2018 Chief Scientific Officer's Conference: Partners in the Future

Hosts:
Vivienne Parry, OBE, Science Writer & Broadcaster

Vivienne Parry is a science writer and broadcaster. She has hosted the conference and will be announcing the awards. In the past she has been a columnist for the Times, written books and presented BBCTV's science show Tomorrow's World. She continues to make films and programmes for Radio 4 but also has a part time role as head of engagement for Genomics England. She is on the board of UKRI, responsible for the strategic spend of the UK's £7 billion research and innovation budget.

Professor Sue Hill OBE, Chief Scientific Officer, NHS England

Professor Sue Hill OBE PhD DSc CBiol FSB Hon FRCP Hon FRCPath is the Chief Scientific Officer for England and the head of profession for the 50,000 healthcare science workforce in the NHS and associated bodies – embracing more than 50 separate scientific specialisms. She is a respiratory scientist by background with an international academic and clinical research reputation.

Professor Hill has a broad portfolio of policy responsibilities across NHS England and the wider NHS and provides professional leadership and expert clinical advice across the whole health and care system. In particular, Sue is the Senior Responsible Officer for Genomics in NHS England has established NHS Genomic Medicine Centres and is now leading the NHS England Personalised Medicine strategy.

A significant part of her role involves working across government, with the Department of Health, with the NHS, Public Health and Health Education England and other external stakeholders to inform policy, legislation, deliver strategic change and to introduce new and innovative ways of working.

Speakers:

Professor Sir John Skehel, Biological Secretary and Vice-President, Royal Society

Professor Sir John Skehel has provided major insights into the molecular basis of how viruses recognise and infect their host cells. John focusses on the virus that causes influenza, of which there are 3–5 million cases a year worldwide, resulting in up to 500,000 deaths.

To infect a cell, the influenza virus must bind to a sialic acid-containing receptor on the cell surface, which it achieves through its own

haemagglutinin glycoprotein. John was able to isolate, crystallise and subsequently determine the three-dimensional structure of this molecule. He also observed that under conditions of low pH, haemagglutinin changes shape — allowing the virus to fuse with and enter the cell.

John has been a leader in virology research for over thirty years. He headed the WHO Collaborating Centre for Reference and Research on Influenza between 1975 and 1993 and was the Director of the National Institute for Medical Research from 1987–2006. His pioneering research was recognised in 1996 when he received a knighthood.

Tracey Brown OBE Director, Sense about Science

Tracey Brown has been the director of Sense about Science since 2002. Under her leadership, the charity has turned the case for sound science and evidence into popular campaigns to urge scientific thinking among the public and the people who answer to them. It has launched important initiatives including AllTrials, a global campaign for the reporting of all clinical trial outcomes; and the Ask for Evidence campaign, which engages the public in requesting evidence for claims.

In 2010, the Times named Tracey as one of the ten most influential figures in science policy in Britain and in 2014 she was recognised by the Science Council for her work on evidence-based policy making. In June 2017 Tracey was made an OBE for services to science.

Helen Pearson Chief Editor, Nature

Helen Pearson is a science journalist, editor and author. As Chief Magazine Editor for Nature, the world's leading science journal, she oversees all its journalism and opinion content. Her own stories have won accolades including the 2010 Wistar Institute Science Journalism Award and two best feature awards from the Association of British Science Writers.

Helen's popular science book, The Life Project, was published in 2016 to critical acclaim. It was named best science book of the year by The Observer, was a book of the year for The Economist, was longlisted for the Orwell Prize and Highly Commended in the British Medical Association book awards 2017. It tells the story of the British birth cohorts, a remarkable series of scientific studies that have tracked generations of children growing up in Britain over the last 70 years, and how the results shaped medical and social policy. Helen has a degree in natural sciences from the University of Cambridge and a PhD in genetics.

Professor Peter Bradley, Director of Knowledge and Intelligence, Public Health England

Peter Bradley has been Director of Public Health Development for Public Health Wales since November 2011 and is honorary professor at both Cardiff and Swansea Universities. Before this, he was Director of Public Health in Suffolk for many years working for NHS Suffolk and Suffolk County Council.

Peter was one of the founders of the award-winning Healthy Ambitions Suffolk programme which saw health inequalities reduce in the county. Prior to this he has worked in academia internationally.

Peter worked for five years in Norway where he led the equivalent of NICE, worked for the National Prioritisation Council, completed a PhD on medical education and led a project to encourage evidence-based public health. Prior to this he worked in and led an international project to promote evidence-based practice and critical appraisal (CASP International).

He started his career in the NHS as a doctor in general practice and child health.

Professor Stephen Keevil, Head of Medical Physics, Guy's and St Thomas' NHS Foundation Trust.

Professor Stephen Keevil is Head of Medical Physics at Guy's and St Thomas' NHS Foundation Trust, where he heads a team of around 130 clinical scientists and technologists providing services across the whole range of medical physics and clinical engineering disciplines. Prior to taking up this appointment in 2017, he worked in magnetic resonance imaging (MRI) physics for almost 30 years in a series of research, academic and clinical posts.

He is also Professor of Medical Physics at King's College London and Director of the King's Technology Evaluation Centre (KiTEC), a health technology assessment centre commissioned by the National Institute for Health and Care Excellence (NICE). Among other professional activities, he is a past president of the Institute of Physics and Engineering in Medicine, the UK professional body and learned society for physics and engineering applied to medicine. He originally studied physics at Oxford University before taking an MSc in Medical Physics at the University of Surrey and a PhD in nuclear magnetic resonance spectroscopy from the University of London.

Jo Hannaford, Head of Technology, Goldman Sachs

Jo is head of the Technology Division for EMEA and global head of Quality Assurance Engineering. She serves on the Technology Executive Leadership Group and Firmwide Technology Risk Committee. Jo is global co-sponsor of the Women in Technology Network.

Jo joined Goldman Sachs in 1997 in the Investment Research Division in London. Since 2001, she has held roles across Technology in London and New York, predominantly focusing on the build out of the firm's global Compliance Technology and Conflicts Technology architectures. Jo was named managing director in 2008 and partner in 2014.

Prior to joining the firm, Jo was responsible for Global Volume Trading Technology at NatWest Markets. Jo is an advisor to the UK Government Digital Service Advisory Board and is a board member of Women in Science and Engineering.

Dr Richard Scott, Clinical Lead for Rare Disease 100,000 Genomes Project, Genomics England

Richard Scott is Clinical Lead for Rare Disease for the 100,000 Genomes Project at Genomics England and a Consultant and Honorary Senior Lecturer in Clinical Genetics at Great Ormond Street Hospital for Children and the UCL Institute of Child Health.

Richard trained in medicine at Cambridge University and University College London. He specialised in Paediatrics and subsequently Clinical Genetics in London and completed his PhD on childhood cancer syndromes at the Institute of Cancer Research. His main interests are in the clinical and molecular diagnosis of rare dysmorphic, neurological and multisystem childhood disorders. He has a particular interest in the translation of new genetic technology into clinical practice.

Caroline Chipperfield, Deputy Managing Director, NHS Leadership Academy

Caroline has over 20 years' experience in both the private and public sectors in change management and people and organisational development. Her strong business background derives from operational roles, generalist human resource management experience and specialist development roles.

Caroline joined the NHS in August 2007 becoming Associate Director of Leadership and Organisational Development in 2009 at NHS South Central, a role that spanned Leadership and Organisational Development, HR Best Practice and Equality and Diversity.

During 2011 Caroline took a secondment to the role of Lead Associate for the NHS Institute for Innovation and Improvement for 8 months, this provided her national

experience in co-designing, delivering and leading a new mobilising and leading change programme, working with the Leading Change team from Harvard University. Caroline was appointed as Deputy Managing Director for the NHS Leadership Academy in December 2017, and has worked in partnership on systems development and to co-design the 'Developing People – Improving care' strategy and is now co programme Director with Jo Vigor - NHS Improvement.

She has established effective partnerships across many networks in health and care ensuring leaders can be supported through appropriate leadership interventions, either as an individual, team organisations and more recently systems development.

Dr Joanne Horne BSc (Hons) MSc CSci FIBMS PGCertMHSC DHealthSci, Lead Healthcare Scientist and Advanced Practitioner Healthcare Scientist in Histopathology

Jo specialises in histopathology, which is the study of disease within tissues and involves their sampling, followed by examination under a microscope. Jo's other roles include UHS lead Healthcare Scientist, Cellular Pathology Education & Training lead and Pathology Clinical Effectiveness lead. Jo was the first scientist in the UK to pass the exam in 2015. This is an important area of workforce transformation within histopathology, as it will help to address the increasing workload and demands on the service and its staff.

Jo is proud to be one of the CSO WISE Fellows for 2017, and is passionate about education and training and within her job provides educational and academic supervision to colleagues and students. Jo works with various organisations to support and promote the development of clinical careers for Healthcare Scientists within Cellular Pathology, and also enjoys promoting STEM careers to young people. Outside of work, Jo loves the theatre and regularly attend shows, both locally and in the West End. She enjoys football, and spending time with friends, family and her godchildren.

Dr Keith Ison OBE, MA MBA MSc PhD FIPEM, Head of Medical Physics (Ret.), Guy's and St Thomas' Hospital

Keith recently retired from being Head of Medical Physics at Guy's and St Thomas' Hospital. In this role he was responsible for a department of 120 people providing science-based services across the hospital, including teams responsible for radiotherapy treatment planning and delivery and for medical equipment maintenance.

In 15 years at the Hospital he also coordinated a total spend of £100M on new medical equipment. He retains interests in leadership and mentoring, the use of systems thinking in training and education, and the disruptive effects of rapidly developments in technology on healthcare. Recent new ventures include exploring the relationship between science and religion, cultivating an allotment, and demonstrating a Tai Chi Fan form on stage in a local pantomime.

Professor Michael Parker, Director of the Wellcome Centre for Ethics and Humanities, and the Ethox Centre

Michael Parker is Director of the Wellcome Centre for Ethics and Humanities and the Ethox Centre at the University of Oxford. Michael's research interest is in the ethical aspects of the clinical use of genomics. He is Chair of the Ethics Advisory Group for the 100,000 Genomes Project and a non-executive director of Genomics England. In 2001, together with Professors Anneke Lucassen, Angus Clarke, and Tara Clancy, he established the Genethics Forum, which has become the main national forum for the discussion of practical ethical issues in genetics and genomics. The Forum has met 50 times and discussed more than 600 cases in that time. This experience has been published in Ethical Problems and Genetics Practice, Cambridge University Press.

Michael's other main research interest is in the ethics of collaborative global health research. Together with partners at the Wellcome Africa Asia Programmes in Vietnam, Malawi, Thailand-Laos, Kenya, and South Africa he co-ordinates the Global Health Bioethics Network which is a programme to carry out ethics research and build ethics capacity across the Africa and Asia Programmes.

Jillian Ward Hastings, Chair, Participant Panel, 100,000 Genomes Project

Jillian and her family are participating in the 100,000 Genomes Project because of her son, who is severely disabled. She is the Chair of the Participant Panel that oversees what Genomics England do with participant data. She also sits on the Access Review Committee that decides who should be allowed access to the 100,000 Genomes Project data bank.

With the mainstreaming of genomic medicine into the NHS, Jillian is keen to make sure that participant voices are heard in conversations about the future. In the past year she has spoken at conferences presented by the NHS, the King's Fund, the Progress Educational Trust and the Festival of Genomics, and appeared on BBC TV and R4 Today programme on the importance of participant involvement in genomics.

Prior to the arrival of her son, Jillian was a civil servant in central Government. She is also a qualified town planner

Dr Rachel Carling BSc, MSc, PhD, FRCPath, Consultant Clinical Scientist, Director of Service & Clinical Lead. Biochemical Sciences, Guys & St Thomas' NHSFT

Rachel graduated with a first class degree in Chemistry from Manchester University in 1996. From there she studied for a PhD in Analytical Chemistry before moving on to Leeds to train as a Clinical Biochemist.

After completion of training Rachel wanted to specialise in Metabolic Biochemistry so initially took a post at Great Ormond Street Hospital. In 2005, she was appointed as a Higher Specialist Trainee in Metabolic Biochemistry at Addenbrookes Hospital. Rachel obtained FRCPath in 2007 and moved to Guys & St Thomas' the following year and became a Consultant Scientist in 2011 and Director of Biochemical Sciences and South East Thames Regional Newborn Screening Service in 2013

Rachel's main area of interest is in inherited metabolic disease with a particular focus on the application of tandem mass spectrometry to the measurement of small molecules. The expansion of the Newborn Blood Spot Screening (NBSS) programme in 2015, to include screening for 4 metabolic disorders has provided an opportunity for Rachel to lead the national drive to improve harmonisation of expanded new born screening results.
Rachel is passionate about service improvement and has a keen interest in Continuous Quality Improvement and A3 thinking.

Dr Bal Sanghera, PET-CT physicist and Medical Physics Expert, Paul Strickland Scanner Centre at Mount Vernon Hospital, East and North Herts NHS Trust.

Bal Sanghera completed his PhD at the Institute of Cancer Research with Imperial College in medical imaging. This was followed by medical physics hospital locum posts there and at St George's hospital before postdoctoral research at Hammersmith Hospital and Imperial College in imaging, robotics and biomechanics.

Bal is currently a PET-CT physicist and Medical Physics Expert in the Paul Strickland Scanner Centre at Mount Vernon Hospital which is part of East and North Herts NHS Trust. He has also supervised MSc and PhD students including one investigating PET-CT and MRI of the prostate using textural analysis.

Bal is presently honorary secretary, member of the finance and business plan committee and Trustee at the Institute of Physics and Engineering in Medicine (IPEM) and Medical Physics Examiner for the Royal College of Radiology.
His interests include research, lecturing, teaching and disseminating information to a wider audience. He iskeen to collaborate with the public, academia, NHS and industry to accomplish goals in challenging times

Dr Colin Baker BSC, MSc, PHD FIPEM MInstP,Head of Radiotherapy Physics, Royal Berkshire Hospital

Colin graduated from the University of Liverpool in 1987 with a BSc in Mathematical Physics, then joined the NHS as a trainee Clinical Scientist and completed a part-time MSc in Radiation Physics at St Bartholomew's Hospital Medical College in 1989. Following this he temporarily left the NHS to study for a PhD in Physics at the University of Surrey, supported by an EPSRC Case studentship in

collaboration with the National Physics Laboratory, which he completed in 1993.

After completing his PhD, Colin held NHS positions in Coventry and Cambridge before taking a 9 year break from the NHS for an academic post as Lecturer in Medical Physics at the University of Liverpool, returning to the NHS at Clatterbridge in 2010. He was appointment in 2015 as head of the Radiotherapy Section of the Medical Physics Department at the Royal Berkshire NHS Foundation Trust where he provides scientific leadership and management to a team of Physicists, Engineers and Radiographers in supporting and developing the radiotherapy service.

Colin's main research interests to date include: Monte Carlo simulation of photon, electron and proton beams for radiotherapy, mathematical modelling of radiotherapy outcome, and in vivo dosimetry for proton therapy**.**

Professor Sir John Bell (GBE, FRS, FMedSci)

Professor Sir John Bell is the Regius Professor of Medicine at Oxford University. Sir John went to Oxford as a Rhodes Scholar to train in medicine and undertook postgraduate training in London and at Stanford University.

At Stanford he developed research interests in the area of immunology and genetics with a particular focus on characterising the molecular events associated with susceptibility to autoimmune diseases. He returned to Oxford as a Wellcome Trust Senior Clinical Fellow in 1987 and was elected to the Nuffield Professorship of Clinical Medicine in Oxford in 1992. In 1993, he founded the Wellcome Trust Centre for Human Genetics, one of the world's leading centres for complex trait common disease genetics. In 2002, he became the Regius Professor of Medicine.

Sir John served as President of the Academy of Medical Sciences from 2006 to 2011. He was responsible for the working party that produced the highly influential Academy of Medical Sciences "Strengthening Clinical Research" report that highlighted the need for the UK to focus some of its attention on developing expertise in translational research. He was appointed by the Chancellor of the Exchequer in 2006 to Chair the Office for the Strategic Coordination of Health Research (OSCHR) and in December 2011, he was appointed one of two UK Life Sciences Champions by the Prime Minister. On 30th August 2017, the UK Life Sciences Industrial Strategy, written by Sir John, was published. The report, was written in collaboration with industry, academia, charity, and research organisations, provides recommendations to HM Government on the long term success of the life sciences sector.

In 2008 he was made a Fellow of the Royal Society and was made a Knight Bachelor for his services to Medical Science. He was appointed Knight Grand Cross of the Order of the British Empire (GBE) in the 2015 New Year Honours for services to medicine, medical research and the life science industry.
Professor Bell has been extensively involved in the development of research programmes in genetics and genomics and in the development of a clinical research programme across the UK. He sits on a wide range of advisory panels for public and

private sector bodies responsible for biomedical research in Canada, Sweden, Denmark, France, Singapore and the UK and is a founding director of three biotechnology start-up companies.

Professor Gillian Leng CBE, Deputy Chief Executive NICE

Gillian Leng is the Deputy Chief Executive at NICE, the National Institute for Health and Care Excellence, and a visiting professor at King's College London.

Gillian trained in medicine at Leeds, and then spent several years researching the epidemiology of peripheral vascular disease at Edinburgh University. She was involved in the Cochrane Collaboration as it first became established, and still contributes as an editor to the EPOC Group (Effective Practice and Organisation of Care). She specialised in public health medicine, and worked as a consultant before moving to NICE in 2001.

At NICE, Gillian has been responsible for the initial set up and running of the clinical guidelines programme, for establishing the NICE implementation function, and for setting up NHS Evidence. More recently she has been responsible for establishing the NICE accreditation programme, to accredit the process of guidelines developed by third parties, and for establishing a guideline development function in social care. Gillian is also responsible for the NICE programme of indicator development, to support national initiatives to measure and monitor improvements in care.

Gillian is also involved in other national initiatives, including sitting on the English National Quality Board and the Leadership and Improvement Board. She is also actively involved in research into guideline implementation and quality improvement at King's College, London. She is the editor of a textbook published in 2014: '*Achieving high quality care: experiences from NICE*'.

Professor Wendy Reid MBBS FRCOG, National Medical Director Health Education England

Professor Reid trained at the Royal Free in London and was appointed a consultant Obstetrician & Gynaecologist there prior to moving into Postgraduate Medical Education as, firstly, an Associate and then Post-Graduate Dean in London.
Wendy has held several national roles including that of Clinical Advisor to the DH on the European Working Time Directive, a contributor to the Temple Report, a former Vice President of RCOG, and former President of NAMPS.

Appointed as National Medical Director of Health Education England in 2013, Wendy subsequently took on the additional role of HEE's Executive Director of Education & Quality. Wendy now enjoys this multi-professional role and the opportunities it gives

HEE to deliver a better healthcare workforce and health improvements to the patients and public of England through high quality education and training.

Professor Stephen H Powis BSc (Hons) BM BCh PhD MBA FRCP, Medical Director NHS England

Stephen Powis is the National Medical Director of NHS England and Professor of Renal Medicine at University College London.

Previously he was Medical Director (and latterly Group Chief Medical Officer) of the Royal Free London NHS Foundation Trust from 2006 to 2018. Professor Powis was also a member of the governing body of Merton Clinical Commissioning Group for five years and a Director of Healthcare Services Laboratories LLP. He is a past Chairman of the Association of UK Universities (AUKUH) Medical Directors Group and has been a member of numerous national committees and working groups, including the Department of Health Strategic Education Funding Expert Group. He is a past non-executive director of the North Middlesex University Hospital NHS Trust, including a period of eight months as acting chairman.

He is a past chairman of the Joint Royal Colleges of Physicians Training Board (JRCPTB) Specialty Advisory Committee (SAC) for Renal Medicine and a former board member of Medical Education England. He was Director of Postgraduate Medical and Dental Education for UCLPartners from 2010-13. He is a past treasurer and trustee of the British Transplantation Society and a former member of the UK Transplant Kidney Pancreas Advisory Group. He has also served as a member of the Renal Association Executive Committee. He was Editor of the journal Nephron Clinical Practice from 2003 to 2008. In 2017 he became the inaugural Editor-in-Chief of the journal BMJ Leader. He has been a trustee of several charities, including the Royal Free Charity and the Healthcare Management Trust.

Professor Brendan G Cooper B.Sc.(Hons), M.SC., Ph.D., C.Biol, FRSB, FERS Consultant Clinical Scientist and Honorary Professor in Respiratory & Sleep Physiology

Professor Brendan Cooper is a respiratory physiologist with over 35 years' experience in both clinical and research practice in the UK. He has published over 100 peer-reviewed papers on a broad range of respiratory physiology and he is a world leader in the drive for quality lung function testing and has recently returned from 2 visits to Nepal here he trained doctors, nurses and scientists in spirometry. He is a great supporter of the European Respiratory Society.

Professor Cooper is the first President of the Academy for Healthcare Science and acts as figurehead for all UK healthcare scientists. He works tirelessly to promote "One Voice" for all healthcare scientists.

Brendan's clinical interests include development of new lung function tests and sleep disordered breathing. His research includes a wide spectrum of respiratory physiology from the resting state to exercise and sleep. Outside work he enjoys driving sports cars and scuba diving, but not at the same time!

Professor Sian Ellard, Head of Molecular Genetics, Royal Devon & Exeter NHS Foundation Trust

Sian Ellard is Clinical Programme Director for the South West NHS Genomic Medicine Centre, Professor of Genomic Medicine at the University of Exeter Medical School and Consultant Clinical Scientist, Head of Genomic Science, at the Royal Devon and Exeter NHS Foundation Trust. Her laboratory provides a core facility for integrated research and diagnostic genetic testing, receiving samples from ~100 countries throughout the world. It is acclaimed for both its research into monogenic disorders and the translation of its research discoveries into diagnostic service.

Dr Andy Nevill, Consultant Clinical Scientist, Plymouth Hospitals NHS Trust. Interim Head of Medical Physics, Royal Devon and Exeter NHS Foundation Trust.

Andy is a chartered engineer, scientist and manager who has been working at Plymouth Hospital in a consultant clinical scientist role since 2005. Andy has had a passion for healthcare technologies going back to his school days where his physics teacher encouraged him to enter a competition to develop some laboratory equipment. Andy is currently supporting Royal Devon and Exeter NHS Foundation Trust as interim Head of Medical Physics and was previously leading a team of 250 people to deliver physical science related services across 2 acute hospital sites and to numerous external clients.

Andy's work has involved establishing and developing a collaborative clinical network for physical science services across the SW peninsula and Andy has fulfilled the Trust lead scientist role for Plymouth since the original nationwide lunch of this role. Andy studied electronic engineering at Kent University and this led onto an EPSRC funded PhD in rehabilitation engineering. His early career included an academic appointment at Dundee, an IT related job in the private sector and a Voluntary Services Overseas placement at Kamuzu Central Hospital in Malawi.

Andy joined the NHS in 1996 and has since been continuously developing his interests in technology management. More recently his interests have included coaching and mentoring, and in particular coaching for people who are transitioning from a clinical/scientific/technical role into a leadership role.

Associate Professor Jamie Waterall, Public Health England

Jamie has had a varied clinical, managerial and academic background, spanning local, regional and national roles within the health and care system in England. He is currently Associate Deputy Chief Nurse and National Lead for Cardiovascular Disease Prevention at Public Health England. Jamie also holds an Honorary Associate Professor position at the University Of Nottingham, where he first trained to be a nurse and undertook his clinical Masters Degree.

Professor Max Lu, President and Vice-Chancellor, University of Surrey

Professor Max Lu is President and Vice-Chancellor of the University of Surrey. He is on the Boards of the National Physical Laboratory, Universities UK, and the Leadership Council of the National Centre for Universities and Business, and also serves as Deputy Lieutenant of Surrey and a patron of the charity Transforming Housing.

Professor Lu lectured at Nanyang Technological University from 1991 to 1994. From 1994 to 2016, he held academic and leadership positions at the University of Queensland, eventually serving as Provost and Senior Vice-President.

At Queensland, Professor Lu founded the Australian Research Council's Centre of Excellence for Functional Nanomaterials, and served as its director for 8 years. He was awarded the Australian Research Council Federation Fellowship in 2003 and in 2008.

Professor Lu's research is into chemical engineering and nanotechnology, for which he is one of only 150 double highly cited academics in the world. He has published over 500 peer-reviewed articles in top journals, attracting more than 49,000 citations.

He is co-inventor of more than 20 granted international patents, and has been honoured with numerous awards including, recently, the Medal of the Order of Australia for his distinguished service to education and international research and to Australia-China relations.

Professor Rosanna Peeling, Director of the International Diagnostics Centre, London School of Hygiene and Tropical Medicine

Rosanna Peeling is currently Professor and Chair of Diagnostics Research at the London School of Hygiene and Tropical Medicine

(LSHTM) and Director of the International Diagnostics Centre (IDC). Trained as a medical microbiologist, Dr. Peeling had been Research Coordinator and Head of Diagnostics Research at the UNICEF/UNDP/World Bank/WHO Special Programme on Research and Training in Tropical Diseases (WHO/TDR) in Geneva, Switzerland, and the Chief of the Canadian National Laboratory for Sexually Transmitted Diseases before assuming her current position. Her work in WHO/TDR focused on the evaluation of diagnostics appropriate for developing countries settings, to inform policy and procurement decisions.

Dr Peeling's work at LSHTM spans from facilitating test development and evaluation to translation of evidence to policy, appropriate placement of new diagnostic technologies into different health care settings to ensure maximum impact, and innovation in the uptake of testing by marginalised populations. She established the IDC to provide a global hub for advocating the value of diagnostics, fostering innovation, and accelerating regulatory approval and access to quality-assured diagnostics to improve global health. In 2014, she was awarded the George MacDonald Medal by the Royal Society of Hygiene and Tropical Medicine for contributions to tropical medicine, becoming the first woman to receive this honour.

Professor Martyn G Boutelle, Professor of Biomedical Sensors Engineering Imperial College London

After an initial undergraduate training in Chemistry and a PhD in Electrochemistry at Imperial College London. Martyn worked as a research fellow in the University Laboratory of Physiology, University of Oxford using implantable electrochemical sensors and microdialysis probes to study brain neurochemistry. This work was extended to clinical monitoring of the injured brain when he moved to the Department of Chemistry, King's College London. Martyn moved to the Department of Bioengineering at Imperial College in 2004, where he is currently Deputy Head of Department.

Martyn's biomedical monitoring research group is multidisciplinary, embracing both the development of fundamental physical/ analytical science methods, particularly combining microfluidic devices with electrochemical sensors, and the use of these new techniques in a program of neuroscience and clinical science research. His approach is to combine real-time measurement of neurochemical, electrical and physical measurements such as blood flow and local brain pressure to give a clear picture of the dynamics of tissue response to stimulation or trauma. The same measurement techniques are used in patients and in experimental models allowing genuine translational research. Current clinically collaborations are in monitoring acute traumatic brain injury (King's College and St Mary's Hospitals), kidney transplantation (Hammersmith Hospital), ovarian cancer surgery (Hammersmith Hospital), chol (King's College Hospital), acute limb trauma (St Mary's Hospital).

Lord James O'Shaughnessy, Parliamentary Under Secretary of State for Health (Lords)

Lord O'Shaughnessy was appointed as a Parliamentary Under Secretary of State at the Department of Health and a Government Whip (Lord in Waiting) in December 2016.

Lord O'Shaughnessy was a senior fellow at the Legatum Institute and at the Jubilee Centre for Character and Virtues at the University of Birmingham. In 2013, he founded Floreat Education, a multi-academy trust of 3 primary schools in Wandsworth, Wokingham and Brentford that provides an 'academics and character' educational philosophy. He held a number of other education and advisory positions.

In his role as Director of Policy to the Prime Minister between 2010 and 2011, he was responsible for co-authoring the coalition's programme for government and overseeing the implementation of the government's domestic policy programme.

He was Director of the Conservative Research Department from 2007 to 2010 and authored the Conservative Party's general election manifesto.

He was made a life peer in 2015.

Professor Sophie Scott, British neuroscientist and Wellcome Senior Research Fellow in Basic Biomedical Science and Professor of Cognitive Neuroscience, University College London

I am interested in the neural basis of vocal communication - how our brains process the information in speech and voices, and how our brains control the production of our voice. Within this, I am interested in the roles of streams of processing in auditory cortex, hemispheric asymmetries, and the interaction of speech processing with attentional and working memory factors. I am also interested in the expression of emotion in the voice. Finally, I am interested in individual differences in speech perception, and plasticity in speech perception, since these are important factors for people with cochlear implants.