Advances in Immunoengineering: Fundamentals and Cutting Edge Advances

Tuesdays and Thursdays
January 2 - 18, 2024

INTERNET LIVE CONFERENCE

Presented by
Johns Hopkins School of Medicine
The Johns Hopkins Translational ImmunoEngineering (JH-TIE) Center
An NIBIB National Center for Biomedical Imaging and Bioengineering
The Johns Hopkins Translational Tissue Engineering Center (TTEC)
The Johns Hopkins Institute for NanoBioTechnology (INBT)

This activity has been approved for AMA PRA Category 1 Credits™.
DESCRIPTION
The field of immunoengineering combines the diverse and complex fields of engineering and immunology and is transforming patient treatment in cancer, autoimmunity, regeneration, and transplantation.

There is a significant need for training of engineers in immunology and for training immunologists in quantitative engineering techniques.

Moreover, there is need to bridge basic immunological discoveries with advances in clinical application. This course will review the fundamentals of the immune system and its components, engineering strategies to modulate the immune system, and clinical applications to improve patient care and outcomes in the development of neoadjuvant immunotherapies, highlighting particular considerations for immunological mechanisms, clinical development, and pathologic response assessments.

WHO SHOULD ATTEND
The course is designed for graduate students, medical students, residents, and fellows in engineering, immunology, and related fields. Engineering and clinical faculty and members of industry will benefit from the course as well.

OBJECTIVES
After attending this activity, the learner will demonstrate the ability to:

- Review the fundamentals and recent discoveries in the function of the immune system.
- Identify engineering strategies to manipulate the immune system.
- Describe the clinical applications of immunoengineering.

ACCREDITATION STATEMENT
The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

CREDIT DESIGNATION STATEMENT
The Johns Hopkins University School of Medicine designates this live activity for a maximum of 9 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

OTHER CREDITS
American Academy of Nurse Practitioners National Certification Program accepts AMA PRA Category 1 Credit™ from organizations accredited by the ACCME.

American Nurses Credentialing Center (ANCC) accepts AMA PRA Category 1 Credit™ from organizations accredited by the ACCME.

National Commission on Certification of Physician Assistants (NCCPA) PAs may claim a maximum of 9 Category 1 credits for completing this activity. NCCPA accepts AMA PRA Category 1 Credit™ from organizations accredited by ACCME or a recognized state medical society.

The Johns Hopkins University has approved this activity for 9 contact hours for non-physicians.

POLICY ON PRESENTER AND PROVIDER DISCLOSURE
It is the policy of the Johns Hopkins School of Medicine that the presenter and provider globally disclose conflicts of interest. The Johns Hopkins School of Medicine OCME has established policies that will identify and resolve conflicts of interest prior to this educational activity. Detailed disclosure will be made prior to presentation of the education.

JOHNS HOPKINS STATEMENT OF RESPONSIBILITY
The Johns Hopkins School of Medicine takes responsibility for the content, quality, and scientific integrity of this CME activity.

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HARDWARE/SOFTWARE REQUIREMENTS
Internet connection.
FREE REGISTRATION

Register Online: hopkinscme.cloud-cme.com/default.aspx?P=5&EID=50939

On the day of, please log into the online platform by 3:45 p.m. ET to test your connection. Exclusive log-in details will be provided via email the week prior.

You will receive a confirmation by e-mail. If you have not received it by December 29, 2023, call (410) 502-9636 to confirm that you are registered. A transcript of attendance will be available upon attestation of your credit hours and submission of the post activity online evaluation.

The Johns Hopkins University reserves the right to cancel or postpone any activity due to unforeseen circumstances. Under such circumstances registrants will be notified as soon as possible.

Johns Hopkins Students may also choose to sign up for this workshop as a two-credit pass/fail course that will appear on their transcript. To do this, please register for the unique course number below on SIS and check Canvas regularly for course assignments.

Ugrads: EN.580.403 Independent Study: Advances in Immunoengineering
MSE/PhD: EN.580.703 Independent Study: Advances in Immunoengineering

SYLLABUS

The syllabus will be accessible online and via your mobile device in the CloudCME App prior to the activity.

HOW TO OBTAIN CREDIT

Post activity, an online evaluation will be available to attendees to evaluate the activity and individual presentations and to identify future educational needs. Upon completion of the evaluation, the learner must attest to the number of hours in attendance. Credits earned will be added to the learner’s transcript and immediately available for print. The last day to access the evaluation and attest to your credits is March 6, 2024.

An outcome survey will be sent to all physician attendees within two months post activity to assist us in determining what impact this activity had on the learner’s practice.

AMERICANS WITH DISABILITIES ACT

The Johns Hopkins School of Medicine fully complies with the legal requirements of the ADA and the rules and regulations thereof. Please notify us if you have any special needs.
TUESDAYS AND THURSDAYS * JANUARY 2 - 18, 2024 * 4:00 - 5:30 P.M. ET

WEEK 1 - TARGETED IMMUNE INTERVENTIONS AND IMMUNOTHERAPIES
Tuesday, January 2, 2024
Artificial Antigen Presenting Complexes: From Bench to Bedside
Jonathan Schneck, MD, PhD
Targeting NKT Cells for Cancer Immunotherapy
Tonya Webb, PhD

Thursday, January 4, 2024
Engineering IL-2 for Control of Autoimmunity
Dan Campbell, PhD
Antigen Discovery for Development of Personalized Cancer Immunotherapies
Michal Bassani, PhD

WEEK 2 - IMMUNOMODULATION AT THE MULTI-SCALE
Tuesday, January 9, 2024
Reconstructing Cell Fate using Genomic Lineage Barcodes
Reza Kalhor, PhD
Immunocytokines for Cancer Therapy
Dafne Muller, PhD

Thursday, January 11, 2024
Engineering Cellular Microenvironment to Control Immuno-vascular Responses
Sharon Gerecht, PhD
Engineering Lipid Nanoparticles and Microgel Matrix to Program Th1/Th2 Immune Response Towards Enhanced Antitumor Activity
Hai-Quan Mao, PhD

WEEK 3 - ENGINEERING CELLS AND TISSUES AS LIVING DRUGS
Tuesday, January 16, 2024
Molecular Immunoengineering: Integrating Cellular Networks to Drive mRNA Vaccine Design
David Alvarez, PhD
High-throughput and High-dimensional Profiling of Antigen Specific T Cells
Ning Jenny Jiang, PhD

Thursday, January 18, 2024
Immunotherapy in Treatment of Genetic Disease
Roland Herzog, PhD
Immune-mediated Tissue Restructuring: A Spatial Omics Perspective
John Hickey, PhD

Presentation titles and other details can be found on the JH-TIE website: https://jhtie.jhmi.edu/

The Johns Hopkins School of Medicine takes responsibility for the content, quality, and scientific integrity of this CME activity. This schedule is subject to change.

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