



Immune Regulation in Autoimmunity and Cancer

March 26–30, 2017 | Whistler Conference Centre | Whistler, British Columbia | Canada

Scientific Organizers:

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

Vijay K. Kuchroo, Brigham and Women's Hospital, Harvard Medical School, USA

Jane L. Grogan, Genentech, Inc., USA

While the importance of innate and adaptive immunity has been clear in the pathogenesis of human autoimmune disease resulting in a multitude of immune-based therapeutic approaches, the realization is now apparent that understanding immune evasion by cancer is central in developing curative treatments. This meeting will explore and contrast the underlying immune mechanisms resulting in autoimmunity and tumor evasion. The meeting is innovative in bringing together basic immunologists investigating mechanisms of tolerance with scientists exploring immune mechanisms of autoimmunity and cancer in both patients and experimental models. Thus, this Keystone Symposia meeting will cover the pathways in immunity and tolerance that lead to loss of immunological control, dysregulated immune responses and chronic inflammatory disease or tumor evasion. Presentations will include consideration of preclinical and clinical aspects of a diverse number of autoimmune and inflammatory diseases and cancer. Conference participants engaged in preclinical, translational and clinical research will hopefully engage in continuing conversations and collaborations which, over the long-term, will provide greater insights into the human immune response and allow us to reassess and further explore pathways that are driving autoimmune disease yet in opposition, lead to tumor evasion. Understanding checkpoints in autoimmunity and immune cell tolerance is important for delivering therapies to patients with autoimmune disease and cancer, and this meeting will provide a platform for the cross-pollination of clinical experience and experimental research. Attendees will have learned about the impact of targeted immune-based therapeutics on clinical outcome and, consequently, be able to widen their research scope accordingly.

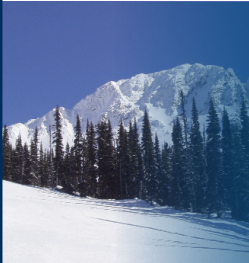
Session Topics:

- Tissue Micro-Immune Environments in Tumors and Autoimmune Tissue Inflammation
- Basic Mechanisms of T Cell Tolerance
- Metabolic Regulation of T Cell Function in Cancer and Autoimmunity
- Effector T Cell Dysfunction: Surface Receptors in Autoimmunity vs. Cancer
- Innate Regulation of Autoimmunity and Cancer
- B Cell Regulation of Autoimmunity
- 10 Years of Discovery of Th17 Cell. From Bench to Bedside
- Systems Biology Approaches to Understanding Tolerance in Cancer and Autoimmunity

Scholarship Application & Discounted Abstract Deadline: November 29, 2016

Abstract Deadline: January 10, 2017

Discounted Registration Deadline: January 25, 2017



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted.

Upper image courtesy of: The Web site of the National Cancer Institute (<http://www.cancer.gov>).

Meeting Hashtag: #KSimmreg

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SUNDAY, MARCH 26

Arrival and Registration

MONDAY, MARCH 27

Welcome and Keynote Address

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

James P. Allison, University of Texas MD Anderson Cancer Center, USA

Cancer Immunotherapy

Tissue Micro-Immune Environments in Tumors and Autoimmune Tissue Inflammation

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

From the Clinic to the Lab: Investigating Response and Resistance Mechanisms to Immune Checkpoint Therapy

Jennifer L. Gommerman, University of Toronto, Canada

Compartmentalization of B Cells During CNS Inflammation

***Jane L. Grogan**, Genentech, Inc., USA

Immunoregulatory Roles of TIGIT and PVR-nectin Family in Tumors

Abigail E. Overacre, University of Pittsburgh, USA

Short Talk: Interferon-gamma drives Treg Functional Instability thereby Promoting Anti-Tumor Immunity

Workshop 1: Effector T Cells

***Thomas Korn**, Technical University Munich, Germany

***Jane L. Grogan**, Genentech, Inc., USA

June-Yong Lee, New York University School of Medicine, USA

Systemic and Local Functions of Serum Amyloid A (SAA) in Th17 Cell Pathogenicity

Jinju Lee, Kyoto University Graduate School of Medicine, Japan

Regulation of Th17 Expansion by PGE2-EP2/EP4 Signaling and its Clinical Implication

Pradip Nair, Biocon Research Limited, India

T Cell Activation and Differentiation to Th17 Cells is Modulated by a CD6 Domain 1 Antibody Itolizumab

Patricia Castillo, University of Pittsburgh, USA

Disrupted Enteric Th17 Signaling Exacerbates Autoimmune Inflammation

Michael Waterfield, University of California, San Francisco, USA

Characterization of a Novel Epigenetic Regulator Required for Th17 Differentiation

Mark S. Sundrud, The Scripps Research Institute, USA

The Xenobiotic Transporter Mdr1 Permits T Cell Adaptation to Mucosa-Associated Bile Acids in the Ileum

Geoffrey Alexander Smith, University of California, San Francisco, USA

IL-2RB Receptor Levels Tune T-Cell IL-2 Responses by Altering Signaling Dynamics in Different T Cell Subsets

Peter A. Morawski, NIAID, National Institutes of Health, USA

Brain Infiltrating CD8+ T Cells in Lupus-Prone Mice

Basic Mechanisms of T Cell Tolerance

***Jeffrey A. Bluestone**, University of California, San Francisco, USA

Treg Biology and Treatment in Autoimmune Diseases and Cancer

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

IFN γ Identifies Dysfunctional Regulatory T Cells in Autoimmunity and Cancer

Alexander Y. Rudensky, HHMI/Memorial Sloan Kettering Cancer Center, USA

Regulatory T Cells in Cancer

Poster Session 1

TUESDAY, MARCH 28

Metabolic Regulation of T Cell Function in Cancer and Autoimmunity

***Erika L. Pearce**, Max Planck Institute of Immunobiology and Epigenetics, Germany

How Metabolism Influences CD8 Cells in Cancer

Douglas R. Green, St. Jude Children's Research Hospital, USA

Cell Death and Resuscitation: To the Edge of Necroptosis and Back

Jens Titze, Vanderbilt University, USA

Rethinking Sodium Metabolism

Tomokazu Sumida, Yale School of Medicine, USA

Short Talk: Beta-catenin Links High Salt and Proinflammatory Signature in Treg

Seungho Lee, Yonsei University, South Korea

Short Talk: Exploration of Tumor Microenvironment and Metabolism using Tumor Infiltrating Lymphocytes and FDG-PET CT

Workshop 2: Tregs in Autoimmunity and Cancer

***Alexander Y. Rudensky**, HHMI/Memorial Sloan Kettering Cancer Center, USA

***Ana Carrizosa Anderson**, Harvard Medical School, USA

Liliana Elisa Lucca, Yale University, USA

PD-1 Marks Dysfunctional Regulatory T Cells in Malignant Gliomas

Maran L. Sprouse, Baylor College of Medicine, USA

High CD5 Expression is a Marker of Functional Regulatory T Cells in Autoimmunity

Catherine Konopacki, Memorial Sloan Kettering Cancer Center, USA

Foxp1 Is a Foxp3 Binding Partner that Contributes to Regulatory T Cell Stability and Function

Allison L. Bayer, University of Miami School of Medicine, USA

Immunomodulation Requirements for Treg Immunotherapy for Autoimmune Diabetes

Danbee Ha, Osaka University, Japan

ADCC-Mediated in vitro Depletion of Human Treg Cells by Anti-CTLA-4 mAb Enhances CD8+ T Cell Responses against Self/Tumor Antigens

David Bauche, Merck, USA

Foxp3+ Regulatory T Cells Prevent from ILC3-Driven Colitis

Wenxian Fu, University of California, San Diego, USA

A Tissue-Resident Macrophage Specific Coinhibitory Molecule Promotes Regulatory T Cell Differentiation and Stability

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Dana Catherine Gilmore, University of Chicago, USA
Identification of Natural Peptide Epitopes Recognized by Regulatory T Cells

Effector T Cell Dysfunction: Surface Receptors in Autoimmunity vs. Cancer

***Arlene H. Sharpe**, Harvard Medical School, USA
Role of Coinhibitory Receptors in Controlling Effector T Cells

E. John Wherry, University of Pennsylvania, USA
Molecular Basis of T Cell Exhaustion: Insights for Immunotherapy

Ana Carrizosa Anderson, Harvard Medical School, USA
T Cell Dysfunction: From Co-Inhibitory Receptors to Molecular Programs

Christopher E. Rudd, University of Montreal, Canada
Short Talk: A Next Generation Approach using Small Molecules to Inhibit PD-1 Transcription Is as Effective as Anti-PD-1/PL1 Biologics in Immunotherapy

Poster Session 2

WEDNESDAY, MARCH 29

Innate Regulation of Autoimmunity and Cancer

Nina Bhardwaj, Icahn School of Medicine at Mount Sinai, USA
Role of Dendritic Cells and NK Cells in Mediating Anti-Tumor Responses

Federica Sallusto, University of Italian Switzerland, Switzerland
Autoreactive T Cells in Narcoleptic Patients

***Carla V. Rothlin**, Yale University, USA
Innate Immune Checkpoints in Anti-Tumor Immunity

Mark J. Smyth, QIMR Berghofer Medical Research Institute, Australia
Barriers to NK Cell Control of Cancer

Keiji Hirota, Institute for Frontier Life and Medical Sciences, Kyoto University, Japan
Short Talk: An Inflammatory Cellular Network of Autoimmune Th17 Cells, GM-CSF-Producing ILCs and Synovialocytes in the Development of Autoimmune Arthritis

Workshop 3: T Cell Tolerance, Exhaustion and Dysfunction in Autoimmunity and Cancer

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

Rachel S. Friedman, National Jewish Health and University of Colorado, Denver, USA
MerTK Mediates T Cell Tolerance in the Pancreatic Islets during Type 1 Diabetes

Yemsratch T. Akalu, Yale University School of Medicine, USA
An eMERging Target in Cancer Immunotherapy

Rachael Bashford-Rogers, University of Cambridge, UK
Using High-Throughput Sequencing to Reveal Insights into the Relationship between B-Cell Repertoire, Phenotype and Function in Health, Cancer and Autoimmune Disease

David M. Sansom, University College London Medical School, UK
CTLA-4 Mutations from Patients with Immune Dysregulation Syndromes Inform our Understanding of CTLA-4 Function

Jennifer Lori Blanchfield, Emory University, USA
MOG-Specific Tolerance Mechanisms Limit Autoimmune Demyelinating Disease following Bacterial Delivery of MOG Epitope

John R. Sedy, Sanford Burnham Prebys Medical Discovery Institute, USA

Cancer Mutations Targeting TNFRSF14 alter Microenvironment Checkpoint Interactions to Limit Tumor Clearance by Cytotoxic Cells

Greg M. Delgoffe, University of Pittsburgh, USA
Defects in Mitochondrial Biogenesis and Oxidative Function Underlie Tumor-Infiltrating T Dysfunction

B Cell Regulation of Autoimmunity

***Antonio Lanzavecchia**, Institute for Research in Biomedicine, Switzerland
Mechanisms of Antibody Diversification

Kenneth Smith, University of Cambridge, UK
Predicting and Explaining the Future: A New Biology of Clinical Outcome in Autoimmunity?

Alicia Gonzalez-Martin, The Scripps Research Institute, USA
Short Talk: MicroRNA Control of B Cell Tolerance and Autoimmunity

Bonnie Huang, NHGRI, National Institutes of Health, USA
Short Talk: Dissecting T Follicular Helper Cell Development in vivo using CRISPR

Poster Session 3

THURSDAY, MARCH 30

Ten Years of Discovery of Th17 Cells: From Bench to Bedside

***Vijay K. Kuchroo**, Brigham and Women's Hospital, Harvard Medical School, USA
Transcriptional Networks in Development of Th17 Cells

Dan R. Littman, HHMI/New York University School of Medicine, USA
Th17 Cells in the Gut Homeostasis

Thomas Korn, Technical University Munich, Germany
Trans-presentation of IL-6 by Dendritic Cells - A Novel Mode of IL-6 Signaling – Is Required for the Priming of Pathogenic TH17 Cells in vivo

Daniel J. Cua, Merck Research Laboratories, USA
The IL-23-Th17 Immune Axis: From Mechanisms to Therapeutic Testing

Dhaval Kumar D. Patel, Novartis Institutes for BioMedical Research, Switzerland
Therapeutic Targeting of Th17 Cells in Autoimmune Diseases

Systems Biology Approaches to Understanding Tolerance in Cancer and Autoimmunity

***Frank Oliver Nestle**, Sanofi, USA
Deciphering the Rules of Engagement of Tissue Immunity

Alex Marson, University of California, San Francisco, USA
Decoding T Cell Circuitry

Meromit Singer, Broad Institute, USA
Short Talk: Identification and Validation of a Gene Module Specific for T Cell Dysfunction in Tumor via Population and Single-Cell Transcriptomics

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

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FRIDAY, MARCH 31

Departure