



7th Annual  
**Immune Modulation &  
Engineering Symposium**

**2025**

Philadelphia, PA, USA



# About the Symposium

The mission of the Immune Modulation & Engineering Symposium is to bring together researchers in biomedical engineering and basic and translational immunology to advance the rapidly emerging field of immune engineering. The speakers and attendees represent leaders in this field, with expertise in collaborating across disciplines to generate innovative solutions to treat disease and injury by modulating the immune system.

## Symposium Location:

The Study Hotel  
20 S. 33rd Street  
Philadelphia, PA, USA

## Poster Session Location:

Behrakis Grand Hall  
3210 Chestnut Street  
Philadelphia, PA, USA

## Organizing Committee

### CONFERENCE CHAIR

Christopher Rodell, PhD

### CONFERENCE VICE CHAIR

Gabriele Romano, PhD

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Alex Osidach (Chair)

Samuel Sung

Lindsay Barger

Lyssa Buissereth

# Symposium Agenda

## Day 1: Tuesday, December 9

8:00 AM	<b>Breakfast</b>
	<b>Opening Remarks</b>
8:45AM	<b>Chris Rodell, PhD, Chair of the Immune Modulation and Engineering Collaborative at Drexel University</b>
9:00 AM	<b>Session 1: Modulating immune tolerance</b>
Moderator: Jennifer Hope, PhD	<b>Ying Mei, PhD   Clemson University</b> <i>"Hypoimmunogenic hPSC-derived cardiac organoids evade host immune rejection and promote cardiac functional recovery"</i>
	<b>Gabe Kwong, PhD   Georgia Institute of Technology</b> <i>"Building Synthetic Immunity: Designing T Cells to Measure, Detect, and Treat Cancer"</i>
	<b>Kaitlyn Sadtler, PhD   National Institute of Biomedical Imaging and Bioengineering (NIBIB)</b> <i>"Microplastics in damaged tissue induce autoimmune tertiary lymphoid structure formation constrained by CD8 regulatory T cell"</i>
	<b>Robert Oakes, PhD   University of Delaware</b> <i>"Microneedle array delivery of tolerizing nanotherapeutics for countering autoimmunity"</i>
10:30 AM	<b>Break</b>
11:00 AM	<b>Session 2: Targeted therapeutics for anti-cancer therapy Sponsored by the Drexel University College of Medicine</b>
Moderator: Gabe Romano, PhD	<b>Dmitry Gabrilovich, MD, PhD   AstraZeneca</b> <i>"Immune suppressive myeloid cells: from biology to therapeutic targeting"</i>
	<b>Honggang Cui, PhD   Johns Hopkins</b> <i>"Self-assembling peptide nanofibers for cancer immunotherapy "</i>
	<b>Suzanne Topalian, MD   Johns Hopkins</b> <i>"PD-1 pathway blockade: using "precision immunology" to unleash the immune system against cancer."</i>
	<b>Brendan Knittle   Brown University</b> <i>"A Lipo-Polymeric Nanoparticle Drug and Gene Delivery Platform for Enhanced Immune Responses Against Melanoma"</i>

# Symposium Agenda

12:30 PM	<b>Break</b> <i>Optional "Meet the Mentors" session for trainees to interact with leaders in the field</i> Time: 1:15 to 2:20pm
2:30 PM	<b>Session 3: Cell-based therapeutics for cancer immunotherapy</b> <b>Sponsored by the Sidney Kimmel Comprehensive Cancer Center</b>  <b>Ben Youngblood, PhD</b>   St. Jude's Children's Research Hospital <i>"Reverse translation of patient-identified epigenetic regulators limiting durable tumor immunotherapy"</i>  <b>Yvonne Chen, PhD</b>   University of California, Los Angeles <i>"Engineering Multi-pronged CAR-T Cells for Cancer Therapy"</i>  <b>Babar Bashir, MD, MS, FACP</b>   Thomas Jefferson University <i>"Immunological and Preliminary Clinical Responses to Ad5.F35-hGUCY2C-PADRE Vaccine in GI Cancers"</i>
4:30 PM	<b>Opening Reception : Unique Perspectives in Immune Engineering</b> <b>Location: Behrakis Grand Hall</b>  <b>Brian Aguado, PhD and Ana Maria Porras, PhD</b>   LatinXinBME <i>Building a Virtual Community to Support and Celebrate the Success of Latinx Biomedical Engineers</i>  Discussion
5:15-7:30 PM	<b>Poster Session and Cocktail Reception</b> <b>@ Behrakis Grand Hall</b>
<b>Day 2: Wednesday, December 10</b>	
8:00 AM	<b>Breakfast</b>
9:00 AM	<b>Session 4: Cardiovascular immune engineering</b>  <b>Katey Rayner, PhD</b>   Ottawa Heart Institute <i>"Exploring novel inflammatory mediators, and vascular disease"</i>  <b>Ronald Vagnozzi, PhD</b>   University of Colorado Anschutz <i>"Optimizing Macrophage Fate and Function for Cardiac Repair"</i>  <b>Brian Aguado, PhD</b>   University of California San Diego <i>"Understanding sex chromosome and sex hormone regulation of cardiovascular disease and inflammation using biomaterials"</i>

# Symposium Agenda

10:30 AM	Break
11:00 AM	<b>Session 5: Molecular design of immunotherapeutics</b>  <b>Moderator:</b> Peter Deak, PhD  <b>Aaron Esser-Kahn, PhD</b>   University of Chicago <i>"Discovery of New Trained Immunity Molecules and Pathways "</i>  <b>John Wilson, PhD</b>   Vanderbilt University <i>"Engineering Nanotechnologies for Immuno-Oncology "</i>  <b>Christopher Garris, PhD</b>   Mass General Research Institute & Harvard Medical School <i>"JAK Inhibition Hyperactivates Dendritic Cells in Bladder Cancer Therapy"</i>  <b>Yaoying Wu, PhD</b>   Syracuse University <i>"Dendritic Cell Membrane-Coated Nanoparticles for Antigen-Specific T-Cell Targeted Delivery "</i>
12:30 PM	Break
2:00 PM	<b>Session 6: Infectious disease and vaccines</b>  <b>Moderator:</b> Michele Kutzler, PhD  <b>Bali Pulendran, PhD</b>   Stanford University <i>"Systems Vaccinology"</i>  <b>Laura Vella, MD, PhD</b>   Children's Hospital of Philadelphia <i>"Decoding the HIV Reservoir"</i>  <b>Asheley Chapman, PhD</b>   Scripps Research Institute <i>"CD45-targeted HIV Env trimers produce robust immunity with a single shot"</i>  <b>Laurel Hind, PhD</b>   University of Colorado Boulder <i>"M-MDSCs and Neutrophil Dysfunction: Unveiling a Mechanism of Post-Sepsis Immunosuppression"</i>
3:30 PM	Break
4:00 PM	<b>Session 7: Pediatric immune development and engineering</b>  <b>Moderator:</b> Alison Carey, MD  <b>Danielle Soranno, MD</b>   Indiana University School of Medicine <i>"Engineering and stimulation of myeloid cells for cancer immunotherapy"</i>  <b>Krithika Lingappan, MD, PhD</b>   Children's Hospital of Philadelphia <i>"Harnessing macrophages for therapy in the developing lung"</i>  <b>Akari Seiner</b>   Drexel University <i>In Vitro Assessment of Hydrogel-Coated Cardiovascular Shunt Hemocompatibility for Pediatric Applications"</i>

# Symposium Agenda

## Day 3: Thursday, December 11

8:00 AM	Breakfast
9:00 AM	<b>Session 8: Immune modulation for regenerative medicine</b>  <b>Laura Suggs, PhD</b>   University of Texas at Austin <i>"Apoptic Cell-Inspired Immunoengineering"</i>  <b>Brendan Harley, PhD</b>   University of Illinois Urbana-Champaign <i>"Composite biomaterials to shape regenerative trajectories"</i>  <b>Kyle Vining, DDS, PhD</b>   Penn Dental Medicine <i>"Mechanical regulation of immune cells in myelofibrotic niches"</i>  <b>Lauren Mottel</b>   University of Delaware <i>"IL-33-releasing hydrogels for treating ischemic muscle injuries"</i>
10:30 AM	Break
11:00 AM	<b>Session 9: Novel tools and techniques in immunoengineering</b>  <b>Tram T. Dang, PhD</b>   Nanyang Technical University, Singapore <i>"Proteases as immuno-modulators for biomaterials and drug delivery systems"</i>  <b>Ana Maria Porras, PhD</b>   University of Florida <i>"Genomic and Functional Profiling of Microbiome Enzymes that Remodel Intestinal Extracellular Matrix"</i>  <b>Kate MacNary</b>   Drexel University College of Medicine <i>"HTLV-infection derived exosome-mediated transcriptional reprogramming in Monocytes of HAM/TSP patients"</i>  <b>Zehra Demir</b>   University of Virginia <i>"'Goldilocks' Thermal Window as Defined by Theranostic PET for Optimal Focused Ultrasound Thermal Ablation and CD47 Antagonist Delivery"</i>
12:30 PM	<b>Closing Remarks</b>  <b>Gabe Romano, PhD</b>   Vice Chair of the Immune Modulation and Engineering Collaborative at Drexel University

## Our Speakers



**Ying Mei, PhD**

Clemson University

Dr. Ying Mei is the McQueen Quattlebaum Professor of Bioengineering at Clemson University and holds an adjunct position in the Department of Regenerative Medicine and Cell Biology at the Medical University of South Carolina. He earned his Ph.D. in Materials Chemistry from the Polytechnic Institute of New York University and joined Clemson's Department of Bioengineering as a faculty member in 2012. Dr. Mei's research focuses on developing engineered human cardiac organoids for regenerative therapies and disease modeling. He received the U.S. Presidential Green Chemistry Challenge Award in the Academic category, the MTF Biologics Established Investigator Grant Award, and the American Heart Association Innovative Project Award.



**Gabe Kwong, PhD**

Georgia Institute of Technology

Gabe Kwong is the Robert A. Milton Professor of Biomedical Engineering at Georgia Tech and Emory School of Medicine. His research program sits at the intersection of synthetic immunity and medicine, with a particular emphasis on developing biosensors and cell therapies for cancer. A native of the San Francisco Bay Area, Dr. Kwong received his B.S. from UC Berkeley, Ph.D. from Caltech, and completed postdoctoral studies at MIT. He has been recognized with selective distinctions, including the NIH Director's New Innovator and Pioneer Awards, and currently leads the \$49.5 million Cancer and Organ Degradome Atlas (CODA) project – a multi-institutional initiative supported by ARPA-H that aims to transform early cancer detection. Dr. Kwong co-founded 3 biotech companies and holds 40 issued or pending patents.

## Our Speakers



**Dmitry Gabrilovich, MD, PhD**  
AstraZeneca

Dmitry Gabrilovich, MD, Ph.D., is an Executive Director and Chief Scientist, Cancer Immunology, AstraZeneca where he performs discovery and translational studies of tumor immunology with emphasis on myeloid cells. He studied dendritic cell (DC) biology at the Imperial College of London and tumor immunology at U.T. Southwestern Medical School and Vanderbilt University. In mid-1990s his group demonstrated, that DCs in cancer were functionally impaired. They have described the first tumor-derived factor implicated in DC defects and determined that myeloid progenitors were the main targets for this negative effect. His group implicated lipid accumulation as one of the mechanisms negatively regulating function of DCs. Dr. Gabrilovich was instrumental in the discovery and characterization of myeloid-derived suppressor cells (MDSC). His group described number of molecular mechanisms regulating expansion and function of these cells and provided first evidence that MDSC can be therapeutically targeted in patients. Dr. Gabrilovich was involved in number of clinical trials testing the effect of cancer vaccines and small molecules and antibodies that target myeloid cells. Before joining AstraZeneca Dr. Gabrilovich was Robert Rothman Endowed Chair in Cancer Research at H. Lee Moffitt Cancer Center and then Christopher M. Davis Professor in Cancer Research at the Wistar Institute in Philadelphia. He is currently adjunct professor at the Department of Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania. Dr. Gabrilovich is American Cancer Society Research Professor and during last 10 years is listed as one of the most highly cited researchers in the field of Immunology.



**Honggang Cui, PhD**  
Johns Hopkins

Honggang Cui is a Professor in the Department of Chemical and Biomolecular Engineering, as well as a core member of the Johns Hopkins Institute for NanoBioTechnology at the Whiting School of Engineering. Cui's research focuses on developing supramolecular nanostructures that leverage their unique physical, chemical, and biological properties for a diverse array of applications, including protein purification, targeted drug delivery, cancer imaging, immunotherapy, and the treatment of infectious diseases such as HIV. His contributions to science, engineering and medicine are documented in over 150 published manuscripts in peer-reviewed journals, and his lab has filed more than 25 invention disclosures over the past decade. He currently serves as an Associate Editor for the Journal of Controlled Release, the flagship journal of the Controlled Release Society. He co-chaired the inaugural Gordon Research Conference on Peptide Materials.



## Our Speakers



**Suzanne Topalian, MD**

Johns Hopkins

Dr. Topalian is a physician-scientist whose studies of programmed death 1 (PD-1) blockade established immune checkpoint inhibition as a pillar of oncology. Her work demonstrated durable tumor regressions across multiple malignancies and laid the clinical foundation for today's PD-(L)1 inhibitors, now approved in more than 20 cancer types. She also co-led the development of the PD-L1 IHC and MSI-high biomarkers. An author of over 180 peer reviewed publications and one of the most highly cited biomedical researchers, she continues to lead trials of neoadjuvant immune checkpoint blockade and biomarker-driven treatment combinations. Recognition for her contributions includes Nature's 10 (2014), ASCO's David A. Karnofsky Memorial Award (2015), the Taubman Prize (2016), the NCI Rosalind E. Franklin Award (2018), and the AAMC Award for Distinguished Research in the Biomedical Sciences (2021). Dr. Topalian was elected to the National Academy of Medicine in 2017 and to the AACR and SITC Academies in 2022.



**Ben Youngblood, PhD**

St. Jude's Children's Research Hospital

Benjamin Youngblood, PhD, is currently a member in the Department of Immunology at St Jude Children's Research Hospital. He received a Bachelor of Science degree in Biochemistry from Oregon State University in 2001 and went on to do his graduate training in Biochemistry studying enzyme specificity of DNA methyltransferases at the University of California Santa Barbara. He joined Professor Rafi Ahmed's laboratory in 2007 for postdoctoral training focused on epigenetic regulation of memory CD8 T cell differentiation and exhaustion. In 2014, he joined the faculty at St Jude Children's Research Hospital, and has developed a research program studying epigenetic mechanisms that regulate the development of functional and nonfunctional CD8 T cells during viral infection, cancer, and autoimmunity.

## Our Speakers



### **Yvonne Chen, PhD**

University of California, Los Angeles

Dr. Yvonne Chen is a Professor of Microbiology, Immunology, and Molecular Genetics at UCLA. She received her B.S. and Ph.D. in Chemical Engineering from Stanford University and Caltech, respectively, and was a Junior Fellow in the Harvard Society of Fellows. The Chen Laboratory applies biomolecular engineering to the development of novel mammalian-cell systems for clinical use, and led the first investigator-initiated clinical trial on CAR-T cell therapy at UCLA. The Chen Lab's work has been recognized by the NIH Director's Early Independence Award, the NSF CAREER Award, and the Cancer Research Institute Lloyd J. Old STAR Award, among others.



### **Babar Bashir, MD, MS, FACP**

Thomas Jefferson University

Babar Bashir is an Associate Professor with a primary appointment in the Department of Medical Oncology, Division of Solid Tumors and a secondary appointment in the Department of Pharmacology, Physiology and Cancer Biology at Thomas Jefferson University. I am board certified in internal medicine and medical oncology and fellowship trained in clinical pharmacology. I provide specialized care to patients with various GI cancers as well as clinical trial participants. I serve as the Director of Phase I therapeutics program as well as co-leader for Immune Cell Regulation and Targeting (IRT) program at Sidney Kimmel Comprehensive Cancer Center. I am engaged in translational research and leading the clinical development of cancer vaccine to prevent tumor recurrence in GI cancers and a novel CAR-T cell therapy in advanced colorectal cancers.

## Our Speakers



**Tram T. Dang, PhD**

Nanyang Technical University, Singapore

Dr Dang Thuy Tram is Associate Professor at the School of Chemistry, Chemical Engineering and Biotechnology and a Fellow of the Ageing Research Institute for Society and Education (ARISE) at Nanyang Technological University (NTU), Singapore. Dr Dang received her B.Sc degree from the University of Illinois, Urbana-Champaign (USA) and Ph.D. degree from Massachusetts Institute of Technology (USA). She also conducted her postdoctoral training as a Controlled Release Society fellow at Brigham and Women's Hospital, Harvard Medical School (USA). Dr Dang's research leverages fundamental understanding of the interaction between biomaterials and the immune systems to design novel immuno-modulatory biomaterials and therapeutic delivery systems for the treatment of diabetes and chronic inflammatory diseases.



**Ana Maria Porras, PhD**

University of Florida

Dr. Ana Maria Porras is an Assistant Professor of Biomedical Engineering at the University of Florida, where she leads the Tissue-Microbe Interactions lab. Her group leverages cell and tissue engineering, and computational tools to understand how microorganisms regulate human extracellular matrix remodeling. Her work centers on the gut microbiome, cardiovascular health, and tropical infectious diseases. She is the co-founder of the "Latinx in Biomedical Engineering" community, and the recipient of multiple awards, including the UF Excellence Award for Assistant Professors, the NSF Faculty Early Career Development (CAREER) Award, the NIH Maximizing Investigators Research Award (MIRA), the AAAS Early Career Award for Public Engagement with Science.

## Our Speakers



**Aaron Esser-Kahn, PhD**

University of Chicago

Aaron was born and raised in Bloomfield Hills, MI. As a high-school student, he began his interest in research at Wayne State University. He studied chemistry at the California Institute of Technology and worked in the Tirrell lab. He completed his PhD in chemistry at UC Berkeley as part of the Francis group and the Chemical-Biology Program. He worked as a post-doctoral scholar with Jeffrey Moore and the Autonomous Materials Systems Group at University of Illinois, Urbana-Champaign. Upon completion, Aaron began his independent career at the University of California, Irvine, in 2011. In 2017, he and his lab moved to be part of the Pritzker School for Molecular Engineering at the University of Chicago. There, he has worked in two areas: synthetic approaches to vaccine design and biomimetic approaches to materials.



**John Wilson, PhD**

Vanderbilt University

John T. Wilson is a Professor of Chemical & Biomolecular Engineering, Bio-medical Engineering, and Pathology, Immunology & Microbiology at Vanderbilt University and Co-Leads the Host-Tumor Interactions Program within the Vanderbilt-Ingram Cancer Center as the Ingram Professor of Cancer Research. His multidisciplinary Immunoengineering Laboratory works at the interface of molecular engineering and immunology to develop strategies for more precisely modulating immune and inflammatory responses at the tissue, cell, and subcellular level.



**Bali Pulendran, PhD**

Stanford University

Dr. Bali Pulendran is Director of the Institute for Immunity, Transplantation and Infection (ITI) and Professor of Pathology, Microbiology, and Immunology at Stanford University School of Medicine. He earned his undergraduate degree from Cambridge University, his Ph.D. from the Walter & Eliza Hall Institute in Melbourne under Sir Gustav Nossal, and completed postdoctoral work at Immunex in Seattle. His research has transformed human immunology and vaccinology, pioneering systems approaches to study immunity and revealing key roles of dendritic cell subsets and Flt3-Ligand. Widely published in top journals, he is an AAAS Fellow, NIH MERIT awardee, and a Highly Cited Researcher.

# Our Speakers



**Laura Vella, MD, PhD**  
Children’s Hospital of Philadelphia

Dr. Laura Vella is an Assistant Professor of Pediatrics (Infectious Diseases) at the University of Pennsylvania and in the Division of Infectious Diseases at the Children’s Hospital of Philadelphia. Dr. Vella’s research program focuses on the use of peripheral blood to measure lymph node events, with an emphasis on T follicular helper cells, vaccine readiness in immunocompromised populations, and HIV reservoir.



**Danielle Soranno, MD**  
Indiana University School of Medicine

Dr. Soranno is an associate professor, pediatric nephrologist, and physician-scientist-engineer at Indiana University School of Medicine. She runs a basic science research lab in the Wells Center for Pediatric Research and performs translational research in pediatric acute kidney injury. Her background is in biomedical engineering, and she holds a faculty position in the Weldon School of Biomedical Engineering at Purdue. She obtained her undergraduate engineering degree from Case Western Reserve University in 2003, and her medical degree from Case in 2007. She trained in pediatrics at the University of Colorado and then trained in pediatric nephrology at the Children’s Hospital of Philadelphia at the University of Pennsylvania. She spent the first 9 years of her career back at the Children’s Hospital of Colorado, until she was recruited to Indiana University in 2022.

## Our Speakers



**Krithika Lingappan, MD, PhD**

Children's Hospital of Philadelphia

Dr. Krithika Lingappan is an accomplished clinician-scientist and educator. She is an Associate Professor of Pediatrics (with tenure) at the University of Pennsylvania and an Attending Neonatologist at the Children's Hospital of Philadelphia. Dr. Lingappan is known for her research on sex-specific differences in neonatal lung injury and repair, with more than 75 peer-reviewed publications. Her scholarship has garnered awards from the American Thoracic Society, Southern Society for Pediatric Research, and other organizations. She has served as a standing and ad-hoc member in NIH study sections, and as a moderator, organizer, or chair of numerous national research and scientific gatherings. The lab's long-term goal is developing innovative therapies to guide the preterm lung to recovery.



**Laura Suggs, PhD**

University of Texas at Austin

Dr. Laura Suggs holds the Zarrow Centennial Professorship at the University of Texas at Austin. She earned her Ph.D. in chemical engineering from Rice University. She has received a number of awards for her work including the National Science Foundation's ADVANCE Award, the CAREER Award, and teaching awards from National Instruments and the ASEE Gulf Southwest Section. She is a Fellow of the American Institute for Medical and Biological Engineering (FAIMBE), the Royal Society of Chemistry (FRSC), and Biomaterial Science and Engineering (FBSE). She received the Clemson Award for contributions to the literature by the Society for Biomaterials.



**Brendan Harley, PhD**

University of Illinois Urbana-Champaign

Brendan Harley is the Robert Schaefer Professor in the Dept. of Chemical and Biomolecular Engineering at the University of Illinois at Urbana-Champaign as well as Program Leader in the Cancer Center at Illinois. He received a B.S. in Engineering Sciences from Harvard University, a Sc.D. in Mechanical Engineering from MIT, and performed postdoctoral studies at the Joint Program for Transfusion Medicine at Children's Hospital Boston. His research group develops tissue engineering technologies for musculoskeletal regeneration, hematopoietic stem cell biomanufacturing, as well as to investigate endometrial pathologies and invasive brain cancer. Dr. Harley co-founded a regenerative medicine company, Orthomimetics Ltd., to commercialize a biomaterial for osteochondral regeneration.

## Our Speakers



**Katey Rayner, PhD**  
Ottawa Heart Institute

Katey Rayner is the Chief Scientific Officer and VP Research at the University of Ottawa Heart Institute. She is also a Professor in the Department of Biochemistry, Microbiology & Immunology in the Faculty of Medicine at the University of Ottawa. Dr. Rayner's research program focuses how inflammation underlies common diseases like coronary artery disease, obesity and dementia. Her lab is trying to understand the molecular signals that cause inappropriate activation of the immune system and how we can use this understanding to either better diagnose/identify patients at risk of disease, or to better treat this excess inflammation directly to lower risk of disease. Dr. Rayner has been recognized with awards such as the CIHR Institute of Circulatory & Respiratory Health/CSATVB Mid-Career Excellence Award in Blood and Blood Vessel Research, Joseph A Vita Award (American Heart Association), and is a member of the College of New Scholars of the Royal Society of Canada. Dr. Rayner's research is currently funded by the Canadian Institutes for Health Research, the Heart and Stroke Foundation of Canada and the European Cardiovascular Research Network.



**Ronald Vagnozzi, PhD**  
University of Colorado Anschutz

Ronald J. Vagnozzi is currently an Assistant Professor in the Division of Cardiology, Gates Institute, and Consortium for Fibrosis Research and Translation at the University of Colorado Anschutz. The Vagnozzi lab explores unique and subset-specific roles of cardiac macrophages in coordinating fibrosis, healing, and remodeling of the injured heart. The lab goals are: to uncover fundamental cellular mechanisms of tissue injury and stress, to determine how organs and tissues might be coaxed into resolving chronic inflammation without pathological consequences, and to develop therapeutics that harness beneficial properties of immune cell activity in non-regenerative organs. The lab is currently funded by an R01 from the NHLBI and a Dept. of Medicine Translational Research Scholars Award from CU Anschutz.

## Our Speakers



### **Brian Aguado, PhD**

University of California San Diego

Dr. Brian Aguado is currently an Assistant Professor of Bioengineering at UC San Diego, where his laboratory research is focused on studying sex differences in cardiovascular disease using biomaterial technologies. Dr. Aguado completed his BS degree in Biomechanical Engineering from Stanford University and his MS and PhD in Biomedical Engineering from Northwestern University. He also obtained his certificate in Management for Scientists and Engineers from the Kellogg School of Management at Northwestern. He completed his postdoctoral fellowship in Chemical and Biological Engineering at the University of Colorado Boulder. Dr. Aguado has received numerous awards to support his research, including the NIH K99/R00 Pathway to Independence Award, the American Heart Association Career Development Award, the Chan Zuckerberg Initiative Science Diversity Leadership Award, the NIH Director's New Innovator DP2 Award, and the NSF CAREER Award. In recognition of his laboratory's research, Dr. Aguado has also received the Society for Biomaterials Young Investigator Award, the American Society for Matrix Biology Junior Investigator Award, the Cellular and Molecular Bioengineering Society Rising Star Award, and was elected as an AIMBE Emerging Leader. Dr. Aguado is also a dedicated science communicator outside of the lab and seeks to engage historically excluded and marginalized populations in the sciences. Dr. Aguado co-founded the non-profit LatinXinBME, a social media organization dedicated to building a diverse and inclusive community of Latinx biomedical engineers and scientists to support each other personally and professionally through their careers. LatinXinBME has received awards from the Society for Biomaterials, the Biomedical Engineering Society, and the American Society for Engineering Education for their community building initiatives. Dr. Aguado was also named one of the 100 Most Inspiring Latinx Scientists in America by Cell Press, received the Teacher of the Year Award from the Jacobs School of Engineering, and the GEMINI Faculty Mentor Award from the Institute for Engineering in Medicine.



# Abstract Award Winners

## Leadership in Diversity:

**Kate MacNary** | Drexel University College of Medicine

*HTLV-infection derived exosome-mediated transcriptional reprogramming in Monocytes of HAM/TSP patients*

**Akari Seiner** | Drexel University

*In Vitro Assessment of Hydrogel-Coated Cardiovascular Shunt Hemocompatibility for Pediatric Applications*

## Translational Research:

**Zehra Demir** | University of Virginia

*'Goldilocks' Thermal Window as Defined by Theranostic PET for Optimal Focused Ultrasound Thermal Ablation and CD47 Antagonist Delivery*

## Collaborative Research:

**Asheley Chapman, PhD** | Scripps Research Institute

*CD45-targeted HIV Env trimers produce robust immunity with a single shot*

## Innovative Research:

**Lauren Mottel** | University of Delaware

*IL-33-releasing hydrogels for treating ischemic muscle injuries*

**Brendan Knittle** | Brown University

*CD45-targeted HIV Env trimers produce robust immunity with a single shot*

## Outstanding Early Career Researchers:

**Christopher Garriss, PhD** | Mass General Research Institute & Harvard Medical School

*JAK Inhibition Hyperactivates Dendritic Cells in Bladder Cancer Therapy*

**Laurel Hind, PhD** | University of Colorado Boulder

*M-MDSCs and Neutrophil Dysfunction: Unveiling a Mechanism of Post-Sepsis Immunosuppression*



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## Poster Session

Date: December 9th, 2025

Time: 5:15 pm to 7:30 pm

Location: Behrakis Grand Hall

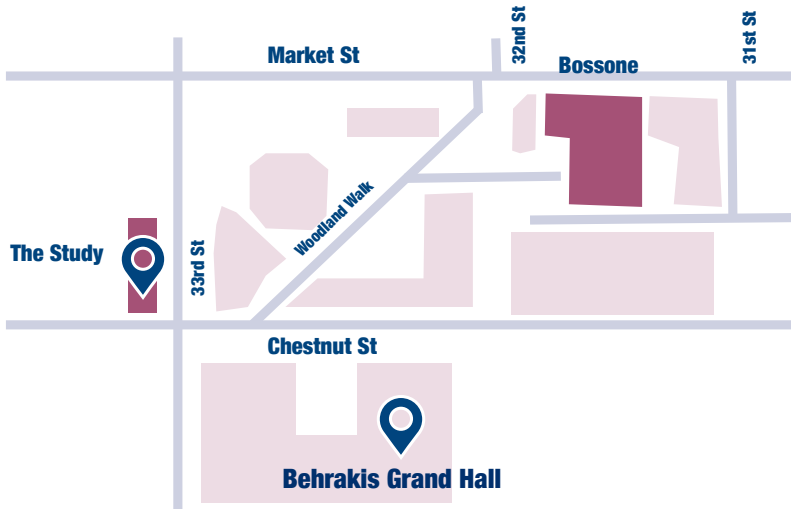
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