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MSc Physics (Negotiated Learning)
Specialisation:
Space Science & Technology
UCD School of Physics



This MSc programme is delivered by academic researchers and industry professionals of considerable expertise and experience.

BIOGRAPHIES



Professor Lorraine Hanlon, BSc MSc PhD MInP

Lorraine Hanlon is Associate Professor of Astronomy in UCD and worked at the European Space and Technology Research Centre (ESTEC) in the Netherlands as a research fellow for 4 years. She is an active researcher in space-based high-energy astrophysics with particular expertise in the area of gamma-ray bursts. She was involved in the development of the Optical Monitoring Camera for the ESA

INTEGRAL mission and has led the installation of a ground-based robotic telescope in South Africa for gamma-ray burst follow-up observations. With her colleagues in UCD, and in partnership with Irish industry, she is working on the development of next-generation gamma-ray detector technology. She is currently scientific advisor to the Irish national delegate for the Science Programme Committee of ESA and is a member of the INTEGRAL Users' Group.



Deirdre Coffey, BSc HDipEd MSc PhD MInP

Deirdre Coffey is a lecturer in the Astrophysics and Space Science Group at UCD. She graduated with a BSc in Experimental Physics, MSc in Optoelectronics, and a PhD in Astrophysics, as well as Higher Diploma in Education. She has held a research fellowship at Arcetri Observatory in Florence, Italy, as part of a Marie Curie Research and Training Network under FP6; an Irish Research Council

research fellowship at the Dublin Institute for Advanced Studies; and an Italian Space Agency research fellowship at Arcetri Observatory. She was also awarded a Marie Curie European Reintegration Grant as part of FP7. Following a year of exposure to research policy and administration at the Irish Research Council, she joined the staff at UCD. Her research interests are in the field of star formation, using high-resolution observations to understand how new stars are born. She has ten years experience working with the Hubble Space Telescope, as well as world-class ground-based facilities, including VLT, Gemini and ALMA.



Sheila McBreen, BSc PhD MInP

Sheila McBreen is a lecturer in the School of Physics. She completed her PhD in 2004 on the subject of the prompt emission of gamma-ray bursts (GRBs) detected with NASA's Compton Gamma-ray Space Observatory. After graduation, she worked as a research fellow in the European Space Agency (ESA) in The Netherlands focusing on high-energy observations of extragalactic sources. In 2006, she was awarded a Marie Curie Fellowship from the European Union and moved to the Max Planck Institute for extraterrestrial physics (MPE) in Munich. While at MPE, she joined the Gamma-ray Burst Monitor (GBM) team and continues to be an active team member. The GBM is an instrument on NASA's Fermi Gamma-ray Space Telescope. Her interests include gamma-ray bursts, their afterglows and host galaxies, terrestrial gamma-ray flashes and developing instrumentation for the next generation gamma-ray space mission.



Willi O'Connor, BE PhD

Willi O'Connor is a Senior Lecturer in the School of Mechanical and Materials Engineering in UCD. He lectures in Mechanics, Dynamics and Control. He obtained a PhD from University College Dublin on the role of saturation in magnetic force production. His current research interests include control and active vibration damping of flexible mechanical systems; numerical modelling methods, particularly TLM (Transmission Line Matrix); theoretical mechanics; analysis and design of acoustic devices; waves and wave-structure interaction; development of novel and special-purpose acoustic and infrared sensors; and analysis and computation of non-linear magnetic fields and forces. He currently has a research contract with ESA to apply wave-based control to under-actuated, large, flexible space structures and to robotic arms for planetary explorers. He is also researching control challenges associated with the sloshing of liquid propellant in spacecraft and some control aspects of the space debris removal problem.



Mark Flanagan, BE PhD

Dr. Mark Flanagan is an SFI Stokes lecturer with the School of Electrical, Electronic and Communications Engineering at University College Dublin. Prior to this, he held research fellowships at the University of Zurich, the University of Bologna and the University of Edinburgh, as well as the Claude Shannon Institute for Discrete Mathematics, Coding and Cryptography, Dublin. His main research interest lies in coding and modulation for telecommunication systems, with a particular emphasis on design and analysis of state-of-the-art error-correction codes and decoders (include turbo and LDPC codes). He is a reviewer for many leading international journals, and serves on the TPC of several high-profile international conferences. Dr. Flanagan is a member of the Editorial Board for IEEE Communications Letters. He is a Senior Member of the IEEE.



Declan Murphy, BSc MSc

Declan Murphy graduated from University College Cork, with a Masters degree in Experimental Physics. His career in the Irish Meteorological Service culminated in his appointment as Director in 1989. He represented Ireland in many international meteorological organisations including EUMETSAT (the European Organisation for the Exploitation of Meteorological Satellites), a leading agency in the field of Earth Observation. He was elected Chairman of the Council of EUMETSAT in 2004, a position he held until 2008. Following his departure from Met Éireann in 2009 he has worked on a number of projects for EUMETSAT. He is the author of the history of EUMETSAT - *“EUMETSAT 25 Years”* – published on the organisation’s 25th anniversary in 2011.



Michael Perryman, BSc PhD

Michael Perryman has a degree in theoretical physics and a PhD in radio astronomy, both from Cambridge University. A large part of his career has been with the European Space Agency, where he was project scientist for the Hipparcos space astrometry mission (1980-97), project manager during the satellite operational phase (1989-93), co-originator of the Gaia space astrometry mission, and Gaia project scientist between 1995-2008. Subsequently he spent 2010 as a Distinguished Visitor in Heidelberg in a joint appointment at the university and the Max Planck Institute, 2011-12 as visiting professor in Bristol, and autumn 2013 as Bohdan Paczynski visiting professor at Princeton. His scientific works include *The Exoplanet Handbook* (2011), recipient of the PROSE Award for Cosmology & Astronomy, 2011. Recognition for his leadership of the Hipparcos project includes the Gold Medal of the French Astronomical Society, the Academy Medal of the Royal Netherlands Academy of Arts & Sciences, the Tycho Brahe Prize of the European Astronomical Society, and an Honorary Doctorate from Lund University in Sweden.



Danny Gleeson, BSc MSc

Danny Gleeson is the Space Business Development Manager with Curtiss Wright Controls Avionics & Electronics. He graduated in 1986 from Imperial College in London with an Honors Degree in Physics and in 1990 with a Masters Degree in Astronomy and Astronautics. Danny has more than 26 years in the space sector working with some of the world’s leading space companies in the US and Europe and has helped develop Ireland’s indigenous strategy for growing and commercialising space technology. Danny has produced and delivered training material for areas including innovation management and space technology transfer. He is also the founder of the Space Industry Skillnet, Europe’s first space industry training network endorsed by the European Space Agency. In his career, Danny has worked on technology developments for many international space projects including future expendable and re-useable launchers, space station infrastructure, space suits, re-entry vehicles, Geo-Stationary satellite platforms and Low Earth orbiting experiment missions.



Ronan Wall, BSc PhD

Ronan Wall is Programme Manager at Moog Ltd. He has extensive experience in leading industrial space contracts for Astrium Satellites and Moog Ltd for over 10 years. His initial industrial posting was in the Science Missions group at Astrium where he participated in or led definition studies for ExoMars, Mars Sample Return, the Cross-Scale Magnetospheric mission and Planetary Protection implementation. Ronan managed the Solar Orbiter sunshield subcontract for Astrium before moving to Moog to lead the team for the design and implementation of the High Thrust Apogee Engine – a new highly efficient engine for ESA's planetary missions. Ronan was also the founding programme manager for the first UK national CubeSat programme, UKube-1, which is due for launch in 2013. One of Ronan's key activities over his whole time in the space industry has been in new business acquisition through extensive proposal and tendering. Ronan is a UCD physicist by training, having focused on Nuclear and Radiation Physics during PhD studies.



Giuseppe Vacanti, BSc PhD

Giuseppe Vacanti holds a Laurea in Physics from the University of Milan (1987) and a PhD in Astrophysics from the University of Paris (1993). He spent three years in Tucson, Arizona, working as an astronomer in the Fred Lawrence Whipple Observatory gamma-ray group. After four years in Paris (Service d'Astrophysique and École Polytechnique) straddling the boundaries between physics and astrophysics, he reached The Netherlands in 1994. Here, Giuseppe worked as calibration scientist and scientific software programmer on the X-ray missions Beppo SAX and XMM-Newton. In 2000, he joined *Cosine*, a small technology company working on measurement systems for space and ground applications. Here, Giuseppe works on projects that combine physics, data analysis, modelling, simulations, and software.



Zeldine O'Brien, PhD

Zeldine O'Brien is a barrister at law. Following a LL.B from Trinity College Dublin, she was conferred with a Ph.D also from Trinity in the field of space law under the supervision of the late Dr Gernot Biehler. During her years of doctoral research, she was a participant in the European Space Agency's student participation programme. She has published widely in the field of space law in Ireland, the Netherlands and the U.S. and has taught at Trinity's Law School. She has also taught in Kosovo with the Irish Rule of Law International's project there in coordination with the Kosovo Chamber of Advocates. In 2005, she won the Diederiks Verschoor Award from the International Institute of Space Law of which she is a member. She is also a member of the Society of Legal Scholars. She was called to the Bar of Ireland in 2009 and has been in practice since. Her research interests include space law and European and Irish space policy.



Therese Raftery, BSc MSc PhD

Therese Raftery holds an MSc in Inorganic Chemistry from UCC and later a PhD in Mechanical and Materials Engineering from UCD. She has worked in materials production through research and development of advanced materials and coatings for use in extreme conditions: oil and gas exploration (GE Superabrasives), biomedical applications (Boston scientific and Stryker Orthopaedics), and currently new coatings satellites with EnBio. Through her career she has used Six Sigma, Lean, and Stable Operations to improve and stabilise materials and their fabrication and processing, and to develop novel materials for use in aggressive unexplored environments. She has also helped apply Six Sigma Methodology improving environmental health and safety as well as finance functions.



Joe Houghton, MBA

Joe Houghton is currently Director of Project Management & lecturer at UCD Smurfit Graduate School of Business, International Executive MBA graduate (UCD 2004) and part way through part time PhD by research in the area of Not for Profit governance. He is an experienced business/IT manager who has held European and global positions in software development, systems implementation, technology management, & telemetry systems development with multi-nationals including General Electric.



Barry Brophy, BE MEngSc

Barry Brophy was educated in UCD and completed an engineering Masters in 1996. He worked in industry for two years and returned to UCD in 1998 where he worked as a contract researcher in the energy sector and as a lecturer. In parallel with this, Barry is a consultant in making oral presentations. Industry clients include: ESB, ESBI, PM, Wyeth, DePuy, Jacobs Engineering, BP, Cable & Wireless, Engineers Ireland, Institute of Chartered Accountants and Faber Maunsell. He also teaches presentation skills in schools across the University and carries out cognitive research into this communication process.



Caroline Gill, BA MBS

Caroline Gill is responsible for providing and supporting a variety of innovation related education programmes and initiatives across UCD. Prior to joining UCD, Caroline worked in the IT industry for 10 years in the area of enterprise software and business consulting. She worked internationally with SAP, Accenture and Avnet Technology Solutions and has experience in a range of sectors including FMCG, oil & gas, manufacturing, financial services, software industry, hospitality and publishing.