

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Cancer Neoantigens, Vaccines and Viruses (T3)

Scientific Organizers: Catherine J. Wu, Robert D. Schreiber and Cornelis J.M. Melief

Supported by the Directors' Fund

## Advances in Checkpoints Immunology from Autoimmunity to Oncology to Infectious Diseases (B1)

Scientific Organizers: David M. Lee, Arlene H. Sharpe and William H. Robinson

February 6-10, 2022 • Fairmont Banff Springs • Banff, AB, Canada

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Scholarship Deadline: October 21, 2021 / Abstract Deadline: October 28, 2021 / Discounted Registration Deadline: December 9, 2021

### SUNDAY, FEBRUARY 6

#### Arrival and Registration

### MONDAY, FEBRUARY 7

#### Welcome and Keynote Address (T3)

**Rafi Ahmed**, Emory University School of Medicine, USA  
*T Cell Functional State, from Viruses to Cancer*

#### Welcome and Keynote Address (B1)

**Ira Mellman**, Genentech, Inc., USA  
*Checkpoint and Immune Exhaustion Overview*

#### Antigen Targets (T3)

**Jonathan W. Yewdell**, NIAID, National Institutes of Health, USA  
*Identification of Viral Antigen Targets and Discovery of Novel ORFs*

**Michal Bassani-Sternberg**, University Hospital of Lausanne, Ludwig Institute for Cancer Research, Switzerland  
*Mass Spectrometry and Proteogenomics Based Approaches for Antigen Detection*

**Maxim Artyomov**, Washington University in St. Louis, USA  
*Computational Informatic Approaches for Prediction of Neoantigens*

**Thorald van Hall**, Leiden University Medical Center, Netherlands  
*Novel Cancer Antigens in the Setting of TAP Deficiency*

#### Short Talks Chosen from Abstracts

#### Advances in Checkpoint Biology I: Lymphocytes (B1)

**E. John Wherry**, University of Pennsylvania, USA  
*PD 1/PD L1 and CD8 T Effectors*

**Chen Dong**, Tsinghua University, China  
*Beyond PD 1: Differential Roles for other T Cell Checkpoints (e.g. TIM 1 or TIM 3 or TIGIT)*

**William H. Robinson**, Stanford University School of Medicine, USA  
*Checkpoints in B Cells*

#### Short Talks Chosen from Abstracts

#### Cellular Interactions Critical to Effective Tumor Immunity (T3)

**Jannie Borst**, Leiden University, Netherlands  
*Role of CD4 T Cell Help, and Impact of CD27 Costimulation*

**Robert D. Schreiber**, Washington University School of Medicine, USA  
*Macrophage Subpopulations in Cancer Immune Response*

**Nir Hacohen**, Massachusetts General Hospital, USA  
*TCF7 Expression in CD8+ T Cells and Its Role in Cancer Immunotherapy*

#### Short Talks Chosen from Abstracts

#### Checkpoints in Autoimmunity: Genetic Insights and Innate Immunity Lineages (B1)

**Ferenc A. Scheeren**, Leiden University Medical Center, Netherlands  
*Genetics 1—WGS/GWAS in Checkpoint Autoimmunity*

**Gulbu Uzel**, National Institutes of Health, USA  
*Genetics 2—Insights from Human Checkpoint Mutations (both Autoimmunity and Immunodeficiency)*

**Carla V. Rothlin**, Yale University, USA  
*Innate Immune Checkpoints: TAMs*

**Miriam Merad**, Mount Sinai School of Medicine, USA  
*Myeloid Cell Checkpoints*

#### Short Talk(s) Chosen from Abstracts

#### Poster Session 1

### TUESDAY, FEBRUARY 8

#### Reprogramming the Microenvironment (T3)

**Valerie Chew**, SingHealth, Singapore  
*The Microenvironments of Hepatitis B Virus(HBV)-Related Hepatocellular Carcinoma*

**Jennifer Ann Wargo**, University of Texas MD Anderson Cancer Center, USA  
*Microbiome and Cancer Immunotherapy*

**Garry P. Nolan**, Stanford University, USA  
*Direct Spatial Visualization of Microenvironment Changes with Immunotherapy*

#### Short Talks Chosen from Abstracts

#### Advances in Checkpoint Biology II: Immune Exhaustion and Immunometabolism (B1)

**Rafi Ahmed**, Emory University School of Medicine, USA  
*Immune Exhaustion: Functional and Molecular Definitions in Th and Teff Populations*

**Jeffrey C. Rathmell**, Vanderbilt University, USA  
*Immune Metabolism in the Tumor Microenvironment and Checkpoint Function*

**Luke A. J. O'Neill**, Trinity Biomedical Sciences Institute, Ireland  
*Immune Metabolism in Checkpoint Function 2: Innate*

#### Short Talk(s) Chosen from Abstracts

#### Panel Discussion: New Directions in Checkpoint Biology: Major Gaps and Emerging Insights (B1)

#### Workshop 1: Emerging Checkpoints Insights: Basic and Animal Model Studies (B1)

#### Short Talks Chosen from Abstracts

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### Immune Targeting against Viral Antigens (T3)

**Helen Heslop**, Baylor College of Medicine, Houston Methodist Hospital and Texas Childrens, USA

*Adoptive Transfer of Virus Specific T Cells*

**Cornelis J. M. Melief**, Leiden University Medical Center & ISA Pharmaceuticals BV, Netherlands

*Vaccines Targeting HPV Antigens*

**Eric Vivier**, Aix Marseille University and Innate Pharma, France

*Unleashing Anti-Viral and Anti-Tumor Responses with NK Cell-Targeting Therapy*

Short Talks Chosen from Abstracts

### Checkpoints in Autoimmunity: Function and Dysfunction in Disease (B1)

**Bali Pulendran**, Stanford University School of Medicine, USA

*Defining what Good Looks Like: Quantifying Homeostasis and Appropriate Immune Exhaustion as Treatment Goals*

**Laura Cappelli**, Johns Hopkins University, USA

*Checkpoint Dysfunction, Disease 1 (e.g. RA or MS)*

**Kenneth Smith**, University of Cambridge, UK

*Lymphocyte Exhaustion State in Autoimmune Disease X: Integrating Functional Status across Active Checkpoints*

Short Talk(s) Chosen from Abstracts

### Poster Session 2

### WEDNESDAY, FEBRUARY 9

#### Immunoregulation and Immunosuppression (Joint)

**Thomas Gajewski**, University of Chicago, USA

*The Tumor Microenvironment and Immunotherapy Efficacy*

**Shannon J. Turley**, Genentech, Inc., USA

*Stromal Cells in Modulating Anticancer Responses*

**David A. Hafler**, Yale University School of Medicine, USA

*Checkpoint Dysfunction in Autoimmune Disease*

Short Talks Chosen from Abstracts

#### Workshop 2: Emerging Checkpoints Insights: Translational and Clinic Studies (B1)

Short Talks Chosen from Abstracts

#### Vaccines in Cancer and Other Non Infectious Syndromes (T3)

**Gerald P. Linette**, University of Pennsylvania, USA

*Dendritic-Based Targeting of Tumor Neoantigens*

**Ugur Sahin**, BioNTech AG, Germany

*Individualized RNA-Based Cancer Vaccines*

**Catherine J. Wu**, Dana-Farber Cancer Institute, USA

*SLPs for Personal Neoantigen-Targeting Vaccines*

Short Talks Chosen from Abstracts

#### Checkpoints Insights from Infectious Diseases and Environmental Triggers (B1)

**Georg Lauer**, Massachusetts General Hospital, USA

*Checkpoint Signaling and Phenotype in Chronic Viral Infections*

**Mala K. Maini**, University College London, UK

*Beyond Classical Checkpoints in the Liver Niche*

**Kevan C. Herold**, Yale University, USA

*Checkpoint Inhibitor Autoimmunity after Withdrawal of Therapy: Continued Checkpoint Dysfunction or Evidence for Environmental Regulation?*

Short Talks Chosen from Abstracts

### Poster Session 3

### THURSDAY, FEBRUARY 10

#### Novel Combinatorial Approaches (T3)

**Padmanee Sharma**, University of Texas MD Anderson Cancer Center, USA

*Role of ICOS in Checkpoint Blocking Therapy*

**Nina Bhardwaj**, Icahn School of Medicine at Mount Sinai, USA

*Combination of Flt3L and Vaccine*

**Irving L. Weissman**, Stanford University, USA

*Normal and Neoplastic Stem Cells*

Short Talks Chosen from Abstracts

#### Checkpoints in Oncology—Treatment Effectiveness, Include CAR T, States of Immune Exhaustion in IO, and Combo Approaches (B1)

**W. Nicholas Haining**, Merck Research Laboratories, USA

*Determinates of Treatment Effectiveness*

**Maria E. Suarez-Almazor**, University of Texas MD Anderson Cancer Center, USA

*Oncology Adverse Events Treatments*

**Crystal L. Mackall**, Stanford University, USA

*Checkpoints in CAR-T Therapies*

**Arlene H. Sharpe**, Harvard Medical School, USA

*Using Genetics to Define Novel Combo Checkpoints*

Short Talk(s) Chosen from Abstracts

#### Combination Therapy with Oncolytic Virus and Viral Delivery Systems (T3)

**John C. Bell**, Ottawa Hospital Research Institute, Canada

*Oncolytic Viruses: Multiplex Cancer Therapeutics*

**Kevin Harrington**, Institute of Cancer Research, UK

*Physical & Pharmacological Modulation of Oncolytic Virotherapy*

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**Alan J. Korman**, Vir Biotechnology, Inc., USA  
*Virus as an Antigen Delivery System*

### Short Talks Chosen from Abstracts

### Emerging Clinical Insights into Checkpoint Contributions to Autoimmunity (B1)

**Javid Moslehi**, UCSF School of Medicine, USA  
*I-O Checkpoint Antagonists Associated Autoimmunity: Distinct Disease Phenotypes (Similarities and Differences to Spontaneous Autoimmunity) Associated with Current Monotherapy and Combo Therapy Approaches*

**Alexandra-Chloé Villani**, Broad Institute of MIT and Harvard, USA  
*New Views on 'Traditional' Autoimmune Disease Informed by Checkpoint Antagonist Therapy*

**David M. Lee**, Janssen Pharmaceutical Companies of Johnson & Johnson, USA  
*Checkpoint Agonists 1 (Disease/Checkpoint)*

### Closing Keynote Address (T3)

**James P. Allison**, University of Texas MD Anderson Cancer Center, USA  
*Where We Are Going as a Field*

### Panel Discussion: Targeting Checkpoints in Human Disease: Gaps for Translation and Opportunities Ahead (B1)

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (T3)

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (B1)

## FRIDAY, FEBRUARY 11

### Departure