Stanford Autoimmune & Allergy Supergroup
SAAS Conference
Monday, March 4 and 5, 2024

ORGANIZERS: Mark M. Davis & Tobias Lanz, ITI

SPEAKERS BIOS

Rosa Bacchetta, MD is a pediatric immunologist and physician-scientist. Her translational research focuses on Autoimmune Genetic Diseases, dissecting the role of FOXP3 and Treg cells in immune responses. She is the Sponsor of the Phase 1 gene therapy trial using autologous engineered CD4LVFOXP3 Treg-like cells to treat patients with IPEX. She has been a Faculty at Stanford since 2015 in Pediatrics.

Matthew Baker, MD is an Assistant Professor and Clinical Chief in the Division of Immunology and Rheumatology at Stanford University. He received his medical degree from Harvard Medical School and completed his internal medicine residency at MGH and rheumatology fellowship at Stanford. His research program is focused on clinical trials, epidemiological studies, and translational research with a focus on sarcoidosis, IgG4-related disease, rheumatoid arthritis, and osteoarthritis.

Scott Boyd, MD, PhD is a physician scientist, Stanford Professor in Food Allergy and Immunology and Professor of Pathology. The Boyd laboratory uses high-throughput DNA sequencing and single-cell experiments to analyze human immune responses to infection and vaccination, as well as immunological disorders such as food allergy and immunodeficiency. Many of the laboratory’s projects analyze the responses of B cells and the genetics and functional roles of antibodies in health and disease. He received bachelor’s degrees in Biochemistry at the University of Manitoba, and English Literature at Oxford University, where he was a Rhodes Scholar. He obtained his M.D. from Harvard Medical School and Ph.D. from MIT, followed by pathology residency, hematopathology fellowship, and postdoctoral research work at Stanford University. He is a recipient of the Presidential Early Career Award for Scientists and Engineers, among other honors.
David Clark M.D., Ph.D. is Professor and Vice-Chair for Academic Affairs in the Department of Anesthesiology. His clinical area of practice is pain management with an emphasis on the prevention of pain chronification after injuries and surgery. Dr. Clark’s research ranges from basic to clinical with much of the work directed at understanding contributions of innate and adaptive immune processes. Current projects focus on the contributions of autoantibodies to pain after long bone, joint and intervertebral injuries and surgeries.

Mark M. Davis, PhD is the Director of the Stanford Institute for Immunology, Transplantation and Infection (ITI), a Professor of Microbiology and Immunology, and a Howard Hughes Medical Institute Investigator. He received a B.A. from Johns Hopkins University and a Ph.D. from the California Institute of Technology. He later was a postdoctoral fellow and staff fellow at the Laboratory of Immunology at NIH and later became a faculty member in the Department of Microbiology and Immunology at Stanford University School of Medicine, where he remains today. Dr. Davis is well known for identifying many of the T-cell receptor genes, which are responsible for the ability of these cells to recognize a diverse repertoire of antigens. Other work in his laboratory pioneered studies of the biochemistry, genetics and cell biology of these molecules and T lymphocytes generally, which play a key role in orchestrating immune responses. He and his colleagues also developed a novel way of labeling specific T lymphocytes according to the molecules that they recognize (“peptide-MHC tetramers”), which is widely used in both clinical and basic immunology studies. His current research interests involve understanding the molecular interactions that underlie T cell recognition and the challenges of human immunology, specifically a “systems level” understanding of an immune response to vaccination or infection. He has received many honors and awards, including memberships in the National Academy of Science and the Institute of Medicine, 2021 Szent-Györgyi Prize for Progress in Cancer Research, NFCR, The Paul Ehrlich Prize, The Gairdner Foundation Prize, The King Faisal Prize and the General Motors Alfred P. Sloan Prize.

Ronald W. Davis, Ph.D., is Professor of Biochemistry and of Genetics at Stanford University School of Medicine, Director of the Stanford Genome
Technology Center, and Director of the Chronic Fatigue Syndrome Research Center at Stanford University. Dr. Davis is a member of the National Academy of Sciences. Throughout his career he has made numerous seminal discoveries that have accelerated genetics, genomics, and bioengineering, including over 70 patented technologies that have launched numerous successful companies. His contributions have been recognized by the Gruber Genetics Prize, the Genetics Society of America Medal, the Warren Alpert Prize, and the Personalized Medicine World Conference Luminary Award. In 2013, he was named one of the 7 World’s Greatest Inventors by The Atlantic. He now is devoted to finding a cure for Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS).

Diana Dou, PhD, is currently an NIAMS K99 fellow in Dr. Howard Chang’s lab at Stanford University. Prior to Stanford, she earned her B.S. with honors from Caltech and received her PhD in Molecular Biology at UCLA with Dr. Hanna Mikkola where she showed that medial HOXA cluster gene expression demarcates definitive human hematopoietic stem cells. She is currently investigating the involvement of long noncoding RNAs (lncRNAs) and chromatin accessibility in autoimmune disease and recently discovered a novel role for the Xist ribonucleoprotein (RNP) as a driver for autoimmunity underlying the sex-biased female preponderance for developing autoimmune diseases. In addition to the NIAMS K99/R00 Pathway to Independence Award, she has been the recipient of the NSF Graduate Research Fellowship Program (GRFP) and ISEH New Investigator Dirk van Bekkum Award. In her future lab, Dr. Dou plans to continue her research with lncRNA complexes to understand how immune tolerance deteriorates into autoreactivity and disease from a lncRNA and epigenetic gene regulation perspective.

C Garrison (Garry) Fathman MD, Professor (Emeritus) in the Division of Immunology and Rheumatology graduated from Washington University School of Medicine followed by medical residency at Dartmouth; fellowship in Immunology and Rheumatology at Stanford; Clinical Associate Immunology Branch, NCI, NIH; Member of the Basel Institute for Immunology; and Associate Professor of Immunology at Mayo Medical School before returning to Stanford. Dr. Fathman was PI of an NIH funded Autoimmunity Centers of Excellence, established to support an integrated
basic and clinical research program focused on tolerance induction and immune modulation to prevent or treat autoimmune disease. Under Dr. Fathman’s supervision, the Human Immune Monitoring Center that incorporates current state of the art immune phenotyping (genomics, proteomics and bioinformatics) was initiated. His lab’s studies in NOD mice and T1D patients have helped identify new players controlling the progression of disease from peri-insulitis to destructive insulitis and hyperglycemia in T1D. His lab’s recent studies have identified a druggable defect in IL-2 receptor signaling in Tregs from patients with autoimmunity (including T1D) and allergic diseases that suggests a paradigm shift in the therapy of autoimmune and allergic diseases from immunosuppression to restoration of normal immunoregulation.

Theodore Jardetsky, PhD, is Professor of Structural Biology. Dr. Jardetzky’s laboratory is studying the structures and mechanisms of macromolecular complexes important in viral pathogenesis, allergic hypersensitivities and the regulation of cellular growth and differentiation, with an interest in uncovering novel conceptual approaches to intervening in disease processes. Ongoing research projects include studies of paramyxovirus and herpesvirus entry mechanisms, IgE-receptor structure and function and TGF-beta ligand signaling pathways.

Purvesh Khatri, PhD, is an Associate Professor in the Institute for Immunity, Transplantation and Infection and Division of Biomedical Informatics Research in the Departments of Medicine and Biomedical Data Science at Stanford University. His research focuses on developing machine learning methods for leveraging biological, clinical, and technical heterogeneity across independent publicly available heterogeneous data to accelerate clinical translation. His lab has applied these methods for identification of disease signatures that are diagnostic, prognostic, therapeutic and mechanistic across a broad spectrum of diseases including infections, autoimmune diseases, cancer, organ transplant, and vaccination.

Brian S. Kim, M.D., M.T.R. is Sol and Clara Kest Professor of Dermatology, Vice Chair of Research, Director of the Mark Lebwohl Center for Neuroinflammation and Sensation, and Lead for the Allen Discovery Center for Neuroimmune Interactions at Icahn School of Medicine at Mount Sinai. Dr. Kim’s research focuses on novel molecular and cellular pathways
that drive neuroimmune processes such as itch and inflammation across multiple barrier surfaces. His work has led to multiple new patents and FDA-approved medications.

Seung Kim, MD, PhD is the KM Mulberry Professor, and a Professor of Developmental Biology, Medicine and (by courtesy) of Pediatrics in the School of Medicine, and Director of the Stanford Diabetes Research Center. After obtaining his MD and PhD degrees at Stanford, he trained in Internal Medicine and Oncology/Bone Marrow Transplantation at the Brigham and Women's Hospital and Dana Farber Cancer Institute in Boston, followed by a post-doctoral fellowship at Harvard and HHMI. His group studies pancreas development and diseases, and collaborates with ITI members to develop islet replacement strategies for diabetes.

Tobias Lanz, MD is an assistant professor at the Institute for Immunity, Transplantation, and Infection and the Division of Immunology and Rheumatology at Stanford. His lab’s research focuses on B cell biology in autoimmune and neuroimmunological diseases. He uses high-throughput screening technologies, and methods from structural and cell biology to identify new autoantigens and to understand how certain self-reactive B cells escape tolerance mechanisms. He is particularly interested in molecular mechanisms that explain the association between Epstein Barr Virus (EBV) and autoimmunity. Tobias went to medical school at the Eberhard Karls University in Tübingen, Germany and at the University College of London. He wrote his MD thesis at Dr. Michael Platten’s laboratory at the Hertie Institute for Clinical Brain Research in Tübingen, Germany before joining Dr. Lawrence Steinman’s neuroimmunological laboratory at Stanford as a research scholar. After medical school he pursued his scientific and clinical training at the German Cancer Research Center (DKFZ) and the Department of Neurology at the University Hospital in Heidelberg, Germany. In 2015 he joined Dr. William Robinson’s lab at Stanford, where he investigated environmental triggers of autoimmunity, including viruses and milk consumption. In his most recent work, he characterized the B cell repertoire in the spinal fluid of patients with multiple sclerosis (MS) and identified molecular mimicry between EBV EBNA1 and the glial cellular adhesion molecule GlialCAM as a driver of neuroinflammation (Lanz et al., Nature, 2022). His long-term objective is to further understand how viruses contribute to or trigger autoimmunity and to
develop next-generation targeted antiviral and antigen-specific therapeutics to treat autoimmune diseases.

**Jin Billy Li, PhD** is Professor of Genetics. His lab is deeply interested in studying RNA editing and other modifications. There are over 100 RNA modifications, collectively called the epitranscriptome, most of which are poorly studied. Our long-term interest is to understand the biological roles of RNA modifications. Our current focus is A-to-I RNA editing where genomically encoded adenosine is changed to inosine (recognized as guanosine) in the RNA. We aim to identify RNA editing events in the entire transcriptomes, and understand their regulation and functions. We have successfully mapped the A-to-I editing in the transcriptomes of multiple species. Work in our group and others has revealed important features of the cis and trans regulation of A-to-I RNA editing. While the role of RNA editing has long thought to be most important in the nervous system, recent work reveals that a critical role of RNA editing is to suppress the innate immunity, thus implicating RNA editing in autoimmune diseases and cancers. We employ a plethora of experimental approaches, ranging from molecular genetics, genomics, biochemistry, cell biology, chemical biology, computational biology to technology development.

**Eric Meffre, PhD** is Professor of Medicine, Immunology & Rheumatology. His work focuses on the etiology of autoimmune syndromes and the roles played by B cells in these diseases. His group characterized the abnormal selection of developing autoreactive B cells in patients with rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), type 1 diabetes (T1D), multiple sclerosis (MS) and Sjögren’s syndrome, resulting in large numbers of autoreactive naïve B cells accumulating in the patient’s blood. Hence, these autoreactive B cells may present self-antigens to T cells and initiate autoimmune diseases. These early B cell tolerance defects are likely primary to these autoimmune diseases and may result from genetic factors such as the 1858T PTPN22 allele that segregates with RA, SLE and T1D and correlate with an impaired removal of developing autoreactive B cells. His research goals also consist in characterizing the molecules and pathways involved in the establishment of B cell tolerance and the removal of developing autoreactive B cells generated by random V(D)J recombination through the investigation of rare patients with primary immunodeficiency (PID) enrolled through an international network.
Alteration of B cell receptor (BCR) or Toll-like receptor (TLR) signaling in PID patients results in a defective central B cell tolerance and a failure to counterselect developing autoreactive B cells in the bone marrow. In contrast, functional and suppressive regulatory T cells play a key role in preventing the accumulation of autoreactive clones in the mature naïve B cell compartment. The recent development of humanized mouse models recapitulating early B cell tolerance checkpoints and their defects in autoimmune settings allow further in-depth investigation of tolerance mechanisms and the development of novel approaches to restore defective central and peripheral B cell tolerance checkpoints and thwart autoimmunity.

Elizabeth Mellins, MD graduated from Cornell University with degree in political science, did a post-bac year at MIT and received her MD from Harvard Medical School. She trained in Pediatrics at the University of Colorado and in Pediatric Rheumatology at the University of Washington. She began to focus on research in immunology and immunogenetics during her postdoctoral work at the University of Washington with Dr. Donald Pious. She had her first independent laboratory at the University of Pennsylvania and then moved to Stanford, where she is now a professor of Pediatrics and a member of the Interdisciplinary Program in Immunology. She was a member of the Cellular and Molecular Immunology NIH study section for 9 years (2 terms) and is a Distinguished Fellow of the American Association of Immunologists. She was also a founder and first chairperson of the Childhood Arthritis and Rheumatology Research Alliance.

Everett Meyer MD PhD is a physician scientist and Associate Professor in Blood and Marrow Transplantation and Cell Therapy. He completed his MD and PhD followed by his residency and fellowship in Hematology at Stanford University and joined faculty in 2014. He served as Medical and Scientific Director of the Stanford Cell Therapy Facility from 2016-2022 and currently serves as the Director of the Cellular Immune Tolerance Program. Dr. Meyers leads CIRM and NIH funded trials testing T regulatory cells to prevent graft-versus-host disease, to promote organ allograft tolerance and in the treatment of Type 1 Diabetes. His laboratory uses preclinical murine models to study Treg therapy and hematopoietic mixed chimerism in pancreatic islet allograft tolerance as part of a JDRF Center of Excellence.
Emmanuel Mignot, MD, PhD is the Craig Reynolds Professor of Sleep Medicine in the Department of Psychiatry and Behavioral Sciences at Stanford University and the Director of the Stanford Center for Narcolepsy. He is recognized as having discovered the cause of narcolepsy. Dr. Mignot was born in Paris, France, and he is a former student of the Ecole Normale Superieure (Ulm, Paris, France). He received his M.D. and Ph.D. (molecular pharmacology) from Paris V and VI University respectively. He practiced medicine and Psychiatry in France for several years before serving as a visiting scholar at the Stanford Sleep Disorders Clinic and Research Center. He joined as faculty and Director of the Center for Narcolepsy in 1993. He was named Professor of Psychiatry in 2001. He has received numerous awards for his work, including a 2023 Breakthrough prize in Life Sciences and is a member of both the National Academies of Sciences and Medicine.

Patricia Nguyen, MD received her Bachelors of Science from the University of California, Irvine and her Doctor of Medicine at Johns Hopkins Medical School. She completed her internal medicine training at New York Presbyterian Hospital (Columbia) and her cardiology fellowship at Stanford University. She is interested in applying molecular imaging techniques to study stem cell biology and in developing novel cellular and genetic therapy.

Virginia Pascual, MD is a pediatric rheumatologist and Director of the Drukier Institute for Children’s Health and the Ronay Menschel Professor of Pediatrics at Weill Cornell Medical College in New York, NY. She is also the Program Director of an NIAID-funded Autoimmunity Center of Excellence, a NIAMS-funded Center of Research Translation, and a Lupus Research Alliance Global Team Science Award, all focused on Pediatric Lupus. Dr. Pascual’s research focuses on pediatric inflammatory and autoimmune diseases with the goals of translating laboratory findings into the identification of therapeutic targets and useful biomarkers. Her studies have contributed to the discovery that type I interferon (IFN) and interleukin 1 (IL-1) are important pathogenic players in Systemic Lupus Erythematosus (SLE) and systemic onset Juvenile Idiopathic Arthritis (sJIA), respectively. Using high throughput approaches, her group is characterizing novel
pathways to target therapeutically as well as unique signatures to follow patients in the clinic and assess responses to therapy. Dr. Pascual and her colleagues have been at the forefront of clinical trials using IL-1 blockers in sJIA, which have shown remarkable clinical benefits in nearly 70% of patients.

**Victoria Rael** graduated from the University of Chicago with a BS in cellular and molecular biology. Before entering graduate school, she worked as a technician in Marisa Alegre’s lab studying transplant immunology. She is currently an NSF Graduate Research Fellow in Greg Barton’s lab at UC Berkeley, where she studies negative regulation of the nucleic acid-sensing TLRs.

**Bill Robinson, MD, PhD.** His laboratory’s overarching objective is to elucidate the molecular and cellular mechanisms underlying autoimmune diseases, and to leverage these insights to develop next-generation diagnostics and therapeutics. I draw on my experiences as a researcher, clinician and entrepreneur – to lead researchers and clinicians to decipher the mechanisms underlying pathogenic and protective immune responses, and to turn our scientific discoveries into tomorrow’s transformational solutions. I serve as the Chief of the Division of Immunology and Rheumatology.

**Michael Rosen, MD** is a pediatric gastroenterologist and physician scientist who has been devoted to advancing inflammatory bowel disease (IBD) research and care for over 20 years. He is the inaugural Stanford University Endowed Professor for Pediatric IBD and Celiac Disease. He is also Director of the Stanford Medicine Children’s Health Center for IBD and Celiac Disease. Dr. Rosen’s research expertise crosses mucosal immunology and epithelial biology and clinical and translational investigation. His NIH-funded laboratory has demonstrated the protective role for type 2 cytokines in chronic intestinal inflammation and advanced intestinal organoids as a model to study IBD. Dr. Rosen serves on the editorial boards for the journals *Gastroenterology* and *Inflammatory Bowel Diseases* and the National Scientific Advisory Committee for the Crohn’s & Colitis Foundation.
**Georg Schett, MD** is professor of Internal Medicine and since 2006 Head of the Department of Medicine 3 - Rheumatology and Immunology - of the Friedrich-Alexander-Universität Erlangen-Nürnberg in Germany. Prof. Schett graduated from the University of Innsbruck (Austria) in 1994. After his dissertation from medical school, he worked as scientist at the Institute of BioMedical Aging Research of the Austrian Academy of Science in Innsbruck. In 1996, he joined the Department of Medicine at the University of Vienna, where he completed his postgraduate training in Internal Medicine and subsequently in Rheumatology. In 2003 he was promoted to professor of Internal Medicine. Before taking up his position as chair of the Department of Medicine 3, he worked as a scientist in the United States for one year. His scientific work focuses on creating a better understanding of the molecular basis of immune-inflammatory diseases with rapid translation into clinical practice. Initially, he investigated the immunology of atherosclerosis and focused on antibody-mediated endothelial cell damage. His research work lead to the understanding of the phenomenon of LE-cells in 2007. He was awarded the renowned START Award in 2002 and founded a research group for arthritis in Vienna. Prof. Schett is an ERC award winner and speaker of several DFG- and BMBF-funded joint projects. His work has been awarded numerous prizes, including the Carol-Nachman Prize. In March 2023, Prof. Schett received the 2023 “Funding Prize in the Gottfried Wilhelm Leibniz Programme” awarded by the DFG. He has published over 970 peer-reviewed articles.

**Michael Snyder, PhD.** As a pioneer of Precision Medicine, Dr Michael Snyder has invented many technologies enabling the 21st century of healthcare including systems biology, RNA sequencing, and protein chip. Dr Snyder has initiated the Big Data approach to healthcare through his work using omics to detect early stage disease, including wearables to detect infectious diseases like COVID-19, and at-home microsampling to measure hundreds of molecules from a single drop of blood. He is the first researcher to gather petabytes of data on individuals, which is 1 Million - 1 trillion times more data than the average clinician collects. He as published over 800 papers and is one of the most cited scientists. In terms of commercial success, Mike has co-founded 17 companies (including 2 unicorns) with combined enterprise value of over $6 billion.
Vishnu Shankar is a third year PhD student in the Immunology Program at Stanford University. He graduated with his master’s degree in Computer Science, with a specialization in Artificial Intelligence from Stanford University. He completed his bachelor’s degree with honors in Mathematical and Computational Science in 2018, also at Stanford, with his senior thesis on Bayesian networks for incorporating effect modifiers in meta-analysis. In addition, his background spans biology, mathematics, chemistry, statistics, operations research, physics, and computing. Vishnu has published 15 papers and 3 articles in fields including protein structural prediction, comparison of clinical guidelines cost-effectiveness in type 2 diabetes, cancer diagnosis with analytical chemistry and machine learning, understanding T cell specificity in atherosclerotic plaques, COVID-19 vaccination responses for hematological malignancy patients, and related areas. He is also the founder of the CARES organization to support peer student wellness at college campuses, for which he won the Asoka Youth Changemaker award sponsored by Boehringer Ingelheim. His effort to develop a framework for offering timely peer help to students was tested by Stanford Clinical and Psychological Services, presented at the American Psychiatric Association meeting (San Diego), and subsequently published in a peer reviewed journal.

Larry Steinman MD is Professor of Neurology and Pediatrics at Stanford. He came to Stanford 50 years ago after graduating medical school at Harvard. He chaired the IDP Immunology at Stanford from 2002-2011. He still sees patients at Lucille Packard Children’s Hospital. Thirty years ago Steinman and colleagues at Stanford and Athena Neuroscience published a paper in Nature emanating in the first monoclonal antibody for multiple sclerosis, targeting alpha 4 integrin, Natalizumab.

PJ Utz, MD is a Professor and Associate Dean for Medical Student Research in the School of Medicine. Dr. Utz is a physician scientist running an active NIH funded lab studying autoantibodies and mechanisms driving immunity. Dr. Utz previously was Director of MSTP for 10 years before moving to a position in the Dean’s office in 2018 with a focus on MD-only physician scientist training and launching the Berg Scholars program. Dr. Utz Founded SIMR, a high school program for disadvantaged local high school students that has trained over 1,000 local students in 24 years. More recently, Dr. Utz was selected as Vice Chair of RECOVER’s
Immunology and Hematology Pathobiology Task Force Committee and Chair a new RECOVER Committee for identifying biomarkers for RECOVER clinical trials. More recently, Dr Utz was appointed Director of Department of Medicine Team Science program, a collaborative effort to address a scientific challenge that leverages the strengths and expertise of scientists to improve health worldwide.

**Michael Wilson, MD, MAS** is Professor of Neurology at UCSF’s Weill Institute for Neurosciences in the Division of Neuroimmunology and Glial Biology and the founding director of the UCSF Center for Encephalitis and Meningitis. He is a neurologist and physician-scientist, and his lab does translational research on idiopathic neuroinflammatory disorders with the aim of developing improved diagnostics and therapeutics.

**Tony Wyss-Coray, PhD**, is the D.H. Chen Distinguished Professor of Neurology and Neurological Sciences and the Director of the Phil and Penny Knight Initiative for Brain Resilience at Stanford University. His lab studies brain aging and neurodegeneration with a focus on age-related cognitive decline and Alzheimer’s disease. The Wyss-Coray research team discovered that circulatory blood factors can modulate brain structure and function and factors from young organisms can rejuvenate old brains. Current studies focus on the molecular basis of the systemic communication with the brain by employing a combination of genetic, cell biology, and –omics approaches in killifish, mice, and humans. Wyss-Coray has presented his ideas at Global TED, the Tencent WE Summit, the World Economic Forum, and he was voted Time Magazine’s “The Health Care 50” most influential people transforming health care in 2018. He co-founded Alkahest Inc. and several other companies targeting Alzheimer’s and neurodegeneration and has been the recipient of an NIH Director’s Pioneer Award, a Zenith Award from the Alzheimer’s Association, and a NOMIS Foundation Award.

**Lisa Zaba M.D. Ph.D.**, is an Associate Professor of Dermatology, and Director of the Merkel cell carcinoma (MCC) multi-disciplinary clinic and member of the supportive oncodermatology group at the Stanford Cancer Center. She runs a lab focusing on the immunology of MCC and the treatment and prognostic implications of immune checkpoint inhibitor and
targeted therapy rashes. Dr. Zaba completed medical school at Cornell University, PhD in immunology at Rockefeller University, Residency and Post-Doc at Stanford University in 2013.

**Han Zhu MD**, is an Assistant Professor of Medicine whose clinical and research expertise focuses on cardio-oncology and cardio-immunology. She specializes in the cardiovascular care of patients undergoing therapies for cancer, with a particular focus on the effects of immunotherapies on the heart. She received a bioengineering degree from MIT, medical degree from Case Western Reserve University, and completed clinical cardiology fellowship and internal medicine residency training at Stanford University School of Medicine. Dr. Zhu’s laboratory focuses on myocarditis, cardiac inflammation, and the effects of cancer therapeutics on the cardiovascular system. Her current research employs clinical data, bio-banked samples, and in vivo/in vitro preclinical models in combination with single-cell technologies to study immune-based toxicities in the heart. Dr. Zhu's clinic sees cardio-oncology and cardio-immunology patients and her lab focuses on devising new methods for minimizing cardiovascular complications in the cancer and autoimmune patient populations.