

Research Highlight (10:00 – 10:30)

“Atomic architects: assembling quantum materials layer-by-layer”

Prof. Brian Gerardot, Heriot-Watt University

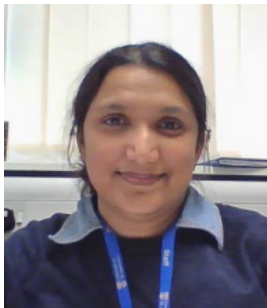


Brian holds a Chair in Emerging Technologies from the Royal Academy of Engineering and a Wolfson Merit Award from the Royal Society. He obtained a BSc in Materials Science from Purdue University (1998), a PhD from UC Santa Barbara (2004). He was a post-doctoral researcher at HWU (2004-2006) which led to a Royal Society of Edinburgh Fellowship (2006-2009) and a Royal Society University Research Fellowship (2009 - 2017) at HWU. He has held an ERC Starting Grant and now holds an ERC Consolidator Grant and in 2022 was elected Fellow of Royal Society of Edinburgh.

Personal Fellowship Journeys (11:00 – 12:30)

“Indoor light-harvesting for building integrated sustainable Internet of Things”

Dr Lethy Krishnan Jagadamma, UKRI-Future Leaders Fellow, University of St Andrews



Lethy is establishing the Energy Harvesting Research Group in the School of Physics and Astronomy at the University of St Andrews. While a Post-doctoral Fellow at King Abdullah University of Science and Technology (KAUST), Saudi Arabia she expanded her research expertise to the field of solution-processed photovoltaics and contributed to the development of record efficiency organic and quantum dot solar cells. In 2015, she returned to the UK to join the Organic Semiconductor Center at St Andrews. In 2017, she was awarded Marie-Curie Individual Fellowship to focus her research on the ‘Time-resolved photovoltaic properties of hybrid perovskite semiconductors’. In March 2020, she was awarded the prestigious UKRI-Future Leaders Fellowship to build her own research team at St Andrews.

“Testing the Standard Model of Particle Physics using High Performance Computing”

Dr Judd Harrison, UKRI Stephen Hawking Fellow, University of Glasgow



After completing a PhD at the University of Cambridge, Judd moved to Glasgow for his first post-doc. He worked within the world renowned HPQCD lattice collaboration and had the opportunity to develop his own ideas. He was encouraged to apply for early career fellowships in order to develop these ideas further, and won a highly competitive Stephen Hawking Fellowship with the support of the University of Glasgow.

“Vortex Dynamics in Ultracold Quantum Mixtures - Probing Cooperative Behaviour in Superfluids”

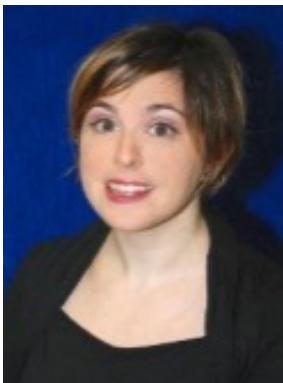
Dr Kali Wilson, Royal Society University Research Fellow and Chancellor’s Fellow, University of Strathclyde



Kali’s experimental background spans ultracold atoms and molecules, nonlinear optics, and quantum imaging technologies. With a degree from Wellesley College, Massachusetts, USA, she taught high-school physics for 4-years. She then completed a PhD in Optical Sciences at the University of Arizona, studying vortex dynamics and quantum turbulence in Bose-Einstein condensates (BECs). She developed techniques for vortex imaging, and for generating vortex distributions with signatures of quantum turbulence. In 2015, she moved to Heriot–Watt University to investigate photon fluids, with applications to superfluidity, analogue gravity, and photon droplets. A complementary direction involved using single photon avalanche diode camera-arrays for real-time imaging of slow light propagating through rubidium vapour. In 2018, she moved to Durham University, working on the CsYb ultracold atom experiment where she demonstrated the first Cs-Yb dual-BECs which facilitate studies beyond mean-field physics in ultracold atoms. She joined the Experimental Quantum Optics and Photonics Group at the University of Strathclyde in January 2021 with an esteemed Royal Society University Research Fellowship.

“Variability of Young, Giant Planets: Obstacle or Opportunity?”

Prof Beth Billar, Former Chancellor’s Fellow, now Personal Chair of Exoplanet Characterisation, University of Edinburgh



Beth, a University of Edinburgh Chancellor’s Fellow until 2019, now holds a Personal Chair of Exoplanet Characterisation at the Institute for Astronomy, School of Physics and Astronomy.

Beth’s interests center around direct imaging detection and characterisation of extrasolar planets and brown dwarfs. She is particularly interested in statistical analysis of large-scale planet surveys and developing techniques to monitor cloud patterns on brown dwarfs and exoplanets through photometric variability. She is also active both in current observational efforts and development of future instruments, including the SPHERE planet-finder at the VLT, the Near-IR Coronagraphic Imager (NICI) at Gemini-South, and the LEECH survey using LMIRCam at the Large Binocular Telescope (LBT).

Prof Malcolm Longair, Chair of SUPA International Advisory Committee



Emeritus Jacksonian Professor of Natural Philosophy, Director of Development, Cavendish Laboratory, Emeritus Professorial Fellow of Clare Hall, CBE, FRS, FRSE.

Malcolm Longair has held many highly respected positions within the fields of physics and astronomy. Born in Dundee he was educated at Morgan Academy. He graduated in 1963 in Electronic Physics from Queen's College, Dundee, then part of the University of St Andrews and later became the University of Dundee. He completed his PhD in 1967 in the Radio Astronomy Group of the Cavendish Laboratory,

Cambridge where he supervised by Martin Ryle.

He held a Fellowship of the Royal Commission for the Exhibition of 1851 from 1966 to 1968 and was a Fellow of Clare Hall, Cambridge from 1967 to 1980. He has held visiting professorships at the California Institute of Technology (1972), the Institute for Advanced Study in Princeton (1978), the Harvard–Smithsonian Center for Astrophysics (1990) and the Space Telescope Science Institute (1997). From 1980 to 1990, he held the joint posts of Astronomer Royal for Scotland, Regius Professor of Astronomy of the University of Edinburgh and Director of the Royal Observatory, Edinburgh. He is a Professorial Fellow and Vice-President of Clare Hall, Cambridge. He was Deputy Head of the Cavendish Laboratory with special responsibility for the teaching of physics from 1991 to 1997, and Head of the Cavendish Laboratory from 1997 to 2005.

He has served on and chaired many international committees, boards and panels, working with both NASA and the European Space Agency. He has received much recognition for his work over the years, including a CBE in the millennium honours list for his services to astronomy and cosmology.

Since 2016 he has been editor-in-chief of the Biographical Memoirs of Fellows of the Royal Society.

Prof Anneila Sargent, Member of SUPA International Advisory Committee

Ira S. Bowen Professor of Astronomy at Caltech, USA



Anneila was brought up in Burntisland, Fife, and schooled at Burntisland Primary School and Kirkcaldy High School. She completed a BSc Honours degree in Physics at the University of Edinburgh in 1963, and then immigrated to the United States, first studying at the University of California, Berkeley, and then from 1967 the California Institute of Technology, where she was awarded her Ph.D. She is currently the Ira S. Bowen Professor of Astronomy at Caltech and has served as director of the Owens Valley Radio Observatory and Combined Array for Research in Millimeter-wave Astronomy.[1][3] She served as president of the American Astronomical Society from 2000 to 2002, continuing to serve on the council since.[1][2] Sargent was the Vice President for Student Affairs at Caltech from 1 December 2007 until 2016.

She was nominated in 2011 by President Obama to serve a six-year term on the National Science Board. She has served on committees such as the NRC Committee for Astronomy and Astrophysics, the NSF Mathematical and Physical Sciences Advisory Committee, and in 1995/6 chaired the Visiting Committee to the National Radio Astronomy Observatory. She has been Chair of NASA's Space Science Advisory Committee since 1994. She is also Director of the Combined Array for Research in Millimeterwave Astronomy (CARMA).

Anneila won both the NASA Public Service Medal and the Caltech Woman of the Year Award in 1998. Asteroid 18244 Anneila is named in her honor. The University of Edinburgh named her Alumna of the Year in 2002 and conferred an honorary degree of Doctor of Science on her in 2008. Anneila was elected an Honorary Fellow of the Royal Society of Edinburgh in 2017. She was elected a Legacy Fellow of the American Astronomical Society in 2020. She was elected to the National Academy of Sciences in 2021.