

# Cell Dynamics: Host-Pathogen Interface

## Programme

### Sunday 8 May 2022

- 12:00**      **Registration opens**
- 12:30 – 13:50**      **Lunch**
- 14:00 – 14:15**      **Sharon Ahmad** Journal of Cell Science, UK  
Welcome
- Session 1 Chairs: Dominique Soldati-Favre, University of Geneva and Michael Way, The Francis Crick Institute**
- 14:15 – 14:35**      **Maria Mota** University of Lisbon, Portugal  
*Plasmodium*-hepatocyte interface: avoiding death in so many different ways
- 14:45 – 15:05**      **Friedrich Frischknecht** Heidelberg University, Germany  
Environmental sensing by *Plasmodium* during transmission
- 15:15 – 15:25**      **Effie Bastounis** University of Tübingen, Germany  
Biomechanical alterations of host endothelial cells infected with *B. burgdorferi*
- 15:30 – 15:40**      **Daria Bonazzi** Institut Pasteur, France  
Mechanobiology of meningococcal infection
- 15:45 – 16:25**      **Coffee break**
- Session 2 Chairs: Dominique Soldati-Favre, University of Geneva and Michael Way, The Francis Crick Institute**
- 16:30 – 16:50**      **Matt Welch** University of California, Berkeley, USA  
Mobilization of the actin cytoskeleton by microbial pathogens
- 17:00 – 17:10**      **Mollie Sweeney** Duke University, USA  
An ancestral mycobacterial effector promotes dissemination of infection
- 17:15 – 17:35**      **Serge Mostowy** London School of Hygiene & Tropical Medicine, UK  
The septin cytoskeleton in antibacterial defense
- 17:45 – 17:55**      **Léa Swistak** Institut Pasteur, France  
*Shigella flexneri* infection at the cellular and ultrastructural level
- 18:00 – 19:00**      **Free time**
- 19:00 – 20:00**      **'Speed dating' event and pre-dinner drinks**
- 20:00 – 21:30**      **Dinner**

## Monday 9 May 2022

07:00 – 08:20 **Breakfast**

08:30 – 08:55 **Careers at a Glance**

**Maximiliano Gutierrez** The Francis Crick Institute, UK

**Session 3 Chair: Friedrich Frischknecht, Heidelberg University**

09:00 – 09:20 **Michael Way** The Francis Crick Institute, UK

Reconstituting microtubule-based motility of vaccinia virus *in vitro*

09:30 – 09:50 **Mojgan Naghavi** Northwestern University, USA

Mimicry of microtubule regulators by HIV-1 capsid

10:00 – 10:10 **Yue Zhang** Institut Pasteur of Shanghai, China

The dual role of host cytoskeletal vimentin in Zika virus replication

10:15 – 10:30 **Sponsored talk**

**PJ Chana** Luminex, The Netherlands

Amnis ImageStream X MKII; The best of both worlds, a novel platform that brings visually verifiable data to your flow cytometry experiments and statistically quantification to your imaging experiments

10:30 – 10:40 **Group photo**

10:40 – 11:10 **Coffee break and exhibitors**

**Session 4 Chair: Friedrich Frischknecht, Heidelberg University**

11:15 – 11:35 **Derek Walsh** Northwestern University, USA

Why nuclei rotate during cytomegalovirus infection

11:45 – 12:05 **Sonja Marie Best** National Institutes of Health, USA

Flavivirus control of mitochondrial dynamics: how and why?

12:15 – 12:25 **Aby Anand** Osnabrück University, Germany

Lipid trafficking at membrane contact sites during mycobacteria infection

12:30 – 13:50 **Lunch and exhibitors**

**Session 5 Chair: Teresa Thurston, Imperial College London**

14:00 – 14:20 **Eva Frickel** University of Birmingham, UK

Host defence by human guanylate binding proteins in macrophages

14:30 – 14:40 **Charlotte Odendall** King's College London, UK

*Shigella* effectors dampen interferon responses by blocking calcium signalling

14:45 – 15:05 **Felix Randow** MRC Laboratory of Molecular Biology, UK

How cells defend their cytosol against bacterial invasion

15:15 – 15:25 **Belinda Hall** University of Surrey, UK

Mycolactone induces translationally controlled, ULK-independent autophagy

15:30 – 16:10 **Coffee break and exhibitors**

## Session 6 Chair: Teresa Thurston, Imperial College London

- 16:15 – 16:35** **Florence Niedergang** Institut Cochin, France  
How to build a phagosome: when new players are revealed by pathogens
- 16:45 – 17:05** **Thierry Soldati** University of Geneva, Switzerland  
Fixing a leaky *Mycobacterium*-containing vacuole with ESCRT and autophagy
- 17:15 – 17:35** **Maximiliano Gutierrez** The Francis Crick Institute, UK  
*Mycobacterium tuberculosis* infection of host cells in time and space
- 17:45 – 17:55** **Naomi Okugbeni** Stellenbosch University, South Africa and South African Medical Research Council Genomics Centre, South Africa  
Tracking autophagy progression in *Mycobacterium tuberculosis*-infected macrophages
- 18:00 – 18:25** **Poster flash talks**
- 18:30 – 19:55** **Poster session 1, exhibitors and pre-dinner drinks**
- 20:00 – 21:30** **Dinner**

## Tuesday 10 May 2022

**07:00 – 08:20** **Breakfast**

**08:30 – 08:55** **Careers at a Glance**  
**Jennifer Rohn** University College London, UK

## Session 7 Chair: Florence Niedergang, Institut Cochin

- 09:00 – 09:20** **Michaela Gack** Cleveland Clinic Florida, USA  
ISG15-mediated activation of innate immunity and viral escape
- 09:30 – 09:40** **Rachel Ulferts** The Francis Crick Institute, UK  
Erroneously neutral vesicles due to viral proton channels are targeted by LC3
- 09:45 – 09:55** **Joana Sa Pessoa** Queen's University Belfast, UK  
A trans-kingdom T6SS effector targets mitochondrial NLRX1 to promote infection

**10:00 – 10:40** **Coffee break and exhibitors**

## Session 8 Chair: Florence Niedergang, Institut Cochin

- 10:45 – 11:05** **Dominique Soldati-Favre** University of Geneva, Switzerland  
Zoom in on the composition and function of the conoid in Apicomplexa
- 11:15 – 11:35** **Isabelle Tardieux** Université Grenoble Alpes, France  
Exploring how *Toxoplasma* coordinates forces to access the host cell
- 11:45 – 11:55** **Vivek Thacker** Global Health Institute, EPFL, Switzerland  
Dissecting the role of cGAS-STING pathway in SARS-CoV-2 induced endotheliitis

12:00 – 13:30 **Lunch and exhibitors**

13:30 – 15:20 **Free time**

15:30 – 15:55 **Coffee break and exhibitors**

**Session 9 Chair: Charlotte Odendall, King's College London**

16:00 – 16:20 **Jae U. Jung** Cleveland Clinic, USA  
Viral evasion of host programmed cell death

16:30 – 16:50 **Sara Cherry** University of Pennsylvania, USA  
Using functional genomics to explore virus-host interactions

17:00 – 17:20 **Nihal Altan-Bonnet** National Institutes of Health, USA  
All aboard: vesicles, viruses and strength in numbers

17:30 – 17:40 **Arthur Bienvenu** CNRS - University of Montpellier, France  
New *Coxiella* lipid-binding effector protein manipulates multivesicular bodies

17:45 – 17:55 **Simon Butterworth** The Francis Crick Institute, UK  
Identifying *T. gondii* effectors that target host transcription by perturb-seq

18:00 – 18:25 **Poster flash talks**

18:30 – 19:55 **Poster session 2, exhibitors and pre-dinner drinks**

20:00 – 21:30 **Dinner**

## Wednesday 11 May 2022

07:00 – 08:25 **Breakfast and check out**

**Session 10 Chairs: Michaela Gack, Cleveland Clinic Florida and Maximiliano Gutierrez, The Francis Crick Institute**

08:30 – 08:50 **Craig Roy** Yale School of Medicine, USA  
Modulation of host cell functions by bacterial effector proteins

09:00 – 09:10 **Virginie Stévenin** Leiden University Medical Center, The Netherlands  
Symphony in DUB major: how USP32 orchestrates the Rab-mediated SCV maturation

09:15 – 09:35 **Teresa Thurston** Imperial College London, UK  
How *Salmonella* infection and a switch in kinase specificity drives macrophage polarisation

09:45 – 09:55 **Mitchell Pallett** Imperial College London, UK  
MAP4Ks drive cell death in response to *Salmonella*-induced actin depolymerisation

10:00 – 10:10 **Joe McKellar** CNRS-University of Montpellier, France  
MX1 proteins disrupt influenza virus nuclear export and cytoplasmic transport

10:15 – 10:55 **Coffee break**

**Session 11 Chairs: Michaela Gack, Cleveland Clinic Florida and Maximiliano Gutierrez, The Francis Crick Institute**

- 11:00 – 11:20** **Robin May** University of Birmingham, UK  
Deciphering the dynamics of the host-pathogen interface during a fatal human fungal infection
- 11:30 – 11:40** **Francisco Mesquita** Global Health Institute, EFPL, Switzerland  
How S-acylation controls SARS-Cov-2 membrane lipid organization and infectivity
- 11:45 – 11:55** **James Daly** University of Bristol, UK  
Mechanistic basis for endosomal sorting of the SARS-CoV-2 host factor neuropilin-1
- 12:00 – 12:15** **Michael Way** The Francis Crick Institute, UK  
Closing remarks
- 12:15 – 13:30** **Lunch and depart**