



# HCV-Flavi 2023

29TH INTERNATIONAL SYMPOSIUM ON HEPATITIS C VIRUS,  
FLAVIVIRUSES, AND RELATED VIRUSES

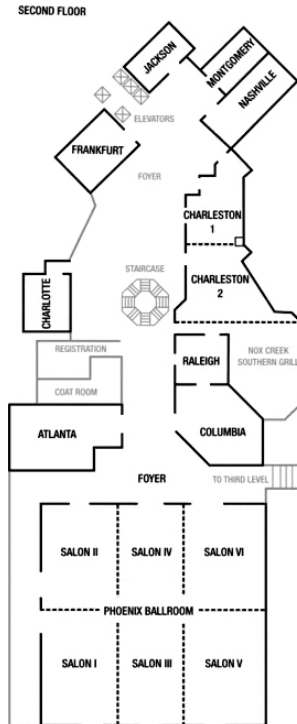
ATLANTA

OCTOBER 1-4, 2023

**PROGRAM BOOKLET**

# FLOOR PLAN

## MEETING ROOMS



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# COMMITTEES

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Scholarships funded by HCV-Flavi 2023 Partners



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**Jarrett Lopez-Scarim**  
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College of Medicine  
USA



**Laura Radić**  
Amsterdam  
University  
Medical Center  
Netherlands

# PROGRAM

## HCV-Flavi Day 1 - Sunday, October 1, 2023

### OPENING SESSION

- 12:00 **Registration**
- 16:45 **Opening remarks**  
Arash Grakoui  
Emory University, USA

### SESSION 1 From discovery, clinical challenges to elimination

- Chair Arash Grakoui  
Emory University, USA
- 17:00 **Keynote lecture: From yellow fever to hepatitis C and back**  
Charles Rice  
Rockefeller University, USA
- 17:30 **Keynote lecture: HCV Elimination: Where there's a will there's a way**  
Susanna Naggie  
Duke University, USA
- 18:00 **Keynote lecture: Hepatitis C elimination: from a Nobel Prize to a Nobel cause**  
John Ward  
Taskforce for Global Health, Coalition for Global Hepatitis Elimination, USA
- 18:10 **End of day 1 and Welcome Reception**

## HCV-Flavi Day 2 - Monday, October 2, 2023

### SESSION 2 Innate immunity and virus-host interaction

- Chairs Judith Gottwein  
University Of Copenhagen, Denmark
- Meital Gal-Tanamy  
Bar-ilan University, Israel
- 8:30 **Keynote lecture: New insights into flavivirus – host cell interactions: a tale of proteins and lipids**  
Ralf Bartenschlager  
Heidelberg University, Germany
- 9:05 **Plenary talk: Calling the shots: micro(RNA)-management of HCV infection**  
Selena Sagan  
University of British Columbia, Canada
- 9:40 **Break (20 min)**



# PROGRAM

## HCV-Flavi Day 2 - Monday, October 2, 2023

### Abstract talks

- 10:00 **A TLR3-based directed evolution approach identifies an HCV NS3 helicase point mutation specifically affecting (-) strand synthesis**  
Philipp Ralfs  
Heidelberg University, Germany
- 10:15 **HCV p7-mediated inhibition of signal peptide peptidase (SPP) promotes HCV assembly by facilitating Core localization to the endoplasmic reticulum (ER) and Core-E1 interaction**  
Ming-Jhan Wu  
University of Texas Medical Branch, USA
- 10:30 **Identification of phosphorylation sites on viral and host proteins regulating west nile virus replication**  
Holly Ramage  
Thomas Jefferson University, USA
- 10:45 **Mutations in the interferon sensitivity determining region dramatically increase hepatitis C virus replication leading to direct viral pathogenesis**  
Paul Rothhaar  
Heidelberg University, Germany
- 11:00 **How a virus builds a house: host factors required for flavivirus replication organelle formation**  
Jonathan Owen  
Emory University, USA
- 11:15 **Break (10 min)**

### 5-minute pitch talks

- 11:25 **Identification of hepatitis E virus restriction factors by utilizing arrayed human and porcine ISG screens**  
Volker Kinast  
Carl Von Ossietzky University, Germany
- 11:30 **NS5A oligomerization-dependent membrane remodeling activity correlates with HCV replicative fitness and is a direct and common target of different NS5A inhibitors**  
Sameh Lofti Abdalla  
University of Texas Medical Branch, USA



# PROGRAM

## HCV-Flavi Day 2 - Monday, October 2, 2023

### Abstract talks

- 14:55 **Design and non-viral delivery of live attenuated virus vaccine to prevent chronic hepatitis C (HCV-like virus) infection**  
Amit Kapoor  
Nationwide Children's Hospital, USA
- 15:10 **Preclinical evaluation of T and B cell targeting DNA/MVA-based HCV vaccine candidates in mice and rhesus macaques**  
Rama Amara  
Emory University, USA
- 15:25 **Supramolecular assembly of Toll-like receptor 7/8 agonist into multimeric virus-mimicking polymer assemblies of E1E2 and core and evaluation of immune responses**  
Thomas Fuerst  
University of Maryland, USA
- 15:40 **Structural and biochemical studies of flaviviruses in complex with antibodies and attachment factors**  
Richard Kuhn  
Purdue University, USA
- 15:55 **Lipid/mRNA HCV E1E2 vaccines elicit broadly neutralizing antibodies and the requirement of transmembrane domains**  
Steven Fong  
Stanford University, USA

### 5-minute pitch talks

- 16:10 **Extensive C->U transition biases in the genomes of HCV and a wide range of mammalian RNA viruses; host-mediated editing of viral RNA?**  
Peter Simmonds  
University of Oxford, United Kingdom
- 16:15 **Rationally designed attenuated HCV variants for vaccine development**  
Meital Gal-Tanamy  
Bar-Ilan University, Israel
- 16:20 **Bispecific antibodies against hepatitis C virus E1E2 show enhanced breadth and potency in HCV pseudoparticle and authentic virus assays**  
Laura Radić  
Amsterdam University Medical Centers, Netherlands

# PROGRAM

## HCV-Flavi Day 2 - Monday, October 2, 2023

### 5-minute pitch talks

- 16:25 **Optimization of HCV vaccine antigens to enhance binding of broadly neutralizing antibody unmutated ancestors**  
Desiree Wright  
Johns Hopkins Medical Institute, USA
- 16:30 **Iterative structure-based design of a hyperstable soluble hepatitis C virus E1E2 heterodimer**  
Joan Capella-Pujol  
Amsterdam University Medical Centers, Netherlands

### Poster session

- 16:35 **Poster viewing reception**
- 18:00 **End of day 2**

## HCV-Flavi Day 3 - Tuesday, October 3, 2023

### SESSION 4 Flavivirus structure, function and viral life cycle

- Chairs Holly Ramage  
Thomas Jefferson University, USA
- Susan Uprichard  
Loyola University Medical Center, USA
- 8:30 **Keynote lecture: Evolution of alphavirus entry**  
Daved Fremont  
Washington University in Saint Louis, USA
- 9:05 **Plenary talk: Receptor binding and entry of hepatitis C virus**  
Joe Marcotigiano  
National Institutes of Health, USA
- 9:40 **Break (20 min)**

# PROGRAM

HCV-Flavi Day 3 - Tuesday, October 3, 2023

## Abstract talks

- 10:00 **Structure of the hepatitis C virus E1/E2 heterodimer in a homodimeric complex**  
Elias Honerød Augestad  
Copenhagen University, Denmark
- 10:15 **Using machine learning to map membrane fusion mechanisms across the Flaviviridae**  
Joe Grove  
University of Glasgow Centre For Virus Research, United Kingdom
- 10:30 **Patterns of mammalian STAT2 antagonism by flavivirus NS5**  
Matt Evans  
Icahn School Of Medicine At Mount Sinai, USA
- 10:45 **Identifying the Molecular Determinants of Epitope Specificity in HCV**  
Rowena Bull  
Kirby Institute, Australia
- 11:00 **Differential T cell signaling by memory-like and severe exhausted HCV-specific CD8 T cells in chronic HCV infection revealed by highly multiplexed mass-based phosphoflow analysis**  
Bertram Bengsch  
University Medical Center Freiburg, Germany
- 11:15 **Break (10 min)**

## 5-minute pitch talks

- 11:25 **Neutralizing antibodies exploit vulnerable E2 amino acids to mediate repeated, spontaneous HCV clearance**  
Nicole Frumento  
Johns Hopkins University, USA
- 11:30 **A new assay for the quantification of HCV E2- or E1-dependent neutralizing antibody responses in polyclonal plasma**  
Anne Gao  
Johns Hopkins University, USA
- 11:35 **Dengue virus serotype-specific inhibition of T cell responses is due to a single amino acid polymorphism in the envelope protein**  
Jack Stapleton  
University of Iowa, USA

# PROGRAM

HCV-Flavi Day 3 - Tuesday, October 3, 2023

## 5-minute pitch talks

- 11:40 **Understanding the virus-host protein-protein interaction network of the hepatitis E virus**  
Philip Meuleman  
Ghent University, Belgium
- 11:45 **IL-15-induced activation of liver damaging bystander CD8+ T cells is counteracted by Ca<sup>2+</sup> signals in viral hepatitis**  
Eui-Cheoi Shin  
Korea Advanced Institute of Science and Technology (KAIST), South Korea
- 11:50 **A structural perspective into Hepatitis C Virus E1E2 glycoproteins using a lentivirus-pseudoparticle approach**  
Shishir Poudyai  
Purdue University, USA
- 11:55 **Investigating the role of NS2A in the zika virus life cycle**  
Breana Landry  
University of British Columbia, Canada
- 12:00 **Lunch (1.5 hours)**

## SESSION 5 Replication systems and animal models

Chairs Selena Sagan  
University of British Columbia  
Canada

Eva Herker  
Philipps University Marburg, Germany

- 13:30 **Keynote lecture: Breaking the species barrier of hepatitis C virus**  
Alexander Ploss  
Princeton University, USA
- 14:05 **Plenary talk: Early events in the HCV life cycle**  
Glenn Randall  
University of Chicago, USA
- 14:40 **Break (15 minutes)**

## Abstract talks

- 14:55 **Impact of HBV pre-core mutation and IFN $\alpha$  on hepatocyte proteome in chronically-infected primary human hepatocytes**  
Lefteris Michailidis  
Emory University, USA
- 15:10 **Function and therapeutic potential of cathepsin peptidases during Hepatitis E Virus infection**  
Mara Klöhn  
Ruhr University Bochum, Germany

# PROGRAM

HCV-Flavi Day 3 - Tuesday, October 3, 2023

## Abstract talks

- 15:25 **Comprehensive epitope mapping and structural studies of antibodies from an HCV elite neutralizer reveal bNAbs that bind multiple antigenic regions on the E2 glycoprotein**  
Andrew Flyak  
Cornell University, USA
- 15:40 **The role of B cells and their antibodies in the clearance of an HCV-related rodent hepacivirus**  
John Gridley  
Emory University, USA

## 5-minute pitch talks

- 15:55 **Phenotype and fate of liver resident CD8 T cells during acute and chronic hepacivirus infection**  
Piyush Dravid  
Nationwide Children's Hospital, USA
- 16:00 **HCV-Specific CD4+ T-Cells are targeted by HIV-1 for infection and viral reservoir persistence**  
Samaa Gobran  
Centre De Recherche Du Chum, Canada
- 16:05 **Insertions in hepatitis C virus hypervariable region 1 as a novel antibody evasion mechanism**  
Chrstitina Holmboe Olesen  
University of Copenhagen, Denmark
- 16:10 **The role of Foxp3+ regulatory T cells in orchestrating anti-viral T and B cell responses during an acute Hepacivirus infection**  
Fengzhi Jin  
Emory University, USA
- 16:15 **Analysis of intrahepatic CD8+ T cells with different viral epitope-specificity during primary and secondary hepacivirus infection**  
Jarrett Lopez-Scarim  
Albert Einstein College of Medicine, USA
- 16:20 **Hepatitis C viral evolution after childbirth bears signatures of both CD8+ T cell and antibody pressure in women with postpartum suppression of viral replication**  
Chris Phelps  
Nationwide Children's Hospital, USA

# PROGRAM

## HCV-Flavi Day 3 - Tuesday, October 3, 2023

### Poster session II

16:30 **Poster viewing reception**

18:00 **End of Day 3**

## HCV-Flavi Day 4 - Wednesday, October 4, 2023

### SESSION 6 Emerging and reemerging flaviviruses, vector transmission and biology

Chairs Margo Brinton Georgia State University, USA Shee Mei Lok Duke-NUS, Singapore

8:30 **Keynote lecture: Zika virus vaccine development: Experience is not preparedness**

Ted Pierson  
National Institutes of Health, USA

9:05 **Plenary talk: Flavivirus-vector interactions**

Greg Ebel  
Colorado State University, USA

9:40 **Break (20 min)**

### Abstract talks

10:00 **Treating dengue infections in vivo using mRNA encoded Cas13**

Chiara Zurla  
Emory University, USA

10:15 **Genetic and functional characterization of the membrane region of the pestiviral NS2 protein**

Olaf Isken  
University of Luebeck, Germany

10:30 **A viral footprint provides clues on how dengue virus escapes the acid bubble**

Jiayu Zhang  
Princeton University, USA

10:45 **Two is better than one: exploring the helicase and capping interfaces between NS3 and NS5 in flavivirus infection**

Quinn Abram  
McGill University, Canada

11:00 **Break (15 min)**



# PROGRAM

## HCV-Flavi Day 4 - Wednesday, October 4, 2023

- 11:15 **Update on CHIM**  
Jordan Feld  
Toronto Centre For Liver Disease, Canada
- Jake Liang  
National Institutes of Health,  
USA
- 12:00 **2024 Meeting introduction**  
Peter Simmonds  
University of Oxford, United Kingdom
- 12:10 **Lunch (1.5 hours)**

### SESSION 7 Correlates of protective immunity

- Chairs Heidi Drummer  
Burnet Institute, Australia
- Naglaa Shoukry  
University of Montreal, Canada
- 13:40 **Keynote lecture: CD8 T cell adaptation to chronic viral infection**  
Rafi Ahmed  
Emory University, USA
- 14:15 **Plenary talk: What is a protective CD4+ T cell response against HCV?**  
Christopher Walker  
Nationwide Children's Hospital, USA
- 14:50 **Break (15 min)**

### Abstract talks

- 15:05 **Epigenetic scars in regulatory T cells are retained after successful treatment of chronic hepatitis C with direct-acting antivirals**  
So-Young Kim  
Korea Advanced Institute Of Science And Technology (KAIST), South Korea
- 15:20 **Analysis of circulating and intrahepatic CD4+ T cell response in acute resolving HCV**  
Heather Blasczyk  
Nationwide Children's Hospital, USA
- 15:35 **Memory B cell responses in chronic hepatitis C patients following direct-acting antiviral treatment**  
Fang Chen  
Scripps Research Institute, USA
- 15:50 **Activation of CD4 T follicular helper cells correlates with B cell expansion and neutralizing antibodies during HCV reinfection and clearance**  
Elsa Gomez Escobar  
CRCHUM, Canada

# PROGRAM

## HCV-Flavi Day 4 - Wednesday, October 4, 2023

16:05	<b>Round table introduction</b> Naglaa Shoukry CRCHUM, Canada	Justin Bailey Johns Hopkins University, USA
16:30	<b>Round table discussion</b> Justin Bailey Johns Hopkins University, USA	Ellie Barnes University of Oxford, United Kingdom
	Andrea Cox Johns Hopkins University, USA	Heidi Drummer Burnet Institute, Australia
	Thomas Fuerst University of Maryland, USA	Judith Gottwein University of Copenhagen, Denmark
	Mansun Law Scripps Research Institute, USA	Naglaa Shoukry CRCHUM, Canada
	Kwinten Sliepen University of Amsterdam, Netherlands	
17:15	<b>Closing remarks</b> Arash Grakoui Emory University, USA	
17:20	<b>Meeting adjourns</b>	
18:30	<b>Gala dinner at Atlanta History Center</b>	

# ACKNOWLEDGEMENTS



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# UPCOMING MEETINGS

The graphic features a dark blue background. On the left, a white wireframe geometric shape, resembling a dodecahedron, is superimposed over a white silhouette of the Oxford skyline, including several spires and a large dome. In the top right corner, the text 'University of Oxford, UK' and '25-28 September 2024' is written in white. The main title 'HCV-Flavi 2024' is in large red font, and the subtitle '30<sup>th</sup> International Symposium on Hepatitis C Virus, Flaviviruses, and Related Viruses' is in smaller black font below it.

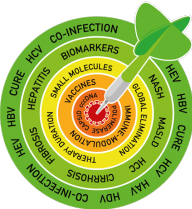
University of Oxford, UK  
25-28 September 2024

## HCV-Flavi 2024

30<sup>th</sup> International Symposium on Hepatitis C Virus,  
Flaviviruses, and Related Viruses

<http://www.hcv-flavi2024.org>

# UPCOMING MEETINGS



FRONTIERS IN DRUG DEVELOPMENT FOR HEPATOLOGY

## HEP-DART 2023

HACIENDA DEL MAR, LOS CABOS • 3-7 DECEMBER 2023

Celebrating 28 years! [www.hepdart.com](http://www.hepdart.com)

### IMPORTANT DATES

- Abstract submissions open:  
**Abstracts and Scholarships Extended for HCV-Flavi 2023 Attendees- Due October 9, 2023**
- Registration deadline: **November 20, 2023**
- Meeting starts: **December 3, 2023 @ 4pm**
- Meeting adjourns: **December 7, 2023 @ 12:30pm**



### LOCATION

**Los Cabos, Mexico**  
Hacienda del Mar  
(a Marriott Hotel)



**HEP-DART** brings a unique blend of chemistry, biology, pharmacology, clinical development and curative therapies.

**Scan QR code for list of exciting speakers!**

### Program highlights

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>➤ Limited to 250 Attendees</li> <li>➤ 40+ World-class invited <b>key opinion leaders and Industry representatives</b></li> <li>➤ CME accreditation</li> <li>➤ 5 days of scientific programming</li> <li>➤ No concurrent sessions</li> </ul> | <ul style="list-style-type: none"> <li>➤ Academic-Industry sessions</li> <li>➤ 5 Panel discussions + 1 debate</li> <li>➤ <b>Opportunities for Oral Abstracts</b></li> <li>➤ 1 poster session with poster review</li> <li>➤ 12+ Hours dedicated to networking</li> </ul> |
|--|---|

