HEA HIGHER EDUCATION AUTHORITY AN tÚDARÁS um ARD-OIDEACHAS

Speakers' Biographies

Tom Boland



Tom Boland is Chief Executive of the Higher Education Authority (HEA), a position he has held since January 2004. The HEA is a statutory body established to allocate public funding to Irish higher education institutions; to oversee the performance of the higher education and research sector generally; and to advise the Minister for Education and Skills on the development of the sector.

Tom is a member of the Board of the Central Applications Office and of the Governing Board of IMHE, the OECD higher education programme. He is former Chairperson of the Board of HEAnet, and

served on the boards of Science Foundation Ireland and the Fulbright Commission.

Tom holds degrees in Civil Engineering and Law and was called to the Irish Bar in 1987.

Professor Vinny Cahill



Professor Vinny Cahill is Dean and Vice President for Research and Professor of Computer Science at Trinity College Dublin. He has responsibility for coordinating and overseeing the university's research, innovation, knowledge transfer, and entrepreneurship strategies, and is an ex officio member of the Executive Officers Group, the university's senior management team. He combines his role with teaching and research in the field of distributed computing systems.

Professor Cahill has previously served as Head of the Department of Computer Science, Director of Research for Computer Science and Statistics, Director of Teaching and Learning, Head of the Distributed Systems Group, and Course Director for the M.Sc. in Computer Science. His research addresses many aspects of distributed systems, in particular middleware and programming models for mobile, ubiquitous and autonomic computing for the optimisation of urban resource usage and service delivery aimed to improve the quality of life and sustainability of cities.

Professor Cahill was elected as Fellow of Trinity College Dublin in 1999. He has a B.A. (Mod) in Computer Science as well as an M.Sc. and Ph.D. in Computer Science from Trinity College Dublin.



HEA HIGHER EDUCATION AUTHORITY AN LÚDARÁS um ARD-OIDEACHAS

Dr. Alison Campbell, O.B.E.



Alison is Director of Knowledge Transfer Ireland (KTI). KTI is a national resource, responsible for the promotion, development and management of Ireland's knowledge transfer system.

Alison has over 20 years' experience working at the academia–industry interface, inclusive of business development and industry collaboration, IP management, out-licensing, start-up company creation, executive education, policy and the impact of research and innovation. During her career, she has worked in the biotech industry, led technology

transfer and research support offices, and worked as an independent consultant specialising in technology transfer and open innovation. She is a non-executive director of PraxisUnico and Portfolio Chair for International Development. She is also a Director of the global Alliance of Technology Transfer Professionals (ATTP). Alison has served as a non-executive director on a number of companies and acted as an advisor to government departments in the UK and and overseas. She was awarded an OBE for her services to UK knowledge transfer in 2010.

Dr. Martin Curley



Martin Curley is Vice-President at Intel Corporation and Director of Intel Labs Europe, the company's network of more than 40 research labs, development centres and open innovation collaborations spanning the European region. He also serves as a Senior Principal Engineer at Intel Labs Europe, which is charged with helping to advance both Intel's research and Europe's ability to compete in the global society.

Martin leads Intel's research and innovation engagement with the European Commission and the broader European Union research ecosystem. Before assuming his current position in 2009, he was global director of IT innovation at Intel. Earlier in his career, Martin held a number of senior positions for Intel in the United States and Europe. Before joining Intel in 1992, he held management and research positions at General Electric in Ireland and at Philips Electronics in the Netherlands.

Martin is also founder and co-director of the Innovation Value Institute, a broad industry– academia open innovation research consortium, and he is Professor of Innovation at Maynooth University. He is the Chair of the EU Open Innovation and Strategy Policy group, which is driving the further development and adoption of the 'open innovation' paradigms in Europe, and he is also a member of various advisory boards, including the EU Common Assessment Framework (CAF) and the Smart London Board.



Martin is the author or co-author of three books on technology management for value, innovation and entrepreneurship, and has published multiple papers in the area of IT, entrepreneurship and innovation management. He is a member of the Royal Irish Academy, and a fellow of the Institution of Engineers of Ireland, the British Computer Society, the Irish Computer Society and the Irish Academy of Engineering.

Martin holds a Bachelor's degree in electronic engineering and a Master's degree in business studies, both from University College Dublin, Ireland. He earned his Ph.D. in information systems from Maynooth University.

Dermot Curran



Dermot Curran is Assistant Secretary General of the Innovation and Investment Division of the Department of Jobs, Enterprise and Innovation. He is responsible for the formulation and implementation of government policy in the areas of science, technology and innovation; enterprise development and inward investment; north–south trade and business development programmes; intellectual property and IP protection; and

Irish engagement in international research and technology programmes.

Dermot Curran is a member of the boards of IDA Ireland, Science Foundation Ireland, Tyndall National Institute, and the European Commission's Joint Research Centre.

Prior to joining the Department of Jobs, Enterprise and Innovation, Dermot Curran served in a range of government departments including the Office of the Taoiseach, the Department of Education and Skills, and the Department of Communications, Energy and Natural Resources. He has also undertaken special assignments in two institutes of technology. He holds a Bachelor of Business Studies from the Institute of Public Administration (1999) and an M.Sc. (Mgmt) from Trinity College Dublin (2001).

Professor Mary E. Daly



Professor Mary E. Daly is one of Ireland's most prominent senior historians and is a member of the government's Expert Advisory Group on Commemorations. She is Emeritus Professor of History at UCD and served for seven years as Principal of UCD College of Arts and Celtic Studies. She has also held visiting positions at Harvard and Boston College. She is the first female President of the Royal Irish Academy in its 229-year history and was elected in March 2014.





From 2000–2004 Professor Daly was Secretary of the Royal Irish Academy and vice-chair of the Academy's Working Group on Higher Education. She has served on the National Archives Advisory Council and the Irish Manuscripts Commission. Professor Daly was involved in the commemoration of the sesquicentenary of the great famine 1995–97 and, with Dr. Margaret O'Callaghan, she directed a research project on the Golden Jubilee of the 1916 Rising, resulting in the publication of a major edited work, *1916 in 1966: Commemorating the Easter Rising* (2007).

Over the course of her distinguished career, Professor Daly has researched widely and published prolifically, notably: *Dublin, the Deposed Capital: A Social and Economic History 1860–1914* (1984); *Women and Work in Ireland* (1997); *The Slow Failure: Population Decline and Independent Ireland 1920–1973* (2006); and, with Theo Hoppen, *Gladstone: Ireland and Beyond* (2011).

Professor Willie Donnelly



Professor Willie Donnelly is the Vice President of Research and Innovation at Waterford Institute of Technology (WIT). Since he assumed this role in 2004, WIT has secured in excess of €100 million in research funding and has grown and consolidated its research competencies in a number of distinct areas—telecommunications, pharmaceutical and molecular biotechnology research, applied materials, and ecoinnovation.

Professor Donnelly is also Director of the Telecommunications Software and Systems Group (TSSG)—a world-class research mobile service and communications management research centre. He founded the TSSG at WIT in 1996, since which time it has grown from 3 to 120 people and has received over €80 million in competitive funding. It is now positioned as one of Europe's leading research centres in the Future Internet programme. In addition, Professor Donnelly has led more than 30 pan-European projects, working with key international industry players such as Ericsson, D-Telekom, ATOS and Nokia. He is the Irish representative on the European Member State Future Internet Forum and Chair of the European Concertation Board for the Future Internet PPP program. He is a founding member of the European Digital Enlightenment Forum—an expert level think-tank providing guidance to Europe on digital policy.

Professor Donnelly's main research interest is in communications management, with particular emphasis on autonomic network management, bio-inspired network management, internet of things and nano communications techniques, and the challenges of managing the future internet. He has strategic research partnerships with major universities in Europe, Asia and North America.





Nationally Professor Donnelly has led two HEA-funded PRTLI projects, M-Zones and FutureCom, both of which have played an important role in establishing Ireland as a key research and innovation centre in communications management. He is presently the Director of the Science Foundation Ireland (SFI) Strategic Research Centre FAME whose industry partners include Cisco, IBM and Alcatel Lucent. FAME is recognised as one of the world-leading research centres in communications management. Professor Donnelly is a Co-Principal Investigator on the SFI-funded Principle Investigator Precision Dairy project, and Co-Principal Investigator of the SFI Connect Research Centre.

Professor Donnelly established the WIT Arclabs Innovation Centre in 2005, a unique research and innovation platform combining world-class research, entrepreneurial training, business development, and high potential start-ups. This has led to the creation of more than 500 jobs in the region and has supported more than 200 industry–academia collaborations over the last 5 years. The TSSG/Arclabs has established a cluster of high-potential start-up companies in mobile services at the Arclabs research centre, which currently employs more than 160 people. Professor Donnelly is also a founding member of the spin-out companies FeedHenry, a major player in enterprise mobile applications in the cloud, and Zolk-C, a world leader in location-based interaction technologies for tourism.

Prior to entering academia, Professor Donnelly worked for 15 years in the telecommunications and utilities industries.

John Dooley



John Dooley is the Principal of the Research and Innovation Policy Unit of the Strategic Policy Division at the Department of Jobs, Enterprise and Innovation. He is responsible for the formulation and provision of evidence-based policy advice to the Department and Minister of Jobs, Enterprise and Innovation on the development, promotion and coordination of Ireland's STI policy.

Previously John was head of Science, Technology and Innovation policy at Forfás, Ireland's national policy advisory board for enterprise, trade,

science, technology and innovation; and head of Secretariat to the national Advisory Council for Science Technology and Innovation which advises the Government on the objectives and priorities for national and international STI policy.

Prior to joining Forfás John worked in senior management roles in the chemical and high technology industrial sectors. John holds degrees in chemistry from Trinity College Dublin.



HEA HIGHER EDUCATION AUTHORITY AN LÚDARÁS um ARD-OIDEACHAS

Mary Doyle



Mary Doyle is Deputy Secretary of the Department of Education and Skills—a role she assumed in June 2012. As Deputy Secretary, Ms. Doyle leads the Higher Education and Quality Division in the Department. Previously, she worked in the departments of the Taoiseach and Health, and was Director General in the Office of the Minister for Children and Youth Affairs. She has been a member of the National Economic and Social Council and of the National Statistics Board, and a Forum Member of the Economic and Social Research Institute. She holds a degree in European Studies from the University of Limerick and a

Master's in Public Service Management from Trinity/Irish Management Institute.

Professor Orla Feely



Professor Feely is Vice President for Research, Innovation and Impact and a Professor of Electronic Engineering at University College Dublin. She holds a B.E. degree from University College Dublin, and M.S. and Ph.D. degrees from the University of California, Berkeley, where her Ph.D. thesis won the D.J. Sakrison Memorial Prize for outstanding and innovative research. While at UC Berkeley, she also won the Outstanding Graduate Student Instructor Award. She leads a research group in nonlinear circuits and has been awarded research grants and prizes from a number of national, international and industry sources.

Professor Feely is a Member of the Royal Irish Academy and a Fellow of the IEEE (Institute of Electrical and Electronics Engineers), Engineers Ireland and the Irish Academy of Engineering. She has served as Chair of the Irish Research Council and of the IEEE Technical Committee on Nonlinear Circuits and Systems, and as a member of a number of editorial boards. She is a director of the Young Scientist and Technology Exhibition.

Professor Mark Ferguson, C.B.E.



Professor Mark W.J. Ferguson commenced as Director General of Science Foundation Ireland in January 2012 and as Chief Scientific Adviser to the Government of Ireland in October 2012. Previously he was Professor in Life Sciences at the University of Manchester (since 1984) and cofounder, CEO and Chairman of Renovo Group plc (1998– 2011).





He is the recipient of numerous international research awards including the 2002 European Science Prize (jointly), and is the author of 327 research papers and book chapters, 60 patent families and author / editor of 8 books.

Mark graduated from the Queen's University of Belfast with degrees in Dentistry (B.D.S. 1st class honours), Anatomy and Embryology (B.Sc. 1st class honours, Ph.D.) and Medical Sciences (D.Med.Sc.), holds Fellowships from the Royal Colleges of Surgeons in Ireland (FFD), and Edinburgh (FDS) and is a Founding Fellow of the U.K.'s Academy of Medical Sciences (FMedSci). He is a member or Fellow of a number of learned societies, and was made a Commander of the British Empire (C.B.E.) by the Queen in 1999 for services to health and the life sciences.

Dr. Graham Love



Dr. Graham Love is Chief Executive of the Health Research Board, an agency of the Irish Government's Department of Health. The HRB manages a €100 million investment portfolio spanning clinical, population and health services research. It also manages key health information systems and provides evidence-based policy support to the Government's Department of Health. Previously Graham worked in Science Foundation Ireland, covering a variety of areas including strategy, communications and programmes, and filling senior roles such as Head of Strategy, Director of Policy and Interim Director General. Before entering the public service, Graham was in the private sector for many years working for management

consulting firm Accenture. There he worked with international clients such as Microsoft, Vodafone and Norsk Hydro on a range of projects including IT system implementations, strategic reviews and transformational change. Graham lives with his family in Dublin.

Professor Anita Maguire



Anita undertook undergraduate and postgraduate studies in chemistry at UCC (B.Sc. 1985, Ph.D. 1989). Following postdoctoral research first at Namur, Belgium then at the University of Exeter, U.K., she returned to the Department of Chemistry in UCC in 1991, initially as a College Lecturer, then Associate Professor in Organic Chemistry in 2002, and was appointed in 2004 to the newly-established Chair of Pharmaceutical Chemistry, jointly in the Department of Chemistry and the School of Pharmacy, playing a leading role in development of the School of Pharmacy in recent years. Since her appointment at UCC she has played a strategic role





in the development of teaching and learning, including the introduction of medicinal and pharmaceutical chemistry at undergraduate level for the first time.

Over the past twenty three years at UCC she has led an active research team focusing on synthetic organic and pharmaceutical chemistry, which interacts extensively with the pharmaceutical sector in Ireland and internationally. She is very committed to postgraduate education, ensuring the research-students gain the skills required to underpin their future careers; 37 Ph.D. and 5 M.Sc. students have graduated from her research team since 1997, most of whom have developed careers within the pharmaceutical industry both in Ireland and internationally.

She is Director of the interdisciplinary research centre, the Analytical and Biological Chemistry Research Facility, established under PRTLI3, and has served as Head of the Department of Chemistry (2005–2007) and Head of the School of Pharmacy (2009–2010). She was elected to the Governing Body of University College Cork in December 2003 and served two terms until December 2011. She was appointed as Vice-President for Research and Innovation in January 2011. She was elected a member of the Royal Irish Academy in 2014.

She is actively engaged nationally in strategic policy development in relation to research, STI policy, the academic industry interface and strategic development of the pharmaceutical industry, including as a member of the Advisory Science Council and the Irish Research Council. She chaired the Irish Research Council for Science Engineering and Technology (IRCSET) in recent years. For example, she chaired the Advisory Science Council Task Force on *The Role of PhDs in the Smart Economy* which reported in December 2009. She is a member of the Boards of Tyndall National Institute, Molecular Medicine Ireland, Insight, APC, Infant, IPIC, Amber, MaREI, and ICHEC.

Dr. Eucharia Meehan



Dr. Eucharia Meehan is the Director of the Irish Research Council. The Irish Research Council supports excellent research and recognises creative individuals with innovative ideas, thus enabling a vibrant research community which enriches Irish research, the economy and society. The Council, which was established in 2012, cultivates expertise across all disciplines, from arts to zoology.

Prior to her role at the Irish Research Council, Eucharia was Head of Research and Innovation (policy and investment) at the Higher Education Authority (HEA). During her tenure, the Programme for Research in Third Level Institutions (PRTLI) invested €1.2 billion of public and





private funds to develop strategic research infrastructure and capacity. She was also the Head of Capital Programmes for Higher Education from 2008–2012.

Prior to 2002, Eucharia was a member of the senior management team and Head of Programme Management at Elan Biotechnology Research (EBR). In this role she had responsibility for sites and joint ventures in Ireland, Israel and the USA. Eucharia holds a Ph.D. in Pharmacology (Neuropharmacology) from the National University of Ireland, Galway, in addition to a number of postgraduate management, accounting and finance qualifications from Trinity College Dublin and the ACCA. She is board member of Science Europe, the association of European Research Funding Organisations (RFOs), and of the European Strategy Forum for Research Infrastructures (ESFRI).

Mark Redmond



Mark Redmond was appointed Chief Executive of the American Chamber of Commerce Ireland in March 2014. The American Chamber of Commerce Ireland is the leading international business organisation in Ireland. Representing the 700 U.S. companies located in Ireland, its mission is to be the voice of U.S. companies and to position Ireland as the global location of choice for U.S. investment. The American Chamber works to enhance the business environment for U.S. companies operating in Ireland, with the aim of improving the positive impact of these companies who already employ over 115,000 people.

Mark directs the significant work-programme of the Chamber which is focused on key areas of priority, including trade and investment between the EU and the United States; progressive economic and social policies that maintain Ireland's position as the location of choice for U.S. investment; and the enhancement of Ireland's research, development and innovation framework to further grow investment in Ireland. The American Chamber hosts extensive network and information sharing for a, including business lunches, seminars, briefings and regional programs.

Mark was previously Chief Executive of the Irish Tax Institute, a position he held from 2004. There he led a reform programme that transformed the Institute into one of Ireland's most respected representative organisations. Prior to this Mark was a Director with PwC.

Mark is a graduate in English and History from Trinity College Dublin, and holds a Professional Diploma in Accounting (DCU), an M.Sc. in Education and Professional Training (DCU), and a qualification in Comparative Tax Policy from the Harvard Kennedy School.





In addition to his role with the American Chamber, Mark serves on the National Council of IBEC, and on the board of the Investor Compensation Company Ltd. He has previously served on the Governing Authority of University College Dublin.

Professor Arie Rip



Arie Rip is Emeritus Professor of Philosophy of Science and Technology in the School of Management and Governance of the University of Twente. He continues working on the research themes he has been addressing all along: changes in modes of knowledge production (including indigenous knowledge) and their impact on science institutions like universities and funding agencies; technology assessment, in particular constructive technology assessment of nanotechnology; science and technology policy analysis, and national systems of research and innovation and their evolution.

He has contributed to science policy studies and reports, and has

carried out evaluation studies and foresight studies. He was a member of the EU High-Level Expert Groups on Foresighting the New Technology Wave (Nordmann 2004), on converging technologies; the Expert Group on Science and Governance (Felt and Wynne *et al*, 2007); and the Expert Group on the Future of Science in Society (MASIS 2009). He was Board Member of the European Network of Excellence PRIME (Policies for Research and Innovation in the Move towards the European Research Area), 2004–2009. He is now also involved in the discussion, and application, of Responsible Research and Innovation, including chairing the Expert Advisory Group on 'Science with and for Society' within the Horizon 2020 programme of the European Commission.

Arie Rip studied chemistry and philosophy at the University of Leiden, did research in physical chemistry, and then switched to teaching and research in the area of chemistry and society, and in science, technology and society studies more generally. He was guest professor of science dynamics at the University of Amsterdam (1984–1987), and then moved to the Chair in Philosophy of Science and Technology at the University of Twente. For a time he was Visiting Professor at the University of Stellenbosch (1997–2009). He was active in professional societies, including being President of the International Society for Social Studies of Science (1988–1989). He has supervised more than fifty Ph.D. students, has (co-)authored almost 200 publications (articles, book chapters, and books and reports), and is often asked to give keynotes and write commentaries.





Professor Sir Peter Scott



Professor Peter Scott is Professor of Higher Education Studies at the Institute of Education, University of London. He is also Chair of the Council of the University of Gloucestershire, and a trustee of the Higher Education Policy Institute (HEPI) and of the Council for the Defence of British Universities (CDBU).

He was Vice-Chancellor of Kingston University from 1998–2010, prior to he was Pro-Vice-Chancellor for External Affairs at the University of Leeds, where he also served as Professor of Education and Director of the Centre for Policy Studies in Education. Before going to Leeds in 1992, he was Editor of the *Times Higher Education Supplement* for sixteen years.

Peter was educated at the University of Oxford, where he studied history, and at the University of California at Berkeley, where he was a visiting scholar at the Graduate School of Public Policy while holding a Harkness Fellowship from the Commonwealth Fund of New York. He has received honorary doctorates from the University of Leicester, the University of Bath, the University of Manchester's Institute of Science and Technology (now part of the University of Manchester), the (former) Council for National Academic Awards, Anglia Polytechnic University, and Grand Valley State University. He is also a member of the Academia Europaea (chairing its Behavioural Sciences Section) and an Academician of the Academy of the Social Sciences.

Peter was President of the Academic Cooperation Association from 2002–2008, the Brusselsbased agency that represents the interests of international organisations such as the British Council and the German Academic Exchange Service (DAAD) at the European level. He is also Chair of the Universities Association for Lifelong Learning (formerly the Universities Association for Continuing Education). From 2000–2006 he was a member of the board of HEFCE, chairing its Quality Assurance Learning and Teaching strategic committee, and was appointed as the inaugural President of the AUA (Association of University Administrators) in 2009. He was appointed a Knight Bachelor in the United Kingdom's 2007 New Year Honours list for services to higher education.

Peter's research interests pertain to the evolution of new patterns of knowledge-production and their implications for knowledge-based organisations (including universities); the governance and management of universities and their implications for the organisational culture of universities (and academic ethos and social missions); the development of mass higher education systems in their social, economic and cultural contexts; and the internationalisation of higher education, in response to wider phenomena of globalisation.





Peter's books include The New Production of Knowledge: The Dynamics of Science and research in Contemporary Societies (1994) [as a co-author], The Meanings of Mass Higher Education (1995), Governing Universities (1996), The Globalization of Higher Education (1998) and Higher Education Re-formed (2000), University Leadership: The Role of the Chief Executive (2000), Ten Years On: Higher Education in Central and Eastern Europe (2000), Re-Thinking Science: Knowledge Production in an Age of Uncertainties (2001) [with Helga Nowotny and Michael Gibbons] and Browne and Beyond: Modernizing English Higher Education (2013) [with Claire Callender]. He is also the author of more than 50 book chapters and journal articles.

Dr. Jack B. Spaapen



Dr. Jack Spaapen is senior policy advisor at the Royal Netherlands Academy of Arts and Sciences and executive secretary for the Academy's Council for Humanities. He is an expert in research and innovation policy, in societal impact evaluation, and in research policy for the social sciences and humanities (SSH). He has coordinated many Academy projects on research and innovation policy, and several EU projects, recently the FP7 SIAMPI project on productive interactions between science and society and the assessment of societal impact of research (2009–2012), and on

Responsible Research and Innovation (2014, together with Roger Strand). He represents the Academy in several national and European networks on RTD evaluation. He initiated the national project on developing methods for the assessment of the societal relevance of research (Evaluating Research in Context (ERiC) project). He co-designed the national evaluation protocol for publicly funded research (Standard Evaluation Protocol (SEP)).

Dr. Spaapen was trained as a sociologist and cultural anthropologist at the University of Amsterdam with a Ph.D. in science and technology studies. His thesis (1995) focused on methods for the evaluation of research in the context of societal and policy demands. Previously he worked as a research fellow in the University of California San Diego (UCSD), as a researcher and lecturer in two departments at the University of Amsterdam (Science and Technology Dynamics and the Institute for Development Research), in a commercial bureau for industrial marketing in Amsterdam, in a government office for urban planning in Lelystad. Between 1993 and 2005 he co-owned sci_Quest, a consultancy firm on science and technology policy and evaluation.



HEA HIGHER EDUCATION AUTHORITY AN LÚDARÁS um ARD-OIDEACHAS

David Sweeney



David Sweeney is Director (Research, Education and Knowledge Exchange) in the Higher Education Funding Council for England (HEFCE). In this role he is responsible for research policy and funding (including the Research Excellence Framework), knowledge exchange and health policy. He is also responsible for the Catalyst Fund, the UK Research Partnership Investment Fund, and HEFCE's international engagement. He works alongside Chris Millward (Director of Policy), who leads on education and skills.

A statistician, David worked at two BBSRC research institutes, developing mathematical models of plant growth before moving into senior management in the IT area, becoming Director of Information Services at Royal Holloway, University of London, and serving in a national role as Chair of the Universities and Colleges Information Systems Association. He became Vice-Principal (Communications, Enterprise and Research) in 2004, responsible for research strategy, the 2008 RAE submission and for developing Royal Holloway's research-led commercial and consultancy activities, knowledge transfer and development programme. He joined HEFCE in 2008 as Director (Research, Innovation and Skills).

David was an adviser to the Australian Research Impact Pilot Exercise, and he has also visited many European countries and Hong Kong to advise on research assessment and funding. In 2012, he was a member of the Finch Group on Open Access to Research Outputs, and has been working with the research councils, charities, learned societies, other academic groups and publishers to take forward the Finch Group recommendations.

David was awarded an honorary doctorate from the University of Aberdeen in 2012 and is a Fellow of the Royal Statistical Society.

