



3rd Annual

**Immune Modulation & Engineering
Symposium**

December 9-10, 2021

Drexel University, Philadelphia, PA



3rd Annual Immune Modulation & Engineering 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.



More at biomed.drexel.edu/immunesymposium/

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Mallinckrodt

Day 1: Thursday, December 9th

8:55 AM Opening Remarks

9:00 AM Session 1: Immunoregulation of Cancer

Moderator: Kara Spiller | Drexel University

David J. Mooney | Wyss Institute

"Biomaterials to promote T cell immunity"

Wayne Hancock | Children's Hospital of Philadelphia

"Targeting tregs to promote antitumor immunity"

Sara Meyer | Thomas Jefferson University

"MicroRNA antagonism of Toll-like receptor signaling in myeloid leukemogenesis"

10:00 AM Panel Discussion

10:20 AM Break

10:40 AM Session 2: Cell Therapy

Moderator: Adam Snook | Thomas Jefferson University

Bruce Levine | University of Pennsylvania

"Engineering genetically enhanced T cells for clinical applications"

Suzie Pun | University of Washington

"Traceless aptamer-mediated isolation of CD8+ T cells for chimeric antigen receptor T-cell therapy"

Minglin Ma | Cornell University

"Developing advanced biomaterials and devices for type 1 diabetes cell replacement therapies"

11:40 AM Panel Discussion

12:00 Noon Lunch Break

1:30 PM Session 3: Nanomedicine for Immune Cell Control I

Moderator: Jake Brenner | University of Pennsylvania

Vladimir Muzykantov | University of Pennsylvania

"Erythrocyte-based delivery system for immunotherapy"

Willem Mulder | Eindhoven University of Technology

"Clinical translation of nanomaterial immunotherapeutics"

Jamie Spangler | Johns Hopkins University

"Engineered multispecific antibodies for cancer immunotherapy"

2:30 PM **Panel Discussion**

2:50 PM **Break**

3:10 PM **Session 4: Nanomedicine for Immune Cell Control II**

Moderator: Hao Cheng | Drexel University

Liangfang Zhang | University of California San Diego

"Biomimetic nanoparticles for multi-antigenic vaccine delivery"

Nichole Daringer | Rowan University

"Synthetic engineering for immune therapy"

Takashi Kei Kishimoto | Selecta Biosciences

"Development of ImmTOR nanoparticles for the induction of antigen-specific immune tolerance and mitigation of anti-drug antibodies"

Kandace Gollomp | Children's Hospital of Philadelphia

"Synthetic antibodies for the treatment of sepsis"

4:30 PM **Panel Discussion**

5:00-7:00 PM **Poster Session**

Day 2: Friday, December 10th

8:55 AM Opening Remarks

9:00 AM Session 5: Infectious Diseases and Vaccines

Moderator: Michele Kutzler | Drexel University

Gregg Duncan | University of Maryland

"Engineering host-pathogen interactions using synthetic mucus biomaterials"

Ebony Gary | Wistar Institute

"DNA vaccines for Covid-19"

Annaleisa Anderson | Pfizer Inc

"Bench to bedside: A novel approach to generate a recombinant toxoid vaccine against Clostridium difficile"

10:00 AM Panel Discussion

10:20 AM Break

10:40 AM Session 6: Personalized Medicine in Immune Engineering

Moderator: Mike Mitchell | University of Pennsylvania

Brian Aguado | University of California San Diego

"Patient and sex-specific in vitro models of aortic valve stenosis"

John Bethea | Drexel University

"Sex differences in neuroimmune modulation of chronic pain"

Peter Gaskill | Drexel University

"Effects of drug use on HIV infection of macrophages"

11:40 AM Panel Discussion

12:00 Noon Lunch Break

1:30 PM Session 7: Immune Regulation of Tissue Repair

Moderator: Yinghui Zhong | Drexel University

De'Broski R. Herbert | University of Pennsylvania

"Perforin-2 pokes its way into Type 2 immunity"

Tatiana Segura | Duke University

"Biomaterials that modulate innate-adaptive immune crosstalk in wound healing"

Hong Wang | Temple University

"Immune regulation in cardiovascular injury and disease"

2:30 PM **Panel Discussion**

2:50 PM **Break**

3:10 PM **Session 8: Engineering Systems for Fundamental Understanding**
Moderator: Chris Rodell | Drexel University

Daniel Hammer | University of Pennsylvania
"Tools for understanding the migration of immune cells"

Rebecca Pompano | University of Virginia
"Ex vivo models to study lymph node function in vaccination and tumor immunity"

Ankur Singh | Georgia Institute of Technology
"Organoids and on-chip models of immune organs"

4:10 PM **Panel Discussion**

4:30-4:45 PM **Concluding Remarks**