

# ICAM Week of Science

## Monday, 13<sup>th</sup> January 2025

8:30 **Opening 30'**

9:00 Oleg Lavrentovich, *Kent State University*  
Title: Polarization patterns of ferroelectric nematic liquid crystals

10:00 Cécile Sykes, *CNRS, Laboratoire de Physique de l'Ecole Normale Supérieure, Paris*  
Title: Cytoskeletal physics: phase diagrams, phase portraits and trajectories

11:00 **Coffee break 40'**

11:40 **Round Table 1 60'**  
What can Physics do for sustainability?

12:40 **Lunch 80'**

14:00 Cristina Marchetti, *University of California Santa Barbara*  
Title: Traveling patterns in nonreciprocal active matter

15:00 Sriram Ganeshan, *City College of New York CUNY*  
Title: Ocean waves and quantum hall effect

15:40 **Coffee break 40'**

16:20 Sami Al-Izzi, *UNSW, Sydney*  
Title: Physics of HIV Nuclear Entry: Geometry, Wetting and Capillary Forces

17:00 Geoff Willmott, *The University of Auckland*  
Title: Soft colloidal assemblies: Multiscale understanding of Janus and patchy particles

17:40 **End of day 1**

## Tuesday, 14<sup>th</sup> January 2025

9:00 **ICAM SSC Meeting**

10:00 **Coffee break 20'**

10:20 **ICAM SSC Meeting**

11:20 **Coffee break 40'**

12:00 Jenny Malmstrom, *The University of Auckland*  
Title: Designing soft materials to control functional properties

12:40 Lunch 80'

14:00 Na Ji, *University of California Berkeley*  
Title: Imaging the brain at high spatiotemporal resolution

15:00 Doug Brumley, *The University of Melbourne*  
Title: The role of chemotaxis in bacterial interactions

15:40 Coffee break and Group photo 40'

16:20 Justin Burton, *Emory University*  
Title: Learning force laws in many body systems

17:00 Jianping Hu, *IOP Beijing*  
Title: Loop current order in correlated electron systems

17:40 End of scientific part of day 2

19:00 Social Dinner

### **Wednesday, 15<sup>th</sup> January 2025**

9:00 Allan MacDonald, *University of Texas Austin*  
Title: Moiré Materials

10:00 Pablo Jarillo Herrero, *MIT*  
Title: The Magic of Moiré Quantum Matter

11:00 Coffee break 40'

11:40 Xing-Jiang Zhou, *Chinese Academy of Sciences*  
Title: Laser ARPES on Pairing Symmetry and High-Tc Origin in High Temperature Superconductors

12:40 Lunch 80'

14:00 Excursion

17:00 Public event to celebrate the [International Year of Quantum Science and Technology](#)  
Speaker: Gordon Baym, *University of Illinois Urbana-Champaign*  
Round table

19:00 End of day 3

## Thursday, 16<sup>th</sup> January 2025

9:00 Ali Yazdani, *Princeton University*

Title: Visualizing strongly interacting quantum phases of matter

10:00 **Round Table 2** 60'

How is AI likely to affect physics research in the next decade?

11:00 Coffee break 40'

11:40 ZX Shen, *Stanford University*

Title: High-Temperature Superconductivity in Cuprates – Strides Made and Challenges Remain

12:40 Lunch 60'

14:00 Suchitra Sebastian, *University of Cambridge*

Title: Unconventional Insulators

15:00 Ehud Altman, *University of California Berkley*

Title: Measurement induced phenomena in many-body quantum systems

15:40 Coffee break 40'

16:20 Michael Fuhrer, *Monash University*

Title: Topological Materials for Low-Voltage Transistors

17:00 Alejandro Fainstein, *Centro Atómico Bariloche and Instituto Balseiro*

Title: Phonon lasing from a Bose-Einstein condensate of interacting polaritons

17:40 End of day 4

## Friday, 17<sup>th</sup> January 2025

9:00 Tony Carrington, *University of Bristol*

Title: Charge Order in Cuprate Superconductors

9:40 Chung-Hou Chung, *National Chiao-Tung University*

Title: A mechanism for quantum-critical Planckian metal phase in high-temperature cuprate superconductors

10:20 Laura Greene, *Florida State University*

Title: Planar Tunneling into Kondo Lattices: Insulators and Superconductors (and a little policy)

11:00 Coffee break 40'

11:40 Vidya Madhavan, *University of Illinois Urbana-Champaign*  
Title: Dynamic manipulation of charge density waves

12:40 Lunch 60'

13:40 Rosario Fazio, *International Centre for Theoretical Physics, Trieste*  
Title: Quantum time crystals for sensing and clocks

14:20 Akito Sakai, *University of Tokuo*  
Title: Multipole order, superconductivity and non-Fermi liquid in the quadrupole Kondo lattice PrTr<sub>2</sub>Al<sub>2</sub>O (Tr = Ti, V)

15:00 Phillip Brydon, *University of Otago*  
Title: Multiphase superconductivity and antiferromagnetism in CeRh<sub>2</sub>As<sub>2</sub>

15:40 Coffee break 40'

16:20 Joachim Brand, *Massey University*  
Title: ODLRO description of odd-frequency superfluidity

17:00 Etienne Latagne Hurtibise, *Caltech*  
Title: Rhombohedral graphene: spin canting, collective modes and superconductivity

17:40 End of day 5