

# 2018 Meeting Programme

ARR/IRRS Annual Meeting - 25<sup>th</sup> – 27<sup>th</sup> June 2018

## Health and Environmental Implications of Multidisciplinary Radiation Research

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### Monday 25<sup>th</sup> June - Morning Session

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- 10:00** Registration opens
- 10:50** Welcome
- 11:00 – 12:30** Session 1 – Radiation Chemistry & Physics  
Chairs: Fred Currell, Queen's University Belfast.  
Marios Sotiropoulos, University of Manchester
- 11:00 – 11:30** Radiation chemistry insights on the hypoxia-selectivity of anti-cancer prodrugs  
**Professor Bob Anderson, University of Auckland, New Zealand**
- 11:30 – 12:00** Comet assay measures of cancer cell treatment sensitivity  
**Professor Don Jones, University of Leicester, UK**
- 12:00 – 12:15** The development of a biologically-relevant preclinical radiotherapy dosimetry phantom  
**Emma Biglin, University of Manchester, UK**
- 12:15 – 12:30** Assessment of risk of radiation toxicity in prostate cancer patients using high throughput FTIR spectroscopy of non-invasive blood plasma samples  
**Dinesh Medipally, Dublin Institute Technology, Ireland**

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### Lunch & posters: 12:30 – 13:15

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### Monday 25<sup>th</sup> - Afternoon Session

- 13:15 – 15:00** Session 2 - Tumour Microenvironment  
Chairs: Kaye Williams, University of Manchester.  
Eva Leonne-Gottgens, University of Oxford
- 13:15 – 13:45** Immune responses mediated by radiation induced TGFb  
**Professor Mary Helen Barcellos-Hoff, UCSF, USA**
- 13:45 – 14:15** Hypoxia-activated prodrugs to deliver targeted radiosensitisation to hypoxic oesophageal tumours  
**Dr Ester Hammond, University of Oxford, UK**
- 14:15 – 14:30** ATM's involvement in regulating chromatin structure in response to hypoxia via MDM2 and SUV39H1  
**Maria Likhatcheva, University of Manchester, UK**

- 14:30 – 14:45 Unravelling the tumour microenvironment of glioma  
**Kelly McKelvey, University of Sydney, Australia**
- 14:45 – 15:00 The action of a novel radiosensitiser within the oesophageal adenocarcinoma tumour microenvironment  
**Amy Buckley, Trinity College Dublin, Ireland**

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**Coffee & posters: 15:00 – 15:30**

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- 15:30 – 17:00** **Session 3 – Protons and other ions**  
**Chairs: Alan Hounsell, Queen’s University Belfast**  
**Steven McMahon, Queen’s University Belfast**
- 15:30 – 16:00 Mechanistic mathematical models in radiobiology: opportunities and risks for radiotherapy  
**Dr Michael Merchant, University of Manchester, UK**
- 16:00 – 16:30 Relative biological effectiveness (RBE) of protons – current knowledge and experimental challenges  
**Dr Clare von Neubeck, OncoRay, Germany**
- 16:30 – 16:45 Combining high LET alpha particles and NHEJ pathway inhibitors for the effective killing of radioresistant glioblastoma stem like cells  
**Pankaj Chaudhary, Queen’s University Belfast, UK**
- 16:45 – 17:00 Monte Carlo simulations of direct DNA damage on gold nanoparticle enhanced proton therapy  
**Marios Sotiropoulos, University of Manchester, UK**
- 18:30 – 19:00** **Conference dinner – Drinks reception – Naughton Gallery, Lanyon Building**
- 19:00 – 20:00** **Welcome and Weiss Medal Speech – Reflections on the role of research in the evolution of the system of radiological protection**  
**Dr Simon Bouffler, Public Health England, UK**
- 20:00 – Late** **Conference dinner and entertainment**

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## Tuesday 26<sup>th</sup> - Morning Session


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- 09:00 – 10:30**                      **Session 4 – Radiation Protection**  
**Chairs: Christophe Badie, Health Protection Research Unit.**  
**Amy Buckley, Trinity College Dublin**
- 9:00 – 9:30                              Causes and Consequences of “Space Brain”  
**Professor Charles Limoli, University of California, USA**
- 9:30 – 10:00                            Developing and supporting the next generation of radiation protection professionals in Ireland  
**Dr Lorraine Currivan, Environmental Protection Agency, Ireland**
- 10:00 – 10:15                            The effects of irradiation on regeneration in planarian  
**Elena Sarapultseva, National Research Nuclear University, Russia**
- 10:15 – 10:30                            A genetic and cytogenetic study of British nuclear test veterans and their children?  
**Rhona Anderson, Brunel University London**

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## Coffee & posters: 10:30 – 11:00

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- 11:00 – 12:45**                      **Session 5 – Personalised Radiation Therapy – Sponsored by EPA Ireland**  
**IRRS Session Chairs:            Susan Short, University of Leeds**  
**Becky Bibby, University of Manchester**
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- 11:00 – 11:30                            Searching for novel radiosensitisers by targeting cellular processes in the tumour microenvironment: Angiogenesis and Energy Metabolism  
**Professor Jacintha O’Sullivan, Trinity College Dublin, Ireland**
- 11:30 – 12:00                            Drug and radiotherapy combinations in lung cancer – how best to take these forward?  
**Dr Gerard Walls, Queen’s University Belfast, UK**
- 12:00 - 12:15                            Integrative study of transcriptome and proteome alterations in radiation-induced human ischemic heart disease  
**Soile Tapio, Institute of Radiation Biology, Neuherberg, Germany**
- 12:15 – 12:30                            The REQUITE project: Integrating biomarkers and clinical predictors of radiotherapy side effects  
**Chris Talbot, University of Leicester, UK**
- 12:30 – 12:45                            Raman spectroscopy to predict radiation toxicity in prostate cancer patients  
**Daniel Cullen, FOCAS Research Institute, Dublin, Ireland**

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**Lunch 12:45 – 14:00**

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**Tuesday 26<sup>th</sup> - Afternoon Session**

- 14:00 – 15:30**      **Session 6 – Advances in Radiobiology and Treatment 1**  
**Chairs: Kevin Prise, Queen’s University Belfast.**  
**Victoria Tessayman, University of Manchester**
- 14:00 – 14:30**      Translational research in prostate cancer – SABR, CXCR2 and IAP antagonists  
**Dr Suneil Jain, Queen’s University Belfast**
- 14:30 – 15:00**      Radiosensitization by inhibition of DNA repair and checkpoints  
**Dr Randi Gussgard Syljuåsen, Oslo University Hospital, Norway**
- 15:00 – 15:15**      First investigation of gadolinium-based nanoparticles for radio-sensitisation and enhanced imaging on the Australian MRI-linac  
**Hilary Byrne, University of Sydney, Australia**
- 15:15 – 15:30**      Analysis of hypothesis-driven biomarkers for radiotherapy stratification from multi-omic profiling in rectal cancer biopsies  
**Enric Domingo, University of Oxford, UK**

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**Coffee & posters: 15:30 – 16:00**

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- 16:00 – 17:30**      **Session 7 - Normal Tissue Response**  
**Chairs: Navita Somaiah, ICR & Royal Marsden**  
**Mihaela Ghita, Queen’s University Belfast**
- 16:00 – 16:30**      Swings and roundabouts: where are we with the radiation-induced lung toxicity?  
**Professor Jaqueline Williams, University of Rochester, USA**
- 16:30 – 17:00**      Radiation and bladder toxicity.  
**Professor Karen McCloskey, Queen’s University Belfast**
- 17:00 – 17:30**      Low doses of ionizing radiation promote p53 mutant progenitor cells expansion via increase in mitochondrial oxidative stress  
**Dr David Fernandez, Wellcome Trust Sanger Institute, Cambridge**

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**Refreshments & Posters: 17:30 – 18:30**  
**Buffet Dinner & Poster Prizes: 18:30 – 20:00**

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## 27<sup>th</sup> June - Morning Session

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- 09:00 – 10:30**      **Session 8 - Advances in Radiobiology and Treatment 2**  
**Chairs: Suneil Jain, Queen's University Belfast**  
**Niamh Lynam-Lennon, Trinity College Dublin**
- 09:00 – 09:30**      Using spatial fractionation to understand the biological response of solid tumors to radiotherapy  
**Professor Robert Griffin, University of Arkansas for Medical Sciences, USA**
- 09:30 – 10:00**      Dreams. Beams and new machines  
**Dr Fiona McDonald, The Royal Marsden NHS Foundation Trust**
- 10:00 – 10:15**      Radiation risk from high LET alpha-emitters using Radium-223 as a model  
**Isabella Bastiani, Brunel University London, UK**
- 10:15 – 10:30**      Using peptide delivery systems to enhance gold nanoparticle uptake and radiosensitisation in prostate cancer  
**Lindsey Bennie, Queen's University Belfast, UK**

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## Coffee 10:30 – 11:00

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- 11:00 – 12:15**      **Session 9 – DNA Damage Response**  
**Chair: Helen Bryant, University of Sheffield**  
**Shannon O'Neill, Queen's University Belfast**
- 11:00 – 11:30**      Distinct responses to radiation exposure in embryonic, neonatal and adult stem and progenitor cells linking to cancer sensitivity  
**Professor Penny Jeggo, University of Sussex, UK**
- 11:30 – 12:00**      The impact of DNA damage response (DDR) modulators on normal tissues following thoracic irradiation  
**Dr Anderson Ryan, University of Oxford, UK**
- 12:00 – 12:15**      Impact of misrepair on DNA double strand break repair kinetics  
**Stephen McMahon, Queen's University Belfast, UK**
- 12:15**                      **Presentation of prizes & meeting close**

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## Lunch and departure 12:30

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