

## Programme

Time	Activity
09.00 – 09.15	Registration and Welcome Coffee.
09.15 – 09.25	Opening remarks H.E. Mr Scott Wightman, British High Commissioner to Singapore
09.25 – 09.45	Introduction: University of Manchester Overview of Advanced Materials: Professor Stephen Flint, Associate Vice-President - Internationalisation  Overview of Cancer and Health Data Sciences: Professor Paul Townsend, Associate Dean, Business Engagement – Faculty of Biology, Medicine and Health
	<b>PART I: Cancer and Health Data Science</b>
09.45 – 10.00	The Manchester Cancer Research Centre: a model for delivering research into the clinic Prof Nic Jones Director of Strategic initiatives, Manchester Cancer Research Centre
10.00 – 10.15	Diet and nutrition in prevention and treatment of non-communicable inflammatory diseases and cancer Prof Clare Mills Professor of Molecular Allergology
10.15 – 10.30	Unlocking benefits to industry: health system transformation combining data, technologies and people Dr Georgina Moulton Senior Lecturer in Bio-Health Informatics
10.30 – 10.45	Powering Clinical Trials Through Innovation and Technology Dr Paul Jarvis Business Development Manager, NorthWest EHealth
10.45 – 11.00	Learning health systems: A partnership approach to improving health outcomes Dr Amanda Lamb Chief Operating Officer of The Connected Health Cities Hub, Division of Informatics, Imaging and Data Sciences
11.00 – 11.15	Q&A on Cancer and Health Data Science
11.15 – 11.30	Networking break with refreshments Registration (for delegates only attending Part II)
	<b>PART II: Advanced Materials</b>
11.30 – 11.45	Materials in Medicine at The University of Manchester - Opportunities for Collaboration Dr Sam Jones Dame Kathleen Ollerenshaw Fellow. Researcher in Virus/Material Interactions
11.45 – 12.00	2D materials based membranes and applications Prof Rahul Raveendran Nair Professor of Materials Physics
12.00 – 12.15	Silicon photonics: materials, devices and applications Dr Iain Crowe Lecturer in Microelectronics & Nanos
12.15 – 12.30	Graphene-polymer composites and applications in sensors to sportswear Dr Aravind Vijayaraghavan Reader in Nanomaterials
12.30 – 12.45	Q&A on Advanced Materials topics
12.45 – 12.55	Closing Remarks: Professor Paul Townsend and Professor Stephen Flint
13:00	Event ends

## Biographies of the University of Manchester Delegates



**Professor Stephen Flint**  
**Associate Vice-President - Internationalisation**  
**Professor of Stratigraphy**  
**The University of Manchester**

Professor Stephen Flint is responsible for the University of Manchester's global engagement strategy in research and education. His own research group works on reconstructing the history of sedimentary basins through the earth's history in order to understand the distribution of natural resources. He graduated from Leeds University with a PhD in geology in 1982 and spent 4 years in the research laboratories of Royal Dutch-Shell in the Netherlands. Following 20 years at the University of Liverpool, publishing over 140 articles in the peer-reviewed scientific literature Stephen joined the University of Manchester in 2012 as Associate Dean, Internationalisation for the Faculty of Engineering and Physical Sciences. For the first half of 2015 Stephen served as Interim Vice-President and Dean of the Faculty of Engineering and Physical Sciences, responsible for the strategic leadership and operational management of the Faculty with an income of over £270M, 11,000 students and over 1,900 academic and support staff.

In November 2015 he was appointed to the newly established position as Associate Vice-President for Internationalisation, in which he is working closely across all Faculties in the University to build global strategic partnerships with universities, government agencies and industry. He was recently elected as Chair of the Universities UK International Pro Vice Chancellors Network and is working on the UUK committee for Internationalisation.

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**Professor Paul Townsend**  
**Associate Dean Business Engagement, Faculty of Biology,  
Medicine and Health**

Professor Townsend is a York graduate (1993) and read for his PhD at Imperial Cancer Research Fund (now Cancer Research UK) central laboratories in London (1997), followed by post-doctoral work at Imperial College London, with research experience in the US and Germany followed by a Wellcome Trust Fellowship at UCL (2001-2004). He was made Faculty staff in 2004 at the University of Southampton, initially funded by Wellcome and BBSRC, full Professor in 2009, Associate Director of Enterprise & Innovation, and Deputy Director of the Cancer Research UK Centre before relocating to Manchester in early 2013 as Associate Dean for Business Engagement & Enterprise. In 2015 he developed and took on leadership of the International Research role for FBMH.

In the Faculty he chairs the Finance Committee, helping manage >£200M of funds. He is also Faculty Chair and AD of the University Business Engagement Strategy Group and University Business Engagement Group and member of the Research Strategy Group amongst other roles including entrepreneurship and strategic/ infrastructure leadership. He is the University industry and research lead for our £28.5M Biomedical Research Centre, incorporating coordinated leadership with Health Innovation Manchester, Innovate UK, especially the Medicines Discovery Catapult and strategic partner lead for large stakeholders e.g. AZ and Waters.

Professor Townsend is passionate about research and impact. He is research active, generating >£11M in career research/innovation & enterprise income. He has been awarded funding from the UK Research Councils BBSRC, MRC, EPSRC, and the European Union, as well as from a number of charities, industries and philanthropy. He maintains a strong track record of publications having an H index of 41 including recent papers in Aging Cell and Nature Cell Biology. The global reputation of his research is reflected by continued invitations to present at UK and international conferences as well as contributing to RCUK committees, including BBSRC Committees C and D and BBSRC Technology Research and Development Fund committee and reviewing for international agencies such as WeHi and Peter Mac in Australia, NIH in the US, Hong Kong, A\*STAR, Portugal, Pasteur Institute in France, and HRB in Ireland.

Professor Townsend has research strengths in cell stress and survival mechanisms, bioengineering, drug discovery, validation, senescence, DNA damage, and epigenetics and multiple 'omics in cancer biology, and apoptosis regulation. His group has made impact and several important discoveries in these fields. Highlights include the discovery that senescence can be assessed in real time and also in archival material, the role of p21 in DNA damage, TP53-dependent coupling of self-renewal and senescence pathways in embryonal carcinoma cells; identifying the stress activated role of stem cell transcription factor Oct4 in cell fate decisions and cell cycle modulators ARF and MKK7 as DNA damage response modulators; dissecting the mechanism of urocortin as novel regulator of Piezo1 activity in the bone:prostate cancer axis; and the demonstration of senescence and advanced MS in biomarker discovery, translation in disease and identifying novel regulators of cellular homeostasis.

His lab has generated a number of international, industry impacts and research activities, attracting philanthropic and industry-funded projects supporting cell stress & biomarker research. Additionally, he has 6 separate SME-related projects as well as being PI for Faculty industrial CASE studentships. This has helped lead to collaborative applications and funding from Innovate UK, BBSRC and MRC and successful iCASE and Doctoral Training studentships and CRUK/MCRC funding. Finally, Professor Townsend helps oversee the UoM-A\*STAR research alliance and 'cancer' links with Brazil, India, Australia and China.

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**Professor Nic Jones**  
**Director of Strategic initiatives, Manchester Cancer Research Centre**

Following the receipt of his PhD from Edinburgh University, Nic pursued his research career in the USA initially at the University of Connecticut Health Centre and subsequently at Purdue University. After 12 years he returned to the UK and joined the ICRF laboratories in London as a Principle Scientist where he continued his research on DNA Tumour Viruses and the mechanisms they employ to transform normal cells into cancer cells. In 1999, he moved to Manchester to become Director of the Paterson Institute (now the Manchester Institute) which is core funded by Cancer Research UK. Over a 12-year period he transformed the international standing and success of the Institute. In 2011 Nic became the Cancer Research UK Chief Scientist with the responsibility of overseeing the scientific strategy of the organization, a position he held for five years. Nic also became the inaugural Director of the Manchester Cancer Research Centre, a partnership between the University of Manchester, the Christie and CRUK and oversaw its development into one of the foremost comprehensive cancer centres in Europe.

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**E.N. Clare MILLS**  
**Professor of Molecular Allergology**

Professor Mills currently has a chair in Molecular Allergology at The University of Manchester and led the EU integrated projects iFAAM and EuroPrevall. Her personal research interests are focused on structure-function relationships in food proteins particularly with regards what makes some proteins, and not others, become allergens, including the effects of the food matrix and processing on resistance of food proteins to digestion and the role this plays in determining the allergenicity of foods.

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**Dr Georgina Moulton**  
**Senior Lecturer in Bio-Health Informatics**

I am presently appointed as a Senior Lecturer in Bio-Health Informatics in the Division of Informatics, Imaging and Data Sciences. My background is as a bio-health informatician & I am one of the UKs leading bio-health informatics educators, with 12 years' experience of delivering education and knowledge transfer interventions, programmes and curricula that produce individuals with the 'health' informatics and data science skills required to work in various contexts. My team has trained and supported knowledge transfer for approximately 4,000 individuals from across the NHS, academia, industry and cohorts from outside of the UK.

Currently, I am the Programme Director for the MSc in Health Data Science as well as the NHS commissioned programmes MSc in Health Informatics and the Clinical Scientific Training Programme in Health Informatics. I also lead the Farr Institute-UK education agenda that aims to develop researcher capability and capacity in health informatics and data science across the UK. In addition, I chair the Department of Health Connected Health Cities working group across the North of England to increase the skills capacity across NHS and industry sectors, and to increase the speed of knowledge into practice. My most recent work involved setting the vision and framework for the recently announced NHS Digital Academy with NHS England.

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**Dr Paul Jarvis**  
**Business Development Manager, NorthWest EHealth**

Dr Paul Jarvis is Business Development Manager for NorthWest EHealth - a unique collaboration between The University of Manchester and the NHS in Salford. They are the only organisation in the world to have evaluated the safety and effectiveness of a pre-license medicine in a real-world setting. Paul has over 15 years' experience using electronic health records for research, service design, feasibility, and clinical evaluations and has a long-term interest in the using these data to enact change and improve healthcare.

Paul is responsible for effectively communicating and building relationships with specialist staff across a wide range of knowledge areas and from a range of external and internal organisations including clinicians, clinical and managerial decision makers, industry partners and academic partners.

Paul achieved his Doctoral and Master's degrees in Medical Informatics from the University of Manchester in 2009 where his primary focus was the use of digital technology to support public health decision making in childhood obesity.

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**Dr. Amanda Lamb**  
**Chief Operating Officer of The Connected Health Cities Hub,**  
**Division of Informatics, Imaging and Data Sciences**

Dr Amanda Lamb is the Deputy Director and Chief Operating Officer of Connected Health Cities, hosted by The University of Manchester, with responsibility for all business and operational functions, including partnerships and international markets. With a background in the Life Science sector she now focusses on informatics solutions for a wide range of health and social care issues. Dr Lamb has over 15 years of expertise across academia, the English National Health Services (NHS) and commercial organisations, with a particular interest in the formation of diverse stakeholder partnerships.

Connected Health Cities (CHC) is a cutting-edge health programme which harnesses the power of data to develop the UK's first implementation of Learning Health Systems (LHS). LHS turn existing and under-used data into actionable intelligence for local NHS and social care providers to drive public sector reform for better health and care. Importantly CHC works in partnership with local citizens to understand what is expected and acceptable when it comes to the use of their data. Testing the level of acceptance by the public, through the use of Citizen Juries, of care pathway projects allows CHC to produce LHS that implement changes that are both wanted and needed by clinical staff and patients to deliver care where and when it is most needed.

Connected Health Cities works across academia, NHS and commercial organisations for the benefit of patients and has created a bespoke Pre-competitive Consortium to allow such interactions to take place in an open and transparent conversation both with and for the wider population that it serves.

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**Dr Sam Jones**

**Dame Kathleen Ollerenshaw Fellow. Researcher in Virus/Material Interactions**

Sam's current research interests focus around material/virus interactions. By understanding and controlling such interactions the group hopes to develop better antivirals, vaccine stabilisers and novel viral vector delivery applications. We use polymer chemistry, nanomaterials, small molecule synthesis and a wide range of other techniques to achieve these goals.

Sam completed his masters in Chemistry, from the University of Warwick, under the direction of Prof. Stefan A. F. Bon in 2009. His work at the time focused on hydrogen bonding interactions for gold nanorod assembly. From there he moved to the University of Cambridge where he worked in the Melville Laboratory for Polymer Synthesis under Prof. Oren A. Scherman, on the supramolecular assembly of nanomaterials via cucurbit[n]uril. Upon completion of his Ph.D. in 2013, Sam moved to the École Polytechnique Fédérale de Lausanne (EPFL) where he worked alongside Prof. Francesco Stellacci. His research focused on the synthesis of novel virucidal materials and the synthesis of Janus nanoparticles for targeted delivery. In 2017 he moved to the School of Materials at the University of Manchester to begin his independent career as a Dame Kathleen Ollerenshaw Fellow.

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**Prof. Rahul Raveendran Nair**  
**Professor of Materials Physics**

Rahul R. Nair is a Professor of Materials Physics at the National Graphene Institute (NGI) and School of Chemical Engineering and Analytical Science at the University of Manchester and holds a prestigious Royal Society Fellowship and ERC grant. The main scope of his research is the novel synthesis and construction of application-oriented devices based on two-dimensional (2D) crystals to explore new physical phenomena. His group is actively engaged in the design and development of 2D materials based membranes and nanofluidic devices for probing fundamental molecular transport at the nanoscale and their potential applications in our daily life. His research mainly involves preparation and characterisation of membranes, engineering the pore dimensions and pore structure by chemical functionalization and developing surface modification strategies for fabricating functional membranes for diverse applications such as water purification, separation, and related technologies. Other major activities include developing high throughput techniques to realise large area membranes for applications such as gas separation, pervaporation, desalination, membrane-assisted catalytic reactions, barrier coating, organic solvent nano-filtration, membranes for healthcare technology, and (bio) pharmaceutical purification. He has published over 50 highly cited peer-refereed research articles, including five Science, two Nature, and more than a dozen Nature series publications during the last ten years. His awards include a Leverhulme Early Career Fellowship from the Leverhulme Trust, IUPAP Young Scientist Award (2014) from the International Union of Pure and Applied Physics and the Moseley Medal and Prize (2015) from the Institute of Physics. He has also selected as a Highly Cited Researcher in 2016 and 2017 by Thomson Reuters.

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**Dr Iain Crowe**  
**Lecturer in Microelectronics & Nanos**

Dr. Iain Crowe (IC) is a Lecturer (Assistant Professor) and Programme Director for the Renewable Energy and Clean Technologies (REaCT) MSc in the School of Electrical and Electronic Engineering at the University of Manchester (UoM). IC spent the early part of his career in senior scientist positions leading large R&D defence capability programmes, initially with the Defence Science and Technology Laboratories (DSTL) and later with BAE Systems Advanced Technology Centre. In 2006, he received the BAE Systems Chairman's Award for Innovation for development of a mobile high power microwave source based on a multi-element non-linear transmission line and high impedance surface phased array antenna.

He received the PhD in 2010 for his work on nanostructured silicon photonic materials and is an expert in optical spectroscopy of electronic materials. He has authored key works describing the optoelectronic properties of silicon nanostructures and graphene integrated waveguide based silicon photonic devices. IC currently leads a research team in the Photon Science Institute (PSI) at UoM working on dopant and strain engineered germanium materials for advanced integrated CMOS compatible MOSFET and laser devices, silicon photonics platforms for petrochemical sensing and biomedical OCT imaging applications and optical techniques for the characterisation of deep level defects in wide bandgap (Nitride) semiconductors. He has previously held visiting research positions at the National Institute for Materials Science, Tsukuba Japan and the Chinese University of Hong Kong, China.

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**Dr Aravind Vijayaraghavan**  
**Reader in Nanomaterials**

Dr. Aravind Vijayaraghavan is a Reader in Nanomaterials in the School of Materials and the National Graphene Institute at The University of Manchester. He leads the Nano-functional Materials Group and his research involves the science and technology of graphene and 2-dimensional materials, particularly for applications in composites, sensors and biotechnology. He was previously a post-doctoral research fellow at Massachusetts Institute of Technology, USA and an Alexander von Humboldt Fellow at Karlsruhe Institute of Technology, Germany. He obtained his MEng (2002) and PhD (2006) from Rensselaer Polytechnic Institute, USA and his BTech (2000) from the Indian Institute of Technology - Madras, India. He has published over 70 papers in international peer reviewed journals and delivered over 60 presentations at international conferences. Dr. Vijayaraghavan is also a leader in public engagement and science communication and won the 2013 Joshua Phillips Award for Innovation in Science Engagement and was Science Communicator in Residence at the 2013 Manchester Science Festival. He has also been awarded a Royal Society Pairing Scheme Award (2013) and a British Science Association Media Fellowship (2017). He has delivered over 40 public lectures.

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**Dr Hui Wang**  
**Science and Engineer Business Engagement Officer, the University of Manchester**

Working in Business Engagement and Support Team at the University of Manchester, Hui conducts various activities in promoting the development of collaboration between external organisations and academics. Hui studied a master degree in Environment Engineering at ZheJiang University, and a dual bachelor degree in Computer Science at CUMT, China. She then moved to England and graduated from the University of Manchester with a PhD in Environmental Geomicrobiology and Geochemistry in 2009. Through her postdoctoral and PhD researches, she has published twelve high impact SCI papers and developed couple of patents.

With the passion on applying knowledge to transform the world and making a real difference to people on an international scale, she expands her portfolio further into Project Management and Business Development sessions. Her interdisciplinary scientific background enables her to quickly grasp complex academic projects while building a rapport with external organizations. She actively provides guidance and support within commercial opportunity scoping, project planning, and evaluation of commercial potential for academics. As a member of Faculty Business Engagement and Innovation Committees, she works together with broad internal university partners to develop innovation collaborations.

Consultative, knowledgeable and resourceful – she is actively looking to introduce external parties to the University and bring together internal research teams to provide world leading knowledge and expertise.

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