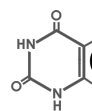




**QUEEN'S
UNIVERSITY
BELFAST**

**THE PATRICK G JOHNSTON
CENTRE FOR
CANCER RESEARCH**



**Charles and Patricia
Heidelberg Foundation
For Cancer Research**

26th International Charles Heidelberg Symposium on Cancer Research

Queen's University Belfast Patrick G Johnston Centre for Cancer Research
Belfast, Northern Ireland, UK
Riddell Hall
October 2-4, 2024

Members of the International Organizing Committee:

- **Robert D Ladner, PhD**, Chair, (Founder and CEO of CV6 Therapeutics and Reader (Associate Professor), Patrick G Johnston Centre for Cancer Research, Queen's University Belfast)
- **Joseph R Landolph, Jr., PhD**, Co-Chair, (Associate Professor of Molecular Micro-biology and Immunology and Associate Professor of Pathology, Member, USC/Norris Comprehensive Cancer Center Keck School of Medicine, Associate Professor of Molecular Pharmacology and Toxicology, School of Pharmacy - University of Southern California)
- **Eliezer Huberman, PhD**, Co-Chair (President and Member of the Board of Directors of The Charles and Patricia Heidelberg Foundation for Cancer Research and founder, scientific director, and CEO of Novadrug LLC)
- *Additional Members:* **Wei Li, PhD** (Professor and Director of Genetics, Molecular & Cell Biology Graduate Program, Department of Dermatology and USC-Norris Comprehensive Cancer Center - The University of Southern California, Keck Medical Center)

Members of the Local Organizing Committee:

- **Robert D Ladner, PhD**, Chair, (Founder and CEO of CV6 Therapeutics and Reader in the School of Medicine, Dentistry and Biomedical Sciences at Queen's University Belfast)
- **Melissa LaBonte Wilson, PhD**, Co-Chair (Senior Lecturer (Associate Professor), Patrick G. Johnston Centre for Cancer Research – Queen's University Belfast)
- *Additional Members:*

Daniel Longley, PhD (Director, Patrick G Johnston Centre for Cancer Research School of Medicine, Dentistry and Biomedical Sciences - Queen's University Belfast)

Rachael McGuickin (Director of Business Development, Sustainability and Transformation - Visit Northern Ireland)

October 2, 2024

Tea/Coffee/Pastry on arrival @ QUB Riddel Hall

8:00 – 9:00

Registration Open

9:00 – 9:45

Welcome

Chair: Robert D. Ladner, PhD

Eliezer Huberman, PhD

(President and Member of the Board of Directors of The Charles and Patricia Heidelberger Foundation for Cancer Research and founder, scientific director, and CEO of Novadrug LLC)

Joseph R Landolph, Jr, PhD

(Associate Professor of Molecular Microbiology and Immunology and Associate Professor of Pathology, Member, USC/Norris Comprehensive Cancer Center Keck School of Medicine, Associate Professor of Molecular Pharmacology and Toxicology, School of Pharmacy – University of Southern California)

9:45 – 11:00

Health and Life Science Cancer Research across the Island of Ireland

Chair: Robert D. Ladner, PhD

Daniel Longley, PhD: 'Johnston Centre/Transformation of Cancer Care in NI'

(Director, Patrick G Johnston Centre for Cancer Research School of Medicine, Dentistry and Biomedical Sciences - Queen's University Belfast)

Mark Lawler, PhD: 'All Island Cancer Research Institute and QUB-UCD Cancer Research Collaboration'

(Associate Pro-Vice-Chancellor and Professor of Digital Health, Chair in Translational Cancer Genomics, Patrick G. Johnston Centre for Cancer Research – Queen's University Belfast; Scientific Director DATA-CAN The UK's Health Data Research hub for Cancer and Chair of the International Cancer Benchmarking Partnership)

William Gallagher, PhD: 'All Island Cancer Research Institute and QUB-UCD Cancer Research Collaboration'

(Full Professor of Cancer Biology and Co-Lead of the All-Island Cancer Research Institute, University College Dublin)

Robert Ladner, PhD: 'USA-Northern Ireland Connections and Transforming Cancer Care'

(Founder and CEO of CV6 Therapeutics and Reader (Associate Professor), Patrick G Johnston Centre for Cancer Research, Queen's University Belfast)

11:00 – 11:30

Tea/Coffee Break

11:30 – 12:00

Poster Session I

12:00 – 13:00

Lunch

13:00 – 15:00

Session 1: Unravelling Carcinogenesis: From Initiation to Metastasis

Co-Chairs: Max Costa and Leanne Bradley

Yoshinori Murakami, MD, PhD: *'Construction of a new disease prevention digital twin by integrating multi-layered bioinformation'*
(Professor, Department of Molecular Pathology, Institute of Advanced Medical Science; Nippon Medical School, Tokyo, Japan)

Cristina Branco, PhD: *'Chemotherapy-induced microvascular remodeling and impact on (pre)metastatic microenvironment'*
(Senior Lecturer, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

Wei Li, PhD: *'Heat Shock Protein-90 in Cancer Clinical Trials: History, Presence and Future'*
(Professor, Director of Genetics, Molecular & Cell Biology Graduate Program, USC-Norris Comprehensive Cancer Center, USA)

Gloria M Calaf, PhD: *'Unravelling breast carcinogenesis: From Initiation to Metastasis: Role of estrogen, acetylcholine and prolactin in breast carcinogenesis'*
(Professor, Instituto de Alta Investigación, Universidad de Tarapacá, Chile)

15:00 – 15:30 Coffee/Tea Break

15:30 – 17:00 **Session 2: Cancer Genomics and Precision Medicine: Personalizing Cancer Medicine**
Co-Chairs: Wei Li and Parisa Naeli

Manuel Salto-Tellez, MD: *'Digital Pathology, Artificial Intelligence and Multimodal Analysis'*
(Clinical Professor, Chair of Molecular Pathology, Patrick G Johnston Centre for Cancer Research; Clinical Consultant Pathologist; Lead of QUB Precision Medicine Centre of Excellence; Queen's University Belfast, UK
Professor on Integrative Pathology; Institute for Cancer Research (ICR), London)

Brent Harris, MD, PhD: *'Update on Senescence and Neurodegeneration'*
(Director of Neuropathology, Georgetown University Medical Centre, USA)

Richard Kennedy, MD, PhD: *'20 Years of Diagnostic Development: What have we learnt? What's Next?'*
(Global VP Biomarker Development and Medical Director, Almac Group; Professor, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

Paul Mullan, PhD: *'The development of novel liquid biopsy assays for the improved clinical management of poor outcome cancers'*
(Professor, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK; Co-founder GenoME Diagnostics)

October 3, 2024

Tea/Coffee/Pastry on arrival @ QUB Riddel Hall

8:00 – 9:00

Registration Open

9:00 – 10:00

Keynote Lecture: Ruth Plummer, MD, PhD
Chair: Vicky Coyle

'Translational Research: From Bench to Bedside in Cancer Treatment – experience of academic drug discovery'

(Clinical Professor of Experimental Cancer Medicine, Translational and Clinical Research Institute; Newcastle University, UK)

10:00 – 11:30

Session 3: Translational Research: From Bench to Bedside in Cancer Treatment

Co-Chairs: Kienan Savage and Niall Byrne

Watcharin Loilome, PhD: *'Combating Cholangiocarcinoma in Thailand: Opportunities and Challenges'*

(Associate Professor, Molecular Oncology; Director of Cholangiocarcinoma Research, Khon Kaen University, Thailand)

Udai Banerji, MD: *'Exploration of combinations and sequences of administration of anticancer drugs to improve outcomes'*

(Deputy Director of Drug Development Unit, Professor of Molecular Cancer Pharmacology; Institute of Cancer Research and The Royal Marsden Hospital NHS Foundation Trust, UK)

Vicky Coyle, MD: *'Overcoming chemotherapy resistance in metastatic colorectal cancer through restoration of apoptotic function'*

(Clinical Professor, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

Roisin Connolly, MD: *'Translational Breast Cancer Research; Opportunities & Challenges'*

(Director Cancer Research and Professor Gerald O'Sullivan Chair, Cancer Research, University of College Cork and Cork University Hospital, Ireland)

11:30 – 11:45

Coffee/Tea Break

11:45 – 13:15

Session 4: 5-Fluorouracil: Honouring a pioneer in cancer therapy and exploring future avenues.

Co-Chairs: Udai Banerji and Ally-Jo Emerson

Bruce Chabner, MD: *'Charles Heidelberger and the Legacy of 5-FU: A Historical Journey and Its Lasting Impact on Cancer Treatment'*

(Director of Clinical Research, Massachusetts General Hospital Cancer Center, USA)

Emma Kerr, PhD: *'Mitochondrial metabolism: a chemotherapy-imposed vulnerability in colorectal cancer'*

(Senior Lecturer Cancer Metabolism, Cancer Research UK Werth Trust, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

Robert Ladner, PhD: *'Targeting Uracil-DNA Biology: Inhibition of dUTPase transforms standard of care therapeutics through DNA uracilation'*

(Founder and CEO of CV6 Therapeutics, Reader (Associate Professor), Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

Richard Wilson, MD: *'A Modular, First-in-Human Study of the dUTPase Inhibitor CV6-168 in Combination with 5-Fluorouracil.'*

(Professor of Gastro-Intestinal Oncology, University of Glasgow, UK)

13:15 – 14:15

Lunch

October 4, 2024

Tea/Coffee/Pastry on arrival @ QUB Riddel Hall

8:00 – 9:00

Registration Open

9:00 – 10:15

Session 5: Genomic Instability and Cancer: Exploring the Impact of DNA Damage

Co-Chairs: Gloria Calaf and Connor Brown

Kienan Savage, MD, PhD: *'Optimizing chemo-immunotherapeutic combinations in breast cancer'*

(Professor of Molecular Oncology, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

David K Ann, PhD: *'Lessons Learned from PARPi'*

(Professor, Diabetes Complications and Metabolism; Dean, Irell and Manella Graduate School of Biological Sciences, Beckman Research Institute; City of Hope, USA)

Sean Rudd, PhD: *'Towards precision cancer medicine with nucleoside analogues'*

(Principal Researcher and Group Leader; Department of Oncology-Pathology; Science For Life Laboratory (SciLifeLab); Karolinska Institutet, Sweden)

10:15 – 11:15

Early Career Showcase I

Chair: Emma Kerr

Tilly Downs: *'Can metabolic reprogramming alter T cell ability to kill lung tumour cells?'*

(Patrick G Johnston Centre for Cancer Research - 3rd Year PhD Student)

Cory Fines: *'STEALTH: Silent Technology to deliver Engineered Antigens for a Lethal TH1 response against mutant p53 in TNBC.'*

(School of Pharmacy - Post-doctoral Research Fellow)

Kathryn Brown: *'Characterisation of quantitative imaging biomarkers for inflammatory and fibrotic radiation-induced lung injuries using preclinical radiomics'*
(Patrick G Johnston Centre for Cancer Research - Post-doctoral Research Fellow)

Fatemeh Mirzadeh Azad: *'Epigenetic reprogramming in drug-tolerant persistent colorectal cancer cells'*
(Patrick G Johnston Centre for Cancer Research - Post-doctoral Research Fellow)

Tim O'Brien: *'Enhancing the neoadjuvant treatment of rectal cancer by targeting Inhibitor of Apoptosis Proteins (IAPs)'*
(Patrick G Johnston Centre for Cancer Research - 3rd Year PhD Student)

Victoria Cairnduff: *'Understanding Barrett's oesophagus: Insights from a population-based Barrett's oesophagus register'*
(Centre for Public Health - Post-doctoral Research Fellow)

11:15 – 11:45 Coffee/Tea Break

11:45 – 12:30 **Early Career Showcase II**
Chair: Emma Kerr

Francisco Liberal: *'The majority of DNA repair deficiencies do not alter the correlation between relative biological effectiveness (RBE) and linear energy transfer (LET) in CRISPR-edited cells'*
(Patrick G Johnston Centre for Cancer Research - Post-doctoral Research Fellow)

Syed Umbreen: *'Using Organoids as a Patient Avatar to support the development of liquid biopsy-based assays.'*
(School of Pharmacy - Post-doctoral Research Fellow)

Lydia Roets: *'The cancer-associated SF3B1^{K700E} spliceosome mutation confers enhanced susceptibility to SMAC mimetics'*
(Patrick G Johnston Centre for Cancer Research - Post-doctoral Research Fellow)

Scott Monteith: *'Exploiting 5FU-Induced Vulnerabilities in Colorectal Cancer'*
(Patrick G Johnston Centre for Cancer Research - 3rd Year PhD Student)

12:30 – 13:30 **Lunch**

13:30 – 14:00 **Poster Session II**

14:00 – 15:00 **Session 6: Advances in Cancer Biology**
Co-Chairs: Brent Harris and Maggie Barros

Miwako Kato Homma, PhD: *'Cell cycle-dependent activation and genomic recruitment of protein kinase CK2: a prognostic factor for cancer recurrence.'*

(Associate Professor, Department of Biomolecular Science, Fukushima Medical University, Japan)

Tim Harrison, PhD: *'Exploiting Engineered Binding Domains in Next Generation Antibody-Drug Conjugate Design'*

(McClay Professor of Medicinal Chemistry, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK; Vice President Drug Discovery, Almac Discovery)

Christopher Scott, PhD: *'Novel approaches to developing antibody targeted chemotherapies'*

(Dean of Research, School of Medicine Dentistry and Biomedical Sciences; Professor, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

15:00 – 15:15

Break

15:15 – 16:45

Session 7: Metal and Radiation Biology

Co-Chairs: Watcharin Loilome and Francisco Liberal

Joseph R. Landolph Jr., PhD: *'Insoluble Nickel (II) Compounds Induce Mutations in Proto-Oncogenes/ Other Genes, Deletions of Genes, Amplifications of Proto-Oncogenes (Ect-2)/Other Genes, and Differential Expression of 150 Genes in C3H10T1/2 Mouse Mesenchymal Cell Lines, Leading to Morphological/Neoplastic Transformation of 10T1/2 Cells'*

(Associate Professor of Molecular Microbiology and Immunology, Pathology, and Pharmacology & Toxicology, University of Southern California, USA)

Max Costa, PhD: *'Arsenic and Chromate cause methylation of MEG3 to induce carcinogenesis'*

(Professor Environmental Medicine, Department of Medicine, New York University Grossman School of Medicine, USA)

Joe O'Sullivan, MD, PhD: *'Molecular Radiotherapy in Advanced Prostate Cancer- The current State-of-the-art and emerging opportunities'*

(Clinical Professor of Radiation Oncology, Patrick G Johnston Centre for Cancer Research, Queen's University Belfast, UK)

Arul Veerappan, PhD: *'Polyadenylation of canonical histone H3.1 in bisphenol associated carcinogenesis'*

(Assistant Professor, Division of Environment Medicine, New York University Grossman School of Medicine, USA)

16:45 – 17:15

Meeting Closing

Robert D. Ladner, PhD

Joseph R. Landolph, Jr., PhD

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