

Advances in Immunoengineering: Fundamentals and Cutting-Edge Advances

Tuesdays and Thursdays, January 4 – 27, 2022

A workshop presented by

The Johns Hopkins Translational ImmunoEngineering (JH-TIE) Center

NIBIB National Center for Biomedical Imaging and Bioengineering

The Johns Hopkins Translational Tissue Engineering Center (TTEC)

The Johns Hopkins University Institute for NanoBioTechnology (INBT)



Register online at: hopkinscme.cloud-cme.com/default.aspx?P=5&EID=38555

Program

Week 1: T Cell Engineering and Immunometabolism

Tuesday 1/4/2022 4:00 – 5:30 pm

Moderators: Jennifer Elisseeff, Natalie Livingston

Opening Remarks: Jennifer Elisseeff; Denis Wirtz

Cassian Yee *The University of Texas MD Anderson Cancer Center, Department of Melanoma Medical Oncology, Division of Cancer Medicine, Department of Immunology; Solid Tumor Cell Therapy Program*

T Cell Therapy of Cancer: The New Math

Kellie N. Smith *Johns Hopkins University School of Medicine, Department of Oncology; Bloomberg~Kimmel Institute for Cancer Immunotherapy; Mark Center for Advanced Genomics and Imaging; Sidney Kimmel Comprehensive Cancer Center*

Integrated multi-omics for tumor-reactive T cell profiling

Thursday 1/6/2022 4:00 – 5:30 pm

Moderators: Jonathan Schneck, Scott Wilson

Pedro Romero *University of Lausanne, Department of Fundamental Oncology*

Modulating antigen specific CD8 T cell differentiation for immunotherapy of cancer

Erika Pearce *Johns Hopkins University, School of Medicine, Department of Oncology, Sidney Kimmel Comprehensive Cancer Center; Bloomberg School of Public Health, Department of Biochemistry and Molecular Biology*

Mitochondrial shape shifting in the CD4+ T cell response

Week 2: Regenerative Immunology and T Cell Programing

Tuesday 1/11/2022 4:00 – 5:30 pm

Moderators: Hai-Quan Mao, Joseph Choy

Stephen Badylak *University of Pittsburgh, Department of Surgery; McGowan Institute for Regenerative Medicine, Center for Pre-Clinical Tissue Engineering*

Immunoengineering ... Finally!

Jennifer Elisseeff *Johns Hopkins University, Department of Biomedical Engineering, Translational Tissue Engineering Center*

Immune changes with aging and implications for regenerative medicine

Thursday 1/13/2022 4:00 – 5:30 pm

Moderators: Jordan Green, Joel Sunshine

Greg Delgoffe *University of Pittsburgh, Department of Immunology; Hillman Cancer Center*

Metabolic reprogramming to improve T cell function

Jonathan Schneck *Johns Hopkins University, Department of Pathology, Institute for Cell Engineering, Institute for NanoBioTechnology*

Engineering Artificial Antigen Presenting Cells, aAPC, for Cancer Immunotherapy: From Bench to Bedside

Week 3: Immunotherapy, Vaccine, and Autoimmunity

Tuesday 1/18/2022 4:00 – 5:30 pm

Moderators: Jordan Green, Ariel Isser

Matthias Stephan *University of Washington School of Medicine, Medical Oncology; Fred Hutchinson Cancer Research Center; University of Washington, Department of Bioengineering; The Paul G. Allen Frontiers Group*

Creating living drugs with synthetic compounds

Ankur Singh *Georgia Institute of Technology, School of Mechanical Engineering; Georgia Institute of Technology & Emory Medicine, Department of Biomedical Engineering*

Decoding Immunity using Engineered Immune Organoids

Thursday 1/20/2022 4:00 – 5:30 pm

Moderators: Jonathan Schneck, Jamie Spangler

Robert Seder *National Institutes of Health, National Institute of Allergy and Infectious Diseases, Vaccine Research Center, Cellular Immunology Section*

IV delivery of a nanoparticle neoantigen cancer vaccine generates effective antitumor immunity through CD8+ T cells and alteration of the tumor micro-environment

Pere Santamaria *University of Calgary, Department of Microbiology, Immunology and Infectious Diseases, Snyder Institute for Chronic Diseases and Hotchkiss Brain Institute, Julia McFarlane Diabetes Research Centre; Institut d'Investigacions Biomèdiques August Pi i Sunyer*

In vivo re-programming of autoantigen-experienced T-follicular helper cells for the treatment of autoimmunity

Week 4: Immunoengineering, Tissue Context, and Immunotherapies

Tuesday 1/25/2022 4:00 – 5:30 pm

Moderators: Jennifer Elisseeff, Scott Wilson

David Mooney *Harvard University, John A. Paulson School of Engineering and Applied Sciences, Wyss Institute for Biologically Inspired Engineering*

Biomaterials for T Cell Immunity

Megan Sykes *Columbia University, Department of Microbiology & Immunology, Department of Surgical Sciences, Columbia Center for Translational Immunology*

Tracking the Human Alloresponse in Transplant Recipients

Thursday 1/27/2022 4:00 – 5:30 pm

Moderators: Hai-Quan Mao, Josh Doloff

Donna Farber *Columbia University, Department of Microbiology & Immunology, Department of Surgical Sciences*

Localized adaptation and tissue residence of immune cells

John Wherry *University of Pennsylvania, Department of Systems Pharmacology & Translational Therapeutics, Institute for Immunology, Abramson Cancer Center, Parker Institute for Cancer Immunotherapy*

Immunity to SARS-CoV-2 vaccination