

Keystone Symposia in Keystone B Cell-T Cell Interactions

Keystone Conference Center | Keystone, Colorado, USA | February 10–14, 2019

Joint with the conference on **Molecular Approaches to Vaccines and Immune Monitoring**

Scientific Organizers:

Gabriel D. Vitoria, Rockefeller University, USA

Carola G. Vinuesa, Australian National University, Australia

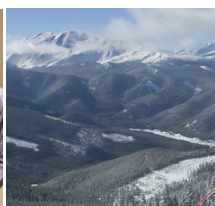
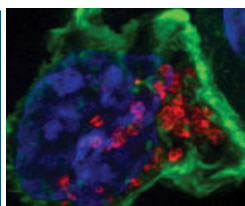
B cell-T cell interactions underlie the maturation and production of high-affinity antibodies, and are thus key to the establishment of effective humoral immunity. While this greatly enhances our ability to fight pathogens, it can also lead to the development of allergies and autoimmune disease. Although recent years have seen a burst in our understanding of how B cell-T cell interactions drive antibody affinity maturation, a number of gaps remain, including how these interactions influence the differentiation of B cells into effector fates and how they limit the emergence of autoreactive B cell clones. Most importantly, from the vaccine standpoint, it is likely that better understanding of how T cells help shape the B cell repertoire will allow us to better control the specificity of vaccine-induced immune responses. The aims of this Keystone Symposia conference are to: 1) Present the most recent advances in the basic biology of the T cell-dependent B cell response, focusing on Tfh development and function and B cell activation and differentiation; 2) Address the gap in our understanding of the differentiation of B cells into post-activation (memory and plasma cell) fates; 3) Discuss how furthering our understanding of B-T cell interactions can inform vaccine development; and 4) Present recent findings regarding the role of T-dependent B cell response in allergy and autoimmunity.

Plenary Session Topics:

- Tfh Biology
- Workshop 1: B Cell Biology in T-Dependent Responses
- Regulation of the GC Response
- Germinal Center Biology
- Workshop 2: Tfh/Tfr Differentiation and Function
- Workshop 3: B Cell-T Cell Interactions in Disease
- Memory Humoral Responses
- Humoral Autoimmunity and Allergic Responses
- T-Dependent B Cell Differentiation

Scholarship/Discounted Abstract Deadline: Oct 23, 2018; Abstract Deadline: Nov 7, 2018; Discounted Registration Deadline: Dec 6, 2018

Visit www.keystonesymposia.org/19J6 for more details.



KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Accelerating Life Science Discovery
a 501(c)(3) nonprofit educational organization

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

B Cell-T Cell Interactions (J6)

Scientific Organizers: Gabriel D. Victora and Carola G. Vinuesa

Sponsored by BioLegend, Inc.

Molecular Approaches to Vaccines and Immune Monitoring (J5)

Scientific Organizers: Peter D. Kwong, Brandon DeKosky and Jeffrey B. Ulmer

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SUNDAY, FEBRUARY 10

Arrival and Registration

MONDAY, FEBRUARY 11

Welcome and Keynote Address (Joint)

Antonio Lanzavecchia, Institute for Research in Biomedicine, Switzerland

The B Cell Immune Response to Infection and Vaccination

Tfh Biology (J6)

Carola G. Vinuesa, Australian National University, Australia
Human Tfh Biology

Hai Qi, Tsinghua University, China
Guidance Cues for Tfh Cells

Shane Crotty, La Jolla Institute for Allergy and Immunology, USA
Tfh Cell and Germinal Center B Cell Responses in the Context of Vaccines

Short Talk(s) Chosen from Abstracts

Targeting Appropriate Immune Responses for Structure-based Design (J5)

Dennis R. Burton, The Scripps Research Institute, USA
From Antibody to Vaccine

George Georgiou, University of Texas at Austin, USA
Molecular Definition of Protective Serum Responses from Vaccination and for Immune Monitoring

Peter D. Kwong, NIAID, National Institutes of Health, USA
Iterative Structure-Based Optimization of Antibody-Guided Vaccines

Short Talk(s) Chosen from Abstracts

Workshop 1: B Cell Biology in T-Dependent Responses (J6)

Short Talks Chosen from Abstracts

Workshop 1: Molecular Characteristics of Serum Responses Which Could Serve as Appropriate Templates for Vaccine Design (J5)

Short Talks Chosen from Abstracts

Regulation of the GC Response (J6)

Andre Ballesteros-Tato, University of Alabama at Birmingham, USA
Regulation of IL-2 Responses in the GC

Michelle A. Linterman, Babraham Institute, UK
Ageing and the Germinal Centre Response

Di Yu, Australian National University, Australia
Follicular Cytotoxic T Cells: Friends or Foes?

Short Talk(s) Chosen from Abstracts

Clinical Results from Structure-based Vaccines (J5)

Sumana Chandramouli, GSK Vaccines, USA

A Structural Biology Approach to Developing an HCMV Vaccine

Amy S. Espeseth, Merck & Co., Inc., USA

mRNA Vaccines Expressing Forms of RSV-F Protein are Immunogenic and Protective in Preclinical Models of Respiratory Syncytial Virus Infection

Barney S. Graham, NIAID, National Institutes of Health, USA
Clinical Results from the Prefusion-Stabilized RSV F (DS-Cav1) Subunit Vaccine

Short Talk(s) Chosen from Abstracts

Poster Session 1

TUESDAY, FEBRUARY 12

Keynote Address (Joint)

Michel C. Nussenzweig, HHMI/Rockefeller University, USA
Antibody Responses and Antibodies

Germinal Center Biology (J6)

Gabriel D. Victora, Rockefeller University, USA
Clonal Dynamics of the Antibody Response

Jason G. Cyster, HHMI/University of California, San Francisco, USA
Guidance Cues in the B Cell Response

Tomohiro Kurosaki, WPI Immunology Frontier Research Center, Osaka University, Japan
Memory Cell Differentiation in the Germinal Center

Short Talk(s) Chosen from Abstracts

B Cell Ontogenies as Vaccine Templates (J5)

Lynn Morris, National Institute for Communicable Diseases, South Africa

V2-directed vaccine-like antibodies from HIV-1 infection mediate ADCC and block $\alpha 4\beta 7$ interactions

William Schief, IAVI and The Scripps Research Institute, USA
Germline-Targeting Vaccine Design

Frederick W. Alt, Boston Children's Hospital, USA
Mouse Models for Lineage-Based Vaccines

Short Talk(s) Chosen from Abstracts

Workshop 2: Tfh/Tfr Differentiation and Function (J6)

Short Talks Chosen from Abstracts

Workshop 2: Antibody Isolation and B Cell Sequencing (J5)

Short Talks Chosen from Abstracts

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Programming T Cells to Help B Cells (J6)

Virginia Pascual†, Cornell University, USA

Talk Title to be Announced

Casey T. Weaver, University of Alabama at Birmingham, USA
Programming the Early Bifurcation of Tfh and Non-Tfh Effector Responses

Philippa C. Marrack, HHMI/National Jewish Health, USA
Tfh Memory

Short Talk(s) Chosen from Abstracts

Tackling Difficult Pathogens with Antibody-Based Vaccine Design (J5)

Ian A. Wilson, The Scripps Research Institute, USA
Towards a Universal Influenza Virus Vaccine: Is it Better to Target the HA Head or Stem?

Sarah F. Andrews, National Institutes of Health, USA
Identifying Common Antibody Lineages to Evaluate Clinical Responses to Influenza Vaccination

Erica Ollmann Saphire, The Scripps Research Institute, USA
Vaccine Design from a Prefusion-Stabilized Lassa Virus Trimer Structure

Short Talk(s) Chosen from Abstracts

Poster Session 2

WEDNESDAY, FEBRUARY 13

Keynote Session (Joint)

Facundo D. Batista, Ragon Institute of MGH, MIT and Harvard, USA
Importance of B Cell-T Cell Interactions in Mouse Vaccine Models

Hedda Wardemann, German Cancer Research Center, Germany
Development and Clonal Evolution of Human Memory B Cell Antibody Responses

B Cell Responses in Infectious Disease (J6)

Patrick C. Wilson, University of Chicago, USA
The B Cell Response to Influenza and Vaccination

Frances E. Lund, University of Alabama at Birmingham, USA
T Cell Dependent Memory B Cell Responses in Influenza Infection and Vaccination

Short Talk(s) Chosen from Abstracts

Immune Monitoring of B Cell Responses (J5)

Michael Joseph Mina, Brigham and Women's Hospital, USA
Reading the Record of Immunity: Profiling the Anti-Virome Antibody Repertoire with Phage Display and Deep Neural Networks

Margaret Ellen Ackerman, Dartmouth College, USA
Measuring and Mining Serum Antibody Responses to Understand Protection from Infection

Short Talk(s) Chosen from Abstracts

Workshop 3: B Cell-T Cell Interactions in Disease (J6)

Short Talks Chosen from Abstracts

Workshop 3: Molecular Approaches to Probe the Elicited Vaccine Response (J5)

Short Talks Chosen from Abstracts

Memory Humoral Responses (J6)

Marc K. Jenkins, University of Minnesota Medical School, USA
Memory T and B Cell Responses

Mark J. Shlomchik, University of Pittsburgh School of Medicine, USA
Memory B Cell Subsets

Marion Pepper, University of Washington, USA
Memory B Cells in Plasmodium Infection

Short Talk(s) Chosen from Abstracts

Optimizing Vaccine Responses (J5)

Neil P. King, University of Washington, USA
Atomic-Level Design to Increase the Magnitude of B Cell Responses

Günther Staffler, AFFIRIS AG, Austria
Towards a Heart Attack Vaccine: PCSK9 as a Immunogen

Speaker to be Announced

Short Talk(s) Chosen from Abstracts

Poster Session 3

THURSDAY, FEBRUARY 14

Humoral Autoimmunity and Allergic Responses (J6)

Rachel Ettinger, Viela Bio, USA
VIB4920, a Novel CD40L Antagonist, Decreased Disease Activity and Improved Biomarkers of Immune Activation in a Phase 1b, Proof-of-Concept Study in Rheumatoid Arthritis

Michael C. Carroll, Boston Children's Hospital, Harvard Medical School, USA

Epitope Spreading in Autoimmune Germinal Centers

Maria A. Curotto de Lafaille, NYU School of Medicine, USA
Biology of IgE Affinity Maturation

Christopher C. Goodnow, Garvan Institute of Medical Research, Australia

Progression from benign to pathogenic autoantibody by somatic mutation in a rogue clone: single cell RNA & DNA sequencing

Short Talk(s) Chosen from Abstracts

Vaccines: Better, Faster, and Less Expensive! (J5)

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Rino Rappuoli, GlaxoSmithKline Vaccines, Italy

Developing Vaccines against Pandemics and for the Developing World

Laura M. Walker, Adimab, USA

Rapid Antibody Identification to Speed Pandemic Responses

Brandon DeKosky, University of Kansas, USA

Paired Heavy-Light Chain Sequencing and Display to Optimize Immune Readout from Vaccination and for Immune Monitoring

Julie Ledgerwood, NIAID, National Institutes of Health, USA

Immune Monitoring to Increase the Likelihood of Phase 2 Success

Short Talk(s) Chosen from Abstracts

Workshop 4: Molecular Approaches for Rapid Identification/Optimization of Target Antigens (J5)

Short Talks Chosen from Abstracts

T-Dependent B Cell Differentiation (J6)

Klaus Rajewsky, Max Delbrück Center for Molecular Medicine, Germany

Transcriptional Programming of GC B Cell Differentiation

Meinrad Busslinger, Research Institute of Molecular Pathology, Austria

Ikaros Prevents Autoimmunity by Promoting Anergy Induction and Restraining Toll-like Receptor Signaling in B cells

Robert Brink, Garvan Institute of Medical Research, Australia

Constant Region-Based Selection in the Germinal Center Reaction

Short Talk Chosen from Abstracts

Reducing Vaccine Risks and Costs (J5)

Jeffrey B. Ulmer, GSK Vaccines, USA

Molecular Approaches to Streamlining Vaccine Discovery and Development

Katalin Karikó, BioNTech RNA Pharmaceuticals, Germany

Advantages of an mRNA Vaccine Approach

Gary J. Nabel, Sanofi, USA

How Appropriate Choice of a Human Antibody Template Reduces Vaccine Development Risks

Short Talk Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J6)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J5)

FRIDAY, FEBRUARY 15

Departure