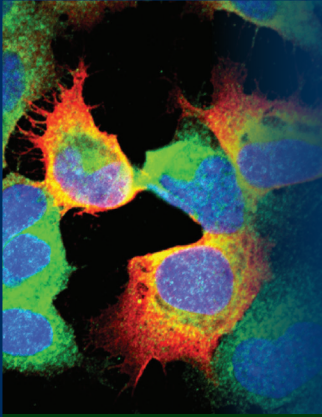




# Cells vs. Pathogens: Intrinsic Defenses and Counterdefenses

March 23–26, 2018 | Hyatt Regency Monterey | Monterey, California | USA

## Scientific Organizers:

**Sara R. Cherry**, University of Pennsylvania School of Medicine, USA

**Craig R. Roy**, Yale University School of Medicine, USA

**Harmit S. Malik**, Fred Hutchinson Cancer Research Center, USA

*Cells have evolved complex mechanisms to detect and respond to infection. We are only beginning to uncover the cellular mechanisms that engage invading pathogens to restrict infection. While bacteria, viruses and parasites are seemingly different, emerging data suggests that there is a convergence of cellular pathways that target these invading pathogens, which these pathogens have developed subversive strategies to evade. This conference will focus on host processes at the forefront of this battle and how pathogens are targeted. From the initial stages of non-self-recognition to the effector pathways engaged, these diverse pathogens are both manipulated and manipulating the system. Cutting-edge technologies are driving our deeper understanding of how core biological processes can be regulated in favor of the host, or pathogen, and how these new mechanisms might be harnessed to treat diverse diseases. This meeting focuses on intrinsic mechanisms of defense across pathogens, bringing together diverse areas of expertise showcasing the convergence of pathways engaged.*

## Session Topics:

- Cellular Barriers to Infection
  - Pattern Recognition and Evasion
  - Metabolic Control as a Defense
  - Cell Biological Control of Infection through Capture
  - Evolution and Co-Evolution of Intrinsic Defenses
  - Systems Approaches to Discover Intrinsic Effectors
- plus one workshop*

**Scholarship Application & Discounted Abstract Deadline: November 21, 2017**

**Abstract Deadline: December 19, 2017**

**Discounted Registration Deadline: January 16, 2018**



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

*Upper image of the Langkat virus protein NS5 (red) interacting with prolidase (green) to prevent cells from mounting an antiviral response courtesy of National Institute of Allergy and Infectious Diseases, NIH*

Meeting Hashtag: #KSdefense

[www.keystonesymposia.org/18C4](http://www.keystonesymposia.org/18C4)

KEYSTONE  SYMPOSIA<sup>™</sup>  
on Molecular and Cellular Biology

*Accelerating Life Science Discovery*

[www.keystonesymposia.org/meetings](http://www.keystonesymposia.org/meetings) | 1.800.253.0685 | 1.970.262.1230

a 501(c)(3) nonprofit educational organization

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Cells vs. Pathogens: Intrinsic Defenses and Counterdefenses (C4)

March 23-26, 2018 • Hyatt Regency Monterey • Monterey, California, USA

Scientific Organizers: Sara R. Cherry, Craig R. Roy and Harmit S. Malik

Supported by the Directors' Fund

Abstract & Scholarship Deadline: November 21, 2017 / Abstract Deadline: December 19, 2017 / Discounted Registration Deadline: January 16, 2018

### FRIDAY, MARCH 23

#### Arrival and Registration

### SATURDAY, MARCH 24

#### Welcome and Keynote Address

**Akiko Iwasaki**, HHMI/Yale University School of Medicine, USA  
*Intrinsic Antiviral Defenses*

#### Cellular Barriers to Infection

**Carolyn B. Coyne**, University of Pittsburgh, USA

*Breaking Barriers-Virus Infection of Polarized Host Cells*

**Emily Troemel**, University of California, San Diego, USA  
*C. elegans Barriers to Microsporidia*

**Andreas J. Bäuml**, University of California, Davis, USA  
*Healthy Guts Exclude Oxygen*

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

#### Poster Session 1

#### Workshop

#### Short Talks Chosen from Abstracts

#### Pattern Recognition and Evasion

**Alan G. Goodman**, Washington State University, USA  
*Conservation of Host-pathogen Interactions and Innate Immunity in Insects and Mammals*

**John C. Boothroyd**, Stanford University School of Medicine, USA  
*Toxoplasma's Manipulation of Host Cell Defenses*

**Luciano A. Marraffini**, Rockefeller University, USA  
*Generation of Memory during the CRISPR-Cas Immune Response*

#### Short Talk Chosen from Abstracts

### SUNDAY, MARCH 25

#### Metabolic Control as a Defense

**Nihal Altan-Bonnet**, NHLBI, National Institutes of Health, USA  
*Infection by Population-A New Mode of Viral Transmission*

**Brian Lichty**, McMaster University, Canada  
*Integration of Viral Sensing with Metabolic Regulators*

**Ken H. Cadwell**, New York University School of Medicine, USA  
*Autophagy in Resistance versus Tolerance During Infectious Disease*

**Russell E. Vance**, University of California, Berkeley, USA  
*Cytosolic Sensing of Bacterial Pathogens*

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

#### Cell Biological Control of Infection through Capture

**Craig R. Roy**, Yale University School of Medicine, USA  
*Manipulation of Autophagy by Intracellular Pathogens*

**Ivan Dikic**, Goethe University Medical School, Germany  
*Phosphoribosyl-dependent Ubiquitination in regulation of Host-Pathogen Interface*

**Julie Magarian Blander**, Weill Cornell Medicine, Cornell University, USA

*Cell-autonomous Responses to vita-PAMPs: Signatures of Microbial Viability*

#### Short Talk Chosen from Abstracts

#### Poster Session 2

### MONDAY, MARCH 26

#### Evolution and Co-Evolution of Intrinsic Defenses

**Harmit S. Malik**, Fred Hutchinson Cancer Research Center, USA  
*Molecular Arms Races between Host and Viral Genomes*

#### Speaker to be Announced

**Jörn Coers**, Duke University, USA

*Antibacterial Host Defense by IFN-inducible Guanylate Binding Proteins*

#### Speaker to be Announced

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

#### Systems Approaches to Discover Intrinsic Effectors

**Sara R. Cherry**, University of Pennsylvania School of Medicine, USA  
*Functional Genomic Strategies to Identify Intrinsic Regulators of Infection*

**Nevan J. Krogan**, University of California, San Francisco, USA  
*Using System Approaches to Studying Disease*

**Nels C. Elde**, University of Utah, USA  
*Interim Immune Functions*

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

### TUESDAY, MARCH 27

#### Departure