE: simultaneous evaluation of antigen-specific B and T lymphocytes following natural SARS-CoV-2 infection and subsequent mRNA vaccination. **K.L. Newell, M.J. Waldran, S.J. Thomas, T.P. Endy and A.T. Waickman.** SUNY Upstate Med. Univ. **(125.38)**

2:00 SARS-CoV-2 vaccination induces T cell memory responses able to cross-recognize ongoing SARS-CoV-2 variants including omicron. **A. Grifoni, A. Tarke, J. Dan, C. Coelho, Z. Zhang, D. Weiskopf, R.D.S. Antunes, S. Crotty and A. Sette.** La Jolla Inst. for Immunology. **(125.03)**

2:15 Epitope-specific T cell response to SARS-CoV-2 infection and vaccination. **A. Minervina, M. Pogorelyy, A.M. Kirk, C-H. Chou, E.K. Allen, J.C. Crawford, M.A. McGargill and P.G. Thomas.** St. Jude Children's Res. Hosp. **(125.41)**

42. AAI BUSINESS MEETING AND AWARDS PRESENTATION

AAI Session

SAT. 1:00 PM—ROOM B110–112

CHAIR: *M.M. HOGAN, AAI*

AAI reports on the “state of the association” to its members at every AAI annual meeting. Members will hear from the CEO on AAI membership, meetings, and awards; the Secretary-Treasurer on the financial standing of AAI, the Editors-in-Chief of *The Journal of Immunology* (*The JI*) and *ImmunoHorizons* (*IH*) on the status of AAI journals; and the Chair of the Committee on Public Affairs on important public policy issues, and other items of interest for the membership. Select 2022 AAI awards will also be presented during this session. Refreshments will be served.

AAI Distinguished Service Awards
Introduction: **M.M. Hogan**, AAI

Recipients:
R. Kedl, Univ. of Colorado Sch. of Med.
For outstanding service as Chair and Member of the AAI Committee on Public Affairs, 2015-2021

E.M. Lord, Univ. of Rochester Sch. of Med. and Dent.
For exceptional service as AAI Secretary-Treasurer, 2015-2021

Chambers-Thermo Fisher Scientific Award
To advance the career of an early-career scientist who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of cancer biology.

Introduction: **M.M. Hogan**, AAI, and **D. Piper**, Thermo Fisher Scientific

Recipient: **H.E. Ghoneim**, The Ohio State Univ. Col. of Med.

Lefrançois-BioLegend Award
To advance the career of a trainee who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of mucosal immunology.

Introduction: **M.M. Hogan**, AAI and **G. Lay**, BioLegend

Recipient: **E.M. Eshleman**, Cincinnati Children's Hosp. Med. Ctr.

Lustgarten-Thermo Fisher Scientific Award
To advance the career of a mid-career scientist who attends the AAI annual meeting and presents an outstanding abstract specifically in the area of immune regulation.

Introduction: **M.M. Hogan**, AAI, and **D. Piper**, Thermo Fisher Scientific

Recipient: **H. Wen**, The Ohio State Univ.

Pfizer-Showell Travel Award
To recognize the professional promise of an early-career investigator.

Introduction: **M.M. Hogan**, AAI

Recipient: **H. Borges da Silva**, Mayo Clin., Arizona

AAI-Thermo Fisher Trainee Achievement Awards
To recognize promising trainees in the field of immunology.

Introduction: **M.M. Hogan**, AAI, and **D. Piper**, Thermo Fisher Scientific

Recipients:
H.L. Caslin, Vanderbilt Univ.
J. Li, Stanford Univ.
J.F. Ortiz-Carpena, Univ. of Pennsylvania
N. Prokhnevska, Emory Univ.
D.F. Zegarra Ruiz, Mem. Sloan Kettering Cancer Ctr.
Z. Zhang, Harvard Med. Sch.

OTHER AWARDS AND GRANTS BEING ACKNOWLEDGED

- AAI Early Career Faculty Travel Grants
- AAI Laboratory Travel Grants
- AAI Undergraduate Faculty Travel Grants
- AAI Minority Scientist Travel Awards
- AAI Trainee Abstract Awards
- AAI Trainee Poster Awards

SATURDAY POSTER SESSIONS

Posters on Display: 9:30 AM – 4:30 PM
Author Presentation Time: 2:30 PM – 3:45 PM

44. CYTOKINE AND REGULATORY CELL CONTROL OF AUTOIMMUNITY

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P100 **44.01** The protective role of IL-36/IL-36R signal in con A-induced acute hepatitis. **J. Sun, X. Wang, L. Soong and Y. Liang.** Univ. of Texas Med. Br.

P101 **44.02** IL-27 signaling contributes to pathogenic T cells in a mouse model of Sjögren's. **I.L. Debreceni, Y-G. Chen and S.M. Lieberman.** Univ. of Iowa and Med. Col. of Wisconsin.

P102 **44.03** Interferon-gamma controls pathogenic T-helper 17 and B cells in a new aquaporin-4 induced experimental autoimmune encephalomyelitis. **G. Arellano, E. Loda, Y. Chen, B. Popko, R. Balabanov and S.D. Miller.** Northwestern Univ.

P103 **44.04** MAP4K3/GLK is a novel therapeutic target for IL-17A-mediated autoimmune diseases. **T-H. Tan and H-C. Chuang.** Natl. Hlth. Res. Inst.

P104 **44.05** Tetramerization of STAT5 promotes autoimmune-mediated neuroinflammation. **K.L. Monaghan, D. Aesoph, A.G. Ammer, W. Zheng, S. Rahimpour, B.Y. Farris, C.A. Spinner, P. Li, J-X. Lin, Z-X. Yu, V. Lazarevic, G. Hu, W.J. Leonard and E.C. K. Wan.** West Virginia Univ., Sch. of Med., West Virginia Univ., NCI, NIH and NHLBI, NIH.

P105 **44.06** Overexpression of IFNg suppresses double negative T regulatory cell function in autoimmune ovarian failure. **E.E. Bafor, J. Valencia, M. Ramba, T. Spindel and H.A. Young.** Ctr. for Cancer Res., Natl. Cancer Inst.

P106 **44.07** Development of uveitis in a mouse model of spontaneous autoimmunity correlates with frequency of autoantigen-specific regulatory T cells. **M. Yin, K.J. Hiam, I. Proekt, J. Chan, Y. Hu, C.A. Lowell, D.B. Gould, M. Spitzer, M.S. Anderson and A.L. DeFranco.** Univ. of California, San Francisco.

P107 **44.08** Homeodomain protein Pbx1 regulates regulatory T cell development, stability and suppressive function. **S-C. Choi, Y.P. Park, T.A. Roach and L. Morel.** Univ. of Florida.

P108 **44.09** The role of tumor necrosis factor receptor 2 in experimental autoimmune encephalomyelitis. **B.L. Bartsch, A.J. Negron and T. Forsthuber.** Univ. of Texas, San Antonio.

P109 **44.10** Role of type I IFN in lacrimal gland-protective Treg dysfunction in nonobese diabetic mouse model of Sjögren's disease. **M-G. Allred and S.M. Lieberman.** Univ. of Iowa.

P110 **44.11** Treg-specific ablation of HuR results in systemic autoimmunity associated with decreased TLR4 activation and IL-1β production. **U. Atasoy, F. Fattahi, J.S. Ellis, S. Socha and K. Bahleda.** Michigan Med., Univ. of Michigan, Lieutenant Colonel Charles S. Kettles VA Medical Center and Boston Children's Hosp. and Harvard Med. Sch.

P111 **44.12** Developing a model of autoimmune diseases with human tonsil organoids. **X. Chen, M. Ghanizada, E. Sola and M.M. Davis.** Stanford Univ. Sch. of Med.

P112 **44.13** C57BL/6 mouse transgenic for human *MeCP2* as a murine model of neuropsychiatric lupus. **T. Wu, Y. Li and S. Zhang.** Univ. of Houston.

P113 **44.14** Genetic analysis of CNS autoimmunity using the diversity of the collaborative cross reveals unique phenotypes and mechanisms. **E.A. Holt, K.G. Lahue, J.M. Mahoney, C. Teuscher and D.N. Krementsov.** Univ. of Vermont and The Jackson Lab.

P114 **44.15** Investigating immune tolerance: characterization of immunoregulatory DN T cells. **S. Pasquin, A-N. Pelletier, F. Lombard-Vadnais, G. Chabot-Roy, R. Collin, L. Coderre and S. Lesage.** Univ. de Montréal, Canada and RPM Bioinfo Solutions, Canada.

45. MOLECULAR MECHANISMS OF CYTOKINE FUNCTION

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P116 **45.02** IL7Rα and TSLPR expression on Langerhans cells in response to inflammatory stimulation. **M.I. Gonzalez-Rodriguez, T. Salomaa, L. Kummola, L. Hiihtola and I. Junttila.** Tampere Univ., Finland, Fimlab Lab., Finland and Univ. of Oulu.

P117 **45.03** Common gamma chain-dependent cytokines drive antigen-independent proliferation of circulating and resident memory $CD8^+$ T cells. **N.N. Jarjour, K.M. Wanhainen, C.M. Peng, H. Borges da Silva, R.J. Martinez, T.S. Dalzell, M.A. Huggins, J.F. Urban, Jr., S.E. Hamilton Hart and S.C. Jameson.** Univ. of Minnesota Med. Sch., Mayo Clin. and USDA-ARS Beltsville Human Nutrition Ctr.

P118 **45.04** Distinct super-enhancer elements differentially control *Il2ra* gene expression in a cell-type specific fashion. **R. Spolski, P. Li, V. Chandra, B. Shin, C. Liu, J. Oh, E. West, P. Vijayanand, E. Rothenberg and W. Leonard.** NHLBI, NIH, La Jolla Inst. for Immunology and California Inst. of Technol.

P119 **45.05** Regulation of IL-2- and IL-6-dependent signaling in human Tregs by CISH and SOCS3. **M. Vujanac, Y. Ding and T.R. Malek.** Univ. of Miami Miller Sch. of Med.

P120 **45.06** Transcription factor Fli-1 impacts CXCL13 chemokine expression and renal inflammation of lupus-like nephritis in MRL/lpr mice. **S. Sato, X. Zhang, N. Matsuoka, S. Yoshida, K. Yokose, H. Matsumoto, J. Temmoku, Y. Fujita, M. Furuya, T. Asano, H. Watanabe and K. Migita.** Fukushima Med. Univ., Japan and Med. Univ. of South Carolina.

P121 **45.07** TRAF3 enhances type I interferon receptor signaling in T cells through modulation of the phosphatase PTPN22. **E. Hornick, A.M. Wallis and G.A. Bishop.** Univ. of Iowa.

P158 **45.08** Transient receptor potential ankyrin 1 mediates IL-1β-induced thermoregulation. **H.A. Silverman, A. Tynan, E.H. Chang, J.H. Li, D.A. Thompson, K.J. Tracey and S.S. Chavan.** The Feinstein Inst. for Med. Res., Northwell Hlth., Donald and Barbara Zucker Sch. of Med., Hofstra/Northwell, Northshore Univ. Hosp., Northwell Hlth. and The Elmezzi Grad. Sch. of Molec. Med., Northwell Hlth.

P159 **45.09** Interferon kappa in keratinocytes is critical for normal wound repair and is decreased in diabetic wounds. **S. Wolf, C.O. Audu, A.D. Joshi, A. denDekker, W.J. Melvin, X. Xing, R. Wasikowski, L.C. Tsoi, J.E. Gudjonsson, J.M. Kahlenberg and K.A. Gallagher.** Michigan Med., Univ. of Michigan.

P160 **45.10** Loss of ten-eleven translocation 2 reduces CCR6 expression and increases B1 B cell number in the peritoneal cavity. **E.A. Dennis, S.V. Bontha, M.A. Marshall, P. Srikakulapu, J. Garmey, C.M. Blackburn and C.A. McNamara.** Univ. of Virginia.

P161 **45.11** Class II phosphatidylinositol-3-kinases promotes CCR7 recycling to the cell membrane in human T-cells. **M.A. Brissette, C.I. Cardona, C.A. Bill and C.M. Vines.** Univ. of Texas, El Paso.

P162 **45.12** The effect of various stimulants on cytokine secretion profiles in freshly isolated peripheral blood mononuclear cells. **R. Lefavor and E. Clarke.** ReachBio Res. Labs.

P163 **45.13** Sex differences in IL-3, IL-4, and IL-7 correlation with cholesterol and triglyceride levels in African Americans with high HbA1c. **K.S. Kimbro, E. Wamble and A. Williams.** North Carolina Central Univ. and NIH, NHGRI.

46. CYTOKINE & CHEMOKINE CONTROL OF CELLULAR IMMUNITY

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P164 **46.01** Investigating immune responses to harmful algal bloom cyanotoxins in protection of human health and the environment. **S.A.J. Augustine, M.C. Robillard and A. De la Cruz.** US EPA.

P165 **46.02** Characterization of anti-porcine CXCL10 monoclonal antibodies. **J.K. Lunney, T. Hailstock, C. Dai, J. Aquino, S. Chick, K. Walker, J.N. Manirarora, R.J. Gourapura, Y.B. Sullivan and J. LaBresh.** USDA-ARS Beltsville Human Nutrition Ctr., Yangzhou Univ., China, The Ohio State Univ. and Kingfisher Biotech.

P166 **46.03** Elevated plasma levels of CXCL16 in severe COVID-19 patients. **S.P. Smieszek.** Vanda Pharmaceuticals Inc.

P167 **46.04** T cell derived XCL1 facilitates the interaction with XCR1+ DCs within the CNS during WNV encephalitis. **K. De La Torre and D. Durrant.** California State Polytechnical Univ., Pomona.

P168 **46.05** Chemokines and anionic phospholipids: new binding partners for microbial killing and apoptotic cell clearance. **S. Pontejo and P. Murphy.** NIAID, NIH.

P169 **46.06** IL-11 induces monocyte inflammasome activation and migration to the CNS in IL-11R$^+$ cells in relapsing remitting multiple sclerosis. **M. Seyedsadr, Y. Wang, M. Alzoheiry, E. kasimoglu, D. Hwang, J. Garifallou, D. Miskin and S. Markovic-Plese.** Thomas Jefferson Univ. and Children Hosp. of Philadelphia.

P170 **46.07** The roles of IL-22 and its receptor in the regulation of inflammatory responses in the brain. **D. Lee, H. Jo, C. Go, Y. kim and J.S. Kang.** Seoul Natl. Univ. Col. of Med., South Korea.

P171 **46.08** Pancreatic interleukin-22 receptor signaling is critical in maintaining beta-cell insulin production and is hepatoprotective. **H. Sajiir, K.Y. Wong, A. Mueller, S. Keshvari, R. Wang, P. Wiid, G. Macdonald, J. Prins, M.A. McGuckin and S.Z. Hasnain.** Mater Res. Inst., Univ. of Queensland, Australia, Princess Alexandra Hosp., Australia and Fac. of Med., Dent. and Hlth. Sci., Univ. of Melbourne, Australia.

P173 **46.10** IL-9 has an important role in promoting Barrett's esophagus phenotype in eosinophilic esophagitis. **S. Upparahalli Venkateshaiah, Y. Chandra Sekhar, O. Lokanatha and A. Mishra.** Tulane Univ.

P174 **46.11** Perturbations of marrow stromal cell function during acute inflammation. **V. Matkins, V. Camacho, A. Hoang, S. Patel and R.S. Welner.** Univ. of Alabama at Birmingham, Boston Children's Hosp. and Harvard Med. Sch. and Univ. of Colorado Anschutz Med. Campus.

P175 **46.12** Collaboration of therapeutic, systemic IL12p40 with locally released IL12p35 focuses immunity to the tumor microenvironment. **E.M. Hill, A.N. Gerber and N.J. Singh.** Univ. of Maryland Sch. of Med.

P176 **46.13** Characterization of a new cytokine complex from the IL-6/IL-12 family. **M. Rousseau, V. Laplante, U. Nadeau, S. Pasquin, E. Fajardo, S. Lesage and J-F. Gauchat.** Univ. de Montréal, Canada.

P177 **46.14** Loss of ADAM17 from macrophages induces ST2$^+$ T regulatory cells that limit obesity-induced metabolic inflammation in mice through changes in both membrane and soluble TNF. **R. Martin, J.C. Lownik, J. Farrar, G. Way, M. Zellner, B. Ni, F. Celi and D.H. Conrad.** Virginia Commonwealth Univ. Sch. of Med. and Cedars Sinai Med. Ctr.

P178 **46.15** Interleukin-2 signaling engages de novo cholesterol biosynthesis in regulatory T cells. **A. Crouch and T.R. Malek.** Univ. of Miami Leonard M. Miller Sch. of Med.

P179 **46.16** Sustained NPSLE development in the absence of systemic lupus-like disease in TLR7-deficient B6.Nba2. **A. Kwun, J. Sullivan, G. Mey, T.M. DeSilva and T.N. Jorgensen.** Cleveland Clin. Fndn. and Case Western Reserve Univ.

P180 **46.17** Validation of ferret Luminex cytokine assays with serum from ferrets infected with flu, stimulated whole blood and PBMCs. **T.C. Race, A. Fletcher, M. Damour, D.M. Brown, R.S. Rutgers and L.L. Stephen.** Ampersand Biosciences and Trudeau Inst.

P181 **46.18** Characterization of cytokine measurement in human serum, plasma, urine, tears, milk, CSF, and saliva with a MILLIPLEX® multiplex immunoassay. **H.L. Steiner, H. Luo, T. Ahmed, B. Gilliam, A.J. Saporita and X. Qiang.** MilliporeSigma.

47. HSCs AND MYELOPOIESIS

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P183 **47.01** *Bclaf1* promotes hematopoietic stem cell repopulating capacity and self-renewal. **S. Crowley, L.S. White, Y. Li, W. Yang, J.A. Magee and J.J. Bednarski.** Washington Univ. Sch. of Med. in St. Louis.

P184 **47.02** HSC-independent definitive lymphopoiesis persists into adult life. **M. Yoshimoto, H. Cheng, C. Nishida, A. Latorre and M. Kobayashi.** McGovern Med. Sch., Univ. of Texas Hlth. Sci. Ctr., Houston.

P185 **47.03** IL-18R signaling impairs hematopoietic recovery after severe, shock-like infection. **J.E. Howard and K.C. MacNamara.** Albany Med. Col.

P186 **47.04** Characterization of a *CLCF1* conditional knock-out mice model. **V. Laplante, M. Rousseau, E. Fajardo, S. Pasquin, S. Lesage and J-F. Gauchat.** Univ. de Montréal, Canada.

P187 **47.05** The X-linked gene for the helicase DDX3X is required for lymphoid differentiation and MYC-driven lymphomagenesis. **M. Lacroix, H. Beauchemin, J. Ross, J. Fraszczak, P. Shooshtarizadeh, R. Chen and T. Moroy.** IRCM, Canada, McGill Univ., Canada and Univ. of Montreal, Canada.

P188 **47.06** Vhl deficiency in Dmp1-expressing cells affects myeloid development and erythropoiesis: possible effects on myeloerythroid metabolism. **B.J. Chicana, J. Emery, H. Taglinao, C. Donham and J. Manilay.** Sch. of Natural Sci., Univ. of California, Merced.

P189 **47.07** Notch signaling is required for generation of conventional type 1 dendritic cells from human induced pluripotent stem cells. **F. Ito, M.D. Long, R. Kajihara, S. Matsueda, T. Oba, K. Kanehira, S. Liu and K. Makino.** Roswell Park Comprehensive Cancer Ctr.

P190 **47.08** Murine epidermis harbors functionally distinct Langerhans cell subsets. **P.M. Dimitrion, I. Adrianto, M. Pawlitz, Y. Yao, C. Yin, H. Peng, L. Zhou and Q-S. Mi.** Henry Ford Hlth. Syst.

P191 **47.09** Ablation of cDC2 lineage specification by mutations within the −165 kb *Zeb2* enhancer. **T. Liu, S. Kim, P. Desai, D-H. Kim, X. Huang, S.T. Ferris, R. Wu, F. Ou, T. Egawa, S.J. Van Dyken, M.S. Diamond, M. Kubo and K.M. Murphy.** Washington Univ. Sch. of Med. in St. Louis and Tokyo Univ. of Sci., Japan.

P192 **47.10** Cellular and molecular mediators of thymic DC homeostasis and activation. **J. Srinivasan, B. Helm, Z. Su, S. Yi, Q. Liu, K. Lau and L.I.R. Ehrlich.** Univ. of Texas, Austin and Vanderbilt Univ. Med. Ctr.

P193 **47.11** IL-7 and IL-7R regulate fetal macrophage establishment via survival and proliferation. **G. Leung, C. Valencia, B. Krum and A.E. Beaudin.** Univ. of Utah Sch. of Med. and Univ. of Utah.

P194 **47.12** IL-7 receptor marks entire embryo-derived mast cell. **M. Kobayashi, S. Cornelius, N. Valiente, M. Kobayashi, H. Cheng and M. Yoshimoto.** McGovern Med. Sch., Univ. of Texas Hlth. Sci. Ctr., Houston.

P195 **47.13** Stress induced eosinophilpoiesis contributes to mortality after pulmonary resection. **Z. Mei, Y. Guo, D. Li, M. Khalil, A. Banerjee, D. Kreisel, A. Gelman and A. Krupnick.** Sch. of Med., Univ. of Maryland, Baltimore and Washington Univ. Sch. of Med. in St. Louis.

P197 **47.15** Regulation of thrombopoiesis by the inhibitor of MyoD family A. **J.S. Houser, M. Patel, M. Onopiuk, L. Tsiokas and M.B. Humphrey.** Univ. of Oklahoma Hlth. Sci. Ctr.

P198 **47.16** Maternal immune activation impairs neonatal lung ILC2 establishment, function, and airway hyperresponsiveness. **D.A. Lopez, A. Griffin and A.E. Beaudin.** Univ. of Utah Sch. of Med.

P199 **47.17** Cell autonomous metabolic remodeling governs regeneration of the thymus. **S. Kinsella, C.A. Evandy, K. Cooper, K. Hopwo, L. Iovino, P. deRoos, C. Smith, D. Granadier and J.A. Dudakov.** Fred Hutchinson Cancer Res. Ctr.

P200 **47.18** Use of imaging mass cytometry and high-resolution microscopy to define human natural killer cell developmental niches in pediatric tonsil. **E. Hegewisch-Solloa, H. Ravichandran, A. Freud, B.L. Mundy-Bosse, B. Salomé, E. Grunstein, O. Elemento, T.J. Connors, A. Horowitz and E.M. Mace.** Columbia Univ. Irving Med. Ctr., Weill Cornell Med. Col., The Ohio State Univ. Comprehensive Cancer Ctr. and Icahn Sch. of Med., Mount Sinai.

48. PULMONARY, VASCULATURE, AND SKIN IMMUNITY

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P201 **48.01** Interstitial lung disease patients exhibit augmented germinal center responses in lung lymph nodes and increased serum reactivities to novel autoantigens. **Y.M. Yoon, T. Velez, V. Upadhyay, S. Vazquez, C.T. Lee, K. Blaine, D. Decker, R. Guzy, A. Adegunsoye, M. Strek, I. Noth, M.S. Anderson, J. DeRisi, A. Shum and A.I. Sperling.** Univ. of Chicago, Univ. of Virginia and Univ. of California, San Francisco.

P202 **48.02** Differential response of dendritic cells and macrophages to signals from airway epithelial cells in humans: changes with age. **S. Agrawal and C. Monteiro.** Univ. of California, Irvine and Federal Univ. of the State of Rio de Janeiro, Brazil.

P203 **48.03** *Candida albicans* induces foaming and inflammation in macrophages through FABP4: its implication for atherosclerosis. **F. Alrashed, M. Haider, Z. Albaqsumi, K. Alobaid, R. Alqabandi, F. Al-Mulla and R. Ahmad.** Dasman Diabetes Inst., Kuwait, Kuwait Univ., Kuwait and Kuwait Ministry of Hlth., Kuwait.

P204 **48.04** Tobacco smoke activated fibrogenic MARCKS/AXL complex promotes macrophage reprogramming and pulmonary fibrosis. **D.C. Yang, J. Zhang, J-M. Li, C-W. Chu, S-W. Hsu and C-H. Chen.** Univ. of California, Davis.

P205 **48.05** Pathological metabolic adaptation of neutrophils recruited to cystic fibrosis airway microenvironment cannot be reversed by modulator therapy. **A. Cammarata-Mouchtouris, G.L. Collins, S.O. Kim, D. Moncada, R. Tirouvanziam and J.D. Chandler.** Emory Univ. Sch. of Med.

P206 **48.06** Lymphotoxin β receptor signaling mediates the formation of high endothelial venule-like vessels in atopic dermatitis-like skin lesions in mice. **S. Kanameishi, S. Ono, Y.H. Keith, R. Asahina, T. Honda and K. Kabashima.** Kyoto Univ., Japan, Hamamatsu Univ., Japan and Singapore Immunology Network, Singapore.

P207 **48.07** Epithelial mesenchymal transition of epithelial cells induced by TGF-β signaling in lymphedema. **H.J. Park, R.P. Kataru, J.P. Shin and B.J. Mehrara.** Mem. Sloan Kettering Cancer Ctr.

P208 **48.08** Discovery of antigen specific CD4+ T cells in anti-3-hydroxy-3-methylglutaryl coenzyme A reductase immune mediated necrotizing myopathy. **E. Tiniakou, A. Mammen and E. Darrah.** Johns Hopkins Univ. and NIAMS, NIH.

P209 **48.09** Age associated B cells positively associate with atherosclerosis in mice and humans. **P. Srikakulapu, T. Pattarabanjird, S.V. Bontha, A. Upadhye, F. Drago, M. Marshall and C. McNamara.** Univ. of Virginia.

P210 **48.10** Arterial antibodies promote atherosclerotic plaque development in mice. **J.A. Taylor, M.A. Hutchinson, P.J. Gearhart and R.W. Maul.** NIA, NIH and Johns Hopkins Univ. Sch. of Med.

P211 **48.11** Transcriptional characteristics of cardiac macrophages during early onset of acute myocardial infarction. **W.A. Boisvert, J. Yap, T. Bishop, M. Tiirikainen and S. Vanapruks.** Univ. of Hawaii.

P212 **48.12** The role of CD45 in the regulation of B cell subset functions in atherosclerosis. **S. Ma, A.K. Moriarty, W.C. Keeter, T. Waseem, A. Zyskin, P. Gauronskas, M. Mussbacher and E. Galkina.** Eastern Virginia Med. Sch. and Univ. of Graz.

P213 **48.13** A rare case of liraglutide-induced iatrogenic amyloidosis. **S.K. Aujla and P. Jasti.** Henry Ford Hlth. System.

P214 **48.14** Vedolizumab reduces dendritic cells and naïve lymphocytes in the colon mucosa. **J.D. Lord, R. Kongala and J. Juarez.** Benaroya Res. Inst., Virginia Mason and Takeda Pharmaceuticals.

P215 **48.15** Multispectral imaging to detect immune phenotypes associated with the tumor microenvironment in a multi-tissue study: a full automated 7-color mIF immuno-oncology workflow. **N. Mehra, B. Patel, S. Allen, B. Boldt, N. Ramirez, N. Mammadova and A. Haggerty.** Lanterne Dx and AKOYA Biosciences.

P217 **48.16** Whole-slide multispectral imaging reveals the immune subtypes of melanoma associated with the tumor microenvironment: an automated 7-color mIF assay. **N. Mehra, B. Patel, S. Allen, B. Boldt, N. Ramirez, N. Mammadova and A. Haggerty.** Lanterne Dx and AKOYA Biosciences.

49. FOOD ALLERGY, ATOPIC DERMATITIS, AND MAST CELLS, OH MY!

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P218 **49.01** Developing a synbiotic biotherapy to prevent allergic responses to food. **L.A. Hesser, L. Maccio-Maretto, J. Hubbell and C. Nagler.** Univ. of Chicago.

P219 **49.02** Covalent heterobivalent inhibitor effectively inhibits anaphylaxis to peanut allergen in a humanized mouse model. **N.S. Alakhras, J. Shin, S. Smith, B. Bilgicer and M.H. Kaplan.** Indiana Univ. Sch. of Med., Univ. of Notre Dame and Vanderbilt Univ. Med. Ctr.

P221 **49.04** Synthetically glycosylated antigens as an inverse vaccine platform to prevent and treat food allergies. **S. Cao, C.D. Maulloo, M. Sabados, M.M. Raczy, D.S. Wilson, C.R. Nagler and J.A. Hubbell.** Univ. of Chicago.

P222 **49.05** Comparison of salt-soluble wheat allergens in a mouse model vs. known human wheat allergens: evidence from durum and ancient wheats. **R.D. Jorgensen, H. Gao, R. Raghunath, S. Chandra, A. Noble, E. Olson, P.K. W. Ng and V. Gangur.** Michigan State Univ.

P223 **49.06** Comparison of sensitizing and disease-eliciting capacities of salt-soluble protein extracts from diploid (einkorn) versus tetraploid (durum) wheats. **H. Gao, R.D. Jorgensen, R. Raghunath, P.K.W. Ng and V. Gangur.** Michigan State Univ.

P224 **49.07** Paneth cells regulate allergic sensitization in the gastrointestinal tract. **E. Kim, D.J. Burnett, M.R. Joldrichsen, Y. Mori-Akiyama, E. Cormet-Boyaka and P.N. Boyaka.** The Ohio State Univ. and Baylor Col. of Med.

P225 **49.08** PD-1 blockade in T follicular helper cells protects mice from peanut allergy by promoting production of low-affinity antibodies. **J.K. Lama, K. Iijima, T. Kobayashi and H. Kita.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin.

P226 **49.09** TFR-derived IL-4 is required for antigen-specific IgE but not antigen-specific IgG1 production in a peanut allergy model. **Q. Chen and A. Dent.** Indiana Univ. Sch. of Med.

P227 **49.10** Brain mast cell accumulation and activation in an asymptomatic mouse model of cow's milk allergy. **D.L.M. Germundson and K. Nagamoto-Combs.** Univ. of North Dakota Sch. of Med. and Hlth. Sci.

P228 **49.11** Interleukin-10 enhances IL-33-mediated MC activation and modulates the development of food allergy. **C.B. Mathias, D. Krajewski, M.T. Taruselli, J. Rovatti, M. Mire, S.S. Schneider and J.J. Ryan.** Western New England Univ., Virginia Commonwealth Univ. and Baystate Med. Ctr.

P229 **49.12** Peripheral IgE+ plasmablasts as a biomarker of clinical allergy onset and severity. **E.M. Larson, S.M. Babasyan and B. Wagner.** Cornell Univ.

P230 **49.13** Defining a functionally distinct, lineage dependent B1 cell population in *Nippostrongylus brasiliensis* infection. **M. Zellner, J.C. Lownik, J.F. Urban, Jr. and R. Martin.** Virginia Commonwealth Univ. Sch. of Med., Cedars-Sinai Med. Ctr. and USDA-ARS Beltsville Human Nutrition Ctr.

P231 **49.14** P2X3 is a female-dominant activator of mast cells. **S.A. Kee, T. Haque, J. Dailey and J.J. Ryan.** Virginia Commonwealth Univ., NIH and Virginia Commonwealth Univ. Sch. of Med.

P232 **49.15** Androgen receptor ceficiency eliminates sex differences in mast cells. **A.J. Moeser, Y.P. Tang, K. Thelen and M. Fardisi.** Michigan State Univ.

P233 **49.16** Transcriptional profiling unveils the heterogeneity of constitutive and inducible mast cells in inflammation and homeostasis. **T. Salloum and D.F. Dwyer.** Brigham and Women's Hosp. and Harvard Med. Sch.

P234 **49.17** Identification of redundancy between human FcεRIβ and MS4A6A proteins points toward additional mechanisms for FcεRI trafficking and signaling. **K.J. Bitting, B. Hedgespeth, L.C. Ehrhardt-Humbert, G. Arthur, P. Bradding, S.L. Tilley and G. Cruse.** North Carolina State Univ., Univ. of Leicester, United Kingdom and Univ. of North Carolina at Chapel Hill.

P235 **49.18** Ligation of siglec-9 inhibits FcεRI-dependent mediator release from human mast cells. **I. Miralda Molina, N.B. Samanas and A.M. Piliponsky.** Seattle Children's Res. Inst.

P236 **49.19** Loss of isoprenylation significantly reduces IgE mediated mast cell activation. **J. Dailey, W. Ballance, S.A. Kee, A. Kotha, S. Sebti and J.J. Ryan.** Virginia Commonwealth Univ. Sch. of Med. and Virginia Commonwealth Univ.

P237 **49.20** The exon-skipping oligonucleotide, KitStop, depletes tissue-resident mast cells in vivo to ameliorate anaphylaxis. **B. Hedgespeth, D. Snider, K. Bitting, G. Arthur, C. Smith and G. Cruse.** North Carolina State Univ.

P238 **49.21** Fluoxetine-mediated suppression reveals a role for P2X receptors in mast cell function and allergic disease. **J. Burchett, T. Haque, S.A. Kee, S. Sebti, R. Martin and J.J. Ryan.** Virginia Commonwealth Univ. and NIH.

P239 **49.22** Early life adversity programs a hyperactive mast cell phenotype and induces long-lasting changes in the mast cell transcriptome. **J. LeMon, N. Maradiaga and A.J. Moeser.** Michigan State Univ.

P241 **49.24** Atopic dermatitis patients have increased numbers of FcεRIα and IgE double positive monocytes and plasmacytoid dendritic cells in peripheral blood mononuclear cells. **L. Bin, B. Richers and D.Y.M. Leung.** Natl. Jewish Health, Colorado.

P242 **49.25** Immunomodulatory effects of human myeloid-derived suppressor cells expanded from cord blood on *Dermatophagoides farinae*-induced atopic dermatitis in NC/Nga mice. **C-h. Kim, H-J. Sohn, S-M. Hong, S. Kim, S-H. Jung, B-G. Lim, E-a. Kim, K-H. Jeong, J. kim, J. Park, S. Kim and T-G. Kim.** Vigencell Inc., South Korea and Catholic Univ.

P243 **49.26** Novel association of Lyme disease, age, and atopic dermatitis. **B. Lee, S. Galloway, S. Strausz, M. Shoham, P. Hansen, P. Mansfield, R. Salomon, L.B. Torrez-Dulgeroff, A. Saleem, E. Gars, E. Sanders, H. Ollila, I.L. Weissman and M.C. Tal.** Massachusetts Inst. of Technol, Stanford Univ. Sch. of Med., Helsinki Univ., Finland, Broad Inst. of MIT and Harvard and Stanford Univ.

50. INNATE IMMUNE RESPONSES AND HOST DEFENSE: CELLULAR MECHANISMS I

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P244 **50.01** Elucidating the immunogenic mechanisms of Merck's lipid nanoparticle adjuvants. **A.R. Bass, S. Kimball, A. Jenkins, A. Burton, K. Trostle, H. Corcoran, M. Allen, C. Gallagher, J. Harms, A. Bett and N. Sullivan.** Merck & Co.

P245 **50.02** MAPK phosphatase-1 controls PD-L1 expression by regulating type I interferon during systemic *Escherichia coli* infection. **Y. Liu, T.J. Barley, P.R. Murphy, B.A. Bowman, J.M. Mormol, C.E. Mager, X. Wang, S.C. Linn, M. Hafner and J. Zhang.** The Ohio State Univ., The Res. Inst. at Nationwide Children's Hosp., Nat. Inst. of Arthritis and Musculoskeletal and Skin Dis and Univ. of Iowa.

P246 **50.03** RSV inhibits myeloid cell recruitment during *S. aureus* coinfection. **H.E.A. Rich, S.H. Morris, N.W. Lukacs and B.B. Moore.** Univ. of Michigan.

P247 **50.04** Sexual dimorphism in CD4+ T cell regulating innate immunity to acute *Toxoplasma gondii* infection. **T. Roy.** Univ. of Wyoming.

P248 **50.05** Loss of mitochondrial protease CLPP activates type I IFN responses through the mitochondrial DNA–cGAS–STING signaling axis. **S. Torres-Odio, Y. Lei, S. Gispert, A. Maletzko, J. Key, S. Menissy, I. Wittig, G. Auburger and A.P. West.** Texas A&M Hlth. Sci. Ctr., Exptl. Neurology, Goethe Univ., Germany and Goethe Univ., Germany.

P249 **50.06** Baseline NK cell frequencies are greater in individuals with asymptomatic SARS-CoV-2 infection compared to those that develop symptomatic illness. **E. Graydon, A. Lindrose, S. Anderson, A. Malloy, R. Lizewski, D. Weir, C. Goforth, P. Sun, A. Letizia and E. Mitre.** Henry M. Jackson Fndn., Frederick Natl. Lab. for Cancer Res., Uniformed Services Univ. of the Hlth. Sci., Naval Med. Res. Unit 6, Peru and Naval Med. Res. Ctr.

P250 **50.07** TGF-β promotes glycolysis through PFKL in activated macrophages and exacerbates sepsis by disrupting blood coagulation. **T. Gauthier.** NIH.

P251 **50.08** Corticosteroids treatment alters lung and gut microbiome communities that correlates to increased pathologic immune responses. **N. Asai, W. Fonseca, K. Yagi, A.D. Ethridge, S.H. Morris, A.J. Rasky, N.R. Falkowski, Y.J. Huang, G.B. Huffnagle and N.W. Lukacs.** Univ. of Michigan.

P252 **50.09** Human β-defensin 2 improves neutrophilia and bacterial clearance during cigarette smoke exposure. **N. Milad, M. Pineault, M-J. Beaulieu, S. Aubin, B.A.H. Jensen and M. Morissette.** Laval Univ., Canada, IUCPQ, Canada and Univ. of Copenhagen, Denmark.

P253 **50.10** Leukocyte associated immunoglobulin-like receptor 1 is immunoprotective in *S. aureus* skin infection. **H.K. Dorando, K. Tomaszewski, L. Tian, M. Wurtz, C. Quinn, E. Mutic, J. Bubeck Wardenburg and J. Payton.** Washington Univ. Sch. of Med. in St. Louis.

P254 **50.11** Obesity inhibits innate immune functions during *Pseudomonas aeruginosa* pneumonia. **G.P. Huizinga, H.I. Warheit-Niemi, K. Gallagher, B.B. Moore and K. Singer.** Univ. of Michigan and Michigan Med., Univ. of Michigan.

P255 **50.12** Macrophage clearance of neutrophil extracellular traps. **J.P. Gronevelt, M. Pisano and J. Rumble.** Cayman Chem. Co.

P256 **50.13** The splicing factor SRSF6 controls *Mycobacterium tuberculosis* replication through its role in maintaining mitochondrial homeostasis. **A. Wagner, C. Weindel, K. West, R. Watson and K. Patrick.** Texas A&M Hlth. Sci. Ctr.

P257 **50.14** Psychological stress of aged mice has long-term impact on *Mycobacterium tuberculosis* infection by altering composition of lung T cell populations. **W.P. Lafuse, S. Sunkum, N. Kumar, O.S. Ahumada, J. Turner and M.V. S. Rajaram.** The Ohio State Univ. and Texas Biomed. Res. Inst.

P258 **50.15** Lactic acid bacteria-derived bioactive molecules condition an in vitro cell model into a tolerogenic dendritic-like cell phenotype. **L. Saleem, M.P. Jeffrey, S.T. Clarke and J.M. Green-Johnson.** Ontario Tech Univ., Canada and Agr. & Agri-Food Canada, Canada.

P259 **50.16** Increased M1 macrophage activity makes females more sensitive to *Francisella tularensis* infection. **C.T. Spencer and M.A. Sanchez Guillen.** Univ. of Texas, El Paso.

P260 **50.17** Innate memory following intravenous BCG in neonatal pigs. **K.A. Byrne, D.C. Hill and C.L. Loving.** USDA-ARS Natl. Animal Dis. Ctr. and Natl. Vet. Services Labs., USDA, Animal and Plant Hlth. Inspection Service.

P261 **50.18** Interorgan transfer of intact micron-sized lipid droplets to macrophages during the *Drosophila* immune response. **C.A. Brennan, I. Kaur, A. Myers and E. Ogundipe.** California State Univ., Fullerton, La Jolla Inst. for Immunology and Univ. of Colorado Anschutz Sch. of Med.

P262 **50.19** To sir with love! Students feedback from an immunology course. **K. Eshetie, S. Ngo, H. Hailu, N. Desta and N. Fazal.** Col. of Pharmacy, Chicago State Univ.

P263 **50.20** Reprogramming of macrophage cholesterol metabolism to attenuate function of bacterial pore forming toxins. **M.S. Lee, Q. Zhou, X. Chi, L. Fong, L. Cheng, P.O. Scumpia and S. Bensinger.** David Geffen Sch. of Med., Univ. of California, Los Angeles and Zhejiang Univ., China.

P264 **50.21** Antibody 'hotspots' induce antibody-dependent cell-mediated cytotoxicity against SARS-CoV-2 spike-expressing lung fibroblasts. **K. Holder, K. Hatfield, D. Ings, K. Fifield, D. Harnum and M. Grant.** Mem. Univ. of Newfoundland, Canada and Eastern Hlth., Canada.

P265 **50.22** Bacteria load and hypoxia contribute to glucose uptake by macrophages and T cells in cynomolgus macaque granulomas. **J.T. Mattila, V.A. Gould, B.A. Junecko, M.C. Bellavia, H.J. Borish, A.G. White, P. Maiello, L. Nyiranshuti, P.L. Lin, C.A. Scanga, C.J. Anderson and J.L. Flynn.** Univ. of Pittsburgh Grad. Sch. of Public Hlth., Univ. of Pittsburgh Sch. of Med., Univ. of California, Los Angeles, UPMC Children's Hosp. of Pittsburgh and Univ. of Missouri.

P266 **50.23** Engineering iPSC-derived neutrophils to fight infection. **M. Giese, D. Bennin, C. Johnson, L. Klemm, H.S. Yung, J. Nett, I. Slukvin and A. Huttenlocher.** Univ. of Wisconsin, Madison.

P267 **50.24** Sphingosine kinase 1 mediated degradation of host lipid bodies clears dormant *Mycobacterium tuberculosis* infection from human mesenchymal stem cells. **A. Khan.** Houston Methodist Res. Inst.

P268 **50.25** Neutrophil NOX2 is required to control experimental urinary tract infection. **I. Cotzomi-Ortega, R. Han, H. Cortado, B. Li, B. Becknell and J.D.D. Ruiz-Rosado.** Abigail Wexner Res. Inst., Nationwide Childrens Hosp. and Nationwide Children's Hosp.

P270 **50.27** A novel function for the CoQ10 biosynthetic complex in anti-pneumococcal macrophage function. **E.C. Walker, E. Todd, R. Ramani, E. Anaya, S. Javati, J-P. Matlam, W. Pomat and S.C. Morley.** Washington Univ. in St. Louis and Papua New Guinea Inst. for Med. Res., Papua New Guinea.

P271 **50.28** Examining the immune regulatory function of NLRP12 through novel protein interactions. **C.A. Rippe.** Missouri State Univ.

P272 **50.29** Defects in macrophage galactose-type lectin signaling and pathogenesis of *Mycobacterium tuberculosis* and human immunodeficiency virus co-infection. **S. Browning, K.F. Naqvi, X. Fan, P. Bharaj, J. Lisinicchia, R.N. Paez, S. Chauhan, M. Huante, Y.B. Martinez-Martinez, M. Endsley, B.B. Gelman and J. Endsley.** Univ. of Texas. Med. Br., Galveston, Univ. of Texas Southwestern Med. Ctr., Univ. of Toledo and Public Hlth. Res. Inst., Rutgers.

P273 **50.30** C-type lectin receptor MGL-1 in SARS-CoV-2 disease pathogenesis. **M.B. Huante, M.J. Gonzalez Orozco, K.F. Naqvi, Y.B. Martinez-Martinez, V. Menachery, J.J. Endsley, R. Rajsbaum, R. Stephens and M. Endsley.** Univ. of Texas. Med. Br., Galveston and Univ. of Texas Southwestern Med. Ctr.

P274 **50.31** Levels of epigenetic regulators TET2 and DNMT1 correlate with virus-stimulated pDC differentiation from IFN-α producing cells to antigen presenting cells. **A.L. Codrington, S.L. Singh and P.L. Fitzgerald-Bocarsly.** Rutgers Sch. of Grad. Studies and Rutgers Univ. New Jersey Med. Sch.

P275 **50.32** Neutrophilic inflammation reprograms the bone marrow to impair T cell immunity during tuberculosis. **M. Saqib, S. Das and B.B. Mishra.** Albany Med. Col.

P276 **50.33** GSDMD deficiency drives immunopathology in cutaneous leishmaniasis. **C.K. Go, J. Grayczyk, I.E. Brodsky and P.A. Scott.** Univ. of Pennsylvania Sch. of Vet. Med.

P277 **50.34** Batf3-dependent regulation of the antifungal inflammatory response after pulmonary *Aspergillus fumigatus* challenge. **A. Rapp and J.J. Obar.** Geisel Sch. of Med. at Dartmouth.

P278 **50.35** In vitro assessment of neutrophil response to proteins and antibodies of SARS-CoV-2. **N.B. F. Almeida, K.M. Fantone, D. Sarr, R.F.Q. Grenfell and B. Rada.** Oswaldo Cruz Fndn. (FIOCRUZ), Brazil and Univ. of Georgia.

P279 **50.36** Innate training induced by subcutaneous BCG administration in pre-weaned calves. **B.E.R. Samuel, T. Maina and J.L.L. McGill.** Iowa State Univ.

P280 **50.37** Skin resident macrophage-derived microRNA21 drives susceptibility to *Staphylococcus aureus* infection. **A. Salina, A.I. Medeiros and C.H. Serezani.** Vanderbilt Univ. Med. Ctr., Sch. of Pharmaceutical Sci., Brazil and Pathology, Microbiology & Immunology, Vanderbilt Univ. Med. Ctr.

P281 **50.38** *C. elegans* host defense pathways protect against microbiota cryptic virulence. **X. Gonzalez, A. Wollenberg and J. Irazoqui.** Univ. of Massachusetts Chan Med. Sch. and Kalamazoo Col.

P282 **50.39** Innate type 2 immunity controls hair follicle commensalism by *Demodex* mites. **R.R. Ricardo-Gonzalez, M.E. Kotas, C. O'Leary, I. Tenvooren, D. Marquez, K. Singh, W. Damsky, C. Liao, A. Schroeder, J. Cohen, M.S. Fassett, J. Lee, S.G. Daniel, K. Bittinger, R.E. Diaz, J. Fraser, K.M. Ansel, M. Spitzer, H-E. Liang and R.M. Locksley.** Univ. of California, San Francisco, Univ. of California, San Francisco, Yale Sch. of Med. and Children's Hosp. of Philadelphia.

P283 **50.40** The contribution of fetal-derived tissue resident macrophages to cytomegalovirus-associated sensorineural hearing loss. **K. Otsuka, C. Nielson, D. Suarez, A. Park and A.E. Beaudin.** Univ. of Utah Sch. of Med.

P284 **50.41** The role of IL-1a during early-stage *Pseudomonas aeruginosa* infection of the corneas. **B. Ratitong, M. Marshall, M. Dragan, C. Anunciado and E. Pearlman.** Univ. of California, Irvine.

P285 **50.42** Monocyte/macrophage heterogeneity during skin wound healing in mice. **J. Pang, M. Maienschein-Cline and T. Koh.** Univ. of Illinois, Chicago.

P286 **50.43** Type III IFNs (IFNλs) expressed in tuberculosis granulomas enhance anti-mycobacterial activity of macrophages. **P. Talukdar, B.F. Junecko and J.T. Mattila.** Univ. of Pittsburgh.

P287 **50.44** Pulmonary infection following skin injury delays wound healing through suppression of IL-1 and chemokine production. **M. Crane, Y. Xu, S.F. Monaghan, B.M. Hall, J. Albina, W.L. Henry, H.L. Tran, K. Chhabria, A. Jordon, L. Carlsen and A.M. Jamieson.** Brown Univ. and Rhode Island Hosp.

P288 **50.45** The extracellular matrix maintained by hypodermal macrophages via IGF1 is a niche for *Staphylococcus aureus* infection. **V. Nadella, B. Voisin, T. Doebel, K. Sakamoto, S. Goel, J-H. Jo, M. Kelly, T. Kobayashi, J.X. Jiang, Y. Hu, C. Yan and K. Nagao.** NIAMS, NIH, Frederick Natl. Lab. for Cancer. Res., Univ. of Texas Hlth. Sci. Ctr., San Antonio and NCI, NIH.

P289 **50.46** Inflammatory responses to *Listeria monocytogenes* infection in the placenta. **S. Seveau.** The Ohio State Univ. Col. of Med.

P290 **50.47** STING activation under pre-existing inflammatory conditions causes severe skin disease. **M. Pyclik, H. Bagavant, J. Papinska, A. Araszkiewicz and U. Deshmukh.** Oklahoma Med. Res. Fndn. and Univ. of Oklahoma Hlth. Sci. Ctr.

51. INNATE IMMUNE RESPONSE TO INFECTION

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P291 **51.01** Mechanistic investigation of granzyme A inhibitory effects on intracellular *Mycobacterium tuberculosis*. **V. Rasi, C. Eickhoff, D. Wood, S. Shakya, H. Carlson, D. Ford and D. Hoft.** St. Louis Univ., Sch. of Med.

P292 **51.02** Nucleotide receptors mediate protection against neonatal sepsis and meningitis caused by alpha-hemolysin expressing *Escherichia coli* K1. **J.A. Skyberg, C.A. Chambers, A.S. Dadelahi, C.R. Moley, R.M. Olson and C.M. Logue.** Univ. of Missouri, Columbia and Univ. of Georgia.

P293 **51.03** The *Cdkn2a* gene product p19ARF (alternative reading frame) is a critical regulator of IFNβ-mediated Lyme arthritis. **J. Li, Y. Ma, J.K. Paquette, A.C. Richards, M.A. Mulvey, J.F. Zachary, C. Teuscher and J.J. Weis.** Univ. of Utah Sch. of Med., Univ. of Illinois, Urbana-Champaign and Univ. of Vermont.

P294 **51.04** *Leptospira* spp. are a potent activator of type I IFN responses via the cGAS-STING pathway. **S. Gupta, J. Matsunaga, S.L. Cassel, D.A. Haake and F.S. Sutterwala.** Cedars Sinai Med. Ctr., VA Greater Los Angeles Healthcare Syst. and David Geffen Sch. of Med., Univ. of California, Los Angeles.

P295 **51.05** A non-canonical role of caspase-1 in regulating bacterial physiology and antimicrobial resistance. **A.S. Akhade, G.V. Mosquera, M.L. Arrieta-Ortiz, A. Kaur, E.J. R. Peterson, N.S. Baliga, K.T. Hughes and N. Subramanian.** Inst. for Syst. Biol., Seattle and Univ. of Utah.

P296 **51.06** N, N-Dimethylacetamide improves survival in a lipopolysaccharide-induced endotoxemia model. **Z. Xiao and S. Reznik.** St. John's Univ.

P297 **51.07** The E3-ligase TRIM7 acts as an antiviral factor by ubiquitinating the SARS-CoV-2 membrane protein to limit apoptosis and virus replication. **M.J. Gonzalez Orozco, A. Hage, H. Xia, M. Huante, S. van Tol, M.I. Giraldo, L. Puebla-Clark, V. Menachery, R. Stephens, M. Endsley, J. Endsley, P-Y. Shi, A. Freiberg and R. Rajsbaum.** Univ. of Texas Med. Br., Galveston.

P298 **51.08** Role of *foxn1* in *Xenopus laevis* thymopoiesis. **D. d. Dimitrakopoulou, E. Bellin, M. Horb and J. Robert.** Univ. of Rochester and Marine Biological Lab.

P299 **51.09** Differential regulation of macrophage galactose-type lectin orthologs by mycobacterial ligands. **R.N. Paez, S. Browning, M. Files, A. Varghese, K.F. Naqvi, M.B. Huante, E. Strong, S. Lee, M. Endsley and J.J. Endsley.** Univ. of Texas Med. Br., Galveston and Univ. of Texas Southwestern Med. Ctr.

P300 **51.10** Recombinant *Fasciola hepatica* fatty acid binding protein (Fh15) as a novel anti-inflammatory biotherapeutic in an acute gram-negative non-human primate sepsis model. **A.M. Espino, J.J. Rosado-Franco, A. Armina-Rodriguez, N. Marzan-Rivera, A.G. Burgos, N. Spiliopoulus and L.B. Mendez.** Univ. of Puerto Rico Med. Sci. Campus, Puerto Rico and Univ. Ana G. Mendez, Puerto Rico.

P301 **51.11** A *Listeria monocytogenes* strain with a constitutively active phospholipase C is susceptible to intracellular killing by neutrophils through an MPO-dominant mechanism. **D. Abi Abdallah.** Lake Erie Col. of Osteopathic Med.

P302 **51.12** Dynamics of antimicrobial protein secretion in mouse milk. **A. Abokor, P. Saha, B.S. Yeoh, R. Golonka and M. Vijay-Kumar.** Univ. of Toledo.

P303 **51.13** Development and functional characterization of anti-phosphorylcholine antibodies against *Streptococcus pneumoniae*. **N. Khan and T.L. Rothstein.** WMU Homer Stryker MD Sch. of Med., Kalamazoo.

P304 **51.14** Glycolysis is critical for granulocytic myeloid-derived suppressor cell activity during *Staphylococcus aureus* biofilm infection. **C.M. Horn, C.E. Heim and T.L. Kielian.** Univ. of Nebraska Med. Ctr.

P305 **51.15** Identifying innate immune receptors causing production of inflammatory cytokines by infection of *Francisella tularensis*. **S.K. Gutierrez, C.T. Spencer and N. Setzu.** Univ. of Texas, El Paso.

P306 **51.16** Merocytophagy contributes to dissemination of *Francisella tularensis* and is enhanced by SYK signaling in macrophages. **K.N. Deobald, S.P. Steele and T.H. Kawula.** Washington State Univ.

P307 **51.17** Interferon-induced transmembrane protein 3 limits lethality of SARS-CoV-2 in mice. **J.S. Yount, A. Zani and A.D. Kenney.** The Ohio State Univ.

P308 **51.18** Virus-induced long noncoding RNAs regulate SARS-CoV-2 pathogenesis. **S. Kulkarni, S. Jayakumar and V. Kulkarni.** Texas Biomed. Res. Inst.

P309 **51.19** Overactivation and dysregulation of the complement system is associated with acute kidney injury during COVID-19: a multicenter, prospective study. **B.M. Henry, G. Sinkovits, S. Benoit and Z. Prohászka.** Texas Biomed. Res. Inst., Semmelweis Univ., Hungary and Cincinnati Children's Hosp. Med. Ctr.

P311 **51.21** Primary fallopian tube epithelial cells are resistant to *Chlamydia trachomatis* infection due to high expression of *ido1*. **K.S. Yount, B. McQueen, C. O'Connell, S.H. Randell, U. Nagarajan and T. Darville.** Univ. of North Carolina at Chapel Hill.

P312 **51.22** The Goldilocks conundrum: the protective and adverse roles of immunoregulation by NOD-like receptors during brucellosis. **J.D. Tupik, A.H. Benton, K.A. King, H.M. Ivester, J. Markov Madanik, S.L. Coutermarsh-Ott, C.C. Caswell and I.C. Allen.** Virginia-Maryland Col. of Vet. Med. and Virginia Tech Carilion Sch. of Med. and Res. Inst.

52. INNATE IMMUNE SENSING AND SIGNALING

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P313 **52.01** NLRC3 localizes to the endoplasmic reticulum via interactions with a novel ER-resident protein. **B.K. Davis, E. Chapman, K. Gawon, I. Petrecca, T. Baker and A. Rechnitzer.** Franklin and Marshall Col.

P314 **52.02** Molecular basis for NEK7-mediated NLRP3 inflammasome activation. **Y. He, D. Jeltema, J. Wang, J. Cai, N. Kelley and Z. Yang.** Wayne State Univ.

P315 **52.03** Autocrine prostaglandin feedback governs the kinetics of bacterial induced type I interferon by driving autophagic targeting of the TLR4/TRIF complex. **D. Perkins and C. Schlenker.** Univ. of Maryland, Baltimore.

P316 **52.04** Antibody detection of nucleic acid sensing pattern recognition receptors of the innate immune response. **V. Natarajan, H. Sridharan, S. Balasubramanian, A. Chandrasekaran, N. Sharma and N. Marbaniang.** Thermo Fisher Scientific, India.

P317 **52.05** PD-L1 back signaling manipulates IL-6 signaling to coordinate innate immune responses. **J.L. Shirley, T. Forward, J.B. Schafer, E.D. Lucas and B. Tamburini.** Univ. of Colorado Anschutz Med. Campus and Univ. of Minnesota.

P318 **52.06** Gasdermin D promotes hyperinflammation by triggering necroptosis in the presence of mitochondrial stress. **C.G. Weindel, X. Zhao, E. Martinez, S.L. Bell, K.J. Vail, A.K. Coleman, J.J. VanPortfliet, C.J. Mabry, P. Li, A.P. West, J. Karpac, K.L. Patrick and R.O. Watson.** Texas A&M Univ., Col. of Med., Rutgers New Jersey Med. Sch. and Tulane Natl. Primate Res. Ctr.

P319 **52.07** E-Syt1 ubiquitination by Nedd4 limits the caspase-11-mediated non-canonical inflammasome and endotoxemia. **Y. Ma, G. Lin, H. guo, J. Yu and J. Zhang.** Univ. of Iowa.

P320 **52.08** Identification of a novel protein interactions that elucidates the mechanism of hydatidiform molar pregnancies in women with NLRP2 and NLRP7 mutations. **N. Son, M. So and C.R. Lupfer.** Missouri State Univ. and St. Jude Children's Hosp.

P321 **52.09** Role of macrophage accumulation activates NLRP3 inflammasome induced IL-18 pathway in EoE pathogenesis. **Y. Chandra Sekhar, S. Upparahalli Venkateshaiah, O. Lokanatha and A. Mishra.** Tulane Univ.

P322 **52.10** Epithelial C15ORF48/miR-147 is an essential regulator of gut inflammation and microbiome homeostasis. **M. Xiong, Z. Liu, N.M. Graham, T. Sokolich and M.P. Boldin.** Beckmann Res. Inst., City of Hope, Univ. of Southern California and City of Hope Natl. Med. Ctr.

P323 **52.11** UBX domain protein 6 positively regulates JAK-STAT1/2 signaling. **A.G. Harrison, H. Ketkar and P. Wang.** UConn Hlth. and New York Med. Col.

P324 **52.12** Complementary target engagement and functional assays to probe NLRP3 inflammasome pathway antagonism. **M.A. O'Brien, M. Robers, K. Teske, C. Corona, J. Vasta, J. Wilkinson, N. Lam, K.D. Hoffman, J. Cali and D. Lazar.** Promega Corp and Promega Biosciences.

P325 **52.13** High frequency electrical stimulation reduces neuronal HMGB1 release. **H. Yang, T.B. Datta-Chaudhuri, S.J. George, B.B. Haider, J. Wong, K.J. Tracey and S.S. Chavan.** Feinstein Inst. for Med. Res.

P326 **52.14** Vagus nerve sensory neurons have distinct neural responses to inflammatory mediators. **T.S. Huerta, B.B. Haider, R. Adamovich-Zeitlin, S.S. Chavan, K.J. Tracey and E.H. Chang.** Feinstein Inst. for Med. Res., Donald and Barbara Zucker Sch. of Med at Hofstra/Northwell and The Elmezzi Grad. Sch. of Molec. Med.

P327 **52.15** STK25 functions as an IRF5 kinase to promote TLR7/8-mediated inflammation. **M.R. Rice, C.D. Sherman and B.J. Barnes.** Feinstein Inst. for Med. Res.

P328 **52.16** A TLR4-independent critical role for CD14 in intracellular LPS sensing. **S. Ollikara Vasudevan, A. Russo, P. Kumari, S. Kailasan Vanaja and V. Rathinam.** UConn Hlth.

P329 **52.17** Structure guided engineering of selective HVEM mutants reveal distinct functions binding to LIGHT and BTLA/CD160. **T-F. Chou, W. Liu, S.C. Garrett-Thomson, G-Y. Seo, E. Fedorov, U.A. Ramagopal, J.B. Bonanno, Q. Wang, K. Kim, S.J. Garforth, K. Kakugawa, H. Cheroutre, M. Kronenberg and S.C. Almo.** La Jolla Inst. for Immunology, Albert Einstein Col. of Med., RIKEN Ctr. for Integrative Med. Sci., Japan and Univ. of California, San Diego.

53. IMMUNOREGULATION—GENERAL

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P330 **53.01** scRNA-Seq analysis of human $CD5^+$ innate-like B cells identifies AHR expression as a marker of human $CD9^+$ IL-10^+ $B_{Regulatory}$ cells. **L.K. Blevins, R.B. Crawford, P.W.F. Karmaus and N.E. Kaminski.** Michigan State Univ. and Natl. Inst. of Envrn. Hlth. Sci.

P331 **53.02** Secreted IgM modulates the pool of IL-10 producing B cells. **S.E. McGettigan, L.E. Aira, G. Kumar, N. Baumgarth and G.F. Debes.** Thomas Jefferson Univ. and Univ. of California, Davis.

P332 **53.03** Role of c-Rel O-GlcNAcylation in regulatory B cells. **A.R. Liu and P. Ramakrishnan.** Case Western Reserve Univ.

P500 **53.04** Myosin 18A is a novel checkpoint regulator in B cell differentiation and antibody-mediated immunity. **N. Gupta, M.B. Cheung, G.M. Enyindah-Asonye, K. Matsui, I. Kosik, N. Dvorina, W.M. Baldwin and J.W. Yewdell.** Cleveland Clin. and NIH.

P501 **53.05** Expansion of B2 cells in the peritoneal cavity of PD-$1^{-/-}$ mice. **J.E. Riggs, A. Conti, J. Maslanka, J. Londregan and J. Somerville.** Rider Univ.

P502 **53.06** Alloprimed antibody-suppressor $CD8^+$ T cells preferentially kill alloprimed germinal center B cells. **J.M. Zimmerer, S. Chaudhari and G.L. Bumgardner.** Wexner Med. Ctr., The Ohio State Univ.

P503 **53.07** Intrinsic B cell TLR-BCR linked coengagement induces mature and protective antibody responses in the absence of T cells. **C.E. Rivera, H. Yan, A.D. Fisher, D.P. Chupp, R. Simon, H. Zan, Z. Xu and P. Casali.** Univ. of Texas Hlth. Sci. Ctr., San Antonio and Univ. of Maryland Sch. of Med.

P504 **53.08** CD138 contributes to plasma cell dynamics and competition in the bone marrow. **R. Park, Z. Benet and D.R. Fooksman.** Albert Einstein Col. of Med.

P505 **53.09** Regulation of humoral immunity in acute vs. chronic viral infection. **L. Cooper and K.L. Good-Jacobson.** Monash Univ., Australia.

P506 **53.10** High-throughput quantification of antibody-dependent phagocytosis using live-cell analysis. **J.E. Trigg, G. Lovell, N. Bevan and T. Dale.** Sartorius, United Kingdom.

P507 **53.11** Fibrinogen depletion ameliorates inflammation and vision loss in mouse models of diabetes. **A.E. Cardona, B. Sarker, S.M. Cardona, K.A. Church, D. Vanegas, P. Velazquez, D. Rodriguez, A. Mendiola, T. Kern, I. Muzzio and R. Stephens.** Univ. of Texas, San Antonio, Gladstone Inst. of Neurological Dis, Univ. of California, Irvine and Univ. of Texas Med. Br., Galveston.

P508 **53.12** The CD40/CD40 ligand system in linking acute neuroinflammation with chronic progressive demyelination. **J. Das Sarma, F. Saadi, D. Chakravarty, M. Kamble, S. Kumar and K.S. Shindler.** Indian Inst. of Sci. Educ. and Res., Kolkata, India and Univ. of Pennsylvania Scheie Eye Inst.

P509 **53.13** Soluble and membrane-bound isoforms of fractalkine differentially regulate microglia activation and vascular damage in the diabetic retina. **D. Rodriguez, K.A. Church, A.N. Pietramale, S.M. Cardona, D.V. Vanegas, K.R. Nash and A.E. Cardona.** Univ. of Texas, San Antonio and Univ. of South Florida.

P510 **53.14** Aging augments type 2 cytokine responses in ILC2s leading to reparative, M2-like microglia. **A.S. Mobley, A. Hamlin, J. Bautista Garrido, J.E. Jung, L.D. McCullough and J. Aronowski.** Univ. of Texas MD Anderson Cancer Ctr. UTHealth Grad. Sch. of Biomed. Sci. and Univ. of Texas Hlth. Sci. Ctr., Houston.

P511 **53.15** SHIP-2 inhibits human microglia-like cell. function in a TREM2 independent manner. **G.S. Ramakrishnan and M.B. Humphrey.** Univ. of Oklahoma Hlth. Sci. Ctr.

P512 **53.16** Testosterone functions as a tumor suppressor in glioblastoma. **J. Lee, D.J. Silver, R. Fodor, Y-M. Chung, N. Sharifi and J.D. Lathia.** Cleveland Clin. Fndn., Case Western Reserve Univ. Sch. of Med. and Case Western Reserve Univ.

P513 **53.17** The role of Piezo1 mechanosensor in osteoclastogenesis from monocytes. **M. Rawas-Qalaji, S. Shindo, S. Nakamura and T. Kawai.** Nova Southeastern Univ.

P514 **53.18** C3aR dampens intracellular cAMP to control TRIF-mediated inflammation in activated macrophages. **J. Corcoran, J. Hickman and B. Napier.** Portland State Univ.

P515 **53.19** Activation of TLR9 signaling in fibroblastic reticular cells enhances anti-tumor immunity in peritoneal tumor via suppressing peritoneal resident macrophage retention. **M. Deng.** Wexner Med. Ctr., The Ohio State Univ.

P516 **53.20** Tolerogenic markers on lung dendritic cells reversibly decrease following cigarette smoke exposure in mice. **D.T.A. Mengistu, M. Toma, B. Anderson, J. Curtis and C. Freeman.** Univ. of Michigan.

P517 **53.21** T follicular helper cells regulate obesity-related metabolic disease. **H. Wang, F. Barrow, G. Fredrickson and X. Revelo.** Univ. of Minnesota.

P518 **53.22** Examining the relationship between epidermal gamma delta T cells and neuropeptide Y. **B. Almaguer and J. Jameson.** California State Univ., San Marcos.

P519 **53.23** Interferon gamma induction of T_H1-like T_{regs} controls anti-viral responses. **A.M. Gocher, J. Cui, A. Szymczak-Workman, K. Vignali, J.N. Latini, G.P. Pieklo, L. Avery, E.L. Cipolla, B.R. Huckestein, L. Hedden, M. Meisel, J.F. Alcorn, L.P. Kane, C.J. Workman and D.A.A. Vignali.** Univ. of Pittsburgh Sch. of Med. and UPMC Children's Hosp. of Pittsburgh.

P520 **53.24** IL-17 cytokines preferentially act on naive CD4+ T cells with IL-17AF inducing the greatest transcriptomic changes. **M.P. Crawford, N. Borcherding and N. Karandikar.** Univ. of Iowa and Washington Univ. Sch. of Med. in St. Louis.

54. IMMUNOREGULATION—MECHANISM OF ACTION

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P521 **54.01** Single-cell multiomics defines tolerogenic extrathymic Aire-expressing cells with unique homology to thymic epithelium. **J. Wang, C.A. Lareau, J.L. Bautista, I.H. Sun, A.R. Gupta and J.M. Gardner.** Univ. of California, San Francisco and Stanford Univ.

P522 **54.02** TNF-α orchestrates the specific loss of tolerogenic dendritic cells during an acute maturation process in vivo. **J. Bourque, C. Iberg, I. Fallahee and D. Hawiger.** St. Louis Univ. Sch. of Med.

P523 **54.03** The role of ionotropic AMPA receptors in T cell tolerance. **M. Mitchell-Flack, Y. Zheng, H. Goldschmidt, K. Rajkovich, M. Higgins, B. Liu, R. Huganir, H. Yu and D. Pardoll.** Johns Hopkins Univ. Sch. of Med.

P524 **54.04** Protective role of tissue-resident regulatory T cells in a murine model of beryllium-induced disease. **S.M. Atif, D. Mack, A. Martin and A.P. Fontenot.** Univ. of Colorado Anschutz Med. Campus.

P525 **54.05** A new mechanism of T_{reg} cell dysfunction during HIV infection and propensity to oral cancer in people living with HIV. **P. Pandiyan.** Case Western Reserve Univ.

P526 **54.06** Lactoferrin-derived chimeric peptide boosts TGFβ1-induced Treg differentiation by diminishing of TCR signal intensity via TβRIII. **Y-S. Jang, S-W. Yang, S. Park, Y-R. Kim, J-H. Han and P-H. Kim.** Kangwon Natl. Univ., South Korea.

P528 **54.08** Tristetraplorin reduces immune-related adverse events caused by combined CTLA-4 and PD-1 blockade immunotherapy. **H.T. Chung, J.H. Gong, J. Park, M. Do and Y. Joe.** Univ. of Ulsan, South Korea.

P530 **54.10** Tregs suppress antigen-specific $CD8^+$ T cells in vivo by depleting pMHC-I complexes from dendritic cells. **M.N. Mansoori, O. Kamenyeva, J. Kabat and E.M. Shevach.** NIAID, NIH.

P531 **54.11** Sterile neutrophilia induced via CXCR4 antagonism ameliorates colonic inflammation by increasing immunosuppressive regulatory T cells. **P. Saha, B.S. Yeoh, R. Golonka, A. Abokor and M. Vijay-Kumar.** Univ. of Toledo.

P532 **54.12** CD6: a costimulatory receptor at the nexus of Teff / Treg development. **J. Ampudia, D. Chu, S. Connelly and C. Ng.** Equillium, Inc.

P533 **54.13** A potential monocyte-regulatory T cell axis in neurorestoration following ischemic stroke. **S. Rahimpour, W. Zheng, K.L. Monaghan and E.C.K. Wan.** West Virginia Univ.

P534 **54.14** Microglia depletion elicits neuroprotective effects to alleviate vascular damage and neuronal cell loss in the diabetic retina. **K.A. Church, D. Rodriguez, I. Lopez-Gutierrez, D.V. Vanegas, S.M. Cardona and A.E. Cardonaa.** Univ. of Texas, San Antonio.

P535 **54.15** The activation of self-antigen specific T cell repertoire during acute tissue injury. **D.S-J. Shin and J.J. Moon.** Boston Children's Hosp. and Massachusetts Gen. Hosp., Harvard Med. Sch.

P536 **54.16** CD300e acts as a ligand to inhibit T cell immunity. **J. Wang, B. Manick, J. Li, M. Bi, V. Kalabokis, A. Person and G. Wu.** Bio-Techne Corp.

P537 **54.17** Disruption of IFNγ, PRF1, GZMB, or LYST results in reduced suppressive function in human $CD8^+$ T cells. **C. Vemulawada, P.S. Renavikar, M.P. Crawford, S. Steward-Tharp, H. Guo, Z. Jian and N.J. Karandikar.** Univ. of Iowa.

P538 **54.18** Multiomic dynamic single-cell profiling of CAR T cell populations associated with efficacy. **A. Rezvan, G. Romain, M. Fathi, D. Heeke, M. Martinez-Paniagua, X. An, I.N. Bandey, I. Liadi, L.J.N. Cooper, H. Singh, A. Bot, S. Neelapu and N. Varadarajan.** Univ. of Houston, CellChorus, Kite Pharma and Univ. of Texas MD Anderson Cancer Ctr.

P539 **54.19** Chimeric antigen receptors on regulatory T cells as a treatment strategy in auto-immune diseases. **H. Dasari.** Univ. of Montreal, Canada.

P540 **54.20** Evaluation of the DNA topoisomerase inhibitor irinotecan (CPT-11) as an alternative to irradiation for pretreatment of NK-92s prior to adoptive cell immunotherapy. **J.B. Cruz Amaya, L.T. Navarrete-Galvan, V.C. Lombardi, M. Isom, J. Smith-Gagen and D. Hudig.** Univ. of Nevada, Reno, Sch. of Med. and Univ. of Nevada, Reno, Sch. of Community Hlth. Sci.

P541 **54.21** Triggering receptor expressed on myeloid cells-1 plays important roles in UVB induced immune suppression and cutaneous carcinogenesis. **C.A. Mier Aguilar, M.A. Sherwani, Y. Tsuruta, H. Rashid, D.K. Crossman, N. Yusuf and H. Xu.** Univ. of Alabama at Birmingham.

P542 **54.22** Myeloid cell interleukin-10 is essential for atherosclerosis protection in $Apoe^{-/-}$ mice. **M. Orecchioni, D. Wolf, V. Suryawanshi, H. Winkels, K. Kobiyama, J. Makings, W.B. Kiosses and K. Ley.** La Jolla Inst. for Immunology, Univ. Hosp. Freiburg, Germany, Univ. Hosp. of Cologne, Germany, Univ. of Tokyo, Japan and Univ. of California, San Diego.

P543 **54.23** Lipin-1 restrains lipid synthesis to promote proresolving macrophage function and disease resolution. **T.T. Bamgbose, R.M. Schilke, C.M.R. Blackburn and M.D. Woolard.** Louisiana State Univ. Hlth. Sci. Ctr., Shreveport and Univ. of Virginia.

P544 **54.24** Chronic stress results in intrahepatic accumulation of a mononuclear myeloid-derived suppressor cell-like population. **M. Ninkov, P.T. Rudak, R. Rashu and S.M.M. Haeryfar.** Univ. of Western Ontario, Canada.

P545 **54.25** TGF-β signaling drives phenotypic and functional characteristics of human mast cells within epithelium. **T.M. Derakhshan, E. Hollers, K. Buchheit, T.M. Laidlaw, J.A. Boyce and D. Dwyer.** Brigham and Women's Hosp. and Harvard Med. Sch.

P546 **54.26** Amino acid F223 in neuroimmune semaphorin 4A is essential for stabilization of human regulatory T cells. **S.P. Chapoval, M. Lee, A. Lemmer, O. Ajayi, X. Qi, A.F. Neuwald and A.D. Keegan.** Univ. of Maryland Sch. of Med.

55. MOLECULAR REGULATION OF INNATE AND CYTOTOXIC LYMPHOCYTE RESPONSES

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P547 **55.01** *Mettl14*-dependent m^6A modification controls iNKT cells development and function. **L. Cao, E. Morgun, S. Genardi, L. Visvabharathy, H. Huang and C-R. Wang.** Feinberg Sch. of Med., Northwestern Univ. and Univ. of Chicago.

P548 **55.02** Leveraging iNKT cells to identify signals driving B cell memory commitment. **R. Parthasarathy, J. Yates, T. Hagglof, E.A. Dudley and E. Leadbetter.** Univ. of Texas Hlth. Sci. Ctr., San Antonio and Trudeau Inst.

P549 **55.03** The signal regulatory protein gamma signaling constrains naïve $CD8^+$ T cell activation with T1D risk associated polymorphisms leading to augmented T cell activation. **R.C. Sharp, M. Brown, L. Peters and T. Brusko.** Univ. of Florida.

P550 **55.04** Mechanism of Tim-3 regulation of CD8+ T cell function. **P. Manandhar, E.E. Landy, B. Murter, H. Banerjee, A. Workman, I. Bosco and L.P. Kane.** Univ. of Pittsburgh Sch. of Med.

P551 **55.05** Ets1 regulates production of dendritic epidermal T cells and cooperates with IL17Ra signaling to regulate immune responses to staphylococcal skin infection. **M. Battaglia, A. Sunshine, W. Luo, L.S. Miller, S. Sinha, E. Wohlfert and L.A. Garrett-Sinha.** Univ. at Buffalo Jacobs Sch. of Med. and Biomed. Sci., Indiana Univ. Sch. of Med. and Johns Hopkins Univ. Sch. of Med.

P552 **55.06** Hypoxia-inducible factor regulation of NK cell dysfunction in lupus. **H.A. Feldman.** Cincinnati Children's Hosp. Med. Ctr.

P553 **55.07** Loss of the nuclear receptor PPARγ primes $CD8^+$ T cells for exhaustion. **R. Shah, A. Christofides, H-I. Aksoylar, R. Pal, V.A. Boussiotis and N. Patsoukis.** Beth Israel Deaconess Med. Ctr., Harvard Med. Sch. and Cornell Univ.

P554 **55.08** A critical role of energy sensor AMPKα1 in rapamycin dependent memory $CD8^+$ T cell survival. **A. Ara and J. Xiang.** Univ. of Saskatchewan, Canada.

P555 **55.09** CD28 signaling strength regulates the cell fate of TCF-1+ PD-1+ CD8 T cells. **E. Humblin, V. Van der Heide, D. Filipescu, A. Lu, M. Selvan, Z. Gumus, E. Bernstein, J. Chipuk, D. Homann and A.O. Kamphorst.** Icahn Sch. of Med., Mount Sinai.

P556 **55.10** Metabolic fuel choices control MAIT cell functions at homeostasis and after infection. **T. Riffelmacher, M.M. Paynich, S. Chandra, C. Wientjens, G. Seumois, P. Vijayanand and M. Kronenberg.** La Jolla Inst. for Immunology.

P557 **55.11** Optimal $CD8^+$ T cell effector function requires costimulation-induced RNA-binding proteins that reprogram the transcript isoform landscape. **T. Karginov, A. Menoret and A.T. Vella.** UConn Hlth.

P558 **55.12** Newly identified role for the transcription factor Foxp1 in natural killer cells. **L.M. Canaday, A. Koty, K. Andino del Valle, M. Cai, H. Seelamneni, D. Krishnamurthy and S. Waggoner.** Univ. of Cincinnati Col. of Med. and Cincinnati Children's Hosp. Med. Ctr.

P559 **55.13** A role for a DEAD box RNA helicase in natural killer cells. **E. Mukhopadhyay, D. Krishnamurthy, J. Tuazon, D. Ohayon, A. Ali, J. Stevens and S.N. Waggoner.** Cincinnati Children's Hosp. Med. Ctr. and Univ. of Cincinnati Col. of Med.

P560 **55.14** Enhanced cytotoxic CD8+ T cell (CTL) antigen recognition by LCK activation. **Y. Zheng, T.L. Piper and A.H. Courtney.** Univ. of Michigan.

P561 **55.15** DNA-PKcs is required for the activation and cytotoxicity of CD8+ effector T cells. **M. Burdine, A. Azevedo-Pouly, L. Appell, M. Barker, Z. Waldrip and L. Burdine.** Univ. of Arkansas for Med. Sci., Arkansas Children's Res. Inst. and Arkansas Children's Hosp.

P562 **55.16** The role of Cdk5/p35 kinase activity in natural killer cell cytotoxicity. **D.P. Wong and R. Parameswaran.** Case Western Reserve Univ. Sch. of Med.

P563 **55.17** The role of STATs and the transcriptional regulation of MAIT cell cytotoxicity. **O.J. Cheng.** Univ. of Utah.

P564 **55.18** Lineage analysis defines subpopulations of human lung tissue-resident memory CD8+ T cells. **M.E. Williams, J.L. Elliott, J.K. Thomas, K. Kost, K. Laccetti, J.L. Lobby, C. Mattingly, C. Scharer and J.E. Kohlmeier.** Emory Univ. Sch. of Med.

P565 **55.19** Increased proliferation of epidermal gamma delta T cells and expression of the transmembrane protein, BST2, in alopecia areata. **Y. Hagan, A. Gonzalez, A. Kasler, M. Macedo, A. Rincon and J. Jameson.** California State Univ., San Marcos.

P566 **55.20** ITK signaling regulates IL-10 production by $CD8^+$ T cells and lung immunopathology during influenza infection. **M.C. McGee, S. Solouki, C.B. Limper, T. Zhang, N. Magazine, K. Ye, N. Nidetz, A. August and W. Huang.** Louisiana State Univ. Sch. of Vet. Med., Cornell Univ. and Univ. of Georgia.

P567 **55.21** Androgen receptor regulation of CD8 T cell immune responses. **R.M. Hawkins, F. Polesso and A.E. Moran.** Oregon Hlth. & Sci. Univ.

P568 **55.22** The sexually dimorphic histone demethylase promotes optimal T cell responses during infection. **C. Krawczyk, L. Zhai, H. Guak, A. VanderArk, P. Davidson, M. Weiland and M. Corrado.** Van Andel Inst.

P569 **55.23** ERK5 and CCL19 regulate the secondary immune response in mice. **J.A. Cervantes, C.M. Vines, C.D. Knight, M.D. Gehre and C.A. Bill.** Univ. of Texas, El Paso.

P570 **55.24** Tumor suppressor p53 controls thymic NKT17 cell development. **S. Celli, M. Watanabe and R.J. Hodes.** NCI, NIH.

56. $CD4^+$ T CELL REGULATION AND RESPONSES: MOLECULAR MECHANISMS

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P571 **56.01** Apolipoprotein E enhance survival of effector memory regulatory T lymphocytes by regulating caspase-dependent apoptosis and lipid metabolism. **L.M. Atehortua, S. Street, W.S. Davidson, A. D'Alessandro and C. Chougnet.** Cincinnati Children's Hosp. Med. Ctr., Univ. of Cincinnati Col. of Med., Univ. of Cincinnati and Univ. of Colorado, Denver, Anschutz Med. Campus.

P572 **56.02** Transcriptome and chromatin changes as regulatory T cells expand and contract to IL-2R signaling in vivo. **A. Moro, Z. Gao, L. Wang, A. Yu, S. Hsiung, Y. Ban, A. Yan, C.M. Sologon, S. Chen and T.R. Malek.** Univ. of Miami Miller Sch. of Med. and Sylvester Comprehensive Cancer Ctr.

P573 **56.03** The neurotrophic factor neuritin regulates T cell anergy and t regulatory cell function. **H. Yu, H. Nishio, J. Barbi, M. Mitchell-Flack, P. Vignali, Y. Zheng, A. Lebid, K-Y. Chang, J. Fu, L. Blosser, A. Tam and D. Pardoll.** Johns Hopkins Univ. Sch. of Med., Keio Univ., Japan, Rosewell Park Comprehensive Cancer Ctr., Univ. of Pittsburgh and Natl. Hlth. Res. Inst.

P574 **56.04** Blimp1 regulates the growth and function of human regulatory T cells. **Y. Ding, M. Vujanac, L. Nivelo, A. Villarino and T.R. Malek.** Univ. of Miami Miller Sch. of Med.

P575 **56.05** Batf stabilizes the Th17 cell developmental program through impairment of Stat5-dependent recruitment of Ets1-Runx1 complexes. **D. Pham, D.J. Silberger, K. Nguyen, M. Gao, R.D. Hatton and C.T. Weaver.** Univ. of Alabama at Birmingham, Sch. of Med.

P576 **56.06** TL1A promotes a multi-cytokine Th9 cell phenotype. **M. Chu and M.H. Kaplan.** Indiana Univ. Sch. of Med.

P577 **56.07** Defining the transcriptional regulation of NR2F6 in $CD4^+$ T helper cell responses. **A.N. Wilson, S. Campbell, Q. Lu, S.A. Mosure, Y. He, B. Bdiri, T.M. Kamenecka and L.A. Solt.** Scripps Florida.

P578 **56.08** IL-35 suppresses pathogenic T cell response in atopic dermatitis by inhibiting PSAT1 activation. **H.J. Lim, J.Y. Lee and J.k. Choi.** Jeonbuk Natl. Univ., South Korea.

P579 **56.09** Inhibition of distinct glycolytic enzymes produces differential effects on CD4 T cell function. **W.H. Godfrey and M. Kornberg.** Johns Hopkins Univ. Sch. of Med.

P580 **56.10** Complement activates an autocrine vitamin D system that recruits a defined transcription factor network to shut down pro-inflammatory programs of Th1 cells. **D.C. Chauss, T. Freiwald, R. McGregor, B. Yan, L. Wang, E. Nova-Lamperti, D. Kumar, Z. Zhang, H. Teague, E. West, K.M. Vannella, M.J. Ramos-Benitez, J. Bibby, A. Kelly, A. Malik, A.F. Freeman, D.M. Schwartz, D. Portilla, D.S. Chertow, S. John, P. Lavender, C. Kemper, G. Lombardi, N.N. Mehta, N. Cooper, M.S. Lionakis, A. Laurence, M. Kazemian and B. Afzali.** NIDDK, NIH, Univ. Hosp. Frankfurt, Goethe-Univ. Germany, Univ. of Auckland, New Zealand, Purdue Univ., Universidad de Concepcion, Chile, NHLBI, NIH, NIAID, NIH, Clin. Ctr., NIH, King's Col. London, United Kingdom, Imperial Col. London, United Kingdom, Univ. of Virginia, Univ. of Lübeck, Germany and Univ. of Oxford, United Kingdom.

P581 **56.11** Transcription coactivator OCA-B/Pou2af1 is necessary and sufficient to promote T cell-intrinsic CD4 memory. **D.R. Tantin, W. Sun, H. Kim, J. Perovanovic, A. Ibarra, J.S. Hale and M.A. Williams.** Univ. of Utah Sch. of Med.

P582 **56.12** The role of HnRNPA1 in T cell-mediated gut tolerance. **T.L. White, M. Gable, Y. Jin and P.A. Morel.** Univ. of Pittsburgh Sch. of Med.

P583 **56.13** Role of transcription factor RUNX1 in the maintenance of T helper cell epigenome and rapid recall response. **S. Korinfskaya, M. Kotliar, A. Katko, D. Hildeman, E.R. Miraldi and A. Barski.** Cincinnati Children's Hosp. Med. Ctr. and Univ. of Cincinnati Col. of Med.

P585 **56.15** Th1 and Th17 cells are critical for limiting the severity of *Staphylococcus aureus* craniotomy infection. **G. Kak, C.M. Horn, C.E. Heim and T. Kielian.** Univ. of Nebraska Med. Ctr.

P586 **56.16** 5-Hydroxyndole-3-acetic acid suppresses activation of glutamate oxaloacetate transaminase 1 linked to Th1/17 cell differentiation and ameliorates rheumatoid arthritis. **J.Y. Lee, H.J. Lim and J.k. Choi.** Jeonbuk Natl. Univ., South Korea.

P587 **56.17** CRISPR-based functional genomics to decode *cis* and *trans* regulation of the *CD28*, *CTLA4*, and *ICOS* costimulatory locus. **C. Mowery, J. Freimer, J. Umhoefer, C. Garrido, R. Schmidt, Z. Steinhart, B. Gowen, G. Curie, J. Corn, J.C. Ye and A. Marson.** Gladstone Inst., Univ. of California, San Francisco, Stanford Univ., Univ. of California, Berkeley and ETH Zurich, Switzerland.

57. MEMORY T CELL DIFFERENTIATION, FUNCTION, AND MAINTENANCE

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P588 **57.01** CXCR6 is required for tissue resident memory T cell formation across diverse peripheral non-lymphoid tissues. **T. Heim, M.M. Steele, T. Mudianto and A.W. Lund.** New York Univ. Langone Med. Ctr.

P589 **57.02** Epigenome accessibility changes before and after activation reveal distinct and progressive differentiation for human memory T cell subsets. **J.R. Rose, A.R. Rahmberg, M.D. Powell, C.D. Scharer and J.M. Boss.** Emory Univ. Sch. of Med. and NIAID, NIH.

P590 **57.03** Dietary iron deficiency impairs the functionality but not generation or establishment of memory T cells following influenza infection. **M.C. Bradley, E. Idzikowski, F. La Carpia, J.I. Gray, K. Rybkina, R.S. Guyer, K. Pethe, E.A. Hod and T.J. Connors.** Columbia Univ. Med. Ctr.

P591 **57.04** Eos regulates IL-7 signaling and central memory T cell differentiation. **S. Pokhrel, K.A. Read, D.M. Jones, M.D. Powell, R.T. Warren and K.J. Oestreich.** The Ohio State Univ. Col. of Med., Emory Univ. Sch. of Med. and The Ohio State Univ. Comprehensive Cancer Ctr.

P592 **57.05** The extracellular ATP receptor P2RX7 imprints a pro-memory transcriptional signature in effector $CD8^+$ T cells. **S. Van Dijk, T. Vardam-Kaur and H. Borges da Silva.** Mayo Clin.

P593 **57.06** The E3 ubiquitin ligase Cul4b is required for $CD8^+$ T cell-mediated antiviral immunity. **A.A. Dar, S. Gordon, K. Klinzing, K. Dale, N. Porter, I. Guha, E.M. Behrens and P.M. Oliver.** Children's Hosp. of Philadelphia.

P594 **57.07** Cell-intrinsic expression of the hemichannel pannexin-1 promotes effector and memory $CD8^+$ T cells via distinct metabolic pathways. **H. Borges da Silva, T. Vardam-Kaur, M. Zhou, B. de Gois Macedo, S. Van Dijk and S.C. Jameson.** Mayo Clin. and Univ. of Minnesota.

P595 **57.08** Defining the extra-thymic role of HEB in the development of CD8+ T stem cell-like immunological memory. **J. Leung, K. Campbell and M.K. Anderson.** Univ. of Toronto, Canada, Sunnybrook Research Institute, Canada and Lunenfeld-Tanenbaum Research Institute, Canada.

P596 **57.09** Normal microbial experiences accelerate memory T cell compartment maturation in infants. **T.D. Stenger, S. Burger, M. Pierson, M. Huggins, S. Hamilton and N.J. Schuldt.** Univ. of Minnesota Med. Sch. and Univ. of Minnesota.

P597 **57.10** The strength of antigenic and IL-2 signals epigenetically programs functional memory $CD8^+$ T cells. **E. Guillen, S.S. Chin, L. Chorro, S. Achar, K. Ng, S. Oberle, F. Alfei, D. Zehn, G. Altan-Bonnet, F. Delahaye and G. Lauvau.** Albert Einstein Col. of Med., Natl. Cancer Inst., Tech. Univ. of Munich, Germany and Inst. Pasteur de Lille, France.

P598 **57.11** Human T cells in barrier sites exhibit site-specific characteristics and clonal compartmentalization. **D.P. Caron, M.M.L. Poon, Z. Wang, W. Meng, N. Lam, P.A. Szabo, S.B. Wells, P. Thapa, P. Dogra, B. Lee, M. Kubota, R. Matsumoto, A. Rahman, E.T. Luning Prak, P. Sims, Y. Shen and D.L. Farber.** Columbia Univ. Med. Ctr., Univ. of Pennsylvania Perelman Sch. of Med. and Icahn Sch. of Med., Mount Sinai.

P599 **57.12** Helpless CD8 T cell memory explained: prolonged antigen presentation drives a temporal rather than terminal defect. **V. van der Heide, B. Davenport, K. Jhun and D. Homann.** Icahn Sch. of Med., Mount Sinai.

P600 **57.13** TRM and mucosal tissue sites are protected from age-associated phenotypic changes in secondary lymphoid organs. **N. Lam, D.P. Caron, J. Davis-Porada, I.J. Jensen, Y. Lee, R. Morrison-Colvin, M.M.L. Poon, P.A. Szabo, B.B. Ural, S.B. Wells, M. Kubota, R. Matsumoto and D.L. Farber.** Columbia Univ. Med. Ctr.

P601 **57.14** Dendritic cells instruct differentiation of tissue resident memory T cells in the skin to promote durable tumor immunity. **A. Mohamed, J. Vella, M.J. Turk and Y.H. Huang.** Geisel Sch. of Med. at Dartmouth.

P602 **57.15** The divergence of germinal center T follicular helper cell differentiation and generation of CXCR5+ CD4+ T cell memory. **R. McMonigle, F. Zhu, A.R. Schroeder, B.D. Greer, E. Gonzalez-Avalos, D.O. Sialer, Y-H. Wang, K.M. Chandler, A.J. Getzler, E.R. Brown, C. Xiao, O. Kutsch, M.E. Pipkin and H. Hu.** Univ. of Alabama at Birmingham, La Jolla Inst. for Immunology and The Scripps Res. Inst.

58. IMMUNITY TO MICROBIAL, PARASITIC, AND FUNGAL INFECTIONS I

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P603 **58.01** Hepcidin deficiency increases susceptibility to disseminating candidiasis and renal failure. **Y. Scindia, S. Kasem, S. Mansouri, D. Desai, A. Agarwal, N. Khodayari, M. Lionakis and B. Mehrad.** Univ. of Florida and NIH.

P604 **58.02** Effective clearance of *Chlamydia* from the murine female reproductive requires IL-12p40, but not T-bet driven Th1 responses. **J. Rixon and S.J. McSorley.** Univ. of California, Davis.

P605 **58.03** Regulatory T cells control Th1 responses to sustain bacterial immunity and skin barrier function. **T.P. Singh, V. Lovins, L.P. Carvalho, E.M. Carvalho, E. Grice and P.A. Scott.** Univ. of Pennsylvania Sch. of Vet. Med., Univ. of Pennsylvania Perelman Sch. of Med. and Funda¸ão Oswaldo Cruz, Inst. Gon¸alo Muniz Bahia, Brazil.

P606 **58.04** The tuberculosis resistance protein TOLLIP prevents disease progression by regulating the integrated stress response in alveolar macrophages. **J.A. Shah, S. Venkatasubramanian, C. Plumlee, S. Cohen, K. Dill-McFarland, S. Hinderstein, M. Altman and K.B. Urdahl.** Univ. of Washington and Seattle Children's Res. Inst.

P607 **58.05** Androgen exposure alters the neutrophil response to pyelonephritis. **T. Hreha, C.A. Collins and D.A. Hunstad.** Washington Univ. Sch. of Med. in St. Louis.

P608 **58.06** Using *Dictyostelium discoideum* as a model for phagocytosis resistance in *Escherichia coli*. **T.L.B. Riddick, M. Perez-Vazquez and M. Snyder.** Towson Univ.

P609 **58.07** TNF-α signaling is required for fungal clearance during brain infection with *Cryptococcus neoformans* via promoting the recruitment of $CD4^+$ T cells and inflammatory monocytes. **Y. Chen, A. Strickland and M. Shi.** Univ. of Maryland, College Park.

P610 **58.08** T cell intrinsic Nod2 controls Th17 immunity to *Candida albicans* infection. **K. Koney, S.J. Lashley, E.J. Lee, E.E. Vance, D.J. Philpott, J.W. Dugan, M.M. Davey, H.L. Rosenzweig and R.J. Napier.** VA Portland Hlth. Care Syst., Oregon Hlth. & Sci. Univ. and Univ. of Toronto, Canada.

P611 **58.09** Exposure to *Vishniacozyma victoriae* elicits airway inflammation and a $CD4^+$ T cell-driven lymphocytic response. **R.E. Rush, C.B. Blackwood, A.R. Lemons, M.S. Orandle and T.L. Croston.** Natl. Inst. for Occup. Safety and Hlth.

P612 **58.10** Intestinal and tracheal microbiomes inhibit in vitro growth of *Coccidioides immitis*. **S. Tejeda-Garibay, A. Diep and K.K. Hoyer.** Univ. of California, Merced.

P613 **58.11** IL-23 signaling limits ferroptosis-driven immunopathology during systemic fungal infection. **N.O.J. Millet, N.V. Solis, D. Aguilar, M.S. Lionakis, R.T. Wheeler, N. Jendzjowsky and M. Swidergall.** Div. of Infectious Dis., Harbor-UCLA Med. Ctr., The Lundquist Inst. for Biomed. Innovation, Harbor-Univ. of California Los Angeles Med. Ctr., NIAID, NIH, Univ. of Maine and David Geffen Sch. of Med., Univ. of California, Los Angeles.

P614 **58.12** Altered trained immunity in $AID^{-/-}$ versus wild type mice following infection with *Pneumocystis murina*. **S. Curran and J. Kovacs.** NIH.

P615 **58.13** Tissue characterization and cellular targets in non-tuberculous mycobacterial granulomas. **P. Escalante, M. Paige, V. Van Keulen, C. Erskine, M. Shah, R. Reddy, B. Pathakumari and T. Peikert.** Mayo Clin., Rochester.

P617 **58.15** Mice infected with *Mycobacterium tuberculosis* are resistant to secondary infection with SARS-CoV-2. **O. Rosas Mejia, E.S. Gloag, J. Li, M. Ruane-Foster, T.A. Claeys, D. Farkas, L. Farkas, G. Xin and R.T. Robinson.** The Ohio State Univ. Col. of Med. and The Ohio State Univ.

P618 **58.16** HIV compromises Th17 and Th22 immunity in a humanized mouse model of tuberculosis and HIV co-infection. **Y.B. Martinez-Martinez, M.B. Huante, M. Files, B.B. Gelman, M. Endsley and J.J. Endsley.** Univ. of Texas Med. Br., Galveston.

P619 **58.17** Developing a transgenic mouse model to better understand the role of CD8 and granulysin against *Mycobacterium tuberculosis* infection. **P. Thakur, R. Sutiwisesak, Y-J. Lu and S. Behar.** Univ. of Massachusetts Chan Med. Sch.

P620 **58.18** Sphingolipids: a double-edged sword in the defense against *Mycobacterium tuberculosis*. **G.D. Guzman, H. Leier, P. Niekamp, J. Holthuis and F.G. Tafesse.** Oregon Hlth. & Sci. Univ., Case Western Reserve Univ. Sch. of Med. and Osnabrück Univ., Germany.

P621 **58.19** The Rv2623-Rv1747 interaction influences phosphatidyl-*myo*-inositol levels on the cell envelope of *Mycobacterium tuberculosis*. **A. Schami, W. Ke, A. Allué-Guardia, A.M. Olmo-Fontánez, J. Chan and J.B. Torrelles.** Texas Biomed. Res. Inst., Univ. of Texas Hlth. Sci. Ctr., San Antonio and Rutgers New Jersey Med. Sch.

P622 **58.20** Dynamics of the immune response to MRSA subcutaneous skin infection. **J.L. Bose, A.K. Gilchrist, M.J. Ridder, H. Dai, M.T. Pritchard and M.A. Markiewicz.** Univ. of Kansas Med. Ctr.

P623 **58.21** Scrub typhus weakens humoral immune responses through suppression of germinal center and B cell activation. **C.A. Gonzales, Y. Liang, G. Card, J. Fisher, D.H. Walker, L. Soong and J. Sun.** Univ. of Texas Med. Br., Galveston.

P624 **58.22** Airway *Prevotella* promote TLR2-dependent neutrophil activation and rapid clearance of *Streptococcus pneumoniae* from the lung. **S.E. Clark, K.J. Horn and M.A. Schopper.** Univ. of Colorado Anschutz Med. Campus.

P625 **58.23** Investigating the three-way interaction between gastric epithelial cells, human neutrophils, and *Helicobacter pylori*. **J. Trujillo and L-A.H. Allen.** Univ. of Missouri, Columbia.

P626 **58.24** Structure of NAD^+ consuming *Acinetobacter baumannii* TIR domain. **G.A. Snyder, S. Nallar, M. Snyder and R. Krishanu.** Univ. of Maryland, Sch. of Medicine and Towson Univ.

P627 **58.25** Host humoral immune suppression by *Clostridioides difficile* toxin A and toxin B. **K.M. Ballard-Norman, J.D. Ballard and M.L. Lang.** Univ. of Oklahoma Hlth. Sci. Ctr.

P628 **58.26** Commensal *Lactobacillus reuteri* tryptophan catabolism promotes host susceptibility to CNS autoimmunity. **T.L. Montgomery, K.M. Eckstrom, E.R. Heney, M.J. Wargo and D.N. Krementsov.** Univ. of Vermont.

P629 **58.27** Indispensable roles of TNF signals in protective immunity against *Orientia tsutsugamushi* infection. **Y. Liang, B. Trent, G. Card, J. Fisher, J. Sun and L. Soong.** Univ. of Texas Med. Br., Galveston.

P630 **58.28** Optimization of cell culture protocols and immunoassays in a non-model teleost. **A. Collias and N.C. Steinel.** Univ. of Massachusetts, Lowell.

P631 **58.29** IL-27 signaling promotes Th1 responses and is required to inhibit fungal growth in the lungs during repeated exposure to *Aspergillus fumigatus*. **A. Strickland, D. Sun, P. Sun, Y. Chen, G. Liu and M. Shi.** Univ. of Maryland, College Park.

P632 **58.30** Characterization of immune cells of stressed beta2-adrenergic receptor homozygous knockout mouse model during *Chlamydia muridarum* genital infection. **T. Belay.** Bluefield State Col.

P633 **58.31** Nonencapsulated *Streptococcus pneumoniae* cause bacteremia through inhibition of C-reactive protein binding. **L.S. McDaniel, S. Neu, C. Thompson, C. Gurski, L. Keller, A. Strzepa and B.N. Dittel.** Univ. of Mississippi Med. Ctr., Med. Col. of Wisconsin and Versiti Blood Res. Inst.

P635 **58.33** Influenza-induced cytokine response predisposes hosts to secondary *Aspergillus fumigatus* infections. **M.S. Grau, X. Wang and J.J. Obar.** Geisel Sch. of Med. at Dartmouth.

P636 **58.34** Sialophorin is an essential host element for immunity against fungal pneumonia. **S. Mudalagiriyappa and S.G. Nanjappa.** Univ. of Illinois, Urbana-Champaign.

59. NEONATAL AND FETAL MUCOSAL IMMUNITY

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P637 **59.01** Arresting microbiome development limits immune system maturation and resistance to infection. **M.A. Silverman, J-B. Lubin, L. Denu, J. Green, T. Duranova, M. Lanza, M. Wynosky-Dolfi, I.E. Brodsky and P. Planet.** Children's Hosp. of Philadelphia, Univ. of Pennsylvania Perelman Sch. of Med., Univ. of Pennsylvania Sch. of Vet. Med., GlaxoSmithKline and American Museum of Natural History.

P638 **59.02** Gut microbiome regulates serotonin production in the neonatal intestine to promote immune tolerance in early life. **K.Z. Sanidad, S.L. Rager, A. Ananthanarayanan, R. Callaghan, T. Li, J.C. Jin, M. Amir, R. Luo, R. Silver, D. Artis, C-J. Guo, J. Krumsiek, N. Inohara and M.Y. Zeng.** Weill Cornell Med. Col. and Univ. of Michigan Med. Sch.

P639 **59.03** The preterm infant microbiome impairs lung immune responses to respiratory syncytial virus infection. **J.A. Brown, H. Carrow, J.C. Jin, A. Ananthanarayanan, K.Z. Sanidad, E.L. Johnson, J.M. Perlman, S. Worgall and M.Y. Zeng.** Weill Cornell Med. Col., Weill Cornell Grad. Sch. of Med. Sci. and Cornell Univ.

P640 **59.04** Gut microbiota-reactive IgG regulates gut microbiota development and immunity against enteric pathogens in early life. **M. Amir, K. Sanidad, A. Ananthanarayanan, L. Zhang, N. Shiland, N. Inohara, G. Nunez and M. Zeng.** Weill Cornell Med., Weill Cornell Med. Col. and Univ. of Michigan Medical School.

P641 **59.05** Early life development of bronchial associated lymphoid tissue containing germinal center in the human lung. **R. Matsumoto, J.I. Gray, T.J. Connors, R. Guyer, K. Rybkina, M. Bradley, M.M.L. Poon and D.L. Farber.** Columbia Univ. Med. Ctr.

P642 **59.06** $CD206^+$ $MHCII^-$ macrophages present in the neonatal but not adult intestine do not derive from LysM monocytes and are decreased in experimental necrotizing enterocolitis. **E. Managlia, X. Yan and I.G. De Plaen.** Ann & Robert H. Lurie Children's Hosp. of Chicago and Feinberg Sch. of Med., Northwestern Univ.

P643 **59.07** Neonatal antibiotic exposure alters intestinal macrophage frequency and polarization. **E.M. Schill, S. Udayan, S. Gaddipatti, V. John, B.E. Barrios, A.N. Floyd, K.G. McDonald and R.D. Newberry.** Washington Univ. Sch. of Med. in St. Louis.

P900 **59.08** Maternally derived epidermal growth factor mediates protection in neonates from opportunistic intestinal pathogens. **K.G. Greenfield, P. Lothert, O. Harlow and K. Knoop.** Mayo Clin.

P901 **59.09** Age associated differential innate immune response to strains of *Escherichia coli* in neonatal sepsis model. **J. Muske, K.G. Greenfield, O. Harlow and K. Knoop.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin.

P902 **59.10** The cellular dynamics of early and transitional human breast milk. **C. LeMaster, S. Pierce, E.S. Geanes, S. Khanal, S. Elliott, A. Scott, D. Louiselle, R. McLennan, W. Truog, D. Maulik, T. Lewis, T. Pastinen and T. Bradley.** Children's Mercy Hosp., Univ. of Kansas Med. Ctr. and Univ. of Missouri, Kansas City.

P903 **59.11** Understanding the role of maternal antibodies on protection from enteric pathogens. **B. Wang, S. Torres and M. Koch.** Fred Hutchinson Cancer Res. Ctr.

P904 **59.12** Amniotic fluid metabolites mediate maternal high fat diet expansion of group 3 innate lymphoid cells in offspring. **J. Mirpuri.** Univ. of Texas Southwestern Med. Ctr.

P905 **59.13** Education of uterine natural killer cells by maternal MHC drives fetal growth. **D.M. Depierreux, J. Kiekbush, N. Shreeve, A. Sharkey, D. Hawkes and F. Colucci.** Univ. of Cambridge, United Kingdom.

P906 **59.14** Systemic and mucosal IgA responses are variably induced in response to SARS-CoV-2 mRNA vaccination and are associated with protection against subsequent infection. **S. Sheikh-Mohamed, G. Chao, B. Isho, M. Zuo, C. Cohen, Y. Lustig, G. Nahass, R.E. Salomon, G. Blacker, M. Fazel-Zarandi, B. Rathod, K. Colwill, A.J. Jamal, Z. Li, K. Quinn deLaunay, A. Takaoka, J. Garnham-Takaoka, A. Patel, C. Fahim, A. Patterson, A. Liu, N. Haq, S. Barati, L. Gilbert, K. Green, M. Mozafarihashjin, P. Samaan, P. Budylowski, W. Siqueira, S. Mubareka, M. Ostrowski, J. Rini, O. Rojas, I.L. Weissman, M.C. Tal, A. McGeer, G. Regev, S. Straus, A-C. Gingras and J.L. Gommerman.** Univ. of Toronto, Canada, Sheba Med. Ctr., Israel, Univ. of Illinois Col. of Med., Stanford Univ., Stanford Univ. Sch. of Med., Princeton Univ., Lunenfeld-Tanenbaum Res. Inst., Canada, St. Michael's Hosp., Unity Hlth., Canada, Univ. of Saskatchewan, Canada, Sunnybrook Res. Inst., Canada and Sheba Med. Ctr., Canada.

P907 **59.15** Assessing mucosal antibody responses to SARS-CoV-2 in humans and mice. **B. Isho, K. Abe, M. Zuo, A.J. Jamal, E. Cao, G. Chao, Z. Li, J.M. Rini, D. Tan, A.J. McGeer, A-C. Gingras and J.L. Gommerman.** Univ. of Toronto, Canada, Lunenfeld-Tanenbaum Res. Inst., Mount Sinai Hosp., Canada, Mount Sinai Hosp., Canada and St. Michael's Hospital, Unity Health.

P908 **59.16** The diversity of beta defensins in lungfish (Dipnoi). **D.M. DeMmon, O. Benedicenti, E. Casadei and I. Salinas.** Univ. of New Mexico.

P909 **59.17** Diet induced changes in microbiota composition affect the development of small intestinal T cells over generations. **L. Cervantes Barragan, C. Royer, M. Yaceczko and N. Rodriguez-Marino.** Emory Univ.

P910 **59.18** Group B *Streptococcus* does not translocate the gut epithelium of neonatal mice. **O.S. Harlow, K.G. Greenfield and K. Knoop.** Mayo Clin.

P912 **59.20** Microbiota drive concomitant expression of IL-17 and the inhibitory receptor PD-1 to regulate effector functions of γδ17 cells in the intestine. **H-I. Huang and G. Hammer.** Duke Univ. Med. Ctr.

P913 **59.21** Gamma delta T cells and keratinocytes modulate wound repair via perforin-2. **N. Strbo, K. Rivas, L. Padula, E. Fisher, J. Marjanovic, J.L. Burgess, T. Wikramanayake, I. Pastar and M. Tomic-Canic.** Univ. of Miami Miller Sch. of Med.

P915 **59.23** CD40 is required for protective T cell responses against *Cryptosporidium*. **K. O'Dea and C.A. Hunter.** Univ. of Pennsylvania Perelman Sch. of Med. and Univ. of Pennsylvania Sch. of Vet. Med.

60. THERAPEUTIC APPROACHES TO AUTOIMMUNITY AND OTHER DISEASES

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P916 **60.01** Multi-transgene AAV immunotherapy re-establishes immune tolerance and provides comprehensive protection in animal model of MS. **A.S. Sagadevan, V. Jha, G.D. Keeler, M. Coulombe, C.D. Gaddie, E.F. Rosloniec, I. Cote, J. Matsuda, K.G. Senior, B.M. Freed, D. Min, C.L. Roark and B.E. Hoffman.** Univ. of Florida Col. of Med., Univ. of Colorado, Univ. of Tennessee Hlth. Sci. Ctr. and Natl. Jewish Hlth.

P918 **60.03** Decoding atopic dermatitis: patient heterogeneity and genetic variation contributing to immune-mediated dermatologic disease in the UK Biobank. **D.T. Truong, J. Molineros, Y. Chen, M. Guan, A. Hart, B. Keyes, K.B. Seiber, S. Li, D. Waterworth and M.H. Black.** Janssen Res. & Develop.

P919 **60.04** A dietary fiber limits autoimmune neuroinflammation by restricting Th1 activation, polarization, and migration. **N.M. Fettig, H.G. Robinson, J.R. Allanach, R.L. Simister, E.J. Wang, Y. Jiayu, K.M. Davis, J.H. Seo, D.L. Gibson, S.A. Crowe, M.S. Horwitz and L.C. Osborne.** Univ. of British Columbia, Canada.

P920 **60.05** The effect of induced lymphatic circulation on lymphangiogenesis and inflammatory mediators in rats with adjuvant induced arthritis. **M.V. Volin, K. Blucher, B. Zanotti, R. Incrocci, R. Monroy Del Toro, S. Jain, D. Weber, C. Gober and M. Swanson-Mungerson.** Midwestern Univ.

P921 **60.06** Ameliorative role of AhR ligands in concanavalin-induced liver injury is due to increased miR-100 expression leading to mTOR downregulation and promoter hydroxymethylation. **A.S. Cannon, P. Nagarkatti and M. Nagarkatti.** Univ. of South Carolina Sch. of Med.

P922 **60.07** STAT3 degraders inhibit cellular activation, cytokine production, and Th17 development, resulting in inhibition of autoimmunity in the MOG-EAE model of CNS inflammation. **J. Sullivan, C. Brown, M. Mayo, V. Dixit, B. Enerson, H. Rong, B. Yang, C. De Savi, J. Gollob, N. Mainolfi, A. Slavin and C. Hubeau.** Kymera Therapeutics.

P923 **60.08** Antigen-specific nanoparticle tolerance treatment actively induces both FoxP3- and IL-10-dependent regulatory mechanisms. **J.R. Podojil, A. Cogswell, M-Y. Chiang, T. Neef, T. Murthy, M. Boyne, A. Elhofy and S.D. Miller.** Feinberg Sch. of Med., Northwestern Univ. and Cour Pharmaceuticals Develop. Co., Inc.

P924 **60.09** Gut bacteria-derived isoflavone metabolites ameliorate experimental autoimmune encephalomyelitis through estrogen receptor engagement. **S.R. Peterson, S. Jensen, D. Dencklau and A.K. Mangalam.** Univ. of Iowa and Weill Cornell Med. Col.

P925 **60.10** EAE suppression caused by Δ-8-THC treatment is due to downregulation of CNS infiltrating CD4+ T-cells, proinflammatory cytokines and apoptotic genes expression. **K. Kakar, P. Nagarkatti and M. Nagarkatti.** Univ. of South Carolina Sch. of Med.

P926 **60.11** A GABA-producing probiotic for the protection of CNS demyelinating inflammation. **J. Ochoa-Reparaz, K. Hoffman, T. Long, W.J. Doyle, H.M. Kohl, K. Staben, A. Sargent, R. Linton, M. Ristig, R. Harris, X. Shi, K.M. Gibson, J-B. Roullet and A.R. Castillo.** Eastern Washington Univ. and Washington State Univ.

P927 **60.12** Aging impairs regulatory T cells to affect late-onset (aged) multiple sclerosis: with the model of experimental autoimmune encephalomyelitis. **W. Wang, R. Thomas, J. Oh and D-M. Su.** Univ. of North Texas Hlth. Sci. Ctr., Alcon Res., LLC and Univ. of Texas Southwestern Med. Ctr.

P928 **60.13** Deficiency in B cell maturation antigen reveals sex differences in experimental autoimmune encephalomyelitis. **G. Kumar, R.M. Ko, N. Bhatt and R.C. Axtell.** Oklahoma Med. Res. Fndn.

P929 **60.14** CSF-1 maintains pathogenic but not homeostatic myeloid cells in the central nervous system during autoimmune neuroinflammation. **D. Hwang, M.S. Seyedsadr, L.L. W.Ishikawa, A. Boehm, Z. Sahin, G. Casella, S. Jang, M.V. Gonzalez, J.P. Garifallo, H. Hakonarson, W. Zhang, D. Xiao, A. Rostami, G-X. Zhang and B. Ciric.** Thomas Jefferson Univ. and Univ. of Pennsylvania.

P930 **60.15** Non-classical anti-inflammatory drugs ameliorates brain inflammation and improves memory in Alzheimer's diseases mice model. **M.J. Islam, Y-J. Koh, C.Y. Chung and S-Y. Seong.** Seoul Natl. Univ. Col. of Med., South Korea and Shaperon, South Korea.

P931 **60.16** Alpha-synuclein peptides presented on chimeric MHC class Ib molecules prevent loss of substantia nigra neurons in an animal model for Parkinson's disease. **J. Wischhusen, J. Wu, F. Ahsan, R. McFleder, A-K. Karl, S. Mamatha Jayaram, H. Wecklein, A. Nienaber, D. Brünnert, V. Bruttel and C.W. Ip.** Univ. Hosp. Wuerzburg, Germany.

P932 **60.17** Novel gene immunotherapy prevents aquaporin-4 mediated neuroinflammation and demyelination in a mouse model of multiple sclerosis. **K.G. Senior, I. Cote, A.S. Sagadevan, C.D. Gaddie, G.D. Keeler, D. Min, M.T. Main, M.N. Rechdan, S. Assakawa and B.E. Hoffman.** Univ. of Florida Col. of Med. and Univ. of Florida.

P933 **60.18** Tolerogenic artificial antigen presenting cells for selective tolerance in autoimmune disease. **G. Raimondi, K. Rhodes, S. Tzeng, M. Igleasias Lozano, D. VanDyke, S. Neshat, J. Spangler and J. Green.** Johns Hopkins Univ. Sch. of Med.

P934 **60.19** MOG variant 45D does not properly activate high-affinity, MOG reactive effector T cells but allows for high-affinity FoxP3+ Treg function. **M.A. Faust, E.M. Kolawole and B.D. Evavold.** Univ. of Utah.

P935 **60.20** Targeting proteolytic cleavage of toll-like receptors by alpha-1 antitrypsin inhibited dendritic cells activation and function. **A.S. Elshikha, G. Abboud, L. Morel and S. Song.** Univ. of Florida.

P936 **60.21** Characterization of ARTS-011, a potent and selective TYK2 inhibitor for the treatment of inflammatory disease. **J. Liang, Y. Liu, X. Zhang, T. Zhang, X. Liu, J. Fu, D. Cheng, W. Xiong, P. Ding, C. Zhu, F. Li and Y. Chen.** Allorion Therapeutics, China and Allorion Therapeutics.

61. MACROPHAGES, MYELOID, AND DENDRITIC CELLS IN TUMOR IMMUNITY AND IMMUNOTHERAPY

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P937 **61.01** Estradiol effects on polymorphonuclear cell production and actions contribute to estrogen-mediated lymphangioleiomyomatosis progression. **B.M. N. Minor, J. Koudouvoh, E. Gibbons, C. Seger and S. Hammes.** Univ. of Rochester Med. Ctr.

P938 **61.02** Accelerated tumorigenesis in a colorectal cancer model in siglec-E knockout mice. **B.L. Maniaci, D. Friedman, S. Crotts, M. Rajcula, K. Theodore, H.S. Kim Lee and V. Shapiro.** Mayo Clin.

P939 **61.03** Liver metastasis restrains immunotherapy efficacy via macrophage-mediated T cell elimination. **I. Kryczek, J. Liu, M. Green, A. Chinnaiyan, M. Cieslik and W. Zou.** Univ. of Michigan.

P940 **61.04** Liver macrophage subsets differentially regulate metastasis in pancreatic cancer. **S.K. Thomas and G.L. Beatty.** Univ. of Pennsylvania Perelman Sch. of Med.

P941 **61.05** Dysfunction of dendritic cells in tumor-draining lymph nodes. **J.M. Bandola-Simon and P.A. Roche.** NCI, NIH.

P942 **61.06** Reactive myelopoiesis and FX-expressing monocyte-derived macrophages triggered by chemotherapy promotes cancer lung metastasis. **C. Ding and J. Yan.** Univ. of Louisville.

P943 **61.07** Determination of CD91 intracellular signaling pathway following HSP stimulation. **J.F. Harkness and R.J. Binder.** Univ. of Pittsburgh.

P944 **61.08** The B cell adapter for PI3K promotes M2 macrophage phenotype and safeguards tumors from immune surveillance. **I. Saha and C. Pasare.** Cincinnati Children's Hosp. and Med. Ctr.

P946 **61.10** Enhanced anti-tumor immunity in ST8Sia6 knockout mice. **D.J. Friedman, M. Kizerwetter, P. Belmonte, M. Rajcula, K. Theodore, H.S. Kim Lee, M.J. Shapiro, H. Dong and V.S. Shapiro.** Mayo Clin.

P947 **61.11** Tumor-associated macrophages found at early tumor sites exhibit altered metabolism and contribute to tumor progression. **R.A. Kurt, M. Chang, K. Ellmaker, A. Esposito, S. Pa and M. Roberts.** Lafayette Col.

P949 **61.13** The role of complement-mediated signaling during antigen presentation. **C.L. Bird, G. Pacholczyk and T. Johnson.** Med. Col. of Georgia, Augusta Univ.

P950 **61.14** Hv1 proton channels control myeloid landscape and promote glioma progression. **J. Zheng, L. Wang, K. Ayasoufi, E. Goddery, S. Zhao, C. Fain, A.J. Johnson and L-J. Wu.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin.

P951 **61.15** Identifying antigen presenting cells responsible for heat shock protein-mediated cancer immunosurveillance. **D.A. Nayak and R.J. Binder.** Univ. of Pittsburgh Sch. of Med.

P952 **61.16** Activation of IRE1 RNase in dendritic cells curtails antitumor adaptive immunity in melanoma. **F. Osorio, F. Flores and D. Fernandez.** Univ. de Chile, Chile.

P953 **61.17** Impact of constitutive FLT3 signaling on dendritic cell development and function in a genetically-engineered mouse model of acute myeloid leukemia. **P.A. Flynn, J.L. Coy, K.A. Romine, Y. Kosaka and E. Lind.** Oregon Hlth. & Sci. Univ.

P954 **61.18** Mechanisms of CD40-dependent cDC1 licensing beyond co-stimulation. **R. Wu, R.A. Ohara, S. Jo, T. Murphy and K.M. Murphy.** Washington Univ. Sch. of Med. in St. Louis.

62. INNATE LYMPHOCYTES AND INNATE-LIKE T CELLS IN CANCER

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P955 **62.01** Tumor-infiltrating myeloid cells determine the fate of NK cells in human early-stage lung cancer. **N.T. Sullivan, E. Encarnado, S. Singhal, S. Albelda and E. Eruslanov.** Univ. of Pennsylvania.

P956 **62.02** Glioblastoma multiforme expresses cell surface PCNA, a potential target for NK cell-mediated immunotherapy. **L.C. Cooksey and P.A. Mathew.** Univ. of North Texas Hlth. Sci. Cntr.

P957 **62.03** CD95/Fas-ligation and resting NK or IL-2 activated NK (LAK) attack limit NK-92 efficacy. **L.T. Navarrete-Galvan, M. Guglielmo, J. Cruz Amaya, R. Merica, J. Smith-Gagen, V.C. Lombardi and D. Hudig.** Univ. of Nevada, Reno, Sch. of Med., Fred Hutchinson Cancer Res. Ctr., St. Olaf Col. and Univ. of Nevada, Reno, Sch. of Community Hlth. Sci.

P958 **62.04** Perturbed function of natural killer cells by inflammatory cytokines in acute and chronic myeloid leukemias. **V. Kuznetsova, S. Patel, F. Luca, V. Camacho, V. Matkins and R.S. Welner.** Univ. of Alabama at Birmingham.

P959 **62.05** Characterization of the tumor immune microenvironment in soft tissue sarcoma patients undergoing surgery. **S.M. Cruz, S.J. Judge, M.A. Darrow, L.M. Perry, L.E. Farley, K.R. Iranpur, C. Dunai, S. Chen, S.W. Thorpe and R.J. Canter.** Univ. of California Davis Med. Ctr. and Univ. of Liverpool, United Kingdom.

P960 **62.06** CD155 axis modulation promotes natural killer cell-mediated graft-versus-tumor effects against osteosarcoma. **M. Cho, M. Phillips, L. Song, A. Erbe-Gurel and C.M. Capitini.** Univ. of Wisconsin, Madison.

P961 **62.07** The fate and function of NK cells in the suppressive tumor microenvironment. **X. Liu, F. Ma, Y. Zhang, Y. Tao, D.F. Hoft and G. Peng.** St. Louis Univ.

P962 **62.08** Assembly and localization of extracellular matrix protein fibronectin modulates natural killer cell infiltration in tumor spheroids. **N. Rajasekaran, T. House, C.C. Magdaleno and A. Varadaraj.** Northern Arizona Univ.

P963 **62.09** LTi-like type 3 innate lymphoid cells are associated with the transient induction of tertiary lymphoid structures in inflamed pulmonary tissue. **C. Riffard, J-L. Teillaud and M-C. Dieu-Nosjean.** INSERM, France and Sorbonne Univ., France.

P964 **62.10** Genome-wide CRISPR screens reveal metabolic and transcriptional regulation of BTN3A and cancer susceptibility to Vγ9Vδ2 T cell targeting. **M.R. Mamedov, S. Vedova, J.W. Freimer, A.D. Sahu, P.A. Chen, A. Ramesh, K. Hanspers, V.Q. Nguyen, E.J. Adams and A. Marson.** Univ. of California, San Francisco, Dana-Farber Cancer Inst., Harvard Med. Sch., Univ. of Chicago and Gladstone Inst.

63. TISSUE RESIDENT MEMORY T CELLS (TRM) IN CANCER

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P965 **63.01** Tissue-resident memory CD4+ T cells play a dominant role in the initiation of antitumor immunity. **H. Zhang, Z. Zhu, S. Modrak and A. Little.** Washington State Univ.

P966 **63.02** Tumor resident memory CD8 T cell formation and concomitant tumor immunity is CD40L dependent and CD4 independent. **M.J. Gough, G. Kramer, S. Bambina, A. Alice, T. Blair, T. Duhen, R. Duhen and M.R. Crittenden.** Providence Portland Med. Ctr.

P967 **63.03** TGF-β-dependent lymphoid tissue residency of stem-like T cells limits the response to tumor vaccine. **N. Zhang, G. Li, L. Wang, S. Srinivasan, C. Ma, W. Liao, Y. Liu, S. Mishra, X. Zhang, Y. Qiu and Q. Lu.** Univ. of Texas Hlth. Sci. Ctr., San Antonio, Hunan Children's Hosp., China, Xiangya Hosp., China, Dana-Farber Cancer Inst., Harvard Med. Sch. and Chinese Acad. of Med. Sci. and Peking Union Med. Col., China.

P968 **63.04** Ovarian cancer immunogenicity is governed by a narrow subset of progenitor tissue-resident memory T-cells. **C.M. Anadon Galindo, X. Yu, K. Hanggi, S. Biswas, R. Chaurio, G. Mandal, A. Martin, K.K. Payne, P.P. Innamarato, C.M. Harro, J. Mine, K. Sprenger, C. Cortina, J.J. Powers, B.A. Perez, C.D. Gatenbee, S. Prabhakaran, D. Marchion, M.H. Heemskerk, T.J. Curiel, A.R.A. Anderson, R.M. Wenham, P.C. Rodriguez and J.R. Conejo-Garcia.** H. Lee Moffitt Cancer Ctr. and Res. Inst., Leiden Univ. Medical Ctr., Netherlands and UT Hlth. San Antonio.

P969 **63.05** Chronic antigen in solid tumors drives a distinct program of T cell residence. **N.V. Gavil, M. Scott, E. Weyu, S. O'flanagan, S. Wijeyesinghe, O. Smith and D. Masopust.** Univ. of Minnesota.

P970 **63.06** Resident memory T cells in antitumor immunity and cancer immunotherapy. **F. Mami-Chouaib, I. Tihy and S. Corgnac.** INSERM, France.

P971 **63.07** Controllable regulation of CD3ζ and MyD88 signaling in T cells expands and enhances the neoantigen-reactive repertoire resulting in effective antitumor activity. **J. Liu and E. Davila.** Univ. of Colorado Anschutz Med. Campus.

P972 **63.08** Evaluation of dry DURAClone antibody panels for the characterization of human PBMCs, enriched T cell fractions and anti-BCMA CAR-T cells. **R. Bowers, G. Grazia, M. Kapinsky, A. Larbi and V. Lacaille.** Beckman Coulter, Beckman Coulter, Italy, Beckman Coulter, Germany and Beckman Coulter, France.

P973 **63.09** Pre-assembled universal SNAP-CARs show potent anti-tumor function. **E. Ruffo, M. Kvorjak, E. Adams and J. Lohmueller.** Univ. of Pittsburgh.

P974 **63.10** Sexual dimorphism and the effect of therapeutic low-dose estrogen in head and neck squamous cell carcinoma. **M.W. Knitz, T.E. Bickett, L.B. Darragh, S. Bhatia, B. Van Court, M. Piper, S. Douglas and S.D. Karam.** Univ. of Colorado Anschutz Med. Campus.

64. VACCINES AND IMMUNOBIOLOGICS AGAINST VIRUSES

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P975 **64.01** Influenza virus-like particle-based hybrid vaccine containing RBD induces immunity against influenza and SARS-CoV-2 viruses. **R. Bommireddy, S. Stone, N. Bhatnagar, P. Kumari, L.E. Munoz, J. Oh, J.L. Berry, K.M. Jacobson, L. Jafaar, S-H. Naing, A.N. Blackerby, T.V.d. Gaag, C.N. Wright, K-H. Kim, L. Lai, C.D. Pack, S. Ramachandiran, M.S. Suthar, S-M. Kang, M. Kumar and P. Selvaraj.** Emory Univ. Sch. of Med., Georgia State Univ. and Metaclipse Therapeutics Corp.

P976 **64.02** Sex differences in B cell frequencies and antibody responses following influenza vaccination in healthcare workers during the 2019-2020 season. **H-S. Park, H. Kuo, H. Liu, K. Fenstermacher, J. Shapiro, A. Jedlicka, S. Dhakal, R. Ursin, J. Wilson, P. Shea, R. Morgan, P.J. Gearhart, R. Rothman, A. Pekosz and S.L. Klein.** Johns Hopkins Bloomberg Sch. of Public Hlth., Molec. Microbiology and Immunology, Johns Hopkins Bloomberg Sch. of Public Hlth., NIA, NIH and The Johns Hopkins Bloomberg Sch. of Public Hlth.

P977 **64.03** Universal protection efficacy against influenza viruses by multi-subtype neuraminidase and M2 ectodomain virus-like particle vaccination in young and older adult mice. **K-H. Kim, Z. Li, N. Bhatnagar, J. Subbiah, B.R. Park, C.H. Shin and S-M. Kang.** Georgia State Univ.

P978 **64.04** Pre-treatment with a novel synthetic TLR4 agonist prior to challenge with mouse-adapted H1N1 and H2N3 influenza strains reduced morbidity and mortality in BALB/c mice. **M. Whitacre, J. Ward, K. Jackson, L. Bess, R. Jayah, C. Sands, H. Arayangkul, J.K. Khalaf, S.M. Miller, J.T. Evans and H.G. Bazin.** Inimmune Corp.

P979 **64.05** Recombinant protein mimicking the antigenic structure of the envelope protein of dengue virus enhances antigen-specific virus-neutralizing immune response induction. **Y-S. Jang, J. Kim, T-Y. Lim, J. Park, J. Kim and S. Cho.** Jeonbuk Natl. Univ., South Korea.

P980 **64.06** Estradiol replacement improves vaccine-induced antibody responses and protection against influenza in aged female mice. **A.R.L. Mueller, S. Dhakal, C. Caputo, K. Seddu and S.L. Klein.** Johns Hopkins Bloomberg Sch. of Public Hlth.

P981 **64.07** Mucosal vaccination provides protection from HSV-2 infection and disease. **K. Tucker, V. Dave and J.M. Lund.** Univ. of Washington and Fred Hutchinson Cancer Res. Ctr.

P982 **64.08** Genetic analysis of differential responses to adjuvanted influenza vaccination. **M.C. Cruz Cisneros, B. Parotti, K. Noll, T.A. Bell, P. Hock, M.T. Heise and M.T. Ferris.** Univ. of North Carolina at Chapel Hill.

P983 **64.09** Isolation of alpaca-derived single-domain antibodies against zika virus non-structural proteins to interrogate viral replication. **J.B. Weinstein and F.G. Tafesse.** Oregon Hlth. & Sci. Univ.

P984 **64.10** Preventing neonatal herpes: protection after maternal mRNA-lipid nanoparticle vaccination equals or exceeds that from prior maternal genital infection in murine models. **A. Desmond, P.C. LaTourette, S. Awasthi, K.P. Egan, L.M. Hook, A.K. Brice, J.M. Lubinski, A.M. Naughton, B. Fowler, M. Beattie, N. Pardi, G.H. Cohen, D. Weissman and H.M. Friedman.** Children's Hosp. of Philadelphia, Univ. of Pennsylvania Perelman Sch. of Med., Univ. of Pennsylvania Sch. of Vet. Med., Acuitas Therapeutics, Inc., Canada and Sch. of Dent. Med., Univ. of Pennsylvania.

P985 **64.11** A live-attenuated mutant CVB3 vaccine virus protects against multiple coxsackievirus B infections. **N. Lasrado, M.T. Rasquinha, M. Sur, A. Gangaplara, C. Massilamany, R. Arumugam, D. Steffen and J. Reddy.** Univ. of Nebraska, Lincoln.

P987 **64.13** The immunologic effects of different adjuvants on enhancing homologous and cross-protection by influenza virus vaccination in young and aged mice. **N. Bhatnagar, K-H. Kim, J. Subbiah, B.R. Park, E-J. Ko, P. Wang and S-M. Kang.** Georgia State Univ., Jeju Natl. Univ., South Korea and Univ. of Alabama at Birmingham.

P988 **64.14** Robust efficacy and long-lasting humoral immunity induced by a respiratory syncytial virus prefusion F-based nanoparticle vaccine in genetically diverse animal models. **L. Stephens, K.A. Ross, J.S. McLellan, B. Narasimhan and S.M. Varga.** Univ. of Iowa, Iowa State Univ. and Univ. of Texas, Austin.

P989 **64.15** Conserved-region MVA vaccines can shift HIV T cell immunodominance in PWH on ART: the M&M Study. **Y. Xu, S. Samir, A.M.K. Weideman, S. Kallon, S. Conrad, F. Shaw, J. Warren, M.A. Fernandez, L. Fox, D.M. Margolis, M.G. Hudgens, T. Hanke, J. Kuruc, C. Gay and N. Goonetilleke.** Univ. of North Carolina at Chapel Hill, NIAID, NIH and Univ. of Oxford, United Kingdom.

P990 **64.16** Long-term sterile immunity induced by an adjuvant-containing live-attenuated AIDS virus. **Y. Yasutomi.** Natl. Inst. of Biomed. Innovation, Hlth. and Nutrition, Japan.

P991 **64.17** Sex hormones more than sex chromosomal complement predict sex differences in influenza vaccine-induced immunity and protection in mice. **K. Seddu, S. Dhakal, A. Ganesan, H. Jacobsen and S.L. Klein.** Johns Hopkins Bloomberg Sch. of Public Hlth.

P992 **64.18** RhCMV/SIV tropism modulation programs unconventional $CD8^+$ T cell priming and vaccine efficacy. **M. Hancock, S. Hansen, D. Malouli, E. Marshall, C. Hughes, K.T. Randall, D. Morrow, J. Ford, R. Gilbride, A. Selseth, R. Espinosa Trethewy, L. Bishop, K. Oswald, R. Shoemaker, B. Berkemeier, W. Bosche, M. Hull, M. Nekorchuk, K. Busman-Sahay, J. Estes, M. Axthelm, J. Smedley, D. Shao, P. Edlefsen, J. Lifson, K. Fruh, J. Nelson and L.J. Picker.** Oregon Hlth. & Sci. Univ., Frederick Natl. Lab. for Cancer. Res. and Fred Hutchinson Cancer Res. Ctr.

P993 **64.19** Combined CpG and MPL as vaccine adjuvants improve immunity and heterosubtypic protection against lethal viral challenge in single dose and prime/boost regimens. **D.M. Brown, Clarkson Trudeau Biomedical Scholars and A.T. Lampe.** Trudeau Inst., Clarkson Univ. and Univ. of Nebraska, Lincoln.

P994 **64.20** Control of established, CNS-resident lyssavirus infection by an adaptive immune response stimulated by single-dose monoclonal antibody therapy. **C. Huaman, K.E. Mastraccio, S.A. Coggins, I. Hussain, L. Yan, A.E. Ahmed, T. Ho, I.L. Smith, W. Markotter, D. Weir, E.D. Laing, C.C. Broder and B.C. Schaefer.** Uniformed Services Univ., CSIRO, Australia, Univ. of Pretoria, South Africa and Naval Med. Res. Ctr.

P995 **64.21** T cell programming by the cytomegalovirus MHC class I homologue UL18. **H. Taher, D. Malouli, S.G. Hansen, M. Mansouri, R. Iyer, C. Papen, J.B. Schell, H. Cleveland-Rubeor, M.R. McArdle, C.M. Hughes, K.T. Randall, A. McNett, L.J. Picker and K. Früh.** Oregon Hlth. & Sci. Univ.

P996 **64.22** Immunogenicity of a germline-targeting nanoparticle in knock-in mice expressing human B cell receptors of the HIV gp41 neutralizing antibody, DH511. **D.W. Cain, M. Tian, T. Schiffner, K. Rantalainen, K.O. Saunders, K. Wiehe, B. Watts, A. Ward, G. Ofek, F.W. Alt, B.F. Haynes, W.R. Schief and S.M. Alam.** Duke Univ., Boston Children's Hosp., Leipzig Univ., Germany, Scripps Res. Inst. and Univ. of Maryland, College Park.

P997 **64.23** Improvement of the aging-related reduced efficacy of the H1N1 pandemic influenza vaccine by the complex of poly-γ-glutamic acid and alum. **J. Kim, Y. Jihyun and P. Haryoung.** Korea Res. Inst. of Bioscience and Biotechnology, South Korea, Univ. of Sci. and Technol., South Korea and Univ. of Sci. and Techn, South Korea.

P998 **64.24** The effects of metformin on influenza vaccination responses in healthy older adults. **D.E. Martin, A.N. Cadar, L. Haynes, G.A. Kuchel and J.M. Bartley.** UConn Hlth.

P999 **64.25** Immunization with a mucosal, post-fusion F/G protein-based polyanhydride nanovaccine protects against BRSV infection in neonatal calves. **T. Maina, E. Grego, B. Narasimhan, R.E. Sacco and J.L. McGill.** Iowa State Univ. and USDA-ARS Natl. Animal Dis. Ctr.

65. VACCINATION AND IMMUNOTHERAPY AGAINST COVID-19

Poster Session

Sat. 2:30 pm—Exhibit Hall

P1000 **65.01** Comparison of the immunogenicity of five COVID-19 vaccines in Sri Lanka. **J.M.K.C. Jeewandara, I.S. Aberathna, S. Danasekara, L. Gomes, S. Fernando, D. Guruge, T. Ranasinghe, B. Gunasekera, A. Kamaladasa, H. Kuruppu, G. Somathilake, J. Jayamali, D. Jayathilaka, H.D.K. Wijayatilake, P.D. Pushpakumara, M. Harvie, T. Nimasha, S.D.G. de Silva, R. Wijayamuni, L. Schimanski, P. Rijal, J. Tan, A. Townsend, G.S. Ogg and G.N. Malavige.** Allergy Immunology and Cell Biol. Unit , Univ. of Sri Jayewardenapura, Sri Lanka, Ministry of Health, Sri Lanka and MRC Human Immunology Unit, MRC Weatherall Institute of Molec. Medicine, Univ. of Oxford, Oxford, United Kingdom; Centre for Translational Immunology, Chinese Acad. of Medical Sciences Oxford Institute, Univ. of Oxford, Oxford, United Kingdom.

P1001 **65.02** Peripheral co-immunization with CCL27 drives robust mucosal responses to SARS-CoV-2 synDNA antigens and provides heterologous protection against delta variant challenge. **E.N. Gary, N.J. Tursi, B. Warner, E. Parzych, A. Ali, D. Kobasa, A. Patel, D. Kulp and D.B. Weiner.** The Wistar Inst. and Public Hlth. Agency of Canada, Canada.

P1002 **65.03** Identification of conserved coronavirus epitopes targeted by antibodies after SARS-CoV-2 infection or vaccination. **T. Bradley, E. Geanes, C. LeMaster, E.R. Fraley, S. Khanal, R. McLennan, E. Grundberg and R. Selvarangan.** Univ. of Kansas Med. Cntr. and Children's Mercy Hosp.

P1003 **65.04** Polyfunctionality of T cell immunity in pre-immune and naïve individuals after COVID-19 mRNA vaccination. **V.S. Moraes and T.M. Ross.** Univ. of Georgia.

P1004 **65.05** Robust antibody responses in children after Pfizer vaccination. **S.L. Gupta, E.J. Anderson, C.A. Rostad, M.S. Suthar and J. Wrammert.** Emory Univ. Sch. of Med.

P1005 **65.06** Clonal structure and epitope specificity of Ad5-nCoV vaccine-induced T cell response to SARS-CoV-2. **S. Sheetikov, A.A. Khmelevskaya, K.V. Zornikova, I.V. Zvyagin, A.S. Shomuradova, A. Afanasiev, V. Dzutseva and G.A. Efimov.** Nat. Med. Res. Ctr. for Hematology, Russia, Lomonosov Moscow State Univ., Russia, Shemyakin and Ovchinnikov Inst. of Bioorganic Chem., Russia and NOP Petrovax Pharm LLC, Russia.

P1006 **65.07** Exposure to SARS-CoV-2 spike protein induces antigen specific IgE and basophil activation. **T. Zhang, N. Magazine, M.C. McGee and W. Huang.** Louisiana State Univ. Sch. of Vet. Med.

P1007 **65.08** Alternative lineage B cells utilizing fatty acid oxidation predict response to third dose COVID vaccination in solid organ transplant recipients. **E.A. Thompson, K. Roznik, A. Karaba, K. Cascino, S. Dhakal, L. Sena, L. Biavatti, A.T. Abedon, J.L. Alejo, S.L. Klein, D. Warren, C.X. Quin, J. Mitchel, J. Garonzik-Wang, R. Leone, B. Boyarsky, D.L. Segev, A.A. R. Tobian, W. Werbel, A.L. Cox and J.R. Bailey.** Johns Hopkins Univ. Sch. of Med. and Johns Hopkins Bloomberg Sch. of Public Hlth.

P1008 **65.09** Antibody-dependent enhancement of SARS-CoV-2 spike binding to human ACE2 receptor by virus neutralizing antibodies. **N.J. Magazine, Y. Guan, L. Yu, M. Carossino, T. Zhang, M.C. McGee and W. Huang.** Louisiana State Univ. Sch. of Vet. Med., Antibody Biopharm Inc. and Guangzhou Eighth People's Hosp., Guangzhou Med. Univ., China.

P1009 **65.10** B cell receptor repertoire dynamics and convergent evolution following SARS-CoV-2 vaccination. **E.R. Fraley, S. Khanal, C. LeMaster, S. Pierce, T. Pastinen and T. Bradley.** Children's Mercy Hosp.

P1010 **65.11** Pan-coronavirus neutralizing S2 human monoclonal antibodies and utility of direct respiratory administration as combination therapy with S1 antibodies against SARS-CoV-2. **J. Kobie, J-G. Park, S. Sarkar, M. Basu, A. Loos, J. Woo, C. Ye, V. Truong, R. Bowen, M.R. Walter, L. Martinez-Sobrido and M. Piepenbrink.** Univ. of Alabama at Birmingham, Texas Biomed. Res. Inst., Aridis Pharmaceuticals and Colorado State Univ.

P1011 **65.12** Hybrid immunity and vaccine breakthrough lead to robust humoral response and antibodies that effectively neutralize SARS-CoV-2 variants. **T.A. Bates, S.K. McBride, H.C. Leier, Z.L. Lyski, W.B. Messer, M.E. Curlin and F.G. Tafesse.** Oregon Hlth. & Sci. Univ. and Case Western Reserve Univ. Sch. of Med.

P1012 **65.13** Robust and prototypical immune responses towards COVID-19 BNT162b2 vaccines in indigenous people. **W. Zhang, L. Kedzierski, B.Y. Chua, A.K. Wheatley, L. Rowntree, L. Allen, J. Petersen, P. Chaurasia, R. Mettelman, A. Miller, P.G. Thomas, J. Rossjohn, K. Subbarao, S.J. Kent, J. Nelson, J. Davies, T.H.O. Nguyen and K. Kedzierska.** Univ. of Melbourne, Australia, Fac. of Vet. and Agr. Sci., Univ. of Melbourne, Australia, Global Station for Zoonosis Control, Global Inst. for Collaborative Res. and Educ., Hokkaido Univ., Japan, ARC Ctr. of Excellence in Convergent Bio-Nano Sci. and Technol., Univ. of Melbourne, Australia, Infection and Immunity Program, Biomedicine Discovery Inst., Monash Univ., Australia, Australian Research Council Centre of Excellence for Advanced Molec. Imaging, Monash University, Clayton, Victoria 3800, St. Jude Children's Res. Hosp., Indigenous Engagement, CQUniv., Australia, St. Jude Children's Res. Hosp., Inst. of Infection and Immunity, Cardiff Univ. Sch. of Med., United Kingdom, Melbourne Sexual Hlth. Ctr., Alfred Hlth., Central Clin. Sch., Monash Univ. Australia and Menzies Sch. of Hlth. Res., Australia.

P1013 **65.14** OX40 boosts and sustains humoral and cellular immune responses to SARS-CoV2 spike protein and RNA vaccinations. **R.A. Duhen, M. Beymer, S. Jensen, S. Abbina, S. Abraham, A. Thomas, H-M. Hu, B.A. Fox and A.D. Weinberg.** Earle A. Chiles Res. Inst. and Precision Nanosystems Inc., Canada.

P1014 **65.15** Differences between autoantibodies induced by SARS-CoV-2 infection and Pfizer-BioNTech SARS-CoV-2 vaccination. **E.S. Geanes and T. Bradley.** Children's Mercy Hosp.

P1015 **65.16** Durability of B and T cell responses against a spike protein of SARS-CoV2 elicited by mRNA vaccines. **L.T. Hamilton, Y. Koguchi, T. Christie, T. Shimada, N. Iwamoto, B. Fox, W.L. Redmond and B.D. Piening.** Providence Portland Med. Ctr. and Shimadzu Sci. Instruments.

P1016 **65.17** Persistence of immune memory to SARS-CoV-2 vaccine in lymphoid tissue. **J. Davis-Porada, K. Rybkina, M.M. L. Poon, D.P. Caron, I.J. Jensen, M. Kubota, N. Lam, Y. Lee, R. Matsumoto, R. Morrison-Colvin, P.A. Szabo, B.B. Ural, S.B. Wells and D.L. Farber.** Columbia Univ. Med. Ctr.

P1017 **65.18** IL-4R blockade prevents a long term memory B cell response to COVID-19 vaccination. **J.D. Mountz, D. M. Ponder, S. Liu, C-W. Sun, K. Sullivan, F.K. Alduraibi and H-C. Hsu.** Univ. of Alabama at Birmingham.

P1018 **65.19** Effect of methotrexate on response to Covid-19 mRNA vaccines in patients with autoimmune inflammatory rheumatic diseases: a longitudinal study. **V. Rus, V. Nguyen, M. Shriver, M. Degrezia, E. Alhassan, M. Passetti, A. Thomas and H.G. Rus.** VA Maryland Hlth. Care Sys. and Univ. of Maryland Sch. of Med.

P1019 **65.20** Evaluation of the long-term anti-spike immune response following a novel coronavirus vaccine (CORVax): electroporation of SARS-CoV-2 spike plasmid DNA plus IL12 plasmid DNA. **S.M. Jensen, M. Afentoulis, K. Wegmann, D.A. Canton, C.G. Twitty and B.A. Fox.** Earle A Chiles Res. Inst., Providence Cancer Inst., OncoSec Med. and Onchilles Pharma.

P1020 **65.21** Efficacy of pediatric SARS-CoV-2 vaccines against high-dose B.1.617.2 challenge one year after vaccination of infant rhesus macaques. **E.C. Milligan, K. Olstad, P. Cano, J. Munt, L. Lindesmith, T. Scobey, M. Mallory, D. Edwards, A. Carfi, K. Corbett, B.S. Graham, M.A. Tomai, S.S. Iyer, R. Baric, R. Reader, K. Van Rompay, D.P. Dittmer, S. Permar and K. De Paris.** Univ. of North Carolina at Chapel Hill, Univ. of California, Davis, Moderna, Inc., NIAID, NIH, 3M Corporate Res. Materials Lab and Weill Cornell Med. Col.

P1021 **65.22** Respiratory humoral and cellular immune responses following COVID-19 mRNA vaccination. **J. Tang, C. Zeng, T.M. Cox, C. Li, Y.M. Son, I.S. Cheon, S. Behl, T.J. Justin, R. Chakaraborty, A.J. Johnson, D.N. Shiavo, J.P. Utz, J.S. Reisenauer, D.E. Midthun, J.J. Mullon, E.S. Edell, R.S. Vassallo, R. Kern, S-I. Liu and J. Sun.** Mayo Clin., The Ohio State Univ., Univ. of Virginia and Fred Hutchinson Cancer Res. Ctr.

P1022 **65.23** Development of a cell-based ELISA assay to assess memory IgG produced in vitro by B cells specific for spike protein of SARS-CoV-2. **G. Scapigliati, G. Zarletti, M. Tiberi, V. De Molfetta, E. Toppi and P. Bossú.** Tuscia Univ. of Viterbo, Italy and IRCCS Santa Lucia Fndn., Italy.

P1023 **65.24** Bead-based multiplex assay panels for quantifying COVID-19 vaccine-induced serological response, neutralizing antibodies and cytokines. **A. Zhao, J. Zhao, E. Webster, C. Wheat, B. Sun and J. Ni.** BioLegend, Inc.

P1024 **65.25** Application of M-cell targeting ligand Co4B enhances Ag-specific mucosal and systemic immunity and protection against MERS-CoV infection after intranasal immunization. **Y-S. Jang, Y.L. Yang, J. Kim and B-H. Cho.** Jeonbuk Natl. Univ., South Korea.

P1025 **65.26** Detection of SARS-CoV-2 specific antibodies in breastfeeding infant stool following mother's COVID-19 vaccination. **L.S. Stafford, V. Valcarce, J. Neu, M. Mueller, A. Louis-Jacques, V. Vicuna, N. Li, I. Kosik, J.W. Yewdell, M. Atkinson, N. Cacho, L. Parker, E. Cato, M. Henry, T. Gowen and J. Larkin.** Univ. of Florida, Univ. of Florida Col. of Med., Med. Univ. of South Carolina and NIH.

P1026 **65.27** Longitudinal measurement of human immune responses to SARS-CoV-2 vaccines through serum immunoglobulins. **K. Heatherton, C. Carey, W. Hawkins and S. Lacey.** Precision for Med.

P1027 **65.28** An inactivated SARS-CoV-2 vaccine causes enhanced type 2 inflammation in mice during coronavirus challenge. **J. Dillard, S. Taft-Benz, A.C. Knight, E.J. Anderson, S. Sarkar, J.F. Loome, K.D. Pressey, V.K. Baxter and M.T. Heise.** Univ. of North Carolina at Chapel Hill and Southern Res.

P1028 **65.29** SARS-CoV-2 $spike_{395\text{-}404}$ is identified as a murine $CD8^+$ T cell epitope in the receptor-binding domain of the SARS-CoV-2 spike protein. **J. Yang, E. Kim and H. Poo.** Korea Res. Inst. of Bioscience and Biotechnology, South Korea.

P1029 **65.30** Differential T cell immunity to SARS-CoV-2 in mRNA-1273 and BNT162b2 vaccinated individuals. **K. Katsis, M.B. Leick, R.C. Larson, T.R. Berger, E.L. Elder, M.V. Maus and K.M.E. Gallagher.** Massachusetts Gen. Hosp.

P1030 **65.31** Resilient T cell responses to B.1.1.529 (omicron) SARS-CoV-2 variant. **J. Nikolich-Zugich, M. Jergovic, C.P. Coplen and J. Uhrlaub.** Univ. of Arizona.

P1031 **65.32** Cationic liposomes containing a TLR4 agonist promote the efficient development of cellular immunity against SARS-CoV-2 spike protein in a subunit vaccine. **S.K. Lathrop, H.H. Amin, C.J. Davison, H.A. Partlow, E.K. Lorentz, D.J. Burkhart and J.T. Evans.** Univ. of Montana.

66. VACCINATION AND IMMUNOTHERAPY

Poster Session

SAT. 2:30 PM—EXHIBIT HALL

P1032 **66.01** Proteogenomic characterization of head and neck squamous cell cancer immunopeptidomes to detect non canonical protein targets for cancer immunotherapy. **B.A. Fox, N. Iwamoto, T. Moudgil, A.K. Dowdell, J. Fass, J. Welle, R. Rattray, J. Cha, T.L. Hilton, C.C. Paustian, R.B. Bell, M. Laws, G. McDonnell, C.B. Bifulco, S.M. Jensen, H-M. Hu, E. Tran, W.J. Urba, R.S. Leidner, Y. Koguchi, B.D. Piening and T. Shimada.** Earle A. Chiles Res. Inst., Providence Cancer Inst., Shimadzu Sci. Instruments and UbiVac.

P1033 **66.02** Potent, safe anti tumour responses observed in a cutaneous tumour model after peritumoral administration of a triple immunomodulatory antibody combination. **Q. Wright, J.L. Gonzalez-Cruz, I.H. Frazer and G.R. Leggatt.** Univ. of Queensland Diamantina Inst., Australia.

P1034 **66.03** RNA origami as a vaccine assembly platform to promote CD8 T cell mediated anti-tumor immunity. **T. Yip, X. Qi, J. Kollings, H. Yan and Y. Chang.** Arizona State Univ.

P1035 **66.04** Characterizing oncolytic potential and safety of a G-protein pseudotyped vesiculovirus in sarcoma. **C.R. Dumbauld, M. Seetharam, B.M. Nagalo and M. Borad.** Mayo Clin. Grad. Sch. of Biomed. Sci., Mayo Clin. and Univ. of Arkansas for Med. Sci.

P1036 **66.05** Novel RNA-based cancer vaccine for AML immunotherapy. **H. Liu, G.H. Tham, X. Ren and H. Yang.** Natl. Univ. of Singapore, Singapore.

P1037 **66.06** Optimizing a multi cancer antigen plasmid-based vaccine using an in situ prediction model. **D.L. Cecil, N. Drovetto, I. Doan, E. Rodmaker, L. Corulli, S. Sei and M.L. Disis.** Univ. of Washington and Natl. Cancer Inst.

P1038 **66.07** CD45RA expressing lymphocytes inhibit the outgrowth of Epstein-Barr virus specific T-cells from patients with EBV+ lymphoma. **S. Sharma, M. Woods, N. Mehta and C. Rooney.** Baylor Col. of Med.

P1039 **66.08** Diversity outbred and collaborative cross mouse models identify and validate host genetic loci associated with immune checkpoint inhibitor response. **J. Hackett, N. Movaheddin, J.E. Glassbrook, M. Bross, M. Muñiz, G. Dyson and H. Gibson.** Karmanos Cancer Inst. and Wayne State Univ. Sch. of Med.

P1040 **66.09** Proteomic analysis of plasma exosomes as biomarkers of response to MVP-S based immunotherapy. **P. Smith, E. Teh, K. Chisholm, S. Penny, D. Pinto, K. Patterson, B. Dirk, M. Bydoun, S. Fiset, Y. Bramhecha, H. Hirsch, O. Hrytsenko and J. Graff.** IMV Inc., Canada and Human Hlth. Therapeutics, Natl. Research Council Canada, Canada.

P1041 **66.10** Sex differences in the pre-treatment cytokine signatures associated with response and survival in B cell lymphoma patients treated with anti-CD19 CAR T-cell therapy. **N. Gupta, M.S. Patel, A. Jalota, A. Mian, P. Bazeley, S.A. Hunter and B.T. Hill.** Cleveland Clin.

P1042 **66.11** Pre-existing biochemical entities predict severity of cytokine release syndrome in B-cell lymphoma patients treated with CD19-directed CAR T-cells. **N. Gupta, A. Jalota, C.E. Hershberger, M.S. Patel, A. Mian, A. Faruqi, G. Khademi, D.M. Rotroff and B.T. Hill.** Cleveland Clin.

P1043 **66.12** Promoted checkpoint inhibitor-based tumor immunotherapy by small-molecule prodrug hydrogelator. **D. Xu and F. Wan.** Johns Hopkins Bloomberg Sch. of Public Hlth.

P1044 **66.13** Oncolytic viral therapy mediates its effectiveness by inducing and enhancing CD4 cytotoxic T-cells. **J.M. Grimes, C. Murchison, J.S. New, D. Crossman, J.M. Markert and J.W. Leavenworth.** Univ. of Alabama at Birmingham.

P1045 **66.14** Analysis of biomarkers in melanoma patients receiving ICI treatments: pre- vs post in responders and progressors. **P.M. Daftarian, N. Nadine, O. Hushur, R. Dronca, N. Dutta and K.L. Knutson.** JSR Life Sci., Mayo Clin. and MBLI.

P1046 **66.15** Harnessing the unique immune biology of cytomegalovirus for cancer immunotherapy. **L.R.F. Iyer, M.C. Verweij, S. Nair, D. Morrow, M. Mansouri, T. Beechwood, C. Meyer, D. Chakravarty, L. Uebelhoer, A. Ventura, E.J. Lauron, A. Selseth, M. Axthelm, E.F. Lind, J. Saultz, J. Douglas, A. Korman, N. Bhardwaj, A.K. Tewari, S.G. Hansen, D. Malouli, L.J. Picker and K. Fruh.** Oregon Hlth. & Sci. Univ., Icahn Sch. of Med., Mount Sinai and Vir Biotechnology, Inc.

P1047 **66.16** Cancer immunotherapy with oncolytic enveloped self-amplifying mRNA CARG-2020 that modulates IL-12, IL-17 and PD-L1 pathways. **K. Wang.** UConn Hlth.

P1048 **66.17** The role of the short chain fatty acid butyrate on DC maturation, T-cell function and checkpoint expression. **P.L. Smith, K. Piadel and A.G. Dalgleish.** St Georges Univ. of London, United Kingdom.

P1049 **66.18** Immunogenicity and efficacy of a multiple antigen-presenting system COVID-19 vaccine in non-human primates. **G. Besin, B. Cieslewicz, D. Makrinos, R. Haridas, H. Burke, T. Stevenson and R. Malley.** Affinivax and Boston Children's Hosp., Harvard Med. Sch.

P1050 **66.19** Effect of standard of care treatment on tumor membrane vesicle vaccine for triple-negative breast cancer. **L. Monterroza, L. Munoz, R. Bommireddy, S. samaranayake, C. Pack and P. Selvaraj.** Emory Univ., Emory Univ. Sch. of Med. and Metaclipse Therapeutics Corp.

SATURDAY AFTERNOON

MAY 7

67. SOCIETY FOR NATURAL IMMUNITY (SNI) SYMPOSIUM: NK CELLS IN INFECTION—NEW DEVELOPMENTS

Guest Session

SAT. 3:45 PM—ROOM A107–109

CHAIRS: *A. DIEFENBACH, A.M. BEAULIEU*

3:45 NK cell dynamics during CMV infection in primates. **C.E. Dunbar.** NHLBI, NIH.

4:15 Missing self responses of NK cells against SARS-CoV-2. **Q. Hammer.** Karolinska Inst., Sweden.

4:45 Epigenetic regulation of NK cell development and function in mice. **A.M. Beaulieu.** Rutgers New Jersey Med. Sch.

5:15 Regulation of NK cell responses during COVID-19. **A. Diefenbach.** Charité, Universitätsmedizin Berlin, Germany.

68. AUTOANTIGEN IDENTIFICATION, AUTOANTIGEN SPECIFICITY, AND CENTRAL TOLERANCE

Block Symposium

SAT. 3:45 PM—ROOM B110–112

CHAIRS: *M. BETTINI, K. HOGQUIST*

3:45 The monocyte cell surface as a novel site of autoantigen generation in rheumatoid arthritis. **M.A Thomas, P. Naik, H. Wang, Y. Jang, T.P. Johnson, A.M. Curran, J.D. Crawford, S. Jahanbani, W.H. Robinson, C.H. Na and E. Darrah.** Johns Hopkins Univ. Sch. of Med., Stanford Univ. and VA Palo Alto Hlth. Care System. **(104.01)**

4:00 Autoantigen specific T-cell receptor induces organ-specific autoimmunity by escaping T cell negative selection. **M. Yin, J.A. Smith, M. Chou, J. Chan, Y. Hu, C.A. Lowell, D.B. Gould, M.S. Anderson and A.L DeFranco.** Univ. of California, San Francisco. **(104.02)**

4:15 $CD4^+$ T cells targeting a hybrid insulin: chromogranin A self-antigen are necessary and sufficient for autoimmune diabetes initiation. **A.J. Dwyer, J.S. Mitchell, J.A. Spanier, N. Silva, M. Alkhatib, C.G. Tucker, M. Silva Morales and B.T. Fife.** Univ. of Minnesota. **(104.03)**

4:30 Insulin specific TCR repertoire analysis reveals functional diversity of Treg TCRs. **Y. Jing, Y. Kong, D. Trout and M.L. Bettini.** Baylor Col. of Med. and Univ. of Utah. **(104.04)**

4:45 Profiling transcriptomes, TCR repertoires, and antigenic specificities of islet-infiltrating T cells in non-obese diabetic mice. **P. Zdinak, S.J. Grebinoski, J. Torrey, S. Rathod, R. Ranjan, L. Hicks and A.V. Joglekar.** Univ. of Pittsburgh Sch. of Med. **(104.05)**

5:00 Control of medullary thymic epithelial cell development and central tolerance by a zinc finger transcription factor. **J.H. Sin, J. Sucharov Costa and M. Waterfield.** Univ. of California, San Francisco. **(104.06)**

5:15 Type III interferon enhances thymic B cell licensing. **R.J Martinez, E. Breed, Y. Worota, K. Ashby, L. Qian and K.A. Hogquist.** Univ. of Minnesota, Univ. of Pennsylvania Hlth. System and Macalester Col. **(104.07)**

5:30 A specific 25-mer peptide from the cysteine protease of *P. gingivalis* is the epitope of humoral immune response in rheumatoid arthritis. **G.J. Tsay, H-Y. Peng, T-Y. Xue, F-Y. Hsieh, Y-K. Chen, M-C. Yin, C-Y. Chao, S-Y. Tsai, C.P. Lin, P-H. Huang, K-J. Yeo, C-C. Huang, J-H. Chen, C-M. Huang, D-Y. Chen and J-L. Lan.** China Med. Univ., Taiwan and Asia Univ., Taiwan. **(104.08)**

69. B AND T CELL DEVELOPMENT

Block Symposium

SAT. 3:45 PM—ROOM B117–119

CHAIRS: *A. GRIFFITH, N. GUPTA*

3:45 Role of paracrine mTOR signaling in regulating thymus size and function. **S.A. Wedemeyer, N. Jones, S. Emtage and A. Griffith.** Univ. of Texas Hlth. Sci. Ctr., San Antonio. **(107.03)**

4:00 Thymic interferon impacts T cell selection. **K.M. Ashby, R.J. Martinez, O.C. Salgado and K.A. Hogquist.** Univ. of Minnesota. **(107.05)**

4:15 An unexpected role for IRF8 during human T cell development. **T.N. Taghon, K.L. Liang, M. Lavaert, J. Roels, S. Strubbe, N. Lambrechts, T. De Vos, L. Boehme, J. Van Hulle, N. Oatman, T. Putteman and I. Velghe.** Ghent Univ., Belgium, NIH and Stanford Univ. **(107.06)**

4:30 A lineage specific role for PD-1 in agonist selection in the thymus. **B.P. Caruso and A. Moran.** Oregon Hlth. & Sci. Univ. **(107.07)**

4:45 WITHDRAWN

5:00 Single-cell proteogenomics reveals that SLAM/SAP signaling regulates the development of innate-like $\gamma\delta$ T cell subsets with distinct TCR repertoires. **J.E. Boyson, E. Andretta, K.J. Hampel, N. Sidiropoulos, O. Dienz, D. Majumdar and S. Mistri.** Univ. of Vermont. **(107.10)**

5:15 Ezrin promotes antigen receptor diversity during B cell development by supporting immunoglobulin heavy chain variable gene recombination. **V. Aysola, C. Labib and N. Gupta.** Cleveland Clin. **(107.14)**

5:30 ABCB7 is required for B cell development, proliferation, and class switch recombination. **M.J. Lehrke, M.J. Shapiro, M. Rajcula, K. Theodore, H.S. Kim Lee and V.S. Shapiro.** Mayo Clin. **(107.15)**

70. MOLECULAR, METABOLIC, AND EPIGENETIC REGULATION OF INNATE IMMUNITY AND INFLAMMATION

Block Symposium

SAT. 3:45 PM—ROOM A105–106

CHAIRS: *C. KRAWCZYK, S. EWALD*

3:45 Costimulation of TLR8 responses by CXCL4 in human monocytes mediated by TBK1-IRF5 signaling and epigenomic remodeling. **C. Yang, M. Bachu, C. Brauner, R. Yuan, Y. Du, M.D. Ah Kioon1, G. Chesi, F.J. Barrat and L.B. Ivashkiv.** Hosp. for Special Surgery. **(111.01)**

4:02 Lipin-1 integrates lipid metabolism with macrophage function to promote inflammation resolution. **M.D. Woolard, C. Blackburn, R. Schilke and T. Bamgbose.** Louisiana State Univ. Hlth. Sci. Ctr., Shreveport and Univ. of Virginia Sch. of Med. **(111.06)**

4:19 Glucocorticoids suppress NLRP3 Inflammasome activation through transcriptional metabolic reprogramming of IRG-1/ACOD1 in macrophages. **D.O. Diaz-Jimenez, C.D. Bortner and J.A. Cidlowski.** NIEHS. **(111.32)**

4:36 Modulation of myeloid cell functions by long noncoding RNAs RN7SK and HCG11. **R.A. Naqvi, I. Ahmad, A.M. Valverde Estepa and A. Naqvi.** Univ. of Illinois, Chicago. **(111.18)**

4:53 Relationships between inflammation, coagulation, and oxidative stress in malaria-induced pregnancy compromise. **A.K. Andrew and J.M. Moore.** Univ. of Georgia and Univ. of Florida. **(111.26)**

5:10 Targeting TCA cycle metabolites by small molecule inhibitors ameliorate LPS induced immune tolerance in macrophages through epigenetic mechanisms. **A. Abhimanyu, M. Ladki, S. Carrero Longlax, D. Sheikh, T. Nishiguchi and A. Dinardo.** Baylor Col. of Med. **(111.15)**

5:27 Helminth TGF-β mimic increases leukocyte migration and activation while also enhancing cutaneous wound healing and tissue regeneration. **K.E. Lothstein, D.J. Smyth, R.M. Maizels and W.C. Gause.** Rutgers Univ. New Jersey Med. Sch. and Univ. of Glasgow, United Kingdom. **(111.11)**

71. OVERCOMING CURRENT ROADBLOCKS IN CAR T CELL THERAPY

Block Symposium

SAT. 3:45 PM—OREGON BALLROOM 201

CHAIR: *A.H.F. ANDERSEN*

3:45 Anti-CD123 chimeric antigen receptor natural killer cell therapy to treat acute myeloid leukemia. **M. Kizerwetter, H. Yang, R. Rahnama, C. Bonifant and J. Spangler.** Johns Hopkins Univ. **(122.01)**

4:00 Utilizing distinct CAR and TCR signaling to generate enhanced cellular immunotherapy. **N.R.J. Gascoigne, L. Wu, J. Brzostek, Q. Wei, P.D. Sakthi Vale, C.K. Koh, Y.L. Chua, J. Yap, T.Y.Y. Tan, J. Lai and P.A MacAry.** Natl. Univ. of Singapore, Singapore. **(122.02)**

4:15 D2C7 CAR: a novel CAR T cell that simultaneously targets wildtype EGFR and its mutant isoform EGFRvIII for treatment of glioma. **D.S. Wilkinson, K. Ryan, J. Wilson, V. Chandramohan, D. Landi, D. Bigner and P.E. Fecci.** Duke Univ. Med. Ctr. and Duke Univ. Sch. of Med. **(122.03)**

4:30 Engineering anti-CD229 CAR T cell selectivity for multiple myeloma. **J. Baker, S.V. Radhakrishnan, M. Olson, D. Atanackovic, T. Luetkens and E. Vander Mause.** Univ. of Maryland Sch. of Med., Med. Col. of Wisconsin, Univ. of Utah. and Marlene and Stewart Greenebaum Comprehensive Cancer Ctr. **(122.06)**

4:45 Identifying novel epigenetic modifiers that sensitize T cell malignancies to CD8+ T cell mediated cytotoxicity by high throughput drug screen. **X.G. Bradeen, A.J. Christians, B. Haverkos and E. Davila.** Univ. of Colorado Anschutz Med. Campus. **(122.07)**

5:00 T-cells resist CD5 CAR mediated fratricide by continuously degrading CD5 protein. **R. Ma, D. Popat, A. Chaumette, A. Carisey, M.K. Brenner and M. Mamonkin.** Baylor Col. of Med. and Texas Children's Hospital. **(122.08)**

5:15 CD19-CAR T cells develop exhaustion epigenetic programs during a clinical response. **C.C. Zebley, C. Brown, T. Mi, Y. Fan, S. Alli, S. Boi, G. Galletti, E. Lugli, D. Langfitt, J-Y. Metais, T. Lockey, M. Meagher, B. Triplett, A.C. Talleur, S. Gottschalk and B.A. Youngblood.** St. Jude Children's Res. Hosp. and Humanitas Clin. and Res. Ctr., Italy. **(122.04)**

5:30 *SUV39H1* disruption imparts functional persistence to CD28-costimulated human CAR T cells. **N. Jain, Z. Zhao, R. Koche, Y. Gozlan, D. Brocks, T. Raveh-Sadka, D. Wells, A. Dobrin, Y. Shi, M. Lopez, G. Gunset and M. Sadelain.** Mem. Sloan Kettering Cancer Ctr. and Immunai. **(122.05)**

72. AAI-BD BIOSCIENCES INVESTIGATOR AWARD PRESENTATION AND LECTURE

Award Lecture

Generously supported by BD Biosciences

SAT. 4:30 PM—PORTLAND BALLROOM 252–255

CHAIR: *G.A. KORETZKY*

The AAI-BD Biosciences Investigator Award recognizes an early-career investigator who has made outstanding contributions to the field of immunology.

Recipient:
A. Schietinger, Mem. Sloan Kettering Cancer Ctr.

4:30 **Dr. Gary Koretzky** and **Mr. Robert Balderas**, Vice President of Biological Sciences, BD Biosciences, will introduce the awardee and present the award immediately prior to the lecture.

4:35 T cell differentiation and fate choice in cancer and autoimmunity. **A. Schietinger.** Mem. Sloan Kettering Cancer Ctr.

73. DISTINGUISHED LECTURE ROBERT D. SCHREIBER

Distinguished Lecture

SAT. 6:00 PM—PORTLAND BALLROOM 252–255

CHAIR: *C.R. NAGLER*

6:00 Neoantigens as probes and targets of immune responses to cancer. **R.D. Schreiber.** Washington Univ. Sch. of Med. in St. Louis.

75. CAREERS IN BIOTECH: PANEL DISCUSSION AND NETWORKING

Career Development Session

Sponsored by the AAI Education Committee

SAT. 7:00 PM—ROOM A105–106

CHAIR: *H. KIYOMI KOMORI*

Many opportunities exist in industry for scientists with advanced degrees. There are positions in laboratory research, program management, business development, regulatory affairs, clinical trials oversight, medical liaison, and more. This panel features scientists employed in a variety of positions in industry discussing their career paths and the skills required for success in each. Following the panel discussion, enjoy casual conversation with the speakers and other scientists from industry at a networking reception.

PANELISTS:
- **R. Boismenu**, Independent Consultant
- **Y.T. Koh**, Eli Lilly and Co.
- **J. Kuo**, Arena Pharma/Pfizer
- **E.L. Stone**, GigaGen

SUNDAY MORNING

MAY 8

76. MAJOR SYMPOSIUM C: SEX DIFFERENCES IN THE IMMUNE RESPONSE

Major Symposium

SUN. 8:00 AM—PORTLAND BALLROOM 252–253

CHAIRS: *S.L. KLEIN, S.E. DUNN*

8:00 SeXX differences in immunity to influenza and SARS-CoV-2. **S.L. Klein.** Johns Hopkins Bloomberg Sch. of Pub. Hlth.

8:35 Sex differences in the effect of obesity on T helper 1 immunity. **S.E. Dunn.** Univ. of Toronto, Canada.

9:10 Sex hormones regulate allergic airway inflammation in asthma. **D.C. Newcomb.** Vanderbilt Univ. Med. Ctr.

9:45 Pregnancy plays a major role in dictating viral-induced immune responses. **J.R. Huh.** Harvard Med. Sch.

10:20 Lifelong sex differences in neutrophil phenotypes. **B.A. Benayoun.** Univ. of Southern California.

10:55 Sex-differences in obesity-induced meta-inflammation. **K. Singer.** Univ. of Michigan.

77. MAJOR SYMPOSIUM D: MAINTAINING TISSUE HOMEOSTASIS DURING INITIATION AND RESOLUTION OF INFLAMMATION

Major Symposium

SUN. 8:00 AM—PORTLAND BALLROOM 254–255

CHAIRS: *D.J. CAMPBELL, K.C. FAIRFAX*

8:00 Influence of bone marrow inflammation on tissue immunity. **K.C. Fairfax.** Univ. of Utah.

8:42 IL-17 signaling crosstalk during inflammation. **S.L. Gaffen.** Univ. of Pittsburgh.

9:24 Skin regulatory B cells: homing and function. **G.F. Debes.** Thomas Jefferson Univ.

10:06 Itch paradigms: neuroimmune regulation of somatosensation. **B.S. Kim.** Icahn Sch. of Med. at Mount Sinai.

10:48 Manipulating regulatory T cell activity in tissues to treat autoimmunity. **D.J. Campbell.** Benaroya Res. Inst.

78. NEXTGEN TRANSFORMATIVE IMMUNOLOGIC THERAPIES FOR HUMAN DISEASE

Committee-Sponsored Session

Sponsored by the AAI Clinical Immunology Committee

SUN. 8:00 AM—ROOM A107–109

CHAIRS: *J.H. ANOLIK, E.L. STONE*

8:00 The next generation of NK cell therapeutics to treat cancer. **J.S. Miller.** Univ. of Minnesota, Twin Cities.

8:30 Inducing and sustaining tumor-specific memory $CD8^+$ T cells. **S.K. Dougan.** Dana-Farber Cancer Inst.

9:00 Adoptive immunotherapy for MuSK subtype myasthenia gravis. **S. Basu.** Cabaletta Bio.

9:30 Treg modulation by IL-2 mutein therapy. **S.A. Long.** Benaroya Res. Inst.

79. NATIONAL INSTITUTE ON AGING (NIA), NIH SYMPOSIUM: ROLE OF THE IMMUNE SYSTEM IN NEUROINFLAMMATION AND NEURODEGENERATIVE DISEASES

Guest Session

SUN. 8:00 AM—OREGON BALLROOM 204

CHAIRS: *R. FULDNER, K.I. ANDREASSON*

8:00 Surprising immune activities at brain's borders. **J. Kipnis.** Washington Univ. Sch. of Med. in St. Louis.

8:30 Immune-metabolic mechanisms of cognitive decline in aging. **K.I. Andreasson.** Stanford Med.

9:00 Using brain regulatory T cells to prevent neurodegeneration. **A. Liston.** Cambridge Univ., United Kingdom.

9:30 Genetics of late-onset Alzheimer's disease: a microglia story. **E.M. Bradshaw.** Columbia Univ.

80. INFECTION AND DISEASE

Block Symposium

SUN. 8:00 AM—OREGON BALLROOM 201

CHAIRS: *M. CATALFAMO, B. MUNDY-BOSSE*

8:00 Genes associated with multiple organ dysfunction syndrome during severe pediatric influenza. **T. Novak, J.C. Crawford, C. Lange, G. Hahn and A.G. Randolph.** Boston Children's Hosp. and Harvard Med. Sch., St. Jude Children's Res. Hosp., Harvard Med. Sch. and Harvard Univ. **(161.01)**

8:15 Profiling the myeloid compartment of PBMC in active tuberculosis reveals substantial changes in $CD14^+$ cells and upregulation of CD16 in pro-inflammatory dendritic cells. **J.G. Burel, H. Hillman, N. Khan, A. Singhania, P. Dubelko, F. Soldevilla Casals, R. Tippalagama, A.D. deSilva, T.J. Scriba, R. Taplitz, G. Seumois, P. Vijayanand, C.C. Hedrick, A. Sette and B. Peters.** La Jolla Inst. for Immunology, Gen. Sir John Kotelawala Def. Univ., Univ. of Cape Town and City of Hope Natl. Med. Ctr. **(161.02)**

8:30 Inflammasomes and IL-1β: an innate immune axis in CD4+ T cells driving HIV infection and disease progression. **J.A. Tomalka, K. Ghneim, M. Costanzo, S. Ribeiro, N. Michael, M. Robb, M. Eller and R. Sekaly.** Emory Univ. Sch. of Med., Henry M. Jackson Fndn., Walter Reed Army Inst. of Res. and NIH. **(161.03)**

8:45 COVID-19 patients are characterized by increased levels of immune cell membrane-bound and soluble CD48. **H.T. Pahima, I. Zaffran, A. Jarjoui, E. Orenbuch-Harroch, P. Gaur, I. Puxeddu, C. Zinner, E. Ben-Chetrit, A. Tzankov and F. Levi-Schaffer.** Hebrew Univ. of Jerusalem, Shaare Zedek Med. Ctr., Hadassah Hebrew Univ. Med. Ctr., Univ. of Pisa, Univ. of Basel and Hebrew Univ. Sch. of Med. **(161.04)**

9:00 Circulating extracellular vesicles from patients with severe COVID-19 upregulate cathepsin B and activate STAT3 in normal human mesangial cells. **S.C. Glover, Y. Scindia, L.P. Liu, N. Dhaliwal, H. Williams, Y. Pride, A.H. Owings, T. Robinson and A.A. Alli.** Univ. of Mississippi Med. Ctr. and Univ. of Florida. **(161.05)**

9:15 *Bacillus anthracis* peptidoglycan alters human M2-like macrophage phenotype and efferocytic function in the presence of human serum. **J.S. Mytych, Z. Pan, C. Lopez-Davis, C. Lawrence, J. James, N. Popescu, M. Coggeshall and D. Farris.** Oklahoma Med. Res. Fndn. and Univ. of Oklahoma Hlth. Sci. Ctr. **(161.06)**

9:30 Targeted transcriptomic signature for monitoring anti-tuberculosis treatment response. **I.L. Manneh, F. Darboe, O. Owolabi, H.M. Dockrell and J.S. Sutherland.** MRC Unit The Gambia at London Sch. of Hygiene and Tropical Medicine (LSHTM), Gambia and London Sch. of Hygiene and Tropical Medicine (LSHTM) United Kingdom. **(161.07)**

9:45 SARS-CoV-2 induced oxidative stress promotes HMGB1 secretion to induce inflammation. **Y.M. Hosakote, K. Rayavara, L.B. Corri, S. McLellan, S.C. Weaver, A. Chopra and C-T.K. Tseng.** Univ. of Texas Med. Br., Galveston. **(161.08)**

81. MOLECULAR MECHANISMS OF INFLAMMATION

Block Symposium

SUN. 8:00 AM—ROOM B117–119

CHAIRS: *K. PATRICK, B. NAPIER*

8:00 Serine arginine splicing factor 7 is a critical regulator of innate immune activation in macrophages. **H.M. Scott, A.R. Wagner, K. West, R. Watson and K.L. Patrick.** Texas A&M Hlth. Sci. Ctr. **(163.29)**

8:15 Effector-mediated subversion of proteasome activator 28αβ enhances lysosomal pathogen targeting within cytokine-activated macrophages. **S.R. Shames.** Kansas State Univ. **(163.30)**

8:30 Mincle and TNF signaling crosstalk enhances type 1 and innate immune responses to *Orientia tsutsugamushi*. **J.R. Fisher, Y. Liang, G. Card, C.A. Gonzales and L. Soong.** Univ. of Texas Med. Br., Galveston. **(163.31)**

8:45 mTOR-associated mitochondrial energy metabolism limits *Mycobacterium* ESX-1-induced cytotoxicity. **A.J. Pagán, L.J. Lee, J. Edwards-Hicks, C.B. Moens, D.M. Tobin, E.L. Pearce, E. Busch-Nentwich and L. Ramakrishnan.** Univ. of Cambridge, United Kingdom, Fred Hutchinson Cancer Res. Ctr., Duke Univ. Sch. of Med., Johns Hopkins Univ. Sch. of Med. and Queen Mary Univ. of London, United Kingdom. **(163.32)**

9:00 Palmitic acid reprograms inflammatory responses to microbial ligands in macrophages, and mediates innate immune memory in vivo. **A.L. Seufert, J.W. Hickman, S.K. Traxler, R.M. Peterson, S.J. Lashley, R.J. Napier, N. Shulzhenko and B.A. Napier.** Portland State Univ., Oregon Hlth. and Sci. Univ. and Oregon State Univ. **(163.33)**

9:15 Defining complex mechanistic interactions and responses by macrophages during *Mycobacterium abscessus* infection. **H. Gilliland and A. Olive.** Michigan State Univ. **(163.34)**

9:30 NADase activity found in bacterial TIR proteins may aid in innate immune evasion. **C. Palm, R. Koudjra, T. Obiorah, G.A. Snyder, M. Snyder and E. Harberts.** Towson Univ. and Univ. of Maryland Sch. of Med. **(163.35)**

9:45 P66 is a bacterial "don't eat me signal" that mimics mammalian CD47 and facilitates immune evasion by *Borrelia burgdorferi*. **M.C. Tal, P. Hansen, N. Ramadoss, R. Volk, B. Zaro and I.L. Weissman.** Stanford Univ. Sch. of Med., Massachusetts Inst. of Technol and Univ. of California, San Francisco. **(163.36)**

82. T CELL EFFECTOR GENERATION AND FUNCTION

Block Symposium

SUN. 8:00 AM—ROOM C123–124

CHAIRS: *T. EGAWA, S. HAMILTON*

8:00 Single-cell TCR and mRNA sequencing of antigen-specific T cells reveal spatial trajectories from single time points with HLA and VDJ bias. **A. Halling Folkmar Andersen, M. Høgsbjerg Schleimann, M. Rosas-Umbert, R. Olesen, J.D. Gunst, M. Krogsgaard and M. Tolstrup.** Aarhus Univ., Denmark, Aarhus Univ. Hosp., Denmark and New York Univ. Langone Med. Ctr. **(169.01)**

8:20 The SWI/SNF canonical BAF complex and c-Myc cooperate to promote early fate decisions in $CD8^+$ T cells. **A. Guo, H. Huang, Z. Zhu, M.J. Chen, H. Shi, P. Sharma, S. Liedmann, D. Haydar, M. Yang, H. Beere, G. Krenciute, C.W.M. Roberts, H. Chi and D.R. Green.** St. Jude Children's Res. Hosp. **(169.02)**

8:40 Characterization of the cross-reactive T cell repertoire in the context of heterosubtypic influenza A virus infection. **J.A. Gaevert, S. Duan and P.G. Thomas.** St. Jude Children's Res. Hosp. **(169.04)**

9:00 Expansion and maintenance of long-lived effector CD8 T cells is modulated by inflammation. **E.D. Lucas, M. Huggins, C. Thefaine, M. Pierson and S. Hamilton.** Univ. of Minnesota. **(169.06)**

9:20 BCL6-dependent TCF-1+ progenitor cells maintain effector and helper CD4 T cell responses to persistent antigen. **Y. Xia, K. Sandor, J.A. Pai, B. Daniel, S. Raju, R. Wu, S. Hsiung, Y. Qi, T. Yangdon, M. Okamoto, R.D. Schreiber, K.M. Murphy, A. Satpathy and T. Egawa.** Washington Univ. Sch. of Med. in St. Louis and Stanford Univ. Sch. of Med. **(169.08)**

9:40 A fluorescent reporter model to study the role of T_{DC} during infection and cancer. **M. Kuka, A. Fiore, E. Sala, F. Oberrauch, P. Provero, M. Riba, C. Cristofani, M. Iannacone and M. Kuka.** Univ. Vita Salute San Raffaele, Italy and IRCCS San Raffaele Scientific Inst., Italy. **(169.09)**

83. MUCOSAL INNATE IMMUNE CELLS

Block Symposium

SUN. 8:00 AM—ROOM A105–106

CHAIRS: *A. REBOLDI, P. PORRETT*

8:00 Select mucosa-associated intestinal commensal bacteria promote gut barrier repair by inducing IL-1b production. **W-J. Wu, M. Kim, L-C Chang, A. Assie, F.B. Saldana-Morales, D.F. Zegarra Ruiz, K. Norwood, B. Samuel and G.E. Diehl.** Mem. Sloan Kettering Cancer Ctr., Baylor Col. of Med. and Pusan Natl. Univ. **(171.01)**

8:15 Crosstalk between skin homing innate T cells and epithelial cells via cholesterol byproduct messengers is required for tissue immunity. **M. Frascoli, E. Ferraj, B. Miu, K. Esposito, N. Spidale, J. Malin, J. Cowan, A. Bhandoola, J. Kang and A. Reboldi.** Univ. of Massachusetts Med. Sch. and NCI, NIH. **(171.02)**

8:30 The transcription factor LRF promotes integrin β7 expression by and gut homing of CD8αα intraepithelial lymphocyte precursors. **J. Nie, A. Bohrer, L. Chopp, T. Chen, M. Balmaceno-Criss, T. Ciucci, Q. Xiao, M. Kelly, D. McGavern, Y. Belkaid and R. Bosselut.** NCI, NIH, NIAID, NIH, Univ. of Pennsylvania Med. Sch., Univ. of Rochester Med. Ctr. and NINDS, NIH. **(171.04)**

8:45 Epithelial HNF4A shapes the intraepithelial lymphocyte compartment via direct regulation of immune signaling molecules. **X. Lei, N. Ketelut-Carneiro, L. Galia, R. Wilson, T. Vierbuchen, Y. Chen, D. Ward and K.A. Fitzgerald.** Univ. of Massachusetts Chan Med. Sch. **(171.03)**

9:00 Small intestine epithelial CD4 cytotoxic T lymphocytes provide innate-like protection against enteric pathogens without risk of immunopathology. **A. Chen, N. Thiault, H. Iwaya and H. Cheroutre.** La Jolla Inst. for Immunology. **(171.05)**

9:15 Aberrant survival of uterine natural killer subsets in uterus transplant recipients. **P. Porrett, M.V. Gonzalez, J. Garifallou, E.D. Wright, A.C.K. Lucander, M.J. Bell, K. Tyson, J. Smiler, F. Mafra, R. Pellegrino Da Silva, S. Johnston, B. Naziruddin, G. Testa, L. Johannesson, J. George, A. Freud and K. O'Neill.** Univ. of Alabama at Birmingham, Univ. of Pennsylvania, Children's Hosp. of Philadelphia, Univ. of Pennsylvania Perelman Sch. of Med., Baylor Univ. Med. Sch. and Ohio State Univ. Col. of Med. **(171.06)**

9:30 ILC3 expansion in acute myeloid leukemia. **T.T.T. Dinh, M.R. Lordo, N. Shilo, E. Altynova, P. Kronen, M. Broughton, V. Sellers, P. Collins, A.G. Freud and B.L. Mundy-Bosse.** Ohio State Univ. Col. of Med. and Ohio State Univ. Comprehensive Cancer Ctr. **(171.07)**

9:45 WITHDRAWN

84. BIG DATA: THE KEY TO UNLOCKING IMMUNE-MEDIATED MECHANISMS OF TUMOR PROGRESSION AND THERAPY RESPONSE

Block Symposium

SUN. 8:00 AM—ROOM B113–116

CHAIRS: *M. PHILIP, S. DOLATSHAHI*

8:00 Single-cell myeloid diversity in human fallopian tube and its implications for early high-grade serous ovarian cancer. **J. Brand, M. Haro, F. Abbasi, X. Lin, M. Siedhoff, A. Li, B. Rimel, F. Medeiros, K. Lawrenson and H. Dinh.** Univ. of Wisconsin, Madison and Cedars Sinai Med. Ctr. **(179.03)**

8:15 Multi-modal immune profiling of mucinous ovarian carcinoma: analysis from the Ovarian Tumor Tissue Analysis/Multidisciplinary Ovarian Cancer Outcomes Group consortia. **N.S. Meagher, P.T. Hamilton, M.S. Anglesio, H.R. Harris, G.E. Konecny, J.M. Schildkraut, A. Talhouk, Ovarian Tumor Tissue Analysis Consortium, Australian Pancreatic Genome Initiative, M.L. Friedlander, C.L. Pearce, M.C. Pike, M. Köbel, J.A. Doherty, E.L. Goode, B.H. Nelson, A. DeFazio and S.J. Ramus.** Univ. of New South Wales, Australia, British Columbia Cancer Res. Ctr., Canada, Univ. of British Columbia, Canada, Fred Hutchinson Cancer Res. Ctr., Univ. of California, Los Angeles, Emory Univ., Garvan Inst. of Med. Res., Australia, Royal Hosp. for Women, Australia, Univ. of Michigan, Mem. Sloan Kettering Cancer Ctr., Univ. of Calgary, Canada, Univ. of Utah, Mayo Clin., Rochester, Univ. of Sydney, Australia and Westmead Hosp., Australia. **(179.04)**

8:30 Analysis of chemokine network in primary human glioblastoma. **M. Lachota, K. Zielniok, A. Gozdz, P. Szpak, I. Kalaszczynska and R. Zagozdzon.** Med. Univ. of Warsaw, Poland and Maria Sklodowska-Curie Natl. Res. Inst. of Oncology, Poland. **(179.06)**

8:45 Analysis of chemokine network in primary human glioblastoma: transcriptomic and epigenetic profiling of tumor-associated monocyte function. **C.F. Contreras, S. Kaczanowska and R.N. Kaplan.** NCI, NIH. **(179.07)**

9:00 Defining myeloid plasticity and heterogeneity in immunotherapy response. **H. Dinh, A. Golfinos, W. Wang, A. Mergaert and P. Lambert.** Univ. of Wisconsin, Madison. **(179.08)**

9:15 Multiplex microscopy reveals unique spatiotemporal effects of cancer immunotherapies. **V.I. Maltez, K.T. Byrne and R.N. Germain.** NIAID, NIH and Abramson Cancer Ctr., Univ. of Pennsylvania Perelman Sch. of Med. **(179.09)**

9:30 Multimodal single-cell analysis of human TILs across multiple tumor types reveals heterogeneity and potential opportunities for personalized immunotherapy. **W.L. Redmond, Y. Koguchi, W.L. Miller, T. Christie, J. Kaufmann, L. Seestaller-Wehr, N. Yanamandra, S. Griffin and J. Smothers.** Earle A. Chiles Res. Inst., Codagenix and GlaxoSmithKline. **(179.14)**

9:45 Identification of immunogenic peptide neoantigens expressed in sarcomas and their therapeutic potential. **A.L. Sedlacek, D. Osei-Hwedieh, A. Agyekum-Yamoah, L. Mena, S. Iyer, K. Weiss and R.J. Binder.** Univ. of Pittsburgh, Univ. of Pittsburgh Sch. of Med. and Univ. of Pittsburgh Med. Ctr. **(179.12)**

85. B CELL AND T CELL HELPER RESPONSES DURING VIRAL INFECTIONS

Block Symposium

SUN. 8:00 AM—OREGON BALLROOM 202

CHAIRS: *A. IWASAKI, H. BORGES DA SILVA*

8:00 Establishment of influenza-specific lung tissue-resident helper memory $CD4^+$ T cells relies on expression the eATP sensor P2RX7. **H. Borges da Silva, I. Santiago-Carvalho, B. de Gois Macedo, T. Vardam-Kaur and S. van Dijk.** Mayo Clin. **(182.01)**

8:15 Requirement for robust T and B cell responses for immune protection against Powassan virus in virus-like particle vaccination. **E. Taylor Stone, M. Hassert, E. Geerling, C. Wagner, J. Brien, G. Ebel, A. Hirsch, C. German, J. Smith and A.K. Pinto.** St. Louis Univ. Sch. of Med., Colorado State Univ. and Oregon Hlth. and Sci. Univ. **(126.43)**

8:30 T cell-intrinsic IL-17RA signaling in the spleen supports the establishment of chronic gammaherpesvirus infection. **C.N. Jondle and V. Tarakanova.** Med. Col. of Wisconsin. **(182.11)**

8:45 Glycan-specific B-1 cells mediate blockade of endogenous retroviruses emergence through recognition of conserved glycan epitopes. **Y. Yang, R. Treger, J. Hernandez-Bird and A. Iwasaki.** Yale Sch. of Med. and Howard Hughes Med. Inst. **(126.31)**

9:00 B cell-derived acetylcholine controls local inflammation and replication of influenza virus during respiratory tract infections. **A. Cembellin Prieto, K. Murray, C. Reardon and N. Baumgarth.** Univ. of California, Davis. **(126.29)**

9:15 Distinct antibody profiles against Ebola virus track with the development of post-Ebola syndrome. **J.V. Velazquez, N.G. Bond, J.S. Schieffelin and B.M. Gunn.** Washington State Univ. and Tulane Univ. Sch. of Med. **(126.30)**

9:30 Influenza A virus-specific maternal antibodies impair vaccine-induced antibody responses and protection in male to a greater extent than female offspring. **A.D. Campbell, P.S. Creisher, J.L. Perry, K. Roznik, M.L. Sherer, I. Burd and S.L. Klein.** Johns Hopkins Bloomberg Sch. of Publ. Hlth. and Johns Hopkins Univ. Sch. of Med. **(126.28)**

9:45 B cell convergence to distinct broadly reactive epitopes revealed by chimeric hemagglutinin vaccination. **J. Guthmiller, L. Li, L.Y-L. Lan, C. Henry, C. Stamper, A. Freyn, H. Utset, J. Han, P. Palese, L. Coughlan, A. Ward, F. Krammer and P.C. Wilson.** Univ. of Chicago, Weill Cornell Med. Col., Icahn Sch. of Med., Mount Sinai, Scripps Res. Inst. and Univ. of Maryland Sch. of Med. **(126.32)**

86. INTERVIEWING FOR A JOB

Career Development Session

SUN. 10:15 AM—ROOM B117–119

CHAIR: *M.T. LITZINGER*

This session will focus on tips and techniques to help you successfully navigate the interview process. Emphasis will be on how to present yourself in the best possible light. You will also learn how to respond to unexpected questions. This session is open to anyone but is especially intended for student and postdoctoral attendees.

10:15 Interviewing for a job. **D.J. Haseltine.** Hertz Fndn.

87. VACCINE ACCEPTANCE: LESSONS FROM THE PAST AND TOOLS FOR THE FUTURE

Committee-Sponsored Session

Sponsored by the AAI Committee on Public Affairs

SUN. 10:15 AM—ROOM A105–106

CHAIR: *P.E. JENSEN*

10:15 Why people vaccinate: social, behavioral, and policy considerations. **R.M. Carpiano.** Univ. of California, Riverside

Disinformation and misinformation that fuel vaccine hesitancy. **A. Iwasaki.** Yale Univ. Sch. of Med.

Vaccines have long been one of the most effective tools to combat infectious diseases, saving countless lives since the development of the first vaccine against smallpox in the late 18th century. Because of vaccines, smallpox has been eradicated worldwide, polio has been eliminated in the United States, and other deadly diseases including rubella, pertussis, and measles are now preventable. Despite this evidence, concerns about the

safety or efficacy of vaccines persist. The problem of waning vaccine acceptance has only been exacerbated by the COVID-19 pandemic. Although scientists have developed remarkably safe and effective vaccines against COVID-19 in record time, and several have been approved by the U.S. Food and Drug Administration, far too many eligible Americans remain unvaccinated. Concerns about vaccine safety and efficacy, widespread misinformation and disinformation about vaccines, and the politicization of public health recommendations have hampered the acceptance of these lifesaving tools, posing an increasingly serious threat to individual lives and global public health.

This session will feature experts who will discuss lessons learned about vaccine acceptance, the challenges that lie ahead, and how we as members of the broader biomedical research community can effectively communicate with the public. A question-and-answer period will follow the formal presentations.

88. CANADIAN SOCIETY FOR IMMUNOLOGY (CSI) SYMPOSIUM: MESENCHYMAL—IMMUNE CROSSTALK IN FIBROTIC DISEASE

Guest Session

SUN. 10:15 AM—ROOM A107–109

CHAIRS: *S. ILANGUMARAN, S.A. HIROTA*

10:15 Requirement of SOCS1 expression in hepatic stellate cells to regulate hepatic fibrogenic response. **S. Ilangumaran.** Univ. de Sherbrooke, Canada.

10:39 Microbial metabolite sensing shapes the mesenchyme to restrain intestinal inflammation and fibrosis. **S.A. Hirota.** Univ. of Calgary, Canada.

11:03 Liver macrophage populations in fibrosis and tissue regeneration. **S.A. MacParland.** Univ. of Toronto, Canada.

11:27 Aryl hydrocarbon receptor and fibroblast–neutrophil interactions in chronic obstructive pulmonary disease. **C.J. Baglole.** McGill Univ., Canada.

11:51 Innate lymphoid cells in tissue fibrosis. **K.M. McNagny.** Univ. of British Columbia, Canada.

89. INTERNATIONAL COMPLEMENT SOCIETY (ICS) SYMPOSIUM: THE ROAD LESS TRAVELED

Guest Session

SUN. 10:15 AM—ROOM B110–112

CHAIRS: *V.P. FERREIRA, M.V. HOLERS*

10:15 Stage- and context-dependent roles for complement in rheumatoid arthritis evolution. **M.V. Holers.** Univ. of Colorado Sch. of Med.

10:45 Intracellular complement control and kidney disease. **J.J. Alexander.** Univ. at Buffalo, SUNY.

11:15 New roles for complement during brain injury. **J.T. Paz.** Gladstone Inst. of Neurological Dis. and Univ. of California, San Francisco.

11:45 New insights into complement's role in the control of fungal disease. **M.S. Lionakis.** NIAID, NIH.

90. PRIMARY IMMUNE DEFICIENCY AND IMMUNE DYSREGULATION

Block Symposium

SUN. 10:15 AM—OREGON BALLROOM 201

CHAIRS: *E.M. MACE, E. DEENICK*

10:15 T cell intrinsic role for NOD2 in Blau syndrome. **R.J. Napier, E.E. Vance, K.V. Koney, E.J. Lee, M.M. Davey and H.L. Rosenzweig.** Oregon Hlth. and Sci. Univ. and VA Portland Hlth. Care Syst. **(159.01)**

10:30 Characterization of thymic epithelial cell and thymocyte function and development in patients with thymic defects using scRNAseq profiling. **M. Bosticardo, F. Pala, C. Oguz, M. Branco, C. Zhao, S.R. Carr, A. Rajan, Y. D'Udekem, M. Delaney and L.D. Notarangelo.** NIAID, NIH, NIAID Collaborative Bioinformatics Resource (NCBR), Children's Natl. Med. Ctr., NCI, NIH and Children's Natl. Hosp. **(159.02)**

10:45 Bi-allelic *TTC21A* mutations in common variable immunodeficiency patients. **Z. Zhang, M.J. Lenardo and K.G.C. Smith.** Harvard Med. Sch., NIAID, NIH and Univ. of Cambridge, United Kingdom. **(159.03)**

11:00 A granular view of X-linked chronic granulomatous disease exploiting single-cell transcriptomics. **S. Muzumdar, S. Ballouz, F. Lam, M. Degrange, S. Kreuzburg, H. Chong, C. Zerbe, A. Jongco and J. Gillis.** Cold Spring Harbor Lab, Garvan Inst. of Med. Res., Australia, Feinstein Inst. for Med. Res., NIAID, NIH and Univ. of Pittsburgh Med. Ctr. **(159.04)**

11:15 T cell extrinsic mechanics explaining the T cell hyperactivation seen in activated PI3K δ syndrome. **J. Bier, R. Brink, S. Tangye and E.K. Deenick.** Garvan Inst. of Med. Res., Australia, St. Vincent's Clin. Sch., Univ. of New South Wales Med. and Hlth., Australia, Garvan Inst. of Med. Res., Australia, and Fac. of Med.,Univ. of New South Wales, Sydney, Australia. **(159.05)**

11:30 22q11.2 Deletion syndrome causes a thymus hypoplasia corrected by mesenchymal cell replacement. **N.S. van Oers, P. Bhalla, A. Moses, A. Kumar, C. Xing, C. Wysocki, O. Cleaver, M.L. Markert and M.T. de la Morena.** Univ. of Texas Southwestern Med. Ctr., Duke Univ. Med. Ctr. and Univ. of Washington. **(159.07)**

11:45 Dissecting the effect of a novel hypomorphic *IL2RB* mutation on immune dysregulation. **O. Bailey, J.E. Garcia-Perez, R.M. Baxter, B. Cabrera-Martinez, V.G. Lui, I.Z. Fernandez, M.J. Foster, R. Gessner, L. Gapin, E.M. Pietras, R. Kedl and E. Hsieh.** Univ. of Colorado Anschutz Med. Campus and CellCarta, Belgium. **(159.08)**

12:00 Dysregulation of $CD8^+$ T cell function in the setting of altered cytokine signaling due to inborn errors of immunity. **J.S. Campos Duran, P.E. Conrey, S. Sayed, C. Di, E.N. Gonzalez, N.D. Romberg, J.R. Bergerson, S.M. Holland, A.F. Freeman, H.C. Su, J.W. Leiding, L.R. Forbes, T.P. Vogel and S.E. Henrickson.** Univ. of Pennsylvania Perelman Sch. of Med., Children's Hosp. of Philadelphia, NIAID, NIH, Johns Hopkins Univ., Arnold Palmer Hosp. for Children, Baylor Col. of Med. and Texas Children's Hosp. **(159.06)**

91. TECHNOLOGICAL INNOVATIONS IN IMMUNOLOGY II

Block Symposium

SUN. 10:15 AM—OREGON BALLROOM 204

CHAIRS: *A.M. BURKHARDT, Y. SYKULEV*

10:15 Expanding the use of clustering and dimensionality reduction in high-parameter flow cytometry data through machine learning for novel samples. **J.C. Lownik.** Cedars Sinai Med. Ctr. **(172.03)**

10:15 Expanding the use of clustering and dimensionality reduction in high parameter flow cytometry data through machine learning for novel samples. **S. Mahov, S. Alkan, A. Merchant and S. Kitahara.** Cedars Sinai Med. Ctr. **(172.03)**

10:32 Derivation of a parsimonious tuberculosis gene signature using the digital NanoString nCounter platform. **V. Kaipilyawar, Y. Zhao, X. Wang, N.M. Joseph, S. Prakash Babu, N.S. Hochberg, S. Sarkar, C. Horsburgh, J.J. Ellner, W.E. Johnson and P. Salgame.** Rutgers New Jersey Med. Sch., Boston Univ. Sch. of Med., Jawaharlal Inst. of Postgraduate Med. Educ. and Res., India and Boston Univ. Sch. of Publ. Hlth. **(172.04)**

10:49 Host-targeted self-attenuated influenza virus as a potential therapeutic influenza vaccine. **L.M. Ieremia, K. Wen, H. Wang, Y. Chen, H. Yang, Z. Zheng, Y. Yan, A. Realivazquez Pena and M. Zeng.** Texas Tech Univ. Hlth. Sci. Ctr., El Paso and Affiliated Stomatology Hosp. of Guangzhou Med. Univ., China. **(172.05)**

11:06 Lymph node-targeted long-acting butyrate micelles induce regulatory immune modulation. **S. Cao, R. Wang, M.E.H. Bashir, Y. Su, M. Sabados, L.A. Hesser, C.R. Nagler and J.A. Hubbell.** Univ. of Chicago. **(172.10)**

11:23 Spatially mapping T cell receptors and transcriptomes. **S. Liu, J.B. Iorgulescu, S. Li, I.A. Barrera-Lopez, M. Borji, V. Shanmugam, J.W. Morriss, Z.N. Garcia, E. Murray, D.A. Braun, K.J. Livak, C.J. Wu and F. Chen.** Massachusetts Inst. of Tech, Harvard Med. Sch., Broad Inst. of MIT and Harvard, Brigham and Women's Hosp. and Harvard Med. Sch. and Harvard Univ. **(172.01)**

11:40 HIVE single-cell TCR sequencing: assay principle and applications. **I.E. Whitney, L. Chen, T. Gierahn and J. Flanigon.** Honeycomb Biotechnologies. **(172.09)**

11:57 A multi-physics approach for high recovery and purity isolation of plasma cells in whole blood. **S. Burns, J. Phi and M. Kempnich.** Applied Cells, Inc. **(172.14)**

92. TISSUE RESIDENT MEMORY T CELLS (TRM) IN CANCER

Block Symposium

SUN. 10:15 AM—OREGON BALLROOM 202

CHAIRS: *J.R. CONEJO-GARCIA, F. MAMI-CHOUAIB*

10:15 Tissue-resident memory CD4+ T cells play a dominant role in the initiation of antitumor immunity. **H. Zhang, Z. Zhu, S. Modrak and A. Little.** Washington State Univ. **(63.01)**

10:35 Tumor resident memory CD8 T cell formation and concomitant tumor immunity is CD40L dependent and CD4 independent. **M.J. Gough, G. Kramer, S. Bambina, A. Alice, T. Blair, T. Duhen, R. Duhen and M.R. Crittenden.** Providence Portland Med. Ctr. **(63.02)**

10:55 TGF-β-dependent lymphoid tissue residency of stem-like T cells limits the response to tumor vaccine. **N. Zhang, G. Li, L. Wang, S. Srinivasan, C. Ma, W. Liao, Y. Liu, S. Mishra, X. Zhang, Y. Qiu and Q. Lu.** Univ. of Texas Hlth. Sci. Ctr., San Antonio, Hunan Children's Hosp., China, Xiangya Hosp., China, Harvard Med. Sch. and Chinese Acad. of Med. Sciences and Peking Union Med. Col., China. **(63.03)**

11:15 Ovarian cancer immunogenicity is governed by a narrow subset of progenitor tissue-resident memory T-cells. **C.M. Anadon Galindo, X. Yu, K. Hanggi, S. Biswas, R. Chaurio, G. Mandal, A. Martin, K.K. Payne, P.P. Innamarato, C.M. Harro, J. Mine, K. Sprenger, C. Cortina, J.J. Powers, B.A. Perez, C.D. Gatenbee, S. Prabhakaran, D. Marchion, M.H. Heemskerk, T.J. Curiel, A.R.A. Anderson, R.M. Wenham, P.C. Rodriguez and J.R. Conejo-Garcia.** H. Lee Moffitt Cancer Ctr. and Res. Inst., Leiden Univ. Med. Ctr., Netherlands and Univ. of Texas Hlth. Sci. Ctr., San Antonio. **(63.04)**

11:35 Chronic antigen in solid tumors drives a distinct program of T cell residence. **N.V. Gavil, M. Scott, E. Weyu, S. O'Flanagan, S. Wijeyesinghe, O. Smith and D. Masopust.** Univ. of Minnesota. **(63.05)**

11:55 Resident memory T cells in antitumor immunity and cancer immunotherapy. **F. Mami-Chouaib, I. Tihy and S. Corgnac.** Natl Inst. of Hlth. and Med. Res., France (INSERM). **(63.06)**

93. CAREERS IN SCIENCE LECTURE AND ROUNDTABLES

Career Development Session

Sponsored by the AAI Education Committee and AAI Committee on the Status of Women

Generously supported by 10x Genomics

SUN. 12:30 PM—PORTLAND BALLROOM 251

CHAIR: *L.A. SOLT*

Ticket required. **Registration Fee: $30** *(includes box lunch)*. At this popular session, attendees will have the opportunity to meet with experienced scientists to explore specific career issues important to today's scientists. Gain insights into issues you are confronting in your own career. Topics include international opportunities in science, succeeding in graduate school, tips on grant writing, considerations for scientists in M.D.-Ph.D. careers, and exciting careers beyond the bench. Don't miss this great opportunity! *Space is limited. To check availability and sign up for session, please go to the Registration Desk.*

12:30 Becoming a confident scientist and embracing your authentic self. **G.J. Randolph.** Washington Univ. Sch. of Med. in St. Louis.

Discussion Topics:

- New PI *(mentoring effectively, recruiting students and postdocs, preparing for promotion, early career self-promotion)*
- Succeeding in Graduate School
- Graduate Student to Postdoc
- Postdoc to PI
- Work/Life Balance
- Building Networking Skills
- Biotech and Industry
- Embracing Your Authentic Self and Becoming a Confident Scientist
- Tackling Gender Biases in Recruitment, Research, and Leadership
- Careers in Government Agencies
- Scientific Publishing
- Opportunities for Scientists in Non-profits/ Foundations
- Careers in Science Policy
- Grant Writing for PIs
- Grant Writing: Fellowships
- Research from M.D.-Ph.D. Perspective/The Physician Scientist
- Careers in Veterinary Immunology
- International Opportunities
- Building Productive Mentor/Mentee Relationships
- Balancing Teaching Responsibilities with Research
- How to Negotiate for Better Self-promotion

94. SCIENTIFIC COMMUNICATION IN A FAST-PACED WORLD

Committee-Sponsored Session

Sponsored by the AAI Publications Committee

SUN. 12:30 PM—ROOM C123–124

CHAIRS: *D.J. CAMPBELL, E.M. OLTZ*

12:30 Writing manuscripts with trainees. **L.E. Harrington.** Univ. of Alabama at Birmingham.

12:55 Responding to reviewers. **J.A. Hamerman.** Benaroya Res. Inst.

1:20 Why you should publish in *ImmunoHorizons*—and *The JI* too! **M.H. Kaplan.** Indiana Univ. Sch. of Med. and Editor-in-Chief, ImmunoHorizons.

1:45 Moderated panel discussion on key topics in publishing: open access, fairness in peer review, preprints, and more!

95. NIH GRANTS WORKSHOP: DEMYSTIFYING THE GRANT APPLICATION SUBMISSION, REVIEW, AND FUNDING PROCESSES

Career Development Session

SUN. 12:30 PM—ROOM A107–109

CHAIR: *D.L. HODGE*

This workshop will provide participants with an overview of NIH grant submission, assignment, review, and funding opportunities. Emphasis will be given to identification of the most appropriate funding agencies and mechanisms available through NIH, how to make an application “reviewer friendly,” and other strategies that contribute to applications that succeed in obtaining research funding. The workshop will also provide information on how to understand the peer review system, which is essential to competing successfully for funding, with a focus on recent changes to the review process. NIH review and program staff will provide a broad array of expertise and encourage questions from seminar participants.

PANELISTS:

- **J.J. Breen**, NIAID, NIH
- **D.L. Hodge**, CSR, NIH
- **M.M. Arnold**, CSR, NIH
- **A. Lau**, CSR, NIH

96. AMERICAN SOCIETY OF TRANSPLANTATION (AST) SYMPOSIUM: CUTTING-EDGE RESEARCH IN TRANSPLANTATION TOLERANCE, REJECTION, AND INFECTION

Guest Session

SUN. 12:30 PM—ROOM A105–106

CHAIRS: *A.D. WELLS, A.S. CHONG*

12:30 Single-cell transcriptomics of kidney transplants reveals a myeloid cell pathway for transplant rejection. **X. Luo.** Duke Univ. Sch. of Med.

1:00 Molecular and genetic mechanisms regulating T cell tolerance. **A.D. Wells.** Univ. of Pennsylvania Perelman Sch. of Med.

1:30 Exhaustion circuits program maternal $CD8^+$ T cell hypofunction in pregnancy and transplantation. **P.M. Porrett.** Univ. of Alabama at Birmingham.

2:00 Memory inflation after CMV. **J.S. Maltzman.** Stanford Univ.

97. INNATE SIGNALING, MICROBIOME AND METABOLISM IN AUTOIMMUNITY

Block Symposium

SUN. 12:30 PM—ROOM B110–112

CHAIRS: *L. KOTTYAN, B. BARNES*

12:30 IRF5 risk variants contribute to pre-symptomatic SLE by enhancing the levels of circulating NET antigens. **B. Matta, J. Battaglia, L. Thomas and B.J. Barnes.** Feinstein Inst. for Med. Res. **(158.01)**

12:45 Treatment with TLR7/8 agonist compromises intestinal epithelium integrity in a lupus prone mouse model. **M.L. Terrell, A.S. Elshikha, N. Kanda, J. Brown, L. Zeumer-Spataro and L. Morel.** Univ. of Florida. **(158.09)**

1:00 Radioresistant cells in STING gain-of-function mice initiate lymphocyte-dependent lung inflammation and IFNγ-dependent mortality. **K.M. Gao, A. Marshak-Rothstein and K.A. Fitzgerald.** Univ. of Massachusetts Med. Sch. **(158.03)**

1:15 Cleavage of DNA and RNA by PLD3 and PLD4 limits autoinflammatory triggering by multiple sensors, including endolysosomal TLRs and a STING dependent sensing pathway. **D. Nemazee.** Scripps Res. Inst. **(158.05)**

1:15 Cleavage of DNA and RNA by PLD3 and PLD4 limits autoinflammatory triggering by multiple sensors, including endolysosomal TLRs and a STING-dependent sensing pathway. **L. Peng, T. Blane, D. Huang and A. Gavin.** Scripps Res. Inst. **(158.05)**

1:30 Understanding innate immune cell-mediated inflammation in UV-induced skin injury in lupus-prone mice. **M.P. Maz, H. Shi, S. Wolf, S.N. Estadt, A. Reddy and J.M. Kahlenberg.** Univ. of Michigan. **(158.06)**

1:45 Neutrophil-specific *Socs3* deficiency induces brain-targeted experimental autoimmune encephalomyelitis with enhanced cerebellar neutrophil activation. **W.J. Turbitt, L. Zhou, R. Williams, J.A. Buckley, H. Qin and E.N. Benveniste.** Univ. of Alabama at Birmingham. **(158.07)**

2:00 HLA class II polymorphisms influence gut microbiota composition and modulate disease in transgenic mice model of multiple sclerosis. **S.K. Shahi, S. Ali, P. Lehman, S. Ghimire, N.V. Guseva and A.K. Mangalam.** Univ. of Iowa. **(158.15)**

2:15 The role of NKG2D signaling in NOD diabetes is affected by the microbiota. **M.A. Markiewicz, Z.K. Bedrosian, E. Ruark and K. Krausz.** Univ. of Kansas Med. Ctr. **(158.08)**

98. NEURONAL AND CENTRAL NERVOUS SYSTEM IMMUNITY

Block Symposium

SUN. 12:30 PM—ROOM B117–119

CHAIR: *A. JOHNSON*

12:30 A surprising pathogenic role of B cells in mice with Alzheimer's disease. **A. Biragyn, K. Kim, X. Wang, E. Ragonnaud, M. Bodogai, R.A. McDevitt and E. Okun.** NIA, NIH and Bar Ilan Univ., Israel. **(162.01)**

12:47 Nutraceutical apigenin regulates DC function in a RelB-dependent manner during neuroinflammation. **P. Jain.** Drexel Univ. Col. of Med. **(162.02)**

12:47 A surprising pathogenic role of B cells in mice with Alzheimer's disease.Nutraceutical apigenin regulates DC function in a RelB-dependent manner during neuroinflammation. **R. Ginwala, E. McTish, P. Moore, N. Revuri, C. Raman, N. Singh, M. Nagarkatti, P. Nagarkatti, V.A. Kranz, J.D. Houle, Z. Khan and P. Jain.** Drexel Univ. Col. of Med., Univ. of Alabama at Birmingham, Sch. of Med. and Univ. of South Carolina. **(162.02)**

1:04 T-cell infiltrates and microglia adopt long-term gene signature changes leading to age-specific responses to traumatic brain injury in mice. **Z. Chen, M. Islam, B. Davis and S. Schwulst.** Feinberg Sch. of Med., Northwestern Univ. **(162.04)**

1:21 Responses of injured nerve in CD137L knockout mice following sciatic nerve crush-induced neuropathic pain. **L. Cao, B. Souza Di Nucci, A. Wakley and K. Ohara.** Univ. of New England and Nihon Univ. Sch. of Dent., Japan. **(162.05)**

1:38 MicroRNA control of inflammatory and regulatory T cells in CNS autoimmunity. **M. Gopal, M. Fujiwara, R. Raheja, L. Garo, A. Ajay, T. Chitnis, H.L. Weiner and R. Gandhi.** Brigham and Women's Hosp. and Harvard Med. Sch. and Brigham and Women's Hosp. and Harvard Med. Sch. **(162.07)**

1:55 Electromyographic characterization and bioinformatic pathway analysis of spinal cord inflammation in a Tat-induced HIV-associated sensory neuropathy model. **L. Cao, A. Kohsar, P. Wilson-Braun and B. Harrison.** Univ. of New England. **(162.08)**

2:12 Single-cell RNA sequence (scRNAseq) analysis of T regulatory cells in relapsing remitting multiple sclerosis. **Y. Wang, M. Seyedsadr and S. Markovic-Plese.** Thomas Jefferson Univ. **(162.13)**

99. INNATE IMMUNITY TO VIRAL INFECTION

Block Symposium

SUN. 12:30 PM—OREGON BALLROOM 203

CHAIRS: *P. THOMAS, S. LI*

12:30 Nuclear soluble cGAS senses DNA virus infection. **Y. Wu, K. Song, W. Hao, L. Wang and S. Li.** Tulane Univ. Sch. of Med. **(163.22)**

12:47 Influenza A virus modulates ACE2 expression and SARS-CoV-2 infectivity in human cardiomyocytes. **M. Rajaram, Q. Wu, N. Kumar, N. Salijoughian, A. Zani, A. Patton, L. Ganesan, J. Yount and W. Lafuse.** Ohio State Univ. **(163.23)**

1:04 Lipopolysaccharide pre-treatment prevents viral induced death by priming macrophages for a robust anti-viral immune response. **J. Resiliac, M. Rohlfing, J. Santoro, S-R.A. Hussain and M.H. Grayson.** Res. Inst. at Nationwide Children's Hosp. and Ohio State Univ. Col. of Med. **(163.24)**

1:21 Circulating monocytes co-expressing surface ACE2 and TMPRSS2 upon TLR4/7/8 activation are susceptible to SARS-CoV-2 infection. **Y. Yao, K. Subedi, J.Z. Sexton, T. Liu, N. Khalasawi, C. Pretto, J.W. Wotring, J. Wang, C. Yin, A. Jiang, J. Li, L. Zhou, J. McKinnon and Q-S. Mi.** Henry Ford Hlth. System and Univ. of Michigan. **(163.25)**

1:38 The impact of lipid nanoparticles on anti-viral pathways and immune function in aged individuals. **J.R. Connors, G. Cusimano, K. Kim, M-G. Alameh, D. Weissman, M. Kutzler and E.K. Haddad.** Drexel Univ. Col. of Med. and Univ. of Pennsylvania Perelman Sch. of Med. **(163.26)**

1:55 Astrocytic RIPK3 confers protection against deleterious neuroinflammation during Zika virus infection. **M. Lindman, J. Angel, K. Newman, C. Atkins and B. Daniels.** Rutgers Univ. **(163.27)**

2:12 Innate immune mechanisms underlying sex differences in COVID-19. **A. Agrawal, S. Agrawal, J. Salazar, J. Nguyen and F. Rahmatpanah.** Univ. of California, Irvine. **(163.28)**

100. THE IMPACT OF THE COMMENSAL MICROBIOME ON CANCER PROGRESSION AND THERAPY RESPONSE

Block Symposium

SUN. 12:30 PM—ROOM B113–116

CHAIRS: *M.R. RUTKOWSKI, I. ALLEN*

12:30 Suppression of local IFN-I by commensal microbiota-derived butyrate impairs antitumor effects of ionizing radiation. **K. Yang, Y-X. Fu and R.R. Weichselbaum.** Univ. of Chicago and Univ. of Texas Southwestern Med. Ctr. **(120.02)**

12:47 Dietary low-fiber promotes resistance to immune checkpoint inhibitor immunotherapy in the LSL-$Kras^{G12D}$ lung cancer model. **Q. Li, K.E. Goggin, J. Seo and N. Egilmez.** Univ. of Louisville. **(120.01)**

1:04 Neutrophil dynamics in the tumor microenvironment determines therapy efficacy and is regulated by microbiota. **R.E. Araya, K.C. Lam, A. Huang, Q. Chen, M. Di Modica, A. Lopes, H. Yang, H. Liu, M.P. Lee and R.S. Goldszmid.** NCI, NIH, Leidos Biomed. Res., Kelly Government Solutions and Istituto Nazionale dei Tumori, Italy. **(120.03)**

1:21 *Lactobacillus rhamnosus* GG re-shapes gut microbiota and triggers STING-type I IFN-dependent antitumor immunity. **L. Wang, H.L. Liang and R. Weichselbaum.** Univ. of Chicago. **(120.04)**

1:38 Absence of Toll-like receptor 5 confers survival in mice bearing ovarian tumors treated with anti-PD-L1. **M.T. McGinty, T-Y. Feng, S. Kolli, A. Putelo and M. Rutkowski.** Univ. of Virginia. **(120.05)**

1:55 Resistance to anti-PD-1 therapy is mediated via the microbiota-Th17-prostaglandin E2 axis in the LSL$Kras^{G12D}$ lung cancer model. **Q. Li, K.E. Goggin, J. Seo and N. Egilmez.** Univ. of Louisville. **(120.06)**

2:12 Tumor-intrinsic factors dictate beneficial effect of microbiota-based therapies. **K.C. Lam, A. Huang, R.E. Araya, Q. Chen and R.S. Goldszmid.** NCI, NIH, Univ. of Maryland, Col. Park, Leidos Biomed. Res. and Kelly Government Solutions. **(120.08)**

101. VACCINES AND IMMUNITY AGAINST BACTERIA AND PARASITES

Block Symposium

SUN. 12:30 PM—OREGON BALLROOM 202

CHAIRS: *J.L. FLYNN, D.A. ROSEN*

12:30 Identification of CPAF as the immunoprevalent antigen of *Chlamydia trachomatis*. **Y. Li, J. Warren, T. Poston, F. Shaw, S. Conrad, Y. Xu, X. Zheng, C.M. O'Connell, S.L. Hillier, H.C. Wiesenfeld, T. Darville and N. Goonetilleke.** Univ. of North Carolina at Chapel Hill and Univ. of Pittsburgh Sch. of Med. **(181.05)**

12:45 The use of outer membrane vesicles as novel, mucosal adjuvants against intracellular bacteria. **J. Harrell, L.A. Morici and J.B. McLachlan.** Tulane Univ. Sch. of Med. **(181.09)**

1:00 The novel adjuvant, ADA-1, restores age-associated defects in the adaptive immune response to *Clostridioides difficile* infection and vaccination in an aging mouse model. **M. Bell, M. Bernui, N. Shah, J.R. Connors and M.A. Kutzler.** Drexel Univ. Col. of Med. **(181.07)**

1:15 Adjuvanted multivalent vaccine targeting clinically relevant Pf bacteriophage creates cross-reactive antibodies. **V.C. Román-Cruz, S. Miller, R. Schoener, C. Lukasiewicz, P. Secor, D. Burkhart and J.T. Evans.** Univ. of Montana and Inimmune Corp. **(181.12)**

1:30 Differential immune response to *Klebsiella pneumoniae* O-antigen subtypes O2v1 and O2v2. **P.L. Wantuch, C.M. Harding and D.A. Rosen.** Washington Univ. Sch. of Med. and VaxNewMo. **(181.08)**

1:45 The role of lymphocyte subsets in preventing tuberculosis following intravenous vaccination with BCG. **A.W. Simonson, A.N. Bucsan, J.J. Zeppa, C.G. Winchell, A.J. Myers, M. Sutton, C.L. Ameel, P.A. Darrah, M. Roederer, R.A. Seder and J.L. Flynn.** Univ. of Pittsburgh Sch. of Med. and NIAID, NIH. **(181.11)**

2:00 M Mycolic acid nanoparticle vaccination leads to antigen persistence and unique differentiation of mycobacterial lipid antigen-specific T cells. **E. Morgun, J. Zhu, S. Bobbala, M.S. Aguilar, J. Wang, K. Conner, L. Cao, C. Seshadri, E.A. Scott and C-R. Wang.** Feinberg Sch. of Med., Northwestern Univ., Northwestern Univ. and Univ. of Washington. **(181.13)**

2:15 Differential sex-specific immune responses following prime-and-trap vaccination alters protection against malaria in mice. **C.J. Duncombe, F.N. Watson, A.C. Kalata, M.J. Shears and S.C. Murphy.** Univ. of Washington and Univ. of Iowa. **(181.14)**

SUNDAY POSTER SESSIONS

Posters on Display: 9:30 AM – 4:30 PM
Author Presentation Time: 2:30 PM – 3:45 PM

102. ANTIGEN PROCESSING AND PRESENTATION—POSTERS

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P100 **102.01** Co-administration of recombinant chicken IL-7 or chicken NK-lysin peptide 2 increases efficacy of *Eimeria tenella* elongation factor-1α in *Eimeria maxima*-infected chicken. **Y. Lee, I-k. Park, S.S. Wickramasuriya and H.S. Lillehoj.** Beltsville Agr. Res. Ctr., ARS, USDA.

P101 **102.02** QuickSwitch^{TM}: a validated platform for both screening MHC-binding SARS-CoV-2 peptides and making SARS-CoV-2-specific MHC class I and II tetramers. **Y.O. Poluektov, M. Delcommenne, P.M. Daftarian and M. George.** MBL International and JSR Life Sci.

P102 **102.03** Role of GILT and MHC class II in melanoma cells on regulating the anti-tumor immune response. **A. Macy, A. Adams and K. Taraszka Hastings.** Phoenix Veterans Affairs Hlth. Care Syst.

P103 **102.04** Citrullination modulates MHC class II antigen processing and presentation by revealing cryptic epitopes. **A.M. Curran, Y. Jang, M.A. Thomas, A.A. Girgis, J.D. Crawford, R.N. O'Meally, R.N. Cole, C.H. Na and E. Darrah.** Johns Hopkins Univ. Sch. of Med. and Johns Hopkins Univ.

P104 **102.05** Germinal center expansion but not plasmablast differentiation is directly proportional to peptide-MHCII density via CD40-CD40L signaling strength. **Z. Jing, M.J. McCarron, M.L. Dustin and D.R. Fooksman.** Albert Einstein Col. of Med., Genentech and Univ. of Oxford, United Kingdom.

P105 **102.06** Distinct myeloid antigen presenting cells dictate differential fates of tumor-specific CD8 T cells in pancreatic cancer. **A.L. Burrack, Z. Schmiechen, M. Patterson, E. Miller, E.J. Spartz, M. Rollins, J. Raynor, J. Mitchell, T. Kaisho, B.T. Fife and I. Stromnes.** Univ. of Minnesota and Wakayama Med. Univ., Japan.

P106 **102.07** Metabolic insults elicit epitope-dependent immune autoreactivity aggravating hepatic damage in type 2 diabetes. **L. Santambrogio, C.C. Clement, P. Nanaware and L. Stern.** Weill Cornell Med. and Univ. of Massachusetts Med. Sch.

P107 **102.08** Direct MHC class I antigen presentation regulation by ribosomal biogenesis inhibitor CX-5461. **S. Kazemi and B.P. Dolan.** Oregon State Univ.

P108 **102.09** B cells licensed by DCs are primary antigen presenting cells for DNA plasmid upon passive uptake. **I. Rastogi and D.G. McNeel.** Univ. of Wisconsin, Madison.

P109 **102.10** The impact of GSK3β on the metabolism of IFNγ-activated macrophages. **L.M. Ankley and A.J. Olive.** Michigan State Univ.

P110 **102.11** Sequence similarity between SARS-CoV-2 nucleocapsid and CNS proteins provides mechanistic insight into viral neuropathogenesis following infection. **C. Lake and J. Breen.** NIAID, NIH.

P111 **102.12** Repertoire size and predictability of influenza A virus matrix protein ($M1_{58-66}$)-specific $CD8^+$ TCR. **J. Li, j. Cifello, J. Lu and N-P. Weng.** NIA, NIH.

P112 **102.13** Sirt1 is responsible for antigen presentation in B cells through induction of CIITA expression and CIITA deacetylation. **S-R. Park, Y. Han, J. Shin and J. Kang.** Konyang Univ. Col. of Med., South Korea.

P113 **102.14** Profiling MHC-I and MHC-II canonical and out-of-frame epitopes from SARS-CoV-2 and seasonal human coronavirus-infected human cells. **P.P. Nanaware, A. Becerra-Artiles, J. Cruz, J.M. Calvo-Calle, M. Khaja, S.A. Shaffer and L.J. Stern.** Univ. of Massachusetts Chan Med. Sch.

P115 **102.16** Dissecting the role of H-2Db class I molecule in the development of brain atrophy during Theiler's murine encephalomyelitis virus infection. **K.M. Wininger, E. Goddery, R. Khadka, Z.P. Tritz, C. Fain, K. Ayasoufi, F. Jin, M. Hansen and A.J. Johnson.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin.

P116 **102.17** Aquaporin 4 is a mediator of essential dendritic cell function. **M. Nicosia, A. Beavers, Y. Yamamoto, T. Thompson, T. Zindrick and A. Valujskikh.** Cleveland Clin. Fndn. and Aeromics Inc.

P117 **102.18** Reverse immunology: an approach to identify Mtb antigens recognized by T cells. **S. Jaiswal, T. Williams, H.P. Gideon, T.K. Hughes, A.A. Tu, S.K. Nyquist, A.N. Shalek, S.M. Fortune, J.L. Flynn and S. Behar.** Univ. of Massachusetts Chan Med. Sch., Univ. of Pittsburgh Sch. of Med., Harvard Med. Sch., Massachusetts Inst. of Technol and Ragon Inst. of MGH, MIT, and Harvard.

P118 **102.19** Mechanism of peptide loading as revealed by structure of tapasin/MHC-I complex. **J. Jiang, D.K. Taylor, E. Kim, L.F. Boyd, P. Cresswell, M.G. Mage, D.H. Margulies and K. Natarajan.** NIAID, NIH, Massachusetts Inst. of Technol and Yale Sch. of Med.

P119 **102.20** Dynamic features of tapasin as revealed by structures of two tapasin/Fab complexes. **D.K. Taylor, J. Jiang, L.F. Boyd, P. Cresswell, M.G. Mage, D.H. Margulies and K. Natarajan.** NIAID, NIH and Yale Sch. of Med.

P120 **102.21** Autophagy in antigen-presenting cells enhances the adjuvant effect by promoting antigen processing. **K. Hashimoto, T. Ootomo, T. Sonobe, N. Kurosaki, A. Hasegawa and T. Nakayama.** Chiba Inst. of Technol., Japan, Yamaguchi Univ. Grad. Sch. of Med., Japan, Yamguchi Univ., Japan and Chiba Univ. Grad. Sch. of Med., Japan.

P121 **102.22** Investigating the potential binding partners of H2-O to further elucidate its role in MHCII antigen presentation. **J. Dobkin, T. Golovkina and L.K. Denzin.** Rutgers Univ. and Univ. of Chicago.

P122 **102.23** HLA-inception: a structure-based deep learning framework for MHC-I binding motif prediction. **E.A. Wilson, J. Cava, K. Anderson and A. Singharoy.** Arizona State Univ.

P123 **102.24** H-2Kb and H-2Db class I molecules on cerebral endothelium differentially modulate CD8 T cells dynamics and pathological outcomes in experimental cerebral malaria. **C.E. Fain, J. Zheng, F. Jin, K. Ayasoufi, M. Chen, A. Dropik, R. Khadka, Z.P. Tritz, M. Hansen, L. Wu and A.J. Johnson.** Mayo Clin. and Mayo Clin. .

P124 **102.25** T cell recognition of disulfide-modified antigens. **S. Dai, W. Li and Y. Wang.** Univ. of Colorado Anschutz Med. Campus.

P125 **102.26** Mechanisms underlying the mollusk hemocyanin processing and presentation through MHC-dependent pathways in antigen-presenting cells of mammals. **M.I. Becker, M.L. Salazar, D. Díaz-Dinamarca, A.E. Vásquez, J. Villar, A. Alvarado, B. Castillo, D. Navarro, F. Salazar and A. Manubens.** Fundación Ciencia y Tecnología para el Desarrollo, Chile, Biosonda Corp., Chile, Instituto de Salud Pública, Chile and Univ. of Exeter, United Kingdom.

P126 **102.27** Identifying highly conserved and immunogenic SARS-CoV-2 $CD8^+$ T cell epitopes for vaccine design. **J. Carmona, E.A. Wilson, P. Yuvaraj, P.R. Ulrich, A. Singharoy and K.S. Anderson.** Arizona State Univ., Caris Life Sci. and Mayo Clin.

P127 **102.28** Molecular chaperone GP96 is a potential target to modulate dendritic cell programming and shape anti-tumor immunity. **L. Mazzoccoli, S. Iwanowycz, C. Peterson, S. Ngoi, M. Hill and B. Liu.** Ohio State Univ. and Med. Univ. of South Carolina.

103. REGULATION OF B AND T CELLS IN AUTOIMMUNE DISEASES

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P128 **103.01** Lupus susceptibility gene *Pbx1* regulates *STAT3* in T cells via JAK2/STAT3 signaling pathway. **T.A. Roach, S-C Choi, Y.P. Park and L. Morel.** Univ. of Florida.

P129 **103.02** mTORC2 contributes to murine lupus-associated immunopathology. **H. Zeng, X. Zhou, Y. Li and A. Davidson.** Mayo Clin. Col. of Med. and Sci., Mayo Clin. and Feinstein Inst. for Med. Res.

P130 **103.03** B cell subsets contributing to the autoreactive plasma cell pool in Lyn-/- mice. **A.B. Satterthwaite, J. Schneider and K. Ottens.** Univ. of Texas Southwestern Med. Ctr.

P132 **103.05** Dysregulation of T follicular cells and antibody responses in high-fat diet-associated lupus development in MRL/lpr mice. **X. Zhang, J. Meng, X. Shi, R. Patel, A. Ray, L. Hellmers, W. Davis, J. Zakem, C. Keshavamurthy, Z. You and R. Quinet.** Ochsner Med. Ctr. and Tulane Univ. Sch. of Med.

P133 **103.06** NADPH oxidase-derived superoxide promotes autoreactive T cell infiltration into islets of prediabetic NOD mice. **S.I. Blum, J. Barra, R. Baker and H.M. Tse.** Univ. of Alabama at Birmingham and Univ. of Colorado Anschutz Med. Campus.

P134 **103.07** Intra-islet $CD8^+$ T cells are restrained by an exhaustion program that can be partially reversed in the absence of LAG3. **S.J. Grebinoski, Q. Zhang, A.R. Cillo, S. Manne, H. Xiao, E. Burnazzi, T. Tabib, C. Cardello, C.G. Lian, G.F. Murphy, R. Lafyatis, E.J. Wherry, J. Das, C.J. Workman and D.A.A. Vignali.** Univ. of Pittsburgh Sch. of Med., Boston Children's Hosp. and Harvard Med. Sch., Univ. of Pennsylvania Perelman Sch. of Med. and Brigham and Women's Hosp. and Harvard Med. Sch.

P135 **103.08** B cell-mediated antigen presentation is required to induce functional pathogenicity of CD4 T cells in a proteolipid protein mouse model of multiple sclerosis. **A.W. Boyden, C.R. Wilhelm, M. Updahye and N.J. Karandikar.** Univ. of Iowa Carver Col. of Med., Iowa City Veterans Affairs Med. Ctr. and Univ. of Iowa.

P136 **103.09** Regulation of inflammatory bowel disorder by ST8Sia6. **S.B. Crotts, R. Antonetti, M.J. Shapiro, M. Rajcula, K. Theodore, H.S. Kim Lee and V. Shapiro.** Mayo Clin.

P137 **103.10** PKCq modulates LKB1 isoforms downstream of IL-6 signaling to mediate iTreg-Th17 cell plasticity. **D. Mohan and L. Minter.** Univ. of Massachusetts, Amherst.

P138 **103.11** USP19 suppresses Th17 pathogenicity in autoimmunity. **R. Bouch.** Wake Forest Sch. of Med.

P139 **103.12** Influenza infection reduces disease in a B-cell-dependent EAE model of multiple sclerosis. **B. Allushi, M. Chlebicz and J. Labombarde.** Univ. of Oklahoma Hlth. Sci. Ctr. and Oklahoma Med. Res. Fndn.

P139 **103.12** Influenza infection reduces disease in a B-cell dependent EAE model of multiple sclerosis. **J. Labombarde, S. Turner, S. Kovats and R.C. Axtell.** Univ. of Oklahoma Hlth. Sci. Ctr. and Oklahoma Med. Res. Fndn.

P140 **103.13** Phenotype of CD39/CD73 expressed on T cells in a mouse model of IPEX syndrome. **Y. Liu, S.A. Armbrister, B. Okeugo, R.C. Daniel and J.M. Rhoads.** McGovern Med. Sch. and Univ. of Texas Hlth. Sci. Ctr., Houston.

P141 **103.14** EGR2 deletion displays similar and differential effects on immunological development and function in autoinflammation-prone B6/lpr and normal B6 mice. **R. Dai, Z. Wang, B. Heid, K. Eden, C.M. Reilly and S.A. Ahmed.** Virginia Tech.

P142 **103.15** Regulation of T cell CD5 levels by BTLA. **A. Adegoke, J.R. Šedý, C.F. Ware, T.A. Baldwin and C.C. Anderson.** Univ. of Alberta, Canada and Sanford-Burnham Prebys Med. Discovery Inst.

P143 **103.16** Maternal autoantibodies as a possible ASD-risk biomarker. **N.A. Ramirez Celis and J.A. Van de Water.** Univ. of California, Davis.

104. AUTOANTIGEN IDENTIFICATION, AUTOANTIGEN SPECIFICITY, AND CENTRAL TOLERANCE

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P144 **104.01** The monocyte cell surface as a novel site of autoantigen generation in rheumatoid arthritis. **M.A. Thomas, P. Naik, H. Wang, Y. Jang, T.P. Johnson, A.M. Curran, J.D. Crawford, S. Jahanbani, W.H. Robinson, C.H. Na and E. Darrah.** Johns Hopkins Univ. Sch. of Med., Stanford Univ. and VA Palo Alto Hlth. Care System.

P145 **104.02** Autoantigen-specific T-cell receptor induces organ-specific autoimmunity by escaping T cell negative selection. **M. Yin, J.A. Smith, M. Chou, J. Chan, Y. Hu, C.A. Lowell, D.B. Gould, M.S. Anderson and A.L. DeFranco.** Univ. of California, San Francisco.

P146 **104.03** $CD4^+$ T cells targeting a hybrid insulin:chromogranin A self-antigen are necessary and sufficient for autoimmune diabetes initiation. **A.J. Dwyer, J.S. Mitchell, J.A. Spanier, N. Silva, M. Alkhatib, C.G. Tucker, M. Silva Morales and B.T. Fife.** Univ. of Minnesota.

P147 **104.04** Insulin-specific TCR repertoire analysis reveals functional diversity of Treg TCRs. **Y. Jing, Y. Kong, D. Trout, M.L. Bettini and M. Bettini.** Baylor Col. of Med. and Univ. of Utah.

P148 **104.05** Profiling transcriptomes, TCR repertoires, and antigenic specificities of islet-infiltrating T cells in non-obese diabetic mice. **P. Zdinak, S.J. Grebinoski, J. Torrey, S. Rathod, R. Ranjan, L. Hicks and A.V. Joglekar.** Univ. of Pittsburgh Sch. of Med.

P149 **104.06** Control of medullary thymic epithelial cell development and central tolerance by a zinc finger transcription factor. **J.H. Sin, J. Sucharov Costa and M. Waterfield.** Univ. of California, San Francisco.

P150 **104.07** Type III interferon enhances thymic B cell licensing. **R.J. Martinez, E. Breed, Y. Worota, K. Ashby, L. Qian and K.A. Hogquist.** Univ. of Minnesota, Univ. of Pennsylvania Hlth. System and Macalester Col.

P151 **104.08** A specific 25-mer peptide from the cysteine protease of *P. gingivalis* is the epitope of humoral immune response in rheumatoid arthritis. **G.J. Tsay, H-Y. Peng, T-Y. Xue, F-H. Hsieh, Y-K. Chen, M-C. Yin, C-Y. Chao, S-Y. Tsai, C-P. Lin, P-H. Huang, K-J. Yeo, C-C. Huang, J-H. Chen, C-M. Huang, D-Y. Chen and J-L. Lan.** China Med. Univ., Taiwan and Asia Univ., Taiwan.

P152 **104.09** Enrichment of Epstein-Barr virus in patients with multiple sclerosis. **E. Kim, C. Forney, K. Viel, M. O'Brien, C. Nelson, P. Gecaine, A. Zabeti, M. Weirauch and L. Kottyan.** Penn State, Cincinnati Children's Hosp. Med. Ctr. and Univ. of Cincinnati Col. of Med.

P153 **104.10** Age-related susceptibility to grey matter demyelination and neurodegeneration is associated with meningeal neutrophil accumulation in an animal model of MS. **M.X. L. Zuo, N.M. Fettig, L.C. Osborne, J.L. Gommerman and V. Ramaglia.** Univ. of Toronto, Canada and Univ. of British Columbia, Canada.

P154 **104.11** The influence of antigen recognition on Treg suppressive function. **V.J. Rase, E.M. Kolawole and B.D. Evavold.** Univ. of Utah Sch. of Med.

P155 **104.12** Immature DC therapy in neonatal NOD mice delays the onset and incidence of T1D. **S. Orozco Figueroa, A. Raugh and Y. Jing.** Univ. of Utah.

P156 **104.13** HDAC6 knockout alleviates pristane-induced lupus. **D. Xu and C.M. Reilly.** Virginia-Maryland Col. of Vet. Med. and Edward Via Col. of Osteo. Med.

105. THEY COME AND THEY GO: A LEUKOCYTE MIGRATION EXTRAVAGANZA

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P157 **105.01** Nexinhib20 inhibits neutrophil adhesion and $\beta 2$ integrin activation to prevent myocardial ischemia-reperfusion injury. **Z. Fan, W. Liu, C.G. Cronin, C. Wang, J. Ruan, J.L. Johnson, S. Catz, H. Sun, A. Groisman, Y. Chen, L. Hu, A.T. Vella and B. Liang.** La Jolla Inst. for Immunology, UConn Hlth., Scripps Res., Univ. of California, San Diego and First Affiliated Hosp. of Zhengzhou Univ., China.

P158 **105.02** Pro-survival lipid metabolism activates intracellular complement signaling to induce inflammasome-mediated tumor metastasis. **A.H. Janneh and B. Ogretmen.** Med. Univ. of South Carolina.

P159 **105.03** High-fat diet-induced immune dysregulation in Th17/regulatory T cells promotes inflammation through protein kinase A and PPAR-γ pathways. **S. Kiran, A. Rakib, G. Boddu and U.P. Singh.** Col. of Pharmacy, Univ. of Tennessee Hlth. Sci. Ctr.

P160 **105.04** PD-1 licenses activated Treg for lymphatic migration. **W. Piao, L. Li, V. Saxena, K. Hippen, B. Bruce, L. Riella and j. bromberg.** Univ. of Maryland Sch. of Med., Univ. of Minnesota and Massachusetts Gen. Hosp.

P161 **105.05** Cyanobacteria *Geitlerinema sp.* lipopolysaccharide induces neutrophil-dependent lung inflammation. **R. Monroy Del Toro, R. Incrocci, P. Williams, A.M.S. Mayer, J.A. Swartzendruber and M. Swanson-Mungerson.** Midwestern Univ. and Univ. of Hawaii at Manoa.

P162 **105.06** The development of a gut-specific immune response to an oral antigen is dependent on $\alpha 4\beta 7$-mediated lymphocyte trafficking. **A.L. Sang, N.S. Redhu, D. Lee, F. Dhang, R. Bonesteel, S. St. Gelais, C. Zhong, D. Cui, B. Harrison, D. Troast, M.G. Bursavich, B. Lippa, B.N. Rogers, A.S. Ray and J. Wong.** Morphic Therapeutic.

P163 **105.07** A new β_2 integrin activation reporter mouse reveals localized intra- and extra-vascular neutrophil integrin activation in vivo. **L. Wen, A. Marki, Z. Wang, M. Orecchioni, J. Makings, K. Kim, W.B. Kiosses, Z. Mikulski and K. Ley.** La Jolla Inst. for Immunology.

P164 **105.08** Isoflurane targets BLT1 to attenuate lung injury. **K. Yuki and S. Koutsogiannaki.** Boston Children's Hosp. and Harvard Med. Sch.

P165 **105.09** Dendritic cells regulate innate cell trafficking into lymph nodes during inflammation. **M.Y. Gerner, Y. Wu and J.Y. Huang.** Univ. of Washington.

P166 **105.10** The tetraspanin CD53 as a novel regulator for B cell trafficking. **Z.J. Greenberg, W. Li and L.G. Schuettpelz.** Washington Univ. Sch. of Med. in St. Louis.

P167 **105.11** Farnesol induces protection against CNS inflammatory demyelination and decreases spinal infiltration of CD4+ T cells. **W.J. Doyle, L.B. Sell, C.C. Ramelow, H.M. Kohl, K.R. Hoffman, J.K. Bains, K.D. Strawn, T. Hervin, T.O. Kirby, K.M. Gibson, J-B. Roullet and J. Ochoa-Repárez.** Eastern Washington Univ. and Washington State Univ.

P168 **105.12** Inflammation depletes humoral immunity by limiting plasma cell access to the bone marrow survival niche. **T. Aaron, Z. Benet and D. Fooksman.** Albert Einstein Col. of Med.

P170 **105.14** Delineating the mechanistic pathway and therapeutic potential of Siglec-6 in chronic lymphocytic leukemia. **J.J. Nunes, A. Ventura, K. Zapolnik, X. Mo, L. Zhang, M. Chen, J. Byrd, C. Rader and N. Muthusamy.** Ohio State Univ. Col. of Med., Ohio State Univ., Univ. of Cincinnati Col. of Med. and Scripps Res.

P171 **105.15** Hapten skin sensitization induces development of TLR4-dependent inflammatory monocytes that are required for elicitation of skin contact hypersensitivity responses. **D. Kish and R.L. Fairchild.** Cleveland Clin.

P172 **105.16** Role of *Mycoplasma pneumoniae* CARDS toxin in inducing mitochondrial damage and inflammation. **A.M. Benavides, N.S. Liendo and J.A. Segovia.** St. Mary's Univ.

P173 **105.17** Effects of *Mycoplasma pneumoniae* CARDS toxin on mitochondrial homeostasis. **N.S. Liendo, A.M. Benavides and J. Segovia.** St. Mary's Univ.

P174 **105.18** TLR-9 agonist CpG activates macrophages and modulates expression of microRNAs involved in cancer drug resistance and various signaling pathways. **V. Kontham Kulangara, Y. Zhong, X. Yang, P.S. Nagarkatti and M. Nagarkatti.** Univ. of South Carolina Sch. of Med.

P175 **105.19** cGAS-STING-mediated inflammation In diabetic wound macrophages is regulated by histone demethylase JMJD3. **C.O. Audu, W.J. Melvin, S. Wolf, S.B. Sharma, K.D. Mangum, E. Barrett, A. Joshi and K. Gallagher.** Michigan Med., Univ. of Michigan.

P176 **105.20** CXCR4 promotes the stop signal and degranulation of cytotoxic T cells infiltrating influenza-infected lungs. **P. Mrass, J. Byrum, D. Torres and J.L. Cannon.** Univ. of New Mexico and Northern New Mexico Col.

P177 **105.21** Elucidating the mechanism of neutrophil-mediated lung injury in sepsis and the role of CD11d/CD18 integrin on this process. **S. Koutsogiannaki and K. Yuki.** Boston Children's Hosp. and Harvard Med. Sch.

P178 **105.22** Type I diabetes induced by OT-I T-cells requires ITK-mediated TCR signaling. **L.J. Perrenoud, J. Conley and L. Berg.** Univ. of Colorado Anschutz Med. Campus.

P179 **105.23** Following vaccination: lymphatic remodeling is coordinated by PD-L1 intracellular interactions. **J.B. Schafer, E.D. Lucas and B. Tamburini.** Univ. of Colorado Anschutz Med. Campus and Univ. of Minnesota.

P180 **105.24** Epithelial cell-specific role of HMGB1 in murine lungs with muco-obstructive lung disease. **Y. Mao, I. Choudhary, S. Patial and Y. Saini.** Louisiana State Univ. Sch. of Vet. Med.

P182 **105.26** Enteric glia regulates the expression of neutrophil inflammatory factors during acute inflammation. **D.S. Padilla Rolon and B.D. Gulbransen.** Univ. of Puerto Rico, Puerto Rico and Michigan State Univ.

P183 **105.27** Loss of midline-1 ameliorates vascular inflammation and atherosclerosis by suppressing T cell motility. **X. Rao and J. Zhong.** Tongji Hosp., Huazhong Univ. of Sci. and Technol., China.

P184 **105.28** Identification of the brain network controlling systemic inflammatory signals. **O. Hashimoto.** Feinstein Inst. for Med. Res.

P184 **105.28** Cellular and molecular mechanisms of regulatory T cell-mediated attenuation of CNS autoimmunity.Identification of the brain network controlling systemic inflammatory signals. **D. Lee, T. Hepler, T. Tsaava, A. Tynan, K.J. Tracey and S.S. Chavan.** Feinstein Inst. for Med. Res. and Donald and Barbara Zucker Sch. of Med., Hofstra/Northwell.

P185 **105.29** The impact of pulmonary fibrosis on neutrophil aging and trafficking. **H.I. Warheit-Niemi and B.B. Moore.** Michigan Med., Univ. of Michigan.

P187 **105.31** CCR2 identifies two subtypes of pathogenic human type 17 Th cells and has a non-redundant role in their transendothelial migration. **F. Parween, S.P. Singh, N. Kathuria, H. Zhang and J.M. Farber.** NIAID, NIH.

P188 **105.32** STK25 acts as a regulator of leukocyte migration. **M.R. Rice, B. Matta and B.J. Barnes.** Feinstein Inst. for Med. Res.

P189 **105.33** Mechanosensory channel Piezo1 contributes to T lymphocyte migration through direct interaction with integrins. **M.S. Laverty, B.L. Benson, A. Aguilar, D. Kingsley, J.T. Myers, S-H. Choi and A.Y. Huang.** Case Western Reserve Univ. Sch. of Med.

P190 **105.34** The CD6-ALCAM pathway selectively modulates pathogenic T cell migration. **V. Marrocco, J. Ampudia, S. Connelly and C. Ng.** Equillium, Inc.

P191 **105.35** Mechanical stress modulates NLRP3 pathway in macrophages. **H. Joshi, A. Almgren-Bell, E.M. Todd and S.C. Morley.** Washington Univ. Sch. of Med., St. Louis and Washington Univ. Sch. of Med., St. Louis.

P192 **105.36** Pulmonary macrophage activation and recruitment in lipopolysaccharide-induced acute lung injury mediates neutrophil infiltration: role of AhR ligation in intervention. **B.L. Holloman, M. Nagarkatti and P. Nagarkatti.** Univ. of South Carolina Sch. of Med.

P193 **105.37** Intracellular delivery of nuclear localization signal relieves inflammatory pulmonal disease through regulating immune system by patient-friendly inhalant formulation. **J. Kim, S. Lee, D. Shin, H. Kang, H. Yu, M. Kang, M. Baek and J. Kim.** Cellivery Therapeutics, Inc.

P194 **105.38** Targeted IL-10 locally suppresses inflammation in atherosclerotic sites. **L.R. Volpatti and J.A. Hubbell.** Univ. of Chicago.

P195 **105.39** MOSPD2 regulates the activation state of $\alpha L\beta 2$ integrin to control monocyte migration. **I. Mendel, Y. Salem, O. Propheta-Meiran, P. Kafri, N. Yacov and E. Breitbart.** VBL Therapeutics, Israel.

P196 **105.40** Tissue ischemia induces mobilization of pro-angiogenic neutrophils from the spleen. **C. Leite, K. Parv, C. Seignez, H. Ng, R.S. Lindsay, G. Christoffersson and M. Phillipson.** Uppsala Univ., Sweden.

P197 **105.41** Diesel exhaust particle-induced inflammatory responses are associated with executive function deficits in juvenile mice. **N.A. Pagan Torres, H.J. Rosa, D.L. Menendez, K.M. Casillas and L.B. Mendez.** Univ. Ana G. Mendez, Carolina, Puerto Rico.

106. IMMUNOLOGY EDUCATION

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P198 **106.01** Improving the effectiveness of combining voice-over PowerPoint presentations and review games for delivering immunology content. **J.K. Cusick, P. Goel, J.S. Tang, A. Abram, Y. Shyu and V. Gerriets.** California Northstate Univ.

P199 **106.02** Using team-based learning to solidify immunology concepts. **H. Turula and T. Bauler.** Homer Stryker M.D. Sch. of Med., Western Michigan Univ.

P200 **106.03** The zombie pirate invasion: an introduction to immunology concepts. **K. Csencsits-Smith and R. Robson.** Saba Univ. Sch. of Med., Netherlands Antilles.

P201 **106.04** Incorporating immunology into the undergraduate curriculum to promote interdisciplinary science education. **S. Pandey, L.B. Justement and R. Taylor.** Minnesota State Univ., Moorhead, Univ. of Alabama at Birmingham and Frostburg State Univ.

P202 **106.05** Driving social belonging and content retention by using the Flipgrid video discussion app. **K. Lukin, K. Aviszus and C. Nardi.** Western Governors Univ., Univ. of Colorado, Denver and Natl. Jewish Hlth., Denver.

P203 **106.06** Female minority students: plight of staying alive in education during an unending pandemic!. **N. Fazal, M-T. Nguyen, J.D. Simmons, S. Olk and P. Jhatu.** Chicago State Univ. and Col. of Pharmacy, Chicago State Univ.

P204 **106.07** Pandemic-induced pan-academic educational response in a minority university. **N. Fazal and H. Faridi.** Col. of Pharmacy, Chicago State Univ.

P205 **106.08** "Heard immunity": pandemic teaches immunology vocabulary through hearing from news and social media outlets. **N. Fazal, D. Brehm, G. Alakbarova, N. Cebiyev, S. Meher and L. De Herde.** Chicago State Univ., Univ. of Birmingham, Azerbaijan Med. Univ., Azerbaijan, I.M. Sechenov First Moscow State Med. Univ., Azerbaijan, MKCG Med. Col., India and Sch. for Mental Hlth. and NeuroSci., Maastricht Univ., Netherlands.

P206 **106.09** Instagram: a non-conventional learning tool in post-covid educational world. Repurposing of an entertainment app. **N. Fazal, D. Brehm, G. Alakbarova, A. Huseynbayli, A. Garajayev, A. Safarova, N. Cebiyev, S. Meher and L. De Herde.** Chicago State Univ., Univ. of Birmingham, Azerbaijan Med. Univ., Azerbaijan, I.M. Sechenov First Moscow State Med. Univ., Azerbaijan, MKCG Med. Col., India and Sch. for Mental Hlth. and NeuroSci., Maastricht Univ., Netherlands.

P207 **106.10** Pharmacy immunology: challenges of teaching a new course in a COVID-affected world of education. **N. Fazal.** Chicago State Univ.

P208 **106.11** "The great college escape": the most difficult choice offered to COVID-19 generation of global students. **N. Fazal, N. Cebiyev, G. Alakbarova, A. Huseynbayli, A. Garajayev, A. Safarova, S. Meher and L. De Herde.** Chicago State Univ., I.M. Sechenov First Moscow State Med. Univ., Azerbaijan, Azerbaijan Med. Univ., Azerbaijan, MKCG Med. Col., India and Sch. for Mental Hlth. and NeuroSci., Maastricht Univ., Netherlands.

P210 **106.13** Student attitudes towards online assessment in undergraduate immunology courses. **T.F. Pearson, C. Barrett-Bressack and K. Brayton.** W.W. Norton and Co., Inc.

P211 **106.14** Open discovery in an undergraduate immunology course lab: testing anti-inflammatory drugs. **C.A. Brennan and M. Roshandell.** California State Univ., Fullerton and Fate Therapeutics.

P212 **106.15** Jedi mindset: discussing effective learning strategies with students. **P. Alard.** Univ. of Louisville.

P213 **106.16** Evidence-based learning modules and culturally responsive mentoring to engage underserved undergraduate students. **M.K. Mishra.** Alabama State Univ.

P214 **106.17** Designing a successful K-12 education program aimed to prevent infectious disease. **S.I. Jarvi, K. Howe, F. Brewer and W. Baker.** Univ. of Hawaii, Hilo, Big Island Invasive Species Committee and Hawaii Acad. of Arts and Sciences.

107. B AND T CELL DEVELOPMENT

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P215 **107.01** Novel insight into the role of the vitamin D receptor in the development and function of the immune system. **J. Arora, J. Wang, V. Weaver and M.T. Cantorna.** Penn State.

P217 **107.02** Dntt expression reveals developmental hierarchy and lineage specification of hematopoietic progenitors. **R. Tussiwand, F. Klein, J. Roux, G. Cvijetic and P. Tsapogas.** NIH, Oxford, Switzerland, Univ. of Basel, Switzerland and NIH.

P218 **107.03** Role of paracrine mTOR signaling in regulating thymus size and function. **S.A. Wedemeyer, N. Jones, S. Emtage and A. Griffith.** Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P220 **107.05** Thymic interferon impacts T cell selection. **K.M. Ashby, R.J. Martinez, O.C. Salgado and K.A. Hogquist.** Univ. of Minnesota.

P221 **107.06** An unexpected role for IRF8 during human T cell development. **T.N. Taghon, K.L. Liang, M. Lavaert, J. Roels, S. Strubbe, N. Lambrechts, T. De Vos, L. Boehme, J. Van Hulle, N. Oatman, T. Putteman and I. Velghe.** Ghent Univ., Belgium, NIH and Stanford Univ.

P222 **107.07** A lineage-specific role for PD-1 in agonist selection in the thymus. **B.P. Caruso and A. Moran.** Oregon Hlth. and Sci. Univ.

P223 **107.08** Using in vivo barcoding to capture T versus B cell fate commitment in the thymus. **L. Abdullah.** Geisel Sch. of Med. at Dartmouth.

P223 **107.08** Novel insight into the role of the vitamin D receptor in the development and function of the immune system. Using in vivo barcoding to capture T versus B cell fate commitment in the thymus. **F.E. Emiliani, A. McKenna and Y.H. Huang.** Geisel Sch. of Med. at Dartmouth.

P224 **107.09** The transcriptional cofactor Ski in thymic epithelial cells regulates peripheral T cell responses. **H. Chiu and S.F. Ziegler.** Benaroya Res. Inst.

P225 **107.10** Single-cell proteogenomics reveals that SLAM/SAP signaling regulates the development of innate-like γδ T cell subsets with distinct TCR repertoires. **J.E. Boyson, E. Andretta, K.J. Hampel, N. Sidiropoulos, O. Dienz, D. Majumdar and S. Mistri.** Univ. of Vermont.

P226 **107.11** Strength of CAR signaling reveals bifurcation of T and ILC2 lineage differentiation from pluripotent stem cells. **S. Li, C.S. Wang, A. Montel-Hagen, D. Casero, S. Lopez, H-C. Chen, O. Zhou, C. Botero, S.C. Tsai, C. Wong, G. M. Crooks and C.S. Seet.** David Geffen Sch. of Med., Univ. of California, Los Angeles and California State Univ., Northridge.

P227 **107.12** Retention of epigenetic and transcriptional memory among reprogrammed T cells imparts selective advantage for T cell re-differentiation. **R.L. Williams, A. Morrow, J. Allred, J. Tolar, W.N. Haining, N. Yosef and B.R. Blazar.** Univ. of Minnesota, Univ. of California, Berkeley and Merck & Co.

P228 **107.13** Risky business blockade: RAG2 basic region blocks V(D)J recombinase function upon genotoxic stress in DNA damage response. **D.A. Simpson and K.K. Rodgers.** Univ. of Oklahoma Hlth. Sciences Ctr.

P229 **107.14** Ezrin promotes antigen receptor diversity during B cell development by supporting immunoglobulin heavy chain variable gene recombination. **V. Aysola, C. Labib and N. Gupta.** Cleveland Clin.

P230 **107.15** ABCB7 is required for B cell development, proliferation, and class switch recombination. **M.J. Lehrke, M.J. Shapiro, M. Rajcula, K. Theodore, H.S. Kim Lee and V.S. Shapiro.** Mayo Clin.

P231 **107.16** Epigenetic regulation during maternal schistosomiasis results in aberrant B cell maturation and tolerance. **L.C. Gibbs, J.M. Oviedo, K. James and K.C. Fairfax.** Univ. of Utah.

P232 **107.17** Transcription factor TFII-I fine tunes innate properties of B lymphocytes. **M. Kaila, A. Singh, S. De, K. Mazan-Mamczarz, R. Sen and A. Roy.** NIA, NIH.

P233 **107.18** Loss of Zfp335 triggers cGAS/STING-dependent apoptosis of post-β selection pre-T cells. **J.J. Ratiu, W. Barclay, Q. Wang, M.L. Shinohara and Y. Zhuang.** Duke Univ.

108. AUTOIMMUNITY

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P234 **108.01** The role of skin-derived IFN-kappa in the development of systemic autoimmunity. **J.W. S. Martens, J. Liu, M. Maz and J.M. Kahlenberg.** Univ. of Michigan.

P235 **108.02** XIST is a source of TLR7 ligands underlying the sex bias in systemic lupus erythematosus. **J.D. Crawford, H. Wang, C.C. Talbot, A.M. Curran, D.W. Goldman, M. Petri, B. Antiochos and E. Darrah.** Johns Hopkins Univ. Sch. of Med.

P236 **108.03** A snapshot of complement gene expression and presence of complement proteins in synovial biopsies from early rheumatoid arthritis patients. **N.K. Banda, K.D. Deane, J. Seifert, C. Strickland, E. Bemis, K. Jordan, K. Goldmann, Accelerating Medicines Partnership (AMP) RA/SLE Network, B.P. Morgan, M.J. Lewis, C. Pitzalis, L.W. Moreland and V.M. Holers.** Univ. of Colorado Anschutz Med. Campus, Ctr. for Exptl. Med. and Rheumatology, William Harvey Res. Inst., Barts, and London Sch. of Med. and Dent., Queen Mary Univ. of London, United Kingdom and Syst. Immunity URI, and UK DRI Cardiff, Sch. of Med., Cardiff Univ., United Kingdom.

P237 **108.04** Proteogenomic immune signatures delineate the landscape of pediatric acquired demyelinating syndromes. **D.A. Espinoza, I. Mexhitaj, J. Smiler, F. Mafra, R. Pellegrino Da Silva, G. Fadda, E.A. Yeh, R.A. Marrie, D.L. Arnold, R. Li, B. Banwell and A. Bar-Or.** Univ. of Pennsylvania Perelman Sch. of Med., Children's Hosp. of Philadelphia, Univ. of Toronto, Canada, Univ. of Manitoba, Canada and McGill Univ., Canada.

P238 **108.05** Old mice and elderly humans make increased autoimmune antibodies, inflammation and SASP from aged-increased B cells (ABCs in mice and DN in humans), which are hypermetabolic. **B. Blomberg, A. Diaz, M. Romero and D. Frasca.** Miller Sch. of Med., Univ. Miami.

P239 **108.06** CD8 T cell exhaustion is reduced in subjects with autoimmune-associated DR4 risk alleles. **S.A. Long, B. Jones, V. Wall, V. Muir, A. Ylescupidez, H. Uchtenhagen, P.S. Linsley and J.H. Buckner.** Benaroya Res. Inst.

P240 **108.07** Metabolic dysfunction governs regulatory T cell inflammatory response during inflammatory bowel disease. **A. Bamidele, M. Sagstetter, P. Hirsova, G.P. Ramos, M. Westphal and W.A. Faubion, Jr.** Mayo Clin., Rochester.

P241 **108.08** T-cell-derived exosomal proteins ECP and BPI induce cytokines and tissue inflammation in systemic lupus erythematosus. **H-C. Chuang and T-H. Tan.** Immunology Res. Ctr., Natl. Hlth. Res. Inst., Taiwan.

P242 **108.09** Regulation of metabolism by protein modifications in autoimmunity. **M-L. Yang, E.A. James, L. Overbergh, K.C. Herold and M.J. Mamula.** Yale Sch. of Med., Benaroya Res. Inst. and Katholieke Univ., Leuven, Belgium.

P243 **108.10** STING-mediated MLKL activation suppresses mitophagy and contributes to intestinal barrier dysfunction in sepsis. **X. Zhang, J. Wu, Q. Liu, X. Wu, Y. Zhao and J. Ren.** Jinling Hosp., Sch. of Med., Southeast Univ., China, Affiliated BenQ Hosp. of Nanjing Med. Univ., China and Jinling Hosp., Nanjing Univ., China.

P244 **108.11** T cells dominate peripheral inflammation in obesity-associated diabetes. **G. Pugh, S. Fouladvand, S. SantaCruz-Calvo, M. Agrawal, X.D. Zhang, J. Chen, P. Kern and B. Nikolajczyk.** Univ. of Kentucky.

P245 **108.12** Collaboration between osteopontin and macrophage migration inhibitory factor in autoimmune myocarditis. **M.T. Medrano, S. Nalawade, C. Chase Huizar, A. Yuhara and T.G. Forsthuber.** Univ. of Texas, San Antonio and Baylor Col. of Med.

P246 **108.13** Association between anti-*P. gingivalis* antibodies and anti-citrullinated vimentin antibodies in the patients with rheumatoid arthritis. **S. Shindo, S. Nakamura, M. Rawas-Qalaji, J. Potempa, S. Arvikar, K. Ouhara, H. Shiba and T. Kawai.** Nova Southeastern Univ., Univ. of Louisville, Massachusetts Gen. Hosp., Harvard Med. Sch. and Hiroshima Univ., Japan.

P247 **108.14** Sex-dependent differences in serum autoantibody levels in the 3×Tg-AD model of Alzheimer's disease. **D. Ma, W. Song, B. Michalski, B. Sakic and M. Fahnestock.** McMaster Univ.

P248 **108.15** Interrogation of STAT3 activation in patients with polyarticular juvenile arthritis. **S.L. Wood, J. Branch, P. Vasquez, M.M. DeGuzman, A. Brown, A.C. Sagcal Gironella, S. Singla, A. Ramirez and T.P. Vogel.** Baylor Col. of Med. and Texas Children's Hosp.

P249 **108.16** Neutrophils control autoreactive Th17 responses in spondyloarthritis. **K.N. Asare-Konadu, E.E. Vance, R. Sen, L. Caplan, H.L. Rosenzweig and R.J. Napier.** Oregon Hlth. and Sci. Univ., VA Portland Hlth. Care System, Univ. of Colorado, Denver, Rocky Mountain Regional VA Med. Ctr. and VA Portland Hlth. Care System.

P250 **108.17** Interleukin-22 plays a protective role in animal model of experimental colitis by signaling on Math1+ cell. **A. Singh, M. Beaupre, X. Lin, S. Gaudino and P. Kumar.** Stony Brook Univ.

P251 **108.18** Arthroplasty surgery alters the local immune composition of the knee joint by causing increases in specific lymphocyte populations. **K.H. Cichos, C. Raman and E.S. Ghanem.** Univ. of Alabama at Birmingham.

P252 **108.19** IgA and FcαR are critical components of plasmacytoid DC response to autoantibody-containing immune complexes in SLE. **H.R. Waterman, M. Duffort, S. Posso, J.H. Buckner and J.A. Hamerman.** Univ. of Washington and Benaroya Res. Inst.

P253 **108.20** AP-1 complex activation is a conserved signature of immune system aging and a potential regulator of inflammaging in humans and mice. **D. Ucar.** Jackson Lab.

P254 **108.21** Small molecule inhibition of spleen tyrosine kinase mitigates gut-liver axis inflammation and histopathology in a novel model of IBD-associated liver disease. **M.L. Jewell, Y. Xue, H-I. Huang, C. Lamagna and G.E. Hammer.** Duke Univ. Med. Ctr. and Rigel Pharmaceuticals, Inc.

P255 **108.22** Determination of inflammasome in obese children. **J.A. Mejia-Estrada, P. Gutierrez-Castrejon, L.R. Arredondo-Hernández, L.F. Verdiguel Fernández, A.I. Castillo-Rodal, S. Ponce de León-Rosales and Y. Lopez-Vidal.** Natl. Autonomous Univ. of Mexico, Mexico and Hosp. Gen. Dr. Manuel Gea González, Mexico.

P256 **108.23** Differential therapeutic modulation of exhaustion among autoreactive and global CD8 T cells in type 1 diabetes. **A.E. Wiedeman, C. Acosta Vega, E. Serti, J. Nepom and A. Long.** Benaroya Res. Inst. and Immune Tolerance Network.

109. THE INS AND OUTS OF AIRWAY INFLAMMATION

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P257 **109.01** Sensory neurons shape allergic type 2 inflammation in the sinonasal tract. **J.F. Ortiz-Carpena, C. Pastore, L-Y. Hung, M.A. Kohanski, A.E. Vaughan, N.A. Cohen and D.R. Herbert.** Univ. of Pennsylvania Perelman Sch. of Med., Univ. of Pennsylvania Sch. of Vet. Med., Univ. of Pennsylvania Hlth. Syst. and Corporal Michael J. Crescenz VA Med. Ctr.

P258 **109.02** The NLRP3 inflammasome inhibitor OLT1177® ameliorates experimental allergic asthma in mice. **L.P. Lunding, D.B. Skouras, C. Vock, C.A. Dinarello and M. Wegmann.** Res. Ctr. Borstel, Germany, Olatec Therapeutics LLC and Univ. of Colorado, Denver.

P259 **109.03** Mouse model of late-onset neutrophilic asthma reveals an epithelium-lymphocyte-neutrophil communication circuit underlying destructive airway neutrophilia. **A.T. Shenoy, F. Korkmaz, C. Lyon De Ana, C. Odom, K. Barker, W. Goltry, A. Ramanujan, I. Martin, F-Z. Shao, M. Jones, L. Quinton, A. Fine, F. Chen, A. Belkina and J. Mizgerd.** Boston Univ.

P260 **109.04** GPR43 signaling in lung eosinophils suppresses neutrophilic airway inflammation in asthma. **J. Yu, S. Kim and Y-M. Kim.** Korea Advanced Inst. of Sci. and Technol., South Korea.

P261 **109.05** T cell responses in children with asthma against SARS-CoV-2 correlates to asthmatic outcomes. **E. Eyoh, A. Murrell, D. Werthmann, I. Trinh, A. Stone, S. Chandra, D. Elliott, A. Smira, J.V. Velazquez, J.S. Schieffelin, J.K. Kolls, J. Robinson, B.M. Gunn, F. Rabito and E.B. Norton.** Tulane Univ. Sch. of Med., Tulane Univ. Sch. of Publ. Hlth. and Tropical Med., Washington State Univ. and Paul G. Allen Sch. of Global Hlth., Washington State Univ.

P262 **109.06** Interrogating mechanisms of CD8 T cell dysfunction in obese asthma. **C. Hay, S. Sayed, P. Conrey, J. Campos, C.F. Pastore, S. Sengupta, D. Herbert and S.E. Henrickson.** Univ. of Pennsylvania Perelman Sch. of Med., Children's Hosp. of Philadelphia and Univ. of Pennsylvania Sch. of Vet. Med.

P263 **109.07** Blocking the migration of circulatory T cells mitigates the accumulation of allergen-induced tissue-resident memory T cells. **G.S. Sethi and M. Croft.** La Jolla Inst. for Immunology.

P264 **109.08** T_H9-derived IL-9 promotes CCR2-dependent mast cell accumulation in the allergic lung. **A. Pajulas and M.H. Kaplan.** Indiana Univ. Sch. of Med.

P265 **109.09** Cytotoxic CD4+ tissue-resident memory T cells are associated with asthma severity. **S. Herrera de la Mata, C. Ramírez-Suástegui, H. Mistry, M.A. Kyyaly, H. Simon, S. Liang, L. Lau, C. Barber, M. Mondal, S. Hasan Arshad, R.J. Kurukulaaratchy, P. Vijayanand and G. Seumois.** La Jolla Inst. for Immunology and Fac. of Med., Univ. of Southampton, United Kingdom.

P266 **109.10** Systemic bile acids potentiate airway hyperresponsiveness and modulate Th17 cell function in obesity-associated asthma. **M.L. Manni, V.A. Heinrich, C.E. Uvalle, A. Manuel, M.R. Ellgass, S.J. Mullett, M.C. Normann, C. Koziel, M.L. Fajt, S.E. Wenzel, F. Holguin, B.A. Freeman and S.L. Wendell.** Univ. of Pittsburgh Sch. of Med., Univ. of Pittsburgh Grad. Sch. of Publ. Hlth. and Univ. of Colorado Anschutz Sch. of Med.

P267 **109.11** Androgen receptor signaling decreases glutaminolysis in Th17 cells to reduce airway inflammation in asthma. **N.U. Chowdhury, J-Y. Cephus, K. Voss, V.D. Gandhi, R.S. Peebles, J.C. Rathmell and D.C. Newcomb.** Sch. of Med., Vanderbilt Univ. and Vanderbilt Univ. Med. Ctr.

P268 **109.12** TSLP and IL-33 distinctively modulate the allergic response by differentially modulating Th2 cells and ILC2s. **R.K. Gurram, J. Zhu and W.J. Leonard.** NHLBI, NIH and NIAID, NIH.

P269 **109.13** E3 ubiquitin ligase Cbl-b inhibits type 2 innate lymphoid cell development by targeting ST2 for ubiquitination. **H. Guo, L. Huang, K. Waldstein, S.M. Varga and J. Zhang.** Univ. of Iowa.

P270 **109.14** CB_2 engagement enhances group 2 innate lymphoid cell expansion and induction of airway hyperreactivity. **B.P. Hurrell, D.G. Helou, P. Shafiei-Jahani, E.D. Howard, J.D. Painter, C. Quach and O. Akbari.** Univ. of Southern California.

P271 **109.15** PD-1 agonist modulates ILC2 metabolism and ameliorates airway hyperreactivity. **G.D. Helou, P. Shafiei-Jahani, R. Lo, E.D. Howard, B.P. Hurrell, L. Galle-Treger, J.D. Painter, G. Lewis, P. Soroosh, A.H. Sharpe and O. Akbari.** Univ. of Southern California, Janssen Res. and Develop and Harvard Med. Sch.

P272 **109.16** The role of Cul5 in group 2 innate lymphoid cells. **I. Guha, A.A. Dar, B. Kumar, N. Porter and P.M. Oliver.** Children's Hosp. of Philadelphia and Univ. of Pennsylvania Perelman Sch. of Med.

P273 **109.17** GFI1 KO can develop allergic reaction independently from IL5 and ILC2 cells. **J. Fraszczak, Z. Dalloul and T. Moroy.** Clin. Res. Inst. of Montreal, Canada.

P274 **109.18** β-Glucosylceramides and tocopherols regulate development and function of dendritic cells. **J.D. Lajiness, N. Amarsaikhan, K. Tat, A. Tsoggerel and J. Cook-Mills.** Indiana Univ. Sch. of Med.

P275 **109.19** Blockade of dendritic cell glutaminolysis induces allergic asthma desensitization via suppression of Tfh13 polarization. **A. Tharakan, J. Liu, A. Cowart and R. Martin.** Virginia Commonwealth Univ. Sch. of Med.

P277 **109.21** LMAN1, a negative regulator of the response to house dust mite. **J. Tigno-Aranjuez, M. Miller, L. Swaby, M. LaFratta and B. Zhang.** Univ. of Central Florida, Indiana Univ. and Cleveland Clin.

P278 **109.22** Myeloid cell-specific IL4Rα deletion protects against mixed allergen-induced lung injury in mice. **I. Choudhary, T. Vo, D. Singamsetty, K. Paudel, Y. Mao, R. Lamichhane, S. Patial and Y. Saini.** Louisiana State Univ. Sch. of Vet. Med.

P279 **109.23** Lung memory B cells promote local IgE production in the respiratory tract. **A.J. Nelson and Y.L. Wu.** Loyola Univ. Chicago and Loyola Univ., Chicago.

P280 **109.24** VEGFR3-driven pulmonary lymphangiogenesis exacerbates induction of bronchus-associated lymphoid tissue in allergic airway disease. **J.E. Gomez Medellin, M.K. Hollinger, J. Rosenberg, K. Blaine, T. Kurtanich, N. Ankenbruck, C.L. Hrusch, A.I. Sperling and M.A. Swartz.** Univ. of Chicago.

110. IMMUNOREGULATION—INFECTION AND IMMUNITY

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P281 **110.01** Sexual dimorphism in the antigen-specific T cell response in *S. typhimurium* infections within extra-lymphoid tissues. **S.J. D'Souza, V. Immethun, M. Godwin and J.B. McLachlan.** Tulane Univ. Sch. of Med.

P282 **110.02** Early life exposure to *Streptococcus pneumoniae* has sex-specific long-term impact on inflammatory responses. **J-F. Lauzon-Joset, O. Lerdu, K. Bouchard, D. Patoine, H. Mbareche and E. Bissonnette.** Laval Univ., Canada and Univ. of Toronto, Canada.

P283 **110.03** Inhibiting glycolysis by targeting the enzyme PFKFB3 restricts macrophage anti-mycobacterial activity and neutrophil phagocytosis of *Mycobacterium tuberculosis*. **D.S. Lane, P. Talukdar, B.F. Junecko and J.T. Mattila.** Univ. of Pittsburgh Grad. Sch. of Publ. Hlth.

P284 **110.04** CD200 is required to control LPS-induced lung inflammation. **D. Patoine, K. Bouchard, E. Bissonnette and J-F. Lauzon-Joset.** Laval Univ., Canada.

P285 **110.05** *Mycobacterium tuberculosis* reduces global histone acetylation in human macrophages, which is restored by sirtuin inhibitors. **C. Jagannath, V. Singh, A. Mishra, A. Khan and K. Zhang.** Houston Methodist Res. Inst. and Univ. of Texas Med. Br.

P286 **110.06** Effect of HIV status on Th17/IL-17 immune function in subjects undergoing tuberculosis treatment in Kenya. **A. Ongaya, M. Files, Y.B. Martinez-Martinez, R. Chacha, J. Kyalo, P. Mwangi, M.B. Huante, K. Navqi, E. Amukoye and J.J. Endsley.** Kenya Med. Res. Inst., Univ. of Texas Med. Br., Galveston, Kenya Med. Res. Inst., Kenya and Univ. of Texas Southwestern Med. Ctr.

P288 **110.08** Robust homotypic and heterosubytpic immunity against influenza A virus in mice lacking Th1/Tc1 transcriptional machinery. **K. Dhume, S. Gallahan and K.K. McKinstry.** Univ. of Central Florida.

P289 **110.09** Pulmonary thrombo-inflammation promotes severe flu in mice exposed to cigarette smoke. **T.W. Kaminski, T. Brzoska, K.M. Robinson, T. Nyunoya and P. Sundd.** Pittsburgh Heart, Lung and Blood Vascular Med. Inst. and Univ. of Pittsburgh Sch. of Med.

P290 **110.10** Core fucosylation of N-linked glycans: a novel player in memory $CD8^+$ T cell differentiation following acute viral infection. **M. Abdelbary, J. Harbour, S. Fancher, T. Nappi and J.C. Nolz.** Oregon Hlth. and Sci. Univ.

P291 **110.11** Immune determinants of cardiometabolic risk in pre-existing type 2 diabetes in severe COVID-19 patients. **M.G.B. Gunasena, Y. Wijewantha, E. Bowman, A. Kumar, K. Weragalaarachchi, J. Furay, T. Skladany, S-l. Liu, A. Vilgelm, J. Bednash, D. Kasturiratna, T. Demberg, N. Funderburg and N. Liyanage.** Ohio State Univ., Ohio State Univ. Col. of Med., Northern Kentucky Univ. and NIH.

P292 **110.12** SARS-CoV-2-induced proinflammatory innate immune response drives and shapes the SARS-CoV-2-specific T cell immunity in active COVID-19 cases in Indian adults. **A. Binayke, A. Zaheer, J. Dandotiya and A. Awasthi.** Translational Hlth. Sci. and Technol. Inst.

P293 **110.13** Tim-3 deletion on Treg increases virus-specific T cell response and reduces viral burden in chronic LCMV infection. **H.M. Nieves-Rosado, H. Banerjee and L.P. Kane.** Univ. of Pittsburgh Sch. of Med.

P294 **110.14** $CD8^+$ T cell impairment drives severe human metapneumovirus respiratory disease in aged mice. **O.B. Parks, J. Lan, Y. Zhang, J. Sojati, T.J. Eddens, C.A. Byersdorfer and J.V. Williams.** Univ. of Pittsburgh Sch. of Med., Univ. of Pittsburgh, Univ. of Pittsburgh and Children's Hosp. of Pittsburgh.

P295 **110.15** Upregulation of CD9 identifies cytokine-producing T follicular helper cells during viral infection. **O.Q. Antao, G.M. Sanchez, D. Mayer and J.S. Weinstein.** Rutgers New Jersey Med. Sch.

P297 **110.17** Ena/VASP protein-mediated actin polymerization contributes to naive $CD8^+$ T cell activation and expansion by promoting T cell-APC interactions in vivo. **M.M. Waldman, J.T. Rahkola, B.A. S. Willett, J.W. Chung, A.L. Sigler, R.S. Friedman, R.M. Kedl and J. Jacobelli.** Univ. of Colorado Anschutz Med. Campus, Barbara Davis Ctr. and Denver Veterans Affairs Med. Ctr.

P298 **110.18** Archived antigen boosts CD8 T cell memory responses during an unrelated infection. **T.A. Doan and B. Tamburini.** Univ. of Colorado Anschutz Med. Campus.

P299 **110.19** Heterogeneous killing of Plasmodium liver stages by liver-localized CD8 T cells. **S. Bera, R. Amino, I.A. Cockburn and V.V. Ganusov.** Univ. of Tennessee, Knoxville, Pasteur Inst., France, Australian Natl. Univ., Australia and Univ. of Tennessee Tennessee, Knoxville.

P300 **110.20** Modulating levels of cell surface CD6 is a novel mechanism for regulating T cell activity. **D.N. Chu, P. Tiet, V. Marrocco, J. Ampudia, S. Connelly and C. Ng.** Equillium, Inc.

P301 **110.21** Macrophage inflammatory response increases in adult female exposed to neonate stress. **K. Bouchard, D. Patoine, S. Fournier, O. Lerdu, D. Marsolais, R. Kinkead, E. Bissonnette and J-F. Lauzon-Joset.** Laval Univ., Canada and Fac. of Med., Laval Univ., Canada.

P302 **110.22** BATF controls T cell differentiation during chronic antigen stimulation. **P.J. Titcombe, M. Silva Morales, N. Zhang and D.L. Mueller.** Univ. of Minnesota.

P303 **110.23** Comprehensive comparison of adaptive immune responses to inactivated SARS-CoV-2 vaccine between young and old. **C. Xiao, Z. Ren, B. Zhang, L. Mao, P. Wang, X. Liang, O. Junhong Luo and G. Chen.** Jinan Univ., China.

111. MOLECULAR, METABOLIC, AND EPIGENETIC REGULATION OF INNATE IMMUNITY AND INFLAMMATION

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P304 **111.01** Costimulation of TLR8 responses by CXCL4 in human monocytes mediated by TBK1-IRF5 signaling and epigenomic remodeling. **C. Yang, M. Bachu, C. Brauner, R. Yuan, Y. Du, M.D. Ah Kioon1, G. Chesi, F.J. Barrat and L.B. Ivashkiv.** Hosp. for Special Surgery.

P305 **111.02** Immunoresponsive gene 1 modulates neuroinflammation through the induction of heme oxygenase-1. **P-C. Kuo, W-T. Weng, B.A. Scofield, D. Furnas, H.C. Paraiso, I-C. Yu and J-H. Yen.** Indiana Univ. Sch. of Med.

P306 **111.03** MEF2A is a regulator of interferon-mediated inflammation. **A. Forero, J.R. Smith, J.W. Dowling and R. Savan.** Ohio State Univ. and Univ. of Washington.

P307 **111.04** BCAP plays a central role in regulating canonical M2 macrophage polarization upon various cell extrinsic signals. **K. Kawarizadeh, K. Warrick and C. Pasare.** Univ. of Cincinnati Col. of Med.

P308 **111.05** The anti-inflammatic activity of a sulfated polysaccharide Fucoidan in innate immune cells. **Y. Miyazaki, T. Satoyama, H. Nakano, S. Takeuchi, H. Takeuchi and D. Tachikawa.** Fac. of Agr., Kyushu Univ., Japan, NPO Res. Inst. of Fucoidan, Japan, Ventuno Co., LTD., Japan, Kaisou Saiensunokai. Co., Ltd., Japan, Kamerycah Inc. and Wakamiya Hosp., Japan.

P309 **111.06** Lipin-1 integrates lipid metabolism with macrophage function to promote inflammation resolution. **M.D. Woolard, C. Blackburn, R. Schilke and T. Bamgbose.** Louisiana State Univ. Hlth. Sciences Ctr., Shreveport and Univ. of Virginia Sch. of Med.

P310 **111.07** MicroRNAs modulate *Chlamydia trachomatis* infection- and vaccine-induced immunity in macrophages. **F. Eko, C. Bell, L. Jones, F. Medhavi, T. Tanner, Y. Omosun and J.U. Igietseme.** Morehouse Sch. of Med. and CDC.

P311 **111.08** Myeloid cells regulate retinal neovascularization via SOCS3. **Y. Sun, T. Wang and E. Lam.** Boston Children's Hosp., Harvard Med. Sch.

P312 **111.09** TRIM21 as a regulator of UVB-driven IFN responses in lupus. **R.E. Moore, G. Tumurkhuu, G. de los Santos, D.E. Laguna, L. Akaveka, R. Abuav, W. Shon and C.A. Jefferies.** Cedars Sinai Med. Ctr.

P313 **111.10** Anti-inflammatory response induced by exopolysaccharide of the probiotic *Bacillus subtilis*. **J.B. Zamora-Pineda and K.L. Knight.** Loyola Univ., Chicago.

P314 **111.11** Helminth TGF-β mimic, TGM, increases leukocyte migration and activation while also enhancing cutaneous wound healing and tissue regeneration. **K.E. Lothstein, D.J. Smyth, R.M. Maizels and W.C. Gause.** Rutgers Univ. New Jersey Med. Sch. and Univ. of Glasgow, United Kingdom.

P315 **111.12** SOCS1 kinase inhibitory region attenuates synergistic IFNy- and TLR7-induced inflammatory signature within murine macrophages. **J. Sharma, V. Vicuna, L. Stafford, P.E. Kima and J. Larkin.** Univ. of Florida.

P316 **111.13** Selective IRAK4 degradation, not kinase inhibition, blocks TLR-activated NF-Kb and p38 signaling leading to broad cytokine inhibition. **S.M. Skouras, V. Massa, E. Lurier, C. Hubeau, A. Wang, X. Zheng, K. Sharma, D. Walter, C. Browne, M. Mayo, M. Fitzgerald, A. McDonald, J. Gollob, N. Mainolfi, A. Slavin and V. Campbell.** Kymera Therapeutics.

P317 **111.14** THC decreases bone marrow-derived macrophage activation in a dose-dependent manner. **T.H. Carter, M. Nagarkatti and P. Nagarkatti.** Univ. of South Carolina Sch. of Med.

P318 **111.15** Targeting TCA cycle metabolites by small molecule inhibitors ameliorates LPS-induced immune tolerance in macrophages through epigenetic mechanisms. **A. Abhimanyu, M. Ladki, S. Carrero Longlax, D. Sheikh, T. Nishiguchi and A. Dinardo.** Baylor Col. of Med.

P319 **111.16** Delineate the effects of cannabidiol on type 1 IFN-mediated inflammation during HIV infection. **S. Tomer, W. Mu, H. Ng, L. Wang, W. Wennerberg, V. Razek, H. Martin, A. Zhen and S. Kitchen.** David Geffen Sch. of Med., Univ. of California, Los Angeles.

P320 **111.17** Periopathogens modulate inflammation by repressing miR-142-3p and augmenting miR-155/NFκB axis. **A.M. Valverde, S. Schaller, D.A. Brandini, M.F. Brambila, G. Martinez, G. Chapa, W. Li, C. Wu, R. Rahat, H. Siddiqui, S. Nares and A. Naqvi.** Univ. of Illinois, Chicago, Sch. of Dent., São Paulo State Univ., Brazil and Fac. of Odontology, Autonomous Univ. of Nuevo Leon, Mexico.

P321 **111.18** Modulation of myeloid cell functions by long noncoding RNAs RN7SK and HCG11. **R.A. Naqvi, I. Ahmad, A.M. Valverde Estepa and A. Naqvi.** Univ. of Illinois, Chicago.

P322 **111.19** Epigenetic regulation of inflammatory genes involving histone methylation is associated with hyperimmune response in COVID-19 patients. **X. Yang, X.C. Yang, X. Yang, X. Yang, J. Julian, T. Schnell, H. Albrecht, W. Owens, X.S. Yang and X. Yang.** Univ. of South Carolina and Prisma Hlth.

P323 **111.20** 12/15-Lipoxygenase is required for inflammation resolution in a murine model of Lyme arthritis. **C.D. Jackson and C.R. Brown.** Univ. of Missouri, Columbia.

P324 **111.21** Dynamic changes in human single-cell transcriptional signatures during fatal sepsis. **X. Qiu, J. Li, J. Bonenfant, L. Jaroszewski, A. Mittal, W. Klein, A. Godzik and J.G. Li.** Univ. of California, Riverside, Riverside Univ. Hlth. Syst. Med. Ctr. and Loma Linda Univ.

P325 **111.22** Uptake of extracellular complement C3 by cardiomyocytes intervenes the intrinsic apoptosis. **Z. Fang.** State Univ. of New York Downstate Med. Ctr.

P326 **111.23** Cholesterol, LXR activation, and myelin uptake in the macrophage response to diverse signals. **J.H. DeLong, S.E. Velazquez, L.S. Sun, M.J. Landreneau and L.H. Sansing.** Yale Sch. of Med. and Quinnipiac Univ.

P327 **111.24** Determining chicken immunoglobulin-like receptors expression and their effect on immune response in a macrophage disease model. **B.A.T.E. Sparling and Y. Drechsler.** Western Univ. of Hlth. Sci. and West Virginia Univ.

P328 **111.25** Choline acetyltransferase attenuates inflammation in a murine model of DSS colitis and sepsis. **T. Tsaava, A. Tynan, T.D. Hepler, A.H. Gabalski, D.M. Hide, J.H. Li, E.H. Chang, K.J. Tracey and S.S. Chavan.** Feinstein Inst. for Med. Res., Donald and Barbara Zucker Sch. of Med., Hofstra/Northwell and Elmezzi Grad. Sch. of Molec. Med.

P329 **111.26** Relationships between inflammation, coagulation, and oxidative stress in malaria-induced pregnancy compromise. **A.K. Andrew and J.M. Moore.** Univ. of Georgia and Univ. of Florida.

P330 **111.27** Role of Grail in intestinal inflammation. **R.I. Nurieva, Y-Z. Zhao, A. Alekseev, E. Galkina and S.T. Kim.** Univ. of Texas MD Anderson Cancer Ctr. and Eastern Virginia Med. Sch.

P331 **111.28** Intracellularly delivered nuclear localization sequence attenuates the severity of COVID-19 by inhibiting interaction of inflammatory transcription factors and importins. **D. Kim, G. Kim, D. Shin, S. Yu, M. Baek, J. Lee, H. Yu, J. Pi, M. Kang, J. Kim, S. Kim, E. Chung and D. Jo.** Cellivery, South Korea.

P332 **111.29** HAQ and AQ-MPYS modulate fatty acid metabolism and immune tolerance at homeostasis. **H. Gogoi, S. Mansouri, S. Patel, D.S. Katikaneni, A. Singh, A. Aybar, G.d. Lartigue and L. Jin.** Univ. of Florida and BioNtech.

P500 **111.30** Sodium butyrate prevented mortality in acute respiratory distress syndrome through induction of anti-inflammatory response by regulation of epigenetic pathway. **M.A. Sultan and P. Nagarkatti.** Univ. of South Carolina Sch. of Med.

P501 **111.31** Vagus nerve stimulation leads to contraction of the spleen and dampened IFNγ production in response to TLR stimulation. **W.T. Nash, S. Tanaka and M.D. Okusa.** Univ. of Virginia and Univ. of Tokyo, Japan.

P502 **111.32** Glucocorticoids suppress NLRP3 inflammasome activation through transcriptional metabolic reprogramming of IRG-1/ACOD1 in macrophages. **D.O. Diaz-Jimenez, C.D. Bortner and J.A. Cidlowski.** NIEHS, NIH.

112. MOLECULAR AND CELLULAR CONTROL OF HUMORAL IMMUNITY

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P503 **112.01** IL-35-producing Bregs (i35 Bregs) mediate their effect through exosomes. **E.C. Mbanefo and C.E. Egwuagu.** NEI, NIH.

P504 **112.02** Increased mitochondrial metabolism profile is required for immunologic function in age-associated B cells. **S.J. Kim, I. Ramirez De Oleo and B. Diamond.** Feinstein Inst. for Med. Res.

P505 **112.03** Rag GTPase critically contributes to humoral immunity independent of canonical mTORC1 signaling. **X. Zhu, X. Zhou, C. Li, Y. Li, J. Sun, A. Raybuck, M.R. Boothby and H. Zeng.** Mayo Clin., Univ. of Virginia and Vanderbilt Univ. Med. Ctr.

P506 **112.04** Mechanisms of TRAF3 regulation of TLR signaling in B lymphocytes. **T.K. Ybarra and G.A. Bishop.** Univ. of Iowa.

P507 **112.05** Targeting intrinsic regulators of antibody and B cell memory to control chronic viral infection. **K. Good-Jacobson, A. Di Pietro and L. Cooper.** Monash Univ.

P508 **112.06** Blimp1 controls GC B cell expansion and exit through regulating cell cycle progression and key transcription factors BCL6 and IRF4. **W. Luo, L. Conter, D. Callahan, S. Smita and M.J. Shlomchik.** Indiana Univ. Sch. of Med. and Univ. of Pittsburgh Sch. of Med.

P509 **112.07** AP-endonuclease 2 promotes AID-dependent somatic hypermutation in primary B cell cultures that is suppressed by APE1. **C.E. Schrader, T. Williams, K. Pechhold, E. Linehan, D. Tsuchimoto and Y. Nakabeppu.** Univ. of Massachusetts Med. Sch. and Kyushu Univ. Med. Inst. of Bioregulation, Japan.

P510 **112.08** The DEAH-box helicase RHAU regulates immunoglobulin class switch recombination. **T. Thavornwatanayong, S. Zheng, S.J. Guillaume and B.Q. Vuong.** City Col. of New York and Icahn Sch. of Med., Mount Sinai.

P511 **112.09** Differential serological immune imprinting following SARS-CoV-2 infection, vaccination, and breakthrough infection. **W. Voss, Y. Huang, J. Marchioni, A. Seeger, C. Paresi, J. Kain, D. Townsend, J. Munt, R. Baric, G. Georgiou, J. Lavinder and G. Ippolito.** Univ. of Texas, Austin and Univ. of North Carolina at Chapel Hill.

P512 **112.10** Follicular B cells from old mice are hyper-responsive and produce non-specific antibodies. **C.J. Ticas Rodas, B.D. Greer, R.W. Maul and P.J. Gearhart.** NIA, NIH.

P513 **112.11** PD-L1 plays a B cell-intrinsic role in suppressing the antibody response and anti-tumor immunity. **C. Cervantes, M. Khan, M. Fernandez, Z. Liu, Z. Hakeem, S. Viswanadhapalli, H.B. Gupta, T.J. Curiel, H. Yan, R. Vadlamudi and Z. Xu.** Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P514 **112.12** The plasma cell proteome initiates early in B cell activation in advance of Blimp-1. **B.T. Gaudette and D. Allman.** Univ. of Pennsylvania Perelman Sch. of Med.

P515 **112.13** Memory B cells are a heterogenous population regulated by epigenetic programming. **K.J. Wiggins, C. Scharer and J.M. Boss.** Emory Univ. Sch. of Med.

P516 **112.14** Function of ATM and MSH2 during nonhomologous end joining in DNA repair. **E. Sible, M. Attaway, G. Fiorica, J.E. Choi, T. Chwat-Edelstein, L. Haughton, D. Bedasee and B.Q. Vuong.** City Col. of New York, Univ. of Chicago, Albert Einstein Col. of Med., Univ. at Buffalo Jacobs Sch. of Med. and BioMed. Sci. and Mem. Sloan Kettering Cancer Ctr.

P517 **112.15** Activation of C-type lectin receptor DC-SIGN increases human B cell survival. **I.N. Arias and A.J. Valentín-Acevedo.** Universidad Central del Caribe, Puerto Rico.

P518 **112.16** Abatacept enhances blood regulatory B cells of rheumatoid arthritis patients to a level that associates with disease remittance. **M.F. Alenazy, F.S. Sharif-Askari, M.A. Omair, M.S. El-Wetidy, H.F. Mitwalli, S.A. Al-Muhsen, A.F. Al-Masri, Q.S. Hamid and R.S. Halwani.** King Saud Univ., Saudi Arabia and Sharjah Inst. of Med. Res., Univ. of Sharjah, United Arab Emirates.

P519 **112.17** Rad52 mediates class-switch DNA recombination to IgD. **Y. Xu, H. Zhou, G. Post, H. Zan and P. Casali.** Univ. of Texas Hlth. Sci. Ctr., San Antonio and Univ. of Arkansas Sch. of Med.

P520 **112.18** The mutation *PTPN6*^{Ala455Thr} causing pulmonary emphysema affects B lymphocyte populations and causes spontaneous pulmonary tertiary lymphoid tissue formation. **M. Pineault, G. Bouffard, N. Milad, F. Tremblay, A. Lechasseur, J. Routhier, S. Aubin, M-J Beaulieu, Y. Bossé, F. Maltais and M.C. Morissette.** Laval Univ., Canada and Fac. of Med., Laval Univ., Canada.

P521 **112.19** Epigenetic modulation of class-switch DNA recombination to IgA by miR-146a through downregulation of Smad2, Smad3 and Smad4. **S. Li, G. Morales, C.C. Daw, D.P. Chupp, A.D. Fisher, H. Zan and P. Casali.** Univ. of Texas Long Sch. of Med.

P522 **112.20** Aiolos supports T_{FH} cell differentiation by antagonizing the IL-2/STAT5 signaling pathway. **K. Read, S. Pokhrel, D.M. Jones, A. Saadey, C. Eisele, R.T. Warren, P. Collins, H.E. Ghoneim, A. Freud and K.J. Oestreich.** Ohio State Univ. Col. of Med.

P523 **112.21** Defining the *cis*- and *trans*-regulatory architecture for human PD-1 in T follicular helper cells. **M.D. Powell, J.R. Rose, D. Neeld, A.R. Rahmberg, C.D. Scharer and J.M. Boss.** Emory Univ. Sch. of Med. and NIAID, NIH.

P524 **112.22** A temporal switch in T follicular helper cells controls the output of the GC response to influenza. **N.M. Arroyo, H. Bachus, A. Papillion, A.F. Rosenberg, J.E. Bradley, B. Leon-Ruiz and A. Ballesteros-Tato.** Univ. of Alabama at Birmingham.

P525 **112.23** Decreased CD40L through disrupted transcriptional stability affects the autoimmune response in a sex-dependent manner in a GVHD model of SLE. **D.J. Prado De Maio, U. Ganapathi and L. Covey.** Rutgers Univ.

P526 **112.24** Tet2-mediated programing balances T follicular helper cell and T helper 1 cell differentiation. **J.S. Hale.** Univ. of Utah Sch. of Med.

P526 **112.24** 'Tet2-mediated programing balances T follicular helper cell and T helper 1 cell differentiation. **A. Baessler, C.L. Novis, Z. Shen, J. Perovanovic, M. Wadsworth, L.M. Sircy, M. Harrison-Chau, K.E. Varley and D.R. Tantin.** Univ. of Utah Sch. of Med. and Huntsman Cancer Inst.

P527 **112.25** Proteasome inhibition induces p53-driven apoptosis in early activated B-cells. **T. Ochoa and D. Allman.** Univ. of Pennsylvania Perelman Sch. of Med.

P528 **112.26** Human circulating plasmablasts are not blasting: a probable misnomer. **D.C. Nguyen, C. Saney, M.C. Woodruff, I. Sanz and F.E-H. Lee.** Emory Univ. Sch. of Med. and Univ. of Georgia.

P529 **112.27** Modulating immunoglobulin secretion of a single human plasma cell by glycolysis inhibition. **D.C. Nguyen, M.C. Woodruff, I. Sanz and F.E-H. Lee.** Emory Univ. Sch. of Med.

P530 **112.28** Inhibition of glycolysis modifies distinctive metabolic and immune pathways across multiple tissue compartments associated with B and T follicular helper cells. **A. Wells, J. Wilson, D.C. Roopenian, C-H. Chang and G. Carter.** Jackson Lab.

113. MUCOSAL IMMUNE REGULATORY MECHANISMS

Poster Session

Sun. 2:30 pm—Exhibit Hall

P532 **113.01** Inverse-agonist (SMM-189) suppresses colitis by inducing endogenous cannabinoids and attenuating Th17, neutrophils, natural killer cells. **A. Rakib, S. Kiran, G. Boddu, B.M. Moore and U.P. Singh.** Col. of Pharmacy, Univ. of Tennessee Hlth. Sci. Ctr.

P533 **113.02** An immunomodulatory human commensal coordinately regulates inflammatory and metabolic disease. **C.Y. Tan and N. Surana.** Duke Univ. Sch. of Med.

P534 **113.03** Rab27A-dependent transfer of CD11c+ cell exosomes regulates gut immunity. **K. Bauer, J. Round and R.M. O'Connell.** Univ. of Utah.

P535 **113.04** Activation of the aryl hydrocarbon receptor positively regulates gut migration markers on mouse B cells. **L.F. Ortiz, A.B. Costa and G.K. Dekrey.** Univ. of Northern Colorado and Georgia Inst. of Tech.

P536 **113.05** Effect of post-exercise cupping therapy on the inflammatory markers in taekwondo athletes. **S-H FANG and Y-A. Yeh.** Natl. Taiwan Univ. of Sport, Taiwan and China Med. Univ., Taiwan.

P537 **113.06** B-cell-intrinsic MHCII signaling limits bacteremia and systemic invasion by *Citrobacter rodentium*. **M.M. Roland, N. Hall, T. Peacock, A. Mohammed, A. Jolly and J.L. Kubinak.** Univ. of Pennsylvania Sch. of Vet. Med.

P538 **113.07** IgA B cell receptor signaling protects from FasL counterselection during germinal center reaction in Peyer's patches and shapes humoral mucosal response. **A. Reboldi, F. Raso, A. Berthellete, S. Sagadiev, S. Moses, M. Acharya, G. Barton, J. Muppidi and A. Marshak-Rothstein.** Univ. of Massachusetts Med. Sch., Seattle Children's Res. Inst., Univ. of Washington, Univ. of California, Berkeley and NCI, NIH.

P539 **113.08** Treatment with an orally delivered non-replicating, non-colonizing strain of *Veillonella parvula* resolves systemic inflammation in murine models of disease. **K. Ramani, T. Cormack, A. Cartwright, A. Alami, S. Argueta, D. Raghunathan, M. Abdou, F.B. Romano, V. Kravitz, T. Rommel, E. Uckun Kiran, P. Pradeep, H. Ponichtera, M. Sizova, T. Ganguly and A. Itano.** Evelo BioSci.

P540 **113.09** MicroRNA-10a negatively controls regulatory T cell suppression of colitis through inhibition of mitochondrial oxidation and Blimp1 expression. **W. Yang, T. Yu, S. Yao and Y. Cong.** Univ. of Texas Med. Br.

P541 **113.10** Microbiota regulation of development of thymic microbiota-specific T cells. **D.F. Zegarra Ruiz, D.V. Kim, F.B. Saldana-Morales, A. Chen, W-J. Wu, R.S. Longman, M.L. Bettini and G.E. Diehl.** Mem. Sloan Kettering Cancer Ctr., Weill Cornell Med. Col. and Univ. of Utah Sch. of Med.

P542 **113.11** MicroRNA-10A negatively regulates intestinal IGA response through suppressing regulatory T cells conversion to T follicular regulator cells. **T. Yu, W. Yang, S. Yao and Y. Cong.** Univ. of Texas Med. Br.

P543 **113.12** The role of immune checkpoint PD-1 in the submandibular gland. **S. Borys and L. Brossay.** Brown Univ.

P544 **113.13** Antimicrobial peptide and lipid response of alveolar type II model cells to cytokines of TH17 signature. **C.L. Toscano, I. Wesley-Cardwell, D.A. Abou Abbas, J. Dzul, E. Martinez and E. Porter.** California State Univ., Los Angeles, Univ. of Southern California and California State Univ., Los Angeles.

P545 **113.14** MyD88-mediated signaling in myo-/fibroblasts is required for control of macrophage maturation under mucosal tolerance in the gut. **M. Chulkina, G. Uribe, B. He, S. McAninch, K. Khanipov, G. Golovko, N.S. Markov, D.W. Powell, E. Beswick and I.V. Pinchuk.** Penn State Col. of Med., Univ. of Texas Med. Br., Galveston, Feinberg Sch. of Med., Northwestern Univ. and Univ. of Utah Sch. of Med.

P546 **113.15** CDR3 amino acid features of regulatory T cell receptors within infection, inflammatory disease, and tumor microenvironment. **T.L. Wilson, J.C. Crawford, S.A. Schattgen, A. Samarasinghe, M.A. McGargill and P.G. Thomas.** St. Jude Children's Res. Hosp. and Univ. of Tennessee Hlth. Sci. Ctr.

P547 **113.16** Mechanosensory channel Piezo1 is essential in pathogenic T cell-mediated intestinal inflammation. **S.H. Choi, A. Aguilar, J. Myers, B-G. Kim, S. Eid, S. Tomchuck, D. Kingsley and A. Huang.** Case Western Reserve Univ.

P548 **113.17** Defective humoral immunity disrupts bile acid homeostasis, which promotes inflammatory disease of the small bowel. **J.L. Kubinak, A.D. Mohammed, Z. Mohammed, M. Roland, I. Chatzistamou, A. Jolly, L. Schoettmer, M. Arroyo, K. Kakar, Y. Tian, A. Patterson, M. Nagarkatti and P. Nagarkatti.** Univ. of South Carolina Sch. of Med., Univ. of South Carolina and Penn State.

P549 **113.18** B cells drive tertiary lymphoid organ formation in ileal inflammation. **E. Erlich, R. Czepielewski, S. Kumar, R. Field, X. Zhang, L. Saleh, F. Guilak, J. Brestoff, A. Ellebedy and G.J. Randolph.** Washington Univ. Sch. of Med., St. Louis.

P550 **113.19** Treg donation of sIL-6R to promote intestinal integrity and repair. **E.E. Klatt, M. Sagstetter, A. Bamidele, M.M. Gonzalez, G. Piovezani Ramos, H.R. Gibbons, A. Wixom, F.H. Hamdan, M. Braga Neto and W.A. Faubion, Jr.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin. Rochester.

P551 **113.20** Androgens protect ILC2s from interferon-mediated functional suppression during influenza virus infection. **S. Kovats, A. Karlik, S. Turner, R. Miller, E. Ainsua-Enrich, I. Hatipoglu, H. Bagavant, J. Alberola-Ila, R. Pelikan and S. Kadel.** Oklahoma Med. Res. Fndn. and Univ. of Oklahoma Hlth. Sciences Ctr.

P552 **113.21** Functional tuning of commensal-specific lymphocytes by nociceptive sensory neurons. **W. Kulalert, A. Wells, M. Enamorado, V. Link, J. Kabat, O. Kamenyeva and Y. Belkaid.** NIH.

P553 **113.22** Analysis of the mechanisms that maintain intestinal regulatory T cells. **E. Cruz Morales, A.P. Hart and T.M. Laufer.** Univ. of Pennsylvania Perelman Sch. of Med. and Corporal Michael J. Crescenz VA Med. Ctr.

P554 **113.23** Vitamin A regulates phagocytosis by resident macrophages of the small intestine. **C. Dende, M. Pendse, D. Propheter, G. Quinn and L.V. Hooper.** Univ. of Texas Southwestern Med. Ctr. and Howard Hughes Med. Inst.

P555 **113.24** Expression of a BTB-ZF transcription factor controls the function of an innate-like Tregs essential for intestinal homeostasis. **A.K. Krzyzanowska, R.A. Haynes II, D. Kovalovsky, H. Lin, K.L. Edelblum, L.M. Corcoran, A.B. Rabson, L.K. Denzin and D.B. Sant'Angelo.** Child Hlth. Inst. of New Jersey, Rutgers Grad. Sch. of Biomed. Sci., Child Hlth. Inst. of New Jersey, NCI, NIH, Ctr. for Immunity and Inflammation, Rutgers New Jersey Med. Sch. and Walter and Eliza Hall Inst. of Med. Res., Australia.

P556 **113.25** Regulatory T cell coordination of the mucosal NK cell response during viral infection. **S.C. Vick and J.M. Lund.** Fred Hutchinson Cancer Res. Ctr.

114. TISSUE IMMUNITY AT BARRIER SITES

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P558 **114.02** Imaging the lung microenvironment during coccidioidomycosis. **N.E. Miranda, A. Diep, S. Tejeda-Garibay and K.K. Hoyer.** Sch. of Natural Sci., Univ. of California, Merced.

P559 **114.03** The role of progesterone in barrier responses to intravaginal viral infection. **S.J. Dulson, C.A. Lopez and H.M. Lazear.** Univ. of North Carolina at Chapel Hill.

P560 **114.04** Lung-resident memory CD4 T cells recognizing antigen in the airway enhance the kinetics of antigen presentation and naive T cell activation in draining lymph nodes. **C.M. Finn, E. Prokop and K.K. McKinstry.** Univ. of Central Florida Col. of Med.

P561 **114.05** The miseducation of T cells in autoimmunity. **E. Kouame, P. Brigleb, K. Sangani, T.S. Dermody and B. Jabri.** Univ. of Chicago and Univ. of Pittsburgh Sch. of Med.

P562 **114.06** Burns are more than skin deep: heightened neuroinflammation after cutaneous injury in aged mice. **T.M. Walrath, K.M. Najarro, R.H. McMahan, J-P. Idrovo, N. Quillinan and E.J. Kovacs.** Univ. of Colorado Anschutz Med. Campus.

P563 **114.07** Clonal and diversity differences of extravascular B cells in the influenza-experienced lung. **M.P. Breen, F. Feng, F. Aihara, N. Etesami, R. Fearns, J. Mizgerd and T.B. Kepler.** Boston Univ. Sch. of Med.

P564 **114.08** Lung tissue resident memory CD8 T cells rely on lipid-rich environments for differentiation and display unique metabolic profiles. **M.J. Sportiello, A. Geber, A. Poindexter, E.C. Reilly, K. Lambert Emo and D.J. Topham.** Univ. of Rochester Med. Ctr.

P566 **114.10** Parenteral vaccination strategies target protective immunity to the small and large intestine mucosa. **Z. Chen, F. Tierney, B. Raposo, R. Gonzalez, I. Sadeghi, A. Schudel, Q. Hu, J. Garcia, R. Langer, A. Jaklenec and U.H. von Andrian.** Harvard Med. Sch. and Massachusetts Inst. of Technol.

P567 **114.11** Meta-genomic detection of Candida spp. in the nasopharynx and upper airway of patients with severe COVID-19. **S.C. Glover, V.N. Miao, A.H. Owings, A.W. Navia, Y. Ting, J.D. Bromley, P. Lotfy, M. Sloan, H. Laird, H. Williams, M.N. George, R.D. Drake, T. Christian, A. Parker, C. Sindel, M. Burger, H. Williams, M. Hasan, G. Abraham, M. Senitko, H. Williams, A.N. Shalek, B. Horwitz, B. Horwitz and C.N. Ziegler.** Univ. of Mississippi Med. Ctr., Broad Inst. of MIT and Harvard, Ragon Inst. of MGH, MIT, and Harvard, Boston Children's Hosp., Harvard Med. Sch., Boston Children's Hosp. and Boston Children's Hosp. and Harvard Med. Sch.

P568 **114.12** Enzymatic/mechanical digestion outperforms explant culture for isolation of tissue resident memory T cells from human lungs. **A.B. Geber, M.J. Sportiello, H. Hyuck, G. Pryhuber and D.J. Topham.** Univ. of Rochester Med. Ctr.

P569 **114.13** The autophagy gene *Epg5* promotes susceptibility to enteric viral infection. **G. Kalugotla, S. Lee, L. Schriefer, L.A. Casorla Perez, H. Huang, Q. Lu, A. Orvedahl, G. Silverman, S. Pak, D. Wang and M.T. Baldridge.** Washington Univ. Sch. of Med., St. Louis, Brown Univ. and Yunnan Univ., China.

P570 **114.14** *Mycobacterium avium* via oral route provide enhanced protection against pulmonary tuberculosis: an essential role of B cells and germinal centers. **T.S. Dutt, B.R. Karger, A. Fox, N. Youssef, R. Dadhwal, A. Obregon-Henao and M. Henao-Tamayo.** Colorado State Univ. and Univ. of Pittsburgh.

P571 **114.15** Sensing and alarm function of vaccine-elicited SIV-gag specific CD8 T_{RM} in the reproductive mucosa of rhesus macaques. **V. Joag, C. Quarnstrom, A. Soerens, J.M. Stolley, J.M. Schenkel, K. Fraser, V. Vezys, P.J. Skinner, E. Hunter, B. Bimber, R.R. Amara and D. Masopust.** Univ. of Minnesota, Brigham and Women's Hosp. and Harvard Med. Sch., Takeda Pharmaceuticals, Emory Univ. and Oregon Hlth. and Sci. Univ.

P572 **114.16** Bystander CD8 T cell memory responses partially protect mice against lethal vaginal HSV-2 challenge. **T. Arkatkar, V. Dave, I. Talavera, M. Prlic and J.M. Lund.** Univ. of Washington and Fred Hutchinson Cancer Res. Ctr.

P573 **114.17** Intranasal, not parenteral, vaccination induces the formation of tissue-resident memory CD8 T cells in nasal mucosa that rapidly clear influenza virus infection. **C. Matysiak, S. Kazer, J. Ordovas-Montanes and U.H. von Andrian.** Harvard Med. Sch. and Boston Children's Hosp. and Harvard Med. Sch.

P575 **114.19** TGF-β signaling is important for female reproductive tract resident memory CD8 T cell development. **M.H. Hasan, F.J. Mithila, J. Pacia, N. Zhang and L.K. Beura.** Brown Univ. and Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P576 **114.20** Time course scRNAseq analysis on host mucosal immune responses to influenza virus infection during aging. **Y. Wu, J. Tang, X. Gao, C. Li, B. Zhu, R. Zhang, C. Fain, K. Ayasoufi, A.J. Johnson, H. Dong and J. Sun.** Mayo Clin. and Univ. of Virginia.

P577 **114.21** Defining the transcriptional signature and heterogeneity of lung resident memory B cells. **H.O. Padilla-Quirarte, E. Williams and C. Scharer.** Emory Univ. Sch. of Med.

P578 **114.22** Human defensin-5 (HD-5) and HD-6 mRNA produced by intestinal crypt paneth cells are decreased in fecal samples of patients positive for SARS-CoV2. **L.K. Ryan, T.O. Robinson, E.H. Figgins, U. Do, K.J. Wilson, S.C. Glover and G. Diamond.** Univ. of Louisville, Univ. of Florida Col. of Med. and Univ. of Mississippi Med. Ctr.

P579 **114.23** Nasopharyngeal inflammatory lymphocyte perturbation in COVID-19 severity prediction. **M.A. Ayass, T. Tripathi, N. Griko, J. Zhang, R.R. Nair, J. Dai, K. Zhu, W. Cao, V. Pashkov, S.K. Singh and L.A. Mosleh.** Ayass Bioscience, LLC.

P580 **114.24** Low and transient salivary neutralizing antibodies after COVID vaccination. **G. Nahass, R. Salomon-Shulman, S. Sheikh-Mohamed, G. Blacker, K. Haider, C.A. Blish, E. Sanders, J.L. Gommerman, I.L. Weissman and M.C. Tal.** Univ. of Illinois Col. of Med., Stanford Univ. Sch. of Med., Univ. of Toronto and Massachusetts Inst. of Technol.

P581 **114.25** Targeting tonsillar B cells with IL-9 and IL-33 enhances the rhesus macaque humoral response to DNA/protein-based HIV envelope vaccine. **J. Kobie, D. Spencer, P. Barnette, S. Pandey, M. Basu, W. Sutton, J. Rangel-Moreno, N.L. Haigwood, A.J. Hessell and S. Sarkar.** Univ. of Alabama at Birmingham, Oregon Hlth. and Sci. Univ. and Univ. of Rochester.

P582 **114.26** RAMP3 unexplored relevance for innate-T cell immunity. **G.A. Ascui-Gac, A. Mendis, E. Phung, S. Chandra, J. Han, K. Caron and M. Kronenberg.** La Jolla Inst. for Immunology, Univ. of California. San Diego and Univ. of North Carolina at Chapel Hill.

P583 **114.27** Leveraging resident memory T cells to fortify oral immunity. **M. Stolley and D. Masopust.** Univ. of Minnesota.

115. MICROBIOTA AND EPITHELIAL INTERACTIONS

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P584 **115.01** Microbiota regulation of intestinal inflammation influences colorectal cancer. **D.F. Zegarra Ruiz, D.V. Kim, F.B. Saldana-Morales, C. Ng, R. Callaghan, M. Uddin, L-C. Chang, R.S. Longman and G.E. Diehl.** Mem. Sloan Kettering Cancer Ctr. and Weill Cornell Med. Col.

P585 **115.02** Migratory type 2 dendritic cells mediate mucosal Th17 response to gut commensal bacteria. **S.M. Ngoi, Y. Yang, S. Iwanowycz, J. Gutierrez, M. Hill, C. Allen, D. Chung and B. Liu.** Ohio State Univ. and Med. Univ. of South Carolina.

P586 **115.03** Epithelial MHC class II directs microbiota-specific intestinal immune homeostasis. **E.M. Eshleman, T-Y. Shao, V. Woo, T. Rice, J. Whitt, L. Engleman, S.S. Way and T. Alenghat.** Cincinnati Children's Hosp. Med. Ctr., Cincinnati Children's Hosp. Med. Ctr. and Univ. of Cincinnati Col. of Med.

P587 **115.04** Intestinal epithelial autophagy protects from cytokine-driven mortality and IFNγ-dependent cell death in acute small intestinal injury. **E.G. Foerster, C.J. Streutker, H. Maughan, D.K. Tsang, L.M. Robert, O. De Sa, S.E. Girardin and D.J. Philpott.** Univ. of Toronto, Canada, St. Michael's Hosp., Unity Hlth., Canada and Ronin Inst., Canada.

P588 **115.05** NAIP–NLRC4 inflammasome activation in tuft cells contributes to host defense against bacteria. **M.J. Churchill and I. Rauch.** Oregon Hlth. and Sci. Univ.

P589 **115.06** Goblet cells regulate expansion of colonic iNKT cells in a CD1d-dependent manner. **V. John, B. Barrios, S. Udayan, A. Floyd, E.M. Schill, K.G. McDonald, R.S. Blumberg and R.D. Newberry.** Washington Univ. Sch. of Med., St. Louis and Brigham and Women's Hosp., Harvard Med. Sch.

P590 **115.07** Epithelial-derived oxysterol production tunes intestinal IgA secretion against commensals and enteric pathogen in tissue. **S. Ceglia, A. Berthelette, K. Howley, Y. Li, N.K.H. Yiew, Y. Xu, R.A. Brink, J.G. Cyster, L.V. Hooper, G.J. Randolph and A. Reboldi.** Univ. of Massachusetts Med. Sch., Univ. of Texas Southwestern Med. Ctr., Washington Univ. Sch. of Med., St. Louis, Univ. of California, San Francisco and Garvan Inst. of Med. Res.

P591 **115.08** Influence of age, sex, and location on the diversity of the murine gut microbiome and/or expression of pro-inflammatory cytokines. **S.E. Webster, D. Vos, T.L. Rothstein and N.E. Holodick.** Western Michigan Univ. Homer Stryker MD Sch. of Med.

P592 **115.09** A novel role for interleukin-22-signaling in modulating mucosal epithelial cell antigen presentation machinery to control disease. **M.A. Rahman, M. Moniruzzaman, R. Wang, A. Harding, P. Wiid, H. Sajiir, K.Y. Wong, A. Mueller, Y. Sheng, H. Symon, R. Giri, J. Begun, A. Varelias, M.A. McGuckin, S. Phipps and S.Z. Hasnain.** Univ. of Queensland, Australia, Australian Infectious Dis. Res. Ctr., Univ. of Queensland, Australia and Fac. of Med., Dent. and Hlth. Sci., Univ. of Melbourne, Australia.

P593 **115.10** I3C-mediated protection against colitis dependent on AHR expression on VIL1-expressing colonic epithelial cells. **A. Saxena, C. Mitchell, K. Wilson, A. Rutkovsky, P. Wisniewski, N. Dopkins, M. Nagarkatti, P. Nagarkatti and B. Busbee.** Univ. of South Carolina Sch. of Med.

P594 **115.11** Increased tryptase expression in HαT is associated with upregulation of epithelia-derived MRGPRX2 agonists and MRGPRX2+ MCs in the GI mucosa. **S.C. Glover, H. Williams, Y. Pride, A.H. Owings, T. Robinson, J. Lyons, V. Deepak and H. Ali.** Univ. of Mississippi Med. Ctr., NIAID, NIH and Sch. of Dent. Med., Univ. of Pennsylvania.

P595 **115.12** Ingestion of subtoxic doses of cadmium induces persistent dysbiosis and enhances susceptibility to DSS-induced colitis long after exposure. **E. Kim, E. Cormet-Boyaka and P.N. Boyaka.** Ohio State Univ.

P596 **115.13** Strain diversity defines host-mycobiota interactions in inflammatory bowel disease. **X. Li, I. Leonardi, G. Putzel, J. Naglik, B. Hube, E.J. Scherl and I. Iliev.** Weill Cornell Med. Col., King's Col. London, United Kingdom and Hans Knoell Inst.

P597 **115.14** The novel roles of Dusp6 in gut barrier modulation and microbiome shaping in a mouse colitis model. **C-Y. Kao, C-S. Chang, Y-C. Liao, C-T. Huang, C-M. Lin, Y-T. Tsai, I-J. Lin, J-W. Ruan and Y-C. Liao.** Natl. Hlth. Res. Inst., Taiwan, Natl. Hlth. Res.Inst., Taiwan and Natl. Cheng Kung Univ., Taiwan.

P598 **115.15** TLR4 regulates intestinal inflammation mediated by an atopic microbiota. **E. Campbell, R.T. Patry, L.A. Hesser, R. Berni Canini and C.R. Nagler.** Univ. of Chicago and Univ. of Naples Federico II, Italy.

P599 **115.16** Flagella and indole produced by commensal bacteria protect the intestinal barrier to prevent food allergy. **A.M. Kemter, R.T. Patry, J. Arnold, E. Campbell, L.A. Hesser, E. Ionescu and C. Nagler.** Univ. of Chicago.

P600 **115.17** Gut microbiota modulates the development of murine Kawasaki disease vasculitis. **P.K. Jena, D. Wakita, A.C. Gomez, T.T. Carvalho, M. Narayanan, Y. Lee, P.D. Cani, W.M. de Vos, S. Devkota, D.M. Underhill, S. Chen, K. Shimada, T.R. Crother, M. Arditi and M. Noval Rivas.** Cedars-Sinai Med. Ctr., Univ. Catholique de Louvain, Belgium, Wageningen Univ., Netherlands and Helsinki Univ., Finland.

P601 **115.18** Th17-driven immunity to oral candidiasis is dependent on the microbiome and can be triggered by mono-colonization with segmented filamentous bacteria. **F.E. Aggor, C. Zhou, D. Abbott, J. Musgrove, V. Bruno, T.W. Hand and S.L. Gaffen.** Univ. of Pittsburgh Sch. of Med., Richard King Mellon Inst. for Pediatric Res. and Univ. of Maryland Med. Sch.

P602 **115.19** Interactions between aryl hydrocarbon receptor and the microbiome regulate intestinal macrophages in non-obese diabetic mice. **A. Ehrlich, K. Malany, S. Sandoval, N. Shulzhenko and A. Morgun.** Univ. of California, Davis and Oregon State Univ.

P603 **115.20** Contribution of the microbiome, environment, and genetics to mucosal type 2 immunity and anaphylaxis in a murine food allergy model. **K. Stark, N.R. Falkowski, C.A. Brown, R.A. McDonald and G.B. Huffnagle.** Univ. of Michigan Med. Sch. and Univ. of Michigan.

P604 **115.21** Exploiting commensal bacteria to strengthen host immunity and treat infections. **Z.E. Ramirez and N.K. Surana.** Duke Univ.

P605 **115.22** A prospectively created living organoid biobank of Crohn's disease patients enables integrative therapeutics. **G.D. Katkar, C. Tindle, A. Fonseca, S. Taheri, J. Lee, I.M. Sayed, S-R. Ibeawuchi, P. Rama, M. Fuller, D. Stec, M.S. Anandachar, V. Goheen-Holland, J. Ear, B. Boland, W. Sandborn, D. Sahoo, S. Das and P. Ghosh.** Univ. of California, San Diego.

116. TECHNOLOGICAL INNOVATIONS IN IMMUNOLOGY I

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P606 **116.01** A human ectopic-lymphoid-follicle-on-a-chip for testing vaccines and adjuvants. **Y. Zhai, G. Goyal, P. Prabhala, A. Patil, M.S. Kim, A. Junaid, M.W. Ku, G. Mahajan, B. Bausk, T. Gilboa, R. Lazarovits, S. Sharma, L. Cohen, T. Ferrante and D.E. Ingber.** Harvard Univ., Brigham and Women's Hosp. and Harvard Med. Sch. and Boston Children's Hosp. and Harvard Med. Sch.

P607 **116.02** A novel digital device-based adjuvant-like effect for influenza vaccine: a feasibility and pilot study. **J. Hahm, J-P. Choi, G. Ayoub, S-H. Kim, E.S. Kim, J.Y. Noh, J.Y. Song and Y-S. Chang.** S-Alpha Therapeutics, Inc., South Korea, Seoul Natl. Univ. Col. of Med., South Korea and Korea Univ. Col. of Med., South Korea.

P608 **116.03** Genetic knockout of PSGL-1 increases CD19-CAR-T cell persistence in mouse pre-B-ALL disease model. **J. Mavuluri.** St. Jude Children's Res. Hosp.

P609 **116.04** Anti-CD3 Bi-Fab crosslinking of T cells enables their fratricide by activation induced cell death and cytotoxicity. **D. Gil Pages, A. Nelson, L. Wang, T. White, A. Schrum and J. Cannon.** Univ. of Missouri, Columbia.

P610 **116.05** Microfluidic gut-on chip system for reproducing the microbiome-immune cells interaction in Threespine Stickleback. **A. Nouri, M.L. Rodgers, D.L. Bolnick, R. Carrier, K. Milligan-Myhre, S. Scarpino and N.C. Steinel.** Univ. of Massachusetts, Lowell, Univ. of Connecticut and Northeastern Univ.

P611 **116.06** CD16 and NKG2D co-clustering facilitates quality of primary NK cell responses. **Y. Sykulev, O. Tsygankova, N. Anikeeva, N. Maskalenko and K. Campbell.** Thomas Jefferson Univ. and Fox Chase Cancer Ctr.

P612 **116.07** Leveraging mouse genetics to generate heavy-chain only antibodies for therapeutic application. **T.C. Borbet, A. Perault, J. Ilmain, K-W. Chan, C.C. Luo, A.M. Bryan, M. Kirilov, W. Wang, P. Sheiffele, X-P. Kong, D. Ekiert, V. Torres and S.B. Koralov.** New York Univ. Sch. of Med. and Ingenious Targeting Lab.

P613 **116.08** Generation of large numbers of functional NK cells without feeders or serum. **T. Le Fevre, E. Ang, A.W. Wognum, S.J. Szilvassy, A.C. Eaves, S.A. Louis and N. Tabatabaei-Zavareh.** STEMCELL Technol., Inc., Canada and British Columbia Cancer Agency, Canada.

P614 **116.09** Discovery of potently neutralizing antibodies against SARS-CoV-2 using barcode enabled antigen mapping. **M.J. Stubbington, B. Adams, D. Reyes, A. Royall, M. Song, S. Marrache, P. Shahi, F. Tsai, P. Finnegan, T. Vollbrecht, T. Khadilkar, D. Jaffee, R. Ramenani and W. McDonnell.** 10x Genomics.

P615 **116.10** Nanoparticle-based depletion of myeloid-derived suppressor cells in tuberculosis. **H.K. Dkhar, C. Vantucci, A.B. Enriquez, C. Ibegbu, S. Vyas, N.A. Woods, K. Kgoadi, S.L. Goh, K. Roy and J. Rengarajan.** Emory Univ. and Georgia Inst. of Technol.

P616 **116.11** Genetic manipulations to improve intratumoral trafficking of adoptively transferred T cellsr. **V. Vianzon, I. Garg and L.M. Rogers.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin.

P617 **116.12** Changes in the structure of lipid A in glycosylated outer membrane vesicles suppress the activation of glycan-specific B1 cells in vivo. **N. Lopez, S. Tyagi and M.P. DeLisa.** Cornell Univ.

P618 **116.13** Modeling inflammatory immune cell recruitment and response on human colon intestine-chip. **C. Carman, M. Kanellias, D. Ramos, K. Maniar, J. Saud, C. Lucchesi, G. Kulkarni, A. Apostulou, V.J. Kujala and L. Ewart.** Emulate Bio.

P619 **116.14** Characterization of a novel mouse model for deletion of a floxed gene in alternatively activated macrophages. **T.T. Vo, S. Patial and Y. Saini.** Louisiana State Univ. Sch. of Vet. Med.

P620 **116.15** RenMice^{TM} HiTS platform enables identification of novel therapeutic antibodies. **J. Frame, X. Zhang, J. Jin, R. Soto, S. Zhang, X. Li, J. Zhang and Y. Shen.** Biocytogen Boston Corp, Biocytogen Pharmaceuticals (Beijing) Co., Ltd., China and Biocytogen Pharmaceuticals (Beijing) Co.,Ltd., China.

P621 **116.16** A feeder cell-free activation and expansion strategy to generate memory-like NK cells sufficient for off-the-shelf multi-dose adoptive cell therapy. **H.C. Wong, M.J. Dee, N. Shrestha, P. Chaturvedi, G.M. Leclerc, X. Zhu, B. Liu, L. Kong, C.A. Echeverri, L. You, J.O. Egan, J-A. Jiao, P.R. Rhode, M.K. Becker-Hapak, M.M. Berrien-Elliott, E. McClain, M. Foster, P. Pence, C.C. Neal, S. Kersting-Schadek and T.A. Fehniger.** HCW Biologics and Washington Univ. Sch. of Med.

P622 **116.17** Effects of sample storage using tumor and tissue preservation reagent on genomic data quality. **X. Shi, A. Tran, S. Widmann and A.J. Tyznik.** BD Biosciences.

P623 **116.18** A multi-armed approach for identifying circulating bacterial proteins in melioidosis. **D. Hau, K.J. Pflughoeft, H.R. Green, E.E. Hannah, P.N. Thorkildson, S.G. Pandit, H. Demers, D.M. Magee, L. Song, J. LaBaer, R. Woosley, D.R. Quilici, M. Mayo, B.J. Currie, J.W. Sahl, P.S. Keim and D.P. AuCoin.** Univ. of Nevada, Reno, Sch. of Med., Arizona State Univ., Univ. of Nevada, Reno, Charles Darwin Univ., Australia and Northern Arizona Univ.

P624 **116.19** Development of a cell free virus free beads-based SARS-Cov-2 virus neutralization assay. **X. Hou, E. Sims, W. Pan, B. Brown, M. Steele, S. Song and J. Han.** iRepertoire and Icahn Sch. of Med., Mount Sinai.

P625 **116.20** Development of a multiplex microbead-based immunoassay for quantitative analysis of mouse immune checkpoint proteins. **W-R. Lie, C. Kornmeier, S. Williams, J. Pfeifer, M. Banerjee and J. Hoberg.** MilliporeSigma.

P626 **116.21** Linking TCR to its cognate antigens with high-throughput and high-dimensional Smart immune receptor sequencing in single cells. **Y. Guo, M.J. Malone and N. Jiang.** Univ. of Pennsylvania.

P627 **116.22** High-precision micro-wells in polymer for single cell cloning and monitoring. **M.M. Schimke.** STRATEC Consumables GmbH.

P628 **116.23** 3D-IBEX: achieving multiplex 3-dimensional imaging for deep phenotyping of cells in tissues. **A.J. Arroyo-Mejías, H. Ichise, C. Chu, J.L. Hor, Z. Yaniv, J. Kabat, J. Croteau, B. Lowekamp, A.J. Radtke and R.N. Germain.** NIAID, NIH, Univ. of Bristol, United Kingdom and BioLegend, Inc.

117. TUMOR IMMUNOTHERAPY (TM1)

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P629 **117.01** NSAID-induced oxidative stress sensitizes tumor cells to T cell cytotoxicity through the TRAIL-DR5 axis. **N.S. Aboelella and G. Zhou.** Augusta Univ.

P630 **117.02** PD-1 and ICOS co-expression identifies tumor-reactive CD4 Th cells in human solid tumors. **T. Duhen, R. Duhen, O. Fesneau, K. Samson, A. Frye, M. Beymer, V. Rajamanickam, E. Tran, B. Bernard and A.D. Weinberg.** Earle A. Chiles Res. Inst. and AgonOx Inc.

P631 **117.03** Profound differences between prophylactic and therapeutic tumor immunity in neoepitope-elicited tumor control. **S. Singhaviranon, H. Ebrahimi-Nik and P.K. Srivastava.** UConn Hlth. and Broad Inst. of MIT and Harvard.

P632 **117.04** Third generation CAR T cells form polyfunctional long-lived memory and protect from solid-tumor relapse in an immunocompetent murine model. **S.J. Reed, M. Dunga, H. Maylor-Hagen, V. Kalia and S. Sarkar.** Seattle Children's Res. Inst. and Univ. of Washington.

P633 **117.05** Combination therapy for treating drug-resistant multiple myeloma. **B-G. Kim, S.H. Choi, G. Luo, S-J. Kim, E. Malek, J. Driscoll and J. Letterio.** Case Western Reserve Univ. Sch. of Med. and MedPacto Inc., South Korea.

P634 **117.06** Enriching for tumor-reactive CD8 TIL (AGX148) leads to effective tumor clearance in a patient-derived xenograph model. **C.J. Thalhofer, E.A. Ballinger, R.D. Montler, N.P. Morris, J.F. Rios, T. Moudgil and A.D. Weinberg.** AgonOx Inc. and Earle A. Chiles Res. Inst., Providence Cancer Ctr.

P635 **117.07** A novel, synthetic TLR7/8 agonist demonstrates monotherapy efficacy and synergy with anti-PD-1 in syngeneic mouse tumor models. **C.A. Beyer, D. Lussier, K. Jackson, M. Whitacre, J. Ward, R. Schoener, H.G. Bazin, D. Burkhart and S.M. Miller.** Inimmune Corp and Inimmune Corp.

P636 **117.08** Complement downregulation promotes an inflammatory signature that renders colorectal cancer susceptible to immunotherapy. **S. Guglietta, L.M. Weber, B. Fosso, G. Hardiman, M.M. Olcina, M. Marzano, M.D. Robinson and C. Krieg.** Med. Univ. of South Carolina, Johns Hopkins Bloomberg Sch. of Publ. Hlth., Consiglio Nazionale delle Ricerche, Italy, Queens Univ. Belfast, United Kingdom, Univ. of Oxford, United Kingdom and Univ. of Zurich, Switzerland.

P637 **117.09** Incorporation of Id3 enhances CAR T cell therapeutic efficacy against solid tumors in an immunocompetent murine model. **S.J. Reed, S.J. Tower, M. Dunga, R. Toumi, V. Kalia and S. Sarkar.** Seattle Children's Res. Inst. and Univ. of Washington.

P638 **117.10** Azacytidine elicits diverse regulation of immune responses in AML subtypes with IDH1 and TET2 mutation. **Y. Wu.** Hong Kong Polytechnic Univ., China.

P639 **117.11** Heightened levels of circulating cell-free DNA predict aggressive onset of experimental glioblastoma. **K. Ayasoufi, D. Wolf, Z.P. Tritz, F. Jin, L. Gukbicki, M. Hansen, C.E. Fain, R. Khadka and A.J. Johnson.** Mayo Clin. and Mayo Clin. Grad. Sch. of Biomed. Sci.

P640 **117.12** Targeting the high-affinity IL-2R with high-dose mIL-2/CD25 induces effective antitumor responses. **K.M. Laporte, R. Hernandez and T.R. Malek.** Univ. of Miami.

P641 **117.13** Cell membrane-anchored and tumor-targeted IL-12-T cell therapy for eliminating large and heterogeneous solid tumors. **J. Hu, Q. Yang, W. Zhang, H. Du, L. Dao, X. Xia, N. Fowlkes, K. Mahadeo, R. Gorlick, G. Dotti and S. Li.** Univ. of Texas MD Anderson Cancer Ctr. and Univ. of North Carolina at Chapel Hill.

P642 **117.14** Targeting immunosuppression for enhanced focused ultrasound efficacy in triple negative breast cancer. **L.E. Petricca, M.M. Honikel, A.R. Witter, G.A. Holling, N.D. Sheybani, R. Burchett, E.A. Thim, J. Bramson, T.N. Bullock, K.P. Lee, R.J. Price and S.H. Olejniczak.** Univ. of Virginia, Roswell Park Comprehensive Cancer Ctr., Univ. of Colorado, McMaster Univ., Canada and Indiana Univ. Sch. of Med.

P900 **117.16** CAR T cells targeting olfactory receptor OR2H1 are an effective immunotherapeutic option in human epithelial tumors. **S. BISWAS, A. Martin, C.M. Anadon Galindo, J. Mine, K.K. Payne, G. Mandal, R. Chaurio, J.J. Powers, K. Sprenger, K.E. Rigolizzo, P. Innamarato, C. Harro, S. Mehta, B.A. Perez, R.M. Wenham and J.R. Conejo-Garcia.** H. Lee Moffitt Cancer Ctr. and Res. Inst.

P901 **117.17** A novel linked TCR:MyD88 receptor improves anti-tumor responses while maintaining antigen specificity. **J.C. Magno, J. Guo and E. Davila.** Univ. of Colorado Anschutz Med. Campus.

P902 **117.18** Targeting autophagy with carbon-monoxide reprograms anti-tumor T cells with robust immunometabolic phenotype. **P. Chakraborty, R.Y. Parikh, S. Choi, M. Mehrotra, E.N. Maldonado, H. Wang, J.A. Diehl, V.K. Gangaraju and S. Mehrotra.** Med. Univ. of South Carolina and Case Comprehensive Cancer Ctr.

P903 **117.19** Host genetics influence response to targeted immunotherapy and effector cell capacity to perform key immune functions. **J.E. Glassbrook, J. Hackett, M. Muñiz, G. Dyson and H. Gibson.** Wayne State Univ. Sch. of Med. and Karmanos Cancer Inst.

P904 **117.20** Inhibition of TKI-activated MIF/CXCR2 pathway as a novel therapeutic strategy in acute myeloid leukemia. **C.S. Hino, V. Tadros, B. Hiramoto, B. Leep, D.H. Kim, M.E. Reeves, D. Baylink, H. Cao and Y. Xu.** Loma Linda Univ.

118. NON-IMMUNE THERAPIES IN CANCER

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P906 **118.02** Gene therapy increases MHC class-I and T cell Infiltration to promote anti-tumor immune response in 4T1 breast cancer model. **G. Shi and R. Heller.** Univ. of South Florida.

P907 **118.03** Close proximity of immune and tumor cells underlies response to BRAF/MEK-targeted therapies in metastatic melanoma patients. **C. Yan, S-C. Chen, G. Ayers, C. Nebhan, J. Roland, V. Weiss, D. Johnson and A. Richmond.** Tennessee Valley Healthcare Syst., Vanderbilt Univ. Med. Ctr. and Vanderbilt Univ.

P908 **118.04** Fluorescence tagging to monitor CD8 T cell recirculation from the tumor to the tumor-draining lymph node: the impact of focal radiation therapy on recirculation. **M.J. Gough, T. Blair, A.K. Dowdell, S. Bambina, G. Kramer, B.D. Piening and M.R. Crittenden.** Providence Portland Med. Ctr.

P909 **118.05** The effect of alloferon on chemosensitivity of pancreatic cancer through the regulation of SLC6A14 expression. **H. Jo, D. Lee, C. Go, Y. kim and J.S. Kang.** Seoul Natl. Univ. Col. of Med., South Korea and Seoul Natl. Univ. Col. of Med., South Korea.

P910 **118.06** Induction of inflammatory macrophages in solid tumors by all-trans retinoic acid augments radiation efficacy. **H.L. Liang, E. Rao, Y. Hou, J. Wang, X. Huang, X. Yu, L. Wang, C. He, E. Vokes and R. Weichselbaum.** Univ. of Chicago, Xuzhou Med. Univ., China and Xi'an Jiaotong Univ., China.

P911 **118.07** IFNγ from IL-12 virotherapy stably controls tumors independent of T cell cytotoxicity and IFNγ sensing by tumor cells. **M. Walsh, L. Ali, C. Stump, P. Lenehan, M. Dougan, D. Knipe and S. Dougan.** Harvard Med. Sch., Dana Farber Cancer Inst. and Massachusetts Gen. Hosp.

P912 **118.08** The PARP inhibitor ABT-888 impairs the suppressive capacity of regulatory T cells through modulation of FoxP3 and CTLA-4. **D.M. Falcon and S.F. Adams.** Univ. of New Mexico.

P913 **118.09** Preoperative exercise therapy attenuates liver metastases following surgical stress by inducing Kupffer cells-mediated anti-tumor immunity. **H. Zhang, X. Cheng, M. Deng, A. Tsung and H. Huang.** Wexner Med. Ctr., Ohio State Univ.

P914 **118.10** IFNγ-mediated PD-L1 expression mitigates the immunomodulatory effect of irreversible electroporation on pancreatic cancer. **K.M. Imran, R. Brock, N. Alinezhadbalalami, K.N. Aycock, H.A. Morrison, R.V. Davalos and I.C. Allen.** Virginia Tech, Baylor Col. of Med. and Virginia-Maryland Col. of Vet. Med..

P915 **118.11** Coupling the immunomodulatory properties of the HDAC6 inhibitor ACY241 with oxaliplatin promotes robust anti-tumor response in non-small cell lung cancer. **D.O. Adeegbe, A. Bag, A. Schultz, S. Bhimani, W. Dominguez and L. Cen.** H. Lee Moffitt Cancer Ctr. and Res. Inst.

P917 **118.13** High-dimensional single-cell analysis of the immune response in multiple myeloma and profiling of the T cell repertoire in response to immunomodulatory treatment. **J. Prazich.** Univ. of Pennsylvania.

P918 **118.14** Triple synergy between vaccine and checkpoint inhibitors in a pre-clinical tumor model. **W.J. Becker, P.B. Olkhanud and J.A. Berzofsky.** NIH.

P919 **118.15** The novel coreceptor CD8α:MyD88 enhances T-cell proliferation, activation, and antitumor response at low-dose IL-2 in B16 melanoma. **P. Cao, J. Chen, N. Ciavattone and E. Davila.** Univ. of Colorado Anschutz Med. Campus and Univ. of Michigan.

P920 **118.16** Towards a mechanistic understanding of patient response to neoadjuvant SBRT with anti-PDL1 in human HPV-unrelated locally advanced HNSCC: phase I/Ib trial results. **L.B. Darragh, J. Hu, E.T. Clambey, J.D. McDermott, A. Jimeno and S.D. Karam.** Univ. of Colorado Anschutz Med. Campus.

P921 **118.17** Molecular regulation of CD8 T cell activity and heterogeneity in pancreatic cancer. **W.D. Green, G.N. Mullins, J.M. Green, A. Baldwin and J.J. Milner.** Univ. of North Carolina at Chapel Hill.

119. MECHANISMS OF RESISTANCE TO THERAPY

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P922 **119.01** BHLHE40: required for regulation of effector T cells and remodeling of tumor microenvironment during immune checkpoint therapy. **A.J. Salmon, A.S. Shavkunov, Q. Miao, N.N. Jarjour, S. Keshari, C.D. Williams, A.M. Highsmith, J.E. Pineda, K. Chen, B.T. Edelson and M.M. Gubin.** Univ. of Texas MD Anderson Cancer Ctr. and Univ. of Texas Hlth. Grad. Sch. of Biomed. Sci., Univ. of Texas MD Anderson Cancer Ctr., Univ. of Minnesota Med. Sch. and Univ. of Washington Sch. of Med.

P923 **119.02** A selective class I HDAC inhibitor recovers intratumoral interferon signaling to overcome immune-checkpoint blockade resistance in hepatocellular carcinoma. **Y. Tu, Z. Xiong, C. Zhong, J. Wang, P.P-C. Wong, W. Yang, J. Zhou, K.F. To, S.L. Chan, D. Kerr, N.L. Thangue and A.S.L. Cheng.** Sch. of Biomed. Sci., Chinese Univ. of Hong Kong, China, Renji Hosp., Shanghai Jiao Tong Univ. Sch. of Med., China, Chinese Univ. of Hong Kong, China, Univ. of Oxford, United Kingdom and Celleron Therapeutics, United Kingdom.

P924 **119.03** Evaluation of tumor-derived Serpina3n in experimental glioblastoma. **K. Ayasoufi, D. Wolf, J. Zheng, Z.P. Tritz, F. Jin, L. Gulbicki, M. Hansen and A.J. Johnson.** Mayo Clin. and Mayo Clin. Grad. Sch. of Biomed. Sci.

P925 **119.04** Lymph node colonization promotes distant tumor metastasis through the induction of tumor-specific immune tolerance. **N.E. Reticker-Flynn, W. Zhang, J.A. Belk, P.A. Basto, A. Satpathy, S.K. Plevritis and E.G. Engleman.** Stanford Univ. Sch. of Med.

P927 **119.06** Tumoral expression of NAC1 restrains antitumor immunity through the LDHA-mediated immune evasion. **J.J. Song.** Texas A&M Univ. Hlth. Sci. Ctr.

P928 **119.07** β-Adrenergic signaling modulates the development and activity of erythroid suppressor cells. **A.K. Chawla, J. Nevin, M. Moussa, R. Geyer, I. Mandoiu and P.K. Srivastava.** UConn Hlth., Yale Sch. of Med. and Univ. of Connecticut.

P930 **119.09** Hydrogen sulfide signaling in promoting the anti-tumor T cell response. **N. Oberholtzer and S. Mehrotra.** Med. Univ. of South Carolina.

P931 **119.10** TNF-α blockade improves immunotherapy efficacy by altering the tumor microenvironment and enhancing tumor-specific T cell function in pancreatic ductal adenocarcinoma. **A.L. Burrack, Z. Schmiechen, E. Miller and I. Stromnes.** Univ. of Minnesota.

P932 **119.11** Tumors bearing defective transcription elongation are immune hot but resistant to immune checkpoint inhibitors. **V. Modur and F. Guo.** Cincinnati Children's Hosp. Med. Ctr.

P933 **119.12** Response to anti-PD-1 and anti-LAG-3 immune checkpoint blockade is associated with induction of pro-inflammatory Tregs. **A.S. Rolig, E.R. Sturgill, C. Mick, D. Rose, J. Kaufmann, N. Yanamandra, S. Griffin, J. Smothers and W.L. Redmond.** Earle A. Chiles Res. Inst., Codagenix and GlaxoSmithKline.

P934 **119.13** Targeting LSD1 rescues MHC class I antigen presentation and promotes immune checkpoint blockade response in small cell lung cancer. **E.M. Nguyen, H. Taniguchi, A. Chow, T. Sen and C.M. Rudin.** Mem. Sloan Kettering Cancer Ctr. and Weill Cornell Grad. Sch. of Med. Sci.

P935 **119.14** Remodeling of the tumor microenvironment via disrupting effector Treg activity augments response to checkpoint blockade. **J.W. Leavenworth, M.L. Dixon, L. Luo, S. Ghosh, J.M. Grimes and J.D. Leavenworth.** Univ. of Alabama at Birmingham.

P936 **119.15** Immune characterization in platinum-resistant ovarian cancer patients treated with pembrolizumab and guadecitabine. **P. Xie, S. Chen, M. Cowan, H. Huang, H. Cardenas, M. Kocherginsky, D. Matei and B. Zhang.** Northwestern Univ.

P937 **119.16** TCF-1 controls T_{reg} functions that regulate inflammation, CD8 T-cell cytotoxicity, and severity of colon cancer. **K. Khazaie, A. Osman, B. Yan, M. Kazemian and F. Gounari.** Mayo Clin., Univ. of Chicago and Purdue Univ.

120. THE IMPACT OF THE COMMENSAL MICROBIOME ON CANCER PROGRESSION AND THERAPY RESPONSE

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P938 **120.01** Dietary low-fiber promotes resistance to immune checkpoint inhibitor immunotherapy in the LSL-$Kras^{G12D}$ lung cancer model. **Q. Li, K.E. Goggin, J. Seo and N. Egilmez.** Univ. of Louisville.

P939 **120.02** Suppression of local IFN-I by commensal microbiota-derived butyrate impairs antitumor effects of ionizing radiation. **K. Yang, Y-X. Fu and R.R. Weichselbaum.** Univ. of Chicago and Univ. of Texas Southwestern Med. Ctr.

P940 **120.03** Neutrophil dynamics in the tumor microenvironment determines therapy efficacy and is regulated by microbiota. **R.E. Araya, K.C. Lam, A. Huang, Q. Chen, M. Di Modica, A. Lopes, H. Yang, H. Liu, M.P. Lee and R.S. Goldszmid.** NCI, NIH, Leidos Biomed. Res., Kelly Government Solutions and Istituto Nazionale dei Tumori, Italy.

P941 **120.04** *Lactobacillus rhamnosus* GG re-shapes gut microbiota and triggers STING-type I IFN-dependent antitumor immunity. **L. Wang, H.L. Liang and R. Weichselbaum.** Univ. of Chicago.

P942 **120.05** Absence of Toll-like receptor 5 confers survival in mice bearing ovarian tumors treated with anti-PD-L1. **M.T. McGinty, T-Y. Feng, S. Kolli, A. Putelo and M. Rutkowski.** Univ. of Virginia.

P943 **120.06** Resistance to anti-PD-1 therapy is mediated via the microbiota-Th17-prostaglandin E2 axis in the LSL$Kras^{G12D}$ lung cancer model. **Q. Li, K.E. Goggin, J. Seo and N. Egilmez.** Univ. of Louisville.

P944 **120.07** High glucose drinks improve the anti-tumor efficacy of brain tumor immunity by gut microbiome modulation. **J. Kim and H.K. Lee.** Korea Advanced Inst. of Sci. and Tech., South Korea.

P945 **120.08** Tumor-intrinsic factors dictate beneficial effect of microbiota-based therapies. **K.C. Lam, A. Huang, R.E. Araya, Q. Chen and R.S. Goldszmid.** NCI, NIH, Univ. of Maryland, Col. Park, Leidos Biomed. Res. and Kelly Government Solutions.

P946 **120.09** Intertumoral CD4+ T-cells instruct monocyte differentiation in pancreatic ductal adenocarcinoma. **M. Patterson, A.L. Burrack, Z.C. Schmiechen, Y. Xu, M. Firulyova, E. Miller, P. Schrank, K. Zaitsev, J. Williams and I. Stromnes.** Univ. of Minnesota and ITMO Univ., Russia.

P947 **120.10** Nasal nano-vaccine prevents primary breast tumor from making the lungs its new home. **M.A. Donkor and H. Jones.** Univ. of North Texas Hlth. Sci. Ctr.

P948 **120.11** P2RX7 enhances tumor control by $CD8^+$ T cells in adoptive cell therapy. **K. Wanhainen, C. Peng, S. O'Flanagan, B. Burbach, H. Borges da Silva and S. Jameson.** Univ. of Minnesota and Mayo Clin.

P949 **120.12** Improving anti-tumor CD8+ T cell function through manipulating glutamine metabolism. **E.L. Fisher, M.Z. Madden, C. Chi, A. Suguira and J. Rathmell.** Vanderbilt Univ. Med. Ctr.

P950 **120.13** Anti-TIGIT antibodies promote immune activation relevant to targeting stem-like and tumor-specific T cells in combination with anti-PD-1. **K.E.S. Gauthier, D. Piovesan, A.E. de Groot, G.L. Reiner, P.G. Schweickert, F. Soriano, A. Chen, H. Singh, X. Zhao, L. Seitz, A. Reddy, S.W. Young, N. Walker and M.J. Walters.** Arcus Biosciences.

P951 **120.14** Role of RIG-I in tumor endothelium. **A. Baris, S. Anand and S. Khou.** Oregon Hlth. and Sci. Univ.

P952 **120.15** Common trajectories of highly effective CD19-specific CAR T cells identified by endogenous T cell receptor lineages. **J.C. Crawford.** St. Jude Children's Res. Hosp.

P952 **120.15** Anti-TIGIT antibodies promote immune activation relevant to targeting stem-like and tumor-specific T cells in combination with anti-PD-1.Common trajectories of highly effective CD19-specific CAR T cells identified by endogenous T cell receptor lineages. **T.L. Wilson, H. Kim, C-H. Chou, D. Langfitt, E.K. Allen, J-Y. Metais, M. Pogorelyy, P. Kottapalli, S. Trivedi, S. Olsen, T. Lockey, C. Willis, M.M. Meagher, B. Triplett, A.C. Talleur, S. Gottschalk and P.G. Thomas.** St. Jude Children's Res. Hosp. and St. Jude Children's Res. Hosp.

P953 **120.16** Combining immunotherapies with conventional cancer therapies in a preclinical model of treatment-resistant, high-risk neuroblastoma. **L.K. Zebertavage, T. Aiken, A. Erbe-Gurel, A. Schopf, M. Nielsen, S. Katz, A. Rakhmilevich and P. Sondel.** Univ. of Wisconsin, Madison.

121. $CD8^+$ T CELLS IN CANCER

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P954 **121.01** Nitration of CCL2 disrupts the tumor-protective function of CCL2 in bladder cancer. **N. Mukherjee, N. Ji, Z-J. Shu, T.J. Curiel and R.S. Svatek.** Univ. of Texas Hlth. Sci. Ctr., San Antonio.

P955 **121.02** Chimeric cytokine targeting NKG2D and IL-2 receptor augments CD8+ T cell-metabolic fitness and improves immunotherapy. **A. Banerjee, D. Li, Y. Guo, Z. Mei, K. Chen, A. Schrum and A. Krupnick.** Sch. of Med., Univ. of Maryland, Baltimore and Univ. of Missouri, Columbia.

P956 **121.03** Metabolic reprogramming of antitumor $CD8^+$ T cells by modulation of GSH-Gpx4 axis. **S. Chen, J. Fan, P. Xie, J. Ahn, M. Fernandez, N. Chandel and B. Zhang.** Feinberg Sch. of Med., Northwestern Univ.

P957 **121.04** Granzyme F production by CD8 T cells in the tumor microenvironment. **Z.L. Hay, J.R. Knapp, F.A. Camp, B. P. O'Connor and J.E. Slansky.** Univ. of Colorado Anschutz Med. Campus, Natl. Jewish Hlth. Ctr. for Genes Envrn. and Hlth. and Natl. Jewish Hlth. Ctr. for Genes, Envrn. and Hlth.

P958 **121.05** Tumor-induced, TCR-independent upregulation of A2AR expression in effector CD8+ T cells. **M. Zhou and H. Borges da Silva.** Mayo Clin.

P959 **121.06** CD8 T cell responses to conserved *DNAJB1-PRKACA* fusion neoantigens in fibrolamellar carcinoma. **A.M. Kirk, C-H. Chou, W. Awad, J.C. Crawford, E.K. Allen, X. Zhang, A.E. Zamora, S.E. Strome and P.G. Thomas.** St. Jude Children's Res. Hosp., Univ. of Maryland Sch. of Med., Med. Col. of Wisconsin and Univ. of Tennessee Hlth. Sci. Ctr.

P960 **121.07** Activated $CD8^+$ T cells from CLL patients exhibit impaired granzyme B and perforin secretion that is restored by addition of exogenous IL2 and/or IL21. **C. Paraschivescu, R. Aslam, P.Y. Chiu, B. Jung, G. Ferrer, B. Sherry and N. Chiorazzi.** Karches Ctr. for Oncology Res., Feinstein Inst. for Med. Res., Ctr. for Immunology and Inflammation, Feinstein Inst. for Med. Res., Ctr. for Immunology and Inflammation, Inst. of Molec. Med., Feinstein Inst. for Med. Res., Donald and Barbara Zucker Sch. of Med., Hofstra/Northwell, Northwell Hlth. and Donald and Barbara Zucker Sch. of Med., Hofstra/Northwell.

P961 **121.08** Hallmark features of T cell dysfunction are established within hours after tumor antigen encounter. **M.W. Rudloff, N. Favret, P. Zumbo, F. Dündar, D. Betel and M. Philip.** Vanderbilt Univ. Med. Ctr. and Weill Cornell Med. Col.

P962 **121.09** CD8 T cell activation in cancer is comprised of two distinct phases. **N. Prokhnevska, M.A. Cardenas, R. Valanparambil, E. Sobierajska, C. Jansen, V. Master, M. Sanda and H. Kissick.** Emory Univ.

P963 **121.10** Rebalancing TGFβ1/BMP signaling epigenetically reprograms fully exhausted human CD8 T cells into a functional state. **H.E. Ghoneim, A.A. Saadey, A. Yousif, N. Osborne, Y-L. Chen, B. Laster, A. Zayed and P. Bauman.** Ohio State Univ. Col. of Med., Ohio State Univ. Comprehensive Cancer Ctr. and Ohio State Univ.

P964 **121.11** PIK3IP1/TrIP immune regulation on $CD8^+$ T cells restricts anti-tumor immunity. **B.M. Murter, H. Banerjee, A. Szymczak-Workman and L.P. Kane.** Univ. of Pittsburgh Sch. of Med. and Univ. of Pittsburgh.

P965 **121.12** The role of the thrombin/PAR axis in modulating CD8+ T cell anti-tumor immunity. **R. Cantrell, L. Rosenfeldt, B.K. Sharma, B. Gourley, A. Revenko, B. Monia and J. Palumbo.** Univ. of Cincinnati Col. of Med., Cincinnati Children's Hosp. and Med. Ctr. and Ionis Pharmaceuticals.

P966 **121.13** Sushi domain containing 2 suppresses $CD8^+$ T cell antitumor immunity by targeting IL-2 receptor signaling. **H. Wen and B. Zhao.** Ohio State Univ.

P967 **121.14** CD8 T cells licensed with immune checkpoint blockade kill murine tumors lacking MHC-I. **E.C. Lerner, W. Tomaszewski, V. D'Anniballe, J. Perera, X. Cui, D.S. Wilkinson, J. Waibl-Polania, M. Gunn, P.E. Fecci and K. Woroniecka.** Duke Univ. Sch. of Med., Duke Univ. and Duke Univ. Med. Ctr.

P968 **121.15** Functional virus-specific memory CD8+ T cells survey glioblastoma. **P. Rosato, J. Ning, N.V. Gavil, S. Wu, S. Wijeyesinghe, E. Weyu, J. Ma, M. Li, F-N. Grigore, S. Dhawan, A.G. Skorput, S.C. Musial, S.A. Kleist, J.F. Isaacs, C.C. Chen and D. Masopust.** Geisel Sch. of Med. at Dartmouth and Univ. of Minnesota.

122. ENGINEERING OF T CELL–BASED THERAPIES

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P969 **122.01** Anti-CD123 chimeric antigen receptor natural killer cell therapy to treat acute myeloid leukemia. **M. Kizerwetter, H. Yang, R. Rahnama, C. Bonifant and J. Spangler.** Johns Hopkins Univ.

P970 **122.02** Utilizing distinct CAR and TCR signaling to generate enhanced cellular immunotherapy. **N.R. J. Gascoigne, L. Wu, J. Brzostek, Q. Wei, P.D. Sakthi Vale, C.K.T. Koh, Y.L. Chua, J. Yap, T.Y.Y. Tan, J. Lai and P.A. MacAry.** Natl. Univ. of Singapore, Singapore.

P971 **122.03** D2C7 CAR: a novel CAR T cell that simultaneously targets wildtype EGFR and its mutant isoform EGFRvIII for treatment of glioma. **D.S. Wilkinson, K. Ryan, J. Wilson, V. Chandramohan, D. Landi, D. Bigner and P.E. Fecci.** Duke Univ. Med. Ctr. and Duke Univ. Sch. of Med.

P972 **122.04** CD19-CAR T cells develop exhaustion epigenetic programs during a clinical response. **C.C. Zebley, C. Brown, T. Mi, Y. Fan, S. Alli, S. Boi, G. Galletti, E. Lugli, D. Langfitt, J-Y Metais, T. Lockey, M. Meagher, B. Triplett, A.C. Talleur, S. Gottschalk and B.A. Youngblood.** St. Jude Children's Res. Hosp. and Humanitas Clin. and Res. Ctr.

P973 **122.05** *SUV39H1* disruption imparts functional persistence to CD28-costimulated human CAR T cells. **N. Jain, Z. Zhao, R. Koche, Y. Gozlan, D. Brocks, T. Raveh-Sadka, D. Wells, A. Dobrin, Y. Shi, M. Lopez, G. Gunset and M. Sadelain.** Mem. Sloan Kettering Cancer Ctr. and Immunai.

P974 **122.06** Engineering anti-CD229 CAR T cell selectivity for multiple myeloma. **J. Baker, S.V. Radhakrishnan, M. Olson, D. Atanackovic, T. Luetkens and E. Vander Mause.** Univ. of Maryland Sch. of Med., Med. Col. of Wisconsin, Univ. of Utah and Marlene and Stewart Greenebaum Comprehensive Cancer Ctr.

P975 **122.07** Identifying novel epigenetic modifiers that sensitize T cell malignancies to CD8+ T cell-mediated cytotoxicity by high throughput drug screen. **X.G. Bradeen, A.J. Christians, B. Haverkos and E. Davila.** Univ. of Colorado Anschutz Med. Campus.

P976 **122.08** T-cells resist CD5 CAR-mediated fratricide by continuously degrading CD5 protein. **R. Ma, D. Popat, A. Chaumette, A. Carisey, M.K. Brenner and M. Mamonkin.** Baylor Col. of Med. and Texas Children's Hosp.

P977 **122.09** Combination of αPD-1 and extended half-life IL-2 is effective against the GL261 glioma and uniquely reverses GBM-associated immunosuppression. **Z.P. Tritz, K. Ayasoufi, C.S. Malo, B. Himes, A. Zastrow, D. Wolf, E. Goddery, R. Khadka, C. Fain, M. Chen, L.T. Yokanovich, F. Jin, M. Hansen, C. Wang, K. Moynihan, D.J. Irvine, K.D. Wittrup, I.F. Parney and A.J. Johnson.** Mayo Clin. Grad. Sch. of Biomed. Sci., Mayo Clin. and Massachusetts Inst. of Technol.

P978 **122.10** Overcoming barriers to solid tumor immunotherapy using natural killer cell therapies designed to mimic intraepithelial group 1 innate lymphoid cells. **N.B. Horowitz, J. Hickey, G.P. Nolan and J.B. Sunwoo.** Stanford Univ.

P979 **122.11** Adoptive transfer of *Trac*-targeted T cell receptor engineered T cells with defective *Tgfbr2* signaling promotes pancreatic cancer eradication. **M.R. Rollins, A.L. Burrack, E. Miller and I. Stromnes.** Univ. of Minnesota Med. Sch. and Univ. of Minnesota.

P980 **122.12** Directing T cell alloreactivity against solid tumors through tumor antigen-dependent TCR expression. **K.M. Christie, S. Zhang, T.A. Schwarz and Z. Ma.** Univ. of Delaware and Nemours/Alfred I. duPont Hosp. for Children.

P981 **122.13** Glycolipid-loaded nanoparticle immunotherapy cooperates with checkpoint inhibitors to harness iNKT cells for tumor control. **T.J. Shute, E.A. Dudley, K. Nash and E.A. Leadbetter.** Univ. of Texas Hlth., San Antonio and Univ. of Texas, San Antonio.

P982 **122.14** A tumor-targeted cytokine/antibody fusion protein to stimulate anti-cancer immunity. **A.B. Silver and J. Spangler.** Johns Hopkins Bloomberg Sch. of Publ. Hlth., Johns Hopkins Univ. Sch. of Med. and Johns Hopkins Univ.

P983 **122.15** BET inhibitors synergize with anti-PD1 by rescuing TCF1+ progenitor exhausted T cells in acute myeloid leukemia. **K.A. Romine, H-j. Cho, Y. Kosaka, P. Flynn, K.H. Byrd, J.L. Coy, M.T. Newman, J. Scott, C. Loo and E.F. Lind.** Oregon Hlth. and Sci. Univ.

P984 **122.16** Dissecting molecular mechanisms underlying T cell co-potentiation when targeting the TCR/CD3 complex with anti-CD3 Fab fragments. **H.T. Huynh, C.M. Puthanapura, A.D. Nelson, L.R. Becher, M. Abergel, S. Hu, B. Alarcon, A. Schrum and D. Gil Pages.** Univ. of Missouri, Columbia, Mayo Clin. and Autonomous Univ. of Madrid, Spain.

P985 **122.17** Tumor-adjacent IL2 cytokine factories eradicate ovarian cancer in mice through cytotoxic T-cell activation with safe and predictable dosing in non-human primates. **G. Carmona, A. Nash, M. Jarvis, R. Newman, J. Schladenhauffen, S. Aghlara-Fotovat, A. Hernandez, S. Nouraein, S. Mukherjee, A. Hecht, Y. Cui, J. Lee, P. Rios, D. Zhang, C. Xu, R.S. Sheth, W. Peng, J. Oberholzer, O. Igoshin, A. Jazaeri and O. Veiseh.** Avenge Bio, Rice Univ., Houston, CellTrans, Rice Univ., Univ. of Houston, Univ. of Texas MD Anderson Cancer Ctr. and Univ. of Houston.

P986 **122.18** Cancer vaccines used in combination with TCR-like antibody blockade of the Qa-1^b/Qdm complex, the ligand for the immune checkpoint NKG2A, induce anti-tumor immunity. **S. Ghaffari.** Univ. of Texas, Arlington.

P987 **122.19** Evaluating potential toxicities of cancer immunotherapies using autoimmune animal models. **O.J. Okpasuo, A.N. Cattin-Roy, N. Karasseva, C. Puthanapura Mahadevappa, V. Radhakrishnan, H. Zaghouani and D. Gil Pages.** Univ. of Missouri, Columbia.

P988 **122.20** Identifying key differences between responders vs. non-responders to immune checkpoint blockade for metastatic osteosarcoma. **M.P. Di Palma, N. Appel, D. Lussier and J.N. Blattman.** Arizona State Univ.

P989 **122.21** T cell receptor revision as a novel mechanism of action of immune checkpoint blockade. **D. Brice, P.G. Thomas and M.A. McGargill.** St. Jude Children's Res. Hosp.

P990 **122.22** Novel low-avidity glypican-3-specific CARTs resist exhaustion and mediate durable antitumor effects against hepatocellular carcinoma. **Y. He, L.D. Caraballo-Galva, X. Jiang, M.S. Hussein, H. Zhang, R. Mao, P. Brody, Y. Peng, A.R. He, M. Kehinde-Ige, R. Sadek, X. Qiu and H. Shi.** Augusta Univ., Univ. of Manitoba, Canada and Georgetown Univ. Sch. of Med.

P991 **122.23** TCR-T cells engineered to overexpress c-Jun have better functionality with improved tumor infiltration and persistence for treatment of hepatocellular carcinoma. **M.S. Hussein and Y. He.** Med. Col. of Georgia, Augusta Univ.

P992 **122.24** ITGA4 knockout prevents blood-brain-barrier migration of chimeric antigen receptor T cells. **K.A. Dietze, E. Morales and T. Luetkens.** Univ. of Maryland Sch. of Med. and Univ. of Utah.

P993 **122.25** Improved anti-tumor T cell generation using rapidly differentiated dendritic cells. **A. Minguy, J. Trottier, J. Sanchez-Dardon, J-P. Bastien, V. Dave and D.C. Roy.** Univ. of Montréal, Canada.

P995 **122.27** Overcoming AML T cell therapy barriers with engineered proteins. **A. Ruan, E. Chiu and S.K. Oda.** Seattle Children's Res. Inst., Univ. of Washington and Univ. of Washington.

P996 **122.28** Inflammation suppresses elevated TCF1 and FOXO1 expression in vaccine-elicited T cells. **D.L. Ivanova, A. Kilgore, J. Klarquist, S. Thompson and R. Kedl.** Univ. of Colorado Anschutz Med. Campus.

P997 **122.29** Resveratrol, modafinil and caffeine's modulation of B cell's CD19 activation receptor. **H.F. Valenzuela, G. Samayoa, K. Martinez and S. Salvador.** Whittier Col.

123. ANTIGEN PRESENTATION AND TUMOR MICROENVIRONMENT

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P998 **123.01** Adjuvant AS01 induces monocyte activation that favors T cell expansion and diversification in primary human cells. **C.L. Smith and D.H. Canaday.** Case Western Reserve Univ. Sch. of Med. and Geriatric Res., Educ. and Clin. Ctr. and Lewis Stokes Cleveland VA Med. Ctr.

P999 **123.02** Cell-specific regulation of antigen-specific germinal center formation and antibody responses by thymic stromal lymphopoietin. **P.P. Domeier and S.F. Ziegler.** Benaroya Res. Inst.

P1000 **123.03** Optimizing vaccine performance through improved cross-presentation with a nanoparticle adjuvant. **J.F. Hernandez-Franco, I.M. Jan, M. Goldsmith and H. HogenEsch.** Purdue Univ.

P1001 **123.04** Inhibition of perforin enhances T cell and humoral responses after immunization. **D. Krishnamurthy, H. Cevik, A. Ali, L. Canaday, E. Mukhopadhyay, W. Seibel, K. Risma, M.B. Jordan and S.N. Waggoner.** Cincinnati Children's Hosp. Med. Ctr. and Univ. of Cincinnati Col. of Med.

P1002 **123.05** Immunogenicity and tolerability of a synthetic adjuvant system alternative to AS01. **J. Ward, M. Whitacre, E. Ward, R. Schoener, D. Burkhart and S.M. Miller.** Inimmune Corp.

P1003 **123.06** IL-27 impairs protective cytokine responses in a neonatal mouse model of vaccination. **S. Bradford, J. Povroznik and C. Robinson.** West Virginia Univ. Sch. of Med.

P1004 **123.07** A novel solution to better understand the link between T cell metabolism and function. **J. Walls, Y. Kam and N. Romero.** Agilent Technologies.

P1005 **123.08** Improving the metabolic efficiency of human T cells through AMPK agonist treatment. **E. Braverman, M. McQuaid and C.A. Byersdorfer.** Univ. of Pittsburgh Sch. of Med.

P1006 **123.09** Intranasal administration of a novel synthetic TLR4 agonist suppresses allergen-specific Th2 responses in mice. **S.M. Miller, C. Buhl, M. Whitacre, J. Ward, K. Jackson, J.K. Khalaf, H.G. Bazin and J.T. Evans.** Inimmune Corp.

P1007 **123.10** Demonstration of regulatory CD8 T cell prevalence, phenotype, and functions in autoimmune patients treated with a tolerizing peptide vaccine. **M. Maurer, J. Bowser, R. Fasnacht, J.L. Gardell, S. Julien, M. Templeton, J. Therriault, S.J. Yang, K. Swiderek and C. Crane.** Mozart Therapeutics.

P1008 **123.11** Monoclonal antibodies displaying mutations in Fc region to prolong protection against fentanyl toxicity. **A.J. Khaimraj.** Univ. of Minnesota.

P1008 **123.11** Demonstration of regulatory CD8 T cell prevalence, phenotype, and functions in autoimmune patients treated with a tolerizing peptide vaccine.Monoclonal antibodies displaying mutations in Fc region to prolong protection against fentanyl toxicity. **D. Hicks, C. Baehr and M. Pravetoni.** Univ. of Minnesota.

P1009 **123.12** Investigating the role of interleukin-4 in anti-opioid vaccine efficacy. **B. Crouse, D. Hicks and M. Pravetoni.** Univ. of Minnesota.

P1010 **123.13** Polyanhydride-based nanovaccine promotes long-term humoral and cellular response to PDAC-associated protein MUC4β. **J.C. Christiansen, L. Liu, P. Kshirsagar, E. Wafa, S. Gautam, A. Aithal, M. Gulati, S. Kumar, J. Solheim, S. Batra, A. Salem, M. Jain, M. Wannemuehler and B. Narasimhan.** Iowa State Univ., Univ. of Nebraska Med. Ctr. and Univ. of Iowa.

P1011 **123.14** Intranasal adjuvant immunotherapy re-activates immunity and enhances survival in murine metastatic lymphangioleiomyomatosis. **K. Maisel.** Univ. of Maryland, Col. Park.

P1012 **123.15** Development of no-wash, rapid Fcγ receptor binding immunoassays using NanoBiT® technology. **B. Swanson, N. Nath, B. Godat, R. Flemming and M. Urh.** Promega Corp.

P1013 **123.16** IL-9/STAT3/fatty acid oxidation-mediated lipid peroxidation contributes to Tc9 cell longevity and enhanced antitumor activity. **L. Xiao and Q. Yi.** Houston Methodist Res. Inst.

124. FROM SHARKS, FISH, AND FROGS TO MAMMALS: FASCINATING IMMUNOLOGICAL DISCOVERIES

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P1014 **124.01** The biology of the unconventional γμ T cell in the opossum *Mondodelphis domestica*. **K.A. Morrissey, L. Bu and R. Miller.** Univ. of New Mexico.

P1015 **124.02** Optimization of expansion techniques for adoptive NK cell transfer in dogs with cancer. **A. Razmara, S.J. Judge, C. Dunai, W.J. Murphy, R.B. Rebhun, M.S. Kent and R.J. Canter.** Univ. of California, Davis.

P1016 **124.03** Aggregation of IgM+, TCRβ+ and CD4+ cells around melanomacrophage centers: evidence of an organized lymphoid structure in a teleost. **S.P. Vaidyanathan and N.C. Steinel.** Univ. of Massachusetts, Lowell.

P1017 **124.04** Novel immunological tools to investigate $CD4^+$ T cell activation in the canine species. **H.P. Lang, T. Dileepan, M.K. Jenkins and S. Friedenberg.** Univ. of Minnesota.

P1018 **124.05** B cell ontology in a model marsupial. **J.M. Sampson, K.A. Morrissey and R.D. Miller.** Univ. of New Mexico.

P1019 **124.06** scRNA-Seq profiling of stickleback fish splenocytes: expansion of myeloid and B cells on immunization. **A. Attaya, B. Lohman and N. Steinel.** Univ. of Massachusetts, Lowell and Huntsman Cancer Inst.

P1020 **124.07** Development of swine Fc conjugated serotype O foot and mouth disease virus-like particles. **H-J. Shin and J-Y. Park.** Chungnam Natl. Univ., South Korea.

P1021 **124.08** Phenotypic and transcriptomic profiles of tumor-conditioned macrophages in dogs, and the translational value of canine cancer immunology research. **M. Kerboeuf, A.H. Haaland, L. Moe, D. Argyle and P. Boysen.** Norwegian Univ. of Life Sci., Norway and Univ. of Edinburgh, United Kingdom.

P1022 **124.09** Identifying B cells in hatchling and adult *Trachemys scripta*, red-eared slider turtles. **H.D. Paton, A. Mool, C. Fairow, W. Hurst, R. Bowden and L. Vogel.** Illinois State Univ.

P1023 **124.10** Development of highly specific peptibody against porcine epidemic diarrhea virus. **J. Ryu and H-J. Shin.** Chungnam Natl. Univ., South Korea.

P1024 **124.11** Flt3 and its ligand as an ancient regulators of dendritic cells: evidence in the amphibian *Xenopus laevis*. **M. Paiola, S. Roy, S. Ma, C. Patrick, M. Pavelka, E.J. Adams and J. Robert.** Univ. of Rochester Med. Ctr. and Univ. of Chicago.

P1025 **124.12** Plant-derived nano-11 particle adsorbed with stimulator of interferon genes adjuvant and split influenza virus antigens elicits the cross-protective immunity in pigs. **R.J. Gourapura, V. Patil, J.F. Hernandez-Franco, G. Yadaigiri, D. Bugybayeva, S. Dolatyabi, N. feliciano-ruiz, J. Schrock, J. Hanson and H. HogenEsch.** Ohio State Univ. and Purdue Univ.

P1026 **124.13** Development of swine immune reagents for analysis of immune correlates for vaccines, infection, and in biomedical research. **R.J. Gourapura, C. Loving, S. Kenney, J. LaBresh, V. Patil, K.A. Byrne, J. Manirarora, K. Walker, A. Jovan, S. Chick, C. Dai, T. Hailstock and J.K. Lunney.** Ohio State Univ., Natl. Animal Dis. Ctr., ARS, USDA, and Beltsville Agr. Res. Ctr., ARS, USDA.

P1027 **124.14** B cell selection sites in the nurse shark spleen may represent evolutionary precursors of mammalian germinal centers. **H.C. Matz and H. Dooley.** Univ. of Maryland, Baltimore and Inst. of Marine and Envrn. Technol.

P1028 **124.15** Characterization of cellular subpopulations and their gene expression by single-cell RNA sequencing in canine atopic dermatitis. **Y. Drechsler, B.A.T.E. Sparling, N.G. Moss, G. Kaur and R.D. Hawkins.** Western Univ. of Hlth. Sci. and Univ. of Washington.

P1029 **124.16** The effects of dietary zinc supplement on intracellular zinc concentration in bovine immune cells. **C.E. Franco, F.E. Diaz, E. Rients, D.T. Smerchek, S.L. Hansen and J.L. McGill.** Iowa State Univ.

P1030 **124.17** miRNA-target genes interactome associated with heat and immune homeostasis in evolutionarily adapted cattle. **O. Morenikeji, O.A. Braimah, A. Memili, T. Murphy and B. Thomas.** Univ. of Pittsburgh, Bradford, Univ. of North Carolina at Chapel Hill and Rochester Inst. of Technol.

P1031 **124.18** Dietary zinc supplementation impact on relative frequency and innate function of peripheral bovine immune cells. **F.E. Diaz, E. Rients, C.E. Franco, D.T. Smerchek, S.L. Hansen and J.L. McGill.** Iowa State Univ.

P1032 **124.19** Discovery of an organized nasopharynx-associated lymphoid tissue in the nasal cavity of rainbow trout and its role in secondary adaptive immune responses to nasal vaccines. **I. Salinas, B. Garcia, F. Dong and E. Casadei.** Univ. of New Mexico and Col. of Fisheries, Huazhong Agr. Univ., Wuhan, China.

P1033 **124.20** Altered transcriptome responses in the lungs of preweaned calves supplemented with a yeast fermentate during a viral-bacterial coinfection. **P.O. McDonald, T.W. Maina, B.E.R. Samuel and J.L. McGill.** Iowa State Univ.

125. INNATE AND ADAPTIVE IMMUNITY TO SARS-COV-2

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P1034 **125.01** Evaluation of quantitative correlation between the Abbott SARS-CoV-2 IgG II antibody test with the SARS-CoV-2 surrogate virus neutralization test. **K.H. Lau.** PHC Med. Diagnostic Ctr. Limited, China.

P1035 **125.02** The human *IGHD3-22*-encoded motif contributes to broad reactivity of anti-SARS-CoV-2 antibodies. **H. Liu and I.A. Wilson.** Scripps Res. Inst.

P1036 **125.03** SARS-CoV-2 vaccination induces T cell memory responses able to cross-recognize ongoing SARS-CoV-2 variants including omicron. **A. Grifoni, A. Tarke, J. Dan, C. Coelho, Z. Zhang, D. Weiskopf, R. Da Silva Antunes, S. Crotty and A. Sette.** La Jolla Inst. for Immunology.

P1037 **125.04** Galectin-9 protects humanized-ACE2-immunocompetent mice from SARS-CoV-2 infection. **S.T. Yeung, T.A. Premeaux, T. Niki, S.K. Pillai, K.M. Khanna and L.C. Ndhlovu.** Weill Cornell Grad. Sch. of Med. Sci., Kagawa Univ., Japan, Vitalant Res. Inst. and New York Univ. Langone Med. Ctr.

P1038 **125.05** Eicosanoid signaling as a therapeutic target in middle-aged mice with severe COVID-19. **J. Zheng, L-Y.R. Wong, K. Wilhelmsen, K. Li, M.E. Ortiz, N.J. Schnicker, A. Thurman, A.A. Pezzulo, P.J. Szachowicz, P. Li, R. Pan, K. Klumpp, F. Aswad, J. Rebo, S. Narumiya, M. Murakami, S. Zuniga, I. Sola, L. Enjuanes, D.K. Meyerholz, K. Fortney, P.B. McCray and S. Perlman.** Univ. of Iowa, BioAge Lab, Kyoto Univ., Japan, Univ. of Tokyo, Japan and Autonomous Univ. of Madrid, Spain.

P1039 **125.06** SARS-CoV-2 infection in pregnant female mouse featured as delayed anti-viral response. **L. Liu, G. Zhu and M. Du.** Lab. for Reproductive Immunology; NHC Key Lab. of Reproduction Regulation, Shanghai Inst. of Planned Parenthood Res.; Shanghai Key Lab. of Female Reproductive Endocrine-Related Dis.; and Hosp. of Obstetrics and Gynecology, Shanghai Med. Col., Fudan Univ., China.

P1040 **125.07** The SARS-CoV-2-encoded ORF8 protein stimulates human monocytes to produce pro-inflammatory cytokines. **G.J. Ruan, X. Wu, M.K. Manske, K.E. Nowakowski, J.P. Abeykoon, X. Tang, Y. Yu, T.L. Witter, V. Taupin, J. Paludo, S.M. Ansell, A.D. Badley, M.J. Schellenberg and T.E. Witzig.** Mayo Clin., Rochester and Univ. of California, San Diego.

P1041 **125.08** Endogenous interferon-lambda signaling restricts virus replication and disease severity in a murine model of SARS-CoV-2 infection. **A. Solstad, A.D. Kenney, A. Zani, J.S. Yount and E.A. Hemann.** Ohio State Univ.

P1042 **125.09** Computational fingerprinting of immune-mediated pressure on SARS-CoV-2 viral evolution reveals preliminary evidence for immune-evasion. **T. Hertz, L. Cohen-Lavi, S. Sachren, E. Koren and A. Burkovitz.** Ben Gurion Univ. of the Negev, Israel, Fred Hutchinson Cancer Res. Ctr. and Natl. Ctr. for Biotechnology in the Negev, Israel.

P1043 **125.10** Integrated immune networks in SARS-CoV-2-infected pregnant women reveal differential NK cell and unconventional T cell activation. **J.R. Habel, B.Y. Chua, L. Kedzierski, K.J. Selva, T. Damelang, E.R. Haycroft, T.H. Nguyen, H-F. Koay, S. Nicholson, H. McQuilten, X. Jia, L.F. Allen, L. Hensen, W. Zhang, C.E. van de Sandt, J.A. Neil, F. Amanant, F. Krammer, K. Wragg, J.A. Juno, A.K. Wheatley, H-X. Tan, G. Pell, J. Audsley, A. Reynaldi, I. Thevarajan, J. Denholm, K. Subbarao, M.P. Davenport, M. Hogarth, D.I. Godrey, A.C. Cheng, S.Y.C. Tong, K. Bond, D.A. Williamson, F. James, N.E. Holmes, O.C. Smibert, J.A. Trubiano, C.L. Gordon, A.W. Chung, C. Whitehead, S.J. Kent, M. Lappas, L.C. Rowntree and K. Kedzierska.** Univ. of Melbourne, Australia, Hokkaido Univ., Sapporo, Japan, Fac. of Vet. and Agr. Sciences, Univ. of Melbourne, Melbourne, Victoria 3000, Royal Melbourne Hosp., Australia, Icahn Sch. of Med., Mount Sinai, Grad. Sch. of Biomed. Sci., Icahn Sch. of Med., Mount Sinai, Univ. of Melbourne, Melbourne, Australia, ARC Ctr. of Excellence in Convergent Bio-Nano Sci. and Technol., Univ. of Melbourne, Australia, Mercy Perinatal Res. Ctr., Mercy Hosp. for Women, Heidelberg, Australia, Kirby Inst., Univ. of New South Wales, Sydney, Australia, Royal Melbourne Hosp., Univ. of Melbourne, Melbourne, Australia, World Hlth. Organisation Collaborating Ctr. for Reference and Res. on Influenza, Univ. of Melbourne, Australia, Burnet Inst., Australia, Central Clin. Sch., Monash Univ., Melbourne, Australia, Univ. of Melbourne, Parkville, Australia, Sch. of Publ. Hlth. and Preventive Med., Monash Univ., Melbourne, Australia, Menzies Sch. of Hlth. Res. and Charles Darwin Univ., Australia, Austin Hlth., Heidelberg, Australia, Data Analytics Res. and Evaluation Ctr., Austin Hlth. and Univ. of Melbourne, Heidelberg, Australia, Ctr. for Antibiotic Allergy and Res., Austin Hlth., Heidelberg, Australia, Peter McCallum Cancer Ctr., Melbourne, Australia, Natl. Ctr. for Infections in Cancer, Peter McCallum Cancer Ctr., Australia, Peter McCallum Cancer Ctr., Australia, Austin Hlth., Univ. of Melbourne, Heidelberg, Australia, Univ. of Melbourne, Parkville, Victoria 3052, Pregnancy Res. Ctr., Royal Women's Hosp., Australia, ARC Ctr. of Excellence in Convergent Bio-Nano Sci. and Technol., Univ. of Melbourne, Melbourne, Australia and Global Station for Zoonosis Control, Hokkaido Univ., Sapporo, Japan.

P1044 **125.11** Identifying distinct T cell subsets in the context of pediatric ARDS. **B.L. Clark, T. Flerlage, S.A. Schattgen, E.K. Allen, D.F. Boyd, J.C. Crawford and P.G. Thomas.** St. Jude Children's Res. Hosp.

P1045 **125.12** Prediction of immunodominant CD4+ SARS-CoV-2 epitopes with TCR repertoire sequencing data. **M. Pogorelyy, A. Minervina, E. Rosati, P. Mudd, A. Ellebedy and P.G. Thomas.** St. Jude Children's Res. Hosp., Christian-Albrecht Univ. of Kiel, Germany and Washington Univ. Sch. of Med.

P1046 **125.13** Exploration of shared antibody motifs in Kawasaki disease and COVID-19-related multisystem inflammatory syndrome of childhood. **Z. Rahman and M. Hicar.** Univ. at Buffalo Jacobs Sch. of Med. and BioMed. Sci. and Univ. at Buffalo, SUNY.

P1047 **125.14** Simultaneously targeting hyperinflammation and hyperglycemia following respiratory viral infection. **X. Wei, B. Zhu and J. Sun.** Univ. of Virginia.

P1048 **125.15** Higher periodontal inflammation, ACE2, and IL-6 expression in COVID-19 subjects. **K. Capistrano, R. Naqvi, A. Hezarkhani, P. Thakkar, S. Etminan, G. Adami, J. Schwartz and A. Naqvi.** Univ. of Illinois, Chicago and Northwestern Univ.

P1049 **125.16** Analysis of SARS-CoV-2 pathogenicity in COVID-19 cynomolgus macaque model reflecting human COVID-19 pathological conditions. **E. Urano, T. Okamura and Y. Yasutomi.** Natl. Inst. of Biomed. Innovation, Hlth. and Nutrition, Japan.

P1050 **125.17** Immunogenic and immunodominant SARS-CoV-2 T cell epitopes recognized after disease and vaccination. **A. Titov, R. Shaykhutdinova, O.V. Shcherbakova, Y.V. Serdyuk, S.A. Sheetikov, K.V. Zornikova, V.R. Ginanova and G.A. Efimov.** Natl. Res. Ctr. for Hematology, Russia and Lomonosov Moscow State Univ., Russia.

P1052 **125.19** Characterization of SARS-CoV-2-specific $CD8^+$ T cells in COVID-19 convalescent, vaccinated, and individuals with respect to age. **C. Choy, J. Lu, J. Li, H. Hemani, J. Chen, A. Lustig, J. McKelvey, D. Melvin, J. Ruffolo, L. Zukley, T. Wallace, C. Dunn, C. Nguyen, J. Fan, S. De, C. Chia, L. Ferrucci, J. Egan and N-p. Weng.** NIA, NIH.

P1053 **125.20** Mapping the spatial biology of COVID-19 immunopathology in placenta tissues. **N. Ma, O. Braubach, P.Z. Rebutini, C. Machado-Souza, E.T.S. Stonoga, L. de Noronha, F. Souza-Fonseca-Guimaraes and A. Kulasinghe.** Akoya Biosciences, Inc., Pontifícia Univ. Católica do Paraná, Brazil, Fac. Pequeno Príncipe, Pelé Pequeno Príncipe Res. Inst., Brazil, Univ. Federal do Paraná, Brazil and Univ. of Queensland Diamantina Inst., Australia.

P1054 **125.21** Cross-protection by SARS vaccines is improved by booster vaccination. **T. Dangi, N. Palacio, S. Sanchez, M. Park, J. Class, L. Visvabharathy, T. Ciucci, I.J. Koralnik, J. Richner and P.P. Macmaster.** Feinberg Sch. of Med., Northwestern Univ., Univ. of Illinois, Chicago and Ctr. for Vaccine Biol. and Immunology, Univ. of Rochester.

P1055 **125.22** Vaccination of non-human primates with self-amplifying mRNA vaccines reveal two distinct immunotypes across major SARS-CoV-2 variants. **B.M. Sullivan and K. Hastie.** Arcturus Therapeutics and La Jolla Inst. for Immunology.

P1056 **125.23** Development of quantitative spike and nucleocapsid protein-based enzyme-linked immunosorbent assays for measurement of antibodies against SARS-CoV-2. **W-C. Liao, M. Adame, J. Webb, D. Nguyen and J. Ni.** BioLegend, Inc.

P1057 **125.24** Changes of small non-coding RNAs by severe acute respiratory syndrome coronavirus 2 infection. **W. Wu, K. Zhang, E. Choi, D. Buck, B. Wang, A. Adam, G. Huang, I. Lee, J. Dong, T. Wang and X. Bao.** Univ. of Texas Med. Br., Galveston and MiRcore.

P1058 **125.25** Sodium pyruvate inhalation for COVID-19 long hauler symptoms: an effective and inexpensive treatment. **R. A. Nadler.** Missouri State Univ.

P1060 **125.27** Impact of C5aR1 and C5aR2 dual deletion on clinical severity of SARS-CoV-2 infection in hACE2 transgenic mice. **M. Bosmann, D. Kenney, S. Walachowski, A. Jayaraman, S. Subramaniam and F. Douam.** Univ. Med. Ctr. Mainz, Germany, Boston Univ. Sch. of Med. and Boston Univ.

P1061 **125.28** Immune responses to SARS-Cov-2 variants in adult and elderly mRNA vaccine recipients. **M. Jergovic, J. Uhrlaub, M. Watanabe, C.P. Coplen and J. Nikolich-Zugich.** Univ. of Arizona.

P1062 **125.29** Repurposed antibiotic and antiviral drugs inhibit the immune evasive endoribonuclease of SARS-CoV-2 and restrict coronavirus infection in vitro. **T.A. von Beck, L. Mena Hernandez, H. Zhou, J. Skolnick and J. Jacob.** Emory Univ. and Georgia Inst. of Technol.

P1063 **125.30** TLR2 senses spike protein of SARS-CoV-2 to trigger inflammation. **H. Zaki and S. Khan.** Univ. of Texas Southwestern Med. Ctr.

P1064 **125.31** Development of SARS-CoV-2-specific neutralizing recombinant monoclonal antibodies. **P. Desai, T. Karuppuchamy, N. Syed, S. Unnikrishnan, R. Mathivanan, N. Priya, R. Balasubramanian, K. Bhattiprolu, S. Sundarraj and H. Sridharan.** Thermo Fisher Scientific, India.

P1065 **125.32** Development of niclosamide-based COVID-19 therapeutic reagent using porous silicon nanoparticle and ACE2-specific antibody. **G. Cheolhyeon, D. Lee, H. Jo, Y. kim and J.S. Kang.** Seoul Natl. Univ. Col. of Med., South Korea.

P1066 **125.33** Chemokine CXCL10's role in the immune response to SARS-CoV-2. **H. Ivester, H. Morrison, C. Finkielstein, N. Duggal, J. Weger and I.C. Allen.** Translational Biol., Med. and Hlth., Virginia Tech, Virginia-Maryland Col. of Vet. Med., Virginia Tech Carilion Sch. of Med. and Res. Inst. and Ctr. for Emerging, Zoonotic and Arthropod-borne Pathogens, Virginia Tech.

P1067 **125.34** Severe acute respiratory syndrome coronavirus-2 infection in a bat gastrointestinal organoid model. **M. Hashimi, T. Sebrell, J. Hedges, D.T. Snyder, K. Lyon, M.D. Cherne, A. Robison, B. Sidar, J. Wilking, S. Walk, T. Schountz, M.A. Jutila and D. Bimczok.** Montana State Univ.

P1068 **125.35** SARS-CoV-2 epitope-specific CD8+ clonotypes persist 8 months post-infection despite reduced clonality. **K.V. Zornikova, A. Khmelevskaya, S. Sheetikov, O.V. Shcherbakova, D. Kirukhin, A. Titov, I.V. Zvyagin and G.A. Efimov.** Natl. Med. Res. Ctr. for Hematology, Russia, Lomonosov Moscow State Univ., Russia and Shemyakin and Ovchinnikov Inst. of Bioorganic Chem., Russia.

P1069 **125.36** Maternal and neonatal antibody and T cell responses to SARS- CoV-2 following maternal infection and/or vaccination. **I. Trinh, E. Eyoh, A. Murrell, S. Desai, C. Lauritsen, S. Rambaran, A. Stone, A. Agbodji, S. Chandra, D. Elliott, A. Smira, C. Dugas, R. Satou, G. Pridjian, S. Longo, J. Robinson, G. Piedimonte, B.M. Gunn and E.B. Norton.** Tulane Univ. Sch. of Med., Paul G. Allen Sch. of Global Hlth., Washington State Univ. and Ochsner Baptist Med. Ctr.

P1070 **125.37** Pathologic characteristics of experimental pulmonary SARS-CoV-2 infection in Syrian golden hamsters. **N>S. Ramasamy, A. Kolloli, R. Kumar and S. Subbian.** Rutgers Univ. New Jersey Med. Sch.

P1071 **125.38** Spike BATTLE: simultaneous evaluation of antigen-specific B and T lymphocytes following natural SARS-CoV-2 infection and subsequent mRNA vaccination. **K.L. Newell, M.J. Waldran, S.J. Thomas, T.P. Endy and A.T. Waickman.** State Univ. of New York Upstate Med. Univ.

P1072 **125.39** SARS-CoV-2 drives JAK1/2-dependent local complement hyperactivation. **B. Yan, T. Freiwald, D. Chauss, L. Wang, E. West, C. Mirabelli, C.J. Zhang, E-M. Nichols, N. Malik, R. Gregory, M. Bantscheff, S. Ghidelli-Disse, M. Kolev, T. Frum, J.R. Spence, J.Z. Sexton, K.D. Alysandratos, D.N. Kotton, S. Pittaluga, J. Bibby, N. Niyonzima, M.R. Olson, S. Kordasti, D. Portilla, C.E. Wobus, A. Laurence, M.S. Lionakis, C. Kemper, B. Afzali and M. Kazemian.** Purdue Univ., NIDDK, NIH, NHLBI, NIH, Univ. Hosp. Frankfurt, Goethe-Univ., Germany, Univ. of Michigan, GlaxoSmithKline, Univ. of Michigan Med. Sch., Ctr. for Regenerative Med., Boston Univ. and Boston Med. Ctr., Boston Univ. Sch. of Med., NCI, NIH, Norwegian Univ. of Sci. and Technol., Norway, King's Col. London, United Kingdom, Guy's Hosp., United Kingdom, Univ. of Virginia, Univ. of Oxford, United Kingdom, NIAID, NIH and Univ. of Lübeck, Germany.

P1073 **125.40** A longitudinal study of humoral immune responses to SARS-CoV-2 spike proteins in gamma-interferon-inducible lysosomal thiol reductase-deficient mice. **X. He, L. Guo, H. Dai and P.E. Jensen.** Univ. of Utah.

P1083 **125.41** Epitope-specific T cell response to SARS-CoV-2 infection and vaccination. **A. Minervina, M. Pogorelyy, A.M. Kirk, C-H. Chou, E.K. Allen, J.C. Crawford, M.A. McGargill and P.G. Thomas.** St. Jude Children's Res. Hosp.

P1084 **125.42** Metabolic syndrome enhances viral disease severity and reduces vaccine efficacy in mice. **E. Geerling, D.H. Carpenter, K.E. Schwetye, B. DeBosch and A. Pinto.** St. Louis Univ. Sch. of Med., Washington Univ. Sch. of Med., St. Louis and Washington Univ. Sch. of Med., St. Louis.

P1085 **125.43** Children with multi-system inflammatory syndrome develop functionally competent T cell memory against SARS-CoV-2 following recovery. **K. Rybkina, M.C. Bradley, J.N. Bell, W. Meng, M.P. DiLorenzo, B.R. Anderson, K. Pethe, E. Luning-Prak, D.L. Farber and T.J. Connors.** Columbia Univ. Med. Ctr. and Univ. of Pennsylvania Perelman Sch. of Med.

P1086 **125.44** ADAM-17 protease promotes inflammation and mortality while decreasing viral burden in a COVID-19 mouse model. **J.F. Hedges, D.T. Snyder, A. Robison, H. Walk, K. Havlak, K. Shepardson, D. Kominsky, A. Rynda-Apple, B. Walcheck and M.A. Jutila.** Montana State Univ. and Univ. of Minnesota.

P1087 **125.45** SARS-CoV-2 mRNA vaccination induces polyfunctional T cell responses in healthy and immunocompromised individuals. **Y. GAO, C. Cai, D. Wullimann, J. Niessl, O.R. Ballesteros, J. Lange, P. Bergman, O. Blennow, L. Hansson, S. Mielke, P. Nowak, G. Bogdanovic, S. Muschiol, A. Grifoni, D. Weiskopf, A. Sette, F. Hellgern, K. Loré, M. Sällberg Chen, P. Ljungman, J. Sandberg, H.G. Ljunggren, S. Aleman and M. Buggert.** Karolinska Inst., Sweden and La Jolla Inst. for Immunology.

126. INNATE AND ADAPTIVE IMMUNITY TO VIRUSES 1

Poster Session

SUN. 2:30 PM—EXHIBIT HALL

P1088 **126.01** β-defensin regulates the STAT3 signaling pathway and modulates influenza virus infection in human bronchial epithelial cells. **S. Othumpangat and J.D. Noti.** CDC.

P1089 **126.02** Vaccination modulates pulmonary eosinophil subsets upon breakthrough influenza infection. **L.A. Chang, R. Rathnasinghe, S. Jangra, A. Choi, A. García-Sastre and M. Schotsaert.** Icahn Sch. of Med., Mount Sinai and Icahn Sch. of Med., Mount Sinai.

P1090 **126.03** Heterogeneity in NK memory stem cells after Zika virus infection using single cell approaches. **W. Kujur.** Univ. of Texas Hlth. Sci. Ctr., Tyler.

P1090 **126.03** Vaccination modulates pulmonary eosinophil subsets upon breakthrough influenza infection.Heterogeneity in NK memory stem cells after Zika virus infection using single cell approaches. **O. Murillo, S. Adduri and S. Mulik.** Univ. of Texas Hlth. Sci. Ctr., Tyler.

P1091 **126.04** DEC-205-expressing dendritic cells inhibit T cell responses during West Nile virus encephalitis in the central nervous system. **C. Mo and D.M. Durrant.** California State Polytechnical Univ., Pomona.

P1092 **126.05** Alveolar macrophages act as an early viral sponge inducing long-lived functional enhancement. **K. Waldstein, S. van de Wall, S. Anthony, J.T. Harty and S.M. Varga.** Univ. of Iowa.

P1093 **126.06** Investigating the role of inflammasome activation by dengue virus non-structural protein 1 during dengue infection. **M.P. Wong, E.Y.W. Juan, S.F. Blanc, S.B. Biering, P. Wang, R. Beatty and E. Harris.** Univ. of California, Berkeley.

P1094 **126.07** Novel mouse model of MCMV-induced adaptive NK cells. **I.J. Jensen, M.D. Martin, S.K. Tripathy, V.P. Badovinac and D.L. Farber.** Columbia Univ. Med. Ctr., Univ. of Minnesota, Washington Univ. Sch. of Med., St. Louis and Univ. of Iowa Carver Col. of Med.

P1095 **126.08** A viral homologue of IPS-1 that reprograms innate immunity during viral replication. **D. Miranda and D.J. Sanchez.** Western Univ. of Hlth. Sci.

P1096 **126.09** Liver biopsies reveal temporal changes in pathology and macrophage function following SIV infection of rhesus macaques. **N.R. Derby, K.A. Fancher, S. Biswas, S. Yusova, C. Luevano-Santos, J. Smedley, C. Pacheco, B. Burwitz and D.L. Sodora.** Seattle Children's Res. Inst., Oregon Hlth. and Sci. Univ. and Seattle Children's Hosp.

P1097 **126.10** Using single cell spatial and transcriptional analysis to understand early host response to RNA virus infections. **L. Arakkal, G. Sturdevant, S. Robertson, K. Meade-White, R.N. Germain, S.M. Best and E. Speranza.** NIAID, NIH.

P1098 **126.11** Highly multiplexed, single-cell spatial phenotyping of Epstein-Barr virus-infected tissues. **N. Nikulina, B.B. Cheikh, O. Braubach, E. Fennell, C. Leahy, M. Pugh, G. Taylor, P. Murray and P. Murray.** Akoya Biosciences, Inc., Sch. of Med. and Hlth. Res. Inst., Univ. of Limerick, Ireland, Inst. of Immunology and Immunotherapy, Univ. of Birmingham, United Kingdom and Sch. of Med. and Hlth. Res. Inst., Univ. of Limerick, Ireland.

P1100 **126.13** Ifit2 regulates murine-β-coronavirus spread to the spinal cord white matter and its associated myelin pathology. **M. Sharma, D. Chakravarty, A. Zalavadia, A. Burrows, P. Rayman, N. Sharma, C. Bergmann, J. Das Sarma and G.C. Sen.** Indian Inst. of Sci. Educ. and Res., Kolkata, India, Cleveland Clin. Fndn. and Indian Inst. of Sceince Educ. and Res., Kolkata, India.

P1101 **126.14** Differential type 1 IFN gene expression in CD14+ placenta cells elicited by Zika virus infection during pregnancy. **N. Haese, H. Smith, K. Onwuzu, C.N. Kreklywich, J. Smith, M. Denton, N. Kreklywich, A. Streblow, A.E. Frias, T. Morgan, A. Hirsch, B. Bimber, V. Roberts and D. Streblow.** Oregon Hlth. and Sci. Univ. and Oregon Natl. Primate Res. Ctr.

P1102 **126.15** Corticosteroid treatment results in enhanced susceptibility to influenza-associated aspergillosis. **D. Worthley and C.R. Lupfer.** Missouri State Univ.

P1103 **126.16** IL-15 synergizes with IL-12 to enhance NK cell function in vivo during chronic SIV infection. **H. Babu, S. Govindaraj, I. wagoner, S.A. Ali, C. Ibebgu, R.R. Amara, F. Villinger and V. Velu.** Emory Univ. Sch. of Med. and Univ. of Louisiana, Lafayette.

P1104 **126.17** A unique cooperativity between optineurin and CCL5 triggers early cell death during herpes simplex virus-1 infection of the cornea. **C.D. Patil and D. Shukla.** Univ. of Illinois, Chicago.

P1106 **126.19** Pre-existing atopy prevents mortality from respiratory viral infection via induction of neuregulin-1. **S-R.A. Hussain, M. Rohlfing, J. Santoro, J. Resiliac and M.H. Grayson.** Nationwide Children's Hosp. and Ohio State Univ. Col. of Med.

P1107 **126.20** Multiplex imaging to reveal the dynamics of MAVS-mediated control of Ebola virus replication in tissues. **N. Bettis, E. Speranza, G. Sturdevant, S. Robertson, R. Germain and S. Best.** NIAID, NIH.

P1108 **126.21** Evolution of inflammation and immunity in a dengue virus 1 human infection model. **A.T. Waickman, J.Q. Lu, H. Fang, M.J. Waldran, C. Gebo, L. Van Wesenbeeck, N. Verpoorten, O. Lenz, L. Tambuyzer, G. Herrera-Taracena, M. Van Loock, T.P. Endy and S.J. Thomas.** State Univ. of New York Upstate Med. Univ., SUNY Upstate Med. Univ., Janssen Pharmaceutical, Belgium and Janssen Global Publ. Hlth., Janssen Res. and Develop., Belgium.

P1109 **126.22** Neurological chikungunya virus infection induces corpus callosum degeneration associated with resident immune cell activation and peripheral immune cell infiltration. **A.C. Knight, J. Nagel, E.J. Anderson, H.M. Atkins, S. Montgomery and V.K. Baxter.** Univ. of North Carolina at Chapel Hill and North Carolina State Univ.

P1110 **126.23** Combined blockade of TNF-a and IFN-I receptors in experimental RSV infection: analysis of STAT protein modulation. **D.R. Morris, Y. Qu, A. Haas de Mello, T. Ivanciuc, M. Ansar, A. Casola and R.P. Garofalo.** Univ. of Texas Med. Br., Galveston.

P1111 **126.24** Elucidating neuronal innate immune mechanisms in the central nervous system. **S.G. Negatu and K.A. Jurado.** Univ. of Pennsylvania Perelman Sch. of Med.

P1112 **126.25** Innate lymphoid cells: essential responders to pulmonary cytomegalovirus infection. **M.A. Mundy and L. Brossay.** Brown Univ.

P1113 **126.26** Nanoparticles divert monocytes away from the lungs to improve outcomes after influenza virus infection in aged mice. **A. Elhofy, W.J. Kelley, J. Chen, T. Murthy, Q. Xu, M. Boyne and D. Goldstein.** Cour Pharmaceuticals Develop. Co., Inc. and Univ. of Michigan Med. Sch.

P1114 **126.27** Bone morphogenetic protein modulates the antiviral response against Zika virus infection in human Sertoli cells. **B. Jiyarom, D.P. Strange, S. Giannakopoulos, N. Panova and S. Verma.** Univ. of Hawaii, Manoa.

P1115 **126.28** Influenza A virus-specific maternal antibodies impair vaccine-induced antibody responses and protection in male to a greater extent than female offspring. **A.D. Campbell, P.S. Creisher, J.L. Perry, K. Roznik, M.L. Sherer, I. Burd and S.L. Klein.** Johns Hopkins Bloomberg Sch. of Publ. Hlth. and Johns Hopkins Univ. Sch. of Med.

P1116 **126.29** B cell-derived acetylcholine controls local inflammation and replication of influenza virus during respiratory tract infections. **A. Cembellin Prieto, K. Murray, C. Reardon and N. Baumgarth.** Univ. of California, Davis.

P1117 **126.30** Distinct antibody profiles against Ebola virus track with the development of post-Ebola syndrome. **J.V. Velazquez, N.G. Bond, J.S. Schieffelin and B.M. Gunn.** Washington State Univ. and Tulane Univ. Sch. of Med.

P1118 **126.31** Glycan-specific B-1 cells mediate blockade of endogenous retroviruses emergence through recognition of conserved glycan epitopes. **Y. Yang, R. Treger, J. Hernandez-Bird and A. Iwasaki.** Yale Sch. of Med. and Howard Hughes Med. Inst.

P1119 **126.32** B cell convergence to distinct broadly reactive epitopes revealed by chimeric hemagglutinin vaccination. **J. Guthmiller, L. Li, L-L. Lan, C. Henry, C. Stamper, A. Freyn, H. Utset, J. Han, P. Palese, L. Coughlan, A. Ward, F. Krammer and P.C. Wilson.** Univ. of Chicago, Weill Cornell Med. Col., Icahn Sch. of Med., Mount Sinai, Scripps Res. Inst. and Univ. of Maryland Sch. of Med.

P1120 **126.33** Compensatory antibody responses support heterosubtypic immunity against influenza viruses. **R. Keating and M.A. McGargill.** St. Jude Children's Res. Hosp.

P1121 **126.34** Impact of B-cell depletion therapy on respiratory viral infection. **B. Allushi, M. Chlebicz, S. Turner, S. Kovats and R.C. Axtell.** Univ. of Oklahoma Hlth. Sciences Ctr. and Oklahoma Med. Res. Fndn.

P1122 **126.35** Non-classical major histocompatibility factor H2-O counteracts gammaherpesvirus manipulation of the germinal center response. **K. Stoltz, T. Golovkina and V. Tarakanova.** Med. Col. of Wisconsin and Univ. of Chicago.

P1123 **126.36** Identifying maternal humoral immune responses associated with control of viremia after primary maternal CMV infection in a rhesus macaque model. **C.E. Otero, C.S. Nelson, E. Scheef, L. Sprehe, M. Mostrom, D. Malouli, K. Fruh, C. Chan, A. Kaur and S.R. Permar.** Weill Cornell Med. Col., Brigham and Women's Hosp. and Harvard Med. Sch., Tulane Natl. Primate Res. Ctr., Oregon Hlth. and Sci. Univ. and Duke Univ.

P1124 **126.37** Modeling chronic gammaherpesvirus infection as a risk factor for MS reveals a profound impact of host genotype on control of viral load and T helper reprogramming. **E.A. Holt, K.G. Lahue, E.J. Usherwood, C. Teuscher and D.N. Krementsov.** Univ. of Vermont and Geisel Sch. of Med. at Dartmouth.

P1125 **126.38** Iron chelators and HDAC inhibitors are potent inducers of Epstein-Barr virus lytic cycle in stomach adenocarcinoma. **S. Chakravorty, L. Wang and M. Kazemian.** Purdue Univ.

P1126 **126.39** Controlling herpetic inflammatory lesions by inhibiting glucose metabolism: on the different outcome of using 2DG and metformin. **E. BERBER and B.T. Rouse.** Univ. of Tennessee.

P1127 **126.40** Early post-vaccination gene signatures correlate with the magnitude and function of vaccine-induced HIV envelope-specific plasma antibodies in infant rhesus macaques. **V.V. Karuvan Kandiyil, A.D. Curtis, K. Cross, K.K.A. Van Rompay, J. Pollara, C. Fox, M. Tomai, T. Hanke, G. Fouda, M. Hudgens, S.R. Permar and K. De Paris.** Univ. of North Carolina at Chapel Hill, Univ. of California, Davis, Duke Univ., Infectious Dis. Res. Inst., 3M Corporate Res. Materials Lab, Univ. of Oxford, United Kingdom and Weill Cornell Med. Col.

P1128 **126.41** Impact of pre-existing immunity on the development of de novo virus-specific T_{RM} following live attenuated influenza vaccination. **J.L. Lobby, S. Danzy, A. Lowen and J.E. Kohlmeier.** Emory Univ. Sch. of Med.

P1129 **126.42** Multi-functional HCV-specific $CD4^+$ T cells associated with viral control during the postpartum period express Th1- and Tfh-biasing transcription factors. **C. Phelps, C.M. Walker and J.R. Honegger.** Abigail Wexner Res. Inst. at Nationwide Childrens Hosp.

P1130 **126.43** Requirement for robust T and B cell responses for immune protection against Powassan virus in virus-like particle vaccination. **E.T. Stone, M. Hassert, E. Geerling, C. Wagner, J. Brien, G. Ebel, A. Hirsch, C. German, J. Smith and A.K. Pinto.** St. Louis Univ. Sch. of Med., Colorado State Univ. and Oregon Hlth. and Sci. Univ.

P1131 **126.44** Role of exosomal BTLA/HVEM signaling in HTLV-1-associated diseases and associated T-cell dysfunction. **J. Joseph, A. Rao, J. Connors, V. Stoffel, J. Nootenboom, B. Rahmani, E. Haddad, A. Carey and P. Jain.** Drexel Univ. Col. of Med.

SUNDAY AFTERNOON

MAY 8

127. NIH POLICY FOR DATA MANAGEMENT AND SHARING: ARE YOU READY?

AAI Special Session

SUN. 3:45 PM—ROOM B117–119

CHAIR: *C.R. NAGLER*

SPEAKERS:

3:45 The NIH Policy for Date Management: Explanation of the policy and the benefit to the research community. **T. Paine.** Off. of Sci. Policy, NIH.

4:15 FASEB DataWorks! A new initiative to support data sharing and reuse. **Y. Seger.** FASEB.

Data is a fundamental component of the research process. Sharing that data is essential to accelerate and enhance research discoveries, and to advance research findings. Central in this process, the NIH is responsible for promoting the sharing and management of scientific data to promote reproducibility and translation of research results to advance science, medicine, and public health. This session will inform the attendees about the facts and details of the NIH Policy for Data Management and Sharing which goes into place as a requirement for all NIH-funded investigators on January 25, 2023. A special initiative sponsored by FASEB, DataWorks! will also be presented. This program has been established to support investigators in navigating the oftentimes confusing open data landscape, and assist them in designing effective practices for data sharing.

128. NEONATAL IMMUNITY AND NEUROIMMUNOLOGY

Committee-Sponsored Session

Co-sponsored by the AAI Minority Affairs Committee and Black in Immuno

SUN. 3:45 PM—ROOM C123–124

CHAIRS: *M.M. OPATA, A.S. MOBLEY*

3:45 Neonatal immunity to malaria using a mouse model. **M.M. Opata.** Appalachian State Univ.

4:05 Beyond GPCR recycling: β-arrestin as a neuroprotective modulator of innate immune responses. **D.W. Williams.** Johns Hopkins Univ. Sch. of Med.

4:25 Aging augments type 2 cytokine responses in ILC2s leading to reparative, M2-like microglia. **A. Mobley.** Univ. of Texas MD Anderson Cancer Ctr.

4:45 A window into experimental cerebral malaria reveals dynamics of hyper-coagulation, BBB disruption, and microgliosis. **O. Solomon.** Univ. of Texas Med. Br.

5:05 Sex differences in alcohol-induced behavioral sensitization. **S.N. Alexander.** Univ. of Texas, Dallas.

5:25 Understanding the mechanisms of immunity against percutaneous infection by a skin-penetrating helminth. **E.E. Jean.** Univ. of Pennsylvania Perelman Sch. of Med.

129. INTERNATIONAL CYTOKINE AND INTERFERON SOCIETY (ICIS) SYMPOSIUM: RISING STARS OF CYTOKINE BIOLOGY

Guest Session

SUN. 3:45 PM—ROOM B110–112

CHAIRS: *S.L. GAFFEN, R.C. COLL*

3:45 Harnessing the power of NLRP3: pharmacological strategies for inhibition and activation of the inflammasome. **R.C. Coll.** Queen's Univ., Belfast, United Kingdom.

4:15 Immune-epithelial crosstalk in tissue repair. **S. Naik.** New York Univ. Grossman Sch. of Med.

4:45 Therapeutic modulation of STING. **F. Humphries.** Univ. of Massachusetts Chan Med. Sch.

5:15 Small intestinal tuft cells: sentinels and effectors of type 2 immunity. **J. von Moltke.** Univ. of Washington.

130. THERAPIES FOR RHEUMATIC DISEASES AND BEYOND

Block Symposium

SUN. 3:45 PM—OREGON BALLROOM 202

CHAIRS: *R.S. LONGMAN, L.M. MOREL*

3:45 Therapeutic targeting of tumor necrosis factor-like weak inducer of apoptosis in psoriasis. **R.K. Gupta, D. Gracias, D.S. Figueroa, H. Miki, J. Miller, K. Fung, F. Ay, L.C. Burkly and M. Croft.** La Jolla Inst. for Immunology and Biogen Inc. **(174.06)**

4:00 Renal tubular cell ferroptosis: a new player in pathogenesis of lupus nephritis. **Y. Scindia, A. Ali, D. Desai, B. Mehrad, L. Morel, M. Conrad, W. Clapp and A. Abdelmegeed.** Univ. of Florida and Helmholtz Inst., Germany. **(174.08)**

4:15 The gut microbiota transfers the therapeutic effect of inhibiting glucose metabolism in lupus-prone mice. **A.S. Elshikha, J. Brown, N. Kanda, Y. Ge, X. Teng, G. Abboud, S-C. Choi, M. Terrell, T.J. Garrett, M. Mohamadzadeh and L. Morel.** Univ. of Florida. **(174.02)**

4:30 Defining the role for the gut microbiome in the clinical efficacy of sulfasalazine therapy for IBD-associated spondyloarthritis. **S.F. Lima, A. Rupert, M. Viladomiu, A. Marderstein, S. Pires, G. Putzel, V. Woo, G. Funez-dePagnier, W-B. Jin, C-J. Guo, E. Scherl and R.S. Longman.** Weill Cornell Med. Col., Westchester Med. Ctr., Stanford Univ. and New York Univ. Sch. of Med. **(174.01)**

4:45 A combination of genetic factors and dietary tryptophan shapes gut microbial dysbiosis in a lupus-prone mouse model. **L. Ma, J. Brown, N. Kanda, M. Terrell, Y. Ge, M. Mohamadzadeh and L. Morel.** Univ. of Florida. **(174.03)**

5:00 Characterization of a novel anti-inflammatory biogenic amine. **L. Santambrogio and C.C. Clement.** Weill Cornell Med. Col. **(174.04)**

5:15 The immune dysregulations in inflammatory arthritis immune-related adverse events. **H. Zeng, X. Zhu, Y. Li, J. Jaquith, K. McCarthy-Fruin and U. Thanarajasingam.** Mayo Clin., Rochester. **(174.05)**

5:30 ST8Sia6 expression in beta cells mitigates onset of autoimmune diabetes in the murine NOD model. **J. Choe, P. Belmonte, M. Rajcula, K. Theodore, H.S. Kim Lee, M.J. Shapiro and V. Shapiro.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin. **(174.09)**

131. TRANSPLANT IMMUNOLOGY: NOVEL MECHANISMS & INTERVENTIONS

Block Symposium

SUN. 3:45 PM—OREGON BALLROOM 203

CHAIRS: *G. RAIMONDI, M-L. ALEGRE*

3:45 Alloantigen-specific chimeric antigen receptor regulatory T cell therapy in non-human primate islet transplantation. **G.I. Ellis, K.E. Coker, D.W. Winn, M.Z. Deng, D. Shukla, V. Bhoj, M.C. Milone, W. Wang, C. Liu, A. Naji, R. Duran-Struuck and J.L. Riley.** Univ. of Pennsylvania. **(175.21)**

4:00 Engineering T cells to prevent graft-versus-host disease and leukemia relapse following allogeneic stem cell transplantation. **F. Mo, N. Watanabe, P.M. Burkhardt, H.E. Heslop, M.K. Brenner and M. Mamonkin.** Baylor Col. of Med. **(175.22)**

4:15 Leveraging CAR T cells to achieve desensitization and enable transplantation. **C.A. Markmann, Z. Zheng, M. Yu, S. Rostami, W. Wang, T. Ochoa, K. Parvathaneni, X. Xu, J. Scholler, Q. Zhang, A. Posey, D. Allman, M. Milone, V. Arruda, B.S. Jones, A. Naji and V. Bhoj.** Univ. of Pennsylvania Perelman Sch. of Med. and Univ. of Pennsylvania. **(175.23)**

4:30 Paired immunoglobulin-like receptors impact the differentiation of reparative macrophages following allogeneic challenge. **J. Warunek, A. Lucas, L. Mathews, J. Ossart, M.H. Oberbarnscheidt, F.G. Lakkis and H.R. Turnquist.** Univ. of Pittsburgh Sch. of Med. **(175.24)**

4:45 Targeting temporal metabolic needs of T follicular helper cells to treat cGVHD utilizing a mitochondrial pyruvate carrier inhibitor. **F.A. Mohamed, S.Y. Rhee, J. Ly, E.G. Aguilar, P.T. Sage, T. Schumacher, G. Thangavelu, M.C. Zaiken, J. Liu, V. Mereddy, J.W. Locasale and B.R. Blazar.** Univ. of Minnesota, Brigham and Women's Hosp. and Harvard Med. Sch. and Duke Univ. **(175.25)**

5:00 The role of LAG3 in antibody responses to kidney transplantation. **M. Nicosia, R. Fan, J. Lee, V. Gorbacheva, A. Beavers, N. Dvorina, W.M. Baldwin, R.L. Fairchild, B. Min and A. Valujskikh.** Cleveland Clin. Fndn. and Feinberg Sch. of Med., Northwestern Univ. **(175.26)**

5:15 Oral alloantigen exposure promotes donor-specific tolerance in a mouse model of minor mismatched skin transplantation. **P. Wang, L. Chen, C.M. McIntosh, J.I. Lane, R. Li, S.Z. Xie, H. Sattar, D. Esterhazy, A. S.F. Chong and M-L. Alegre.** Univ. of Chicago. **(175.27)**

5:30 Graft-matched pregnancy imparts profound epigenetic changes onto alloreactive memory T cells to enforce a phenotypic and transcriptional state of tolerance. **J. Pollard, D. Yin, M. Mandal, F. Gounari, M-L. Alegre and A. Chong.** Univ. of Chicago. **(175.28)**

132. TUMOR MICROENVIRONMENT II

Block Symposium

SUN. 3:45 PM—ROOM B113–116

CHAIRS: *D. AVRAM, K. CHIAPPINELLI*

3:45 Spontaneous class-switched antibody responses at endometrial cancer tumor bed drives superior patient outcomes. **G. Mandal, S. Biswas, C.M. Anadon, X. Yu, C.D. Gatenbee, S. Prabhakaran, K.K. Payne, R. A. Chaurio, A. Martin, P. Innamarato, C. Moran, J.J. Powers, C.M. Harro, J.A. Mine, K.B. Sprenger, K.E. Rigolizzo, X. Wang, T.J. Curiel, P.C. Rodriguez, A.R. Anderson, O. Saglam and J.R. Conejo-Garcia.** H. Lee Moffitt Cancer Ctr. and Res. Inst. and Univ. of Texas Hlth., San Antonio. **(177.01)**

4:00 Class switching is required for antigen-dependent B cell anti-tumor activity. **Z. Guo, N. Claudio, T. Ziglari and F. Pucci.** Oregon Hlth. and Sci. Univ. **(177.02)**

4:15 T-cell phenotype varies in distinct tumor microenvironments and $CD57^+$ T_{FH} cells are associated with disease progression and inferior survival in follicular lymphoma. **Z-Z. Yang, H.J. Kim, H. Wu, X. Tang, J. Krull, P. Mondello, J. Villasboas, A. Novak and S. Ansell.** Mayo Clin. and China Three Gorges Univ., China. **(177.05)**

4:30 Sex-specific T cell behavior drives differential immune responses in mouse glioblastoma models. **J. Lee and J.D. Lathia.** Cleveland Clin. Fndn. and Case Western Reserve Univ. **(177.07)**

4:45 Inhibition of DNMTs and RNA editing increases immunogenic transposable element RNA to reduce tumor burden and prolong survival in a murine ovarian cancer model. **S. Gomez, O.L. Cox, U. Rentia, V. Balick, M. Hadley, E.E. Grundy, T. Kanholm, J.I. McDonald, J. Kobyra, E. Palmer, Y. Saunthararajah and K.B. Chiappinelli.** George Washington Univ. and Cleveland Clin. **(177.08)**

5:00 WITHDRAWN

5:15 Senescent cell-derived extracellular vesicles are critical elements in senescence surveillance by recruiting antigen-presenting cells. **T. Ziglari, N. Claudio, Z. Guo and F. Pucci.** Oregon Hlth. and Sci. Univ. **(177.12)**

5:30 Role of the extracellular ATP/adenosine pathway in neutrophil-mediated T cell suppression in ovarian cancer microenvironment. **T. Giridharan, S. Suzuki, T.R. Emmons, A.N.M.N. Khan, M.B. Yaffe, E. Zsiros, K. Odunsi, M. Bhalla, E. Bou Ghanem and B.H. Segal.** Roswell Park Comprehensive Cancer Ctr., Ctr. for Precision Cancer Med., Massachusetts Inst. of Technol, Massachusetts Inst. of Technol, David. H. Koch Inst. for Integrative Cancer Res., Massachusetts Inst. of Technol, Beth Israel Deaconess Med. Ctr., Harvard Med. Sch., Surgical Oncology Program, NCI, NIH, Univ. of Chicago Med. Comprehensive Cancer Ctr., Univ. of Chicago, Univ. at Buffalo, SUNY and Univ. at Buffalo Jacobs Sch. of Med. and Biomed. Sci. **(177.15)**

133. CD4$^+$ T CELLS IN CANCER

Block Symposium

SUN. 3:45 PM—ROOM A105–106

CHAIRS: *S. SCHOENBERGER, S. ZIEGLER*

3:45 TCR-engineered neoantigen-specific CD4$^+$ T cells mediate immunotherapy of a class II-negative murine squamous cell carcinoma. **S.E. Brightman, A. Becker, R. Thota, M.S. Naradikian, R. Griswold, J.S. Dolina and S.P. Schoenberger.** La Jolla Inst. for Immunology. **(180.06)**

4:02 CD4+ T cells mediate non-canonical rejection of major histocompatibility class-I deficient pancreatic tumors independently of CD8+ T cells. **K.T. Byrne, S.I. Kim, C. Arora, I.I. Verginadis, C.R. Cassella, N. Markosyan, C. Koumenis and R.H. Vonderheide.** Univ. of Pennsylvania Perelman Sch. of Med., Parker Inst. for Cancer Immunotherapy, Univ. of Pennsylvania Perelman Sch. of Med. and Univ. of Pennsylvania Perelman Sch. of Med. **(180.07)**

4:19 Dissecting anti-tumor immunity in glioblastoma. **D. Chen and S.K. Varanasi.** Salk Inst. for Biological Studies. **(180.08)**

4:36 Target the activin receptor 1c on CD4+ T cells to achieve anti-tumor therapeutic effects. **Y. Zheng, A. Lebid, J. Fu, C. Patel, X. Wang and D. Pardoll.** Johns Hopkins Univ. Sch. of Med. **(180.09)**

4:53 Leveraging the Treg-intrinsic CTLA4-PKCη signaling pathway for cancer immunotherapy. **H.Y. Liu, C. Pedros, K-F. Kong, A.J. Canonigo-Balancio, W. Xue and A. Altman.** La Jolla Inst. for Immunology and Univ. of Massachusetts Med. Sch. **(180.10)**

5:10 Thymic stromal lymphopoietin receptor signaling controls a tumorigenic Treg to promote colorectal cancer. **K. Obata-Ninomiya and S.F. Ziegler.** Benaroya Res. Inst., Virginia Mason. **(180.11)**

5:27 The glutathione peroxidase Gpx4 prevents Treg lipid peroxidation and ferroptosis to facilitate tumor immunoevasion. **K. Yang.** Indiana Univ. Sch. of Med. **(180.12)**

134. VACCINATION AND IMMUNOTHERAPY AGAINST COVID-19

Block Symposium

SUN. 3:45 PM—OREGON BALLROOM 204

CHAIRS: *D.L. FARBER, J.J. KOBIE*

3:45 Peripheral co-immunization with CCL27 drives robust mucosal responses to SARS-CoV-2 synDNA antigens and provides heterologous protection against Delta variant challenge. **E.N. Gary, N.J. Tursi, B. Warner, E. Parzych, A. Ali, D. Kobasa, A. Patel, D. Kulp and D.B. Weiner.** The Wistar Inst. and Public Hlth. Agency of Canada, Canada. **(65.02)**

4:00 Polyfunctionality of T cell immunity in pre-immune and naïve individuals after COVID-19 mRNA vaccination. **V.S. Moraes and T.M. Ross.** Univ. of Georgia. **(65.04)**

4:15 Alternative lineage B cells utilizing fatty acid oxidation predict response to third dose COVID vaccination in solid organ transplant recipients. **E.A. Thompson, K. Roznik, A. Karaba, K. Cascino, S. Dhakal, L. Sena, L. Biavatti, A.T. Abedon, J.L. Alejo, S.L. Klein, D. Warren, C.X. Quin, J. Mitchel, J. Garonzik-Wang, R. Leone, B. Boyarsky, D.L. Segev, A.A. Tobian, W. Werbel, A.L. Cox and J.R. Bailey.** Johns Hopkins Univ. Sch. of Med. and Johns Hopkins Bloomberg Sch. of Public Hlth. **(65.08)**

4:30 Pan-coronavirus neutralizing S2 human monoclonal antibodies and utility of direct respiratory administration as combination therapy with S1 antibodies against SARS-CoV-2. **J. Kobie, J-G. Park, S. Sarkar, M. Basu, A. Loos, J. Woo, C. Ye, V. Truong, R. Bowen, M.R. Walter, L. Martinez-Sobrido and M. Piepenbrink.** Univ. of Alabama at Birmingham, Texas Biomed. Res. Inst., Aridis Pharmaceuticals and Colorado State Univ. **(65.11)**

4:45 Hybrid immunity and vaccine breakthrough lead to robust humoral response and antibodies that effectively neutralize SARS-CoV-2 variants. **T.A. Bates, S.K. McBride, H.C. Leier, Z.L. Lyski, W.B. Messer, M.E. Curlin and F.G. Tafesse.** Oregon Hlth. & Sci. Univ. and Case Western Reserve Univ. Sch. of Med. **(65.12)**

5:00 Differences between autoantibodies induced by SARS-CoV-2 infection and Pfizer-BioNTech SARS-CoV-2 vaccination. **E.S. Geanes and T. Bradley.** Children's Mercy Kansas City. **(65.15)**

5:15 M Persistence of immune memory to SARS-CoV-2 vaccine in lymphoid tissue. **J. Davis-Porada, K. Rybkina, M.M.L. Poon, D.P. Caron, I.J. Jensen, M. Kubota, N. Lam, Y. Lee, R. Matsumoto, R. Morrison-Colvin, P.A. Szabo, B.B. Ural, S.B. Wells and D.L. Farber.** Columbia Univ. Med. Ctr. **(65.17)**

5:30 IL-4R blockade prevents a long term memory B cell response to COVID-19 vaccination. **J.D. Mountz, D.M. Ponder, S. Liu, C-W. Sun, K. Sullivan, F.K. Alduraibi and H-C. Hsu.** Univ. of Alabama at Birmingham. **(65.18)**

135. CD8+ T CELL IMMUNITY TO VIRAL INFECTIONS

Block Symposium

SUN. 3:45 PM—OREGON BALLROOM 201

CHAIRS: *B. YOUNGBLOOD, E. STELEKATI*

3:45 Differential localization and kinetics of antiviral CD8 T cell responses to chronic and acute murine norovirus infections from initiation onwards. **B.K. Hardman and L.C. Osborne.** Univ. of British Columbia, Canada. **(182.19)**

4:00 *In situ* characterization of lesion-forming human HSV-2 reactivation reveals distinct innate and adaptive immune compartmentalization. **J. Zhu, T. Peng, K. Phasouk, S. Sun, L. Jin, C. Johnston, A. Wald and L. Corey.** Univ. of Washington and Fred Hutchinson Cancer Res. Ctr. **(182.28)**

4:15 HIV-specific CD8 T cells from elite controllers have an epigenetic imprint that preserves effector functions. **A.B. Frias, R.L. Rutishauser, A.A. Sharma, T. Mi, H.A. Abdelsamed, C. Zebley, C. Zebley, C.M. Constantz, M. Stone, M. Busch, S. Deeks, R. Sekaly and B.A. Youngblood.** St. Jude Children's Res. Hosp., Univ. of California, San Francisco, Emory Univ. Sch. of Med., Univ. of Pittsburgh and Vitalant Res. Inst. **(182.07)**

4:30 Role of p16 expressing cells in formation and function of T cell memory with age. **B. Torrance, E.C. Lorenzo, H.A. Panier, A.N. Cadar, D.E. Martin, J.M. Bartley and L. Haynes.** UConn Hlth. **(182.02)**

4:45 MicroRNA-29a attenuates exhaustion and promotes memory-like CD8 T cells. **X. Leng, X. Leng, L. Buchness, S. Ristin, A. Villarino and E. Stelekati.** Miller Sch. of Med., Univ. of Miami. **(182.26)**

5:00 CD8 T cell exhaustion is dynamically controlled by the chromatin regulator factor BRD4. **G.N. Mullins, J.M. Green, W.D. Green, J.J. Milner and J.J. Milner.** Univ. of North Carolina at Chapel Hill. **(182.05)**

5:15 A novel approach to define contribution of microglia and brain endothelium in antigen specific CD8 T cell-mediated blood brain barrier disruption during virus infection. **R. Khadka, J. Zheng, M. Hansen, K. Ayasoufi, C. Fain, F. Jin, Z.P. Tritz, K.M. Wininger, L. Wu and A.J. Johnson.** Mayo Clin. and Mayo Clin. Grad. Sch. of BioMed. Sci. **(182.08)**

5:30 A unique gammadelta T cell population in the brain during viral infection. **J. Berger, B. Monogue, J.D. Beckham and L. Berg.** Univ. of Colorado Anschutz Med. Campus. **(182.12)**

136. AAI-BIOLEGEND HERZENBERG AWARD PRESENTATION AND LECTURE

Award Lecture

Generously supported by BioLegend

SUN. 4:30 PM—PORTLAND BALLROOM 252–255

CHAIR: *G.A. KORETZKY*

The AAI-BioLegend Herzenberg Award recognizes outstanding research contributions to the field of immunology in the area of B cell biology.

Recipient: **C.C. Goodnow**, Garvan Inst. of Med. Res., Australia

4:30 **Mark M. Davis**, HHMI, Stanford Univ. Sch. of Med., AAI Vice President
Dr. Davis is very proud to introduce his former trainee and will present this award prior to the start of the lecture.

4:35 Autoantibody control: a conceptual journey from B cell functional silencing to immune tolerance checkpoints. **C.C. Goodnow.** Garvan Inst. of Med. Res., Australia.

137. AAI-THERMO FISHER MERITORIOUS CAREER AWARD PRESENTATION AND DISTINGUISHED LECTURE KATHERINE A. FITZGERALD

Award and Distinguished Lecture

Award generously supported by Thermo Fisher Scientific

SUN. 6:00 PM—PORTLAND BALLROOM 252–255

CHAIR: *G.A. KORETZKY*

The AAI-Thermo Fisher Meritorious Career Award recognizes a mid-career scientist for outstanding research contributions to the field of immunology.

Recipient: **K.A Fitzgerald**, Univ. of Massachusetts Chan Med. Sch.

6:00 Introduction and Award Presentation: **G.A. Koretzky.** Cornell Univ. and Weill Cornell Med., AAI President and **D. Piper.** Thermo Fisher Scientific.

6:05 Regulation, initiation, and resolution of inflammation. **K.A. Fitzgerald.** Univ. of Massachusetts Chan Med. Sch.

MONDAY MORNING

MAY 9

138. MAJOR SYMPOSIUM E: TUMOR MICROENVIRONMENT

Major Symposium

MON. 8:00 AM—PORTLAND BALLROOM 252–253

CHAIRS: *S.J. TURLEY, P. SHARMA*

8:00 From the clinic to the lab: investigating mechanisms of response and resistance to immune checkpoint therapy. **P. Sharma.** Univ. of Texas MD Anderson Cancer Ctr.

8:00 Investigating T cell responses in engineered cancer models. **N.S. Joshi.** Yale Univ. Sch. of Med.

8:00 Control of T cell differentiation by tumor microenvironment metabolism. **G.M. Delgoffe.** UPMC Hillman Cancer Ctr.

8:00 Stromal-immune niches in cancer, inflammation, and immunotherapy. **S.J. Turley.** Genentech.

8:00 Immunological mechanisms of cancer defense. **M.O. Li.** Mem. Sloan Kettering Cancer Ctr.

139. MAJOR SYMPOSIUM F: B CELL RESPONSES IN NON-LYMPHOID TISSUES

Major Symposium

MON. 8:00 AM—PORTLAND BALLROOM 254–255

CHAIRS: *J.L. GOMMERMAN, J.L. BROWNING*

8:00 Building and controlling B cell niches in the CNS. **T. Korn.** Tech. Univ. of Munich, Germany.

8:35 Resident memory B cells in the frontline of respiratory immunity. **S.R. Allie.** Penn State Col. of Med.

9:10 Tumor-infiltrating B cells from diagnosis to end-stage disease in ovarian cancer. **B.H. Nelson.** BC Cancer–Victoria, Canada.

9:45 Exploring differential functions of B cells and tertiary lymphoid structures in human cancer. **T.C. Bruno.** Univ. of Pittsburgh Sch. of Med.

10:20 The bone marrow microniche and the maturation of human long-lived plasma cells. **F.E.-H. Lee.** Emory Univ.

10:55 B cells and grey matter injury in an animal model of multiple sclerosis. **J.L. Gommerman.** Univ. of Toronto, Canada.

140. TISSUE INFLAMMATION

Block Symposium

MON. 8:00 AM—ROOM A107–109

CHAIRS: *A. JAMIESON, A. BEAUDIN*

8:00 The role of IL-1a during early-stage Pseudomonas aeruginosa infection of the corneas. **B. Ratitong, M. Marshall, M. Dragan, C. Anunciado and E. Pearlman.** Univ. of California, Irvine. **(50.41)**

8:17 Monocyte/macrophage heterogeneity during skin wound healing in mice. **J. Pang, M. Maienschein-Cline and T. Koh.** The Univ. of Illinois, Chicago. **(50.42)**

8:34 Type III IFNs (IFNλs) expressed in tuberculosis granulomas enhance anti-mycobacterial activity of macrophages. **P. Talukdar, B.F. Junecko and J. T. Mattila.** Univ. of Pittsburgh. **(50.43)**

8:51 Pulmonary infection following skin injury delays wound healing through suppression of IL-1 and chemokine production. **M. Crane, Y. Xu, S.F. Monaghan, B.M. Hall, J. Albina, W.L. Henry, H.L. Tran, K. Chhabria, A. Jordon, L. Carlsen and A.M. Jamieson.** Brown Univ. and Rhode Island Hosp. **(50.44)**

9:08 The extracellular matrix maintained by hypodermal macrophages via IGF1 is a niche for Staphylococcus aureus infection. **V. Nadella, B. Voisin, T. Doebel, K. Sakamoto, S. Goel, J-H. Jo, M. Kelly, T. Kobayashi, J.X. Jiang, Y. Hu, C. Yan and K. Nagao.** NIAMS, NIH, Frederick Natl. Laboratory for Cancer Res., Univ. of Texas Hlth. Sci. Ctr., San Antonio and NCI, NIH. **(50.45)**

9:25 Inflammatory responses to *Listeria monocytogenes* infection in the placenta. **S. Seveau.** The Ohio State Univ. Col. of Med. **(50.46)**

9:42 STING activation under pre-existing inflammatory conditions causes severe skin disease. **M. Pyclik, H. Bagavant, J. Papinska, A. Araszkiewicz and U. Deshmukh.** Oklahoma Med. Res. Fndn. and Univ. of Oklahoma Hlth. Sci. Ctr. **(50.47)**

141. $CD4^+$ T CELL REGULATION AND RESPONSES: MOLECULAR MECHANISMS

Block Symposium

MON. 8:00 AM—ROOM C123–124

CHAIRS: *C. CHOUGNET, T. KIELIAN*

8:00 Apolipoprotein E enhance survival of effector memory regulatory T lymphocytes by regulating caspase-dependent apoptosis and lipid metabolism. **L.M. Atehortua, S. Street, W.S. Davidson, A. D'Alessandro and C. Chougnet.** CCHMC, Immunology Grad. Program, Univ. of Cincinnati Col. of Med., Cincinnati, Ohio, Univ. of Cincinnati and Univ. of Colorado Denver—Anschutz Med. Campus. **(56.01)**

8:15 Th1 and Th17 cells are critical for limiting the severity of *Staphylococcus aureus* craniotomy infection. **G. Kak, C. M. Horn, C. E. Heim and T. Kielian.** Univ. of Nebraska Med. Ctr. **(56.15)**

8:30 Blimp1 regulates the growth and function of human regulatory T cells. **Y. Ding, M. Vujanac, L. Nivelo, A. Villarino and T.R. Malek.** Miller Sch. of Med., Univ. of Miami. **(56.04)**

8:45 CRISPR-based functional genomics to decode *cis* and *trans* regulation of the *CD28*, *CTLA4*, and *ICOS* costimulatory locus. **C. Mowery, J. Freimer, J. Umhoefer, C. Garrido, R. Schmidt, Z. Steinhart, B. Gowen, G. Curie, J. Corn, J.C. Ye and A. Marson.** Gladstone Inst., Univ. of California, San Francisco, Stanford Univ., Univ. of California, Berkeley and ETH Zurich, Switzerland. **(56.17)**

9:00 Batf stabilizes the Th17 cell developmental program through impairment of Stat5-dependent recruitment of Ets1-Runx1 complexes. **D. Pham, D.J. Silberger, K. Nguyen, M. Gao, R.D. Hatton and C.T. Weaver.** Univ. of Alabama at Birmingham Sch. of Med. **(56.05)**

9:15 TL1A promotes a multi-cytokine Th9 cell phenotype. **M. Chu and M.H. Kaplan.** Indiana Univ., Sch. of Med. **(56.06)**

9:30 Inhibition of distinct glycolytic enzymes produces differential effects on CD4 T cell function. **W.H. Godfrey and M. Kornberg.** Johns Hopkins Univ. Sch. of Med. **(56.09)**

9:45 Transcription coactivator OCA-B/Pou2af1 is necessary and sufficient to promote T cell-intrinsic CD4 memory. **D.R. Tantin, W. Sun, H. Kim, J. Perovanovic, A. Ibarra, J.S. Hale and M.A. Williams.** Univ. of Utah Sch. of Med. **(56.11)**

142. MICROBIOTA AND EPITHELIAL INTERACTIONS

Block Symposium

MON. 8:00 AM—ROOM A105–106

CHAIRS: *G. DIEHL, B. LIU*

8:00 Migratory type 2 dendritic cells mediate mucosal Th17 response to gut commensal bacteria. **S.M. Ngoi, Y. Yang, S. Iwanowycz, J. Gutierrez, M. Hill, C. Allen, D. Chung and B. Liu.** The Ohio State Univ. and Med. Univ. of South Carolina. **(115.02)**

8:15 Microbiota regulation of intestinal inflammation influences colorectal cancer. **D.F. Zegarra Ruiz, D.V. Kim, F.B. Saldana-Morales, C. Ng, R. Callaghan, M. Uddin, L-C. Chang, R.S. Longman and G.E. Diehl.** Mem. Sloan Kettering Cancer Ctr. and Weill Cornell Med. **(115.01)**

8:30 Epithelial MHC class II directs microbiota-specific intestinal immune homeostasis. **E.M. Eshleman, T-Y. Shao, V. Woo, T. Rice, J. Whitt, L. Engleman, S.S. Way and T. Alenghat.** Cincinnati Children's Hosp. Med. Ctr., Cincinnati Children's Hosp. Med. Ctr. and Univ. of Cincinnati Col. of Med. **(115.03)**

8:45 Intestinal epithelial autophagy protects from cytokine-driven mortality and IFNγ-dependent cell death in acute small intestinal injury. **E.G. Foerster, C.J. Streutker, H. Maughan, D.K. Tsang, L.M. Robert, O. De Sa, S.E. Girardin and D.J. Philpott.** Univ. of Toronto, Canada, St. Michael's Hosp., Unity Health, Canada and Ronin Inst., Canada. **(115.04)**

9:00 NAIP—NLRC4 inflammasome activation in tuft cells contributes to host defense against bacteria. **M.J. Churchill and I. Rauch.** Oregon Hlth. & Sci. Univ. **(115.05)**

9:15 Goblet cells regulate expansion of colonic iNKT cells in CD1d-dependent manner. **V. John, B. Barrios, S. Udayan, A. Floyd, E.M. Schill, K.G. McDonald, R.S. Blumberg and R.D. Newberry.** Washington Univ. Sch. of Med. in St. Louis and Brigham and Women's Hosp., Harvard Med. Sch. **(115.06)**

9:30 Epithelial-derived oxysterol production tunes intestinal IgA secretion against commensals and enteric pathogen in tissue. **S. Ceglia, A. Berthelette, K. Howley, Y. Li, N.K.H. Yiew, Y. Xu, R.A. Brink, J.G. Cyster, L.V. Hooper, G.J. Randolph and A. Reboldi.** Univ. of Massachusetts Med. Sch., Univ. of Texas Southwestern Med. Ctr., Washington Univ. Sch. of Med. in St. Louis, Univ. of California, San Francisco and Garvan Inst. of Med. Res., Australia. **(115.07)**

9:45 Influence of age, sex, and location on the diversity of the murine gut microbiome and/or expression of pro-inflammatory cytokines. **S.E. Webster, D. Vos, T.L. Rothstein and N.E. Holodick.** Western Michigan Univ. Homer Stryker MD Sch. of Med. **(115.08)**

143. MECHANISMS OF VIRAL SENSING AND INNATE IMMUNE RESPONSES

Block Symposium

MON. 8:00 AM—OREGON BALLROOM 202

CHAIRS: *S. VARGA, S. MULIK*

8:00 Alveolar macrophages act as an early viral sponge inducing long-lived functional enhancement. **K. Waldstein, S. van de Wall, S. Anthony, J.T. Harty and S.M. Varga.** Univ. of Iowa. **(126.05)**

8:15 Vaccination modulates pulmonary eosinophil subsets upon breakthrough influenza infection. **L.A. Chang, R. Rathnasinghe, S. Jangra, A. Choi, A. García-Sastre and M. Schotsaert.** Icahn Sch. of Med., Mount Sinai. **(126.02)**

8:30 Liver biopsies reveal temporal changes in pathology and macrophage function following SIV infection of rhesus macaques. **N.R. Derby, K.A. Fancher, S. Biswas, S. Yusova, C. Luevano-Santos, J. Smedley, C. Pacheco, B. Burwitz and D.L. Sodora.** Seattle Children's Res. Inst., Oregon Hlth. & Sci. Univ. and Seattle Children's Hosp. **(126.09)**

8:45 DEC-205-expressing dendritic cells inhibit T cell responses during West Nile Virus encephalitis in the central nervous system. **C. Mo and D.M. Durrant.** California State Polytechnical Univ., Pomona. **(126.04)**

9:00 Investigating the role of inflammasome activation by dengue virus non-structural protein 1 during dengue infection. **M.P. Wong, E.Y. Juan, S.F. Blanc, S.B. Biering, P. Wang, R. Beatty and E. Harris.** Univ. of California, Berkeley. **(126.06)**

9:15 A viral homologue of IPS-1 that reprograms innate immunity during viral replication. **D. Miranda and D.J. Sanchez.** Western Univ. of Hlth. Sci. **(126.08)**

9:30 Heterogeneity in NK memory stem cells after Zika virus infection using single cell approaches. **W. Kujur, O. Murillo, S. Adduri and S. Mulik.** Univ. of Texas Hlth. Sci. Ctr., Tyler. **(126.03)**

9:45 Novel mouse model of MCMV-induced adaptive NK cells. **I.J. Jensen, M.D. Martin, S.K. Tripathy, V.P. Badovinac and D.L. Farber.** Columbia Univ. Med. Ctr., Univ. of Minnesota, Washington Univ. in St Louis Sch. of Med. and Univ. of Iowa Carver Col. of Med. **(126.07)**

144. CHALKING UP SUCCESS: THE ALL-IMPORTANT CHALK TALK AND PREPARING FOR A FACULTY INTERVIEW

Career Development Session

MON. 9:00 AM—ROOM B117–119

CHAIRS: *L.J. BERG, B.B. MOORE*

This session will focus on strategies to help you successfully navigate the faculty application process. You will learn how to develop your teaching and research statements, tailor your application to the position, and prepare for an interview and chalk talk. A panel of early career faculty will also present their recent application experiences and advice for success. This session is open to anyone but is especially intended for student and postdoctoral attendees.

SPEAKER:

- **B.B. Moore**, Univ. of Michigan

PANELISTS:

- **A.H. Courtney**, Univ. of Michigan
- **J. Guthmiller**, Univ. of Colorado Sch. of Med.
- **B.S. Lopez**, Midwestern Univ.

145. HOW TO HAVE A SUCCESSFUL POSTDOCTORAL EXPERIENCE

Career Development Session

MON. 10:45 AM—ROOM B117–119

CHAIR: *M.T. LITZINGER*

A postdoctoral fellowship is the time to develop research skills you will need to succeed as an independent scientist. It is also an important opportunity to prepare for a career path at the same time. This session will highlight ways of getting the most out of your postdoctoral fellowship, how to successfully relate with your mentor, and how to use the resources available to you to ensure that your training prepares you adequately for a seamless transition into the next phase of your career.

10:45 How to have a successful postdoctoral experience. **S.R. Kleppner.** Stanford Univ.

146. NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES (NIAID), NIH SYMPOSIUM: COMPUTATIONAL MODELING: NOVEL INSIGHTS INTO IMMUNITY TO INFECTIONS OR VACCINES

Guest Session

MON. 10:15 AM—OREGON BALLROOM 204

CHAIRS: *J.J. BREEN, V.I. ZARNITSYNA*

10:15 Waning of protective immunity after viral infection and vaccination. **V.I. Zarnitsyna.** Emory Univ.

10:45 Mechanistic insights about V(D)J recombination from statistical inference on high-throughput T cell receptor data. **F.A. Matsen IV.** Fred Hutch Cancer Res. Ctr.

11:15 Dynamic gene regulatory network models of human response to influenza virus. **E.R. Miraldi.** Cincinnati Children's Hosp. Med. Ctr.

11:45 Vaccine adjuvant comparison: building a functional response database for computational modeling. **S.M. Miller.** Inimmune Corp. and Univ. of Montana.

147. SOCIETY FOR MUCOSAL IMMUNOLOGY (SMI) SYMPOSIUM HOST–MICROBIOTA INTERACTIONS AT MUCOSAL BARRIERS

Guest Session

MON. 10:15 AM—ROOM B110–112

CHAIRS: *T. ALENGHAT, L.A. ZENEWICZ*

10:15 From water to land: evolution of mucosal immune systems in vertebrates. **I. Salinas.** Univ. of New Mexico.

10:45 Immune responses to microbiota colonization of the intestine. **T.W. Hand.** UPMC Children's Hosp. of Pittsburgh.

11:15 Regulation of the host–microbiota relationship. **T. Alenghat.** Cincinnati Children's Hosp. Med. Ctr.

11:45 Disruption of microbiota and intestinal epithelial interactions as a key driver of noncommunicable diseases. **M.X. Byndloss.** Vanderbilt Univ. Med. Ctr.

148. CYTOKINE AND REGULATORY CELL CONTROL OF AUTOIMMUNITY

Block Symposium

MON. 10:15 AM—ROOM A105–106

CHAIRS: *Z. RAHMAN, E. WAN*

10:15 IL-27 signaling contributes to pathogenic T cells in a mouse model of Sjögren's. **I.L. Debreceni, Y-G. Chen and S.M. Lieberman.** Univ. of Iowa and Med. Col. of Wisconsin. **(44.02)**

10:30 Interferon-gamma controls pathogenic T-helper 17 and B cells in a new Aquaporin-4 induced experimental autoimmune encephalomyelitis. **G. Arellano, E. Loda, Y. Chen, B. Popko, R. Balabanov and S.D. Miller.** Northwestern Univ. **(44.03)**

10:45 MAP4K3/GLK is a novel therapeutic target for IL-17A-mediated autoimmune diseases. **T-H. Tan and H-C. Chuang.** Natl. Hlth. Res. Inst., Taiwan. **(44.04)**

11:00 Tetramerization of STAT5 promotes autoimmune-mediated neuroinflammation. **K.L. Monaghan, D. Aesoph, A.G. Ammer, W. Zheng, S. Rahimpour, B.Y. Farris, C.A. Spinner, P. Li, J-X. Lin, Z-X. Yu, V. Lazarevic, G. Hu, W.J. Leonard and E.C. Wan.** West Virginia Univ., Sch. of Med., West Virginia Univ., NCI, NIH and NHLBI, NIH. **(44.05)**

11:15 Development of uveitis in a mouse model of spontaneous autoimmunity correlates with frequency of autoantigen-specific regulatory T cells. **M. Yin, K.J. Hiam, I. Proekt, J. Chan, Y. Hu, C.A. Lowell, D.B. Gould, M. Spitzer, M.S. Anderson and A.L. DeFranco.** Univ. of California, San Francisco. **(44.07)**

11:30 Homeodomain protein Pbx1 regulates regulatory T cell development, stability, and suppressive function. **S-C. Choi, Y.P. Park, T.A. Roach and L. Morel.** Univ. of Florida. **(44.08)**

11:45 Treg-specific ablation of HuR results in systemic autoimmunity associated with decreased TLR4 activation and IL-1β production. **U. Atasoy, F. Fattahi, J.S. Ellis, S. Socha and K. Bahleda.** Michigan Med., Univ. of Michigan, Lieutenant Colonel Charles S. Kettles VA Med. Ctr. and Boston Children's Hosp. and Harvard Med. Sch. **(44.11)**

12:00 Investigating immune tolerance: characterization of immunoregulatory DN T cells. **S. Pasquin, A-N. Pelletier, F. Lombard-Vadnais, G. Chabot-Roy, R. Collin, L. Coderre and S. Lesage.** Université de Montréal, Canada and RPM Bioinfo Solutions, Blainville, Canada. **(44.15)**

149. FOOD ALLERGY, ATOPIC DERMATITIS, AND MAST CELLS, OH MY!

Block Symposium

MON. 10:15 AM—OREGON BALLROOM 202

CHAIRS: *M. KAPLAN, A. PILIPONSKY*

10:15 Developing a synbiotic biotherapy to prevent allergic responses to food. **L.A. Hesser, L. Maccio-Maretto, J. Hubbell and C. Nagler.** Univ. of Chicago. **(49.01)**

10:30 Covalent heterobivalent inhibitor effectively inhibits anaphylaxis to peanut allergen in a humanized mouse model. **N.S. Alakhras, J. Shin, S. Smith, B. Bilgicer and M.H. Kaplan.** Indiana Univ. Sch. of Med., Univ. of Notre Dame, Vanderbilt Univ. Med. Ctr. and Indiana Univ. Sch. of Med. **(49.02)**

10:45 Interleukin-10 enhances IL-33-mediated MC activation and modulates the development of food allergy. **C.B. Mathias, D. Krajewski, M.T. Taruselli, J. Rovatti, M. Mire, S.S. Schneider and J.J. Ryan.** Western New England Univ., Virginia Commonwealth Univ. and Baystate Med. Ctr. **(49.11)**

11:00 Ligation of Siglec- 9 inhibits FcεRI-dependent mediator release from human mast cells. **I. Miralda Molina, N.B. Samanas and A.M. Piliponsky.** Seattle Children's Res. Inst. **(49.18)**

11:15 Transcriptional profiling unveils the heterogeneity of constitutive and inducible mast cells in inflammation and homeostasis. **T. Salloum and D.F. Dwyer.** Brigham and Women's Hosp. and Harvard Med. Sch. **(49.16)**

11:30 Androgen receptor deficiency eliminates sex differences in mast cells. **A.J. Moeser, Y.P. Tang, K. Thelen and M. Fardisi.** Michigan State Univ. **(49.15)**

11:45 Immunomodulatory effects of human myeloid-derived suppressor cells expanded from cord blood on *Dermatophagoides farinae*-induced atopic dermatitis in NC/Nga mice. **C.=h. Kim, H-J. Sohn, S-M. Hong, S. Kim, S-H. Jung, B-G. Lim, E-a. Kim, K-H. Jeong, J. kim, J. Park, S. Kim and T-G. Kim.** Vigencell Inc., South Korea and Catholic Univ. **(49.25)**

12:00 Novel association of Lyme disease, age, and atopic dermatitis. **B. Lee, S. Galloway, S. Strausz, M. Shoham, P. Hansen, P. Mansfield, R. Salomon, L.B. Torrez-Dulgeroff, A. Saleem, E. Gars, E. Sanders, H. Ollila, I.L. Weissman and M.C. Tal.** Massachusetts Inst. of Technol, Stanford Univ. Sch. of Med., Helsinki Univ., Finland, Broad Inst. of MIT and Harvard and Stanford Univ. **(49.26)**

150. INNATE IMMUNE RESPONSE TO INFECTION

Block Symposium

MON. 10:15 AM—ROOM A107–109

CHAIRS: *F. SUTTERWALA, N. SUBRAMANIAN*

10:15 Glycolysis is critical for granulocytic myeloid-derived suppressor cell activity during *Staphylococcus aureus* biofilm infection. **C.M. Horn, C.E. Heim and T.L. Kielian.** Univ. of Nebraska Med. Ctr. **(51.14)**

10:30 The E3-ligase TRIM7 acts as an antiviral factor by ubiquitinating the SARS-CoV-2 membrane protein to limit apoptosis and virus replication. **M.J. Gonzalez Orozco, A. Hage, H. Xia, M. Huante, S. van Tol, M.I. Giraldo, L. Puebla-Clark, V. Menachery, R. Stephens, M. Endsley, J. Endsley, P-Y. Shi, A. Freiberg and R. Rajsbaum.** Univ. of Texas Med. Br., Galveston. **(51.07)**

10:45 Interferon-induced transmembrane protein 3 limits lethality of SARS-CoV-2 in mice. **J.S. Yount, A. Zani and A.D. Kenney.** The Ohio State Univ. **(51.17)**

11:00 Virus-induced long noncoding RNAs regulate SARS-CoV-2 pathogenesis. **S. Kulkarni, S. jayakumar and V. Kulkarni.** Texas Biomed. Res. Inst. **(51.18)**

11:15 A non-canonical role of caspase-1 in regulating bacterial physiology and antimicrobial resistance. **A.S. Akhade, G.V. Mosquera, M.L. Arrieta-Ortiz, A. Kaur, E.J. Peterson, N.S. Baliga, K.T. Hughes and N. Subramanian.** Inst. for Systems Biology, Seattle and Univ. of Utah. **(51.05)**

11:30 Nucleotide receptors mediate protection against neonatal sepsis and meningitis caused by alpha-hemolysin expressing *Escherichia coli* K1. **J.A. Skyberg, C.A. Chambers, A.S. Dadelahi, C.R. Moley, R.M. Olson and C.M. Logue.** Univ. of Missouri, Columbia and Univ. of Georgia. **(51.02)**

11:45 The Goldilocks Conundrum: the protective and adverse roles of immunoregulation by NOD-like receptors during brucellosis. **J.D. Tupik, A.H. Benton, K.A. King, H.M. Ivester, J. Markov Madanik, S.L. Coutermarsh-Ott, C.C. Caswell and I.C. Allen.** Virginia-Maryland Col. of Vet. Med. and Virginia Tech Carilion Sch. of Med. and Res. Inst. **(51.22)**

12:00 *Leptospira* spp. are a potent activator of type I IFN responses via the cGAS-STING pathway. **S. Gupta, J. Matsunaga, S.L. Cassel, D.A. Haake and F.S. Sutterwala.** Cedars Sinai Med. Ctr., VA Greater Los Angeles Healthcare System, Los Angeles and David Geffen Sch. of Med., Univ. of California, Los Angeles. **(51.04)**

151. MACROPHAGES, MYELOID, AND DENDRITIC CELLS IN TUMOR IMMUNITY AND IMMUNOTHERAPY

Block Symposium

MON. 10:15 AM—OREGON BALLROOM 201

CHAIRS: *E. LIND, K. MURPHY*

10:15 Estradiol effects on polymorphonuclear cell production and actions contribute to estrogen-mediated lymphangioleiomyomatosis progression. **B.M.N. Minor, J. Koudouvoh, E. Gibbons, C. Seger and S. Hammes.** Univ. of Rochester Med. Ctr. **(61.01)**

10:30 Liver macrophage subsets differentially regulate metastasis in pancreatic cancer. **S.K. Thomas and G.L. Beatty.** Univ. of Pennsylvania Perelman Sch. of Med. **(61.04)**

10:45 The B cell adapter for PI3K promotes M2 macrophage phenotype and safeguards tumors from immune surveillance. **I. Saha and C. Pasare.** Cincinnati Children's Hosp. and Med. Ctr. **(61.08)**

11:00 WITHDRAWN

11:15 Enhanced anti-tumor immunity in ST8Sia6 knockout mice. **D.J. Friedman, M. Kizerwetter, P. Belmonte, M. Rajcula, K. Theodore, H.S. Kim Lee, M.J. Shapiro, H. Dong and V.S. Shapiro.** Mayo Clin. **(61.10)**

11:30 Hv1 proton channels control myeloid landscape and promote glioma progression. **J. Zheng, L. Wang, K. Ayasoufi, E. Goddery, S. Zhao, C. Fain, A.J. Johnson and L-J. Wu.** Mayo Clin. Grad. Sch. of BioMed. Sci. and Mayo Clin. **(61.14)**

11:45 Impact of constitutive FLT3 signaling on dendritic cell development and function in a genetically engineered mouse model of acute myeloid leukemia. **P.A. Flynn, J.L. Coy, K.A. Romine, Y. Kosaka and E. Lind.** Oregon Hlth. & Sci. Univ. **(61.17)**

12:00 Mechanisms of CD40-dependent cDC1 licensing beyond co-stimulation. **R. Wu, R.A. Ohara, S. Jo, T. Murphy and K.M. Murphy.** Washington Univ. in St. Louis Sch. of Med. **(61.18)**

152. INNATE LYMPHOCYTES AND INNATE-LIKE T CELLS IN CANCER

Block Symposium

MON. 10:15 AM—OREGON BALLROOM 203

CHAIRS: *R. WELNER, M. MAMEDOV*

10:15 Perturbed function of natural killer cells by inflammatory cytokines in acute and chronic myeloid leukemias. **V. Kuznetsova.** Univ. of Alabama at Birmingham. **(62.04)**

10:15 Perturbed function of natural killer cells by inflammatory cytokines in acute (AML) and chronic (CML) myeloid leukemias. **S. Patel, F. Luca, V. Camacho, V. Matkins and R.S. Welner.** Univ. of Alabama at Birmingham. **(62.04)**

10:32 Characterization of the tumor immune microenvironment in soft tissue sarcoma patients undergoing surgery. **S.M. Cruz, S.J. Judge, M.A. Darrow, L.M. Perry, L.E. Farley, K.R. Iranpur, C. Dunai, S. Chen, S.W. Thorpe and R.J. Canter.** Univ. of California Davis Med. Ctr. and Univ. of Liverpool, United Kingdom. **(62.05)**

10:49 CD155 axis modulation promotes natural killer cell-mediated graft-versus-tumor effects against osteosarcoma. **M. Cho, M. Phillips, L. Song, A. Erbe-Gurel and C.M. Capitini.** Univ. of Wisconsin-Madison. **(62.06)**

11:06 The fate and function of NK cells in the suppressive tumor microenvironment. **X. Liu, F. Ma, Y. Zhang, Y. Tao, D.F. Hoft and G. Peng.** St. Louis Univ. **(62.07)**

11:23 Assembly and localization of extracellular matrix protein fibronectin modulates natural killer cell infiltration in tumor spheroids. **N. Rajasekaran, T. House, C.C. Magdaleno and A. Varadaraj.** Northern Arizona Univ. **(62.08)**

11:40 LTi-like type 3 innate lymphoid cells are associated with the transient induction of tertiary lymphoid structures in inflamed pulmonary tissue. **C. Riffard, J-L. Teillaud and M-C. Dieu-Nosjean.** INSERM, France and Sorbonne Université, France. **(62.09)**

11:57 Genome-wide CRISPR screens reveal metabolic and transcriptional regulation of BTN3A and cancer susceptibility to Vγ9Vδ2 T cell targeting. **M.R. Mamedov, S. Vedova, J.W. Freimer, A.D. Sahu, P.A. Chen, A. Ramesh, K. Hanspers, V.Q. Nguyen, E.J. Adams and A. Marson.** Univ. of California, San Francisco, Dana-Farber Cancer Inst., Harvard Med. Sch., Univ. of Chicago and Gladstone Inst. **(62.10)**

153. AAI VANGUARD AWARD LECTURE

Committee-Sponsored Session

Sponsored by the AAI Minority Affairs Committee

MON. 11:15 AM—ROOM C123–124

CHAIR: *T. WEBB*

The AAI Vanguard Lecture is presented by an AAI member selected by the Minority Affairs Committee for their scientific achievement and exemplary career success.

Recipient: **C.L. Butts**, Biogen

11:15 Concept to approved drug: why immunologists are critical when developing new medicines. **C.L. Butts.** Biogen.

154. AAI EXCELLENCE IN MENTORING AWARD PRESENTATION

Award Presentation

MON. 12:30 PM—PORTLAND BALLROOM 252–255

CHAIR: *G.A. KORETZKY*

The AAI Excellence in Mentoring Award recognizes exemplary career contributions to a future generation of scientists.

Recipient: **R. Medzhitov**, HHMI, Yale Univ. Sch. of Med.

12:30 **Dr. Gary A. Koretzky** and **Dr. Gregory M. Barton**, HHMI, Univ. of California, Berkeley, will introduce the awardee and present the award prior to the start of the President's Symposium.

155. AAI PRESIDENT'S SYMPOSIUM

From Fundamental Investigation to Revolutions in Health Care:
Stories of Immunological Discovery

President's Program

MON. 12:40 PM—PORTLAND BALLROOM 252–255

CHAIR: *G.A. KORETZKY*

12:40 Early efforts to understand how the oligomeric T cell antigen receptor signals led to simplicity and complexity. **A. Weiss.** HHMI, Univ. of California, San Francisco.

1:06 Engineering the immune system as a new tool for cancer therapy. **C.H. June.** Univ. of Pennsylvania Perelman Sch. of Med.

1:32 A roadmap to personalized therapies for autoimmune diseases. **M.V. Pascual.** Weill Cornell Med., Drukier Inst. for Children's Hlth.

1:58 Autoinflammatory diseases in children. **R.T. Goldbach-Mansky.** NIAID, NIH.

156. INNATE IMMUNE SENSING AND SIGNALING

Block Symposium

MON. 12:30 PM—ROOM B117–119

CHAIRS: *Y. HE, J. ZHANG*

12:30 E-Syt1 ubiquitination by Nedd4 limits the caspase-11-mediated non-canonical inflammasome and endotoxemia. **Y. Ma, G. Lin, H. guo, J. Yu and J. Zhang.** Univ. of Iowa. **(52.07)**

12:54 Molecular basis for NEK7-mediated NLRP3 inflammasome activation. **Y. He, D. Jeltema, J. Wang, J. Cai, N. Kelley and Z. Yang.** Wayne State Univ. **(52.02)**

1:18 Gasdermin D promotes hyperinflammation by triggering necroptosis in the presence of mitochondrial stress. **C.G. Weindel, X. Zhao, E. Martinez, S.L. Bell, K.J. Vail, A.K. Coleman, J.J. VanPortfliet, C.J. Mabry, P. Li, A.P. West, J. Karpac, K.L. Patrick and R.O. Watson.** Texas A&M Univ., Col. of Med., Rutgers New Jersey Med. Sch. and Tulane Natl. Primate Res. Ctr. **(52.06)**

1:42 A TLR4-independent critical role for CD14 in intracellular LPS sensing. **S. Ollikara Vasudevan, A. Russo, P. Kumari, S. Kailasan Vanaja and V. Rathinam.** UConn Hlth. **(52.16)**

2:06 STK25 functions as an IRF5 kinase to promote TLR7/8-mediated inflammation. **M.R. Rice, C.D. Sherman and B.J. Barnes.** Feinstein Inst. for Med. Res. **(52.15)**

2:30 Identification of a novel protein interactions that elucidates the mechanism of hydatidiform molar pregnancies in women with NLRP2 and NLRP7 mutations. **N. Son, M. So and C.R. Lupfer.** Missouri State Univ. and St. Jude Children's Hosp. **(52.08)**

2:54 PD-L1 back signaling manipulates IL-6 signaling to coordinate innate immune responses. **J.L. Shirley, T. Forward, J.B. Schafer, E.D. Lucas and B. Tamburini.** Univ. of Colorado Anschutz Med. Campus and Univ. of Minnesota. **(52.05)**

157. NEONATAL MUCOSAL IMMUNITY

Block Symposium

Mon. 12:30 pm—Room B110–112

Chairs: *K.A. KNOOP, M. SILVERMAN*

12:30 Arresting microbiome development limits immune system maturation and resistance to infection. **M.A. Silverman, J-B. Lubin, L. Denu, J. Green, T. Duranova, M. Lanza, M. Wynosky-Dolfi, I.E. Brodsky and P. Planet.** Children's Hosp. of Philadelphia, Univ. of Pennsylvania Perelman Sch. of Med., Univ. of Pennsylvania Sch. of Vet. Med., GlaxoSmithKline and American Museum of Natural History. **(59.01)**

12:45 Gut microbiome regulates serotonin production in the neonatal intestine to promote immune tolerance in early life. **K.Z. Sanidad, S.L. Rager, A. Ananthanarayanan, R. Callaghan, T. Li, J.C. Jin, M. Amir, R. Luo, R. Silver, D. Artis, C-J. Guo, J. Krumsiek, N. Inohara and M.Y. Zeng.** Weill Cornell Med. Col. and Univ. of Michigan Med. Sch. **(59.02)**

1:00 Gut microbiota-reactive IgG regulates gut microbiota development and immunity against enteric pathogens in early life. **M. Amir, K. Sanidad, A. Ananthanarayanan, L. Zhang, N. Shiland, N. Inohara, G. Nunez and M. Zeng.** Weill Cornell Med., Weill Cornell Med. Col. and Univ. of Michigan Med. Sch. **(59.04)**

1:15 Maternally derived epidermal growth factor mediates protection in neonates from opportunistic intestinal pathogens. **K.G. Greenfield, P. Lothert, O. Harlow and K. Knoop.** Mayo Clin. **(59.08)**

1:30 Neonatal antibiotic exposure alters intestinal macrophage frequency and polarization. **E.M. Schill, S. Udayan, S. Gaddipatti, V. John, B.E. Barrios, A.N. Floyd, K.G. McDonald and R.D. Newberry.** Washington Univ. in St. Louis Sch. of Med. **(59.07)**

1:45 $CD206^{+}MHCII^{-}$ macrophages present in the neonatal but not adult intestine do not derive from LysM monocytes and are decreased in experimental necrotizing enterocolitis. **E. Managlia, X. Yan and I.G. De Plaen.** Ann & Robert H. Lurie Children's Hosp. of Chicago and Feinberg Sch. of Med., Northwestern Univ. **(59.06)**

2:00 The preterm infant microbiome impairs lung immune responses to respiratory syncytial virus infection. **J.A. Brown, H. Carrow, J.C. Jin, A. Ananthanarayanan, K.Z. Sanidad, E.L. Johnson, J.M. Perlman, S. Worgall and M.Y. Zeng.** Weill Cornell Med. Col., Weill Cornell Grad. Sch. of Med. Sci. and Cornell Univ. **(59.03)**

2:15 Early life development of bronchial associated lymphoid tissue containing germinal center in the human lung. **R. Matsumoto, J.I. Gray, T.J. Connors, R. Guyer, K. Rybkina, M. Bradley, M.M. Poon and D.L. Farber.** Columbia Univ. Med. Ctr. **(59.05)**

MONDAY POSTER SESSIONS

Posters on Display: 9:30 AM – 4:30 PM
Author Presentation Time: 2:30 PM – 3:45 PM

158. INNATE SIGNALING, MICROBIOME, AND METABOLISM IN AUTOIMMUNITY

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P100 **158.01** IRF5 risk variants contribute to pre-symptomatic SLE by enhancing the levels of circulating NET antigens. **B. Matta, J. Battaglia, L. Thomas and B.J. Barnes.** Feinstein Inst.s for Med. Res.

P101 **158.02** A lupus-associated variant in IRF7 amplifies IFN- α production in response to TLR stimulation. **S.J. Virolainen, Y. Keddari, K. Dunn, C. Forney, C. Yin, O. Donmez, S. Parameswaran, E. Javier, A. Porollo, S. Waggoner, M. Weirauch and L. Kottyan.** Cincinnati Children's Hosp. Med. Ctr. and Immunology Grad. Program, Univ. of Cincinnati Col. of Med.

P102 **158.03** Radioresistant cells in STING gain-of-function mice initiate lymphocyte dependent lung inflammation and IFNγ dependent mortality. **K.M. Gao, A. Marshak-Rothstein and K.A. Fitzgerald.** Univ. of Massachusetts Med. Sch.

P103 **158.04** Activation of the MDA-5 dependent RNA sensing signaling pathway modulates endothelial cell functions in mice. **Q. Wang, X. Guo, S. Liu, R. Yan, M. Zenati and T.R. Billiar.** Univ. of Pittsburgh Sch. of Med. and Univ. of Pittsburgh Med. Ctr.

P104 **158.05** Cleavage of DNA and RNA by PLD3 and PLD4 limits autoinflammatory triggering by multiple sensors, including endolysosomal TLRs and a STING dependent sensing pathway. **D. Nemazee, L. Peng, T. Blane, D. Huang and A. Gavin.** Scripps Res. Inst.

P105 **158.06** Understanding innate immune cell-mediated inflammation in UV-induced skin injury in lupus-prone mice. **M.P. Maz, H. Shi, S. Wolf, S.N. Estadt, A. Reddy and J.M. Kahlenberg.** Univ. of Michigan.

P106 **158.07** Neutrophil-specific *Socs3* deficiency induces brain-targeted experimental autoimmune encephalomyelitis with enhanced cerebellar neutrophil activation. **W.J. Turbitt, L. Zhou, R. Williams, J.A. Buckley, H. Qin and E.N. Benveniste.** Univ. of Alabama at Birmingham.

P107 **158.08** The role of NKG2D signaling in NOD diabetes is affected by the microbiota. **M.A. Markiewicz, Z.K. Bedrosian, E. Ruark and K. Krausz.** Univ. of Kansas Med. Ctr.

P108 **158.09** Treatment with TLR7/8 agonist compromises intestinal epithelium integrity in a lupus prone mouse model. **M.L. Terrell, A.S. Elshikha, N. Kanda, J. Brown, L. Zeumer-Spataro and L. Morel.** Univ. of Florida.

P109 **158.10** The TLR7 agonist imiquimod mediates immune activation in primary Sjögren's syndrome. **A. Punnanitinont, E.M. Kasperek and J.M. Kramer.** Univ. at Buffalo, SUNY.

P110 **158.11** Androgens can modulate immunoregulation directly through gut cells and indirectly through alteration of microbiota composition/function in a lupus mouse model. **J. Ma, J. Harder, P. Alard and M.M. Kosiewicz.** Univ. of Louisville.

P111 **158.12** Importance of microRNAs and gut microbiota in the characterization of a phenotypic drift in lupus-prone MRL/lpr mice. **X. Cabana Puig, J.M. Bond, Z. Wang, R. Dai, R. Lu, A. Lin, V. Oakes, A. Rizzo, B. Swarwout, L. Abdelhamid, J. Mao, M. Prakash, C. Sangmeister, N. Cheung, C.R. Cowan, C.M. Reilly, S. Sun, S.A. Ahmed and X.M. Luo.** Virginia-Maryland Col. of Vet. Med., Translational Biology, Med. and Health, Virginia Tech, Carilion Sch. of Med., Virginia Tech, Edward Via Col. of Osteopathic Med. and Univ. of California.

P112 **158.13** Microbiome methods in experimental autoimmune encephalomyelitis. **K.R. Hoffman, D.P. Daberkow, H.M. Kohl, T. Long, T.O. Kirby and J. Ochoa-Reparaz.** Eastern Washington Univ. and Washington State Univ.

P113 **158.14** Inhibition of the pentose phosphate pathway in cytotoxic T lymphocytes preserves neuronal function and ameliorates neuroinflammatory disease. **E. Grund, B.D. Clarkson and C.L. Howe.** Mayo Clin. Rochester.

P114 **158.15** HLA class II polymorphisms influence gut microbiota composition and modulate disease in transgenic mice model of multiple sclerosis. **S.K. Shahi, S. Ali, P. Lehman, S. Ghimire, N.V. Guseva and A.K. Mangalam.** Univ. of Iowa.

P115 **158.16** Risk factors for development of severe gastrointestinal dysmotility in patients with systemic sclerosis. **I. Jakhar, M. Singh, A. Singh, S. Sahil and D. Singh.** Univ. of Missouri, Kansas City and Stormont Vail HealthCare, Topeka, KS.

159. PRIMARY IMMUNE DEFICIENCY AND IMMUNE DYSREGULATION

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P116 **159.01** T cell intrinsic role for NOD2 in Blau syndrome. **R.J. Napier, E.E. Vance, K.V. Koney, E.J. Lee, M.M. Davey and H.L. Rosenzweig.** Oregon Hlth. & Sci. Univ. and VA Portland Hlth. Care Syst.

P117 **159.02** Characterization of thymic epithelial cell and thymocyte function and development in patients with thymic defects using scRNAseq profiling. **M. Bosticardo, F. Pala, C. Oguz, M. Branco, C. Zhao, S.R. Carr, A. Rajan, Y. D'Udekem, M. Delaney and L.D. Notarangelo.** NIAID, NIH, NIAID Collaborative Bioinformatics Resource (NCBR), Children's Natl. Med. Ctr., NCI, NIH and Children's Natl. Hosp.

P118 **159.03** Bi-allelic *TTC21A* mutations in common variable immunodeficiency patients. **Z. Zhang, M.J. Lenardo and K.G. Smith.** Harvard Med. Sch., NIAID, NIH and Univ. of Cambridge, United Kingdom.

P119 **159.04** A granular view of X-linked chronic granulomatous disease exploiting single-cell transcriptomics. **S. Muzumdar, S. Ballouz, F. Lam, M. Degrange, S. Kreuzburg, H. Chong, C. Zerbe, A. Jongco and J. Gillis.** Cold Spring Harbor Lab, Garvan Inst. of Med. Res., Australia, Feinstein Inst. for Med. Res., Northwell Hlth., NIAID, NIH and Univ. of Pittsburgh Med. Ctr.

P120 **159.05** T cell extrinsic mechanics explaining the T cell hyperactivation seen in activated PI3K δ syndrome. **J. Bier, R. Brink, S. Tangye and E.K. Deenick.** Garvan Inst. of Med. Res., Australia, St Vincent's Clin. Sch., UNSW Med. & Health, Australia and Fac. of Med., UNSW, Sydney, Australia.

P121 **159.06** Dysregulation of $CD8^+$ T cell function in the setting of altered cytokine signaling due to inborn errors of immunity. **J.S. Campos Duran, P.E. Conrey, S. Sayed, C. Di, E.N. Gonzalez, N.D. Romberg, J.R. Bergerson, S.M. Holland, A.F. Freeman, H.C. Su, J.W. Leiding, L.R. Forbes, T.P. Vogel and S.E. Henrickson.** Univ. of Pennsylvania Perelman Sch. of Med., Children's Hosp. of Philadelphia, NIAID, NIH, Johns Hopkins Univ., Arnold Palmer Hosp. for Children, Baylor Col. of Med. and Texas Children's Hosp.

P122 **159.07** 22q11.2 deletion syndrome causes a thymus hypoplasia corrected by mesenchymal cell replacement. **N.S. van Oers, P. Bhalla, A. Moses, A. Kumar, C. Xing, C. Wysocki, O. Cleaver, M.L. Markert and M.T. de la Morena.** Univ. of Texas Southwestern Med. Ctr., Duke Univ. Med. Ctr. and Univ. of Washington.

P123 **159.08** Dissecting the effect of a novel hypomorphic *IL2RB* mutation on immune dysregulation. **O. Bailey, J.E. Garcia-Perez, R.M. Baxter, B. Cabrera-Martinez, V.G. Lui, I.Z. Fernandez, M.J. Foster, R. Gessner, L. Gapin, E.M. Pietras, R. Kedl and E. Hsieh.** Univ. of Colorado Anschutz Med. Campus and CellCarta, Belgium.

P124 **159.09** Mid-pregnancy immune dysregulation and its association with maternal metabolic and genetic factors in those with preterm birth: insights using artificial intelligence. **L.L. Jelliffe-Pawlowski, H. Wright, S. Oltman, R. Baer, J. Chappell, A. Dowdell, K. Kannan, n. monangi, F. Kong, B.D. Piening, G. Srinivasa, G. Zhaang, L. Muglia, L. Rand and K. Ryckman.** Univ. of California, San Francisco, Omics Data Automation, Cincinnati Children's Hosp. and Med. Ctr., Providence Health, Providence Portland Med. Ctr., Burroughs Wellcome and Univ. of Iowa.

P125 **159.10** Characterization of human *FOXN1* mutations uncovers both loss- and gain-of-function outcomes. **N.S. van Oers, A. Moses, P. Bhalla, C. Wysocki, C. Seroogy, M.L. Markert and M.T. de la Morena.** Univ. of Texas Southwestern Med. Ctr., Med. Col. of Wisconsin, Duke Univ. Med. Ctr. and Univ. of Washington.

P126 **159.11** Phenotypic heterogeneity in patients and mice with immunodeficiency caused by *SASH3* mutations. **S. Majumdar, D. McDermott, H. Jaiswal, K. Cho, J. Khillan and P. Murphy.** NIAID, NIH.

P127 **159.12** Immune and hematological disorders in primary immunodeficiency in children. **N. Fazal, G.M. Nasrullayeva, V.R. Mammadova, G.Z. Aliyeva and B.A. Babayeva.** Chicago State Univ. and Azerbaijan Med. Univ., Azerbaijan.

P128 **159.13** Human G protein-coupled receptor 15 mutations associated with inflammatory bowel disease. **Y. Cheng, J. Cui, J.C. Ravell and M.J. Lenardo.** NIAID, NIH.

P129 **159.14** Selective IgM deficiency in a patient with connexin-26 deficiency. **S. Sarkaria, J. Rajan, J. Venglarcik and R. Hostoffer.** Univ. Hosp. Cleveland Med. Ctr., Lake Erie Col. of Osteopathic Med. and Allergy and Immunology Associates.

P130 **159.15** Analysing the cellular mechanisms underlying activated PI3K δ syndrome (APDS) reveals differences between APDS1 and APDS2. **E. Deenick, A. Lau, T. Nguyen, J. Bier, R. Brink and S. Tangye.** Garvan Inst. of Med. Res., Australia and St Vincent's Clin. Sch., UNSW Med. & Health, Australia.

160. ADAPTIVE IMMUNITY IN INFLAMMATION

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P131 **160.01** Dysfunction in B cell tolerance and activation in obesity. **C. Vanz, T. Hägglöf, E.A. Dudley and E. Leadbetter.** Univ. of Texas Hlth., San Antonio.

P132 **160.02** Leveraging genetic correlation across immune-mediated disease to gain insights into underpowered studies of rare conditions. **J. Molineros, K. Elliott, D.T. Truong, H. Fang, A. Hart, S. Li, D. Waterworth, J.C. Knight and M.H. Black.** Janssen Res. & Develop and Univ. of Oxford, United Kingdom.

P133 **160.03** Pathogenic tissue-resident memory T cells in exocrine gland chronic graft-versus-host disease. **A.C. Costa da Silva, R. Sharma, C.H. Kim, A. Javaid, D. Martin and J.W. Mays.** Natl. Inst. of Dental and Craniofacial Res.

P135 **160.05** Evidence for metabolic disturbances in the pathogenesis of immune-mediated disease in SAMP1/YitFcs mice. **L. Campillo-Gimenez, I. Drygiannakis, A. Sayi Yazgan, J. Rivera-Nieves, D. Vera and P.B. Ernst.** Univ. of California, San Diego.

P136 **160.06** IgA deficiency destabilizes immunological homeostasis towards intestinal microbiota and increases the risk of systemic immune dysregulation. **M.A. Silverman, P.E. Conrey, L. Denu, K.C. O'Boyle, C. Tanes, J. Green, K. Bittinger, D. Allman, J-B. Lubin, T. Duranova, D. Oldridge and S. Henrickson.** Univ. of Pennsylvania Perelman Sch. of Med. and Children's Hosp. of Philadelphia.

P137 **160.07** From genetic variants to diseases: the role of *LACC1* in T cells. **Y. Li, V. Chandra, P. Vijayanand and M. Kronenberg.** Univ. of California, San Diego and La Jolla Inst. for Immunology.

P138 **160.08** Targeting the NLRP3 inflammasome in rare hereditary blood disorder Fanconi anemia. **S. Beesetti, R. sumpter and D.R. Green.** St. Jude Childrens Res. Hosp.

P139 **160.09** Diet-induced obesity promotes CD11c$^+$ T-bet$^+$ B cell expansion in liver and adipose tissue. **B. Enslow, C. Vanz, E.A. Dudley, T. Hägglöf and E.A. Leadbetter.** UT Hlth. San Antonio.

P140 **160.10** Association of elevated CD151+ T cell frequencies with impaired immune function. **M. Perez, K. Lowman, D.C. Moylan, C.M. Tidwell, A. Schroeder, A. Duverger, F.H. Wagner, N. Erdmann, P. Goepfert, H. Hu, S. Sabbaj and O. Kutsch.** Univ. of Alabama at Birmingham.

P141 **160.11** Correlation between acute and chronic inflammatory states: a case control study. **S. Mahesh, M. Mallappa, V. Vacaras, V. Shah, A. Belagaje, P. Dhamodar, E. Serzhantova, N. Kubasheva, D. Chabanov, D. Tsintzas, L. Jaggi, A. Jaggi and G. Vithoulkas.** Taylor's Univ., Malaysia, Ctr. for Classical Homeopathy, India, Iuliu Hatieganu, Romania, Shah Homeopathic Clin., India, Novosibirsk Ctr. of Classical Homeopathy, Russia, Clin. of Nadezhda Kubasheva, Russia, Gen. Hosp. of Aitoloakarnania, Greece, H3 Ctr. of Classical Homeopathy, India and Univ. of the Aegean, Greece.

P142 **160.12** A gut feeling about complement in early onset colorectal cancer. **S. Anand, A. Affleck, I. Gardner, K. Watson, R. Ruhl and L.V. Tsikitis.** Oregon Hlth. & Sci. Univ.

P143 **160.13** Unraveling the mechanism of sepsis-mediated multiple organ dysfunction syndrome by RNA sequencing analysis in the pediatric population. **M. Bermudez, K. Yuki and S. Koutsogiannaki.** Boston Children's Hosp. and Harvard Med. Sch.

P158 **160.14** CEACAM1 is an IL-2R-dependent biomarker in patients with multiple autoimmune-diseases undergoing low-dose IL-2 therapy. **A. Yu, A. Moro, M. Rosenzwajg, N. Tchitchet, D. Klatzmann and T.R. Malek.** Univ. of Miami Miller Sch. of Med. and Sorbonne Univ. and Pitié-Salpêtrière Hosp., France.

P159 **160.15** STING-dependent sensing of mtDNA initiated autophagy dysfunction drives sepsis-induced intestinal injury. **Q. Liu, J. Wu, X. Zhang, X. Wu, Y. Zhao and J. Ren.** Jinling Hosp., Nanjing Univ., China, The Affiliated BenQ Hosp. of Nanjing Med. Univ., China and Jinling Hosp., Sch. of Med., Southeast Univ., China.

P160 **160.16** Determining the cellular mechanism underlying allergic sensitization and inflammation within an Interleukin-33 initiated model of allergic inflammation. **S.N. Varela and S.F. Ziegler.** Univ. of Washington.

161. INFECTION AND DISEASE

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P161 **161.01** Genes associated with multiple organ dysfunction syndrome during severe pediatric influenza. **T. Novak, J.C. Crawford, C. Lange, G. Hahn and A.G. Randolph.** Boston Children's Hosp. and Harvard Med. Sch., St. Jude Children's Res. Hosp., Harvard Med. Sch. and Harvard Univ.

P162 **161.02** Profiling the myeloid compartment of PBMC in active tuberculosis reveals substantial changes in CD14$^+$ cells and upregulation of CD16 in pro-inflammatory dendritic cells. **J.G. Burel, H. Hillman, N. Khan, A. Singhania, P. Dubelko, F. Soldevilla Casals, R. Tippalagama, A.D. deSilva, T.J. Scriba, R. Taplitz, G. Seumois, P. Vijayanand, C.C. Hedrick, A. Sette and B. Peters.** La Jolla Inst. for Immunology, Gen. Sir John Kotelawala Def. Univ., Sri Lanka, Univ. of Cape Town, South Africa and City of Hope Natl. Med. Ctr.

P163 **161.03** Inflammasomes and IL-1β: an innate immune axis in CD4+ T cells driving HIV infection and disease progression. **J.A. Tomalka, K. Ghneim, M. Costanzo, S. Ribeiro, N. Michael, M. Robb, M. Eller and R. Sekaly.** Emory Univ. Sch. of Med., Henry M. Jackson Fndn., Walter Reed Army Inst. of Res. and NIH.

P164 **161.04** COVID-19 patients are characterized by increased levels of immune cell membrane-bound and soluble CD48. **H.T. Pahima, I. Zaffran, A. Jarjoui, E. Orenbuch-Harroch, P. Gaur, I. Puxeddu, C. Zinner, E. Ben-Chetrit, A. Tzankov and F. Levi-Schaffer.** The Hebrew Univ. of Jerusalem, Israel, Shaare Zedek Med. Ctr., Israel, Hadassah Hebrew Univ. Med. Ctr., Israel, Univ. of Pisa, Italy, Univ. of Basel, Switzerland and Hebrew Univ. Sch. of Med., Israel.

P165 **161.05** Circulating extracellular vesicles from patients with severe COVID-19 upregulate Cathepsin B and activate STAT3 in normal human mesangial cells. **S.C. Glover, Y. Scindia, L.P. Liu, N. Dhaliwal, H. Williams, Y. Pride, A.H. Owings, T. Robinson and A.A. Alli.** Univ. of Mississippi Med. Ctr. and Univ. of Florida.

P166 **161.06** *Bacillus anthracis* peptidoglycan alters human M2-like macrophage phenotype and efferocytic function in the presence of human serum. **J.S. Mytych, Z. Pan, C. Lopez-Davis, C. Lawrence, J. James, N. Popescu, M. Coggeshall and D. Farris.** Oklahoma Med. Res. Fndn. and Univ. of Oklahoma Hlth. Sci. Ctr.

P167 **161.07** Targeted transcriptomic signature for monitoring anti-tuberculosis treatment response. **I.L. Manneh, F. Darboe, O. Owolabi, H.M. Dockrell and J.S. Sutherland.** MRC Unit, The Gambia at London Sch. of Hygiene and Tropical Med, Gambia and London Sch. of Hygiene and Tropical Med., United Kingdom.

P168 **161.08** SARS-CoV-2 induced oxidative stress promotes HMGB1 secretion to induce inflammation. **Y.M. Hosakote, K. Rayavara, L.B. Corri, S. McLellan, S.C. Weaver, A. Chopra and C-T.K. Tseng.** The Univ. of Texas Med. Br. at Galveston.

P169 **161.09** Effect of malaria parasites' infection on CD4 cells, hemopoietic cells, and hemopoietic factors. **E.C. Amadi and J.A. Amaechi.** Caritas Univ., Nigeria and Enugu State Univ. of Sci. & Tech., Nigeria.

P170 **161.10** Single-cell transcriptomics of CD8 T cells during CMV viremia In kidney transplant recipients identify transcriptional states of advanced differentiation. **S. Sen, H.C. Pickering, Y. Sun, R. Parmar and E.F. Reed.** Univ. of California, Los Angeles and David Geffen Sch. of Med. at Univ. of California, Los Angeles.

P171 **161.11** Molecular mechanisms of dexamethasone-mediated modulation of inflammatory and interferon responses in severe COVID-19 patients. **A.A. Chimote, A. Alshwimi, M. Chirra, V.S. Gawali, K.M. Hudock, M.V. Powers-Fletcher and L. Conforti.** Univ. of Cincinnati Col. of Med. and Cincinnati Children's Hosp. Med. Ctr.

P172 **161.12** Characterization of pathological IgE-mediated mast cell activation in Lyme disease. **S.D. Galloway, M. Shoham, B. Lee, L.B. Torrez-Dulgeroff, I. Irnov, A. Lin, S. Strausz, P. Hansen, G. Blacker, R. Salomon-Shulman, H-H. Surya Kumar Potula, M. Markovic, G.R. Nahass, O. Colace, T. Raveh, B. Pollack, E. Sanders, H. Ollila, C. Jacobs Wagner, W.H. Robinson, I.L. Weissman and M.C. Tal.** Stanford Univ. Sch. of Med., Massachusetts Inst. of Technol, Stanford Univ. and Helsinki Univ., Finland.

P173 **161.13** IL-27 modulates T cell cytokines in the T cell-osteoclast crosstalk during HIV infection. **T. Li, C. Hadigan, J. Kumar, P. Kumar and M. Catalfamo.** Georgetown Univ. Sch. of Med. and NIAID, NIH.

P174 **161.14** Low oxygen tension downregulates expression of corona- and influenza viral entry genes and Toll-like receptor pathway genes in human airway epithelial cells. **Y-M. Li, C-M. Huang, C-J. Lin and Y-H. Chen.** Koo Fndn. Sun Yat-Sen Cancer Cntr., Taiwan, Xin Tai Gen. Hosp., Taiwan and Natl. Def. Med. Ctr., Taiwan.

P175 **161.15** Augmentation of lymphoid tissues in the human immune system mouse to advance host directed therapies for HIV. **A. Holloway, T.B. Saito, K.F. Naqvi, M. Huante, X. Fan, J. Lisinicchia, B.B. Gelman, J. Endsley and M. Endsley.** Univ. of Texas Med. Br. at Galveston, NIAID, NIH, Univ. of Texas Southwestern Med. Ctr. and The Univ. of Toledo.

P177 **161.17** Comprehensive analysis of the durability and the quality of humoral and T cell responses in SARS-CoV-2 vaccinated and infected subjects. **K. Woloszczuk, J.R. Connors, G. Cusimano, M. Bell, S. Furukawa, N. Melnyk, E. Lin, K. Venkateswaran, M. Bernui, M. Kutzler, C. Cairns and E.K. Haddad.** Drexel Univ. Col. of Med. and Tetracore.

P178 **161.18** Epigenetic immunophenotyping in monitoring of SARS-CoV2 vaccine response and COVID-19 disease course. **J.N. Jung, U. Hoffmueller, B. Samans, E. Raschke, M.R. Chornet, K. Schildknecht, L. Lozza, A.R. Chornet, L.A. Zaragoza, J.H. Laforet, N. Babel and S. Olek.** Precision for Med., Germany, Univ. Gen. Hosp. of Valencia, Spain and Ruhr Univ. of Bochum, Germany.

P179 **161.19** Differential CD4+ and CD8+ T cell recognition of mycobacteria antigens in pediatric versus adult TB. **C. Lancioni, E. Morrow, Q. Liu, G. Swarbrick, S. Kiguli, M. Nsereko, M. Toerien, M. Cansler, D.M. Lewinsohn and D. Lewinsohn.** Oregon Hlth. and Sci. Univ., Makerere Univ., Uganda and Uganda Case Western Res. Collaboration, Uganda.

162. NEURONAL AND CENTRAL NERVOUS SYSTEM IMMUNITY

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P180 **162.01** A surprising pathogenic role of B cells in mice with Alzheimer's disease. **A. Biragyn, K. Kim, X. Wang, E. Ragonnaud, M. Bodogai, R.A. McDevitt and E. Okun.** NIA, NIH and Bar Ilan Univ., Israel.

P181 **162.02** Nutraceutical Apigenin regulates DC function in a RelB-dependent manner during neuroinflammation. **P. Jain, R. Ginwala, E. McTish, P. Moore, N. Revuri, C. Raman, N. Singh, M. Nagarkatti, P. Nagarkatti, V.A. Kranz, J.D. Houle, Z. Khan and P. Jain.** Drexel Univ. Col. of Med., Univ. of Alabama at Birmingham Sch. of Med. and Univ. of South Carolina.

P182 **162.03** Concerted cellular responses to type I interferon propel memory impairment associated with amyloid β plaques. **E. Roy, G. Chiu, S. Li, H. Zheng and W. Cao.** Baylor Col. of Med.

P183 **162.04** T-cell infiltrates and microglia adopt long-term gene signature changes leading to age-specific responses to traumatic brain injury in mice. **Z. Chen, M. Islam, B. Davis and S. Schwulst.** Feinberg Sch. of Med., Northwestern Univ.

P184 **162.05** Responses of injured nerve in CD137L knockout mice following sciatic nerve crush-induced neuropathic pain. **L. Cao, B.S. Di Nucci, A. Wakley and K. Ohara.** Univ. of New England and Nihon Univ. Sch. of Dentistry.

P185 **162.06** Neural dysfunction following *Francisella tularensis* infection. **A. Tena, R.T. Hightower, M.A. Sanchez Guillen and C.T. Spencer.** The Univ. of Texas at El Paso.

P186 **162.07** MicroRNA control of inflammatory and regulatory T cells in CNS autoimmunity. **M. Gopal, M. Fujiwara, R. Raheja, L. Garo, A. Ajay, T. Chitnis, H.L. Weiner and R. Gandhi.** Brigham and Women's Hosp. and Harvard Med. Sch. and Brigham and Women's Hosp. and Harvard Med. Sch.

P187 **162.08** Electromyographic characterization and bioinformatic pathway analysis of spinal cord inflammation in a Tat induced HIV-associated sensory neuropathy model. **L. Cao, A. Kohsar, P. Wilson-Braun and B. Harrison.** Univ. of New England.

P188 **162.09** Neuroinflammatory signatures of complement component 4 in the subventricular zone of autism spectrum disorder and schizophrenia. **T-C. Mou, M. Lane, D.D. Ireland, S.M. Clark and L.H. Tonelli.** Univ. of Maryland Sch. of Med. and FDA.

P189 **162.10** Outside-in IL1b-HMGB1 signaling axis may drive astrocytic response in drug resistant epilepsies. **B.D. Clarkson, R. Lafrance-Corey, C. McCarthy, R. Johnson, R. Barun Shrestha and C.L. Howe.** Mayo Clin. Rochester.

P190 **162.11** The effect of miRNAs targeting TGFβ-signaling in multiple sclerosis. **C.N. Rau, M.E. Severin and A.E. Lovett-Racke.** The Ohio State Univ. Col. of Med.

P191 **162.12** Modulation of CNS neuroinflammation and microglia in EAE by the human aging gut microbiome. **A. Pu, N.M. Fettig, I. Naouar, G. Chao, J. Copeland, D. Chan, L.C. Osborne and J.L. Gommerman.** Univ. of Toronto, Canada and Univ. of British Columbia, Canada.

P192 **162.13** Single-cell RNA sequence analysis of T regulatory cells in relapsing remitting multiple sclerosis. **Y. Wang, M. Seyedsadr and S. Markovic-Plese.** Thomas Jefferson Univ.

163. INNATE IMMUNE RESPONSES AND HOST DEFENSE: CELLULAR MECHANISMS II

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P193 **163.01** PD-1 restricts the development and effector function of tissue regulatory T cells in experimental autoimmune encephalomyelitis. **D. Liang, J. Judge, S. Markson, S. Guinn, J.L. Collier, O. Shahid, S. Manne, J. Kuchroo, M. Fung, K.E. Pauken, D.A. Vignali, J.E. Wherry and A.H. Sharpe.** Harvard Med. Sch., Univ. of Pennsylvania Perelman Sch. of Med. and Univ. of Pittsburgh Sch. of Med.

P194 **163.02** Distinct subpopulations of mouse and human kidney resident macrophages in acute kidney injury. **M.D. Cheung, E. Erman, J. Lever, P. Porrett, A. Agarwal and J. George.** Univ. of Alabama at Birmingham Sch. of Med. and Univ. of Alabama at Birmingham.

P195 **163.03** Trained immunity in neurodegenerative diseases. **P. Bossu', L. Sireno, M. Lembo and E. Toppi.** IRCCS Santa Lucia Fndn., Italy.

P196 **163.04** Spatial transcriptomics and single cell sequencing identifies a unique injury associated resident macrophage subpopulation and reveals differential response to injury. **E. Erman, M.D. Cheung, J. La Fontaine, Z. Yang, A. Agarwal and J. George.** Univ. of Alabama at Birmingham.

P197 **163.05** Secretome of adipose-derived mesenchymal stem cells establish anti-inflammatory milieu by developing M2b/c macrophage. **T. Yoon, E. Ko and Y-B. Park.** Yonsei Univ. Col. of Med., South Korea.

P198 **163.06** Inhibition of LRRK2 kinase activity in the treatment of Crohn's disease. **S. Deloer, I. Fuss, C. Suebsuwong, K. Kumar, R.J. Devita, I. Peter and W. Strober.** NIAID, NIH and Icahn Sch. of Med. at Mount Sinai.

P199 **163.07** PD-1 inhibition on pulmonary ILC2s promotes TNF-α production and restricts progression of metastatic melanoma tumor growth. **E.D. Howard, B.P. Hurrell, D.G. Helou, C. Quach, J.D. Painter, P. Shafiei-Jahani, M. Fung, A.H. Sharpe and O. Akbari.** Univ. of Southern California and Harvard Med. Sch.

P200 **163.08** High-potency synthetic STING agonists rewire myeloid stroma in the tumour microenvironment to amplify immune checkpoint blockade efficacy in refractory pancreatic cancer. **A.R. Boda, C.R. Ager, K. Rajapakshe, S.T. Lea and M.A. Curran.** MD Anderson Cancer Ctr., Columbia Univ. Irving Med. Ctr. and Baylor Col. of Med.

P201 **163.09** Effect of BPA on cytokine expression and regeneration in larval zebrafish. **D. Walser-Kuntz, H. Wang, L. Alvarez and P. Intasin.** Carleton Col.

P202 **163.10** The potential roles of mast cells in the development and aging of heart. **L. Xia, J. Jin and Z. Su.** Jiangsu Univ., China.

P203 **163.11** Role of CD73 on peritoneal macrophages in age-associated immune dysfunction and tumor immunity. **F. Rivera-Escalera, M.T. McGinty, M.R. Rutkowski, P.S. Murphy and M.R. Elliott.** Univ. of Virginia and 10x Genomics.

P204 **163.12** Complement-dependent phagocytosis as a regulator of antibody-dependent cellular cytotoxicity. **C.M. Van Wagoner, F. Rivera-Escalera, L. Dea Comeau, C. Bauchle, C.C. Chu, C. Zent and M.R. Elliott.** Univ. of Virginia and Univ. of Rochester.

P205 **163.13** Contrasting roles for neutrophils and macrophages during experimental pyelonephritis. **J.D.D. Ruiz Rosado, H. Cortado, F. Robledo-Avila, J.D. Spencer, B. Becknell and S. Partida-Sanchez.** Abigail Wexner Res. Inst. at Nationwide Childrens Hosp. and Nationwide Children's Hosp.

P206 **163.14** The role of phosphatidylserine receptor-mediated phagocytosis of amyloid-β by microglia in Alzheimer's disease. **C.J. Bauchle, L. Owlett, B. Karaahmet, J. Olschowka, K. O'Banion and M.R. Elliott.** Univ. of Virginia and Univ. of Rochester Med. Ctr.

P207 **163.15** The role of temperature on macrophage functional activity in young and aged mice. **I.A. Hassan, A. Strope, K. Woods, S. Rath and J.M. Durdik.** Univ. of Arkansas and Indian Inst. of Sci. Educ. and Res., India.

P208 **163.16** The effects of fragmented sleep on monocyte and neutrophil distribution within the tissues during atherosclerosis. **A.K. Moriarty, W.C. Keeter, S. Ma, N. Stahr, J. Hatler, L. Wellman, L. Sanford and E. Galkina.** Eastern Virginia Med. Sch.

P209 **163.17** Intravascular neutrophil extracellular traps are associated with immunothrombosis and COVID-19-related severe acute kidney injury. **B.M. Henry, S. Benoit and N. Pode Shakked.** Texas Biomed. Res. Inst. and Cincinnati Children's Hosp. Med. Ctr.

P210 **163.18** Profiling adrenal gland resident macrophage response to acute and chronic stress. **Y. Xu, A. Gallerand, B. Dolfi, A. Zhu, P.R. Schrank, M.T. Patterson, N. Acharya, K. Zaitsev, S. Ivanov and J.W. Williams.** Univ. of Minnesota, Université Côte d'Azur, France and ITMO Univ., Russia.

P211 **163.19** The N-glycosyltransferase ST6GAL1 plays a key role in M2 macrophage anti-inflammatory functions. **R. Barnes and S. Dolatshahi.** Univ. of Virginia.

P212 **163.20** Notch2, Bcl6, and IRF2 govern differentiation and survival of murine nonclassical monocytes. **K.W. O'Connor, T. Liu, S. Kim, T. Murphy and K.M. Murphy.** Washington Univ. in St. Louis Sch. of Med.

P213 **163.21** Glycogen pathway intermediate uridine diphosphate glucose alters dendritic cell mitochondrial respiration in a nitric oxide-dependent manner. **B.L. Vagher and E. Amiel.** Univ. of Vermont.

P214 **163.22** Nuclear soluble cGAS senses DNA virus infection. **Y. Wu, K. Song, W. Hao, L. Wang and S. Li.** Tulane Univ. Sch. of Med.

P215 **163.23** Influenza A virus modulates ACE2 expression and SARS-CoV-2 infectivity in human cardiomyocytes. **M. Rajaram, Q. Wu, N. Kumar, N. Salijoughian, A. Zani, A. Patton, L. Ganesan, J. Yount and W. Lafuse.** The Ohio State Univ.

P217 **163.24** Lipopolysaccharide pre-treatment prevents viral induced death by priming macrophages for a robust anti-viral immune response. **J. Resiliac, M. Rohlfing, J. Santoro, S-R.A. Hussain and M.H. Grayson.** The Res. Inst. at Nationwide Children's Hosp. and The Ohio State Univ. Col. of Med.

P218 **163.25** Circulating monocytes co-expressing surface ACE2 and TMPRSS2 upon TLR4/7/8 activation are susceptible to SARS-CoV-2 infection. **Y. Yao, K. Subedi, J.Z. Sexton, T. Liu, N. Khalasawi, C. Pretto, J.W. Wotring, J. Wang, C. Yin, A. Jiang, J. Li, L. Zhou, J. McKinnon and Q-S. Mi.** Henry Ford Hlth. System and Univ. of Michigan.

P219 **163.26** The impact of lipid nanoparticles on anti-viral pathways and immune function in aged individuals. **J.R. Connors, G. Cusimano, K. Kim, M-G. Alameh, D. Weissman, M. Kutzler and E.K. Haddad.** Drexel Univ. Col. of Med. and Univ. of Pennsylvania Perelman Sch. of Med.

P220 **163.27** Astrocytic RIPK3 confers protection against deleterious neuroinflammation during Zika virus infection. **M. Lindman, J. Angel, K. Newman, C. Atkins and B. Daniels.** Rutgers Univ.

P221 **163.28** Innate immune mechanisms underlying sex differences in COVID-19. **A. Agrawal, S. Agrawal, J. Salazar, J. Nguyen and F. Rahmatpanah.** Univ. of California, Irvine.

P222 **163.29** Serine arginine splicing factor 7 is a critical regulator of innate immune activation in macrophages. **H.M. Scott, A.R. Wagner, K. West, R. Watson and K.L. Patrick.** Texas A&M Hlth. Sci. Ctr.

P223 **163.30** Effector-mediated subversion of proteasome activator (PA)28$\alpha\beta$ enhances lysosomal pathogen targeting within cytokine-activated macrophages. **S.R. Shames.** Kansas State Univ.

P224 **163.31** Mincle and TNF signaling crosstalk enhances type 1 and innate immune responses to *Orientia tsutsugamushi*. **J.R. Fisher, Y. Liang, G. Card, C.A. Gonzales and L. Soong.** Univ. of Texas Med. Br. at Galveston.

P225 **163.32** mTOR-associated mitochondrial energy metabolism limits mycobacterium ESX-1-induced cytotoxicity. **A.J. Pagán, L.J. Lee, J. Edwards-Hicks, C.B. Moens, D.M. Tobin, E.L. Pearce, E. Busch-Nentwich and L. Ramakrishnan.** Univ. of Cambridge, United Kingdom, Fred Hutchinson Cancer Res. Ctr., Duke Univ. Sch. of Med., Johns Hopkins Univ. Sch. of Med. and Queen Mary Univ. of London, United Kingdom.

P226 **163.33** Palmitic acid reprograms inflammatory responses to microbial ligands in macrophages and mediates innate immune memory in vivo. **A.L. Seufert, J.W. Hickman, S.K. Traxler, R.M. Peterson, S.J. Lashley, R.J. Napier, N. Shulzhenko and B.A. Napier.** Portland State Univ., Oregon Hlth. & Sci. Univ. and Oregon State Univ.

P227 **163.34** Defining complex mechanistic interactions and responses by macrophages during *Mycobacterium abscessus* infection. **H. Gilliland and A. Olive.** Michigan State Univ. and Michigan state Univ.

P228 **163.35** NADase activity found in bacterial TIR proteins may aid in innate immune evasion. **C. Palm, R. Koudjra, T. Obiorah, G.A. Snyder, M. Snyder and E. Harberts.** Towson Univ. and Univ. of Maryland Sch. of Med.

P229 **163.36** P66 is a bacterial “don’t eat me signal” that mimics mammalian CD47 and facilitates immune evasion by Borrelia burgdorferi. **M.C. Tal, P. Hansen, N. Ramadoss, R. Volk, B. Zaro and I.L. Weissman.** Stanford Univ. Sch. of Med., MIT, Massachusetts Inst. of Technol and University of California, San Francisco.

164. CELLS OF THE INNATE IMMUNE SYSTEM

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P230 **164.01** TGF-β and CIS inhibition synergistically enhance natural killer cell-based immunity. **F. Souza-Fonseca-Guimaraes.** The Univ. of Queensland Diamantina Inst., Australia.

P232 **164.03** MΦ derived from circulating monocytes play a key role in the antibacterial response against gut-associated sepsis in radiation mice. **A. Asai, H. Nishikawa, S. Fukunishi and K. Higuchi.** Osaka Med. and Pharmaceutical Univ., Japan.

P233 **164.04** CD3ζ adaptor structure determines functional differences between human and mouse CD16 Fc-gamma receptor signaling in natural killer cells. **O.A. Aguilar, L-K. Fong, K. Ishiyama, W.F. DeGrado and L.L. Lanier.** Univ. of California, San Francisco.

P234 **164.05** BCG vaccination impacts the epigenetic landscape of progenitor cells in human bone marrow. **S.J. Sun, A. Dumaine, L.C. J. de Bree, M.G. Netea and L.B. Barreiro.** Univ. of Chicago, Statens Serum Inst., Netherlands, Statens Serum Inst., Denmark, Univ. of Bonn, Netherlands and Univ. of Bonn, Germany.

P235 **164.06** Comparison of DNA sensing by non-immune cells and tissues. **L. Heller, K. Znida, M. Bosnjak, A. Sales Conniff, T. Jesenko, B. Markelc, J. Tur, N. Semenova and M. Cemazar.** Univ. of South Florida, Inst. of Oncology Ljubljana, Slovenia and Old Dominion Univ.

P236 **164.07** Proteomics analysis to identify intracellular inflammatory pathways modulated by Fh15 in macrophages stimulated with LPS-*E. coli*. **A. Armina-Rodriguez, B. Valdés-Fernández, A. Roche-Lima, K. Carrasquillo-Carrión and A.M. Espino.** Univ. of Puerto Rico, Med. Sci.

P237 **164.08** The long noncoding RNA LUCAT1 promotes immune gene expression in human macrophages. **K.E. Vergara, S. Lal, R. Cattley, W.F. Hawse and M. Atianand.** Univ. of Pittsburgh Sch. of Med.

P238 **164.09** STING activation contributes to PARylation-mediated parthanatos in macrophages. **X. Li, X. Zhang, Q. Liu, J. Wu, X. Wu, Y. Zhao and J. Ren.** Jinling Hosp., Nanjing Med. Univ., China, Jinling Hosp., Sch. of Med., Southeast Univ., China, Jinling Hosp., Nanjing Univ., China and The Affiliated BenQ Hosp. of Nanjing Med. Univ., China.

P239 **164.10** cDC2 heterogeneity is influenced by pDCs and type 1 IFN. **C. Krawczyk, H. Guak, A. VanderArk, M. Weiland, P. Davidson, M. Corrado and L. Zhai.** Van Andel Inst.

P240 **164.11** The role of ERK2 in dendritic cell function. **N.S. Abdul-Baki, A. Negron and T. Forsthuber.** Univ. of Texas at San Antonio.

P241 **164.12** Osteoclast differentiation alters monocyte inflammatory responses *to Staphylococcus aureus*. **J.R. Petronglo, K.R. Eichelberger and J. Cassat.** Vanderbilt Univ., Pathology, Microbiology & Immunology, Vanderbilt Univ. Med. Ctr. and Vanderbilt Univ. Med. Ctr.

P242 **164.13** Role of innate lymphoid cells on experimental sepsis-induced cognitive decline. **V. Vayalanellore Giridharan, A. Tripathi, A. Madeshiya, A. Pillai, F. Petronilho, F. Dal-Pizzol and T. Barichello.** McGovern Med. Sch., the Univ. of Texas Hlth. Sci. Ctr. at Houston and Univ. of Southern Santa Catarina, Brazil.

P243 **164.14** Regulation of myeloid-derived suppressor cell expansion by TRAF3 during chronic inflammation. **J. Jung, S. Zhu, A. Lalani, D.B. Sant'Angelo, L.R. Covey, S. Ostrand-Rosenberg and P. Xie.** Rutgers—The State Univ. of New Jersey, Child Hlth. Inst. of New Jersey, Rutgers Robert Wood Johnson Med. Sch., Rutgers Cancer Inst. of New Jersey and Univ. of Maryland, Baltimore.

P244 **164.15** GM-CSF maturation of monocytes in to macrophages impair their efferocytosis capability and tissue repair. **S. Banerjee, Z. Akhter, J.C. Joshi and D. Mehta.** The Univ. of Illinois at Chicago.

P245 **164.16** Aging alters murine peritoneal macrophages in a sex-dimorphic fashion. **R. Lu, H.L. Caslin, E. Wang, M. Cottam, M. Kim, N. Winn, N.K. Sampatkumar, A. Hasty and B.A. Benayoun.** Univ. of Southern California, Univ. of Oxford, United Kingdom and Vanderbilt Univ.

P247 **164.18** LncRNA *U90926* is induced in activated macrophages, encodes a novel secreted protein, and is protective in endotoxic shock. **D.N. Krementsov, B. Sabikunnahar, S. Caldwell and S. Varnum.** Univ. of Vermont.

P248 **164.19** Effector memory CD4 T cells engage myeloid cells through TNFR and CD40 to induce innate inflammation and autoimmune pathology independent of pattern recognition receptors. **H. Meibers, M.M. McDaniel, A. Jain, A. Singh Chawla and C. Pasare.** Cincinnati Children's Hosp. Med. Ctr. and The Univ. of Texas Southwestern Med. Ctr.

P249 **164.20** Adenosine deaminase-1 induces maturation and skewing of cytokine and chemokine production in dendritic cells to improve adaptive immune responses. **G. Cusimano, M. Chakhtoura, B. Taramangalam, J. Connors, M.A. Kutzler and E. Haddad.** Drexel Univ. Col. of Med.

P250 **164.21** dNTP catabolism is a macrophage-intrinsic gatekeeper preventing NLRP3 inflammasome hyperactivation. **Z. Zhong, S. Huo, D. Liu, X. Wang and S. Liang.** The Univ. of Texas Southwestern Med. Ctr.

165. IMMUNOREGULATION—INNATE IMMUNE RESPONSES

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P251 **165.01** Adenosine receptor signaling regulates effector T cell activation through the limitation of aerobic glucose metabolism. **L. Campillo-Gimenez, M. Li, E. Molina and P.B. Ernst.** Univ. of California San Diego.

P252 **165.02** IRF5 regulation of CD4+ T cell metabolism controls CD40L expression. **Z. Brune, B. Matta and B. Barnes.** Feinstein Inst. for Med. Res., Northwell Hlth.

P253 **165.03** Enhancing lysosomal lipid metabolism prevents the loss of Kupffer cells in non-alcoholic steatohepatitis and attenuates liver pathology. **M.M. Chan, S. Daemen, L. He, A. Gainullina, M.N. Artyomov, B. Razani and J.D. Schilling.** Washington Univ. in St Louis Sch. of Med.

P254 **165.04** Choline metabolism underpins macrophage IL-4 polarization in vitro and in vivo. **P. Ghorbani, S.Y. Kim, I. Alecu, D. Woo, M. Ilijevska, T.K. Smith, J.R. Nunes, L. Minarrieta, J. St-Pierre, S.A. Bennett, M.G. Nair and M.D. Fullerton.** Univ. of Ottawa. Canada and Univ. of California, Riverside.

P255 **165.05** Choline metabolism promotes M2 macrophage polarization in intestinal infection with helminth *Heligmosomoides polygyrus*. **S.Y. Kim, P. Ghorbani, D. Woo, M.D. Fullerton and M.G. Nair.** Univ. of California Riverside Sch. of Med. and Univ. of Ottawa. Canada.

P256 **165.06** Circadian control of macrophages in the tumor microenvironment. **A.M. Clark and B.J. Altman.** Univ. of Rochester.

P257 **165.07** UTX is an epigenetic regulator of natural killer cell development and anti-viral effector function. **M.I. Cheng, L. Riggan, F. Ma, S. Chin, R. Tafti, M. Pellegrini, T.E. O'Sullivan and M.A. Su.** Univ. of California, Los Angeles.

P258 **165.08** Glutamine addiction in NKT cells is regulated by AMPK-mTORC1 axis. **A. Kumar, E.L. Yarosz, A. Andren, L. Zhang, C. Lyssiotis and C-H. Chang.** Univ. of Michigan.

P259 **165.09** Tissue resident lung natural killer cells demonstrate enhanced responses to IL-15 compared to peripheral populations. **C. Sholevar, S.J. Judge, R. Nielsen, L.E. Farley, C. Dunai, A.M. Razmara, D.T. Cooke, E.G. Brown, R.B. Rebhun, W.J. Murphy and R.J. Canter.** Univ. of California Davis Med. Ctr., Univ. of California, Davis and Univ. of Liverpoolm United Kingdom.

P260 **165.10** Prenatal rejecter NK cells enhance allo-specific Th17/Tc17 cell responses via TGF-beta1, IL-6, and GM-CSF. **H.K. Kang, K. Ott, L. Turner, C. Redden, M. Langereis, A. Alhajjat and A. Shaaban.** Ann & Robert Lurie Children's Hosp. / Northwestern Univ.

P261 **165.11** Transcription factor profiling reveals activation of type II natural killer T cell effector functions in response to *Francisella tularensis* infection. **C.M. Torres.** The Univ. of Texas at El Paso.

P262 **165.12** NK cell-derived IL-10 enhances *Plasmodium*-specific CD4+ Tfh differentiation and IL-27 production in mice. **K.S. Burrack, M. Harris, T. Dileepan, M.K. Jenkins and A. Frosch.** Hennepin Healthcare Res. Inst. and Univ. of Minnesota.

P263 **165.13** Several active components within MSCs secretome inhibit the IL-2-mediated effector functions of NK cells. **E. Ko, Y. Lee, T. Yoon, J. Kim and Y-B Park.** Yonsei Univ. Col. of Med., South Korea.

P264 **165.14** Key contribution of NK cells to inflammation after muscle injury. **H. Cevik, I. Gangadin, J.G. Boyer, D. Millay and S.N. Waggoner.** Cincinnati Children's Hosp. Med. Ctr.

P265 **165.15** Influence of estradiol deficiency on the acute inflammatory response following a traumatic skeletal muscle injury. **S.L. McMillin, R. Noel, L. O'Farrell, G. Warren and D. Lowe.** Univ. of Minnesota, Georgia Inst. of Technol., Atlanta and Georgia State Univ.

P266 **165.16** Setting the pace: CD4 T cell-intrinsic Arginase 1 orchestrates Th1 induction and contraction. **E.E. West, S. Freeley, M.M. Kaminski, N.S. Merle, S. Veenbergen, D-Y. Lee, L. St. John-Williams, J.W. Thompson, D.R. Green, S. Scholl-Buergi, D. Karall, M. Huemer and C. Kemper.** NHLBI, NIH, Kings Col. London, United Kingdom, St. Jude Children's Res. Hosp., Erasmus Univ. Med. Ctr., Netherlands, Duke Univ., Med. Univ. of Innsbruck, Austria, Univ. Children's Hosp. Zurich, Switzerland and Univ. of Lubeck, Germany.

P267 **165.17** Human KIR^+CD8^+ T cells target pathogenic T cells in celiac disease and are active in autoimmune diseases and COVID-19. **J. Li, M. Zaslavsky, Y. Su, J. Guo, M. Sikora, V. van Unen, A. Christophersen, S-H. Chiou, L. Chen, J. Li, X. Ji, J. Wilhelmy, A. McSween, B. Palanski, V. Mallajosyula, N. Bracey, G. Dhondalay, K. Bhamidipati, J. Pai, L. Kipp, J. Dunn, S. Hauser, J. Oksenberg, A. Satpathy, W.H. Robinson, L. Steinmetz, C. Khosla, P. Utz, L. Sollid, Y-H. Chien, J. Heath, N. Fernandez-Becker, K. Nadeau, N. Saligrama and M. Davis.** Stanford Univ. Sch. of Med., Stanford Univ., Inst. for Systems Biol., Seattle, Univ. of Oslo, Norway, Rutgers—The State Univ. of New Jersey, Univ. of California, San Francisco and Washington Univ. in St. Louis.

P268 **165.18** Brain resident memory $CD8^+$ T cells trigger CNS immune activation and infiltration. **S.C. Musial, T.G. Searles, S.A. Kleist, H.N. Degefu, J.F. Isaacs, A.G. Skorput and P.C. Rosato.** Geisel Sch. of Med. at Dartmouth.

P269 **165.19** Role of NF-kappaB c-Rel O-GlcNAcylation in the regulation of cytotoxic T cell function. **P. Ramakrishnan and J.T. Centore.** Case Western Reserve Univ. Sch. of Med.

P270 **165.20** *Bifidobacterium longum* ameliorates inflammatory bone loss in osteoporotic mice via modulating "Bregs-Tregs-Th17" cell axis. **R.K. Srivastava and L. Sapra.** All India Inst. of Med. Sci., New Delhi.

P271 **165.21** Preclinical in vivo assessment of replacing linezolid for spectinamide-1599 in the Nix-TB regimen. **M.Z. Ali, T.S. Dutt, A. Walz, C. Pearce, R.E. Lee, G.T. Robertson, A.J. Hickey, B. Meibohm and M. Gonzalez-Juarrero.** Colorado State Univ., St. Jude Children's Res. Hosp., Research Triangle Inst. International and Univ. of Tennessee Hlth. Sci. Ctr.

P273 **165.23** Characterization of urine-derived immune cells from bladder cancer patients and comparison to tumor and peripheral blood. **M.A. Tran, A. Farkas, K. Beaumont, T. O'Donnell, R. Mehrazin, P. Wiklund, A. Horowitz, M. Galsky, J. Sfakianos and N. Bhardwaj.** Icahn Sch. of Med. at Mount Sinai.

P274 **165.24** The biological mechanisms of metformin effects on aging-associated inflammation in obesity. **S. Santa Cruz Calvo, L. Bharath and B. Nikolajczyk.** Univ. of Kentucky and Merrimack Col.

166. MOLECULAR MECHANISMS OF T CELL SIGNALING

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P275 **166.01** Acid β-glucosidase insufficiency activates the C-X-C Motif Chemokine Ligand 9/CXCR3 axis leading to T cell mediated inflammation in Gaucher disease. **M.K. Pandey, A.F. Magnusen, V.S. Trivedi, S.L. Hatton, R. Rani, T.C. Nyamajenjere, D.N. A. Magnusen, M.A. McKay, C. Woods, B.A. DiPasquale, J. Köhl and G.A. Grabowski.** Univ. of Cincinnati Coll. of Med. and Cincinnati Children's Hosp. Med. Ctr.

P276 **166.02** The ZFP36 family of RNA-binding proteins regulate homeostatic and autoreactive T cell responses. **M.E. Cook, T.R. Bradstreet, A.M. Webber, J. Kim, A. Santeford, E.A. Schwarzkopf, R.S. Apte, P.J. Blackshear and B.T. Edelson.** Washington Univ. in St. Louis Sch. of Med. and NIEHS.

P277 **166.03** Aiolos restrains the acquisition of cytotoxic features by $CD4^+$ T cells. **D.M. Jones, K.A. Read, S. Pokhrel, E. Hales, C. Eisele, R.T. Warren, P. Collins, A. Freud and K.J. Oestreich.** The Ohio State Univ. Col. of Med.

P278 **166.04** CD99 is essential for actin-microtubule cross-talks for immune synapse formation. **G. Nam and E.Y. Choi.** Seoul Natl. Univ. Col. of Med., South Korea.

P279 **166.05** Adrenal stress response is an essential host response against lethal T cell activation. **X. Li and L. Guo.** Univ. of Kentucky and Lexington VA Med. Ctr.

P280 **166.06** Characterization of the native CD160–HVEM immunomodulatory protein complex by intact mass spectrometry and the crystallographic analysis. **I. Nemcovicova, S. Lenhartova, M. Benko, A. Bitala and M. Nemcovic.** Biomed. Res. Ctr. SAS, Slovakia and Inst. of Chem. SAS, Slovakia.

P281 **166.07** Two MHCs versus one and the effect on T cell receptor repertoire. **A.J. Brown, J. White, E. Kushner, E. Torpy, L. Gapin, J. Scott-Browne, J.W. Kappler and P. Marrack.** Natl. Jewish Hlth., Colorado.

P282 **166.08** Copper homeostasis is critical for T cell activation. **A.H. Mandarano and M.A. McGargill.** St. Jude Children's Res. Hosp.

P283 **166.09** A critical role for the RNA binding protein HuR in $CD4^+$ T cell-mediated airway inflammation in mouse and human. **F. Fattahi, J.S. Ellis, M. Sylvester, K. Bahleda, N.L. Lugogo and U. Atasoy.** Michigan Med. at Univ. of Michigan and Boston Children's Hosp. and Harvard Med. Sch.

P284 **166.10** Cell-specific roles for miR-155 during neuroinflammation. **J.W. Thompson, T. Huffaker, R. Hu and R.M. O'Connell.** Univ. of Utah.

P285 **166.11** Classification of novel conditional POSH knockout murine models. **C.E. Guldenpfennig, Y. Guan, E. Teixeiro and M. Daniels.** Univ. of Missouri, Columbia.

P286 **166.12** The phosphatidylinositol-transfer protein Nir3 modulates T cell development and function. **W. Lu, Y.A. Helou, B.B. Au-Yeung, K. Shrinivas, J. Liou and A. Weiss.** Univ. of California, San Francisco, Emory Univ., Harvard Univ. and Univ. of Texas Southwestern Med. Ctr.

P287 **166.13** Mediator complex maintains peripheral T cell tolerance through enforcement of the quiescence module. **S.M. Chaudhuri, Y. Zhang, S.E. Weinberg and D. Fang.** Feinberg Sch. of Med., Northwestern Univ. and Northwestern Univ.

P288 **166.14** Overcoming inhibitory constraints to TCR signaling by targeting the pH-sensitive phosphatase suppressor of T-cell receptor signaling 1. **Y-L. Tsai, M. Arias Badia, T.A. Kadlecek, N.H. Shah, L. Fong and A. Weiss.** Univ. of California, San Francisco, Univ. of California, San Francisco, Howard Hughes Med. Inst. and Columbia Univ.

P289 **166.15** Mapping quantitative relationships in the TCR signaling network, in vivo. **Z.G. Fasana.** Univ. of Maryland, Balitimore.

P290 **166.16** GPR65, a critical regulator of Th17 pathogenicity, is regulated by the CREB/CRTC2 pathway. **J.B. Hernandez.** Keck Grad. Inst.

P291 **166.17** CRISPR/Cas9 based determination of the mechanism of POSH function in T-ALL. **B.D. Cole, M. Lange-Osborn, E. Teixeiro and M. Daniels.** Univ. of Missouri Columbia.

P292 **166.18** Absence of the fatty acid binding protein 5 inhibits the establishment of resident memory T cells after a secondary *Listeria monocytogenes* infection. **K. Aviszus, A. Giron, M. El Kharbili DiLisio, X. Zhao and F. Gally.** Natl. Jewish Health, Colorado.

P293 **166.19** QRICH1 is a CARD11 interactor that negatively regulates T cell activation. **N.M. Carter and J.L. Pomerantz.** Johns Hopkins Univ. Sch. of Med.

P294 **166.20** TCR-enriched microvesicles provide antigen-specific help for class-switched antibody production. **F. Li and K. Choudhuri.** Univ. of Michigan Med. Sch.

P295 **166.21** The Ikaros zinc finger transcription factor Eos as a candidate regulator of T_H2 differentiation and function. **J. Tuazon, B. Sreekumar, K. Read, M. Yaeger, S. Varikuti, K.M. Gowdy and K.J. Oestreich.** The Ohio State Univ. Col. of Med. and Gladstone Inst.

167. LYMPHOCYTE HOMEOSTASIS AND REGULATION

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P297 **167.02** Profound abnormalities in thymic epithelial cells in *Rag1* hypomorphic mice: implications for immune reconstitution after stem cell transplantation. **F. Pala, C. Oguz, C. Corsino, A. Martins, J. Lack, J. Tsang, L. Notarangelo and M. Bosticardo.** NIAID, NIH and NIAID Collaborative Bioinformatics Resource (NCBR).

P298 **167.03** Age-dependent changes in the regulatory program of $CD8^+$ regulatory T cells ($CD8^+$ Tregs). **S. Srinivasan, M. Chaoyu, S. Mishra, L. Wang, K. Fan and N. Zhang.** Univ. of Texas Hlth. Sci. Ctr. San Antonio, Dana Farber Cancer Inst. and Central South Univ., Changsha Hunan, China.

P299 **167.04** ITK tunes the Th17/Treg switch response by controlling calcium dependent signaling. **O. Anannya and A. August.** Cornell Univ.

P300 **167.05** Age-associated changes to lymph node fibroblastic reticular cells. **J.N. Lancaster, T. Kwok, S. Medovich and I. Alves da Silva.** Mayo Clin.

P301 **167.06** T cell fate and central tolerance: using iTregs to elucidate the persistence of thymic development on a T cell's behavior. **J. White, K. Ishihara and S. Sakaguchi.** Osaka Univ., WPI Immunology Frontier Res. Ctr., Japan.

P302 **167.07** The effect of malnutrition on T-cell circadian rhythms. **T.R. Foster, K.A. Dadzie, O. Adams and M.R. Gubbels-Bupp.** Randolph-Macon Col.

P303 **167.08** Malnutrition disrupts T cell migration. **K.A. Dadzie, T.R. Foster, A. Mister, S. Goulmamine, D. Gibson, O. Adams and M.R. Gubbels-Bupp.** Randolph-Macon Col.

P304 **167.09** Spatially restricted T-cell activation in inflamed tissues. **N. Bala, H. Prizant, A. Hughson, A. McGurk and D.J. Fowell.** Cornell Univ. Col. of Vet. Med. and Univ. of Rochester Med. Ctr.

P305 **167.10** Glucocorticoid signaling and regulatory T cell collaborate to maintain the hair follicle stem cell niche. **Y. Zheng, Z. Liu, X. Hu, Y. Liang, J. Yu and M.N. Shokhirev.** Salk Inst. for Biological Studies.

P307 **167.12** Strong tonic TCR signaling is associated with negative regulation of naive CD4+ T cells. **B.B. Au-Yeung, J. Eggert, C. Scharer and W. Zinzow-Kramer.** Emory Univ. Sch. of Med.

P308 **167.13** Naive $CD4^+$ T cell heterogeneity. **A. Sajani, E. Schaafsma, M. ElTanbouly, J. Lines and R.J. Noelle.** Geisel Sch. of Med. at Dartmouth and Rockefeller Univ.

P311 **167.16** Covalent TCR-peptide-MHC recognition induces central tolerance and elicits activation of T cells with subthreshold affinity for antigen. **P. Zareie, C. Szeto, R.C. Wirasinha, J.B. Zhang, A.T. Nguyen, A. Riboldi-Tunnicliffe, N.L. La Gruta, S.T. Gras and S.R. Daley.** Monash Univ., Australia, La Trobe Univ., Australia, Australian Synchrotron, Australia and Queensland Univ. of Technol., Australia.

168. B CELL DIFFERENTIATION, REGULATION, AND FUNCTION

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P312 **168.01** The development of humoral immunity to common dietary antigens in human infants is accompanied by the accumulation of specific plasma cells in the thymus. **H. Cordero, J. Hess, E. Nitschki, R. Shihab, P. Roy, D.M. Kalfa, E.A. Bacha and E. Zorn.** Columbia Univ. Med. Ctr.

P313 **168.02** The role of microRNA-142 in B cell activation and effector functions. **N.M. Graham, W-L. Wang, E. Reyes and M.P. Boldin.** City of Hope Natl. Med. Ctr., Washington Univ. in St Louis Sch. of Med. and Duke Univ.

P314 **168.03** Novel *SLC5A6* mutations lead to B lymphocyte maturation defects with metabolic abnormality rescuable by biotin replenishment. **C-H. Hsieh, P-C. Chen and C-C. Shieh.** Inst. of Clin. Med., Col. of Med., Natl. Cheng-Kung Univ., Taiwan.

P315 **168.04** Optimal development and effector function of antibody-suppressor $CXCR5^+CD8^+$ T cells requires host IFN-γ and $CD4^+$ T cells. **J.M. Zimmerer, S. Chaudhari, M. Hart, J.L. Han, K. Koneru and G.L. Bumgardner.** Wexner Med. Ctr., The Ohio State Univ.

P316 **168.05** IL-4 signaling regulates the fate of B cell differentiation and limits BCR repertoire. **J.M. Oviedo, L.C. Gibbs, K. James and K.C. Fairfax.** Univ. of utah and Univ. of Utah.

P317 **168.06** Let's talk about sex, baby: sex influences age-related changes in natural antibodies and natural antibody producing B-1a cells. **S.E. Webster, B. Ryali, N.E. Tsuji, M.J. Clemente and N.E. Holodick.** Western Michigan Univ. Homer Stryker MD Sch. of Med. and Rush Univ. Med. Ctr.

P318 **168.07** Understanding the temporal requirement for T follicular helper cells for germinal center output of long-lived plasma cells and B memory cells. **T. Zilch, S. Leddon and D.J. Fowell.** Cornell Univ.

P319 **168.08** Developmental dynamics and genomic programming of GC-derived precursors that give rise to long lived plasma cells. **G.K. Manakkat Vijay, K. Thakkar, K. Chetal, S. Hay, J. Fan, A.V. Joglekar, N. Salomonis and H. Singh.** Univ. of Pittsburgh and Cincinnati Children's Hosp. and Med. Ctr.

P320 **168.09** Epigenetic remodeling by vitamin C potentiates the differentiation of mouse and human plasma cells. **C-W.J. Lio, H-Y. Chen, A. Almonte-Loya, F-Y. Lay, E. Johnson, E. Gonzalez-Avalos, J. Yin, Q. Ma, D. Wozniak and F. Harrison.** The Ohio State Univ., La Jolla Inst. for Immunology and Vanderbilt Univ. Med. Ctr.

P321 **168.10** The role of ERK2 in regulating germinal center B cell fate decisions. **A.J. Negron, N.S. Abdul-Baki, R. Perez, C. Perez, B.L. Bartsch and T.G. Forsthuber.** Univ. of Texas San Antonio.

P322 **168.11** Unique and shared molecular features of human B and T lymphocyte memory differentiation. **A.K. Singh, R. Roy, M. Kaileh, D. Sarantopoulou, D. Hernandez, S. Arepalli, A. Bektas, J. Kim, J. McKelevy, L. Zukely, C. Dunn, C. Nguyen, T. Wallace, W. Wood, Y. Piao, S. De, J.M. Sen, N-p. Weng, L. Ferrucci and R. Sen.** NIA, NIH.

P323 **168.12** Splenic T-bet$^+$ B cells exhibit stem-like features and constitutively generate antibody-secreting cells. **J.J. Knox, R.L. Rosenthal, J.L. Johnson, J. Zhu and M.P. Cancro.** Univ. of Pennsylvania Perelman Sch. of Med. and NIAID, NIH.

P324 **168.13** HIV gp120-specific memory develops from pre-existing memory and naive B cells following vaccination in humans. **J. Kobie, M. Piepenbrink, C. Fucile, C. Bunce, L-X. Man, J. Liesveld, A.F. Rosenberg, M. Keefer and M. Basu.** Univ. of Alabama at Birmingham and Univ. of Rochester.

169. T CELL EFFECTOR GENERATION AND FUNCTION

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P325 **169.01** Single-cell TCR and mRNA sequencing of antigen-specific T cells reveal spatial trajectories from single time points with HLA and VDJ bias. **A.H. F. Andersen, M.H. Schleimann, M. Rosas-Umbert, R. Olesen, J.D. Gunst, M. Krogsgaard and M. Tolstrup.** Aarhus Univ., Denmark, Aarhus Univ. Hosp., Denmark and New York Univ. Langone Med. Ctr.

P326 **169.02** The SWI/SNF canonical BAF complex and c-Myc cooperate to promote early fate decisions in $CD8^+$ T cells. **A. Guo, H. Huang, Z. Zhu, M.J. Chen, H. Shi, P. Sharma, S. Liedmann, D. Haydar, M. Yang, H. Beere, G. Krenciute, C.W. Roberts, H. Chi and D.R. Green.** St. Jude Children's Res. Hosp.

P328 **169.04** Characterization of the cross-reactive T cell repertoire in the context of heterosubtypic influenza A virus infection. **J.A. Gaevert, S. Duan and P.G. Thomas.** St. Jude Children's Res. Hosp.

P329 **169.05** The PGI_2 signaling pathway decreases glycolysis and mitochondria respiration in mouse Th2 cells. **W. Zhou, J. Zhang, N.U. Chowdhury, A.E. Norlander, S. Toki, D.C. Newcomb and R.S. Peebles, Jr.** Vanderbilt Univ. Med. Ctr.

P330 **169.06** Expansion and maintenance of long lived effector CD8 T cells is modulated by inflammation. **E.D. Lucas, M. Huggins, C. Thefaine, M. Pierson and S. Hamilton.** Univ. of Minnesota.

P331 **169.07** Lineage specification of killer versus helper Innate lymphoid cells. **Y. Ding, M. Lavaert, C. Harly, A. Das and A. Bhandoola.** NIH and French Inst. of Hlth. and Med. Res., France.

P332 **169.08** BCL6-dependent TCF-1+ progenitor cells maintain effector and helper CD4 T cell responses to persistent antigen. **Y. Xia, K. Sandor, J.A. Pai, B. Daniel, S. Raju, R. Wu, S. Hsiung, Y. Qi, T. Yangdon, M. Okamoto, R.D. Schreiber, K.M. Murphy, A. Satpathy and T. Egawa.** Washington Univ. in St Louis Sch. of Med. and Stanford Univ. Sch. of Med.

P500 **169.09** A fluorescent reporter model to study the role of T_{DC} during infection and cancer. **M. Kuka, A. Fiore, E. Sala, F. Oberrauch, P. Provero, M. Riba, C. Cristofani, M. Iannacone and M. Kuka.** Università Vita Salute San Raffaele, Italy and IRCCS San Raffaele Scientific Inst., Italy.

P501 **169.10** Sympathetic nervous system-mediated β-adrenergic signaling maintains the pool of mature natural killer cells. **R. Geyer, M. Moussa, I. Mandoiu, P.K. Srivastava and J. Nevin.** UConn Hlth. and Univ. of Connecticut.

P502 **169.11** Tissue- and age-specific adaptations of human $\gamma\delta$T cells in early life. **J.I. Gray, A. Chin, T.J. Connors, R.S. Guyer, K. Rybkina, M.C. Bradley, R. Matsumoto and D.L. Farber.** Columbia Univ. Med. Ctr.

P503 **169.12** The functional and molecular determinants of HCV-specific CD8 T cell responses during early infection. **C. Cai, J. Samir, T. Adikari, T. Peters and F. Luciani.** Karolinska Inst., Sweden, Univ. of New South Wales, Australia and Garvan Inst. of Med. Res., Australia.

P504 **169.13** The circadian clock gene ARNTL regulates the expression of *CCR6* and Th17 related genes in human cells. **S. Singh, F. Parween, N. Edara, H. Zhang, P. Gardina, F. Otaizo-Carrasquero, T. Myers and J.M. Farber.** NIAID, NIH.

P505 **169.14** Homeostatic cytokines regulate the emergence of human prenatal effector T cells. **V. Locher, S. Park, D. Bunis, S. Makredes, G. Fragiadakis and J. Halkias.** Univ. of Chicago and Univ. of California, San Francisco.

P506 **169.15** Impact of TCR-peptide/MHC class II affinity on the pathogenicity and regulation of prostate-specific $CD4^+$ T cells. **D.M. Rodriguez, R. Duncombe, V. Lee, S. Zeng, D.E. Klawon, E.J. Adams and P.A. Savage.** Univ. of Chicago.

P507 **169.16** Exploring the functionality of CD56+ MAIT cell populations across human tissues. **T. Kammann, T. Parrot, C. Boulouis, M. Buggert, E. Leeansyah and J.K. Sandberg.** Karolinska Inst., Sweden, Tsinghua Univ., China and Duke-National Univ. of Singapore Med. Sch., Singapore.

P508 **169.17** The heterogenous origin of lung ILC3s. **M. Romera-Hernandez, L. Mathä, M. Orangi, D. Khijakadze and F. Takei.** Univ. of British Columbia, Canada and Terry Fox Laboratory, BC Cancer, Canada.

P509 **169.18** Enhanced T cell effector function upon differentiation of $CD8^+$ and $CD4^+$ T cells in the presence of BioE-1197 through potential off target ARK family inhibition. **R.S. Helms, C.H. Patel, R.D. Leone, B. Duvall, R-D. Gao, T. Tsukamoto, B.S. Slusher, J.L. Pomerantz and J.D. Powell.** Johns Hopkins Univ. Sch. of Med. and Calico Life Sci.

170. IMMUNITY TO MICROBIAL AND PARASITIC INFECTIONS II

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P510 **170.01** The unusual peptidoglycan cell wall of *Borrelia burgdorferi* and it's role in Lyme disease pathogenesis. **M.E. McClune, J. Dressler, M. Davis and B. Jutras.** Virginia Polytechnic Inst. and State Univ.

P511 **170.02** Exogenous IL-13 exacerbates *Leishmania major* infection and abrogates acquired immunity to reinfection. **M.T. Zaatar, Y. Simaan and M. Karam.** Univ. of Balamand Dubai, United Arab Emirates.

P512 **170.03** Microbiota-derived acetic acid suppresses type 1 diabetes via a G-protein-coupled receptor on $CD8^+$ Treg. **C. Shimokawa and H. Hisaeda.** Natl. Inst. of Infectious Dis., Japan.

P513 **170.04** Immune requirements for protection during secondary *Plasmodium* infection. **M.F. Fontana and M. Pepper.** Univ. of Washington.

P514 **170.05** CCR5 inhibition by maraviroc blocks the immunopathology mediated by $CD8^+$ T cells in cutaneous leishmaniasis. **L.A. Sacramento, C.F. Amorim, C. Lombana and P. Scott.** Univ. of Pennsylvania Sch. of Vet. Med.

P515 **170.06** Sterile liver inflammation and T cell-intrinsic T-bet expression drive the formation of tissue resident memory CD4 T cells that protect against systemic *Salmonella* infection. **C. Depew and S.J. McSorley.** Univ. of California, Davis.

P516 **170.07** Exposure to diverse microbial flora accelerates the development of infant immunity. **N.J. Schuldt, S. Burger, T. Stenger, M. Pierson, M. Huggins and T. Stenger.** Univ. of Minnesota.

P517 **170.08** Basophil depletion alters host immunity, intestinal permeability, and mammalian host-to-mosquito transmission in malaria. **E.L. Donnelly, N. Céspedes, J.A. Van de Water and S.L. Luckhart.** Univ. of Idaho and Univ. of California, Davis.

P518 **170.09** Chronic vaccine boost prolongs malaria vaccine immunity and CD4 effector and memory T cells. **K. Gbedande, S.A. Ibitokou, M.L. Ong, M.G. Brown, M.A. Degli-Esposti and R. Stephens.** Univ. of Texas Med. Br.at Galveston, Ctr. for Exptl. Immunology, Lions Eye Inst., Nedlands Ctr. for Exptl. Immunology, Lions Eye Inst., Australia and Univ. of Virginia.

P519 **170.10** Gut-derived vaginal microbiota protects female reproductive organ from viral infection through pseudonormoxia of immune cells. **J.H. Park and H.K. Lee.** Korea Advanced Inst. of Sci. and Tech., South Korea.

P520 **170.11** Age-dependent responses of γδ+ T cells during bloodstream infection in early life. **L.T. Yokanovich, K. Greenfield and K. Knoop.** Mayo Clin. Grad. Sch. of BioMed. Sci. and Mayo Clin.

P521 **170.12** Meningeal lymphatic drainage promotes T cell responses against *Toxoplasma gondii* but is dispensable for parasite control in the brain. **M. Kovacs, M.N. Cowan, K.M. Still, S.J. Batista, I. Babcock, L. Sibley, I. Sethi and T.H. Harris.** Univ. of Virginia.

P522 **170.13** The microbiome enhances transcriptional inflammatory signatures and delays clinical resolution in cutaneous leishmaniasis. **C. Farias Amorim, V. Lovins, F.O. Novais, J. Harris, L. Carvalho, E.M. Carvalho, D.P. Beiting, E. Grice and P.A. Scott.** Univ. of Pennsylvania Sch. of Vet. Med., Univ. of Pennsylvania Perelman Sch. of Med., The Ohio State Univ. Col. of Med., Fundação Oswaldo Cruz, Inst. Gonçalo Muniz Bahia, Brazil and Univ. of Pennsylvania, Sch. of Vet. Med.

P523 **170.14** Contribution of PU.1 and STAT6 to fibrosis-mediated growth suppression of the Diphyllobothriidae family cestode, *Schistocephalus solidus*. **N.C. Steinel, J. Weber, F. Peng, K.C. Shim, B. Lohman, L. Fuess, S. De Lise and D.I. Bolnick.** Univ. of Massachusetts, Lowell, Univ. of Wisconsin-Madison, Haverford Col., Univ. of Texas at Austin, Huntsman Cancer Inst., Texas State, Lund Univ., Sweden and Univ. of Connecticut.

P524 **170.15** PD-1 restrains B cell dependent CD4+ T cell responses that promote susceptibility to *Brucella* infection. **A.S. Dadelahi, M.F. N. Ateya, B. Ponzilacqua-Silva, C.A. Chambers, C.A. Lacey and C.R. Moley.** Univ. of Missouri, Columbia.

P526 **170.17** Selective reprogramming of peritoneal macrophages by IFN-γ during acute *Toxoplasma gondii* Infection. **A.T. Martin and F. Yarovinsky.** Univ. of Rochester Med. Ctr.

P527 **170.18** Single-cell profiling identifies ACE^+ granuloma macrophages as a non-permissive niche for intracellular bacteria during persistent *Salmonella* infection. **T.H.M. Pham, Y. Xue, S.M. Brewer, S. Quake and D. Monack.** Stanford Univ. Sch. of Med. and Stanford Univ.

P528 **170.19** Contributions of the PD-1/PD-L1 pathway to *Borrelia* persistence and inflammation. **J.D. Helble, J.E. McCarthy, M.N. Starnbach and L.T. Hu.** Tufts Univ. Sch. of Med. and Harvard Med. Sch.

P529 **170.20** Mechanisms by which Factor H protects *Trypanosoma cruzi* from the alternative pathway of complement. **S. Sugumaran Menon, G. Ramirez-Toloza, K.L. Wycoff, J. Shaughnessy, S. Ram and V.P. Ferreira.** The Univ. of Toledo Col. of Med. and Life Sci., Universidad de Chile, Chili, Planet BioTechnol., Inc. and Univ. of Massachusetts Med. Sch.

P530 **170.21** T cell immunity to a classical strain of *Klebsiella pneumoniae*. **J.J. Mackel, R. Wasbotten, A. Dahler, C. Morffy Smith and D.A. Rosen.** Washington Univ. Sch. of Med.

P531 **170.22** Cutaneous CD4+ T cell subsets promote distinct outcomes in human keratinocytes and fibroblasts. **P.A. Morawski, H. DeBerg, M. Fahning, C. Stefani, A. Lacy-Hulbert, I. Gratz and D.J. Campbell.** Benaroya Res. Inst., Virginia Mason and Univ. of Salzburg.

P532 **170.23** Ineffective polarization characterizes CD4 T cell responses to persistent *Borrelia burgdorferi* infection. **E.M. Hammond, K. Olsen and N. Baumgarth.** Univ. of California, Davis.

P533 **170.24** Cellular dynamics of immune evasion during *Leishmania major* infection. **R. Zayats, Z. Mou, A. Yazdanpanah, W.H. Koh, P. Lopez, J.E. Uzonna and T. Murooka.** Univ. of Manitoba, Canada.

P534 **170.25** Neonatal immunity to malaria using a mouse model. **M.M. Opata, K. Gbedande, M.R. Smith and R.S. Onjiko.** Appalachian State Univ., Univ. of Texas Med. Branch and Wake Forest Sch. of Med.

P535 **170.26** Cutaneous host response to tick- borne disease: a comparative evaluation of transcriptional changes over the long course of tick attachment and pathogen transmission. **L. Robbertse, N. Malachowa and T.B. Saito.** NIAID, NIH.

P536 **170.27** Malaria antigens are presented to CD8 T cells via the non-classical HLA-E. **B.K. Wilder, L. de Lacerda, C.R. R. Barbosa, M. Aleshnick, T. Martinson, D. Morrow, Z. Zhao, G. Gaiha and C. Junqueira.** Oregon Hlth. & Sci. Univ., Insituto Rene Rachou, Brazil, Boston Children's Hosp., Harvard Med. Sch., Harvard Med. Sch. and Ragon Inst. of MGH, MIT, and Harvard.

P537 **170.28** Predicted cellularity using RNASeq-based cellular deconvolution differentiates periprosthetic joint infection from non-infectious arthroplasty failure. **C. Fisher, J. Krull, A. Bhagwate, K. Greenwood-Quaintance, M.P. Abdel and R. Patel.** Mayo Clin.

P538 **170.29** Longitudinal interactions between levels of serum cytokine and the microbiome from four body sites. **X. Zhou, X. Shen, J. Johnson, D.J. Spakowicz, C. Zhu, W. Zhou, Y. Zhou, G. Weinstock and M. Snyder.** Stanford Univ. Sch. of Med., Univ. of Oxford, United Kingdom, The Ohio State Univ., UConn Hlth. and The Jackson Lab.

P539 **170.30** *Plasmodium* infection elevates risk of severe secondary bacterial disease by altering the immunological landscape of the lung. **J. Reed, D. Cornwall, N. Jacobs, B.D. Evavold and T.J. Lamb.** Univ. of Utah Sch. of Med. and Emory Univ. Sch. of Med.

P540 **170.31** Effect of *Tritrichomonas foetus*, Tf-31 (a cattle isolate), and Tff6 (a feline isolate) on TLR signaling pathway in cervical epithelial cells. **A.S. Kucknoor and R. Lavergne.** Lamar Univ.

P541 **170.32** Breakdown of the blood brain barrier in experimental cerebral malaria is caused by CD8+ T cells with low affinity TCRs. **D. Cornwall, J. Jacobs, E.M. Kolawole, B.D. Evavold and T.J. Lamb.** Univ. of Utah Sch. of Med.

P542 **170.33** Th1/Tfh hybrid ($Ifng^+Il21^+$) T cells contribute to delay of germinal center formation in *Plasmodium chabaudi* infection. **L. Puebla Clark, K. Gbedande, N. Domingo and R. Stephens.** Univ. of Texas Med. Br. at Galveston.

P543 **170.34** Exploring cutaneous neuro-immune networks during helminth infection. **E.E. Jean, H. Rossi and D. Herbert.** Univ. of Pennsylvania Sch. of Vet. Med.

P544 **170.35** Treponema pallidum specific CD4 T cell epitope discovery. **T. Reid, C. Godornes, D. Tong and D.M. Koelle.** Univ. of Washington.

P545 **170.36** Type I Interferon remodels intrahepatocytic signaling to promote T cell dysfunction during liver stage *Plasmodium* infection. **N.K. Minkah, L. Reynolds, V. Okolo and S. Kappe.** Seattle Childrens Res. Inst. and Univ. of Washington Sch. of Med.

P546 **170.37** Hypoxia promotes cytolytic activity of CD8 T cells and pathogenesis in cutaneous leishmaniasis. **E. Fowler, A. A-R DAOUD and F.O. Novais.** The Ohio State Univ. Col. of Med. and Tanta Univ.

P548 **170.39** Administration of 3,3-dimethyl-1-butanol is immunomodulatory in collagen induced arthritis murine model independent of TMA lyase activity. **S. Fechtner, B. Allen, M.E. Chriswell, W.K. Jubair, M.A. Vroljik, V.M. Holers and K.A. Kuhn.** Univ. of Colorado Anschutz Med. Campus.

171. MUCOSAL INNATE IMMUNE CELLS

Poster Session

MON. 2:30 PM—EXHIBIT HALL

CHAIRS: *A. REBOLDI, P. PORRETT*

P549 **171.01** Select mucosa-associated intestinal commensal bacteria promote gut barrier repair by inducing IL-1b production. **W-J. Wu, M. Kim, L-C. Chang, A. Assie, F.B. Saldana-Morales, D.F. Zegarra Ruiz, K. Norwood, B. Samuel and G.E. Diehl.** Mem. Sloan Kettering Cancer Ctr., Baylor Col. of Med. and Pusan Natl. Univ., South Korea.

P550 **171.02** Crosstalk between skin homing innate T cells and epithelial cells via cholesterol byproduct messengers is required for tissue immunity. **M. Frascoli, E. Ferraj, B. Miu, K. Esposito, N. Spidale, J. Malin, J. Cowan, A. Bhandoola, J. Kang and A. Reboldi.** Univ. of Massachusetts Med. Sch. and NCI, NIH.

P551 **171.03** Epithelial HNF4A shapes the intraepithelial lymphocyte compartment via direct regulation of immune signaling molecules. **X. Lei, N.K. Carneiro, L. Galia, R. Wilson, T. Vierbuchen, Y. Chen, D. Ward and K.A. Fitzgerald.** Univ. of Massachusetts Chan Med. Sch.

P552 **171.04** The transcription factor LRF promotes Integrin β7 expression by and gut homing of CD8αα intraepithelial lymphocyte precursors. **J. Nie, A. Bohrer, L. Chopp, T. Chen, M. Balmaceno-Criss, T. Ciucci, Q. Xiao, M. Kelly, D. McGavern, Y. Belkaid and R. Bosselut.** NCI, NIH, NIAID, NIH, Univ. of Pennsylvania Med. Sch., Univ. of Rochester Med. Ctr. and NINDS, NIH.

P553 **171.05** Small intestine epithelial CD4 cytotoxic T lymphocytes provide innate-like protection against enteric pathogens without risk of immunopathology. **A. Chen, N. Thiault, H. Iwaya and H. Cheroutre.** La Jolla Inst. for Immunology.

P554 **171.06** Aberrant survival of uterine natural killer subsets in uterus transplant recipients. **P. Porrett, M.V. Gonzalez, J. Garifallou, E.D. Wright, A.C. K. Lucander, M.J. Bell, K. Tyson, J. Smiler, F. Mafra, R. Pellegrino Da Silva, S. Johnston, B. Naziruddin, G. Testa, L. Johannesson, J. George, A. Freud and K. O'Neill.** Univ. of Alabama at Birmingham, Univ. of Pennsylvania, Children's Hosp. of Philadelphia, Univ. of Pennsylvania Perelman Sch. of Med., Baylor Univ. Med. Sch., Univ. of Alabama at Birmingham and The Ohio State Univ. Col. of Med.

P555 **171.07** ILC3 expansion in acute myeloid leukemia. **T.T.T. Dinh, M.R. Lordo, N. Shilo, E. Altynova, P. Kronen, M. Broughton, V. Sellers, P. Collins, A.G. Freud and B.L. Mundy-Bosse.** Univ. of Pennsylvania, The Ohio State Univ. Comprehensive Cancer Ctr. and The Ohio State Univ. Col. of Med.

P557 **171.09** Differential expression of urinary bladder microRNAs alters the severity of experimental cystitis. **G. Boddu, S. Kiran, A. Rakib and U.P. Singh.** Coll. of Pharmacy, The Univ. of Tennessee Hlth. Sci. Ctr.

P558 **171.10** Single-cell mRNA analysis of colon tissue during DSS colitis in $CX3CR1^{cre/+}EP4^{fl/fl}$ mice suggests PGE_2 signaling via EP4 promotes survival of protective macrophages. **P. Murray, E. Emanuel, B. Kang and B.L. Kelsall.** NIAID, NIH.

P559 **171.11** Gene signatures for intestinal and peripheral innate lymphoid cells in pigs reveal tissue-specific imprinting and similarities to human cells via single-cell RNA sequencing. **J.E. Wiarda, J.M. Trachsel, S.K. Sivasankaran, C.K. Tuggle and C.L. Loving.** Natl. Animal Disease Ctr., ARS, USDA and Iowa State Univ.

P560 **171.12** Renewal of $CX_3CR1^+CCR2^-MHCII^-Postn^+$ $Col6a1^+$CRMs in response to environmental cues abrogated the potential of promoting cardiac regeneration. **Z. Su, L. Xia, F. Liu and S. Zhang.** Jiangsu Univ., China and Jiangsu Univ.

P561 **171.13** A forward genetic screen in alveolar macrophage-like cells highlights the essential role of peroxisome membrane regulation in hallmark alveolar macrophage phenotypes. **S.M. Thomas, K. Wierenga, J. Pestka and A.J. Olive.** Michigan State Univ.

P563 **171.15** Cbf-β is required for development and differentiation of murine mucosal-associated invariant T cells. **J. Toor, T. Liu, K. Subedi, J. Wang, I. Loveless, C. Yin, L. Zhou and Q-S. Mi.** Henry Ford Hlth. System, Wayne State Univ. Sch. of Med. and Shandong Provincial Hosp. for Skin Diseases and Shandong Provincial Inst. of Dermatology and Venereology, China.

P564 **171.16** Loss of Paneth cells alters intestinal innate lymphoid cells and enhances weight gain in mice. **M.R. Joldrichsen, E. Kim, H.E. Steiner, E. Cormet-Boyaka and P.N. Boyaka.** The Ohio State Univ.

P565 **171.17** Group 2 innate lymphoid cells are critical in diet and alcohol induced in steatohepatitis and fibrosis. **M. Orangi, L. Mathae, M. Romera-Hernández, D. Khijakadze and F. Takei.** Terry Fox Laboratory, BC Cancer, Canada, Univ. of British Columbia, Canada and Karolinska Inst., Sweden.

P566 **171.18** Microbially induced exosomes in dendritic cells promote paracrine immunosenescence: novel mechanism of inflammatory alveolar bone loss in mice. **R.M. Elsayed, M. Elashiry and C.W. Cutler.** Augusta Univ.

P567 **171.19** Neutral ceramidase mediates intestinal immune response and control of infectious colitis. **Z. Deng, R. Sun, C. Lei and L. Chen.** Univ. of Louisville.

P568 **171.20** Modulating expression of a BTB-ZF transcription factor in adipose resident NKT cells alters function and disrupts metabolism regulation. **D. Millick, J.A. Vieth, L.K. Denzin and D.B. Sant'Angelo.** Rutgers Grad. Sch. of Biomed. Sci., New Brunswick and Child Hlth. Inst. of New Jersey.

172. TECHNOLOGICAL INNOVATIONS IN IMMUNOLOGY II

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P569 **172.01** Spatially mapping T cell receptors and transcriptomes. **S. Liu, J.B. Iorgulescu, S. Li, I.A. Barrera-Lopez, M. Borji, V. Shanmugam, J.W. Morriss, Z.N. Garcia, E. Murray, D.A. Braun, K.J. Livak, C.J. Wu and F. Chen.** Massachusetts Inst. of Tech, Dana-Farber Cancer Inst., Harvard Med. Sch., Broad Inst. of MIT and Harvard, Brigham and Women's Hosp. and Harvard Med. Sch. and Harvard Univ.

P570 **172.02** A rapid and fully automated in vitro micronucleus assay using imaging flow cytometry and convolutional neural network analysis. **M.G. Garcia Mendoza, A. Sutton, R. Kong, M. Rodrigues and H. Pugsley.** Luminex Corp., a DiaSorin Co.

P571 **172.03** Expanding the use of clustering and dimensionality reduction in high parameter flow cytometry data through machine learning for novel samples. **J.C. Lownik, S. Mahov, S. Alkan, A. Merchant and S. Kitahara.** Cedars Sinai Med. Ctr.

P572 **172.04** Derivation of a parsimonious Tuberculosis gene signature using the digital NanoString nCounter platform. **V. Kaipilyawar, Y. Zhao, X. Wang, N.M. Joseph, S. Prakash Babu, N.S. Hochberg, S. Sarkar, C. Horsburgh, J.J. Ellner, W.E. Johnson and P. Salgame.** Rutgers New Jersey Med. Sch., Boston Univ. Sch. of Med., Jawaharlal Inst. of Postgraduate Med. Educ. and Res., India and Boston Univ. Sch. of Public Hlth.

P573 **172.05** Host-targeted self-attenuated influenza virus as a potential therapeutic influenza vaccine. **L.M. Ieremia, K. Wen, H. Wang, Y. Chen, H. Yang, Z. Zheng, Y. Yan, A. Realivazquez Pena and M. Zeng.** Texas Tech Univ. Hlth. Sci. Ctr., El Paso, Affiliated Stomatology Hosp. of Guangzhou Med. Univ., China and Texas Tech Univ. Hlth. Sci. Ctr. El Paso.

P574 **172.06** Role of inflammation in the pulmonary hemorrhage induced by a snake venom metalloproteinase. **A.C. Castro, J.M. Gutiérrez, T. Escalante and A. Rucavado.** Univ. of Costa Rica, Costa Rica.

P575 **172.07** Combined analysis of T cell activation and T cell-mediated cytotoxicity by imaging cytometry. **M.K. Chanda, C.E. Shudde, T.L. Piper, Y. Zheng and A.H. Courtney.** Univ. of Michigan Med. Sch. and Univ. of Michigan.

P576 **172.08** Use of novel fluorescent dyes enables in depth analysis of checkpoint inhibitors CTLA-4 (CD152) and PD-1 through spectral flow cytometry. **J. Ellsworth, K. DeFelippi, J. Strenger-Smith and S. Zahner.** Thermo Fisher Scientific.

P577 **172.09** HIVE single-cell TCR sequencing: assay principle and applications. **I.E. Whitney, L. Chen, T. Gierahn and J. Flanigon.** Honeycomb Biotechnologies.

P578 **172.10** Lymph node-targeted long-acting butyrate micelles induce regulatory immune modulation. **S. Cao, R. Wang, M.E. H. Bashir, Y. Su, M. Sabados, L.A. Hesser, C.R. Nagler and J.A. Hubbell.** Univ. of Chicago.

P579 **172.11** Single-cell multi-omic analysis identify heterogeneity and distinct features in fate-mapped tissue-resident alternatively activated macrophages. **J-D. Lin, T-Y. Chou, C-H. Yang, P-A. Chao, Y-T. Chen and P. Loke.** Natl. Taiwan Univ., Taiwan and NIAID, NIH.

P580 **172.12** Novel multiplexed IHC analysis of Her2+ breast cancer demonstrates the range of immune infiltration across tumors with varying Her2 expression levels. **D. Papalegis, J. Ziello, V. Duckworth, S. Beausoleil, R. Polakiewicz and S.R. Klein.** Cell Signaling Technol.

P581 **172.13** Combining immunohistochemistry and in situ hybridization to characterize immunosuppression in the tumor microenvironment. **E. Cartwright, A. Oliver and A. Kalyuzhny.** Novus Biologicals and R&D Systems, Inc.

P582 **172.14** A multi-physics approach for high recovery and purity isolation of plasma cells in whole blood. **S. Burns, J. Phi and M. Kempnich.** Applied Cells, Inc.

P583 **172.15** Robust serum- and feeder-free expansion of mouse B cells in vitro. **H. Arora, S. Babic, T. Lee, T. Rogers, A.C. Eaves, S.A. Louis, M.A. Brown, A.I. Kokaji and N.T. Zavareh.** STEMCELL Tech., Inc., Canada.

P584 **172.16** To decipher the function of signalling transducing adaptor protein 1 in immune cells. **C. DENG and M.H. Y. YEUNG.** The Hong Kong Polytechnic Univ., China.

P585 **172.17** An automated approach to high-plex cytometric immunophenotyping with CyTOF XT. **S.K. Li, N. Zabinyakov, A. Bouzekri, R. Straus, R. Jong, M. Sullivan, A. Loboda, D. Majonis and C. Loh.** Fluidigm Canada, Inc., Canada.

P586 **172.18** Cell type-specific differential expression in Alzheimer's disease and cancer using spatial transcriptomics. **D. Cable, R. Irizarry and F. Chen.** Massachusetts Inst. of Technol, Dana-Farber Cancer Inst., Harvard Med. Sch. and Broad Inst. of MIT and Harvard.

P587 **172.19** Potential clinical applicability of the PHENotype SIMulator for in silico viral co-infection studies in COVID-19. **N.I. Maria, R.V. Rapicavoli, S. Alaimo, E. Bischof, A. Pulvirenti, B. Mishra, A.J. Duits and A. Ferro.** The Feinstein Inst. for Med. Res., Northwell Health, Courant Inst., Tandon and Sch. of Med., New York Univ., New York, Red Cross Blood Bank Fndn., Netherlands Antilles, Univ. of Catania, Italy, 7Sch. of Clin. Med., Shanghai Univ. of Med. and Hlth. Sci., Pudong, Shanghai, China, Insilico Med., Hong Kong Special Administrative Region, China, Simon Ctr. for Quantitative Biology, Cold Spring Harbor Lab, Long Island, Curaçao Biomed. Hlth. Res. Inst., Willemstad, Curaçao, Netherlands Antilles and Inst. for Med. Education, Univ. Med. Ctr. Groningen, Netherlands.

P588 **172.20** Analysis of human BCR-IgH from genomic DNA with UMI incorporation. **B.E. Brown, W. Pan, C. Berngruber, M. Byrne-Steele and J. Han.** iRepertoire.

173. TECHNOLOGICAL INNOVATIONS IN IMMUNOLOGY III

Poster Session

Mon. 2:30 pm—Exhibit Hall

P589 **173.01** Practical solutions to improve animal study reproducibility. **E. Ibsen.** Studylog Animal Study Workflow Software.

P590 **173.02** The minimal information about MHC multimers. **R.J. Vita, A. Mody, J.A. Overton, S. Buus, S.T. Haley, R.A. Willis, A. Sette, V. Mallajosyula, B. Peters and J.D. Altman.** La Jolla Inst. for Immunology, Knocean Inc., Canada, Univ. of Copenhagen, Demark, Immudex USA, Emory Univ. Sch. of Med., Univ. of California, San Diego and Stanford Univ. Sch. of Med.

P591 **173.03** Large-batch evaluation of cell counter instrument-to-instrument consistency for cell therapy applications. **J. Bell, Y. Huang and L. Chan.** Nexcelom BioSci.

P592 **173.04** An integrated single-cell multiomics approach to characterize mRNA, intracellular, and surface proteins using intracellular AbSeq and BD® AbSeq Immune Discovery Panel. **H-W Song, E. Hatami, S. Vadrevu, J. Martin, E. Snowden, T. Zheng Zhu, A. Wright, M. Nakamoto, S. Dillmore and A. Ayer.** bd Biosci and bd Tech. and Innovation.

P593 **173.05** Semi- and fully automated immunostaining sample preparation platforms improve live leukocyte recovery, reproducibility, and flow cytometry data quality. **G.K. Feld, M. Lye, C. Eberle, A. Wang and C.Y. Ke.** Curiox Biosystems, Charles River Laboratories and Curiox Biosyst.

P594 **173.06** Quick and easy isolation of immune cells from large-volume samples. **V. Posarac, G.N. MacDonald, C.A. Buck, E. Toombs, S.D. Gellner, S. de Jong, M.E. Williamson, O. Egeler, B. Dalton, A.I. Kokaji, A.C. Eaves, S.A. Louis and F. Antignano.** STEMCELL Technol., Inc., Canada and Terry Fox Laboratory, BC Cancer, Cancer.

P596 **173.08** Advancements in single cell multiomic profiling of antigen-specific T cells with dCODE Dextramer™ (RiO) and BD® AbSeq Reagents on the BD Rhapsody™ Single-Cell Analysis System. **C. Sakofsky, K. Jacobsen, V. Lopez-Salmeron, M. Nakamoto, L. Brix and A. Ayer.** BD Biosci, Immudex, Denmark and BD Biosci., Germany.

P597 **173.09** Barcode enabled antigen mapping enables next-generation systems immunology analysis of the post-COVID-19 immune landscape. **M.J. Stubbington, B. Adams, D. Reyes, A. Royall, M. Song, S. Marrache, P. Shahi, F. Tsai, P. Finnegan, T. Vollbrecht, T. Khadilkar, D. Jaffe, R. Ramenani and W. McDonnell.** 10x Genomics.

P598 **173.10** Microfluidic cell sorting for gentle isolation of immune cells. **N. Jagnandan and J. Morachis.** NanoCellect BioMed.

P599 **173.11** Cell-interaction based CRISPR screening using intercellular barcode transfer. **N.Q. Tay and M. McManus.** Univ. of California, San Francisco.

P600 **173.12** Lumit: a novel bioluminescent, homogenous immunoassay platform for analyte detection. **M.L. Bach, M.A. O'Brien, N. Nath, H. Zegzouti, D. Lazar and J. Cali.** Promega Corp.

P601 **173.13** Development of a point-of-care immunoassay for Ebola virus disease through the detection of Ebola virus soluble glycoprotein. **H.R. Green, D. Hau, S. Pandit, J. Arias-Umana, H. DeMers, C. Chung, A. Foster, L. Carrasco, M.A. Gates-Hollingsworth and D. AuCoin.** Univ. of Nevada, Reno, Sch. of Med.

P602 **173.14** Development of a serum-free, chemically defined workflow solution for T cell culture. **V. Lopes, Z. Quintero and J. Ni.** BioLegend, Inc.

P603 **173.15** Computational approach for predicting T cell receptor specificity from single cell immune profiling data. **M.R. Moussa and P.K. Srivastava.** Univ. of Connecticut and UConn Hlth.

P604 **173.16** A rapid, calcium-independent Mojosort™ dead cell removal kit for improved live cell enrichment and downstream application. **H. Zhang, J. Ruiz, K. Yamamoto, K. Taylor, C. Wiethe and X. Yang.** BioLegend, Inc.

P605 **173.17** Buoyancy activated cell separation microbubbles for lysis and Ficoll free processing of leukopaks. **E.C. Grimley, J. Roussey, C. Ku, T. Snow, C. Wegner and B.H. McNaughton.** Akadeum Life Sci.

P606 **173.18** Extending the capabilities of a high-parameter immunophenotyping assay with cytoplasmic staining applications for mass cytometry. **C.E. Rogers, H. Yao, M. Cohen and C. Loh.** Fluidigm Canada, Inc., Canada.

P607 **173.19** Imaging mass cytometry identifies structural and cellular composition of the mouse tissue microenvironment. **K. Lowrie, Q. Raza, M. Cohen, S. Kala, G. Awong, A. Quong and C. Loh.** Fluidigm Canada, Inc., Canada.

P608 **173.20** Simultaneous in situ detection of highly complexed proteins and RNA by combining CODEX immunostaining with RNAscope in situ hybridization. **Q. Li and Y. Cheng.** Univ. of Nebraska-Lincoln.

P609 **173.21** StarBright Dyes: build bigger better panels with superior dyes excitable by the violet and ultraviolet lasers. **M. Blundell, S. Sanderson, L. Huang, M. Cichewicz and L. Li.** Bio-Rad Laboratories, United Kingdom and Bio-Rad Laboratories.

P610 **173.22** Expanding the size of multicolor panels with ease with new StarBright blue and StarBright yellow dyes. **M. Blundell, S. Sanderson, L. Huang, M. Cichewicz and L. Li.** Bio-Rad Laboratories, United Kingdom and Bio-Rad Laboratories.

174. THERAPEUTIC APPROACHES TO AUTOIMMUNITY 2

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P611 **174.01** Defining the role for the gut microbiome in the clinical efficacy for sulfasalazine therapy for IBD associated spondyloarthritis. **S.F. Lima, A. Rupert, M. Viladomiu, A. Marderstein, S. Pires, G. Putzel, V. Woo, G. Funez-dePagnier, W-B. Jin, C-J. Guo, E. Scherl and R.S. Longman.** Weill Cornell Med., Westchester Med. Ctr., Stanford Univ. and NYU Sch. of Med.

P612 **174.02** The gut microbiota transfers the therapeutic effect of inhibiting glucose metabolism in lupus-prone mice. **A.S. Elshikha, J. Brown, N. Kanda, Y. Ge, X. Teng, G. Abboud, S-C. Choi, M. Terrell, T.J. Garrett, M. Mohamadzadeh and L. Morel.** Univ. of Florida.

P613 **174.03** A combination of genetic factors and dietary tryptophan shapes gut microbial dysbiosis in a lupus-prone mouse model. **L. Ma, J. Brown, N. Kanda, M. Terrell, Y. Ge, M. Mohamadzadeh and L. Morel.** Univ. of Florida.

P614 **174.04** Characterization of a novel anti-inflammatory biogenic amine. **L. Santambrogio and C.C. Clement.** Weill Cornell Med.

P615 **174.05** The immune dysregulations in inflammatory arthritis immune related adverse events. **H. Zeng, X. Zhu, Y. Li, J. Jaquith, K. McCarthy-Fruin and U. Thanarajasingam.** Mayo Clin. Rochester.

P616 **174.06** Therapeutic targeting of tumor necrosis factor like weak inducer of apoptosis in psoriasis. **R.K. Gupta, D. Gracias, D.S. Figueroa, H. Miki, J. Miller, K. Fung, F. Ay, L.C. Burkly and M. Croft.** La Jolla Inst. for Immunology and Biogen Inc.

P617 **174.07** Identification of novel, potent and selective NLRP3 inhibitors for the treatment of inflammatory and auto-immune diseases. **S. Ray, R.S. Senaiar, M. Pothuganti, A. Kulkarni, N. Biswas, J. Saini, S. Kumar, R. Harde, S. Margal, A. Joshi, H. Desai, V. Rathi, S. Pardeshi, S. Dhone, S. Phatangare, P. Nagpure, M.Y. Pawar, C. Nawale, A. Kadam, M. Gandhi, P. Jain, A. Parkhe, P. Lambade, P. Tandale, D. Wale, S. Bedare, V. M, D. Behera, V. Karande, H. Shah, S. Kadam, A. Joshi, S. Pandita, S.S. Chaudhari, M. Bajpai, N. Gowda and P.S. Iyer.** Glenmark Pharmaceuticals Limited, India.

P618 **174.08** Renal tubular cell ferroptosis: a new player in pathogenesis of lupus nephritis. **Y. Scindia, A. Ali, D. Desai, B. Mehrad, L. Morel, M. Conrad, W. Clapp and A. Abdelmegeed.** Univ. of Florida and Helmholtz Inst., Germany.

P619 **174.09** ST8Sia6 expression in beta cells mitigates onset of autoimmune diabetes in the murine NOD model. **J. Choe, P. Belmonte, M. Rajcula, K. Theodore, H.S. Kim Lee, M.J. Shapiro and V. Shapiro.** Mayo Clin. Grad. Sch. of BioMed. Sci. and Mayo Clin.

P620 **174.10** Induction of tolerance to a CD4 T cell hybrid insulin peptide epitope prolongs islet graft survival and suppresses autoreactive CD8 T cells. **J.E. DiLisio, B.L. Jamison, T. Neef, S.D. Miller, R. Baker and K. Haskins.** Univ. of Colorado Anschutz Med. Campus, Benaroya Res. Inst. and Feinberg Sch. of Med., Northwestern Univ.

P621 **174.11** Tolerogenic immune modifying nanoparticles encapsulating multiple diabetogenic epitopes prevent onset of type 1 diabetes in NOD mice. **S. Genardi, J.R. Podojil, S. Kakade, M. Boyne, A. Elhofy and S.D. Miller.** Cour Pharmaceuticals Develop. Co., Inc. and Feinberg Sch. of Med., Northwestern Univ.

P622 **174.12** Prevention of type 1 diabetes via a lipid nanoparticle-based oral immunotherapy that targets selective lymphoid tissues. **G. Raimondi, Y. Zhang, S. Hou, J. Wang, X. Calderon-Colon, O. Tiburzi, M. Igleasias Lozano and J. Patrone.** Johns Hopkins Univ. Sch. of Med. and Johns Hopkins Applied Physics Laboratory.

P623 **174.13** Global effects on pancreatic islet lymphoid compartments in response to Treg-targeted therapy with mIL-2/CD25 in NOD mice. **J. Poder and T.R. Malek.** Univ. of Miami.

P624 **174.14** An IL-2 mutein promotes Foxp3$^+$ Treg-mediated suppression of dendritic cell activation in response to inflammatory stimuli. **B.L. Jamison and D.J. Campbell.** Benaroya Res. Inst.

P625 **174.15** Robust human regulatory T cell expansion with fusion proteins HCW9302 and HCW9213 circumvents need for magnetic-bead or feeder cell approaches for adoptive cell therapy. **H.C. Wong, N. Shrestha, V. George, M.J. Dee, P. Chaturvedi, X. Zhu, C. Spoundis, B. Liu, L. Kong, C.A. Echeverri, L. You, J.O. Egan, J-A. Jiao and P.R. Rhode.** HCW Biologics.

P626 **174.16** Bispecific CD8 Treg modulators regulate a novel regulatory CD8 T cell network and eliminate pathogenic CD4 T cells in live cell co-culture system. **J.L. Gardell, C. Crane, J. Bowser, R. Fasnacht, S. Julien, M.E. Maurer, M. Templeton, J. Therriault, S.J. Yang and K.M. Swiderek.** Mozart Therapeutics.

P627 **174.17** Therapeutic regulation of autoreactive B cells using bispecific molecules. **A.S. Griffith, K. Apley, G. Downes, S. Johnson, P. Ross, B. DeKosky, M. Farrell, C. Berkland and P.L. Kendall.** Washington Univ. in St. Louis and Univ. of Kansas.

P628 **174.18** Precision killing of T cells via targeting of T cell receptors using two novel chimeric antigen receptor designs. **P. Francis, M. Yarnell, M. Burchill and T. Fry.** Univ. of Colorado Anschutz Med. Campus.

P629 **174.19** The role of autophagy in thymic stromal cell maintenance with age. **S.N. B. Emtage, M. Semwal, S. Wedemeyer, Y. Xiao and A. Griffith.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.

175. TRANSPLANT IMMUNOLOGY: NOVEL MECHANISMS & INTERVENTIONS

Poster Session

Mon. 2:30 pm—Exhibit Hall

P631 **175.01** Tregs: the Sertoli cell's secret weapon in transplant survival. **T. Hibler, G. Kaur and J. Dufour.** Texas Tech Univ. Hlth. Sci. Ctr.

P632 **175.02** IL-35 promotes Treg function to inhibit acute rejection in murine cardiac transplantation. **A. Huang, K. Liu, Z. Yin, J. Liu, C. Liu, H. Wei, Q. Liu and J. Ke.** Wuhan Union Hosp., Tongji Med. Col. of Huazhong Univ. of Sci. and Technol., China and Southern Univ. of Sci. and Technol., China.

P633 **175.03** Chromatin profiling of renal allograft-infiltrating cells reveals epigenetic regulation of CD8$^+$ T cell exhaustion in chronically rejected human kidney allografts. **S.G. Yi, D. Zou, Y. Dai, Z. Zhao, O. Gaber and W. Chen.** Houston Methodist Academic Inst. and Univ. of Texas Hlth. Sci. Ctr. Houston.

P634 **175.04** Acute GVHD in liver and lungs is mediated by phenotypically analogous but transcriptionally unique T cells. **K.I. Omdahl, R. Bermea, C. McGuckin, J. Kaminski, J. Lane, V. Tkachev and L. Kean.** Boston Children's Hosp., Harvard Med. Sch.

P635 **175.05** DRAK2 is a promising target to inhibit GvHD without negatively impacting graft reconstitution after bone marrow transplant. **M.S. Duggar, M. Wehenkel, P. Vogel and M.A. McGargill.** St. Jude Children's Res. Hosp.

P636 **175.06** PD-1H/VISTA expressed on host myeloid cells regulates acute graft-versus-host disease. **Q. Hu, C. Hedgepath, J. Hong, W.J. Huh, X. Han, M. Vesely, L. Chen and T.K. Kim.** Vanderbilt Univ. Med. Ctr. and Yale Sch. of Med.

P637 **175.07** Dendritic cell-based amelioration of graft versus host disease in humanized mice. **O. Kalinina, A. Greene and K.L. Knight.** Loyola Univ. Chicago.

P638 **175.08** IL-33 upregulated in fibroblastic reticular cells after recipient conditioning acts as a novel costimulatory signal in the generation of alloreactive Type 1 T helper cells. **G.K. Dwyer, L. Mathews, A. Lucas, B.R. Blazar, A. Poholek, W. Shlomchik and H.R. Turnquist.** Univ. of Pittsburgh, Univ. of Pittsburgh Sch. of Med. and Univ. of Minnesota.

P639 **175.09** Deficiency of antibody-suppressor CXCR5$^+$ CD8$^+$ T cells (not CD4$^+$ T_{regs}) drives high alloantibody production in CCR5 KO kidney transplant recipients. **J.L. Han, J. Zimmerer, Q. Zeng, S. Chaudhari, C. Breuer and G.L. Bumgardner.** The Ohio State Univ. and The Res. Inst. at Nationwide Children's Hosp.

P640 **175.10** Seeking the Sertoli cell complement inhibitory signature to prolong transplant survival. **R. Washburn, G. Kaur, B. Chilton, B.D. Reilly and J. Dufour.** Texas Tech Univ. Hlth. Sci. Ctr.

P641 **175.11** CMV drives phenotypic changes in CD4 T cells prior to but not during the first year after solid organ transplantation. **L.E. Higdon, A.A. Ahmad and J.S. Maltzman.** Stanford Univ. Sch. of Med. and Hunter Col., CUNY.

P642 **175.12** IL-10 signaling in T cells is essential for transplant tolerance induction. **G. Raimondi, M. Igleasias Lozano, A. Komin and M. Chicco.** Johns Hopkins Univ. Sch. of Med.

P643 **175.13** Lipoxin A4 mitigates ferroptosis via FPR2 signaling during lung ischemia-reperfusion injury. **A.K. Sharma, J. Cai, V. Leroy, Z. Tu, A. Gonzalez, J. Hartman, J. Mulligan, C. Atkinson and G. Upchurch, Jr.** Univ. of Florida.

P902 **175.16** Synergistic effect of $CXCR5^{+}CD8^{+}T_{Ab\text{-}supp}$ cell therapy and mTOR inhibition (but not calcineurin inhibition) in suppressing alloantibody following kidney transplant in mice. **J.L. Han, J. Zimmerer, Q. Zeng, S. Chaudhari, C. Breuer and G.L. Bumgardner.** The Ohio State Univ. and The Res. Inst. at Nationwide Children's Hosp.

P903 **175.17** Impact of swine leukocyte antigen on renal endothelial cells in pig-to-non-human primate xenotransplantation in vitro. **Z-Y. Wang, L. Reyes, J. Estrada, M. Tector and A. Tector.** Univ. of Miami Miller Sch. of Med. and Makana Therapeutics, Inc.

P904 **175.18** Dysregulated regulatory T cell responses target fibroblasts and lead to chronic rejection after heart transplantation. **G.K. Dwyer, L. Fan, X. Zhang, T. Li, L. Mathews, J. Saba, E. Colon, M. Calderon, K. Helfrich, M. Ross, S. Watkins and H.R. Turnquist.** Univ. of Pittsburgh and Univ. of Pittsburgh Sch. of Med.

P905 **175.19** Augmenting oxidation of branched-chain amino acids treats murine chronic graft-versus-host disease. **S. Jin, S. Bolivar Wagers, K.L. Walker, E.T. Mirek, P.T. Sage, Z. Arany, T.G. Anthony and B.R. Blazar.** Univ. of Minnesota, Rutgers Univ., Brigham and Women's Hosp. and Harvard Med. Sch. and Univ. of Pennsylvania Perelman Sch. of Med.

P906 **175.20** Characterizing arterial lesions in cardiac allograft vasculopathy rejected grafts using NanoString GeoMx digital spatial profiling. **J. Nevarez-Mejia, H.C. Pickering, R.A. Sosa, R.P. Lau, G.A. Fishbein, W.M. Baldwin, R.L. Fairchild and E.F. Reed.** Univ. of California, Los Angeles and Cleveland Clin.

P907 **175.21** Alloantigen-specific chimeric antigen receptor regulatory T cell therapy in non-human primate islet transplantation. **G.I. Ellis, K.E. Coker, D.W. Winn, M.Z. Deng, D. Shukla, V. Bhoj, M.C. Milone, W. Wang, C. Liu, A. Naji, R. Duran-Struuck and J.L. Riley.** Univ. of Pennsylvania.

P908 **175.22** Engineering T cells to prevent graft-versus-host disease and leukemia relapse following allogeneic stem cell transplantation. **F. Mo, N. Watanabe, P.M. Burkhardt, H.E. Heslop, M.K. Brenner and M. Mamonkin.** Baylor Col. of Med.

P909 **175.23** Leveraging CAR T cells to achieve desensitization and enable transplantation. **C.A. Markmann, Z. Zheng, M. Yu, S. Rostami, W. Wang, T. Ochoa, K. Parvathaneni, X. Xu, J. Scholler, Q. Zhang, A. Posey, D. Allman, M. Milone, V. Arruda, B.S. Jones, A. Naji and V. Bhoj.** Univ. of Pennsylvania Perelman Sch. of Med. and Univ. of Pennsylvania.

P910 **175.24** Paired immunoglobulin-like receptors impact the differentiation of reparative macrophages following allogeneic challenge. **J. Warunek, A. Lucas, L. Mathews, J. Ossart, M.H. Oberbarnscheidt, F.G. Lakkis and H.R. Turnquist.** Univ. of Pittsburgh Sch. of Med.

P911 **175.25** Targeting temporal metabolic needs of T follicular helper cells to treat cGVHD utilizing a mitochondrial pyruvate carrier inhibitor. **F.A. Mohamed, S.Y. Rhee, J. Ly, E.G. Aguilar, P.T. Sage, T. Schumacher, G. Thangavelu, M.C. Zaiken, J. Liu, V. Mereddy, J.W. Locasale and B.R. Blazar.** Univ. of Minnesota, Brigham and Women's Hosp. and Harvard Med. Sch. and Duke Univ.

P912 **175.26** The role of LAG3 in antibody responses to kidney transplantation. **M. Nicosia, R. Fan, J. Lee, V. Gorbacheva, A. Beavers, N. Dvorina, W.M. Baldwin, R.L. Fairchild, B. Min and A. Valujskikh.** Cleveland Clin. Fndn. and Feinberg Sch. of Med., Northwestern Univ.

P913 **175.27** Oral alloantigen exposure promotes donor-specific tolerance in a mouse model of minor mismatched skin transplantation. **P. Wang, L. Chen, C.M. McIntosh, J.I. Lane, R. Li, S.Z. Xie, H. Sattar, D. Esterhazy, A.S.F. Chong and M-L. Alegre.** Univ. of Chicago.

P914 **175.28** Graft-matched pregnancy imparts profound epigenetic changes onto alloreactive memory T cells to enforce a phenotypic and transcriptional state of tolerance. **J. Pollard, D. Yin, M. Mandal, F. Gounari, M-L. Alegre and A. Chong.** Univ. of Chicago.

176. TUMOR IMMUNOTHERAPY (TI1)

Poster Session

Mon. 2:30 pm—Exhibit Hall

P915 **176.01** DNA-PK inhibition plus immune adjuvants promotes CD8 TIL infiltration, neoantigen presentation, and diversifies the tumor-reactive TCRβ repertoire in B16 melanoma. **A. Christians, A. Sanchez, G. Albert, X.G. Bradeen, D. Geng, J. Chen, D. Gonzalez-Rivera and E. Davila.** Univ. of Colorado Anschutz Med. Campus.

P916 **176.02** Treatment with exogenously added catalase promotes differentiation and function of central memory $CD8^{+}$ T cells. **N.E. Patsoukis and H-I. Aksoylar.** Beth Israel Deaconess Med. Ctr., Harvard Med. Sch.

P917 **176.03** PP4 inhibition stimulates anti-tumor immunity in ovarian cancer. **M.R. Curtis, R. Raja, C. Wu, T. Rubino, E. Utagawa, P. Magtibay and K. Butler.** Mayo Clin.

P918 **176.04** Vista blockade reprograms tumor myeloid cells and relieves adaptive resistance. **J.L. Lines, E. Schaafsma, W. Croteau, E.C. Nowak, M. ElTanbouly, A. Sarde, C. Cheng and R.J. Noelle.** Dartmouth Col., Rockefeller Univ. and Baylor Col. of Med.

P919 **176.05** A comparison of monoclonal antibodies against murine PD-1 and PD-L1. **M.T. Bu, L. Yuan, A. Klee and G.J. Freeman.** Dana-Farber Cancer Inst., Harvard Med. Sch.

P920 **176.06** Intratumoral CD40 agonist sotigalimab with pembrolizumab induces broad innate and adaptive immune activation in local and distant tumors in metastatic melanoma. **S. Bentebibel, D. Johnson, D. McGrail, S. Lecagoonporn, C. Haymaker, D. Duose, K. Wani, H. Safa, R. Amaria, I. Glitza, S. Patel, M. Wong, H. Tawbi, J. Burks, C. Yee, M. Davies, R. Murthy, C. Bernatchez, S. Ekmekcioglu, G. Lizée and A. Diab.** The Univ. of Texas MD Anderson Cancer Ctr.

P921 **176.07** Glycogen synthase kinase (GSK-3) synergizes with PD-1/PDL1 blockade to generate super-armed CD8 killers against tumors. **M.E. Issa, J. Krueger, A. Kazanova, A. Taylor and C.E. Rudd.** Univ. of Montreal, Canada and Univ. of Leeds, United Kingdom.

P922 **176.08** Enhancing the antitumor response of $CD8^+$ T cells by 4-1BB (CD137) co-stimulation with distinct inactivation of the type 2 adenosine receptors. **J. Ahn, S. Chen, J. Fan and B. Zhang.** Feinberg Sch. of Med., Northwestern Univ.

P923 **176.09** Evaluation of checkpoint inhibitor therapies using a mixed lymphocyte reaction assay. **J.E. Trigg, K. McBain, Z. Liu, T. Dale and C. Szybut.** Sartorius, United Kingdom and Sartorius.

P925 **176.11** Targeting YAP in T cells to improve anti-tumor immunity. **N. Cheng, E. Stampouloglou, A. Federico, S. Monti, G.L. Szeto and X. Varelas.** Boston Univ. Sch. of Med., Boston Univ. and Allen Inst. for Immunology, Seattle.

P927 **176.13** Sialylation of CD44 by ST8sia6 is required for recognition by the inhibitory receptor Siglec-7. **Y. Chen, D.J. Friedman, M. Saraswat, M.J. Shapiro, D. Wilfahrt, A. Pandey and V.S. Shapiro.** Mayo Clin. Grad. Sch. of Biomed. Sci. and Mayo Clin.

P928 **176.14** Complement C3 deficiency enhances anti-CD47 efficacy in murine ovarian cancer model. **S. Suzuki, T. Giridharan, A.N. Khan, T.R. Emmons, M.B. Yaffe, K. Weiskopf, M. Das, K.H. Eng, E. Zsiros and B.H. Segal.** Roswell Park Comprehensive Cancer Ctr., David. H. Koch Inst. for Integrative Cancer Res., Massachusetts Inst. of Technol, Whitehead Inst., Massachusetts Inst. of Technol and Apellis Pharmaceuticals, Inc.

P929 **176.15** PARP-inhibition with IFNg in the ovarian tumor microenvironment induces immunogenic cancer cell death for sustained anti-tumor immunity. **I. Kinjyo and S.F. Adams.** Univ. of New Mexico.

P930 **176.16** IL-33 suppresses melanoma progression. **J. Liu, H. Wei, A. Huang, C. Li, X. Li, Z. Yin, L. Zhang, R. Zhang and Q. Liu.** Southern Univ. of Sci. and Technol, Fac. of Hlth. Sci., Univ. of Macau, Macau, Southern Univ. of Sci. and Technol., China and Tongji Med. Col. of Huazhong Univ. of Sci. and Technol., China.

P931 **176.17** Monocyte-directed targeting of VEGFA in the melanoma microenvironment. **M.T. Bu, P. Chandrasekhar, L. Ding and W. Hugo.** David Geffen Sch. of Med. at Univ. of California, Los Angeles.

P932 **176.18** Loss of IFNgR1 signaling glioblastoma drives resistance to CAR T cell binding avidity and cytotoxicity due to lower downstream expression of ICAM-1. **R. Larson, M. Kann, S. Bailey, N. Haradhvala, K. Stewart, A. Bouffard, I. Scarfo, M. Leick, T.R. Berger, M. Jan, J. Joung, T. Ouspenskaia, T. Law, A. Regev, G. Getz and M. Maus.** Massachusetts Gen. Hosp., Harvard Med. Sch., Harvard Grad. Prog. in Biophysics, Broad Inst. of MIT and Harvard and Massachusetts Inst. of Tech.

177. TUMOR MICROENVIRONMENT (TME) 1

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P933 **177.01** Spontaneous class-switched antibody responses at endometrial cancer tumor bed drive superior patient outcomes. **G. Mandal, S. Biswas, C.M. Anadon, X. Yu, C.D. Gatenbee, S. Prabhakaran, K.K. Payne, R.A. Chaurio, A. Martin, P. Innamarato, C. Moran, J.J. Powers, C.M. Harro, J.A. Mine, K.B. Sprenger, K.E. Rigolizzo, X. Wang, T.J. Curiel, P.C. Rodriguez, A.R. Anderson, O. Saglam and J.R. Conejo-Garcia.** H. Lee Moffitt Cancer Ctr. and Res. Inst. and UT Hlth., San Antonio.

P934 **177.02** Class switching is required for antigen-dependent B cell anti-tumor activity. **Z. Guo, N. Claudio, T. Ziglari and F. Pucci.** Oregon Hlth. & Sci. Univ.

P936 **177.04** Organoid models for high-grade endometrial cancer to dissect tumor immune microenvironments. **C. Chung, A. Nizam, G.L. Goldberg and S. Beyaz.** Cold Spring Harbor Lab and Feinstein Inst. for Med. Res., Northwell Hlth.

P937 **177.05** T-cell phenotype varies in distinct tumor microenvironments and $CD57^+$ T_{FH} cells are associated with disease progression and inferior survival in follicular lymphoma. **Z-Z. Yang, H.J. Kim, H. Wu, X. Tang, J. Krull, P. Mondello, J. Villasboas, A. Novak and S. Ansell.** Mayo Clin. and China Three Gorges Univ., China.

P938 **177.06** Role of $CD4^+$ T cell-intrinsic HDAC8 signaling in cancer immunotherapy. **J. Wang, W. Yang, J. Zhou, Z. Chen and A.S-L. Cheng.** The Chinese Univ. of Hong Kong, Hong Kong and The Univ. of Hong Kong, Hong Kong.

P939 **177.07** Sex-specific T cell behavior drives differential immune responses in mouse glioblastoma models. **J. Lee and J.D. Lathia.** Cleveland Clin. Fndn. and Case Western Reserve Univ.

P940 **177.08** Inhibition of DNMTs and RNA editing increases immunogenic transposable element RNA to reduce tumor burden and prolong survival in a murine ovarian cancer model. **S. Gomez, O.L. Cox, U. Rentia, V. Balick, M. Hadley, E.E. Grundy, T. Kanholm, J.I. McDonald, J. Kobyra, E. Palmer, Y. Saunthararajah and K.B. Chiappinelli.** The George Washington Univ. and Cleveland Clin.

P942 **177.10** A tumor-restricted glycoepitope of podocalyxin correlates with immune evasion in high-grade serous ovarian carcinoma. **J. Brassard, D. Canals Hernaez, M.R. Hughes, K. Milne, P. Dean, M. Warren, K. Zhang, A.C. Banville, J. Smazynski, D. Bond, B.H. Nelson, C.D. Roskelley and K.M. McNagny.** Univ. of British Columbia, Canada and British Columbia Cancer Agency, Canada.

P943 **177.11** Androgen deprivation therapy allows for effective anti-TIGIT immunotherapy in murine model of castration resistant prostate cancer. **F. Polesso, X. Guan, Z. Xia and A.E. Moran.** The Ohio State Univ., Genentech and Oregon Hlth. & Sci. Univ.

P944 **177.12** Senescent cell-derived extracellular vesicles are critical elements in senescence surveillance by recruiting antigen-presenting cells. **T. Ziglari, N. Claudio, Z. Guo and F. Pucci.** Oregon Hlth. & Sci. Univ.

P945 **177.14** The nucleic acid sensor RIG-I as an inducer of anti-tumor response. **E. Fraile-Bethencourt, S. Khou and S. Anand.** Oregon Hlth. & Sci. Univ.

P946 **177.15** Role of the extracellular ATP/adenosine pathway in neutrophil-mediated T cell suppression in ovarian cancer microenvironment. **T. Giridharan, S. Suzuki, T.R. Emmons, A.N. Khan, M.B. Yaffe, E. Zsiros, K. Odunsi, M. Bhalla, E. Bou Ghanem and B.H. Segal.** Roswell Park Comprehensive Cancer Ctr., Ctr. for Precision Cancer Med., Massachusetts Inst. of Technol, Massachusetts Inst. of Technol, David. H. Koch Inst. for Integrative Cancer Res., Massachusetts Inst. of Technol, Beth Israel Deaconess Med. Ctr., Harvard Med. Sch., NCI, NIH, Univ. of Chicago Med. Comprehensive Cancer Ctr., Univ. of Chicago, Univ. at Buffalo, SUNY and Univ. at Buffalo Jacobs Sch. of Med. and Biomed. Sci.

P947 **177.16** ZBP1 is a crucial regulator for tumor necroptosis during tumor development. **J.Y. Baik and S. Choksi.** NCI, NIH.

P948 **177.17** MTAP deficiency reshapes the tumor immune landscape in lung cancer. **J-M. Li, J. Zhang, W-H. Chang, S-W. Hsu and C-H. Chen.** Univ. of California, Davis.

P949 **177.18** Effects of tumor-derived extracellular vesicles on T cell fate and function. **F. Ma, Y. Wang and G. Peng.** St. Louis Univ. and St. Louis Univ. Sch. of Med.

178. TUMOR MICROENVIRONMENT (TME) 2

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P950 **178.01** Diminished noncanonical NF-κB signaling induces colitis-associated colorectal cancer susceptibility upon de-differentiation of epithelial cells. **H. Morrison, A. Rowe, K. Eden, K. Baumgarner, S.L. Brown, E.K. Holl and I.C. Allen.** Virginia-Maryland Col. of Vet. Med., Edward Via Col. of Osteopathic Med. and Duke Univ. Med. Ctr.

P951 **178.02** Egfl6 promotes ovarian cancer progression by inducing the immunosuppressive functions of tumor-infiltrating myeloid cells. **S. Cascio, S. Sinno, S. Bai, C. Coronnello, A. Vlad and R.J. Buckanovich.** Univ. of Pittsburgh Sch. of Med., Magee-Womens Res. Inst. and Fondazione RiMED.

P952 **178.03** Dendritic cells to prevent cancer: immune responses against neoantigens after dendritic cell vaccination of Lynch Syndrome patients. **A. Abidi, H. Westdorp, M.A. Gorris, B. Scheijen, A-L. Boller, C.B. Irusquieta, N. Hoogerbrugge, G. Schreibelt and J.I. de Vries.** Radboudumc, Netherlands.

P953 **178.04** Abrogating regulatory T cells overcomes tumor-specific T cell exhaustion and prevents metastatic pancreatic cancer. **Z.C. Schmiechen, A.L. Burrack, E. Miller, M. Rollins, I.X. Wang, E. Cruz, M. Patterson and I. Stromnes.** Univ. of Minnesota.

P954 **178.05** "X"ploring the multifaceted functions of NLRX1 in triple-negative breast cancer. **M.A. Nagai, M. Woolls, K.M. Imran, J. Tupik and I.C. Allen.** Virginia Polytechnic Inst. and State Univ.

P955 **178.06** Hematopoietic protein RELT is upregulated in human breast and lung cancers and binds the cytoskeletal protein Filamin A. **J.K. Cusick, A. Yanumula, Y. Shyu, W. Wang, A. Abram, J. Alcaide, J. Zhou, B. Gillespie, M. Senderovich, A. Budhiraja, V. Qureshi, S. Bilasy and Y. Shi.** California Northstate Univ.

P956 **178.07** Tumor immunity is enhanced in mice expressing the pro-autoimmune allele of tyrosine phosphatase *Ptpn22*, but not in *Ptpn22* knock-out mice. **R.C. Orozco, K. Marquardt, K.A. Mowen and L.A. Sherman.** Scripps Res.

P957 **178.08** Evaluating plasma antibody repertoires in breast cancer patients with progesterone receptor positive and negative tumors. **A.I. Chapoval, S.V. Podlesnykh, E.A. Kolosova, P.I. Koltysheva, E.D. Tishchenko, Y.N. Shoikhet, A.F. Lazarev and S.A. Johnston.** Altai State Univ., Russia, Altai State Univ., Altai State Med. Univ., Russia and Arizona State Univ.

P958 **178.09** Turning immunologically cold tumors into hot ones by activating hepatoma-intrinsic FADD/NF-κB/CCL5 pathway. **J. Lu, A.W. H. Chan, K.F. To and J. Zhou.** The Chinese Univ. of Hong Kong, Hong Kong.

P959 **178.10** Ovarian cancer cell glucocorticoid receptor activity modulates cytokine secretion promoting infiltration of immunosuppressive cells into the tumor microenvironment. **M. Taya, J. Gonzalez, L. Bennett and S.D. Conzen.** Univ. of Texas Southwestern Med. Ctr.

P960 **178.11** Malignant cell expression of the aryl hydrocarbon receptor induces PD-L1 and immunosuppression in models of oral and lung cancer. **M. Snyder, J. Kenison, B. Lara, Z. Wang, T. Pichardo, K. Yang, S. Mazzilli and D. Sherr.** Boston Univ. Sch. of Med., Brigham and Women's Hosp. and Harvard Med. Sch. and Boston Univ. Sch. of Public Health.

P961 **178.12** Opposite effects of CXCR1 and CXCR2 overexpression in prostate tumorigenesis. **M. Richardson, T. Adekoya, N. Smith and P. Kothari.** North Carolina Central Univ.

P962 **178.13** Pro-tumoral role of Granzyme B to aid in invasion and metastasis. **E.J. Tibbs and X. Cao.** Univ. of Maryland Sch. of Med.

P963 **178.14** An emerging and previously unrecognized paradigm of Cxcl12/Cxcr4 pathway implication in breast cancer metastasis. **M.K. Lagou, L.R. Sanchez, C.L. Duran, J. Burt, X. Chen, Y. Lin, R. Eddy, A.S. Harney, D. Entenberg, J.S. Condeelis, M.H. Oktay and G.S. Karagiannis.** Albert Einstein Col. of Med.

P964 **178.15** Analysis of expression and function of LLT1 (CLEC2D) in Ewing sarcoma. **S.O. Mathew and C.W. Buller.** Univ. of North Texas Hlth. Sci. Ctr.

P965 **178.16** Glycoprotein-NMB is pro-tumorigenic in lymphangioleiomyomatosis. **E. Gibbons, M. Taya and S. Hammes.** Univ. of Rochester Med. Ctr.

P966 **178.17** Loss of p53 sensitizes tumor cells to immune checkpoint blockade therapy via upregulation of IL-33. **D.S. Gao, Y. Li, J. Shoush, R. Sun and B. Lu.** Univ. of Pittsburgh Sch. of Med.

P967 **178.18** MARCKS mediates the AXL/PD-L1 signaling axis and contributes to an immunosuppressive environment in lung cancer. **E.H. Yoo, J-M. Li, S-W. Hsu and C-H. Chen.** Univ. of California, Davis.

179. BIG DATA: THE KEY TO UNLOCKING IMMUNE-MEDIATED MECHANISMS OF TUMOR PROGRESSION AND THERAPY RESPONSE

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P968 **179.01** In situ analysis of the metastatic immune milieu in breast cancer brain metastasis at the single-cell level. **A.J. Longworth, K. Evans and D. Lawson.** Univ. of California, Irvine and AKOYA Biosci.

P969 **179.02** Transcriptome analysis identifies networks and key drivers in tumor microenvironment for metastatic castration-resistant prostate cancer. **L.P. McKinney, R. Singh, I.K. Jordan, S. Varambally, E.B. Dammer, M.G. Sanda and J.W. Lillard.** Morehouse Sch. of Med., Georgia Inst. of Technol., Atlanta, Univ. of Alabama at Birmingham and Emory Univ. Sch. of Med.

P970 **179.03** Single-cell myeloid diversity in human fallopian tube and its implications for early high grade serous ovarian cancer. **J. Brand, M. Haro, F. Abbasi, X. Lin, M. Siedhoff, A. Li, B. Rimel, F. Medeiros, K. Lawrenson and H. Dinh.** Univ. of Wisconsin-Madison and Cedars Sinai Med. Ctr.

P971 **179.04** Multi-modal immune profiling of mucinous ovarian carcinoma: analysis from the Ovarian Tumor Tissue Analysis/Multidisciplinary Ovarian Cancer Outcomes Group consortia. **N.S. Meagher, P.T. Hamilton, M.S. Anglesio, H.R. Harris, G.E. Konecny, J.M. Schildkraut, A. Talhouk, Ovarian Tumor Tissue Analysis Consortium, Australian Pancreatic Genome Initiative, M.L. Friedlander, C.L. Pearce, M.C. Pike, M. Köbel, J.A. Doherty, E.L. Goode, B.H. Nelson, A. DeFazio and S.J. Ramus.** Univ. of New South Wales, Australia, BC Cancer Res. Ctr., Canada, Univ. of British Columbia, Canada, Fred Hutchinson Cancer Res. Ctr., Univ. of California at Los Angeles, Emory Univ., Garvan Inst. of Med. Res., Australia, Royal Hosp. for Women,m Australia, Univ. of Michigan, Mem. Sloan Kettering Cancer Ctr., Univ. of Calgary, Canada, Univ. of Utah, Mayo Clin. Rochester, The Univ. of Sydney, Australia and Westmead Hosp., Australia.

P972 **179.05** Upregulated Ly-6 gene expression is associated with poor overall survival in uterine corpus endometrial carcinoma patients. **L. Rathbun, A. Magliocco and A.K. Bamezai.** Villanova Univ. and Protean BioDiagnostics.

P973 **179.06** Analysis of chemokine network in primary human glioblastoma. **M. Lachota, K. Zielniok, A. Gozdz, P. Szpak, I. Kalaszczynska and R. Zagozdzon.** Med. Univ. of Warsaw, Poland and The Maria Sklodowska-Curie Natl. Res. Inst. of Oncology.

P974 **179.07** Transcriptomic and epigenetic profiling of tumor-associated monocyte function. **C.F. Contreras, S. Kaczanowska and R.N. Kaplan.** NCI, NIH.

P975 **179.08** Defining myeloid plasticity and heterogeneity in immunotherapy response. **H. Dinh, A. Golfinos, W. Wang, A. Mergaert and P. Lambert.** Univ. of Wisconsin-Madison.

P976 **179.09** Multiplex microscopy reveals unique spatiotemporal effects of cancer immunotherapies. **V.I. Maltez, K.T. Byrne and R.N. Germain.** NIAID, NIH and Univ. of Pennsylvania Perelman Sch. of Med.

P977 **179.10** Immunological profiling of tumor-infiltrating $CD8^+$ T lymphocytes in non-small cell lung cancer, head and neck squamous cell carcinoma, breast cancer, and renal cell cancer. **W.L. Miller, Y. Koguchi, J.K. Kaufmann, N. Yanamandra, S. Griffin, J. Smothers and W.L. Redmond.** Providence Portland Med. Ctr. and GlaxoSmithKline.

P978 **179.11** Identification of a subset of tumor-reactive CD8 TILs expressing NKG2A in HNSCC and CRC. **O. Fesneau, K. Samson, V. Rajamanickam, D. Ross and T. Duhen.** Earle A. Chiles Res. Inst.

P979 **179.12** Identification of immunogenic peptide neoantigens expressed in sarcomas and their therapeutic potential. **A.L. Sedlacek, D. Osei-Hwedieh, A. Agyekum-Yamoah, L. Mena, S. Iyer, K. Weiss and R.J. Binder.** Univ. of Pittsburgh, Univ. of Pittsburgh Sch. of Med. and Univ. of Pittsburgh Med. Ctr.

P980 **179.13** High-throughput screening for rare antigen-reactive TCRs using natively-paired TCRab expression libraries generated from millions diverse primary T cells. **M.J. Spindler, S. Sandhu, T.S. Weller and D.S. Johnson.** GigaMune, Inc.

P981 **179.14** Multimodal single-cell analysis of human TILs across multiple tumor types reveals heterogeneity and potential opportunities for personalized immunotherapy. **W.L. Redmond, Y. Koguchi, W.L. Miller, T. Christie, J. Kaufmann, L. Seestaller-Wehr, N. Yanamandra, S. Griffin and J. Smothers.** Earle A. Chiles Res. Inst., Codagenix and GlaxoSmithKline.

P982 **179.15** Precise spatial multiplexing of immune cell diversity in clinical FFPE tumor samples with ChipCytometry™. **S. Schwarz, A. Christians, J. Brooks, A. Northcutt, K. Kwarta and C. Winkeler.** Canopy BioSci.

P983 **179.16** Combined Immunoscore and PD-L1 expression significantly predicts clinical outcomes of stage Ib lung adenocarcinoma patients. **Y. Huang, S. Dai, T. Deng, L. Jiang, F. Luo and D. Zhu.** West China Hosp. of Sichuan Univ., China.

P984 **179.17** Spatial profiling of immune cell markers in FFPE tumor tissues using the RNAscope™ HiPlex v2 in situ hybridization assay. **A. Dikshit, S. Basak, C-W. Chang, K. Collins and M. Bunting.** Advanced Cell Diagnostics.

P985 **179.18** Spatial whole transcriptome profiling of the tumor microenvironment in FFPE prostate carcinoma using the Visium platform. **D. Reyes, V. Giangarra, S.R. Williams, M. Turkekul, P. Mielinis, J. Chell and S.E. B. Taylor.** 10x Genomics.

P986 **179.19** RNA-protein co-detection using spatial analysis to profile tumor-infiltrated immune cells. **A. Dikshit, S. Basak, E. Doolittle and M. Bunting.** Advanced Cell Diagnostics.

P987 **179.20** Cellular avidity as a novel biomarker for candidate selection of cell-based immunotherapies. **J. Eberlein, J. Moser, Z. Zhong, K.A. Bailey, S-M. Hoang, A.J. Schultz, A. Candelli, R.M. Reijmers and W. Singleterry.** LUMICKS and LUMICKS, Netherlands.

180. CD4$^+$ T CELLS IN CANCER

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P988 **180.01** Defining the cooperation between T cell responses to MHC-I and MHC-II melanoma neoantigens towards developing effective personalized cancer immunotherapies. **C. Williams, A. Shavkunov, S. Keshari, A. Salmon, A. Highsmith, J. Pineda and M. Gubin.** The Univ. of Texas MD Anderson Cancer Ctr. UT Health Grad. Sch. of Biomed. Sci. and MD Anderson Cancer Ctr.

P989 **180.02** Leucine-rich repeats and immunoglobulin-like domains protein 1 is highly expressed on tumor-infiltrating T cells and may play a role in modulating T cell activation. **H.M. Ta, D. Roy, K. Zhang, J. Dong, C. Gilmour, S-K. Yoo, T. Alban, V. Makarov, P. Bangalore Parthasarathy, T. Chan and L. Wang.** Cleveland Clin.

P990 **180.03** Peripheral CD4 T cell resistance to type I interferon defines outcome of PD1 blockade therapy in human cancer. **G.M. Boukhaled, R. Gadalla, H.J. Elsaesser, A. Sacher, M.O. Butler and D.G. Brooks.** Princess Margaret Cancer Ctr., Canada and Univ. of Toronto, Canada.

P991 **180.04** Aberrant beta-catenin activation guides Tcf-1 to promote genomic instability and thymocyte transformation. **F. Gounari, S. Arnovitz, M.G. Tracy, A.G. Mohsin, K. Khazaie and A.O. Emmanuel.** Univ. of Chicago, Mayo Clin. and Univesity of Chicago.

P992 **180.05** TIM-3$^+$ T regulatory cells alter the lymphoid compartment in cold and hot solid tumor model. **H. Banerjee, H.M. Nieves-Rosado, B. Murter and L.P. Kane.** Univ. of Pittsburgh and Univ. of Pittsburgh Sch. of Med.

P993 **180.06** TCR-engineered neoantigen-specific CD4$^+$ T cells mediate immunotherapy of a class II-negative murine squamous cell carcinoma. **S.E. Brightman, A. Becker, R. Thota, M.S. Naradikian, R. Griswold, J.S. Dolina and S.P. Schoenberger.** La Jolla Inst. for Immunology.

P994 **180.07** CD4+ T cells mediate non-canonical rejection of major histocompatibility class-I deficient pancreatic tumors independently of CD8+ T cells. **K.T. Byrne, S.I. Kim, C. Arora, I.I. Verginadis, C.R. Cassella, N. Markosyan, C. Koumenis and R.H. Vonderheide.** Univ. of Pennsylvania Perelman Sch. of Med., Parker Inst. for Cancer Immunotherapy, Univ. of Pennsylvania and Univ. of Pennsylvania Perelman Sch. of Med.

P995 **180.08** Dissecting anti-tumor immunity in glioblastoma. **D. Chen and S.K. Varanasi.** Salk Inst. for Biological Studies.

P996 **180.09** Target the activin receptor 1c on CD4+ T cells to achieve anti-tumor therapeutic effects. **Y. Zheng, A. Lebid, J. Fu, C. Patel, X. Wang and D. Pardoll.** Johns Hopkins Univ. Sch. of Med.

P997 **180.10** Leveraging the Treg-intrinsic CTLA4-PKCη signaling pathway for cancer immunotherapy. **H.Y. Liu, C. Pedros, K-F. Kong, A.J. Canonigo-Balancio, W. Xue and A. Altman.** La Jolla Inst. for Immunology and Univ. of Massachusetts Med. Sch.

P998 **180.11** Thymic stromal lymphopoietin receptor signaling controls a tumorigenic Treg to promote colorectal cancer. **K. Obata-Ninomiya and S.F. Ziegler.** Benaroya Res. Inst., Virginia Mason.

P999 **180.12** The glutathione peroxidase Gpx4 prevents Treg lipid peroxidation and ferroptosis to facilitate tumor immunoevasion. **K. Yang.** Indiana Univ. Sch. of Med.

181. VACCINES AND IMMUNITY AGAINST BACTERIA AND PARASITES

Poster Session

MON. 2:30 PM—EXHIBIT HALL

P1000 **181.01** Cloning ospA of Borrelia burgderferi for plant expression. **Q.A. Browne, D.P. Puthoff and R. Taylor.** Frostburg State Univ.

P1001 **181.02** Complement Factor H immunoproteins increase complement-mediated opsonophagocytic killing of methicillin-resistant *Staphylococcus aureus*. **J.A. Sharp, K.A. Cranmer, M.G. Sage and K.L. Wycoff.** Eastern Virginia Med. Sch. and Planet BioTechnol., Inc.

P1002 **181.03** Assessing immunogenicity of vaccines and adjuvant combinations for Q fever. **S. Jan, A. Gregory, J. Felgner, J. Davies, R. Nakajima, A. Jasinskas, D.H. Davies and P.L. Felgner.** Univ. of California, Irvine.

P1003 **181.04** A recombinant *Chlamydia muridarum* MOMP encapsulated PLGA 85/15 nanovaccine induced antibodies elicited cross-recognition of serovar-D elementary bodies. **R. Sahu, R. Verma, H.N. Sharma, V. Tadjuidje, S. Joshi, O.A. Forte, S.R. Singh and V.A. Dennis.** Alabama State Univ.

P1004 **181.05** Identification of CPAF as the immunoprevalent antigen of *Chlamydia trachomatis*. **Y. Li, J. Warren, T. Poston, F. Shaw, S. Conrad, Y. Xu, X. Zheng, C.M. O'Connell, S.L Hillier, H.C Wiesenfeld, T. Darville and N. Goonetilleke.** Univ. of North Carolina at Chapel Hill and Univ. of Pittsburgh Sch. of Med.

P1005 **181.06** Evaluation of the protective efficacy of a novel rVCG-based *Chlamydia abortus* vaccine in a pregnant mouse model. **S.S. Richardson, C. Bell, L. Jones, F. Medhavi, T. Tanner, S. Lundy, Y. Omosun and F.O. Eko.** Morehouse Sch. of Med.

P1006 **181.07** The novel adjuvant, ADA-1, restores age-associated defects in the adaptive immune response to *Clostridioides difficile* infection and vaccination in an aging mouse model. **M. Bell, M. Bernui, N. Shah, J.R. Connors and M.A. Kutzler.** Drexel Univ. Col. of Med.

P1007 **181.08** Differential immune response to *Klebsiella pneumoniae* O-antigen subtypes O2v1 and O2v2. **P.L. Wantuch, C.M. Harding and D.A. Rosen.** Washington Univ. Sch. of Med. and VaxNewMo.

P1008 **181.09** The use of outer membrane vesicles as novel, mucosal adjuvants against intracellular bacteria. **J. Harrell, L.A. Morici and J.B. McLachlan.** Tulane Univ. Sch. of Med.

P1009 **181.10** Identification of adjuvants for $\gamma\delta$ T cells in response to a novel *M. tuberculosis* vaccine antigen. **K. Phelps, M. Xia, V. Rasi, C. Fox, N. Petrovsky, D. Carter and D. Hoft.** St. Louis Univ. Sch. of Med., Infectious Disease Res. Inst., Vaxine, PAI Life Sci. and St. Louis Univ. Sch. of Med.

P1010 **181.11** The role of lymphocyte subsets in preventing tuberculosis following intravenous vaccination with BCG. **A.W. Simonson, A.N. Bucsan, J.J. Zeppa, C.G. Winchell, A.J. Myers, M. Sutton, C.L. Ameel, P.A. Darrah, M. Roederer, R.A. Seder and J.L. Flynn.** Univ. of Pittsburgh Sch. of Med. and NIAID, NIH.

P1011 **181.12** Adjuvanted multivalent vaccine targeting clinically relevant Pf bacteriophage creates cross-reactive antibodies. **V.C. Román-Cruz, S. Miller, R. Schoener, C. Lukasiewicz, P. Secor, D. Burkhart and J.T. Evans.** Univ. of Montana and Inimmune Corp.

P1012 **181.13** Mycolic acid nanoparticle vaccination leads to antigen persistence and unique differentiation of mycobacterial lipid antigen-specific T cells. **E. Morgun, J. Zhu, S. Bobbala, M.S. Aguilar, J. Wang, K. Conner, L. Cao, C. Seshadri, E.A. Scott and C-R. Wang.** Feinberg Sch. of Med., Northwestern Univ., Northwestern Univ. and Univ. of Washington.

P1013 **181.14** Differential sex-specific immune responses following Prime-and-Trap vaccination alters protection against malaria in mice. **C.J. Duncombe, F.N. Watson, A.C. Kalata, M.J. Shears and S.C. Murphy.** Univ. of Washington.

P1014 **181.15** Duration of peripheral blood cellular immune responses induced in dogs in response to a modified live attenuated vaccine for *Ehrlichia chaffeensis*. **J.L. McGill, S. Madesh, P. Hove and R.R. Ganta.** Iowa State Univ. and Kansas State Univ.

P1016 **181.17** A novel approach for targeting whole cell vaccine to antigen presenting cells. **S. Kumar and R. Sunagar.** Albany Med. Col. and Ella Fndn.

182. INNATE AND ADAPTIVE IMMUNITY TO VIRUSES 2

Poster Session

MON. 2:30 PM—EXHIBIT HALL

CHAIR: *S. VARGA*

P1017 **182.01** Establishment of influenza-specific lung tissue-resident helper memory $CD4^+$ T cells relies on expression the eATP sensor P2RX7. **H. Borges da Silva, I. Santiago-Carvalho, B. de Gois Macedo, T. Vardam-Kaur and S. van Dijk.** Mayo Clin.

P1018 **182.02** Role of p16 expressing cells in formation and function of T cell memory with age. **B. Torrance, E.C. Lorenzo, H.A. Panier, A.N. Cadar, D.E. Martin, J.M. Bartley and L. Haynes.** UConn Hlth.

P1019 **182.03** Resident CD8+ T-cells drive dysplastic repair of aged lungs following viral pneumonia. **H. Narasimhan, N.P. Goplen, I.S. Cheon and J. Sun.** Univ. of Virginia and Mayo Clin. Rochester.

P1020 **182.04** Restriction of viral replication, rather than T cell immunopathology, drives lethality in MNV CR6-infected STAT1-deficient mice. **A.J. Sharon, H.A. Filyk, N.M. Fonseca, R.L. Simister, R.B. Filler, W. Yuen, B.K. Hardman, H.G. Robinson, J.H. Seo, J. Rocha-Pereira, I. Welch, J. Neyts, C.B. Wilen, S.A. Crowe and L.C. Osborne.** Univ. of British Columbia, Canada, Yale Sch. of Med. and Univ. of Leuven, Belgium.

P1021 **182.05** CD8 T cell exhaustion is dynamically controlled by the chromatin regulator factor BRD4. **G.N. Mullins, J.M. Green, W.D. Green and J.J. Milner.** Univ. of North Carolina at Chapel Hill.

P1022 **182.06** Assessing how biological sex effects tissue-resident memory T cell responses to influenza infection. **L. Bachnak, M. Godwin and J.B. McLachlan.** Tulane Univ. Sch. of Med.

P1023 **182.07** HIV-specific CD8 T cells from elite controllers have an epigenetic imprint that preserves effector functions. **A.B. Frias, R.L. Rutishauser, A.A. Sharma, T. Mi, H.A. Abdelsamed, C. Zebley, C.M. Constantz, M. Stone, M. Busch, S. Deeks, R. Sekaly and B.A. Youngblood.** St. Jude Children's Res. Hosp., University of California, San Francisco, Emory Univ. Sch. of Med., Univ. of Pittsburgh and Vitalant Res. Inst.

P1024 **182.08** A novel approach to define contribution of microglia and brain endothelium in antigen specific CD8 T cell-mediated blood brain barrier disruption during virus infection. **R. Khadka, J. Zheng, M. Hansen, K. Ayasoufi, C. Fain, F. Jin, Z.P. Tritz, K.M. Wininger, L. Wu and A.J. Johnson.** Mayo Clin. and Mayo Clin. Grad. Sch. of BioMed. Sci.

P1025 **182.09** Mechanisms of impaired muscle repair following influenza infection in aged mice. **A. Cadar, S.R. Keilich, D.E. Martin, B.L. Torrance, L. Haynes and J.M. Bartley.** UConn Hlth.

P1026 **182.10** CD4 T cell memory restoration upon antiretroviral initiation in people living with HIV. **A.T. Sponaugle, M. Abad-Ferenandez, G. Clutton, A.M.K. Weideman, M.G. Hudgens, T. Davy-Mendez, A.A. Adimora, C. Ramirez, M. Floris-Moore, J. Kuruc, D.M. Margolis, C. Gay, J.J. Eron and N. Goonetilleke.** Univ. of North Carolina at Chapel Hill.

P1027 **182.11** T cell-intrinsic IL-17RA signaling in the spleen supports the establishment of chronic gammaherpesvirus infection. **C.N. Jondle and V. o. Tarakanova.** Med. Col. of Wisconsin.

P1028 **182.12** A unique gammadelta T cell population in the brain during viral infection. **J. Berger, B. Monogue, J.D. Beckham and L. Berg.** Univ. of Colorado Anschutz Med. Campus.

P1029 **182.13** Influenza A virus-specific memory T cell persistence and functional recall are retained during pregnancy. **V. Flores Malavet, A. Satchmei, E. Prokop and T.M. Strutt.** Univ. of Central Florida.

P1030 **182.14** Highly multiplexed biomarker analysis of tissue immune microenvironments during herpes virus infections. **D. Klymyshyn, N. Jhaveri, N. Nikulina, H. Zong, N. Ma, B. Ben Cheikh, A. Pratapa and O. Braubach.** AKOYA BioSci.

P1031 **182.15** Sustained Interleukin-2 signaling throughout the effector T cell response is required for the differentiation of anti-viral Th1 cells. **K.R. Charley.** Univ. of Utah Sch. of Med.

P1032 **182.16** Identification and characteristics of HLA-restricted HMPV-specific $CD8^+$ T cells. **J. Lan, O. Parks, Y. Zhang, S. Walters, J. Sojati and J.V. Williams.** Univ. of Pittsburgh and Children's Hosp. of Pittsburgh of UPMC.

P1033 **182.17** CD4+ CD151+ T cells may serve as preferential reservoir cells of latent HIV infection events. **C.M. Tidwell, M. Perez, M. Zhang, A. Duverger, F. Wagner, R.Q. Cron, S. Sabbaj and O. Kutsch.** Univ. of Alabama at Birmingham Sch. of Med., Univ. of Mississippi Med. Ctr. and Univ. of Alabama at Birmingham Sch. of Med.

P1034 **182.18** Effect of E-cigarette use on lung immunity to influenza infection. **J.L. Cannon, D. Scieszczka, P. Mrass, D. Garland, K. Major, R. Hunter, J. Begay, S. Lucas and M.J. Campen.** Univ. of New Mexico.

P1035 **182.19** Differential localization and kinetics of antiviral CD8 T cell responses to chronic and acute murine norovirus infections from initiation onwards. **B.K. Hardman and L.C. Osborne.** Univ. of British Columbia, Canada.

P1036 **182.20** XCL1-XCR1 interactions are crucial in the development of anti-West Nile Virus immunity within the CNS. **J. Ho, A. Contreras and D. Durrant.** California State Polytechnical Univ., Pomona.

P1037 **182.21** Human lung tissue-resident memory CD8+ T cells are transcriptionally, epigenetically, and phenotypically diverse. **J.L. Elliott, K.N. Kost, K.H. Lacetti, J.K. Thomas, M.E. Williams, C.L. Mattingly, J.L. Lobby, L.A. Lawrence and J.E. Kohlmeier.** Emory Univ. Sch. of Med.

P1038 **182.22** CD4 T cell deficiency results in impaired neutralizing IgG against polyomavirus carrying a frequent PML-associated capsid mutation. **K.N. Ayers, M.D. Lauver and A.E. Lukacher.** Penn State Col. of Med.

P1039 **182.23** Examining effector functions of lung $CD8^+$ tissue resident memory T cells in humans. **C. Mattingly, J.L. Elliott, J.K. Thomas, J.L. Lobby, S.E. Michalets and J.E. Kohlmeier.** Emory Univ. Sch. of Med.

P1040 **182.24** IFN-γ promotes T_H1 at the expense of T_{FH} differentiation during viral infections. **E. Sala, M. Mangione, C. Laura, E. Consolo, C.G. Beccaria, M. Iannacone and M. Kuka.** Vita-Salute San Raffaele Univ., Italy, IRCCS San Raffaele Scientific Inst., Italy and Ctr. for Omics Sci., IRCCS San Raffaele Scientific Inst., Italy.

P1041 **182.25** Immunogenetic determinants of HSV-2 infection and disease. **J.B. Graham, J. Swarts, M. Mooney and J.M. Lund.** Fred Hutchinson Cancer Res. Ctr., Oregon Hlth. & Sci. Univ. and Univ. of Washington.

P1042 **182.26** MicroRNA-29a attenuates exhaustion and promotes memory-like CD8 T cells. **X. Leng, L. Buchness, S. Ristin, A. Villarino and E. Stelekati.** Miller Sch. of Med., Univ. of Miami.

P1043 **182.27** The characterization of MCMV specific Qa-1-restricted $CD8^+$ T cells. **S. Reilly, C. Anderson and L. Brossay.** Brown Univ.

P1044 **182.28** In situ characterization of lesion-forming human HSV-2 reactivation reveals distinct innate and adaptive immune compartmentalization. **J. Zhu, T. Peng, K. Phasouk, S. Sun, L. Jin, C. Johnston, A. Wald and L. Corey.** Univ. of Washington and Fred Hutchinson Cancer Res. Ctr.

P1045 **182.29** GC Tfh cell metabolism and survival of HIV-1 infection. **F. Syed, W. Li and Q. Yu.** Indiana Univ. Sch. of Med.

P1046 **182.30** Early heterogeneity of IL2R? expression influences the programming of exhausted CD8T cells during chronic infection. **R. Toumi, H. Xiao, R. Deo, S.J. Reed, S. Sarkar and V. Kalia.** Seattle Children's Res. Inst. and Univ. of Pittsburgh Sch. of Med.

P1047 **182.31** Induction of blood brain barrier disruption through reactivation of virus antigen specific brain resident memory T cells. **K. Ayasoufi, S.L. Namen, D. Wolf, Z.P. Tritz, E. Goddery, C.K. Pfaller, L. Gulbicki, C.E. Fain, F. Jin, M. Hansen and A.J. Johnson.** Mayo Clin., Mayo Clin., Mayo Clin. Grad. Sch. of BioMed. Sci. and Paul Ehrlich Inst., Germany.

P1048 **182.32** Exploring the role of c-Myc in defining the fate of exhausted CD8 T cells. **R. Toumi, R. Deo, S. Bhise, S. Sarkar and V. Kalia.** Seattle Children's Res. Inst.

P1049 **182.33** Induction of autophagy reduces IFN-I mediated Inflammation and restores anti-HIV-1 T cell response in vivo. **A. Zhen, W. Mu, V. Rezek, H. Martin, M. Carrillo, P. Hamid, M. Lizarraga, O. Yang, B. Jamieson and S. Kitchen.** David Geffen Sch. of Med. at UCLA, Los Angeles.

P1050 **182.34** Evaluating the association of SARS-CoV-2 IgG II antibody level with neutralizing antibody response in patient who vaccinated in Hong Kong. **K.H. Lau and W.Y. Lam.** PHC Med. Diagnostic Ctr. Limited, Hong Kong.

P1051 **182.35** Localization of terminal memory CD8 T cells in the lungs during respiratory infection. **J.E. Suarez-Ramirez, K. Chandiran and L.S. Cauley.** UConn Hlth.

P1052 **182.36** Severe acute respiratory syndrome coronavirus 2 vaccination induces short-term polyclonal antibody response against seasonal endemic coronaviruses. **B. Adhikari, E.M. Oltz, R.J. Gumina, L.J. Saif and A.N. Vlasova.** The Ohio State Univ.

P1053 **182.37** Persistence of SARS-CoV-2 in long COVID-19 patients. **D. Goh, J.C. T. Lim, S.B. Fernandez, J.N. Lee, C.R. Joseph, S. Guerrero, Z.W. Neo, M.C. Lau and J.P.S. Yeong.** Inst. of Molec. and Cell Biology, A*STAR, Singapore, Inst. of Molec. and Cell Biology, A*STAR, Singapore and Long Covid Autonomous Communities Together Spain, Spain.

P1054 **182.38** Evaluation of murine norovirus-1 infection in primary mouse B cells. **C.E. M. Rodriguez, C.C. Lonches, A.L. G. Escolano and L.S. Argumedo.** Ctr. for Res. and Advanced Studies of IPN, Mexico.

P1055 **182.39** A longitudinal study of antibodies in medical doctors of the General Hospital of Guerrero, professionally exposed to SARS-CoV-2. **N.X. Alvarez Martínez, E.S. Sanchez Salguero and L. Santos-Argumedo.** Cinvestav, Mexicco.

P1056 **182.40** HSV-2 increases replication of HIV in human T cells. **C.A. Pierce, P. Preston-Hurlburt, L.N. Loh, H. Steach, S. Sidoli, F. Zhang, W. Philbrick, M. Nassar, S. Krishnaswamy, K.C. Herold and B.C. Herold.** Albert Einstein Col. of Med., Yale Sch. of Med. and Children's Hosp. at Montefiore.

P1057 **182.41** Phenotypical changes in peripheral NK cells and their impact on the clinical outcomes of patients with severe pandemic influenza A. **J.A. Ramírez-Noyola, L.A. Fernández-López, L.M. Pacheco-Hernández, S. Ignacio-Cortés, I.A. Gómez-García, B. Garcia-Padrón, G. Ramírez-Martínez, J. Zúñiga and J.A. Choreño-Parra.** Instituto Nacional de Enfermedades Respiratorias, Mexico, Instituto Politécnico Nacional, Mexico, Tecnologico de Monterrey, Mexico and Universidad Nacional Autónoma de México.

P1058 **182.42** Altered cytokine and chemokine profiles in the lungs of vitamin A deficient mice with respiratory syncytial virus infection. **S. Hong and J.L. McGill.** Iowa State Univ.

P1059 **182.43** Immune profile predicts stages of clinical evolution in community setting of COVID-19. **L.F. Verdiguel Fernández, L.R. Arredondo-Hernández, J.A. Mejía-Estrada, A. Ortiz-Rico, A. Verdugo-Rodríguez, S. Ponce de León-Rosales and Y. López-Vidal.** Universidad NAcional Autonoma de Mexico, Mexico.

P1060 **182.44** Discovery and engineering of a therapeutic interfering particle for HIV-1: a single-administration antiviral. **L. Weinberger, E. Tanner, D. Spencer, T. Cheever, P. Barnette, Y. Zhou, S-Y. Jung, J. Glazier, C. Thompson, C.R. Maldini, S. Chaturvedi, B. Martin, A. Harvey-Vera, H-I. Son, S.A. Strathdee, J.L. Riley, A.J. Hessell and N.L. Haigwood.** Gladstone Inst., Oregon Hlth. & Sci. Univ., Univ. of Pennsylvania Perelman Sch. of Med. and Univ. of California, San Diego.

P1061 **182.45** Symptomatic infection of SARS-CoV-2 in vaccinated population: a time analysis on Delta wave. **R. Arredondo-Hernandez, J.A. Mejia - Estrada, J. Pitalua, A. Verdugo-Rodriguez, A. Ortiz-Rico, C. Avella, S. Ponce de Leon-Rosales and Y. Lopez - Vidal.** UNAM, Mexico.

MONDAY AFTERNOON

MAY 9

183. INTERNATIONAL SOCIETY OF DEVELOPMENTAL AND COMPARATIVE IMMUNOLOGY (ISDCI) SYMPOSIUM: INSIGHTS INTO IMMUNE EVOLUTION FROM COMPARATIVE IMMUNE APPROACHES

Guest Session

MON. 3:45 PM—ROOM B110–112

CHAIRS: *A. VOSKOBOYNIK, M.F. CRISCITIELLO*

3:45 Transplantation reactions in *Botryllus schlosseri*: co-evolution of stem cells and immunity. **A. Voskoboynik.** Stanford Med. and Hopkins Marine Station.

4:15 B cell selection sites in the nurse shark spleen may represent evolutionary precursors of mammalian germinal centers. **H. Matz.** Univ. of Maryland, Baltimore.

4:45 Fever as an ancient modulator of immune function. **D.R. Barreda.** Univ. of Alberta, Canada.

5:15 Natural history of immunoglobulin surrogate light chains and the heavy chain third complementarity determining region. **M.F. Criscitiello.** Texas A&M Univ.

184. KOREAN ASSOCIATION OF IMMUNOLOGISTS (KAI) AND ASSOCIATION OF KOREAN IMMUNOLOGISTS IN AMERICA (AKIA) SYMPOSIUM: DRIVING FORCES OF HUMORAL IMMUNITY AND PATHOLOGY

Guest Session

MON. 3:45 PM—ROOM A107–109

CHAIRS: *S-I. LEE, W-K. SUH*

3:45 Thymic plasma cells secrete natural IgE and promote food anaphylaxis by enhancing mast cell survival. **Y.J. Lee.** Seoul Nat. Univ., South Korea.

4:15 The role of iron homeostasis for naïve T cell survival and maintenance. **C-H. Chang.** Univ. of Michigan.

4:45 Increased mitochondrial metabolism is required for immunologic function in age-associated B cells. **S.J. Kim.** Feinstein Inst. of Med. Res.

5:15 Humoral immunity in different mucosal systems. **J.E. Oh.** Korea Advanced Inst. of Sci. and Tech., South Korea.

185. MOLECULAR REGULATION OF INNATE AND CYTOTOXIC LYMPHOCYTE RESPONSES

Block Symposium

MON. 3:45 PM—ROOM C123–124

CHAIRS: *J. SUN, A. KAMPHORST*

3:45 CD28 signaling strength regulates the cell fate of TCF-1+ PD-1+ CD8 T cells. **E. Humblin, V. Van der Heide, D. Filipescu, A. Lu, M. Selvan, Z. Gumus, E. Bernstein, J. Chipuk, D. Homann and A.O. Kamphorst.** Icahn Sch. of Med. at Mount Sinai. **(55.09)**

4:00 Ets1 regulates production of dendritic epidermal T cells and cooperates with IL17Ra signaling to regulate immune responses to *Staphylococcal* skin infection. **M. Battaglia, A. Sunshine, W. Luo, L.S. Miller, S. Sinha, E. Wohlfert and L.A. Garrett-Sinha.** Univ. at Buffalo Jacobs Sch. of Med. and BioMed. Sci., Indiana Univ. Sch. of Med. and Johns Hopkins Univ. Sch. of Med. **(55.05)**

4:15 Metabolic fuel choices control MAIT cell functions at homeostasis and after infection. **T. Riffelmacher, M.M. Paynich, S. Chandra, C. Wientjens, G. Seumois, P. Vijayanand and M. Kronenberg.** La Jolla Inst. for Immunology. **(55.10)**

4:30 Optimal $CD8^+$ T cell effector function requires costimulation-induced RNA-binding proteins that reprogram the transcript isoform landscape. **T. Karginov, A. Menoret and A.T. Vella.** UConn Hlth. **(55.11)**

4:45 A role for a DEAD box RNA helicase in natural killer cells. **E. Mukhopadhyay, D. Krishnamurthy, J. Tuazon, D. Ohayon, A. Ali, J. Stevens and S.N. Waggoner.** CCHMC and Univ. of Cincinnati Col. of Med., Cincinnati. **(55.13)**

5:00 Lineage analysis defines subpopulations of human lung tissue-resident memory CD8+ T cells. **M.E. Williams, J.L. Elliott, J.K. Thomas, K. Kost, K. Laccetti, J.L. Lobby, C. Mattingly, C. Scharer and J.E. Kohlmeier.** Emory Univ. Sch. of Med. **(55.18)**

5:15 Androgen receptor regulation of CD8 T cell immune responses. **R.M. Hawkins, F. Polesso and A.E. Moran.** Oregon Hlth. & Sci. Univ. **(55.21)**

5:30 The sexually dimorphic histone demethylase promotes optimal T cell responses during infection. **C. Krawczyk, L. Zhai, H. Guak, A. VanderArk, P. Davidson, M. Weiland and M. Corrado.** Van Andel Inst. **(55.22)**

186. MUCOSAL IMMUNE REGULATORY MECHANISMS

Block Symposium

MON. 3:45 PM—ROOM B117–119

CHAIRS: *C.L. MAYNARD, M.A. KOCH*

3:45 Androgens protect ILC2s from interferon-mediated functional suppression during influenza virus infection. **S. Kovats, A. Karlik, S. Turner, R. Miller, E. Ainsua-Enrich, I. Hatipoglu, H. Bagavant, J. Alberola-Ila, R. Pelikan and S. Kadel.** Oklahoma Med. Res. Fndn. and Univ. of Oklahoma Hlth. Sci. Ctr. **(113.20)**

4:00 Rab27A-dependent transfer of CD11c+ cell exosomes regulate gut immunity. **K. Bauer, J. Round and R.M. O'Connell.** Univ. of Utah. **(113.03)**

4:15 MyD88-mediated signaling in myo-/fibroblasts is required for control of macrophage maturation under mucosal tolerance in the gut. **M. Chulkina, G. Uribe, B. He, S. McAninch, K. Khanipov, G. Golovko, N.S. Markov, D.W. Powell, E. Beswick and I.V. Pinchuk.** Penn State Col. of Med., Univ. of Texas Med. Br. at Galveston, Feinberg Sch. of Med., Northwestern Univ. and Univ. of Utah Sch. of Med. **(113.14)**

4:30 B cells drive tertiary lymphoid organ formation in ileal inflammation. **E. Erlich, R. Czepielewski, S. Kumar, R. Field, X. Zhang, L. Saleh, F. Guilak, J. Brestoff, A. Ellebedy and G.J. Randolph.** Washington Univ. in St. Louis Sch. of Med. **(113.18)**

4:45 IgA B cell receptor signaling protects from FasL counterselection during germinal center reaction in Peyer's patches and shapes humoral mucosal response. **A. Reboldi, F. Raso, A. Berthellete, S. Sagadiev, S. Moses, M. Acharya, G. Barton, J. Muppidi and A. Marshak-Rothstein.** Univ. of Massachusetts Med. Sch., Seattle Children's Res. Inst., Univ. of Washington, Univ.of California, Berkeley and NCI, NIH. **(113.07)**

5:00 Defective humoral immunity disrupts bile acid homeostasis which promotes inflammatory disease of the small bowel. **J.L. Kubinak, A.D. Mohammed, Z. Mohammed, M. Roland, I. Chatzistamou, A. Jolly, L. Schoettmer, M. Arroyo, K. Kakar, Y. Tian, A. Patterson, M. Nagarkatti and P. Nagarkatti.** Univ. of South Carolina Sch. of Med., Univ. of South Carolina and Penn State. **(113.17)**

5:15 Analysis of the mechanisms that maintain intestinal regulatory T cells. **E. Cruz Morales, A.P. Hart and T.M. Laufer.** Univ. of Pennsylvania Perelman Sch. of Med. and Corporal Michael J. Crescenz VA Med. Ctr. **(113.22)**

5:30 Functional tuning of commensal-specific lymphocytes by nociceptive sensory neurons. **W. Kulalert, A. Wells, M. Enamorado, V. Link, J. Kabat, O. Kamenyeva and Y. Belkaid.** NIH. **(113.21)**

187. CD+ T CELLS IN CANCER

Block Symposium

MON. 3:45 PM—OREGON BALLROOM 201

CHAIR: *D. MASOPUST*

3:45 Hallmark features of T cell dysfunction are established within hours after tumor antigen encounter. **M.W. Rudloff, N. Favret, P. Zumbo, F. Dündar, D. Betel and M. Philip.** Vanderbilt Univ. Med. Ctr. and Weill Cornell Med. Col. **(121.08)**

4:00 CD8 T cell activation in cancer is comprised of two distinct phases. **N. Prokhnevska, M.A. Cardenas, R. Valanparambil, E. Sobierajska, C. Jansen, V. Master, M. Sanda and H. Kissick.** Emory Univ. **(121.09)**

4:15 Rebalancing TGFβ1/BMP signaling epigenetically reprograms fully exhausted human CD8 T cells into a functional state. **H.E. Ghoneim, A.A. Saadey, A. Yousif, N. Osborne, Y-L Chen, B. Laster, A. Zayed and P. Bauman.** The Ohio State Univ. Col. of Med., The Ohio State Univ. Comprehensive Cancer Ctr. and The Ohio State Univ. **(121.10)**

4:30 PIK3IP1/TrIP immune regulation on $CD8^+$ T cells restricts anti-tumor immunity. **B.M. Murter, H. Banerjee, A. Szymczak-Workman and L.P. Kane.** Univ. of Pittsburgh Sch. of Med. and Univ. of Pittsburgh. **(121.11)**

4:45 The role of the thrombin/PAR axis in modulating CD8+ T cell anti-tumor immunity. **R. Cantrell, L. Rosenfeldt, B.K. Sharma, B. Gourley, A. Revenko, B. Monia and J. Palumbo.** Univ. of Cincinnati Col. of Med., Cincinnati, Cincinnati Children's Hosp. and Med. Ctr. and Ionis Pharmaceuticals. **(121.12)**

5:00 Sushi domain containing 2 suppresses $CD8^+$ T cell antitumor immunity by targeting IL-2 receptor signaling. **H. Wen and B. Zhao.** The Ohio State Univ. **(121.13)**

5:15 CD8 T cells licensed with immune checkpoint blockade kill murine tumors lacking MHC-I. **E.C. Lerner, W. Tomaszewski, V. D'Anniballe, J. Perera, X. Cui, D.S. Wilkinson, J. Waibl-Polania, M. Gunn, P.E. Fecci and K. Woroniecka.** Duke Univ. Sch. of Med., Duke Univ. and Duke Univ. Med. Ctr. **(121.14)**

5:30 Functional virus-specific memory CD8+ T cells survey glioblastoma. **P. Rosato, J. Ning, N.V. Gavil, S. Wu, S. Wijeyesinghe, E. Weyu, J. Ma, M. Li, F-N. Grigore, S. Dhawan, A.G. Skorput, S.C. Musial, S.A. Kleist, J.F. Isaacs, C.C. Chen and D. Masopust.** Geisel Sch. of Med. at Dartmouth and Univ. of Minnesota. **(121.15)**

188. AAI-STEINMAN AWARD FOR HUMAN IMMUNOLOGY RESEARCH PRESENTATION AND LECTURE

Award Lecture

MON. 4:30 PM—PORTLAND BALLROOM 252–255

CHAIR: *G.A. KORETZKY*

The-AAI-Steinman Award for Human Immunology Research recognizes an individual who has made significant contributions to the understanding of immune processes underlying human disease pathogenesis, prevention, or therapy.

Recipient: **J.A. Bluestone**, Univ. of California, San Francisco, and Sonoma Biotherapeutics

4:30 **Dr. Gary A. Koretzky** will introduce the awardee and present the award prior to the start of the lecture.

4:35 Immune tolerance: the long road to finding the holy grail. **J.A. Bluestone.** Univ. of California, San Francisco, and Sonoma Biotherapeutics.

189. DISTINGUISHED LECTURE YASMINE BELKAID

Distinguished Lecture

MON. 6:00 PM—PORTLAND BALLROOM 252–255

CHAIR: *C.R. NAGLER*

6:00 Control of tissue immunity and repair by the microbiota. **Y. Belkaid.** NIAID, NIH.

190. IMMUNOLOGY2022™ GALA

Social Event

Generously sponsored by BioLegend and AAI

MON. 7:00 PM—PORTLAND ART MUSEUM

The IMMUNOLOGY2022™ Gala will be held at the Portland Art Museum. The Portland Art Museum features outstanding exhibits ranging from modern trends to historic art periods. Take part in interactive exhibits, view films, or gaze at classic pieces. The museum shop will also be open. Uniquely, the Portland Art Museum recognizes and honors the Indigenous communities–past, present, and future—of the region on whose ancestral lands it stands. Attendees will have access to the full museum. Food and drinks will be available, and as is the Gala's tradition, you will have the opportunity to express yourself on the Grand Ballroom dance floor!

Tickets to this can't miss event are still available for purchase. Please go to the Registration Desk to purchase a ticket.

MON

TUESDAY MORNING

MAY 10

191. MAJOR SYMPOSIUM G: IMMUNOLOGY OF COVID-19: MECHANISMS OF PATHOLOGY AND PROTECTION

Major Symposium

TUE. 8:00 AM—PORTLAND BALLROOM 252–253

CHAIRS: *A.H. ELLEBEDY, D. BHATTACHARYA*

8:00 Germinal center B cell response to SARS-CoV-2. **A.H. Ellebedy.** Washington Univ. Sch. of Med. in St. Louis.

8:35 Interferons: friends or foes in COVID-19?. **I. Zanoni.** Harvard Univ.

9:10 Immunological mechanisms of messenger RNA vaccines. **M. Locci.** Univ. of Pennsylvania Perelman Sch. of Med.

9:45 Deconstructing the form and function of T cell responses to SARS-CoV-2. **P.G. Thomas.** St. Jude Children's Res. Hosp.

10:20 Structurally and functionally distinct antibody responses predict COVID-19 disease trajectory and mRNA vaccine response. **T.T. Wang.** Stanford Univ.

10:55 Antibody recall responses to heterologous SARS-CoV-2 infections. **D. Bhattacharya.** Univ. of Arizona.

192. MAJOR SYMPOSIUM H: NEW INSIGHTS INTO AUTOIMMUNITY AND IMMUNE TOLERANCE

Major Symposium

TUE. 8:00 AM—PORTLAND BALLROOM 254–255

CHAIRS: *H. CHI, V.K. KUCHROO*

8:00 IL-17 from translation to function. **M.J. McGeachy.** Univ. of Pittsburgh.

8:35 Role of gut-resident stem-like Th17 cells in inducing tissue inflammation and autoimmunity. **V.K. Kuchroo.** Brigham and Women's Hosp.

9:10 Human Treg response to inflammation. **Q. Tang.** Univ. of California, San Francisco.

9:45 Nutrients: signal 4 for licensing T cell immunity and tolerance. **H. Chi.** St. Jude Children's Res. Hosp.

10:20 Transcriptional regulation of $CD4^+$ T cells that mediate neuroinflammation. **V. Lazarevic.** NCI, NIH.

10:55 Lessons from a humanized mouse model of COVID-19. **R.A. Flavell.** Yale Univ. Sch. of Med.

193. ANTIGEN PROCESSING AND PRESENTATION II

Block Symposium

TUE. 8:00 AM—ROOM A107–109

CHAIRS: *L. DENZIN, P. ROCHE*

8:00 Citrullination modulates MHC class II antigen processing and presentation by revealing cryptic epitopes. **A.M. Curran, Y. Jang, M.A. Thomas, A.A. Girgis, J.D. Crawford, R.N. O'Meally, R.N. Cole, C.H. Na and E. Darrah.** Johns Hopkins Univ. Sch. of Med. and Johns Hopkins Univ. **(102.04)**

8:15 Sequence similarity between SARS-CoV-2 Nucleocapsid and CNS proteins provides mechanistic insight into viral neuropathogenesis following infection. **C. Lake and J. Breen.** NIAID, NIH. **(102.11)**

8:30 Repertoire size and predictability of influenza A virus matrix protein ($M1_{58-66}$)-specific $CD8^+$ TCR. **J. Li, J. Cifello, J. Lu and N-P. Weng.** Natl. Inst. on Aging. **(102.12)**

8:45 Reverse immunology: an approach to identify Mtb antigens recognized by T cells. **S. Jaiswal, T. Williams, H.P. Gideon, T.K. Hughes, A.A. Tu, S.K. Nyquist, A.N. Shalek, S.M. Fortune, J.L. Flynn and S. Behar.** Univ. of Massachusetts Chan Med. Sch., Univ. of Pittsburgh Sch. of Med., Harvard Med. Sch., MIT and Ragon Inst. of MGH, MIT, and Harvard. **(102.18)**

9:00 H-2Kb and H-2Db class I molecules on cerebral endothelium differentially modulate CD8 T cells dynamics and pathological outcomes in experimental cerebral malaria. **C.E. Fain, J. Zheng, F. Jin, K. Ayasoufi, M. Chen, A. Dropik, R. Khadka, Z.P. Tritz, M. Hansen, L. Wu and A.J. Johnson.** Mayo Clin. and Mayo Clin. **(102.24)**

9:15 Dynamic features of tapasin as revealed by structures of two tapasin/Fab complexes. **D.K. Taylor, J. Jiang, L.F. Boyd, P. Cresswell, M.G. Mage, D.H. Margulies and K. Natarajan.** NIAID, NIH and Yale Sch. of Med. **(102.20)**

9:30 Autophagy in antigen presenting cells enhances the adjuvant effect by promoting antigen processing. **K. Hashimoto, T. Ootomo, T. Sonobe, N. Kurosaki, A. Hasegawa and T. Nakayama.** Chiba Inst. of Technol., Japan, Yamaguchi Univ., Grad. Sch. of Med., Japan, Yamguchi Univ., Japan and Chiba Univ. Grad. Sch. of Med., Japan. **(102.21)**

9:45 T cell recognition of disulfide modified antigens. **S. Dai, W. Li and Y. Wang.** Univ. of Colorado Anschutz Med. Campus. **(102.25)**

194. CYTOKINE & CHEMOKINE CONTROL OF CELLULAR IMMUNITY

Block Symposium

TUE. 8:00 AM—ROOM C123–124

CHAIRS: *T. MALEK, R. WELNER*

8:00 Chemokines and anionic phospholipids: new binding partners for microbial killing and apoptotic cell clearance. **S. Pontejo and P. Murphy.** NIAID, NIH. **(46.05)**

8:15 Pancreatic Interleukin-22 receptor signaling is critical in maintaining beta-cell insulin production and is hepatoprotective. **H. Sajiir, K.Y. Wong, A. Mueller, S. Keshvari, R. Wang, P. Wiid, G. Macdonald, J. Prins, M.A. McGuckin and S.Z. Hasnain.** Mater Res. Inst., The Univ. of Queensland, Australia, Princess Alexandra Hosp., Australia and Fac. of Med., Dentistry and Hlth. Sci., The Univ. of Melbourne, Australia. **(46.08)**

8:30 WITHDRAWN

8:45 Perturbations of marrow stromal cell function during acute inflammation. **V. Matkins, V. Camacho, A. Hoang, S. Patel and R.S. Welner.** Univ. of Alabama at Birmingham, Boston Children's Hosp. and Harvard Med. Sch. and Univ. of Colorado Anschutz Med. Campus. **(46.11)**

9:00 Collaboration of therapeutic, systemic IL12p40 with locally released IL12p35 focuses immunity to the tumor microenvironment. **E.M. Hill, A.N. Gerber and N.J. Singh.** Univ. of Maryland Sch. of Med. **(46.12)**

9:15 Characterization of a new cytokine complex from the IL-6/IL-12 family. **M. Rousseau, V. Laplante, U. Nadeau, S. Pasquin, E. Fajardo, S. Lesage and J-F Gauchat.** Université de Montréal, Montreal, Canada. **(46.13)**

9:30 Loss of ADAM17 from macrophages induces $ST2^+$ T regulatory cells that limit obesity-induced metabolic inflammation in mice through changes in both membrane and soluble TNF. **R. Martin, J.C. Lownik, J. Farrar, G. Way, M. Zellner, B. Ni, F. Celi and D.H. Conrad.** Virginia Commonwealth Univ. Sch. of Med. and Cedars Sinai Med. Ctr. **(46.14)**

9:45 Interleukin-2 signaling engages de novo cholesterol biosynthesis in regulatory T cells. **A. Crouch and T.R. Malek.** Univ. of Miami Leonard M. Miller Sch. of Med. **(46.15)**

195. IMMUNOREGULATION—INNATE IMMUNE RESPONSES

Block Symposium

TUE. 8:00 AM—ROOM B110–112

CHAIRS: *M. NAIR, E. HOWARD*

8:00 UTX is an epigenetic regulator of natural killer cell development and anti-viral effector function. **M.I. Cheng, L. Riggan, F. Ma, S. Chin, R. Tafti, M. Pellegrini, T.E. O'Sullivan and M.A. Su.** Univ. of California, Los Angeles. **(165.07)**

8:17 Glutamine addiction in NKT cells is regulated by AMPK-mTORC1 axis. **A. Kumar, E.L. Yarosz, A. Andren, L. Zhang, C. Lyssiotis and C-H Chang.** Univ. of Michigan. **(165.08)**

8:34 IRF5 regulation of CD4+ T cell metabolism controls CD40L expression. **Z. Brune, B. Matta and B. Barnes.** Feinstein Inst. for Med. Res., Northwell Hlth. **(165.02)**

8:51 Setting the pace: CD4 T cell-intrinsic Arginase 1 orchestrates Th1 induction and contraction. **E.E. West, S. Freeley, M.M. Kaminski, N.S. Merle, S. Veenbergen, D-Y. Lee, L. St. John-Williams, J.W. Thompson, D.R. Green, S. Scholl-Buergi, D. Karall, M. Huemer and C. Kemper.** NHLBI, NIH, Kings Col. London, United Kingdom, St. Jude Children's Res. Hosp., Erasmus Univ. Med. Ctr., Netherlands, Duke Univ., Med. Univ. of Innsbruck, Austria, Univ. Children's Hosp. Zurich. Switzerland and Univ. of Lubeck, Germany. **(165.16)**

9:08 Human KIR^+CD8^+ T cells target pathogenic T cells in celiac disease and are active in autoimmune diseases and COVID-19. **J. Li, M. Zaslavsky, Y. Su, J. Guo, M. Sikora, V. van Unen, A. Christophersen, S-H. Chiou, L. Chen, J. Li, X. Ji, J. Wilhelmy, A. McSween, B. Palanski, V. Mallajosyula, N. Bracey, G. Dhondalay, K. Bhamidipati, J. Pai, L. Kipp, J. Dunn, S. Hauser, J. Oksenberg, A. Satpathy, W.H. Robinson, L. Steinmetz, C. Khosla, P. Utz, L. Sollid, Y-H. Chien, J. Heath, N. Fernandez-Becker, K. Nadeau, N. Saligrama and M. Davis.** Stanford Univ. Sch. of Med., Stanford Univ., Inst. for Systems Biol., Seattle, Univ. of Oslo, Norway, Rutgers—The State Univ. of New Jersey, Univ. of California, San Francisco, Univ. of Oslo and Washington Univ. in St. Louis. **(165.17)**

9:25 Choline metabolism underpins macrophage IL-4 polarization in vitro and in vivo. **P. Ghorbani, S.Y. Kim, I. Alecu, D. Woo, M. Ilijevska, T.K. Smith, J.R. Nunes, L. Minarrieta, J. St-Pierre, S.A. Bennett, M.G. Nair and M.D. Fullerton.** Univ. of Ottawa, Canada and Univ. of California, Riverside. **(165.04)**

9:42 Enhancing lysosomal lipid metabolism prevents the loss of Kupffer cells in non-alcoholic steatohepatitis and attenuates liver pathology. **M.M. Chan, S. Daemen, L. He, A. Gainullina, M.N. Artyomov, B. Razani and J.D. Schilling.** Washington Univ. in St Louis Sch. of Med. **(165.03)**

196. B CELL DIFFERENTIATION, REGULATION, AND FUNCTION

Block Symposium

TUE. 8:00 AM—ROOM B117–119

CHAIRS: *T. FORSTHUBER, G.L. BUMGARDNER*

8:00 IL-4 signaling regulates the fate of B cell differentiation and limits BCR repertoire. **J.M. Oviedo, L.C. Gibbs, K. James and K.C. Fairfax.** Univ. of Utah. **(168.05)**

8:24 Optimal development and effector function of antibody-suppressor $CXCR5^+CD8^+$ T cells requires host IFN-γ and $CD4^+$ T cells. **J.M. Zimmerer, S. Chaudhari, M. Hart, J.L. Han, K. Koneru and G.L. Bumgardner.** Wexner Med. Ctr., The Ohio State Univ. **(168.04)**

8:48 Let's talk about sex, baby: sex influences age-related changes in natural antibodies and natural antibody producing B-1a cells. **S.E. Webster, B. Ryali, N.E. Tsuji, M.J. Clemente and N.E. Holodick.** Western Michigan Univ. Homer Stryker MD Sch. of Med. and Rush Univ. Med. Ctr. **(168.06)**

9:12 The role of ERK2 in regulating germinal center B cell fate decisions. **A.J. Negron, N.S. Abdul-Baki, R. Perez, C. Perez, B.L. Bartsch and T.G. Forsthuber.** Univ. of Texas, San Antonio. **(168.10)**

9:36 Unique and shared molecular features of human B and T lymphocyte memory differentiation. **A.K. Singh, R. Roy, M. Kaileh, D. Sarantopoulou, D. Hernandez, S. Arepalli, A. Bektas, J. Kim, J. McKelevy, L. Zukely, C. Dunn, C. Nguyen, T. Wallace, W. Wood, Y. Piao, S. De, J.M. Sen, N-p. Weng, L. Ferrucci and R. Sen.** NIA, NIH. **(168.11)**

10:00 Splenic T-bet^+ B cells exhibit stem-like features and constitutively generate antibody-secreting cells. **J.J. Knox, R.L. Rosenthal, J.L. Johnson, J. Zhu and M.P. Cancro.** Univ. of Pennsylvania Perelman Sch. of Med. and NIAID, NIH. **(168.12)**

197. NON-IMMUNE THERAPIES IN CANCER

Block Symposium

TUE. 8:00 AM—ROOM B113–116

CHAIR: *M. GOUGH*

8:00 WITHDRAWN

8:15 Gene therapy increases MHC class-I and T cell Infiltration to promote anti-tumor immune response in 4T1 breast cancer model. **G. Shi and R. Heller.** Univ. of South Florida. **(118.02)**

8:30 Fluorescence tagging to monitor CD8 T cell recirculation from the tumor to the tumor-draining lymph node: the impact of focal radiation therapy on recirculation. **M.J. Gough, T. Blair, A.K. Dowdell, S. Bambina, G. Kramer, B.D. Piening and M.R. Crittenden.** Providence Portland Med. Ctr. **(118.04)**

8:45 Induction of inflammatory macrophages in solid tumors by all-trans retinoic acid augments radiation efficacy. **H.L. Liang, E. Rao, Y. Hou, J. Wang, X. Huang, X. Yu, L. Wang, C. He, E. Vokes and R. Weichselbaum.** Univ. of Chicago, Xuzhou Med. Univ., China and Xi'an Jiaotong Univ., China. **(118.06)**

9:00 IFNγ from IL-12 virotherapy stably controls tumors independent of T cell cytotoxicity and IFNγ sensing by tumor cells. **M. Walsh, L. Ali, C. Stump, P. Lenehan, M. Dougan, D. Knipe and S. Dougan.** Harvard Med. Sch., Dana Farber Cancer Inst. and Massachusetts Gen. Hosp. **(118.07)**

9:15 Preoperative exercise therapy attenuates liver metastases following surgical stress by inducing Kupffer cells-mediated anti-tumor immunity. **H. Zhang, X. Cheng, M. Deng, A. Tsung and H. Huang.** Wexner Med. Ctr., The Ohio State Univ. **(118.09)**

9:30 IFNγ mediated PD-L1 expression mitigate the immunomodulatory effect of irreversible electroporation on pancreatic cancer. **K.M. Imran, R. Brock, N. Alinezhadbalalami, K.N. Aycock, H.A. Morrison, R.V. Davalos and I.C. Allen.** Translational Biology, Med. and Health, Virginia Tech, Baylor Col. of Med. and Virginia Tech. **(118.10)**

9:45 WITHDRAWN

198. ADAPTIVE IMMUNITY IN INFLAMMATION

Block Symposium

TUE. 10:15 AM—ROOM C123–124

CHAIRS: *A. SATTERTHWAITE, J. GRAY*

10:15 Dysfunction in B cell tolerance and activation in obesity. **C. Vanz, T. Hägglöf, E.A. Dudley and E. Leadbetter.** Univ. of Texas Hlth. at San Antonio. **(160.01)**

10:30 Leveraging genetic correlation across immune-mediated disease to gain insights into underpowered studies of rare conditions. **J. Molineros, K. Elliott, D.T. Truong, H. Fang, A. Hart, S. Li, D. Waterworth, J.C. Knight and M.H. Black.** Janssen Res. & Develop and Univ. of Oxford, United Kingdom. **(160.02)**

10:45 Pathogenic tissue-resident memory T cells in exocrine gland chronic graft-versus-host disease. **A.C. Costa da Silva, R. Sharma, C.H. Kim, A. Javaid, D. Martin and J.W. Mays.** NIDR, NIH. **(160.03)**

11:00 WITHDRAWN

11:15 Evidence for metabolic disturbances in the pathogenesis of immune-mediated disease in SAMP1/YitFcs mice. **L. Campillo-Gimenez, I. Drygiannakis, A. Sayi Yazgan, J. Rivera-Nieves, D. Vera and P.B. Ernst.** Univ. of California, San Diego. **(160.05)**

11:30 IgA deficiency destabilizes immunological homeostasis towards intestinal microbiota and increases the risk of systemic immune dysregulation. **M.A. Silverman, P.E. Conrey, L. Denu, K.C. O'Boyle, C. Tanes, J. Green, K. Bittinger, D. Allman, J-B. Lubin, T. Duranova, D. Oldridge and S. Henrickson.** Univ. of Pennsylvania Perelman Sch. of Med. and Children's Hosp. of Philadelphia. **(160.06)**

11:45 Targeting the NLRP3 inflammasome in rare hereditary blood disorder Fanconi anemia. **S. Beesetti, R. Sumpter and D.R. Green.** St. Jude Childrens Res. Hosp. **(160.08)**

12:00 From genetic variants to diseases: the role of *LACC1* in T cells. **Y. Li, V. Chandra, P. Vijayanand and M. Kronenberg.** Univ. of California, San Diego and La Jolla Inst. for Immunology. **(160.07)**

199. CELLS OF THE INNATE IMMUNE SYSTEM

Block Symposium

TUE. 10:15 AM—ROOM A107–109

CHAIRS: *M. ATIANAND, D. KREMENTSOV*

10:15 WITHDRAWN

10:30 BCG vaccination impacts the epigenetic landscape of progenitor cells in human bone marrow. **S.J. Sun, A. Dumaine, L.C.J. de Bree, M.G. Netea and L.B. Barreiro.** Univ. of Chicago, Statens Serum Inst., Netherlands, Statens Serum Inst., Denmark, Univ. of Bonn, Netherlands and Univ. of Bonn, Germany. **(164.05)**

10:45 LncRNA *U90926* is induced in activated macrophages, encodes a novel secreted protein, and is protective in endotoxic shock. **D.N. Krementsov, B. Sabikunnahar, S. Caldwell and S. Varnum.** Univ. of Vermont. **(164.18)**

11:00 The long noncoding RNA LUCAT1 promotes immune gene expression in human macrophages. **K.E. Vergara, S. Lal, R. Cattley, W.F. Hawse and M. Atianand.** Univ. of Pittsburgh Sch. of Med. **(164.08)**

11:15 CD3ζ adaptor structure determines functional differences between human and mouse CD16 Fc-gamma receptor signaling in natural killer cells. **O.A. Aguilar, L-K. Fong, K. Ishiyama, W.F. DeGrado and L.L. Lanier.** Univ. of California, San Francisco. **(164.04)**

11:30 TGF-β and CIS inhibition synergistically enhance natural killer cell-based immunity. **F. Souza-Fonseca-Guimaraes.** The Univ. of Queensland Diamantina Inst. **(164.01)**

11:45 dNTP catabolism is a macrophage-intrinsic gatekeeper preventing NLRP3 inflammasome hyperactivation. **Z. Zhong, H.L. Caslin, S. Huo, M. Cottam, D. Liu, N. Winn, X. Wang, A. Hasty and S. Liang.** The Univ. of Texas Southwestern Med. Ctr. and Vanderbilt Univ. **(164.21)**

12:00 Do adipose macrophages remember obesity? Innate immune memory in weight cycling. **H. Caslin.** Vanderbilt Univ.

200. MOLECULAR MECHANISMS OF T CELL SIGNALING

Block Symposium

TUE. 10:15 AM—ROOM A105–106

CHAIRS: *F. GALLY, K. CHOUDHURI*

10:15 TCR-enriched microvesicles provide antigen-specific help for class-switched antibody production. **F. Li and K. Choudhuri.** Univ. of Michigan Med. Sch. **(166.20)**

10:30 The ZFP36 family of RNA-binding proteins regulate homeostatic and autoreactive T cell responses. **M.E. Cook, T.R. Bradstreet, A.M. Webber, J. Kim, A. Santeford, E.A. Schwarzkopf, R.S. Apte, P.J. Blackshear and B.T. Edelson.** Washington Univ. in St. Louis Sch. of Med. and NIEHS. **(166.02)**

10:45 The Ikaros zinc finger transcription factor Eos as a candidate regulator of T_H2 differentiation and function. **J. Tuazon, B. Sreekumar, K. Read, M. Yaeger, S. Varikuti, K.M. Gowdy and K.J. Oestreich.** The Ohio State Univ. Col. of Med. and Gladstone Inst. **(166.21)**

11:00 QRICH1 is a CARD11 interactor that negatively regulates T cell activation. **N.M. Carter and J.L. Pomerantz.** Johns Hopkins Univ. Sch. of Med. **(166.19)**

11:15 Cell-specific roles for miR-155 during neuroinflammation. **J.W. Thompson, T. Huffaker, R. Hu and R.M. O'Connell.** Univ. of Utah. **(166.10)**

11:30 The phosphatidylinositol-transfer protein Nir3 modulates T cell development and function. **W. Lu, Y.A. Helou, B.B. Au-Yeung, K. Shrinivas, J. Liou and A. Weiss.** Univ. of California, San Francisco, Emory Univ., Harvard Univ. and Univ. of Texas Southwestern Med. Ctr. **(166.12)**

11:45 Mediator complex maintains peripheral T cell tolerance through enforcement of the quiescence module. **S.M. Chaudhuri, Y. Zhang, S.E. Weinberg and D. Fang.** Feinberg Sch. of Med., Northwestern Univ. and Northwestern Univ. **(166.13)**

12:00 Absence of the fatty acid binding protein5 inhibits the establishment of resident memory T cells after a secondary *Listeria monocytogenes* infection. **K. Aviszus, A. Giron, M. El Kharbili DiLisio, X. Zhao and F. Gally.** Natl. Jewish Health, Colorado. **(166.18)**

201. LYMPHOCYTE HOMEOSTASIS AND REGULATION

Block Symposium

TUE. 10:15 AM—ROOM B110–112

CHAIRS: *M. GUBBELS BUPP, N. ZHANG*

10:15 Profound abnormalities in thymic epithelial cells in *Rag1* hypomorphic mice: implications for immune reconstitution after stem cell transplantation. **F. Pala, C. Oguz, C. Corsino, A. Martins, J. Lack, J. Tsang, L. Notarangelo and M. Bosticardo.** NIAID, NIH and NIAID Collaborative Bioinformatics Resource (NCBR). **(167.02)**

10:30 T cell fate and central tolerance: using iTregs to elucidate the persistence of thymic development on a T cell's behavior. **J. White, K. Ishihara and S. Sakaguchi.** Osaka Univ., WPI Immunology Frontier Res. Ctr., Japan. **(167.06)**

10:45 WITHDRAWN

11:00 Strong tonic TCR signaling is associated with negative regulation of naive CD4+ T cells. **B.B. Au-Yeung, J. Eggert, C. Scharer and W. Zinzow-Kramer.** Emory Univ. Sch. of Med. **(167.12)**

11:15 ITK tunes the Th17/Treg switch response by controlling calcium dependent signaling. **O. Anannya and A. August.** Cornell Univ. **(167.04)**

11:30 The effect of malnutrition on T-cell circadian rhythms. **T.R. Foster, K.A. Dadzie, O. Adams and M.R. Gubbels-Bupp.** Randolph-Macon Col. **(167.07)**

11:45 Spatially restricted T-cell activation in inflamed tissues. **N. Bala, H. Prizant, A. Hughson, A. McGurk and D.J. Fowell.** Cornell Univ. Col. of Vet. Med. and Univ. of Rochester Med. Ctr. **(167.09)**

12:00 Age-dependent changes in the regulatory program of $CD8^+$ regulatory T cells ($CD8^+$ Tregs). **S. Srinivasan, M. Chaoyu, S. Mishra, L. Wang, K. Fan and N. Zhang.** Univ. of Texas Hlth. Sci. Ctr., San Antonio, Dana Farber Cancer Inst., Central South Univ., Changsha Hunan, China and Univ. of Texas Hlth. Sci. Ctr. San Antonio. **(167.03)**

202. IMMUNITY TO MICROBIAL, PARASITIC, AND FUNGAL INFECTIONS I

Block Symposium

TUE. 10:15 AM—ROOM B117–119

CHAIRS: *O. MORENIKEJI, D. MONACK*

10:15 Hepcidin deficiency increases susceptibility to disseminating candidiasis and renal failure. **Y. Scindia, S. Kasem, S. Mansouri, D. Desai, A. Agarwal, N. Khodayari, M. Lionakis and B. Mehrad.** Univ. of Florida and NIH. **(58.01)**

10:30 Sterile liver inflammation and T cell-intrinsic T-bet expression drive the formation of tissue resident memory CD4 T cells that protect against systemic *Salmonella* infection. **C. Depew and S.J. McSorley.** Univ. of California, Davis. **(170.06)**

10:45 Basophil depletion alters host immunity, intestinal permeability, and mammalian host-to-mosquito transmission in malaria. **E.L. Donnelly, N. Céspedes, J.A. Van de Water and S.L. Luckhart.** Univ. of Idaho and Univ. of California, Davis. **(170.08)**

11:00 The tuberculosis resistance protein TOLLIP prevents disease progression by regulating the integrated stress response in alveolar macrophages. **J.A. Shah, S. Venkatasubramanian, C. Plumlee, S. Cohen, K. Dill-McFarland, S. Hinderstein, M. Altman and K.B. Urdahl.** Univ. of Washington and Seattle Children's Res. Inst. **(58.04)**

11:15 Selective reprogramming of peritoneal macrophages by IFN-γ during acute *Toxoplasma gondii* infection. **A.T. Martin and F. Yarovinsky.** Univ. of Rochester Med. Ctr. **(170.17)**

11:30 Androgen exposure alters the neutrophil response to pyelonephritis. **T. Hreha, C.A. Collins and D.A. Hunstad.** Washington Univ. in St. Louis Sch. of Med. **(58.05)**

11:45 TNF-α signaling is required for fungal clearance during brain infection with *Cryptococcus neoformans* via promoting the recruitment of $CD4^+$ T cells and inflammatory monocytes. **Y. Chen, A. Strickland and M. Shi.** Univ. of Maryland, Col. Park. **(58.07)**

12:00 Malaria antigens are presented to CD8 T cells via the non-classical HLA-E. **B.K. Wilder, L. de Lacerda, C.R.R. Barbosa, M. Aleshnick, T. Martinson, D. Morrow, Z. Zhao, G. Gaiha and C. Junqueira.** Oregon Hlth. & Sci. Univ., Insituto Rene Rachou, Brazil, Boston Children's Hosp., Harvard Med. Sch., Harvard Med. Sch. and Ragon Inst. of MGH, MIT, and Harvard. **(170.27)**

203. TUMOR MICROENVIRONMENT II

Block Symposium

TUE. 10:15 AM—ROOM B113–116

CHAIRS: *R. BUCKANOVICH, F. OSORIO*

10:15 Diminished noncanonical NF-κB signaling induces colitis-associated colorectal cancer susceptibility upon de-differentiation of epithelial cells. **H. Morrison, A. Rowe, K. Eden, K. Baumgarner, S.L. Brown, E.K. Holl and I.C. Allen.** Virginia-Maryland Col. of Vet. Med., Edward Via Col. of Osteopathic Med. and Duke Univ. Med. Ctr. **(178.01)**

10:30 Egfl6 promotes ovarian cancer progression by inducing the immunosuppressive functions of tumor-infiltrating myeloid cells. **S. Cascio, S. Sinno, S. Bai, C. Coronnello, A. Vlad and R.J. Buckanovich.** Univ. of Pittsburgh Sch. of Med., Magee-Womens Res. Inst. and Fondazione RiMED, Italy. **(178.02)**

10:45 Dendritic cells to prevent cancer: immune responses against neoantigens after dendritic cell vaccination of Lynch syndrome patients. **A. Abidi, H. Westdorp, M.A. Gorris, B. Scheijen, A-L. Boller, C.B. Irusquieta, N. Hoogerbrugge, G. Schreibelt and J.I. de Vries.** Radboudumc, Netherlands. **(178.03)**

11:00 Ovarian cancer cell glucocorticoid receptor activity modulates cytokine secretion promoting infiltration of immunosuppressive cells into the tumor microenvironment. **M. Taya, J. Gonzalez, L. Bennett and S.D. Conzen.** Univ. of Texas Southwestern Med. Ctr. **(178.10)**

11:15 Malignant cell expression of the aryl hydrocarbon receptor induces PD-L1 and immunosuppression in models of oral and lung cancer. **M. Snyder, J. Kenison, B. Lara, Z. Wang, T. Pichardo, K. Yang, S. Mazzilli and D. Sherr.** Boston Univ. Sch. of Med., Brigham and Women's Hosp. and Harvard Med. Sch. and Boston Univ. Sch. of Public Health. **(178.11)**

11:30 Pro-tumoral role of Granzyme B to aid in invasion and metastasis. **E.J. Tibbs and X. Cao.** Univ. of Maryland Sch. of Med. **(178.13)**

11:45 Glycoprotein-NMB is pro-tumorigenic in lymphangioleiomyomatosis. **E. Gibbons, M. Taya and S. Hammes.** Univ. of Rochester Med. Ctr. **(178.16)**

12:00 Loss of p53 sensitizes tumor cells to immune checkpoint blockade therapy via upregulation of IL-33. **D.S. Gao, Y. Li, J. Shoush, R. Sun and B. Lu.** Univ. of Pittsburgh Sch. of Med. **(178.17)**

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Invited and Guest Symposia Speakers

Basu, S., Adaptimmune; Cabaletta Bio – 1 ; 1, 4 (78)
Berg, L.J., ImmVue Therapeutics; W.W. Norton Publishing; Nurix: Aclaris Therapeutics – 6, 7; 2; 5; 5 (144)
Bhattacharya, D., Gilead Sciences; Sana Biotechnology; GlaxoSmithKline; Clade Therapeutics – 2; 2; 9; 1, 5, 6 (19)
Bluestone, J., Sonoma Biotherapeutics; Gilead Sciences; Provention – 1, 2, 4, 6, 7; 1, 5, 7; 1, 5, 7 (188)
Boismenu, R., Amplitude Ventures ; Mission BioCapital ; EUGIT Therapeutics – 5; 5; 5, 9 (75)
Bradshaw, E., IMAD Therapeutics – 6 (79)
Bruno, T.C., Walking Fish Therapeutics; BeSpoke Therapeutics; Kalivir – 5, 9; 9; 9 (139)
Butts, C.L., Biogen, Inc. – 1, 4 (153)
Carpiano. R.M., Novo Nordisk Foundation – 3 (87)
Carr, W., W. W. Norton, Inc. – 5 (33)
Coll, R., BioAge Labs; IMMvention Therapeutix; Inflazome (Roche); MonteRosa Therapeutics – 3, 5; 5; 10; 5 (129)
Colonna, M., Pfizer, NGM-Biopharmaceutical; VigilNeuro, Aclairs, Ono, Cell Signaling Technologies – 3; 1, 3, 9; 1, 3, 9; 3; 3; 5 (15)
Crooks, G.M., Pluto Immunotherapeutics – 3, 5, 7 (15)
Delgoffe, G.M., BlueSphere Bio; Century Therapeutics; Nanna Therapeutics; Novasenta; Remplir Bio – 9; 9; 9; 1, 5, 7; 1, 5, 7 (138)
Dougan, S., BMS; Eli Lilly; Kojin Therapeutics; Novartis – 3; 3; 1, 9, 10; 3 (78)
Dunn, S., FSD Pharmaceuticals – 1, 5, 9 (76)
Ellebedy, A., AbbVie; Moderna ; InBios Int'l, Inc.; Fimbrion Therapeutics; Mubadala Investment Co.; Goldman Sachs – 2, 3; 3; 5; 5; 5; 5; 5 (191)
Ferreira, V., Apellis Pharmaceuticals – 3, 5 (89)
Fitzgerald, K., Moderna; Janssen Pharmaceuticals; Gen. Bio.; Nodthera Inc.; Elicio Therapeutics ; Jnana Therapeutics ; OMass ; Danger Bio, LLC – 9; 9; 9; 9; 5; 5; 5; 6, 7 (137)
Gaffen, S.L., Aclaris Therapeutics; Eli Lilly; Int'l Cytokine and Interferon Soc.; Regeneron – 5; 5; 7; 10 (1)
Gros, A., Achilles Therapeutics; BioNTech; SingulaBio, Pact Pharma; InstilBio; Genentech; Tailored Therapeutics; Roche; Merck KGaA, Novartis; Intime Bioscience, Inc; Intellia Therapeutics; Cellular Biomedicine Group: Geneius Biotechnology Group – 9; 9; 9; 5; 5; 5; 2, 5; 3; 3; 3; 2; 2; 2; 2 (37)

Hand, T., Alexandra Walsh LLC – 5 (147)
Huh, J., CJ Bioscience; Interon Laboratories – 5; 1 (76)
Iwasaki, A.; Yale University; HHMI; RIGImmunem; Xanadu; 4Bio; Adaptive Biotechnologies; Blue Willow Biologics; Boehringer Ingelheim; Healthspan Technologies; InProTherAps; Revelar Biotherapeutics; Vedanta; Paratu; Colton, Mercatus; NIAID; FDA; AI Therapeutics – 2, 3, 4; 3, 4; 5, 6, 9; 5, 6, 9; 5, 9; 5, 9; 5, 9; 5, 9; 5, 9; 5, 9; 5, 9; 5, 9; 5, 9; 5, 9; 3; 3; 3; 3; 3 (87)
Kaplan, M.H., NIH; Falk Trust; Indiana Univ.; American Association of Immunologists, Inc. – 3; 3; 4; 5, 7 (94)
Kleppner, S.R., NSF 2015049 AGEP Research Universities Alliance – 3 (145)
Koh, Y.T., Eli Lilly 1, 4 (75)
Komori, H.K., Arena Pharmaceuticals – 4 (75)
Kuo, J., Arena Pharmaceuticals – 1, 4 (75)
Lee, F. E.-H., MicroB-plex Inc.; Be-Biopharma Inc.; Berkeley Lights Inc., Bill Genentech, Inc. – 6; 9; 2, 3; 3; 3 (139)
Liou, T.G., BioLegend – 10 (Exh. Wkshp.)
Liston, A., Aila Biotech; Imcyse; Sangamo – 1, 5, 5 (79)
Long, S.A., Sonoma BioTherapeutics – 5 (78)
Maltzman, J., Genentech; Roche – 1, 4; 1, 4 (96)
Miller, J.S., Fate Therapeutics; GT Biopharma; ONK Therapeutics; Vycellix – 1, 3, 5; 1, 3, 5, 9; 9; 5, 9 (78)
Miller, S., Inimmune Corporation – 1, 4 (146)
Moore, B.B., Boehringer Ingelheim; Pulmonary Fibrosis Foundation; Galapagos – 5; 5; 9 (144)
Naik, S., BiomX; Seed, Inc.; Takeda – 5; 1, 9; 2 (1)
Pandey, S., National Science Foundation – 3 (33)
Pascual, M.V., Astra Zeneca; Sanofi; Novartis – 5, 10; 3, 5; 2 (155)
Rastogi, I., Akadeum Life Sciences, Inc. – 3 (Exh. Wkshp.)
Rothenberg, E.V., A2 Biotherapeutics; Century Therapeutics; Kite Pharma – 5; 9; 5 (15)
Rothlin, C.V., Janssen; Mirati Therapeutics; Roche; Surface Oncology – 5; 3; 5; 1, 5 (15)
Sester, M., Astellas; Biotest, Novartis – 3; 3, 10; 3 (36)
Smith, A.M., NIH; Soc. for Mathematical Bio.; Univ. of Tennessee Hlth. Sci. Ctr. – 4; 7; 3 (1)
Soloman, O.D., Jeane B. Kempner Pre-doctoral Fellowship Award; NIH NINDS-R01 NS106597-01A1 – 3; 3 (128)
Stone, E., GigaGen, Inc., a fully owned subsidary of Grifols; GigaGen – 1, 4; 10 (75)
Thomas, P.G., Elevate Bio; Immunosage; Johnson and Johnson; Pfizer – 3; 5, 9; 5; 5 (191)
Watzl, C., Amgen; Biotest; Hexal; Merck; Moderna – 10; 10; 10; 10; 10 (36)
Weinberg, A., Agonox, Inc. – 4, 6 (37)
Weiss, A., DeCart Therapeutics; Gilead Sciences – 5; 2 (155)
Wells, A., Johnson 1 (96)
Yost, K.E., Cartography Biosciences – 1, 5 (37)

Authors

Abdel, M.P., American Academy of Orthopaedic Surgeons; Stryker—7; 2 (170.28)
Abdou, M., Evelo Biosciences—10 (113.08)
Adams, B., 10x Genomics—4 (116.09, 173.09)
Afentoulis, M., OncoSec Medical—3 (65.20)
Alami, A., Evelo Biosciences—4 (113.08)
Allen, I.C., Patent application—10 (118.10)
Ampudia, J., Equillium, Inc.—1, 4 (54.12, 105.34, 110.20)
Ang, E., STEMCELL Technologies, Inc.—4 (116.08)
Antignano, F., STEMCELL Technologies, Inc.—4 (173.06)
Apostulou, A., Emulate Bio—1, 4 (116.13)
Arayangkul, H., Inimmune Corp.—1, 4 (64.04)
Argueta, S., Evelo Biosciences—4 (113.08)
Atanackovic, D., University of Maryland—10 (122.06)
August, A., 3M company—3 (167.04)
Awasthi, S., BioNTech—10 (64.10)
Awong, G., Fluidigm—4 (173.19)
Ayoub, G., S-Alpha Therapeutics, Inc.—4 (116.02)
Bach, M.L., Promega Corporation—4 (173.12)
Bailey, K.A., LUMICKS—4 (179.20)
Banerjee, M., MilliporeSigma—4 (116.20)
Barrett-Bressack, C., W. W. Norton and Company, Inc.—4 (106.13)
Barski, A., Datirium LLC—6 (56.13)
Basak, S., Advanced Cell Diagnostics , a Bio-Techne brand—4 (179.17, 179.19)
Bazin, H.G., Inimmune Corp.—1, 4 (64.04, 117.07, 123.09)
Beatty, G.L., Incyte, Bristol-Myers Squibb, Verastem, Halozyme, Biothera, Newlink, Novartis, Genmab, Arcus, and Janssen; Novartis and Tmunity Therapeutics; Seagen, Boehinger Ingelheim, Cour Pharmaceuticals, Adicet Bio, Aduro Biotech, AstraZeneca, BioMarin Pharmaceuticals, Bristol-Myers Squibb, Genmab, Incyte, Cantargia, Janssen, Opsona, Merck, Monopteros, Molecular Partners, Nano Ghosts, Pancreatic Cancer Action Network, Shattuck Labs, Verastem, and BiolineRx—3; 2; 9 (61.04)
Becker-Hapak, M.K., HCW Biologics—3 (116.16)
Bednarski, J.J.—10 (47.01)
Bell, J., Nexcelom Bioscience—4 (173.03)
Ben Cheikh, B., Akoya Biosciences—4 (126.11)
Berrien-Elliott, M.M., HCW Biologics—3 (116.16)
Besin, G., Affinivax—4 (66.18)
Bess, L., Inimmune Corp.—1, 4 (64.04)
Beyer, C.A., Inimmune Corp.—1, 4 (117.07)
Bitting, K.J., Hoth Therapeutics—3 (49.17)
Black, M.H., Janssen Research & Development—4 (60.03, 160.02)
Blackerby, A.N., Metaclipse Therapeutics Corporation—4 (64.01)
Bonesteel, R., Morphic Therapeutic—1, 4 (105.06)
Borges da Silva, H., Cancer Research Institute; NIAID—3; 3 (45.03)
Bose, J.L., Azitra, Inc; Merck—5; 5 (58.20)
Bouzekri, A., Fluidigm—1, 4 (172.17)
Bowers, R., Beckman Coulter—4 (63.08)
Bowser, J., Mozart Therapeutics—4 (123.10, 174.16)
Boyne, M., COUR Pharma—4 (126.26)
Bramhecha, Y., IMV Inc.—4 (66.09)
Braubach, O., Akoya Biosciences—1, 4 (125.20, 126.11)
Braun, D.A., Adept Field Solutions; Adnovate Strategies; Blueprint Partnerships; Bristol Myers Squibb; Charles River Associates; Defined Health; Exelixis; Insight Strategy; LM Education/Exchange Services; MDedge; Octane Global; Slingshot Insights; Trinity Group—5; 5; 5; 10; 5; 5; 5, 7; 5; 5; 5; 5; 5; 5 (172.01)
Brayton, K., W. W. Norton and Company, Inc.—4 (106.13)

Breitbart, E., VBL Therapeutics—4 (105.39)
Brenner, M.K., Allogene Therapeutics; Allovir; Bellicum; Bluebird Bio; Cell Genix; Fate Therapeutics; Kuur; Marker Therapeutics; Posedia; Tessa Therapeutics; Tscan; Turnstone Biologics; Walking Fish—10; 1; 2; 7; 7; 10; 7; 1; 7; 1; 7; 7; 7 (122.08, 175.22)
Brocks, D.—10 (122.05)
Brown, B.E., iRepertoire—4 (172.20)
Browne, C., Kymera Therapeutics—4 (111.13)
Bruttel, V., Aeterna Zentaris—3 (60.16)
Buck, C.A., STEMCELL Technologies, Inc.—4 (173.06)
Buhl, C., Inimmune Corp.—1 (123.09)
Bunting, M., Advanced Cell Diagnostics , a Bio-Techne brand—4 (179.19)
Burkhart, D., Inimmune Corp.—1, 4, 7 (117.07, 123.05)
Burkhart, D.J., Inimmune Corp.—4 (65.32)
Bursavich, M.G., Morphic Therapeutic—1, 4 (105.06)
Bydoun, M., IMV Inc.—4 (66.09)
Byrne-Steele, M., iRepertoire—4 (172.20)
Cali, J., Promega Corp.—4 (52.12, 173.12)
Campbell, V., Kymera Therapeutics—4 (111.13)
Candelli, A., LUMICKS—1, 4, 7 (179.20)
Cani, P.D., A-Mansia Biotech—10 (115.17)
Carman, C., Emulate Bio—1, 4 (116.13)
Cartwright, A., Moderna—4 (113.08)
Cartwright, E., Bio-Techne—4 (172.13)
Chan, L., Nexcelom Bioscience—4 (173.03)
Chang, Y-S., S-Alpha Therapeutics, Inc.—3 (116.02)
Chang, C-W., Advanced Cell Diagnostics, a Bio-techne brand—4 (179.17)
Chaturvedi, P., HCW Biologics—4 (116.16, 174.15)
Chell, J., 10x Genomics—4 (179.18)
Chen, A., Arcus Biosciences—10 (120.13)
Chen, F., Atlas Bio—5 (172.01, 172.18)
Chen, L., Honeycomb Biotechnologies—4 (172.09)
Chen, Y., Janssen Research & Development—4 (60.03)
Choi, J-P., S-Alpha Therapeutics, Inc.—3 (116.02)
Chong, H., Horizon Therapeutics—5 (159.04)
Chornet, A.R., Precision for Medicine—4 (161.18)
Chu, D., Equillium, Inc.—4 (54.12)
Chu, D.N., Equillium, Inc.—4 (110.20)
Cohen, G.H., BioNTech—3 (64.10)
Cohen, M., Fluidigm—4 (173.18, 173.19)
Collins, K., Advanced Cell Diagnostics , a Bio-Techne brand—4 (179.17)
Connelly, S., Equillium, Inc.—1, 4, 6, 7 (54.12, 105.34, 110.20)
Cooper, L.J.N., CellChorus—6 (54.18)
Cormack, T., Evelo Biosciences—4 (113.08)
Corona, C.—10 (52.12)
Crane, C., Mozart Therapeutics—4 (123.10, 174.16)
Crawford, J.C., Illumina Inc.; 10X Genomics—1; 1 (120.15)
Crooks, G.M., Pluto Immunotherapeutics—10 (107.11)
Crotty, S., Avalia Immunotherapies, Roche, and GSK—5 (125.03)
Cui, D., Morphic Therapeutic—1, 4 (105.06)
Daftarian, P.M., JSR Life Sciences—4 (66.14)
Dalton, B., STEMCELL Technologies, Inc.—4 (173.06)
Davalos, R.V., Patent application—10 (118.10)
Davis, M., Mozart Therapeutics—9 (165.17)
de Groot, A.E., Arcus Biosciences—1, 4 (120.13)
de Jong, S., STEMCELL Technologies, Inc.—4 (173.06)
de Vos, W.M., A-Mansia Biotech—10 (115.17)
Dee, M.J., HCW Biologics—4 (116.16, 174.15)
Demberg, T., Marker Therapeutics Inc.—4 (110.11)
Desmond, A., BioNTech—10 (64.10)
Dhang, F., Morphic Therapeutic—1, 4 (105.06)
Dikshit, A., Advanced Cell Diagnostics, a Bio-techne brand—4 (179.17, 179.19)
Dinarello, C.A., Olatec Therapeutics LLC—9 (109.02)
Dirk, B., IMV Inc.—4 (66.09)
Doolittle, E., Advanced Cell Diagnostics , a Bio-Techne brand—4 (179.19)
Douglas, J., Vir Biotechnology, Inc.—4 (66.15)
Eaves, A.C., STEMCELL Technologies, Inc.—4, 6 (116.08, 173.06)
Eberle, C., Charles River Laboratories—4 (173.05)
Eberlein, J., LUMICKS—4 (179.20)
Echeverri, C.A., HCW Biologics—4 (116.16, 174.15)
Egan, J.O., HCW Biologics—4 (116.16, 174.15)
Egan, K.P., BioNTech—10 (64.10)
Egeler, O., STEMCELL Technologies, Inc.—4 (173.06)
Elhofy, A., Cour Pharma—4 (126.26)
Elliott, K., Janssen Research and Development—3 (160.02)
Escalante, P., DiaSorin Molecular—10 (58.13)
Estrada, J., Makana Therapeutics, Inc.—1 (175.17)
Evans, J.T., Inimmune Corp.—1, 4 (64.04, 65.32, 123.09)
Evans, K., Akoya Biosciences—4 (179.01)
Ewart, L., Emulate Bio—1, 4 (116.13)
Fasnacht, R., Mozart Therapeutics—4 (123.10, 174.16)
Fehniger, T.A., HCW Biologics—3 (116.16)
Feld, G.K., Curiox Biosystems—4 (173.05)
Finnegan, P., 10x Genomics—4 (116.09, 173.09)
Fiset, S., IMV Inc.—4 (66.09)
Fitzgerald, M., Kymera Therapeutics—4 (111.13)
Flanigon, J., Honeycomb Biotechnologies—4 (172.09)
Flemming, R., Promega Corporation—4 (123.15)
Foster, M., HCW Biologics—3 (116.16)
Fowler, B., BioNTech—10 (64.10)
Fox, B., Shimadzu—3 (65.16)
Fox, B.A., OncoSec Medical; UbiVac—3; 10 (65.20, 66.01)
Frame, J., BD Biosciences—4 (116.15)
Freeman, B.A., Creegh Pharmaceutical—6 (109.10)
Freeman, G.J., Nextpoint, Triursus, Xios, iTeos, IgM, GV20, and Geode.; Roche, Bristol-Myers-Squibb, Xios, Origimed, Triursus, iTeos, NextPoint, IgM, Jubilant, Trillium, IOME, GV20, and Geode.; Roche, Merck MSD, Bristol-Myers-Squibb, Merck KGA, Eli Lilly, Boehringer-Ingelheim, AstraZeneca, Dako, Leica, Mayo Clinic, and Novartis.—10; 9; 2 (176.05)
Freyn, A., Moderna—4 (126.32)
Friedman, H.M., BioNTech—3 (64.10)
Fruh, K., Vir Biotechnology, Inc.—1, 2, 5, 9 (64.18, 66.15, 126.36)
Früh, K., Vir Biotechnology, Inc.—1, 2, 5, 6, 9 (64.21)
Ganguly, T., Evelo Biosciences—4 (113.08)
Gardell, J.L., Mozart Therapeutics—4 (123.10, 174.16)
Gauthier, K.E.S., Arcus Biosciences—1, 4 (120.13)
Gellner, S.D., STEMCELL Technologies, Inc.—4 (173.06)
George, V., HCW Biologics—4 (174.15)
Getz, G., Broad Institute; IBM; Pharmacyclics; Scorpion Therapeutics—10; 3; 3; 10 (176.18)
Giangarra, V., 10x Genomics—4 (179.18)
Gierahn, T., Honeycomb Biotechnologies—4 (172.09)

Glover, S.C., AbbVie; Janssen; Takeda—8; 5; 8 (161.05)
Godat, B., Promega Corporation—4 (123.15)
Gollob, J., Kymera Therapeutics—4 (111.13)
Good-Jacobson, K., GSK—3 (112.05)
Gough, M.J., Bristol Myers Squibb; Vir Biotechnology, Inc.—3; 3 (63.02, 118.04)
Gowen, B., Spotlight Therapeutics—4 (56.17)
Gozlan, Y., Immunai—4 (122.05)
Graff, J., IMV Inc.—4 (66.09)
Grayson, M.H., AstraZeneca; AstraZeneca, Novartis, and Genentech; Genentech; Novartis—9; 9; 9; 9 (126.19, 163.24)
Grazia, G., Beckman Coulter—4 (63.08)
Griffin, S., GlaxoSmithKline—4 (119.12, 179.14)
Guan, M., Janssen Research & Development—4 (60.03)
Hahm, J., S-Alpha Therapeutics, Inc—4 (116.02)
Hamilton, L.T., Shimadzu—3 (65.16)
Hamilton Hart, S.E., NIAID—3 (45.03)
Han, J., iRepertoire—6 (172.20)
Hancock, M., Vir Biotechnology, Inc.—2 (64.18)
Hansen, S., Vir Biotechnology, Inc.—2 (64.18)
Hansen, S.G., Vir Biotechnology, Inc.—1, 2, 5, 6, 9 (64.21, 66.15)
Haradhvala, N., Constellation Pharmaceuticals—5 (176.18)
Harrison, B., Morphic Therapeutic—1, 4 (105.06)
Hart, A., Janssen Research & Development—4 (60.03, 160.02)
Heller, R., Oncosec Medical—1, 5 (118.02)
Henry, C., Moderna—4 (126.32)
Hernandez, R., Bristol Myers Squibb—10 (117.12)
Herrera-Taracena, G., Janssen Global Public Health, Janssen Research and Development—4 (126.21)
Hilton, T.L.—4 (66.01)
Hirsch, H., IMV Inc.—4 (66.09)
Hoang, S-M., LUMICKS—4 (179.20)
Hoberg, J., MilliporeSigma—4 (116.20)
Hoffman, K.D.—4 (52.12)
Hoffmueller, U., Precision for Medicine—1, 4 (161.18)
Hook, L.M., BioNTech—10 (64.10)
Hrytsenko, O., IMV Inc.—4 (66.09)
Hu, H-M., UbiVac—1 (66.01)
Huang, H., Genentech—4 (55.01)
Huang, Y., Nexcelom Bioscience—4 (173.03)
Hubbell, J., ClostraBio, Inc.—6 (49.01)
Hubbell, J.A., ClostraBio, Inc.; UbiVac—6; 10 (49.04, 172.10)
Hubeau, C., Kymera Therapeutics—4 (111.13)
Hushur, O.—4 (66.14)
Ibsen, E., Studylog Systems, Inc.—4 (173.01)
Ip, C.W., Aeterna Zentaris—3 (60.16)
Itano, A., Evelo Biosciences—4 (113.08)
Iwamoto, N., Shimadzu; Shimadzu Scientific—4; 4 (65.16, 66.01)
Jackson, K., Inimmune Corp.—1, 4 (64.04, 117.07, 123.09)
Jacobson, K.M., Metaclipse Therapeutics Corporation—4 (64.01)
Jafaar, L., Metaclipse Therapeutics Corp.—4 (64.01)
Jaffe, D., 10x Genomics—4 (173.09)
Jaffee, D., 10x Genomics—4 (116.09)
Jameson, S.C., AAI; NIAID—7; 3 (45.03)
Jarjour, N.N., Damon Runyon Cancer Research Foundation—3 (45.03)
Jayah, R., Inimmune Corp.—1, 4 (64.04)
Jensen, S.M., OncoSec Medical—3 (65.20)
Jiao, J-A., HCW Biologics—4 (116.16, 174.15)
Jin, J., Biocytogen Boston Corporation—4 (116.15)
Joglekar, A.V., Mitsubishi - Tanabe Pharma—3 (104.05)
Johnson, D., Array Biopharma; BMS; Catalyst Biopharma; Incyte; Iovance; Jansen; Merck; Novartis; Oncosec—9; 3, 9; 9; 3; 9; 9; 9; 9; 9 (118.03)
Johnson, D.S., GigaMune, Inc.; GigaGen, Inc.—1; 4 (179.13)
Jong, R., Fluidigm—1 (172.17)
Juarez, J., Takeda—4 (48.14)
Julien, S., Mozart Therapeutics—4 (123.10, 174.16)
Jung, J.N., Precision for Medicine—4 (161.18)
Kafri, P., VBL Therapeutics—4 (105.39)
Kahlenberg, J.M., AstraZeneca; Aurinia Pharmaceuticals; Avion Pharmaceuticals; Boehringer Ingleheim; Bristol Myers Squibb; Celgene/BMS; Eli Lilly; Provention ibo; Q32 Bio—9; 9; 9; 9; 9; 3; 9; 9; 3 (158.06)
Kala, S., Fluidigm—4 (173.19)
Kalyuzhny, A., Bio-Techne—4 (172.13)
Kam, Y., Agilent Technologies—4 (123.07)
Kanellias, M., Emulate Bio—1 (116.13)
Kapinsky, M., Beckman Coulter—4 (63.08)
Karam, S.D., Astrazeneca; Genentech; Ionis; NIDCR R01 DE028282-01; NIDCR R01 DE028529-01—3; 3; 3; 3; 3 (63.10)
Kaufmann, J., Codagenix—4 (179.14)
Ke, C.Y., Curiox Biosystems—4 (173.05)
Kersting-Schadek, S., HCW Biologics—3 (116.16)
Keyes, B., Janssen Research & Development—4 (60.03)
Khadilkar, T., 10x Genomics—4 (116.09, 173.09)
Khalaf, J.K., Inimmune Corp.—1, 4 (64.04, 123.09)
Kim, S-H., S-Alpha Therapeutics, Inc.—3 (116.02)
Kim, E.S., S-Alpha Therapeutics, Inc.—3 (116.02)
Kim, S-J., MedPacto—7 (117.05)
Knight, J.C., Janssen Research and Development—3 (160.02)
Kobie, J., Aridis Pharmaceuticals—3 (65.11)
Koguchi, Y., Shimadzu—3 (65.16)
Kokaji, A.I., STEMCELL Technologies, Inc.—4 (173.06)
Kong, L., HCW Biologics—4 (116.16, 174.15)
Korman, A., Vir Biotechnolgy, Inc—4 (66.15)
Kornmeier, C., MilliporeSigma—4 (116.20)
Krammer, F., Merck; Pfizer—5; 5 (125.10)
Kravitz, V., Evelo Biosciences—4 (113.08)
Krogsgaard, M., Genentech; Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc.; NexImmune; NIH-NCI; NIH-NIGMS; The Mark Foundation—3, 9; 3; 9, 10; 3; 3; 3 (169.01)
Krupnick, A., Valo Health—9 (121.02)
Kujala, V.J., Emulate Bio—1, 4 (116.13)
Kulkarni, G., Emulate Bio—1, 4 (116.13)
LaBresh, J., Kingfisher Biotech—6 (46.02)
Lacaille, V., Beckman Coulter—4 (63.08)
Lacey, C.A., AbbVie—4 (170.15)
Larbi, A., Beckman Coulter—4 (63.08)
LaTourette, P.C., BioNTech—10 (64.10)
Lauron, E.J., Vir Biotechnology, Inc.—4 (66.15)
Laws, M.—4 (66.01)
Lazar, D., Promega Corp.—4 (52.12, 173.12)
Le Fevre, T., STEMCELL Technologies, Inc.—4 (116.08)
Leclerc, G.M., HCW Biologics—4 (116.16)
Lee, D., Morphic Therapeutic—1, 4 (105.06)
Leiding, J.W., bluebird bio, Inc.; Horizon; Pharming; Sobi—1, 4; 5, 8; 5; 5, 8 (159.06)

Lenz, O., Janssen Pharmaceutical—4 (126.21)
Letterio, J., MedPacto—9 (117.05)
Li, S., Janssen Research & Development—4 (60.03, 160.02)
Li, X., Biocytogen Pharmaceuticals (Beijing) Co., Ltd.—4 (116.15)
Li, S.K.H., Fluidigm—1, 4 (172.17)
Lie, W-R., MilliporeSigma—4 (116.20)
Lind, E., Amgen; Celgene; Ikena Oncology; Intellia Therapeutics; Janssen; Kronos Bio; Monojul—3; 3; 3; 3; 3; 3; 3 (61.17)
Lind, E.F., Amgen; Celgene; Ikena Oncology; Intellia Therapeutics; Janssen; Kronos Bio; Monojul—3; 3; 3; 3; 3; 3; 3 (122.15)
Lines, J.L., ImmuNext; King's College, London—3; 2 (176.04)
Lippa, B., Morphic Therapeutic—1, 4 (105.06)
Liu, B., HCW Biologics—4 (116.16, 174.15)
Livak, K.J., Fluidigm Corporation—1 (172.01)
Loboda, A., Fluidigm—1, 4 (172.17)
Loh, C., Fluidigm—1, 4 (172.17, 173.18, 173.19)
Loos, A., Aridis Pharmaceuticals—4 (65.11)
Lopes, V., BioLegend, Inc.—4 (173.14)
Lord, J.D., Takeda—3 (48.14)
Louis, S.A., STEMCELL Technologies, Inc.—4 (116.08, 173.06)
Lowrie, K., Fluidigm—4 (173.19)
Lozza, L., Precision for Medicine—4 (161.18)
Lubinski, J.M., BioNTech—10 (64.10)
Lucchesi, C., Emulate Bio—1, 4 (116.13)
Luetkens, T., University of Maryland; University of Utah—10; 10 (122.06, 122.24)
Lunding, L.P., Olatec Therapeutics LLC—3 (109.02)
Lurier, E., Kymera Therapeutics—4 (111.13)
Lye, M., Curiox Biosystems—4 (173.05)
Lyssiotis, C., Astellas Pharmaceuticals and Odyssey Therapeutics—5 (165.08)
Ma, N., Akoya Biosciences—1 (125.20)
MacDonald, G.N., STEMCELL Technologies, Inc.—4 (173.06)
Mainolfi, N., Kymera Therapeutics—4 (111.13)
Majonis, D., Fluidigm—1, 4 (172.17)
Malek, T.R., Bristol Myers Squibb—2, 3 (56.02, 117.12, 174.13)
Malouli, D., Vir Biotechnology, Inc.—1, 2 (64.18, 64.21)
Maltzman, J.S., Genentech—10 (175.11)
Malyutin, A., Takeda Pharmaceuticals—4 (114.09)
Mamonkin, M., Allogene Therapeutics; Fate Therapeutics—10; 10 (175.22)
Maniar, K., Emulate Bio—1, 4 (116.13)
Markiewicz, M.A., Design-Zyme; LUMICKS—5; 4 (58.20, 158.08)
Marrache, S., 10x Genomics—4 (116.09, 173.09)
Marrocco, V., Equillium, Inc.—1, 4 (105.34, 110.20)
Marson, A., AlphaSights; Anthem; Arsenal Biosciences; Epinomics; Gilead; GlaxoSmithKline; Juno Therapeutics; Merck; Offline Ventures; PACT Pharma; Sanofi; Spotlight Therapeutics; Trizell; Vertex—5; 3; 9, 10; 3; 3; 3; 5, 10; 5, 10; 10; 9; 3; 9, 10; 5, 10; 5, 10 (56.17, 62.10)
Martinez-Sobrido, L., Aridis Pharmaceuticals—3 (65.11)
Massa, V., Kymera Therapeutics—4 (111.13)
Maurer, M., Mozart Therapeutics—4 (123.10)
Maurer, M.E., Mozart Therapeutics—4 (174.16)
Maus, M., 2Seventy Bio; Adaptimmune; Agenus; Arcellx; Astellas; AstraZeneca; Atara ; Bayer; BMS; Cabaletta Bio; Century Therapeutics; CRISPR Therapeutics; Genocea; GSK; In8bio (SAB); Intellia; Kite Pharma; Massachusetts General Hospital; Mircromedicine; Neximmune; Novartis; Oncternal; Sanofi; Servier, CRISPR, Kite Pharma, Novartis; TCR2 (SAB); Tmunity; Torque; University of Pennsylvania—10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 3; 10; 10; 10; 10 (176.18)
Maus, M.V., 2Seventy Bio; Acellx; Adaptimmune; Agenus; Allogene; Arcellx; Astellas; AstraZeneca; Atara; Bayer; BMS; Cabaletta Bio; Cellectis (SAB); Century Therapeutics; CRISPR Therapeutics; CRISPR Therapeutics ; Genocea; GSK; In8bio (SAB); Incysus (SAB); Innovakine; Intellia; Kite Pharma; Massachusetts General Hospital; Micromedicine; Micromedicine/Bendbio; Neximmune; Novartis; Sanofi; Servier; TCR2 (SAB); Tmunity; Torque; WindMIL (SAB)—1, 7, 9; 5; 5; 5; 5; 5; 5; 5; 5; 5; 5; 5; 5; 5; 1; 3, 5; 3; 5; 5; 5; 5; 5; 5; 3, 5; 4; 5; 5; 5; 3, 5; 5; 3; 1, 5; 5; 5; 5 (65.30, 122.26)
Mayo, M., Kymera Therapeutics—4 (111.13)
McClain, E., HCW Biologics—3 (116.16)
McDonald, A., Kymera Therapeutics—4 (111.13)
McDonald, P.O., Diamond V Mills Inc.—3 (124.20)
McDonnell, W., 10x Genomics—4 (116.09, 173.09)
McDonnell, G.—4 (66.01)
McGill, J.L., Diamond V Mills Inc—3 (124.20)
Mendel, I., VBL Therapeutics—1, 4 (105.39)
Meyer, C., Vir Biotechnology, Inc.—4 (66.15)
Mielinis, P., 10x Genomics—4 (179.18)
Miller, S.M., Inimmune Corp.—1, 4 (123.05, 123.09)
Miller, S.D., Cour Pharmaceuticals Development Company, Inc.; Inimmune Corp.—1; 1, 4 (60.08, 64.04, 117.07)
Miyazaki, Y., Ventuno Co.Ltd.—3 (111.05)
Mo, F., Allogene Therapeutics; Fate Therapeutics—10; 10 (175.22)
Molineros, J., Janssen Research & Development—4 (60.03, 160.02)
Monia, B., Ionis Pharmaceuticals—4 (121.12)
Montel-Hagen, A., Pluto Immunotherapeutics—10 (107.11)
Morales, E., University of Utah—10 (122.24)
Moser, J., LUMICKS—4 (179.20)
Murthy, T., COUR Pharma—4 (126.26)
Nagler, C., ClostraBio, Inc.—6 (49.01)
Nagler, C.R., ClostraBio, Inc.—6 (49.04, 115.16, 172.10)
Naing, S-H., Metaclipse Therapeutics Corporation—4 (64.01)
Narasimhan, B., ImmunoNanoMed Inc; US 7,858,093 and 8,173,104 B2—6; 10 (123.13)
Nath, N., Promega Corp.—4 (123.15, 173.12)
Naughton, A.M., BioNTech—10 (64.10)
Neal, C.C., HCW Biologics—3 (116.16)
Nelson, J., Vir Biotechnology, Inc.—5 (64.18)
Ng, C., Equillium, Inc.—1, 4 (54.12, 105.34, 110.20)
Ni, J., BioLegend—4 (173.14)
Nikolich-Zugich, J., Youngblood Inc.—3 (65.31)
Nikulina, N., Akoya Biosciences—4 (126.11)
Noelle, R.J., ImmuNext—2, 6 (167.13, 176.04)
Noh, J.Y., S-Alpha Therapeutics, Inc.—3 (116.02)
Nouri, A., Gordon and Betty More Foundation—3 (116.05)
Novak, T., NIH/NIAID—3 (161.01)
O'Brien, M.A., Promega Corp.—4 (52.12, 173.12)
Oda, S.K., bms—2 (122.27)
Olek, S., Precision for Medicine—4 (161.18)
Oliver, A., Bio-Techne—4 (172.13)
Ouspenskaia, T., Flagship Labs 69, Inc.—4 (176.18)
Pack, C.D., Metaclipse Therapeutics Corporation—4 (64.01)
Palumbo, J., Ionis Pharmaceuticals—3 (121.12)

Pan, W., iRepertoire—4 (172.20)
Pardi, N., BioNTech—3 (64.10)
Patel, R., 1928 Diagnostics; Biofire; Bordetella pertussis/ parapertussis PCR patent; CARB-X; Contrafect; Curetis; Day Zero Diagnostics; Infectious Diseases Board Review Course; Infectious Diseases Society of America; Mammoth Biosciences; National Board of Medical Examiners; Next Gen Diagnostics; PathoQuest; PhAST; Qvella; Selux Diagnostics; Specific Technologies; TenNor Therapeutics Limited; Torus Biosystems; Up-to-Date—10; 3; 10; 10; 3; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 10; 3; 10; 10 (170.28)
Patterson, K., IMV Inc.—4 (66.09)
Paustian, C.C., UbiVac—1, 4 (66.01)
Pearson, T.F., W. W. Norton and Company, Inc.—1, 4 (106.13)
Pence, P., HCW Biologics—3 (116.16)
Permar, S.R., Dynavax; HOOKIPA Biotech GmbH; Merck; Merck Vaccines; Moderna; Pfizer—5; 5; 5; 3; 3, 5; 5 (126.36)
Pfeifer, J., MilliporeSigma—4 (116.20)
Picker, L.J., Vir Biotechnology, Inc.—1, 2, 5, 6, 9 (64.18, 64.21, 66.15)
Piening, B.D., Shimadzu—3 (65.16)
Piovesan, D.—4 (120.13)
Podojil, J.R., Cour Pharmaceuticals Development Company, Inc.—4 (60.08)
Ponichtera, H., Evelo Biosciences—4 (113.08)
Posarac, V., STEMCELL Technologies, Inc.—4 (173.06)
Pradeep, P., Evelo Biosciences—4 (113.08)
Propheta-Meiran, O., VBL Therapeutics—4 (105.39)
Quintero, Z.—4 (173.14)
Quong, A., Fluidigm—4 (173.19)
Raghunathan, D., Evelo Biosciences—4 (113.08)
Ramachandiran, S., Metaclipse Therapeutics Corporation—4 (64.01)
Ramani, K., Evelo Biosciences—4 (113.08)
Ramenani, R., 10x Genomics—4 (116.09, 173.09)
Ramos, D., Emulate Bio—1, 4 (116.13)
Raschke, E., Precison for Medicine—4 (161.18)
Rathmell, J.C., Calithera Biosciences; Caribou Biosciences; Incyte Corp; Merck; MitoBridge; Nirogy Therapeutics; Pfizer; Sitryx Therapeutics; Tempest Therapeutics—3; 1; 3; 5; 5; 9; 5; 7; 3 (109.11)
Rathod, S., Novasenta Inc—4 (104.05)
Raveh-Sadka, T.—4 (122.05)
Ray, A.S., Morphic Therapeutic—1, 4 (105.06)
Raza, Q., Fluidigm Canada, Inc., Canada—4 (173.19)
Reddy, A.—4 (120.13)
Redhu, N.S., Morphic Therapeutic—1, 4 (105.06)
Redmond, W.L., Shimadzu; GlaxoSmithKline—3; 3 (65.16, 179.14)
Regev, A., Asimov; Celsius Therapeutics; Genentech; Immunitas Therapeutics; Neogene Therapeutics; Syros Pharmaceuticals; ThermoFisher Scientific—10; 10; 4; 10; 10; 10; 10 (176.18)
Reijmers, R.M., LUMICKS—4 (179.20)
Reiner, G.L.—4 (120.13)
Revenko, A., Ionis Pharmaceuticals—4 (121.12)
Reyes, D., 10x Genomics—4 (116.09, 173.09, 179.18)
Reyes, L., Vir Biotechnology, Inc.—4 (175.17)
Rhode, P.R., HCW Biologics—4 (116.16, 174.15)
Riley, J.L., Tmunity—6 (175.21)
Robers, M.—4 (52.12)
Rogers, B.N., Morphic Therapeutic—1, 4, 7 (105.06)
Rogers, C.E., Fluidigm Canada—4 (173.18)
Romano, F.B., Evelo Biosciences—4 (113.08)
Romero, N., Agilent Technologies—4 (123.07)
Rommel, T., Mozart Therapeutics—4 (113.08)
Rooney, C., Allovir, Marker Therapeutics; Takeda, Marker, Allovir, Bellicum; Tessa Therapeutics; Tessa Therapeutics, Marker Therapeutics, Cell Genix—10; 2; 3; 9 (66.07)
Royall, A., 10x Genomics—4 (116.09, 173.09)
Rudin, C.M., AbbVie; Amgen; Ascentage; AstraZeneca; Bicycle; Bridge Medicines; Celgene; Daiichi Sankyo; Earli; Genetech/ Roche; Harpoon Therapeutics; Ipsen; Jazz; Lilly; Pfizer; PharmaMar; Syros; Vavotek—5; 5; 5; 5; 5; 9; 5; 5; 9; 5; 9; 5; 5; 5; 5; 5; 5; 5; 5 (119.13)
Sagadevan, A.S., Sarepta Pharmaceuticals—3 (60.01)
Salem, Y., VBL Therapeutics—4 (105.39)
Samans, B., Precision for Medicine—4 (161.18)
Samuel, B.E.R., Diamond V Mills Inc—3 (124.20)
Sandhu, S., GigaMune, Inc.—1, 4 (179.13)
Sands, C., Inimmune Corp.—1, 4 (64.04)
Sang, A.L., Morphic Therapeutic—1, 4 (105.06)
Satoyama, T., Ventuno Co., LTD.—3 (111.05)
Satpathy, A., Allogene Therapeutics; Arsenal Biosciences; Cartography Biosciences; Immunai—3; 3; 6; 6 (169.08)
Saud, J., Elumate Bio; Emulate Bio—1; 4 (116.13)
Schildknecht, K., Precision for Medicine—1, 4 (161.18)
Schoener, R., Inimmune Corp.—1, 4 (117.07, 123.05)
Schultz, A.J., LUMICKS—4 (179.20)
Schweickert, P.G.—4 (120.13)
Seestaller-Wehr, L., GlaxoSmithKline—4 (179.14)
Seet, C.S., Pluto Immunotherapeutics—10 (107.11)
Seiber, K.B., Janssen Research & Deveopment—4 (60.03)
Seitz, L.—4 (120.13)
Selvaraj, P., Metaclipse Therapeutics Corporation—6 (64.01)
Sen, T., Jazz Pharma—3 (119.13)
Sette, A., Gristone Bio—5 (125.03)
Shahi, P., 10x Genomics—4 (116.09, 173.09)
Sharma, K., Kymera Therapeutics—4 (111.13)
Sharpe, A.H., Roche and Novartis—2 (163.07)
Shen, Y., Biocytogen Pharmaceuticals (Beijing) Co., Ltd.—4 (116.15)
Sherr, D., Hercules Pharmaceuticals—7 (178.11)
Shi, X., BD Biosciences—4 (116.17)
Shimada, T., Shimadzu—4 (65.16, 66.01)
Shrestha, N., HCW Biologics—4 (116.16, 174.15)
Singh, H.—4 (120.13)
Singleterry, W., LUMICKS—4 (179.20)
Sizova, M., Evelo Biosciences—4 (113.08)
Skouras, D.B., Olatec Therapeutics LLC—6 (109.02)
Skouras, S.M., Kymera Therapeutics—4 (111.13)
Slavin, A., Kymera Therapeutics—4 (111.13)
Smieszek, S.P., Vanda Pharmaceuticals—4 (46.03)
Smith, P., IMV Inc.—4 (66.09)
Smothers, J., GlaxoSmithKline—4 (119.12, 179.14)
Song, J.Y., S-Alpha Therapeutics, Inc.—3 (116.02)
Song, M., 10x Genomics—4 (116.09, 173.09)
Soriano, F.—4 (120.13)
Soto, R., Biocytogen Boston Corporation—4 (116.15)
Spindler, M.J., GigaGen, Inc.; GigaMune, Inc.—4; 1, 4 (179.13)
Spoundis, C., HCW Biologics—4 (174.15)
St. Gelais, S., Morphic Therapeutic—1, 4 (105.06)

Straus, R., Fluidigm—4 (172.17)
Strome, S.E., Gliknik; Mayo Clinic; Virion—1, 5, 6; 2; 1, 9 (121.06)
Stubbington, M.J.T., 10x Genomics—1, 4 (116.09, 173.09)
Sullivan, B.M., Arcturus Therapeutics—4 (125.22)
Sullivan, M., Fluidigm—1, 4 (172.17)
Sullivan, Y.B., Kingfisher Biotech—4 (46.02)
Swanson, B., Promega—4 (123.15)
Swiderek, K., Mozart Therapeutics—4 (123.10)
Swiderek, K.M., Mozart Therapeutics—4 (174.16)
Szilvassy, S.J., STEMCELL Technologies, Inc.—4 (116.08)
Tabatabaei-Zavareh, N., STEMCELL Technologies, Inc.—4 (116.08)
Tambuyzer, L., Janssen Pharmaceutical—4 (126.21)
Taylor, S.E.B., 10x Genomics—4 (179.18)
Tector, M., Makana Therapeutics, Inc.—4 (175.17)
Tector, A., Makana Therapeutics, Inc.—6 (175.17)
Templeton, M., Mozart Therapeutics—4 (123.10, 174.16)
Teske, K.—4 (52.12)
Therriault, J., Mozart Therapeutics—4 (123.10, 174.16)
Thomas, S.J., Janssen; Merck; Pfizer; Sanofi; Takeda; Themisbio—5; 5; 10; 5; 5; 5 (125.38)
Thomas, P.G., 10x Genomics; CytoAgents; CytoAgents ; Elevate Bio; Illumina; ImmunoScape; Mirror Biologics—10; 9; 9; 5; 10; 9; 9 (113.15, 121.06)
Thompson, T., Aeromics—7 (102.17)
Tiet, P., Equillium, Inc.—4 (110.20)
Toombs, E., STEMCELL Technologies, Inc.—4 (173.06)
Tran, A., BD Biosciences—4 (116.17)
Troast, D., Morphic Therapeutic—1, 4 (105.06)
Truong, D.T., Janssen Research & Development—4 (60.03, 160.02)
Truong, V., Aridis Pharmaceuticals—4 (65.11)
Tsai, F., 10x Genomics—4 (116.09, 173.09)
Turkekul, M., 10x Genomics—4 (179.18)
Tyznik, A.J., BD Biosciences—4 (116.17)
Uckun Kiran, E., Evelo Biosciences—4 (113.08)
Urh, M., Promega—4 (123.15)
Valenzuela, H.F., RevGenetics—3 (122.29)
Van der Gaag, T., Metaclipse Therapeutics Corporation—4 (64.01)
Van Loock, M., Janssen Pharmaceutical—4 (126.21)
Van Wesenbeeck, L., Janssen Pharmaceutical—4 (126.21)
Vander Mause, E., University of Maryland—10 (122.06)
Varadarajan, N., MilliporeSigma—4 (54.18)
Vasta, J.—4 (52.12)
Verpoorten, N., Janssen Pharmaceutical—4 (126.21)
Vignali, D.A.A., Almirall; Apeximmune; Astellas; Bicara; BMS; F-Star; G1 Therapeutics; Incyte; Novasenta; Oncorus; Potenza; Tizona; Trishula; Werewolf—5; 1, 9; 3, 5, 10; 9; 3, 5, 10; 9; 5; 5; 1, 3, 10; 1; 1; 1, 9; 1; 1, 9 (53.23)
Vogel, T.P., Novartis; Pfizer—5; 5 (159.06)
Vollbrecht, T., 10x Genomics—4 (116.09, 173.09)
Walker, N.—4 (120.13)
Walls, J., Agilent Technologies—4 (123.07)
Walter, D., Kymera Therapeutics—4 (111.13)
Walter, M.R., Aridis Pharmaceuticals—3 (65.11)
Walters, M.J.—4 (120.13)
Wang, A., Curiox Biosystems—4 (173.05)
Wang, K., CaroGen Corp; Kymera Therapeutics—9; 4 (66.16, 111.13)
Wanhainen, K.M., NCI—3 (45.03)
Wannemuehler, M., ImmunoNanoMed Inc.; US 7,858,093 and US 8,173,104 B2—6; 10 (123.13)
Ward, J., Inimmune Corp.—1, 4 (123.05, 123.09)
Ward, E., Inimmune Corp.; Promega Corporation—1, 4; 4 (64.04, 117.07, 123.05)
Watanabe, N., Allogene Therapeutics—10 (175.22)
Waterworth, D., Janssen Research & Development—4 (60.03, 160.02)
Wegmann, M., Olatec Therapeutics—3 (109.02)
Wegmann, K., OncoSec Medical—3 (65.20)
Weinberger, L., VxBiosciences Inc.—10 (182.44)
Weissman, D., BioNTech—3 (64.10)
Weller, T.S., GigaMune, Inc.—1, 4 (179.13)
Wells, D.—4 (122.05)
Whitacre, M., Inimmune Corp.—1, 4 (64.04, 117.07, 123.05, 123.09)
Whitney, I.E., Honeycomb Biotechnologies—4 (172.09)
Widmann, S., BD Biosciences—4 (116.17)
Wilkinson, J.,— (52.12)
Williams, S.R., 10x Genomics—4 (179.18)
Williams, S., MilliporeSigma—4 (116.20)
Williamson, M.E., STEMCELL Technologies, Inc.—4 (173.06)
Wischhusen, J., Aeterna Zentaris; CatalYm—3, 5; 3, 5 (60.16)
Wognum, A.W., STEMCELL Technologies, Inc.—4 (116.08)
Wong, J., Morphic Therapeutic—1, 4 (105.06)
Wong, H.C., HCW Biologics—4, 6 (116.16, 174.15)
Woo, J., Aridis Pharmaceuticals—4 (65.11)
Woolard, M.D., NIH—3 (111.06)
Wright, C.N., Metaclipse Therapeutics Corporation—4 (64.01)
Xu, Q., COUR Pharma—4 (126.26)
Yacov, N., VBL Therapeutics—4 (105.39)
Yanamandra, N., GlaxoSmithKline—4 (119.12, 179.14)
Yang, S.J., Mozart Therapeutics—4 (123.10, 174.16)
Yang, L., Appia Bio.—9 (176.10)
Yao, H., Fluidigm Canada—4 (173.18)
Ye, J.C., Chan Zuckerberg Initiative, CZB; Genentech; ImmuneAI; Maze Therapeutics; Related Sciences; Trex Bio—3; 3; 10; 10; 10; 5 (56.17)
You, L., HCW Biologics—4 (116.16, 174.15)
Young, S.W.—4 (120.13)
Youngblood, B.A., Abbvie; ElevateBio—5; 5 (122.04)
Yun Tso, J., JN Biosciences—6 (175.15)
Zabinyakov, N., Fluidigm—1, 4 (172.17)
Zagozdzon, R., Pure Biologics S.A. (Wroclaw, Poland)—4 (179.06)
Zegzouti, H., Promega Corp.—4 (173.12)
Zhang, X., Biocytogen Pharmaceuticals (Beijing) Co., Ltd.—4 (116.15)
Zhang, S., Biocytogen Pharmaceuticals (Beijing) Co., Ltd.—4 (116.15)
Zhang, J., Biocytogen Pharmaceuticals (Beijing) Co., Ltd.—4 (116.15)
Zhao, X.—4 (120.13)
Zheng, X., Kymera Therapeutics—4 (111.13)
Zhong, C., Morphic Therapeutic—1, 4 (105.06)
Zhong, Z., LUMICKS—4 (179.20)
Zhu, X., HCW Biologics—4 (116.16, 174.15)
Zindrick, T., Aeromics—7 (102.17)

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B

C

D

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F

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