



## **Biology, Pathogenesis and Treatment of Viral Infections**

**May 14 - 19, 2017**

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### **Chair**

Blossom Damania

### **Vice Chair**

Julie Pfeiffer

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### **Renaissance Tuscany Il Ciocco**

Via Giovanni Pascoli

Lucca (Barga), IT

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### **Conference Description**

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The 2017 Viruses and Cells GRC, the premier conference in the field of virology, will cover seminal topics in virology ranging from viral entry and structure to virus-host interactions, viral replication, immune responses to viral infection, and viral therapeutics.

The 2017 meeting will be held at Renaissance Tuscany, Il Ciocco, Lucca (Barga), Italy, from May 14-19, 2017. The conference is an interactive forum which brings together investigators at the forefront of the field, junior investigators launching their independent research careers, graduate students and postdoctoral fellows, and investigators from NIH and industry. The conference strives to represent a collegial environment that supports the discussion of novel ideas and fosters new collaborations.

Invited speakers will present novel and cutting edge findings in the field of virology. Topics will include: viral structure and entry, the immune response to viral infection, viral evasion of host immunity, viral replication and persistence, viral pathogenesis, virus-host interactions, modulation of cellular pathways by viruses, viruses and cancer, and viral therapeutics. Session chairs who are experts on the topic covered in each session will lead interactive, lively, and open discussions following each presentation.

In addition to each of the invited speakers, short talks will be chosen from the abstracts that are submitted to the meeting at the time of registration. Abstracts that highlight the most exciting and new developments in the field of virology will be selected for short talks, and the remainder



of the abstracts will be selected as posters. The evening poster sessions are a prominent and important aspect of this conference providing yet another opportunity for participants to interact and discuss their research findings in an informal, friendly atmosphere.

## Related Meeting



This GRC will be held in conjunction with the "Viruses and Cells (GRS)" Gordon Research Seminar (GRS). Those interested in attending both meetings must submit an application for the GRS in addition to an application for the GRC. Refer to the [associated GRS program page](#) for more information.

## Conference Program

Sunday	
4:00 pm - 8:00 pm	Arrival and Check-in
6:00 pm - 7:00 pm	Dinner
7:30 pm - 7:40 pm	Introductory Comments by GRC Site Staff / Welcome from the GRC Chair
7:40 pm - 9:30 pm	<b>Virus Structure and Entry</b> Discussion Leaders: <b>Michael Imperiale</b> (University of Michigan, USA) and <b>Roberto Cattaneo</b> (Mayo Clinic College of Medicine, USA)
7:40 pm - 8:00 pm	<b>Sean Whelan</b> (Harvard Medical School, USA) "Structure and Inhibition of the Replication Machinery of Negative Sense RNA Viruses"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:30 pm	<b>Richard Longnecker</b> (Northwestern University, USA) "Epstein-Barr Virus Entry"
8:30 pm - 8:40 pm	Discussion
8:40 pm - 9:00 pm	<b>Felix Rey</b> (Institut Pasteur, France) "Class II Membrane Fusion Proteins in Viruses and Cells: Implications for Eukaryotic Evolution"



9:00 pm - 9:05 pm	Discussion
9:05 pm - 9:25 pm	<b>Ari Helenius</b> (ETH Zurich, Switzerland) "Influenza Virus Capsid Uncoating"
9:25 pm - 9:30 pm	Discussion
<b>Monday</b>	
7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>The Immune Response to Viral Infection</b> Discussion Leaders: <b>Carolina Lopez</b> (University of Pennsylvania, USA) and <b>Mark Denison</b> (Vanderbilt University Medical Center, USA)
9:00 am - 9:20 am	<b>Herbert Virgin</b> (Washington University School of Medicine, USA) "Role of the Virome in Control of Immunity, and Vice Versa"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	<b>Ana Fernandez-Sesma</b> (Icahn School of Medicine at Mount Sinai, USA) "Immune Evasion Mechanisms by Flaviviruses and Beyond"
9:50 am - 10:00 am	Discussion
10:00 am - 10:20 am	<b>Charles Rice</b> (The Rockefeller University, USA) "Unraveling Nature's Intrinsic and Innate Antiviral Defenses"
10:20 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:20 am	<b>Michael Gale</b> (University of Washington, USA) "Targeting RIG-I for Antiviral Therapy and Vaccine Adjuvant Against RNA Virus Infection"
11:20 am - 11:30 am	Discussion
11:30 am - 11:40 am	<b>Benjamin Fulton</b> (Icahn School of Medicine at Mount Sinai, USA) "Mutagenesis of the Zika Virus Genome Defines Regions with Essential Replication and Immune Evasion Functions"



11:40 am - 11:45 am	Discussion
11:45 am - 11:55 am	<b>Ryan Langlois</b> (University of Minnesota, USA) "Mechanisms Dictating Cellular Susceptibility and Resistance to Influenza A Virus Infections <i>In Vivo</i> "
11:55 am - 12:00 pm	Discussion
12:00 pm - 12:10 pm	<b>Nadia Martinez</b> (Genentech, USA) "Virus-Host Receptome Characterization for Discovery of Novel Mechanisms of Immunoregulation"
12:10 pm - 12:15 pm	Discussion
12:15 pm - 12:25 pm	<b>Jacob Yount</b> (The Ohio State University, USA) "IFITM3 Restriction of Virus Infection Requires an Amphipathic Helix"
12:25 pm - 12:30 pm	Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:30 pm	Free Time
4:30 pm - 6:00 pm	<b>Poster Session</b>
6:00 pm - 8:00 pm	<b>Viral Replication and Persistence</b> Discussion Leaders: <b>Andrew Pekosz</b> (Johns Hopkins University, USA) and <b>Laurie Krug</b> (Stony Brook University, USA)
6:00 pm - 6:20 pm	<b>Ronald Desrosiers</b> (University of Miami, USA) "Evidence for an Actual Cure of a SHIV-Infected Monkey"
6:20 pm - 6:30 pm	Discussion
6:30 pm - 6:50 pm	<b>Stacey Schultz-Cherry</b> (St. Jude Children's Research Hospital, USA) "Defining the Cellular Factors Regulating Astrovirus Replication"
6:50 pm - 7:00 pm	Discussion
7:00 pm - 7:20 pm	<b>Rolf Renne</b> (University of Florida, USA) "Long and Short Non-Coding RNAs in KSHV Biology and Pathogenesis"



7:20 pm - 7:30 pm	Discussion
7:30 pm - 7:50 pm	<b>Carolyn Coyne</b> (University of Pittsburgh, USA) "Breaking Barriers: Viral Infections of Polarized Cells"
7:50 pm - 8:00 pm	Discussion
8:00 pm - 9:00 pm	Dinner
<b>Tuesday</b>	
7:30 am - 8:30 am	Breakfast
8:30 am - 9:00 am	Group Photo
9:00 am - 12:30 pm	<b>Viral Pathogenesis</b> Discussion Leaders: <b>Lynn Enquist</b> (Princeton University, USA) and <b>Matthew Evans</b> (Icahn School of Medicine at Mount Sinai, USA)
9:00 am - 9:20 am	<b>Julie Overbaugh</b> (Fred Hutchinson Cancer Research Center, USA) "Immune Responses to HIV in Mothers and Their Infants"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	<b>Lisa Ng</b> (Singapore Immunology Network (SIgN), A*STAR, Singapore) "Cell and Molecular Mechanisms of Alphavirus Pathogenesis"
9:50 am - 10:00 am	Discussion
10:00 am - 10:20 am	<b>Martha Clokie</b> (University of Leicester, United Kingdom) "Bacteriophages to Treat Antibiotic Resistant Bacteria"
10:20 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:20 am	<b>Christiane Wobus</b> (University of Michigan Medical School, USA) "Modulation of Cellular Deubiquitinases Alters Macrophage Functions and Blocks Norovirus Infection"
11:20 am - 11:30 am	Discussion



11:30 am - 11:40 am	<b>Andrew Mehle</b> (University of Wisconsin-Madison, USA) "Repurposing Canonical Antiviral Responses to Promote Viral Infection"
11:40 am - 11:45 am	Discussion
11:45 am - 11:55 am	<b>Craig McCormick</b> (Dalhousie University, Canada) "Translation of Kaposi's Sarcoma-Associated Herpesvirus (KSHV) Lytic Gene Products Is Resistant to mTORC1 Inhibition"
11:55 am - 12:00 pm	Discussion
12:00 pm - 12:10 pm	<b>Enzo Poirier</b> (Pasteur Institute, France) "Defective Genome Production Tunes Viral Load and Persistence Through RNA Interference Activation in Arthropods"
12:10 pm - 12:15 pm	Discussion
12:15 pm - 12:25 pm	<b>Paul Duprex</b> (Boston University, USA) "Delineating Morbillivirus Entry, Dissemination and Transmission by Studying <i>In Vivo</i> Competition of Multicolor Canine Distemper Viruses in Ferrets"
12:25 pm - 12:30 pm	Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:30 pm	Free Time
4:30 pm - 6:00 pm	<b>Poster Session</b>
6:00 pm - 8:00 pm	<b>Virus-Host Interactions</b> Discussion Leaders: <b>Chris Sullivan</b> (University of Texas at Austin, USA) and <b>Donna Neumann</b> (LSU Health Sciences Center New Orleans, USA)
6:00 pm - 6:20 pm	<b>Kanta Subbarao</b> (WHO Collaborating Centre for Reference and Research on Influenza, Australia) "Viral and Host Determinants of Influenza Virus Transmission"
6:20 pm - 6:30 pm	Discussion



6:30 pm - 6:50 pm	<b>Rozanne Sandri-Goldin</b> (University of California, Irvine, USA) "Structure-Function Analysis of a Signature Multifunctional Herpesvirus Protein"
6:50 pm - 7:00 pm	Discussion
7:00 pm - 7:20 pm	<b>Nels Elde</b> (University of Utah, USA) "Viral Adaptation Through Retrotransposition"
7:20 pm - 7:30 pm	Discussion
7:30 pm - 7:40 pm	<b>Marta Gaglia</b> (Tufts University School of Medicine, USA) "Transcriptome-Wide Analysis of Targets of the Influenza RNase PA-X Reveals Specificity for Functional and Structural Classes of RNAs"
7:40 pm - 7:45 pm	Discussion
7:45 pm - 7:55 pm	<b>Rossana Colon-Thillet</b> (Fred Hutchinson Cancer Research Center, USA) "An Unbiased Approach to Evaluate the Contribution of Rapidly Evolving Sites at Antiviral Interfaces"
7:55 pm - 8:00 pm	Discussion
8:00 pm - 9:00 pm	Dinner

## Wednesday

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>Virus Biology</b> Discussion Leaders: <b>Britt Glaunsinger</b> (University of California, Berkeley, USA) and <b>Micah Luftig</b> (Duke University Medical Center, USA)
9:00 am - 9:20 am	<b>Joan Steitz</b> (Yale University, USA) "Viral Noncoding RNAs: More Surprises"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	<b>Carla Saleh</b> (Pasteur Institute, France) "Small RNA Pathways and Arboviral Persistence in Mosquitoes"



9:50 am - 10:00 am	Discussion
10:00 am - 10:20 am	<b>Felicia Goodrum</b> (University of Arizona, USA) "Cytomegalovirus Regulation of Membrane Trafficking and Signaling"
10:20 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:10 am	<b>Adam Lauring</b> (University of Michigan, USA) "A Speed-Fidelity Trade-Off Determines the Mutation Rate and Virulence of an RNA Virus"
11:10 am - 11:15 am	Discussion
11:15 am - 11:25 am	<b>Emma Abernathy</b> (Stanford University, USA) "Poliovirus Utilizes Key Components of the Autophagy Pathway While Bypassing Others"
11:25 am - 11:30 am	Discussion
11:30 am - 11:40 am	<b>Andreas Puschnik</b> (Stanford University, USA) "Genetic Dissection of Flaviviridae Host Factors Through Genome-Scale CRISPR Screens"
11:40 am - 11:45 am	Discussion
11:45 am - 11:55 am	<b>Emmanuelle Genoyer</b> (University of Pennsylvania, USA) "Mechanisms and Consequences of Intracellular Distribution of Sendai Virus Genome Species"
11:55 am - 12:00 pm	Discussion
12:00 pm - 12:10 pm	<b>Seema Lakdawala</b> (University of Pittsburgh, USA) "Genome-Wide Analysis of Influenza Viral RNA and Nucleoprotein Architecture"
12:10 pm - 12:15 pm	Discussion





12:15 pm - 12:25 pm	<b>Gisa Gerold</b> (Institute for Experimental Virology, TWINCORE, Germany) "Identification of Two Host Enzymes as Entry Factors for Hepatitis C Virus and <i>Plasmodium</i> Sporozoites"
12:25 pm - 12:30 pm	Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:30 pm	Free Time
4:30 pm - 6:00 pm	<b>Poster Session</b>
6:00 pm - 8:00 pm	<b>Viral Modulation of Host Immunity</b> Discussion Leaders: <b>Melanie Brinkmann</b> (Helmholtz Centre for Infection Research, Germany) and <b>Stacy Horner</b> (Duke University Medical Center, USA)
6:00 pm - 6:20 pm	<b>Soren Paludan</b> (University of Aarhus, Denmark) "Evasion of Innate Immune Responses by Viruses"
6:20 pm - 6:30 pm	Discussion
6:30 pm - 6:50 pm	<b>Ralph Baric</b> (University of North Carolina at Chapel Hill, USA) "Identification of Novel Viral and Host Genetic Elements Impacting Coronavirus Pathogenesis"
6:50 pm - 7:00 pm	Discussion
7:00 pm - 7:20 pm	<b>Joanna Shisler</b> (Univeristy of Illinois at Urbana-Champaign, USA) "Comparative Biology of Poxvirus Immune Evasion Genes to Learn About Virus Biology"
7:20 pm - 7:30 pm	Discussion
7:30 pm - 7:40 pm	<b>Judy Brown</b> (Vanderbilt University / University of Pittsburgh, USA) "Reovirus Abrogates Immunological Tolerance to Orally Fed Antigen"
7:40 pm - 7:45 pm	Discussion



7:45 pm - 7:55 pm	<b>Christine Vazquez</b> (Duke University, USA) "Identification of a Riplet-Dependent, RIG-I-Independent Antiviral Response Regulated by Hepatitis C Virus"
7:55 pm - 8:00 pm	Discussion
8:00 pm - 9:00 pm	Dinner
<b>Thursday</b>	
7:30 am - 8:30 am	Breakfast
8:30 am - 9:00 am	<b>Business Meeting</b> <i>Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair</i>
9:00 am - 12:30 pm	<b>Viruses and Cancer</b> Discussion Leaders: <b>Robert Yarchoan</b> (National Cancer Institute, NIH, USA) and <b>Jae Jung</b> (University of Southern California, USA)
9:00 am - 9:20 am	<b>Yuan Chang</b> (University of Pittsburgh, USA) "MCV Small T Antigen and the Mitotic Environment"
9:20 am - 9:30 am	Discussion
9:30 am - 9:50 am	<b>Erle Robertson</b> (University of Pennsylvania, USA) "EBV Regulation of Bcl6: Insights into Viral Mediated Lymphomagenesis"
9:50 am - 10:00 am	Discussion
10:00 am - 10:20 am	<b>Laimonis Laimins</b> (Northwestern University, USA) "Human Papillomaviruses and DNA Damage Responses"
10:20 am - 10:30 am	Discussion
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:20 am	<b>Ethel Cesarman</b> (Weill Cornell Medicine, USA) "Targeting Viral Oncogenic Signals"
11:20 am - 11:30 am	Discussion



11:30 am - 11:40 am	<b>Jessica Tucker</b> (University of California, Berkeley, USA) "The Role of Retrotransposon Stimulation During Reactivation of Latent Gammaherpesvirus"
11:40 am - 11:45 am	Discussion
11:45 am - 11:55 am	<b>Cary Moody</b> (University of North Carolina at Chapel Hill, USA) "Trimethylation of Histone H3 on Lysine 36 Is Required for Productive Replication of HPV-31"
11:55 am - 12:00 pm	Discussion
12:00 pm - 12:10 pm	<b>Benjamin Gewurz</b> (Brigham and Women's Hospital, USA) "CRISPR/Cas9 Screens for Synthetic Lethal Targets in EBV-Transformed B-Cells"
12:10 pm - 12:15 pm	Discussion
12:15 pm - 12:25 pm	<b>Dean Kedes</b> (University of Virginia, USA) "The KSHV Episome-Host Chromatin Synapse: Elucidation of Nanoscale Architecture"
12:25 pm - 12:30 pm	Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:30 pm	Free Time
4:30 pm - 6:00 pm	<b>Poster Session</b>
6:00 pm - 8:00 pm	<b>Viral Therapeutics and Vaccines</b> Discussion Leaders: <b>Terence Dermody</b> (University of Pittsburgh, USA) and <b>Sankar Swaminathan</b> (University of Utah, USA)
6:00 pm - 6:20 pm	<b>Matthais Gromeier</b> (Duke University Medical Center, USA) "Cytotoxic and Immunogenic Mechanisms of Oncolytic Poliovirus"
6:20 pm - 6:30 pm	Discussion
6:30 pm - 6:50 pm	<b>Matthew Frieman</b> (University of Maryland, USA) "Pathogenesis and Therapeutic Treatment of the MERS Coronavirus"



6:50 pm - 7:00 pm	Discussion
7:00 pm - 7:10 pm	<b>David Bloom</b> (University of Florida College of Medicine, USA) "In Vivo Knock-Down of the Herpes Simplex Virus Type 1 Latency-Associated Transcript Reduces Reactivation from Latency"
7:10 pm - 7:15 pm	Discussion
7:15 pm - 7:25 pm	<b>Matthew Pennington</b> (Cornell University, USA) "Exploring the Antiviral Mechanism and Anti-Angiogenic Effects of Raltegravir During Feline Herpesvirus (FHV-1) Infection of Primary Feline Corneal Epithelial Cells"
7:25 pm - 7:30 pm	Discussion
7:30 pm - 7:50 pm	General Discussion
7:50 pm - 8:00 pm	Closing Remarks
8:00 pm - 9:00 pm	Dinner
<b>Friday</b>	
7:30 am - 8:30 am	Breakfast
9:00 am	Departure

## Contributors

		
		
		
		

		
		
		
		
		

