

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Maternal-Fetal Crosstalk (Z3)

Scientific Organizers: Sing Sing Way, Carole R. Mendelson and Michal A. Elovitz

Sponsored by Bill & Melinda Gates Foundation

## Immunity in Early Life: From the Maternal to the Microbial Environment (Z4)

Scientific Organizers: Chris Wilson, Tobias Kollmann and Claire-Anne Siegrist

June 7-11, 2020 • Keystone Resort • Keystone, CO, USA

Part of the Keystone Symposia Global Health Series, supported by the Bill & Melinda Gates Foundation

Global Health Travel Award Deadline: January 7, 2020 / Discounted Abstract & Scholarship Deadline: February 6, 2020 / Abstract Deadline: March 5, 2020 / Discounted Registration Deadline: April 7, 2020

### SUNDAY, JUNE 7

#### Arrival and Registration

### MONDAY, JUNE 8

#### Welcome and Keynote Address (Joint)

**Joseph (Mike) McCune**, Bill & Melinda Gates Foundation and University of California, San Francisco, USA  
*Layered Immunity*

#### Maternal-Fetal Immunological Detente (Joint)

**Tippi MacKenzie**, University of California, San Francisco, USA  
*Maternal-Fetal Tolerance in Healthy and Complicated Pregnancies*

**Gil G. Mor**, Wayne State University School of Medicine, USA  
*Remodeling and Inflammation at the Maternal-Fetal Interface*

**Adrian Erlebacher**, University of California, San Francisco, USA  
*Epigenetics of Pregnancy and Parturition*

#### Short Talks Chosen from Abstracts

#### Poster Session 1

#### Primary Microbial Colonization and Offspring Development (Joint)

**Florent Ginhoux**, Singapore Immunology Network, Singapore  
*Learning from Fetal Immunity*

**Maria G. Dominguez-Bello**, Rutgers University, USA  
*Postnatal Microbiome and Growth*

**Kjersti Marie Aagaard**, Baylor College of Medicine, USA  
*Our Earliest Friends*

#### Short Talks Chosen from Abstracts

### TUESDAY, JUNE 9

#### Maternal Microbiota in Healthy Pregnancy and Adverse Pregnancy Outcomes (Z3)

**David A. Relman**, Stanford University, USA  
*Microbiome Dynamics During and After Pregnancy*

**Frederic D. Bushman**, University of Pennsylvania, USA  
*The Microbiome and Virome in Early Life*

**Michal A. Elovitz**, University of Pennsylvania School of Medicine, USA  
*Gardnerella Vaginalis Induced Cervical Inflammation*

#### Speaker to be Announced

#### Short Talks Chosen from Abstracts

#### Innate, Trained and Heterologous Immunity (Z4)

**Dorothee Viemann**, Hannover Medical School, Germany  
*Perinatal Innate Immune Programming*

**Tobias R. Kollmann**, Telethon Kids Institute, Australia  
*Innate Immune Ontogeny*

**Mihai G. Netea**, Radboud University, Netherlands  
*Molecular Mechanisms of Trained Immunity*

**Sabra L. Klein**, Johns Hopkins University, USA  
*Heterologous Immunity and the Impact of Sex on Immune Development*

#### Short Talks Chosen from Abstracts

#### Workshop 1: Animal Pregnancy Models: Benefits and Drawbacks (Z3)

#### Short Talks Chosen from Abstracts

#### Pregnancy Timing, Is there a Parturition Clock? (Z3)

**Carole R. Mendelson**, University of Texas Southwestern Medical Center, USA  
*Fetal - Maternal Signaling in the Initiation of Labor*

**Brice Gaudilliere**, Stanford University School of Medicine, USA  
*Immunological Clock during Pregnancy*

**Sarah K. England**, Washington University School of Medicine, USA  
*Clock Genes and Parturition Timing*

#### Short Talks Chosen from Abstracts

#### Ontogeny of Adaptive Immunity: Repertoire and Response (Z4)

**Scott D. Boyd**, Stanford University, USA  
*The Human Adaptive Immune Repertoire in Early Life*

**Deena L. Gibbons**, King's College London, UK  
*T Cell Development and Function in the Human Neonate*

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**Claire-Anne Siegrist**, University of Geneva, Switzerland  
*Early Life B Cell Vaccine Responses and Influence of Maternal Antibodies*

**Short Talks Chosen from Abstracts**

### Poster Session 2

### WEDNESDAY, JUNE 10

#### The Placenta in Health and Disease (Z3)

**Susan J. Fisher**, University of California, San Francisco, USA  
*Normal and Abnormal Placental Development*

**Mana M. Parast**, University of California, San Diego, USA  
*Trophoblast Differentiation in Placental Development and Disease*

**Kent L. Thornburg**, Oregon Health & Science University, USA  
*Maternal Stresses Modify Placental Function and Fetal Growth*

**Short Talks Chosen from Abstracts**

#### Immune Responses to Infection in Early Life (Z4)

**Jody L. Baron**, University of California, San Francisco, USA  
*HBV*

**Margaret Feeney**, University of California, San Francisco, USA  
*The Fetal Immune Response to Malaria*

**Nigel Curtis**, University of Melbourne, Australia  
*The Heterologous Effects of Neonatal BCG Vaccination*

**Purvesh Khatri**, Stanford University, USA  
*Systems Approaches to Predict and Unravel the Immunobiology of Neonatal Sepsis*

**Short Talks Chosen from Abstracts**

#### Workshop 2: Shared Pathophysiology Underlying Common Pregnancy Complications (Stillbirth, Spontaneous Abortion, Prematurity, Preeclampsia)? (Z3)

**Short Talks Chosen from Abstracts**

#### Workshop: Novel Platforms and Mechanisms of Inducing Protective Immunity to HIV in Early Life (Z4)

\* **Anjali Singh**, National Institutes of Health, USA

\* **Kristina De Paris**, University of North Carolina at Chapel Hill, USA

\* **Sallie R. Permar**, Duke University Medical Center, USA

\* **Mary A. Marovich**, NIAID, National Institutes of Health, USA

#### Immunity at the Maternal-Fetal Interface (Z3)

**Kang Chen**, Wayne State University and National Institutes of Health, USA

*Harnessing the Function of B Cells to Prevent Preterm Labor*

**Aleksandar Stanic**, University of Wisconsin-Madison, USA  
*Integration of Single cell RNAseq and T Cell Receptor Repertoire Data at the Maternal-Fetal Interface*

**Elizabeth Bonney**, University of Vermont, USA  
*Regulation of the Immune Response during Pregnancy*

**Nardhy Gomez-Lopez**, Wayne State University, USA  
*Effector and Regulatory T Cells in the Pathophysiology of Preterm Labor*

**Short Talks Chosen from Abstracts**

#### Protecting the Infant through Maternal and Neonatal Immunization (Z4)

**Arnaud Marchant**, Université libre de Bruxelles, Belgium  
*Maternal Immunization and the Developing Immune System*

**Ofer Levy**, Boston Children's Hospital, USA  
*Precision Vaccines: Age-Specific Adjuvantation Systems to Enhance Early Life Immunization*

**Rino Rappuoli**, GlaxoSmithKline Vaccines, Italy  
*Engineering Vaccines to Protect the Neonate and Young Infant*

#### Closing Keynote Address (Joint)

#### Poster Session 3

### THURSDAY, JUNE 11

#### Local and Systemic Maternal Changes in Normal Pregnancy and Pregnancy Complications (Z3)

**Philippe Van de Perre**, University Montpellier, France  
*Breastmilk Cell Trafficking and Neonatal Immune Maturation*

**Manuel Friese**, University Medical Center Hamburg-Eppendorf, Germany

*T Cell Modulation During Pregnancy in Autoimmunity*

**Sing Sing Way**, Cincinnati Children's Hospital, USA  
*Microchimeric Cells*

#### The Rising Tide of Allergy and Autoimmunity (Z4)

**Donata Vercelli**, University of Arizona, USA  
*Talk Title to be Announced*

**Peter Vuillermin**, Deakin University, Australia  
*Ontogeny of the Immune System and Microbiome in Relation to Allergies*

**Mikael Knip**, University of Helsinki, Finland  
*Early Origin of Autoimmunity*

**Short Talks Chosen from Abstracts**

#### Congenital Infections as a Probe for Maternal Fetal Cross Talk (Joint)

**Carolyn B. Coyne**, University of Pittsburgh, USA  
*Trophoblast Antimicrobial Immunity*

**Sallie R. Permar**, Duke University Medical Center, USA  
*Selective Placental IgG Transfer and Protection Against Neonatal Pathogens*

**Philip J. Gould**, University of Oxford, UK  
*Congenital HIV*

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#### Closing Keynote Address (Joint)

**Andrew J.S. Macpherson**, University of Bern, Switzerland

*Maternal Microbiota Influences on the Newborn and during Early Life*

#### Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z3)

#### Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z4)

### FRIDAY, JUNE 12

#### Departure