

## Companion of OR – Previous Winners

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# Citations

## Citations for Companion of OR 2024

### Christine Currie

Christine Currie has been a member of The OR Society since 2000 and is now Professor of Operational Research within Mathematical Sciences at the University of Southampton. She is also a fellow of the Alan Turing Institute and previously was Director of Centre for Operational Research, Management Science, and Information Systems (CORMSIS) at Southampton. Her expertise is in decision-making under uncertainty, in particular simulation optimisation and revenue management (dynamic pricing). She has an impressive track record of EPSRC funding and a total of 78 publications, both methodological and application focused. In the area of dynamic pricing, she has successfully collaborated with a range of companies, including Carnival Cruises, Red Funnel Ferries, and Ocado. She is also well known for her work in healthcare and disaster relief, including an EPSRC-funded project with collaborators in Vietnam, Indonesia, Laos, and Cambodia. She is currently lead investigator on two EPSRC-funded projects on sustainable transport systems.



Christine has served for ten years as Co-Editor-in-Chief for the Journal of Simulation, published by The OR Society. She has also been Co-Chair of the Simulation Workshops in 2016, 2018 and of the SW23 Programme. She was also Co-Chair of the Society's Annual Conference OR63 in 2021 and has supported many Society activities, including her membership of WORAN.

Christine was a founding member of The OR Society's Research Committee and took over as Chair of the Committee in 2022. This committee has been instrumental in developing links with research funding bodies and other organisations, such as UKRI and ICMS. Christine has been a key advocate of the development of The OR Society Early Career Research Network. She played a pivotal role in developing ECR workshops and facilitated the development of the ECR Network. She was also a founding member of the Virtual Forum for Knowledge Exchange in Mathematical Sciences.

In recent years, Christine has been a key member of The OR Society Working Group for the proto-Academy of Mathematical Sciences and has subsequently been appointed to the proto-Academy Executive Committee, initially leading the Practitioners Affairs and Knowledge Exchange Workstream.

Christine has made an exceptional contribution to The OR Society, particularly through her committee work advocating OR to outside bodies. She is extremely worthy to receive the Companionship of Operational Research.

### **Thomas Archibald**

Tom Archibald has been a member of The OR Society for nearly 30 years and has contributed a great deal to benefit OR in the UK and further afield. Since 1993 he has been on the faculty at the University of Edinburgh, where he obtained his BSc in Mathematics (1988) and PhD in Operational Research (1993), becoming Professor of Business Modelling in 2007. Tom has spent various stints as a visiting academic overseas, including, for example, Monash University in Australia and Tinbergen Institute in the Netherlands.



Tom's academic career includes many important contributions to the areas of Stochastic Modelling, in particular to Stochastic Dynamic Programming and Markov Decision Processes. Examples of his most influential work include contributions to the management of start-up firms, the management of multi-location inventory systems and large reservoir networks. Tom's research on the former was the first to consider the objective of maximising the firm's chance of survival, and found that a start-up firm following a profit maximising policy has a greatly reduced chance of survival. His work on the management of multi-location inventory systems was the first to analyse periodic replenishment with transshipment in response to stockouts - an extremely common situation in the retail industry. Tom's work has been extensively published in flagship academic journals such as Management Science, the European Journal of Operational Research, JORS, Production and Operations Management, Annals of OR, and the International Journal of Production Economics.

Tom has applied his research over almost four decades, via many research grants and industrial consultancy contracts, with organisations in the UK and Australia such as Transco (National Grid), National Power, Kwik-Fit. OR methods developed and popularised by Tom and colleagues (most notably Lyn C Thomas and Jake I Ansell) have positively impacted the management of major physical assets and infrastructure, enabling, since the early 2000s, savings of several £billions/year in the regulated industries within the UK alone. Tom's research outputs have helped asset managers to estimate the effectiveness of maintenance interventions, thus supporting the development of optimal maintenance strategies for large and complex assets. Tom's methods have been deployed to achieve optimal asset management (Scottish Water); support regulatory assessments (Yorkshire Water Services); assist Severn Trent Water Company with its regulatory submissions (Cap Gemini); and inform procurement decisions across major platforms in maritime and air environments (Ministry of Defence).

In addition to his research and its application, Tom has hugely contributed to the development and running of The OR Society, having served in several major roles, including organising (with Lyn C Thomas, Chair) the IFORS 2002 Conference in Edinburgh and being Chair of the OR54 Conference, also in



Edinburgh (2012), co-Editor-in-Chief for JORS (2010-2019), founding member of The OR Society Research Committee, Chair of the ORS Publication Committee, and member of The OR Society Board.

Tom has made an exceptional contribution to the development of operational research, through his own research, and through his significant contributions to The OR Society. He is therefore extremely worthy to receive the Companionship of Operational Research.

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## **Duncan Robertson**

The OR Society recognises Dr. Duncan Robertson as a Companion of Operational Research for his outstanding contributions to communicating science during the Covid-19 pandemic and beyond.



Dr. Robertson's distinguished career spans academia, professional practice, and impactful public engagement. He initially trained in physics at Imperial College London and later qualified as a Chartered Accountant with KPMG, specialising in corporate finance within the banking sector across the UK, Australia, and New Zealand. Subsequently, he completed his DPhil at Saïd Business School, University of Oxford, focusing on strategy dynamics and the modelling of complex systems. His academic career has included positions at Warwick Business School, Manchester Business School, and Sun Yat-sen University in China. He is currently a Senior Lecturer in Management Sciences at Loughborough University and a Fellow and Trustee of St Catherine's College, Oxford.

Dr. Robertson's research specialises in the application of agent-based modelling and complexity science to management problems, exploring the dynamics of firms, consumers, and societal interactions. His contributions to the field include collaborations with global companies, such as Unilever, and publications that bridge theoretical advancements with practical applications.

Dr. Robertson came to broader prominence during the COVID-19 pandemic when, alongside other scientists, he was prominent across a range of media, helping people interpret a range of data about the pandemic. In a time of uncertainty and public concern, Dr. Robertson emerged as a trusted voice, bringing clarity to complex data and models. His ability to explain intricate scientific phenomena in an accessible and nuanced manner made him a regular feature across media platforms, including BBC Radio, BBC News, LBC, Sky News, CNBC, and Talk TV, as well as most UK newspapers. Over 100 weeks of weekly BBC local radio interviews, Dr. Robertson provided insightful commentary, helping audiences interpret data on virus transmission, policy implications, and societal impacts.

Dr. Robertson's dedication to science communication extended beyond broadcast media. He engaged directly with journalists and the public on platforms like Twitter and BlueSky, fostering understanding and facilitating informed decision-making. His visualisations of pandemic data and models, paired with his clear explanations, demonstrated the power of Operational Research to inform policy and public behaviour during crises.

In addition to his public-facing contributions, Dr. Robertson played an important role within the OR Society, coordinating the Society's response to the Royal Society's Rapid Assistance in Modelling the Pandemic (RAMP) initiative. This



effort highlighted the essential role of simulation modelling and foresight approaches in tackling complex global challenges.

As a member of Independent SAGE since 2022, Dr. Robertson has helped further public engagement by adopting participatory methods that prioritise collaboration with communities. His recent publications, co-authored with other OR Society colleagues, reflect his commitment to bridging the gap between technical modelling and societal needs, emphasising the value of OR in addressing multifaceted issues.

Dr. Robertson's work exemplifies the principles of Operational Research: leveraging analytical techniques to solve complex problems for the benefit of society. His calm, considered, and authoritative voice during a turbulent period not only elevated the public's understanding of science but also underscored the critical role of OR in addressing challenges at the intersection of health, policy, and society.

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## **Frances Sneddon**

Frances Sneddon is Chief Technology Officer at Simul8 Corporation, an organization she joined as an intern to conduct a "summer project" during her undergraduate degree in Maths, Stats, and Management Science.

She never escaped, working part time for the simulation company during much of her final year at Strathclyde University in Glasgow and then joining as a consultant building simulation models for customers.



Frances quickly showed her flair for spotting product features that she and customers needed to make simulations easier to build and, rather than complain that there were insufficient resources to create them, she asked if could be trained to program so she could create the features herself.

It did not take long before she was masterminding all the product side of the company (including software products other than Simul8, offered into specialized markets) and was asked to report monthly at Board meetings. In 2008 she formally joined the Board of Directors at the age of 29.

Her remit did not stop expanding as she and her development team felt the marketing side of the company was not taking full advantage of the features that they were creating, and so Frances got involved with marketing as well as product development.

Her practical way of finding solutions to problems continues to this day with, for example, her personally finding a way to make Simul8 available on web and desktop in a way that makes the user experience identical no matter which platform they use. And, recognizing the opportunity for businesses to connect data insights with actionable process improvement, Frances has led the company in the integration of simulation with process mining.

Meanwhile, outside Simul8, Frances has been doing a few other things in parallel like, in 2018 she became the youngest ever chair of Scotland-IS. This is the cluster management and trade body for the Scottish Digital Technologies Sector. It supports the digital transformation of businesses and economic growth of Scotland through the technology sector.

From 2015 to 2021 she was also on the board of Datalab which is funded by the Scottish government to foster innovation between academics, industry and business in data-analytics fields such as AI and Machine Learning. It aims to generate economic, social and scientific value from data.

From 2013 to 2015 Frances was on INFORMS "W.O.R.M.S." (Women in OR/MS) group as VP Communications to help other women grow their careers in OR/MS.



She has served on ORS General Council and is currently one of the co-chairs of HORAF (The Heads of OR and Analytics Forum).

Frances says she has a passion for "software as a user", and she likes nothing more than designing ways to make process improvement easier for her users.

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## **Gavin Blackett**

The award of Companion of OR to Gavin Blackett falls squarely within the category of 'those who have given outstanding service to the OR Society', particularly reflecting the 16 years he spent running the office and activities of the Society.

Well-known for his brand of quick-witted humour and wide knowledge of OR, Gavin has been an indispensable part of the OR community for years.

He has also been a paid-up member of The OR Society for over 34 years.



His journey into OR began when he read Mathematics at Bath between 1984 and 1988, after which he joined British Coal Operational Research Executive (ORE), where he was part of the team working at Bretby near Burton-on-Trent. While with ORE Gavin undertook a 3-year, part time Master's Degree at Sheffield University from 1988 to 1992.

Gavin moved with ORE when it was outsourced to Hoskyns and subsequently acquired by Capgemini. As a consultant at Capgemini, Gavin provided OR and analytics advice to many of the firm's clients.

In August 2006, he joined The OR Society as Secretary / General Manager. Within a short period of assuming the position, he, with the support of the OR HQ staff, set about modernising and evolving core processes, products and channels to bring the society into the modern world.

Gavin raised the profile of the Society's newsletter, changed its name to Inside OR and redesigned it to reflect modern values and connections with multiple channels online. He instituted an active news section and improved information sections too, all of which proved popular with subscribers.

After this success he embarked on a vigorous process of gaining insight into what members were looking for in a modern, connected, keyed-in society. The result of this action improved membership numbers and revealed to all, that OR, contrary to some beliefs, had thrived since the turn of the new millennium and was poised to grow stronger and more required with every new year that passed.

As a result of Gavin's long stewardship, hard and devoted work and continuous improvement efforts for the ORS, the Society's relevance in the business marketplace reached a new high. In addition, Gavin's active collaboration with other learned societies and professional bodies served to raise the profile of OR and drive further growth for the ORS. For example, Gavin actively took the ORS into the Alliance for Data Science Professionals, then took a key leadership role within the alliance, positioning OR at the heart of data science.

Gavin was made Executive Director of the ORS in 2019, to reflect the extent to which his role and responsibilities had grown over the years. He retired from the



ORS in 2022, since when he has continued to play a key role in the global OR community as secretary to the International Federation of Operational Research Societies (IFORS).

By the time Gavin retired from the ORS, the Society's activities were at all-time record levels in terms of amount of research published, training delivered, events run and outreach work. In reflection of this growth in activity, staff numbers had almost doubled during Gavin's time in charge.

Gavin is an exceptional candidate to become a Companion of OR, rewarding his lasting work for the Society and his ongoing support to OR on the international stage.

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### **Alan Robinson**

Alan Robinson was a member of HORF/HORAF for around 15 years and served as Chair from September 2013 to the end of 2019 (jointly with Andy Harrison, 2014 to 2018) during which time I was secretary. Consequently, he managed many discussions on topics of importance to OR managers, some of which were controversial. The major one was helping the OR Society to address the impact of the Analytics/Big Data revolution from around 2010. Several activities were initiated by HORF and HORF members, including membership of an ORS advisory group, organising meetings and conference streams, aimed at both the OR and Analytics communities. This culminated in 2017, when HORF was renamed the OR and Analytics Forum, HORAF. Many other issues of relevance to OR/Analytics managers and practitioners, as well as ORS were also discussed and commented on, including recruitment and training (which was critical after the loss of Masters' Studentships) and professional qualifications (which culminated in the offering of Chartered Scientist by ORS).



Alan managed these various discussions extremely well: he was a calm presence on controversial topics, and he ensured that all members had an opportunity to air their views.

## Citation for Companion of OR 2023

### John Hopes

The award of Companion is expected to meet one of six different requirements, and this nomination for John Hopes falls in Category 5 – “Those who have given outstanding service to the OR Society”.

John Hopes has spent just about all of his working life and beyond working in Operational Research.

His career started with Shell and progressed to various stints in consulting, finishing as Global Head of Analytics at Ernst & Young (or EY as they became).



John has volunteered with the OR Society for an extended period of more than a decade. He was first elected to General Council and Board for the start of 2011, serving six years as Vice President. In 2017 he became President Elect, serving two years as President from 2018 to 2019, and finishing with an extended spell as Past President (two years, due to the COVID pandemic). This is almost certainly the longest continuous spell on Board and General Council since the new constitution came into force in 2006 – and possibly the longest allowable under those rules.

John’s term on Board coincided with a long period of growth for the Society, taking on new initiatives and the staff to manage those. Under his leadership as President, the Society continued to build its strong financial base.

John has been a key contributor to the Society embracing analytics and building its positioning and offering to the widening analytical community. He has been a member of what is now know as the Analytics Development Group since its inception, ensuring new offering such as the Analytics Network, the Analytics Summit and the Journal of Business Analytics have become an established part of the Society’s work.

John’s financial acumen has also been key for the Society as its revenue has grown over the last decade, and he continues to share his expertise as a member of the Investment committee, helping to see the Society through some very turbulent times with the COVID pandemic, the Ukraine war and the subsequent cost-of-living crisis.

John continues to represent the Society through its membership of the Alliance for Data Science Professionals, making sure that the OR Society was at the very heart of an initiative key to this area.

John recently took on the role of secretary to HORAF, the Heads of Analytics Forum, a role in which he can continue to ensure that the Society and the wider OR community can develop and extend its influence in the wider analytical world.



John is an exceptional candidate to become a Companion of OR, rewarding his lasting work with the Society.

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## Citation for Companion of OR 2022

### **Dr Janet Williams (University College London)**

Janet Williams is nationally recognised for her sustained work and support in raising the profile, advancing the development and improving the learning and teaching of Operational Research (OR) across the UK.

Throughout her distinguished career spanning over 40 years, Janet has been instrumental in bridging the gap between academic theory and practice with an enthusiasm that can only be described as 'infectious'. After retiring from Cardiff School of Mathematics as a Senior Lecturer in 2013, Janet took on the more arduous role as Treasurer of the OR Society. She remains extremely dedicated to increasing the reach of the Society, inspiring the next generation to take forward its aims and impressively still keeps in touch with hundreds of students she has previously inspired over the many years to assume their own careers in OR.



Janet launched her career in OR in 1979, working as a Research Assistant at Cardiff University on a contract secured with the Department of Transport. The content of this work concerned the queueing of vehicles at flared road junctions. This later formed the basis of her PhD thesis, which she completed in 1983 under the supervision of Professor Jeff Griffiths at Cardiff University. Upon graduation, Janet moved on to work as a Teaching Assistant at the School of Mathematics, before progressing to become a Lecturer, and later Senior Lecturer in OR in 2001. With this position of added responsibility, she embarked on the challenge of organising and managing Professional Training placements for undergraduate mathematics students. She made huge efforts to promote this scheme and her enthusiasm and tireless efforts were rewarded by an increase in the take-up of the option - numbers of students opting to take the placement increased from about a dozen to over forty. As a consequence, employers throughout UK soon became aware that students could be supplied at undergraduate level (and also on graduation) who could make a significant impact in their organisation. In many cases, the firms had little previous exposure to OR but Janet's attention to a company's needs provided inroads which might otherwise have remained dormant.

Janet's enthusiasm for all aspects of OR has also showed itself in consultancy negotiations with a large number of organisations - again evidence of sustained encouragement for the development of OR. For example, the original contracts (circa 2000) Cardiff University secured with the University Hospital of Wales were the first applications of OR in that organisation. Janet's work with NHS Wales continued where she was instrumental in setting up the Modelling Unit within Aneurin Bevan University Health Board, the first of its kind, with

embedded Operational Researchers having a direct impact on patient care. Modelling in NHS Wales has since grown from strength to strength.

Janet has also been instrumental in sustaining the introduction of OR in many other organisations - Lloyd's Bank, EY, PA Consultants, NHS, GlaxoSmithKline, Pfizer, MoD, etc. to name just a few and she continues to nourish these relationships today.

Janet's biggest contribution to OR is however the enthusiasm she has passed on to thousands of students - many of which she still supports in their careers today, always being on hand for advice and support and always on the lookout for exciting opportunities and careers development that she can share. Despite her busy working schedule, she was well known as a reliable, constantly encouraging and trustworthy lecturer whose office door was always open to students who were welcomed in with a smile. She travelled alongside hundreds of students though their sometimes bumpy journeys through University and constantly encouraged them to reach their full potential with sound advice and a "can do" approach.

Janet's commitment to the OR Society is second to none. In addition to assuming several committee roles over the years, she notably organised the Society's Annual Conference in Edinburgh in 2001 and also was the Scheduler for the Chester Conference in 2005. Janet never stops thinking about what is possible for students and then wants to always go beyond.

Most recently, Janet took on the significant role of Treasurer of the OR Society for six years from 2016 to 2021, bringing herself rapidly up to speed with the heavy demands of the role. She chaired the Board's Finance and Investment sub-committees through a period of increasing turnover and, for the last two years, hugely increased uncertainty resulting from the COVID-19 pandemic, ensuring good governance, effective use of funds to meet the ORS's charitable and strategic objectives, and long-term financial sustainability. As an ORS Board member, she was the driving force behind the introduction of MSc scholarships, which have so far enabled around 10 students, who might otherwise have been unable to afford it, to undertake a Masters degree in OR or related subjects and work as future ambassadors for the Society.

In summary, Janet Williams has inspired, mentored and educated generations of successful OR academics and practitioners. The sustained support she offers to develop OR, the OR Society and the next generation of students is second to none. It is hard to imagine a more creditable candidate for Companionship of the OR Society.

## Citation for Companion of OR 2021

### **Professor Christina Pagel (University College London)**

Professor Christina Pagel, through her work during the Covid-19 pandemic, has achieved a public profile and influence that is quite remarkable. Her appearances on various news outlets (e.g., C4 News, Sky) have put the words 'operational research' before millions of pairs of eyes. More substantively, her membership of Independent SAGE is highly significant to public discourse, with her media contributions being in the best tradition of OR, based in evidence, clearly rationalised and plainly expressed, all in order to improve the quality of the public debate.



Christina Pagel's public profile is a reflection of her distinguished career in OR research in a healthcare setting. Her career had begun with a role as a physicist working in the USA, following completion of her PhD in space physics. But in 2005 Christina left physics to take up a position with the UCL Clinical Operational Research Unit applying mathematics to problems in health care.

In 2016 Christina Pagel was awarded a Harkness Fellowship in Health Care Policy and Practice by the Commonwealth Fund, through which she spent a year in the USA researching healthcare policy issues.

Christina Pagel's current research uses approaches from mathematical modelling, operational research and data sciences to help people within the health service make better decisions. She particularly focuses on mortality and morbidity outcomes following cardiac surgery in children and adults in the UK.

Christina Pagel was instrumental in developing a statistical model to take into account the complexity of individual children with congenital heart disease when considering a hospital's survival rate. This led to the Partial Risk Adjustment in Surgery (PRAiS) model, which has been used by the National Congenital Heart Disease Audit since 2013 to publish hospital survival rates. The associated software, developed by Christina Pagel, has been purchased by all UK hospitals performing children's heart surgery. She then led a multidisciplinary project, working with the Children's Heart Federation, to build a website on survival after children's heart surgery.

In 2019 Christina Pagel was awarded the Lyn Thomas Impact Medal from The Operational Research Society, along with her colleagues Sonya Crowe and Martin Utley. The award was made for their work related to congenital heart disease. It was shortly after this that she began her role in the public eye and with Independent Sage.

Professor Pagel has made it very clear that (whatever the reason she was appointed) she worked out rapidly, on joining, that there was no point in

Independent SAGE mimicking the epidemiological modelling; and that the gap in the scientific approach was in transparency, communication and OR modelling. She therefore took on the role of translating and communicating the research and modelling findings, using her OR experience. This involved recognising which were the weak points from SAGE, which were the systems of importance to which no visible attention is being paid, and where could she personally intervene given the levers at her disposal. The weak points that were identified included communication of the data and modelling, and being transparent about any other work that has been going on around the systems of importance. This approach exposed, in particular, social systems such as the way care homes are staffed and the support systems for low-paid workers as critical areas requiring further attention.

In conclusion, the impactful and high public profile that Christina Pagel has achieved at a time of crisis, both for herself and OR, make her an extremely worthy Companion of OR.

## Citation for Companion of OR 2020

### **Alec Waterhouse**

Alec Waterhouse is an experienced, well-respected, and long-standing member of the Government OR Service (GORS).

He is currently the Head of the Central Modelling Team in the Department for Business, Energy and Industrial Strategy (BEIS) and also leads the GORS Professional Development community as well as being part of its Strategy Board.



Alec's career includes influential work to provide evidence and advice to underpin Government policy and operational decisions, for example, related to energy policy, climate change, and tax.

Much of Alec's work – in person and via the teams he leads – uses modelling-based approaches, for example, over the last eight years by developing and using models that help to understand how the UK can meet its long term emissions targets and how government energy policies affect consumers. Alec is also heavily involved with the assurance of modelling across wider Government as well as within BEIS. Within BEIS – and, before that in the Department for Energy and Climate Change (DECC) - he established a Modelling Integrity Team to introduce and champion a structured approach to model quality assurance, centred on a quality assurance log to record model testing and a risk-based scoring method. His programme of modelling integrity work has been monitored using a departmental quality assurance score metric as a corporate level performance indicator.

More widely, Alec was a key leader and contributor of work to develop best practice and guidance for modelling that is instantiated in the cross-Government Aqua Book (Analysis Quality Assurance), which draws heavily on the experience developed in his own teams as well as approaches adopted elsewhere in Government. Alec frequently speaks on modelling and model assurance within Government and to national and international fora.

Alec's leadership of the GORS professional development community has provided structure and coherence to the significant GORS community, which currently numbers almost 1000 staff.

This has included work to align training schemes and opportunities, such as working with the ORS on the provision of relevant training courses and setting up a variety of cross-Government networks to share and develop practice. Alec also works closely with the wider Government analysis community – including economists, statisticians and social researchers as well as OR staff – often representing the OR voice in such cross-cutting debates.



Most recently, Alec chaired an apprenticeship trailblazer group, with wide-ranging membership across the OR practitioner community both within and beyond Government and with support from the ORS and academia. This group successfully developed a Level 7 (Masters-level) OR standard and gained approval for it through the Institute for Apprentices; and Alec, with support from ORS and the wider practitioner community, is now leading efforts to ensure that the standard is brought into routine use both for GORS and for the wider OR practitioner network.

Alec's lifetime contributions to OR make him a perfect candidate for the Companionship Award of the OR Society.

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## **Citation for Companion of OR 2019**

### **Richard Eglese**

Richard Eglese is Professor Emeritus of Management Science at the University of Lancaster, Chair of the OR Society's Publications Committee, and Immediate Past President of EURO.

It is unusual to present a Companionship award to a serving Board member. However, in Richard's case, we asked for an exception to be made. This is because there has been barely a break in his record of service to the Society over more than 30 years, and if we wait for his service to end we will be waiting a long time.

Richard has contributed immensely to the development of OR nationally and internationally through his excellent research, mentorship and development of early career researchers, academic leadership, and distinguished, sustainable service to the OR profession.

Richard is a Lancaster alumnus, having obtained his M.A. in Operational Research (awarded with distinction) in 1973. After some years as an OR analyst at British Rail and a maths teacher, he returned to Lancaster as a lecturer, and has been there ever since.

During his outstanding academic career Richard became known internationally for his work on simulated annealing and the development of exact and heuristic algorithms for solving large scale network optimization problems. In 2017, his paper "Simulated annealing: a tool for operational research" was listed in the 50 most cited papers in the European Journal of Operational Research. He has published widely in the area of vehicle routing and scheduling and his most recent work has been focussed on modelling and solving Green Vehicle Routing Problems (VRPs). Richard's work on the VRP has been cited extensively worldwide.

This eminent academic record has led to (at time of writing) three visiting lectureships around the world, 8 external examiner appointments, and 11 plenary speaker invitations at international conferences. He has been a member of the EPSRC Mathematics Panel for 3 separate terms.

Throughout his 45-year career Richard mentored and supervised 17 OR Doctoral Students and some of his students have received significant awards and have been recognized internationally for their academic contributions.

Richard's academic leadership is also noteworthy. He served as Head of the Department of Management Science in 2000-03 and also in 2012-14; and as a member of 7 different university committees. He was Director of Studies for the highly-regarded BSc in Management Sciences and Chair of the Steering Committee for the BBA in Management.

Richard's service to the academic and professional OR community in UK and internationally has been exceptional.

In the UK, he served on the OR Society Board for an exceptionally long time, from 1986 to 2012, including a period as Chair of the Publicity, Membership and Website Committee and two years as President of the OR Society. After the constitutionally-required period of stepping down from the Board, he was re-elected. He has been serving as Chair of the Publications Committee since 2015. In that role he was instrumental in ensuring the successful (beyond expectation) re-tendering of the all-important publications contract.

During the two years 2017-18 he was President of EURO, the Federation of European OR Societies, a great honour and responsibility. He has also been, for many years, an active participant of the Working Group on Vehicle Routing and Logistics Optimization within EURO

He has been active in the organization of OR conferences both in UK and internationally: he chaired the OR Society annual conference in 1990, the CO1994, and has been a member of the Programme Committee of 11 international conferences.

He has been a member of the editorial board of Computers and Operations Research since 2002 and International Transactions in Operational Research since 1993.

Richard's lifetime contributions to OR make him a perfect candidate for the Companionship Award of the OR Society.

## Citation for Companion of OR 2018

### Paul Harper

Paul Harper is Professor of Operational Research at Cardiff University and Deputy Head of its School of Mathematics. He has a wide range of research interests from data mining to stochastic OR and simulation modelling, very often with applications to healthcare.

He started his academic career as lecturer at the University of Southampton in 2001 after obtaining his MSc and PhD there. While at the University of Southampton he received the OR Society Goodeve medal for the paper "Improving the cost-effectiveness of chlamydia screening with targeted screening strategies" (with co-authors S.C. Brailsford, D. Evenden, and V. Harindra).

In 2007 Paul took a research chair position in Operational Research at Cardiff University and he took over the role of head of the OR group in 2009. Cardiff University had then a very large mathematics undergraduate student cohort but no postgraduate courses. Paul developed two new postgraduate OR courses with strong industry links specifically, which were launched in 2010 and have been popular ever since.

His research achievements are equally impressive as evidenced by the grants he has won including from EPSRC and NIHR, his 80+ publications, and his PhD students (20 completed and current). But this is not just research that remains in papers; it is research with real impact. He has twice won the Cardiff University Innovation and Impact award (2011, 2015), and its award for Innovation and Enterprise in 2017; and in 2015 the team that he led alongside Jeff Griffiths won the prestigious Times Higher Education award for 'Outstanding Contribution to Innovation and Technology' for their work that led to a reduction in stroke mortality of 60% in Cardiff hospitals. With a vision for sustained impact, he gained funding from the Aneurin Bevan Health Board to establish a Mathematical Modelling Unit (researchers-in-residence) within the Health Board, which is praised and aspired to by the health OR community; and he is the founding Director of the Centre.

His research influence has been recognised in his selection to be a REF2021 sub-panel member (assessment phase) for Mathematical Sciences, representing OR; his membership of the Review Committee of the Bond Review of Knowledge Exchange in the Mathematical Sciences; his chairing of the WIMCS OR and Statistics Cluster; and his elections as a Fellow of the Learned Society of Wales.

He has also contributed extensively to the OR community. From 2005-2011 he chaired the OR Society "OR in Schools Taskforce" which produced various influential teaching resources for Decision Maths and OR. He chaired the Society's Young OR conference in 2003, and its Annual Conference in 2008. He



*Paul Harper (right) with OR Society President John Hopes*



was a co-founder of MASHnet and the Cumberland Initiative, two important initiatives for promoting the use of modelling and OR in healthcare. He is founding Editor-in-Chief of the OR Society journal Health Systems; and he is a member of the Society's Research Panel.

For the significance and impact of his research, his contributions to the visibility and influence of OR, and his support to the wider OR community, Paul is a worthy recipient of the Society's Companion of OR award.

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## Citation for Companion of OR 2017

### Edmund Burke

Edmund Burke Professor Edmund Burke is a distinguished scientist with multidisciplinary research interests which lie at the interface of operational research and computer science. In particular, his main research is focused on the exploration of search methodologies and the role that they play in underpinning intelligent decision support systems across a wide variety of applications. Edmund obtained his PhD in Computer Science and Mathematics from the University of Leeds before joining the University of Nottingham. He held several academic positions at Nottingham, where he served ultimately as Dean of the Faculty of Science. While at Nottingham, he founded the Automated Scheduling, Optimisation and Planning (ASAP) Research Group. Within a less than a decade, the group became one of the largest OR groups in the UK with over 40 members, including academics, post-doctoral research students, PhD students and admin support. The group led by Edmund was one of the leading research groups in the world to set an international research agenda for computational research methodologies. Edmund then moved to Stirling to take the position of Senior Deputy Principal and Deputy Vice-Chancellor and after that joined the Queen Mary's University of London as Vice Principal.



*Edmund Burke with Ruth Kaufman (President of The OR Society)*

In addition to successfully carrying out leading managerial roles at the universities mentioned above, Edmund's research funding portfolio has been continuously growing. He has been awarded 57 externally funded grants worth over £17m. A major part of his funding comes from the UK research councils but he also has a considerable research income from other funding sources in the UK and EU. Edmund has considerably contributed to increasing the visibility of operational research as a discipline in the Engineering and Physical Sciences Research Councils (EPSRC) research agenda. Edmund was one of the key instrumentals in obtaining the largest EPSRC funded grant in OR in the UK, namely the Science and Innovation grant entitled the LANCS Initiative, which enabled collaboration between leading OR groups in the UK. Edmund has edited/authored 14 books and has published over 250 refereed papers.

## Citations for Companion of OR 2016

### **Sally Brailsford**

Sally Brailsford is Professor of Management Science at the University of Southampton and is currently Head of the Department of Decision Analytics and Risk at the Southampton Business School. She is well known, both in the UK and worldwide, for the influential research on healthcare modelling that she has undertaken over the past 25 years.

Sally's research in healthcare has used simulation modelling to evaluate treatments and screening programmes, or to redesign and improve service delivery. This has included work in many different disease fields including diabetes, cancer, mental health and HIV/AIDS, in addition to emergency care and end-of-life care. Her more recent interests are in incorporating behavioural factors into simulation models, in combining simulation methodologies, and in combining simulation with other approaches such as optimisation. She has twice won The OR Society's Goodeve Medal, in 2004 for modelling emergency healthcare services in Nottingham, and in 2006 for modelling chlamydia infection.

Sally has provided outstanding service to the academic community in many ways. She is the current Chair of COPIOR, the Committee of Professors in OR. Also, she was Vice-President of The OR Society during the period 2006-08, and a Vice-President of EURO from 2012-15. She has actively participated in the activities of the EURO Working Group on OR Applied to Health Services (ORAHS) for many years. Highlights of her contributions to ORAHS have been organising the Group's annual conference at Southampton in 2005, and currently serving as the Group's Coordinator.

She is an editor of the book *Discrete-Event Simulation and System Dynamics for Management Decision Making*. Also, she is an Editor-in-Chief of The OR Society's journal *Health Systems*, and is on the editorial boards of *Health Care Management Science*, the *Journal of Simulation*, and *Operations Research for Health Care*.

Sally's contribution to university life cannot be under-estimated. She has always been instrumental in helping to develop the careers of many work colleagues, and in inspiring and educating the next generation of OR researchers and practitioners.

In summary, Sally's wide-ranging contributions to, and achievements in, OR make her an extremely worthy recipient of the Companionship of The OR Society.



*Sally Brailsford with Ruth Kaufman  
(President of The OR Society)*

### **Jeff Griffiths**

Jeff Griffiths is an outstanding academic who has pioneered the development and practical application of operational research for over 55 years, to become a world authority in queuing applications. A member of academic staff at Cardiff University since 1964, Jeff was Head of the School of Mathematics for most of the period from 1983 to 2006. With a Ph.D. in Stochastic Processes, he first became interested in Epidemiology and Healthcare when investigating the world-wide eradication of small pox in the late 1960's and early 1970's. Since that time he has undertaken a large number of consultancies and contracts with government establishments and with a variety of public and private companies. He has also worked extensively in the field of transport, with particular reference to congestion problems. His extensive international work has taken him all over the world. Jeff has received grants and awards totalling over £4.5m. He has been an invited speaker at a large number of conferences in the UK and overseas, and has held key organisational responsibilities in several OR international conferences, e.g. EURO 2000. With authorship of over 140 publications and reports, he has appeared in expert capacity in several television and radio programmes, and as an expert witness in High Court actions.



*Jeff Griffiths with Ruth Kaufman  
(President of The OR Society)*

Reflecting his significant achievements in successfully applying OR to healthcare systems in the UK, Jeff was awarded the unprecedented status of the Fellowship of the Royal Society of Medicine in 2006 – the only non-medical practitioner to be recognized in this way to date. From 2008-2012, Jeff was the Cardiff University representative in the LANCS initiative (with the Universities of Lancaster, Nottingham and Southampton) which was awarded an EPSRC Science and Innovation Grant. He played key influential and persuasive roles in national OR funded initiatives, e.g. LANCS, NATCOR.

During his academic career, Jeff successfully supervised 48 Ph.D. students in OR focused theses. One of his Ph.D. graduands gained The OR Society's Ph.D. prize in 2012. Others hold membership and key responsibilities within The OR Society.

Recognising his considerable OR achievements in over 50 years of service, Cardiff University awarded him the prestigious title of Distinguished Research Professor when he took partial retirement in 2014. This has enabled him to continue his leading role in promoting and organising events with the South Wales OR Discussion Society (SWORDS). In November 2015, the University presented Jeff with its most prestigious award "The Lifetime Achievement Award", with particular reference to his achievements in raising the profile of OR at the University through excellent teaching. The research group he formed and led at Cardiff for many years is now recognised as one of the major OR centres in the UK. In November 2015, it won the prestigious Times Higher "Outstanding Contribution to Innovation and Technology" reflecting the significant impact made by the group in embedding OR methodology in the NHS systems and practices.

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Providing an important contribution to his OR achievements, Jeff is one of the longest serving The OR Society members with his membership dating back to 1961 – something of which he is very proud. He was Vice President of the society from 1997-1999, and was President in 2006-2007. During his Presidency, such was his interest in stimulating The OR Society at local levels, Jeff provided a Presidential seminar at every live ORS Regional Society in the UK. He was The OR Society's representative at the International Federation of The OR Society Conference (IFORS) from 2000 and has attended the majority of IFORS conferences since 1961.

Demonstrating his significant communication skills, Jeff has used several different media channels to promote OR and The OR Society. For example, in February 2015, he appeared in a Radio 4 programme "The Bottom Line" devoted entirely to the impact which queueing theory has on everyday lives. Reflecting his unique status within OR, he was introduced as "one of the leading exponents of queueing theory in the UK". He continues to act as a consultant to the consumer magazine Which? on various OR orientated projects. Jeff is a long standing member of the ORS Investment Committee and was The OR Society representative on the Council for Mathematics Sciences and the Heads of Departments of Mathematical Sciences for many years. In particular, through his unique contribution as Chair of and involvement with the ORS Publications Committee until December 2015, he established a firm foundation for the business strategy, operations and income from the society's journals which continues to substantially benefit The OR Society today.

Jeff was awarded the Beale Medal by The OR Society in 2010 reflecting his sustained and significant contribution to the theory and practice of OR in the UK and internationally. Although those who hold this award are not normally considered for Companionship status, Jeff's outstanding, unprecedented and unrivalled commitment and support to OR and The OR Society at local, regional, national and international levels over the last 55 years makes him an exceptional candidate for the award of Companion of OR.

## Citation for Companion of OR 2015

### **Sue Merchant**

Sue Merchant has had an illustrious career as an analyst, a manager of analysts and as a champion for OR both within the UK and internationally.

After an early career as an OR analyst at the Ministry of Defence where she carried out simulation and statistical modelling, Sue moved to the Metropolitan Police in 1975 where she worked as an internal consultant, project manager and senior manager. From 1990-2000 she was the Met's Director of Consultancy and Information Services. Since then she has worked as an independent OR consultant specialising in planning and running problem structuring and information gathering workshops. Several of her projects have been for third sector organisations.



*Sue Merchant with Stewart Robinson  
(President of The OR Society)*

She also supervises MSc OR students in their summer projects at LSE and was a trustee of the Tavistock Institute for several years.

She is a long standing active member of The UK OR Society, chaired its Heads of OR Committee for some years, and was its President in 2008-2009 when she developed the ORS strategic plan. She has been a regular attendee and speaker at UK and international OR Conferences. She was involved in setting up, and chaired, the original OR in the Third Sector group and actively contributes to the ORS Criminal Justice special interest group. She regularly undertakes OR projects for charities under the ORS pro bono scheme.

The Chair of the CJORSIG, Dr I.M. Newsome, says:

"Sue has been a key member of the CJORSIG steering committee since its establishment some 10 years ago. Over this time she has organised and administered events; obtained key contributions from different sectors of relevance to the CJ community; made presentations herself; and been central to the direction and development of the special interest group and its links into the ORS, such as through the Heads of OR Forum. Her constant focus upon the interests of the CJ community throughout her extensive networking with OR practitioners from all sectors has led to the proactive identification of contributions and the creation of links both within and between communities. Of particular note are Sue's significant organisational and interpersonal capabilities, her energy and personal commitment in keeping the SIG extremely active throughout its lifetime. Sue commits a significant amount of her own time and resource to sustain the CJORSIG and its links to OR more widely. She does this enthusiastically and willingly without any thought of self-gain and although a

small number of us see and appreciate this, her contribution to the OR community is significant and this warrants a more formal acknowledgement.”

Sue is currently Vice President of the International Federation of OR societies and is chair of its Developing Countries committee. She has worked hard for the developing countries, having developed online resources for them, she worked on and took part in the judging of a prize for OR in Development, helped to establish a Nigerian OR Society, and obtained funding for some Nigerian delegates to attend the 2014 IFORS conference. She contributed to the success of the conference where she carried out many admin duties, was joint organiser of the Consultancy stream, and gave a talk to the Board of Representatives.

The President of IFORS, Nelson Maculan, says

“I’m sure that Sue Merchant has all condition for the award of Companion of OR. As IFORS Vice-President, she is working very hard and developing new OR co-operations associated with different countries in AFRICA and ASIA. I need her support every day. She has given an outstanding service for IFORS.”

## Citations for Companion of OR 2014

### **Clive Humby**

Clive Humby has over 25 years' experience in applying mathematical and statistical modelling methods to business, marketing and retail location) and a persuasive advocate of the power of data.

He began his career as a programmer in Bermuda for the geo-demographics firm CACI, innovating in what has become the site location industry. Quickly rising to be CEO of CACI's UK business, Clive soon saw the value of using data to inform relevance and personalisation for customer.



*Clive Humby with Stewart Robinson (President of The OR Society)*

After co-founding DunnHumby in 1989, Clive was responsible for customer strategy, from analysis through to the implementation of client merchandising, store operation, marketing and communication strategies. DunnHumby was the marketing firm which created the Tesco Clubcard and developed it from a basic loyalty scheme into a sophisticated tool for analysing shoppers' habits and fine-tuning promotional offers.

They sold the company to Tesco in early 2011 (for a reported £93m), remaining on the board as Non-executive Directors. More recently they are Directors of Starcount, a new social media platform, and Purple Seven, an arts sector data analytics company that helps venues, production companies and audience development bodies maximise the potential of ticketing and customer data.

Clive is engaged with education, for example as Visiting Professor at Cranfield, and a member of The Operational Research Society.

Clive Humby is an early pioneer in areas of data analytics that are transforming our lives. He has advanced significantly the practice of the subject.

### **Ruth Davies**

Ruth Davies has been one of the “big names” in simulation modelling since the 1980’s. Her PhD work at the University of Southampton with Keith Tocher resulted in a textbook co-authored with Bob O’Keefe entitled “Simulation Modelling with Pascal” which later led to her Patient Oriented Simulation Technique (POST) software. This approach uniquely enabled simulation objects to be in several queues or activities at the same time, something that at that time was not handled easily by commercial off-the-shelf packages, and thus allowed the user to develop realistic clinical models which also captured resource use and waiting times.



*Ruth Davies with Stewart Robinson (President of The OR Society) and Gavin Blackett (Executive Director of The OR Society)*

Ruth applied the POST approach to numerous disease areas such as end-stage renal failure, diabetic retinopathy screening and coronary heart disease, and successfully obtained grant funding from various NHS organizations and Research Councils.

Ruth was well known internationally and was a regular attender at simulation conferences. She worked at Southampton until 2003 and had been Professor of Operational Research at Warwick for six years when she had to take early retirement on health grounds following a major stroke in 2009.

Ruth Davies being awarded Companion of OR 2014 with Stewart Robinson and Gavin Blackett

Ruth Davies with Stewart Robinson (President of The OR Society) and Gavin Blackett (Executive Director of The OR Society)

Ruth was well known internationally and was a regular attender at simulation conferences. She worked at Southampton until 2003 and had been Professor of Operational Research at Warwick for six years when she had to take early retirement on health grounds following a major stroke in 2009.

Ruth has served The OR Society in various ways - for several years as chair of the Publicity and Membership Committee and as co-chair of the 2009 Annual Conference OR51.

Ruth, with her sharp academic mind, keen sense of fairness and justice and wicked sense of humour, has been profoundly influential in the careers of many students, academics and practitioners. She still enjoys life to the full and retains her strong belief that OR is about making practical improvements in the real world.

## Citation for Companion of OR 2013

### Professor David Ryan

David Ryan is New Zealand's leading authority on operational research and is that country's most influential contributor to the field. Until recently he was Professor of Operations Research at Auckland with research interests that include; mathematical programming and optimization theory; optimization techniques of operational research; scheduling, timetabling and combinatorial optimization problems; and curve fitting and solution of under-determined linear systems. David had a health scare back in February which resulted in him spending a considerable period of time in hospital. Due to his illness, David has decided to officially retire from his position with the University, and has been granted the title of Emeritus Professor.

David joined the Faculty of Engineering at the University of Auckland in 1975, after gaining an MSc in Mathematics from the University of Otago and a PhD in Numerical Analysis from the Australian National University. David was Deputy Dean in Engineering at Auckland from 2004 to 2011, and was elected a Fellow of the Royal Society of New Zealand (RSNZ) in 2003; he was elected a Fellow of the Institute of Professional Engineers New Zealand (IPENZ), and an INFORMS Fellow in 2005; he was the IFORS Distinguished Lecturer at the 2002 INFORMS meeting in San Jose. At that meeting he was also awarded the INFORMS Prize for the Teaching of OR/MS Practice. David was awarded the Hans Dallenbach Prize of the Operations Research Society of New Zealand in 2001, and was selected as a finalist in the 2000 Edelman competition. In November 2011, David was awarded the Royal Society of New Zealand's Pickering Medal that recognises excellence and innovation in the practical application of methodology.

In 2004 David served as a member of the International Panel for the EPSRC-sponsored Review of Research in OR in UK universities, and in 2010 he was a member of the International Panel for the EPSRC Review of Mathematical Sciences in the UK. Members of the UK OR community are indebted to David for his strong support in these two reviews – his efforts were instrumental in the establishment of the NATCOR and the LANCS initiatives.

David is probably best known for developing the innovative 'Ryan-Foster constraint branching' methodology which is now a fundamental component of optimisation software used worldwide for solving complex logistics problems. This methodology revolutionised the optimisation landscape by dramatically increasing the range and size of problems to which optimisation could be applied.

David is a strong advocate for the use of mathematical optimisation techniques to solve problems of significant industrial importance. In New Zealand his methods have allowed a new range of practical real-world problems to be solved. As an example, David has collaborated with Air New Zealand for more than 20 years to commercially exploit his methodology. He developed pioneering optimisation software that is now used by the airline to optimally schedule flight crews. The savings from these optimisers were estimated in 2000 as being more



than NZ\$15 million per year. He has recently worked with Air New Zealand to develop robust solutions that can reduce the impact of disruptions, work which is regarded as ground-breaking and is possibly the first airline implementation of this new methodology. In 2000 his original 1992 publication on airline crew rostering was selected as one of five Milestone Papers to mark the 50th year of publication of JORS.

David Ryan has inspired and educated a generation of successful OR/MS practitioners in New Zealand and indeed throughout the world, including many in UK. It is difficult to imagine a more worthy candidate for Companionship of The OR Society.

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## Citation for Companion of OR 2012

### **Professor Peter Millard**

Peter Millard FRCP is Emeritus Professor of Geriatrics, St George's, University of London and President of the UK Nosokinetics Group. He coined the word Nosokinetics in his 1992 PhD thesis: Flow rate modelling: a method of comparing performance in departments of geriatric medicine. Peter is in active retirement a Health Advisor to the National Pensioners Convention and has been co-supervisor of doctoral students modelling health care systems at the Universities of Ulster, Westminster and Adelaide. He has over 120 publications on different aspects of modelling health and social care systems, in addition to numerous publications in the medical literature.

Peter qualified in Medicine in 1960. In 1968 he was the first consultant in geriatric medicine appointed to St. George's Hospital (London). From 1968-1984 he collected a unique longitudinal data set, including data on all geriatric patients in the hospital during the period; this data set has proved an invaluable resource and has formed the basis of much of the work in the following decades. Between 1993 and 1999 he was the Eleanor Peel Professor of Geriatric Medicine at St. George's Hospital Medical School (London), where his research interest in modelling and new methods of measuring activity in hospitals began. With no background in Mathematics or Operational Research, Peter intuitively realised the need to analyse his data to understand the processes at work and provide modelling and planning tools to provide better services for the elderly. As such, Peter extensively analysed his data set and in particular realised that heterogeneity of length of stay of patients in hospital can be described by a two (or more) term mixed exponential distribution, thus characterising short-term (acute) and long-term patients. Thus began a long collaboration between Peter and a series of OR professionals.

In 1989, Peter visited the College of Charleston, USA and together with Gary Harrison (an applied mathematician) developed and published "Balancing acute and long-term care: the mathematics of throughput in departments of geriatric medicine" in *Methods of Information in Medicine*. The next year he met Professor Sally McClean, an operational researcher working in the University of Ulster, with whom he published widely, extending the model to stochastic as well as deterministic representations of patient flow. Between 1993 and 2002, he was a visiting professor to the Department of Mathematics at the University of Ulster where he co-supervised several successful PhD's (Gordon Taylor, Adele Marshall, Lalit Garg and Jennifer Gillespie, to date). Peter has also been a visiting professor to the University of Westminster for many years, where he collaborated extensively with Professor Thierry Chausalet and Dr Elia ElDarzi, contributing extensively to a large number of MSc projects and co-supervising various successful PhDs (Christos Vasilakis, Revlin Abbi) in the area of Healthcare Operational Research. Other significant collaborators have been Dr Mark McKay and Professor Malcolm Faddy in Australia, Dr Brendan Rae in New Zealand, Professor Florin Gorunescu in Romania, not to mention various collaborations with OR and medical researchers in Europe, particularly Spain and France, where he has spent a sabbatical leave with Professor Alain Franco in

Grenoble. Peter has also co-organised a large number of conferences, workshops and conferences to promote his work, principally the Health and Social Care Modelling conferences (Adelaide, 2006 and Portrush, 2008) and the recent workshop on "Maths and Medicine: Measuring and Modelling Patient Flow in Healthcare" held in St. George's, April 2012.

Nosokinetics is the science/subject of measuring and modelling the process of care in health and social care systems. Nosokinetics brings together the Greek words for noso: disease and kinetics: movement and Nosokinetics, (analogous to Pharmacokinetics), and seeks to develop dynamic methods which measure and model the process of inpatient care. The aim is to develop a science base to underpin the planning of sustainable health and social care systems. In 2004 the Nosokinetics group newsletter was established, with Peter as Editor and an extensive circulation to both the OR and the Medical communities. Peter writes about Nosokinetics : "If the random forces of wind and tide can make such a beautiful statue (referring to an iceberg), how much better could mankind do if a new science was developed which explains the complex processes of health and social care. Until new methods of planning health and social care services to meet the needs of an ageing population are introduced, service delivery will stumble on from crisis to crisis. The world population is ageing and sustainable systems of health care need to be developed." This has led to the establishment of the Nosokinetics group of interested researchers. The group collaborates to organize conferences and disseminates news of Nosokinetics and related research and practical use of modelling to enhance decision making in health and social care systems. The Nosokinetics group comprises interested people in many countries including Australia, UK & Egypt, from different disciplines ranging from health care providers to management scientists.

Peter has previously been recognised by the Medical community. For example, in 1999, he became an expert advisor to the Council of Europe. Honours include President of the British Geriatrics Society, and President of the Geriatrics and Gerontology section of the Royal Society of Medicine. It is timely that he should also be recognised by the operational research community, which as a member of The OR Society and the Blakett Club, he would really appreciate. The importance of OR Healthcare is becoming increasingly recognised with the setting up and funding of numerous initiatives such as MASHNET, RIGHT, MATCH, HaCIRIC, and the Cumberland Initiative. Health Services are in crisis and the need to optimise and economise is imperative. However most of the efforts to introduce OR methods to healthcare have come from the OR side with poor understanding and buy-in from the NHS and other healthcare systems. In the midst of this environment Peter has been an outstanding champion for the cause of operational research in Healthcare for many decades. As such he is a very worthy candidate for the award of the Companionship of Operational Research.

## Citations for Companion of OR 2011

### **Professor Val Belton**

Val Belton is an outstanding academic who has contributed for over 25 years to work on the development and practical application of Multi-Criteria Decision Making (MCDM) methodologies. She was the joint author of a book on this subject "Multicriteria Decision Analysis: an integrated approach" published in 2002. She has worked to integrate problem structuring methods, system dynamics and other analytical approaches with multicriteria decision analysis. She has numerous associated academic publications and was editor of the journal of Multi-Criteria Decision Analysis.



In 1994 she was awarded the MCDM Presidential Service Award and, in 2008, the Georg Cantor Lifetime Achievement Award. She was President of the International Society for MCDM from 2000 to 2004.

Val Belton has also worked on performance measurement in the public sector, on how decision makers learn from modelling, and the development of reflective OR practitioners through student-centred teaching and learning.

She is a long standing member of The OR Society. She has been a regular attendee and stream organiser at UK and international OR Conferences. In 1980 she was the first woman to be elected to the Council of The OR Society and was President of The UK OR Society from 2004 to 2006. As President she played a lead role in the high profile International Review of Research in Operational Research in the UK by the Research Councils ESRC and EPSRC, which resulted in more funding for the academic members.

She chaired the organising committee for EURO XIII/OR 36 in Glasgow in 1994. She was Vice- President of EURO from 1996 to 2000 and its President from 2009 to 2010.

## **Ruth Kaufman**

Ruth Kaufman has had an illustrious career as an analyst, a manager of analysts and as a champion for OR both within Government and more widely.

After an early career in analysis, consultancy and management in the transport and energy industries, Ruth moved into Government OR in 1991. She spent five years in a project leadership role in the Department of Health, and then transferred to the Export Credits Guarantee Department as head of its OR group. An extremely effective advocate for OR, she was able to integrate the discipline into both the day-to-day business and the broader strategic planning of the Department. This was recognised by her appointment to the ECGD Executive Board as Head of Strategy, Change and OR.



*Ruth Kaufman with Richard Eglese (President of The OR Society)*

During her 12 years at ECGD, Ruth also made an outstanding contribution to the governance and development of OR within the Civil Service generally. She served two terms as Chair of the Government OR Service Main Committee and hence as de facto Head of OR in Government. Particularly concerned to ensure mechanisms were in place to promote the effective career development of young analysts, she was undoubtedly a key player in facilitating the success and expansion of GORS over the last decade.

Ruth is now an independent consultant and a visiting senior fellow at the LSE Department of Management, and more active than ever in the wider OR community. She is chair of society's Publicity, Membership and Website Committee, she is part of a small team organising and leading practitioner-oriented events at the annual society conference; and she is playing a key role in developing the society's Third Sector OR initiative, having recently been elected to chair the associated Special Interest Group.

**Professor Mike Pidd**

Mike Pidd is currently Head of the Department of Management Science at Lancaster University, which contains one of the largest groups of OR academics in the UK. He is an outstanding academic who is well known for his books "Tools for Thinking: modelling in management science" (now in its 3rd edition) and "Computer Simulation in Management Science" (now in its 5th edition).

He is an active researcher in OR, particularly in the fields of performance measurement and simulation. In 2003 to 2005 he was an ESRC Research Fellow funded under the Advanced Institute of Management Research, investigating ways to improve performance measurement in the provision of public services. Recent work in simulation funded by the Engineering and Physical Sciences Research Council (EPSRC) has included work on performance measurement and improvement for hospitals in the National Health Service.

He is a long standing member of The UK OR Society and was its President in 2000-2001. Since then, he has served the OR community by being Chair of the Committee of Professors of OR (COPIOR) from 2005 to 2009.

Mike Pidd has also served the wider academic community by being chair of the Business & Management panel (I36) for the Research Assessment Exercise (RAE) 2005 to 2008. He is currently chair of the Business & Management subpanel for the Research Excellence Framework (REF). These research assessments are extremely important and influential for UK academic departments. In 2009, he was made a Fellow of the British Academy of Management.

## Citations for Companion of OR 2010

### **Professor Alan Mercer**

Alan Mercer began his career in 1954 and, like many of the UK's pioneers of peace-time OR he started in the National Coal Board, before moving on after two years to the Atomic Weapons Research Establishment at Aldermaston, where he did early research on the generation of pseudo-random numbers for high-speed computers and on stochastic process approximations to nuclear reactions, leading to the probability distribution of the size of an accidental explosion. During his Aldermaston period, he wrote his Ph.D. thesis 'Some Stochastic Processes Analysed by the Method of Supplementary Variable' during his own time over a three year period; his supervisor was D.R. Cox, then at Birkbeck College, University of London. During this period Alan also published papers on queues and renewals in the Journal of the Royal Statistical Society.

In 1962 he left to join the infant IT function at Armour & Co. Ltd. as the senior manager responsible for operational research, statistics and data processing. A couple of years later, Alan became a founder member of the Department of Operational Research and of the University of Lancaster, lured with others to the north by Pat Rivett. The Lancaster Department, headed by Pat, was the first of its type in the UK and its work continues today, though under the name Management Science. Alan soon became a professor and later led the department for many years, encouraging its staff to view OR as a practical discipline based on intellectual rigour and honesty.

During his career he made many contributions to OR in the UK and Europe. He joined the ORS in 1954, and became a Council Member in 1969. Whilst on the Council, and as Chairman of the Education and Research Committee, he was closely involved in the debates concerning Stafford Beer's attempt to create a professionally qualified society. Most importantly, he was a founding editor of EJOR and held that position for 20 years, insisting on the high standards that have led to EJOR's excellent reputation around the world, regarded by many as the best OR journal from outside the INFORMS stable and a worthy competitor for JORS. Alan later ensured that EJOR became a major part of EURO's activities. He was also a regular contributor to JORS. On taking up the founding editorship of EJOR he subsequently found little time for ORS activities, though his swan song was to organise a very successful ORS conference in Lancaster in 1998.

Alan was a distinguished researcher in his own right and, until recently, was one of a very few UK researchers in quantitative marketing, writing the first book on OR in marketing and contributing to another on OR in physical distribution. He has supervised numerous PhDs, many of whom have gone on to successful careers in OR in the UK and around the world.

In addition he has had an extensive public career which brought OR to the attention of policy makers. Included in such activities were his chairmanship of the then SSRC's (now ESRC) Management and Industrial Relations Committee, his membership of the North-West Economic Planning Council and his



chairmanship of the Warrington and Runcorn New Town Development Corporation.

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### **Tony O'Connor**

Tony has served as the chair of the main committee of the Government OR Service (GORS) since 2004. At that time, he was working as Chief Operational Research Analyst in the Prime Minister's Delivery Unit (PMDU), and this experience of seeing how analysis should and could be applied at the very highest levels in Government gave him what is probably a unique perspective amongst current OR practitioners. His insight into the types of communication needed to influence high level decision making in

government is second to none and will no doubt be invaluable to him in his new senior post in the Department of Health. As chair of GORS(M), Tony has brought structure and discipline to an organisation highly reliant on volunteers with other "day jobs", and his leadership has encompassed the profession's central management, continual development of professional capacity (both individually and as a whole), professional standards and links with the world beyond. GORS has flourished during his tenure and membership has expanded substantially to over 400 analysts across over 20 Government departments and agencies. GORS now carries out all the recruitment of OR analysts in the departments covered by GORS to ensure that high standards are maintained. Tony has worked tirelessly to raise the profile and visibility of OR, and to ensure that we retain a seat at the "top table" of analytical professions. He has been an exceptionally effective ambassador for the profession, grasping every opportunity with both hands and has recently taken the initiative to spread the good news about OR to the Scottish and Welsh governments. His enthusiasm for OR contributes greatly to the health of the profession in general, especially in encouraging young OR analysts.

Tony's efforts for the government have clearly been greatly appreciated as he was rewarded with the CBE in 2007.

Tony has also supported and continues to support The OR Society in many ways such as membership of the Heads of OR forum, speaking at conferences and hosting events – a recent example was when the President of EURO wished to arrange a meeting of European OR Society presidents in London. In typical charismatic style Tony took the participants on a grand tour of the Treasury building in Whitehall and gave a fascinating presentation to them on OR in government.



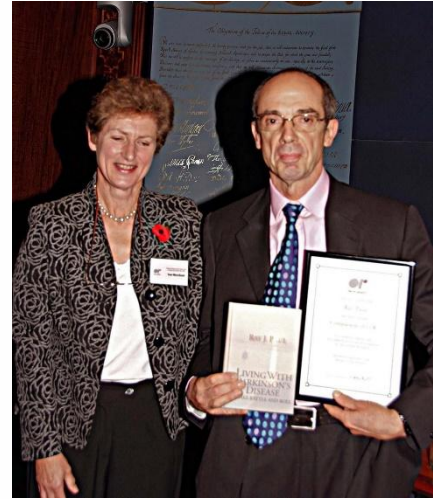
*Tony O'Connor with Richard Eglese  
(President of The OR Society)*

## Citation for Companion of OR 2009

### Ray Paul

Ray Paul, who retired from Brunel University, UK, in 2003 due to ill health has spent 37 years in academic life. His activities included: teaching simulation modeling, creating a research culture among his colleagues, generously investing his energy, creativity, and intellect into developing young researchers, creating simulation software, researching simulation environments and challenging conventional views and approaches.

Ray has served on the editorial boards of a number of journals, including the Journal of Simulation Systems Science and Technology. He founded the European Journal of Information Systems in 1991 and is a Guiding Editor for the Journal of Simulation, launched in 2006. He has been on the editorial board for the British Computer Society Practitioner Series for a number of years and from 2000 has been the series editor. He has made a considerable contribution to the academic community, has been an author of over 100 refereed papers published in academic journals and has been involved in the supervision of 55 PhD students.



*Ray Paul with Sue Merchant (President of The OR Society)*

## Citations for Companion of OR 2008

### **Geoff Royston**

Dr Geoff Royston has worked in OR in Government for over 30 years, holding a Senior Civil Service post since 1990, and from 2003 as Head of Profession for OR. The majority of that time has been in the Department of Health during which OR has grown strongly. 1

Throughout this time he has been an exceptionally strong positive influence on the use of OR both through identifying innovative new Priority Business work areas, amongst them, and of exceptional mention, NHS Direct 2 the 24 hour help-line service, and championing, along with more traditional OR techniques, non mathematical approaches such as System Thinking and Horizon Scanning.

In addition to successfully promoting OR within Government he has done much to ensure that OR is a good career route for entrants into the field. He has actively encouraged OR staff to make public their work through presentations at OR conferences, to edit Special Issues and publish in JORS and elsewhere, and to organise, and participate in, The OR Society events. He has also pump-primed the establishment of part-time distance learning MSc courses in Health OR for Health Service professionals.

Geoff is extremely well liked and respected by OR professionals and managers not only within the Department of Health but also the wider OR community. He has been Chair of the Government OR Service, given numerous invited keynote presentations at prestigious conferences, including ORS events, and published over 25 papers, with some in JORS. He has also undertaken OR consultancy for the WHO.

1 Government Operational Research Service: Civil OR in UK Central Government  
H S Turner  
JORS, vol 59, 2008, 148-162.  
Author H S Turner

2 Operational Research for informed innovation: NHS Direct as a case study in the design, implementation and evaluation of a new public service  
Journal: JORS, vol: 54, Oct 2003, 10, page(s): 1022-1028  
Authors: Royston, G., Halsall, J., Halsall, D. and Braithwaite, C.



*Geoff Royston with Sue Merchant  
(President of The OR Society)*

### **John Friend**

John Friend has made major contributions to the operational research community, both nationally and internationally, over more than 40 years. His methodological and practice contribution is embedded in the Strategic Choice Approach to participative problem structuring, of which he is the unquestioned prime author. The distinctive focus of Strategic Choice is on the management of uncertainty, with a rich variety of tools to help groups make progress through from problem identification to action commitment. The approach is meticulously documented in *Planning Under Pressure* (Friend and Hickling) which has been in print in 3 successive editions for over 20 years. The first book on the strategic choice approach was by John Friend and Neil Jessop who was the first Director of the Institute for OR and who sadly died suddenly, soon after its publication. The latest edition incorporates a range of practical case descriptions, including most striking the appropriation of Strategic Choice by the Venezuelan government for decision-making up to Presidential level.



*John Friend with Sue Merchant  
(President of The OR Society)*

John Friend's creative achievement has been recognised, remarkably for someone who has never held a regular university post, by visiting professorial appointments at several UK universities, an Honorary Doctorate from the University of Amsterdam, and by a special issue of the journal *Planning Theory* devoted to his work.

To these outstanding accomplishments John Friend has added sterling service to The Operational Research Society, starting with his work in the South Wales Operational Research Discussion Society (SWORDS) from the late 1950's. He has been particularly involved in the ORS Developing Countries committee, through which he has consistently sought to support those in the 3<sup>rd</sup> World endeavouring to use appropriate OR to achieve development. As ORS Vice President in 2000-3 he extended his customary purposeful attention to detail to a wider remit of the society's affairs. Long past several retirements he continues to scheme constructively to make the world a better place.

## Citations for Companion of OR 2007

### **Ken James**

After directing Chemical Defence at the MoD, Ken, now in his 90th year, was chosen to head OR in the new Civil Service Department. Taking OR to the highest ministerial levels, he was responsible for establishing most of today's civil OR groups and for OR's high stature in government today.

Ken James is a former Vice-president of the society and a Silver Medallist. After a distinguished career as a chemist, ending as Director of Chemical Defence, he was moved from headship of the Army Operational Research Group to lead OR in the newly-formed Civil Service Department. There he managed the establishment of most of today's civil OR groups, personally advising at the highest ministerial levels. OR's high stature in government today is directly due to his efforts. The society is happy to acknowledge these again by appointing him a Companion.



*Ken James with Maurice Shutler*

**Robert Dyson**

Industrial experience with Pilkington Bros Plc, 1964-1970. Joined Warwick Business School in 1970. Chairman of the Business School 1978-81. Dean 1998-2000. Pro-Vice Chancellor of the University 1989-95 and 1999-2005. Chair, Committee of Professors of Operational Research 1995-1997. President of The Operational Research Society 1998/9, Editor European Journal of Operational Research and member of INFORMS. He has continued to contribute The OR Society after being President. He, with Mike Pidd, led the successful campaign to bring in accreditation and is himself a FORS. He was the Chair of OR48 and he is a current member of the Education and Research Committee.



*Robert Dyson with Jeff Griffiths (President of The OR Society)*

## **Citation for Companion of OR 2006**

### **Julian Miles**

The Companionship of Operational Research should be awarded for sustained support and encouragement for the development of operational research or for those in influential positions who are in broad sympathy with the subject area. Such contributions might be through public or private activities.

The award of Companion is expected to meet one of six different requirements, and the person nominated this year falls in Category 5 – “Those who have given outstanding service to The OR Society”.

Dr Julian Miles, better known throughout the OR world as “Bob Miles”, retired from the post of Secretary and General Manager of the society on 31 October 2006, after 15 years of dedicated service.

Bob initially took a degree in Civil Engineering at Leeds University, and worked for a number of years after graduation in this field in the Birmingham area. He decided on a career change in 1972, and took a Masters degree in OR at Birmingham University. After gaining some teaching experience at Lanchester Polytechnic, Bob was appointed to a vacant lectureship in OR within the Department of Production Engineering at Birmingham University in 1974, and went on to take his PhD in Decision Theory whilst a member of staff. During his seventeen years at Birmingham University, Bob supervised several PhD students and a large number of Masters’ projects. He was also a very active participant in The OR Society affairs – a member of Council, organiser of the society’s Open Days, and Chair of the Organising Committee for the Durham Conference in 1985.

When Bob took up the position of the society’s S&GM, his experience in the civil engineering world, where he had responsibility for bidding for large contracts, was immediately put to good use in keeping a tight reign on the society’s finances. Those of us who have worked closely with Bob will testify to his unflinching dedication to his duties. The number of extra hours Bob has put into the job is incalculable. As will be appreciated, the role of S&GM has changed significantly over the years, particularly with regard to recent legislation, and the society owes Bob a huge debt of gratitude for steering us carefully through a minefield of issues, such as the Charity Commissioners’ requirements and the procedures leading up to the production of the new Constitution which comes into force on 1 January 2007. Bob will no doubt draw satisfaction from the fact that he leaves the society in a strong financial position, and with stable membership numbers.

Bob’s interests outside of the society are in the theatre, opera, and concerts, with a preference for Baroque and earlier music. He will not rest in retirement – he has decided to take a Master’s degree in local history. Bob is also a keen rambler, and intends to spend a substantial part of his retirement years on walking holidays both in UK and overseas.



I am sure that everyone present will join me in thanking Bob for his conscientious service over the last 15 years, and in wishing him a long, happy and healthy retirement.

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## **Citations for Companion of OR 2005**

### **Roger Forder**

Roger Forder has worked in OR in defence since 1974, holding a Senior Civil Service post since 1993. Formerly Chief Analyst of the Centre for Defence Analysis of DERA, the Defence Evaluation and Research Agency, he has continued to undertake similar roles in the Defence Science and Technology Laboratory (Dstl) following its creation in 2001. During this time he has been a strong positive influence on OR as technical 'head of profession' in the largest practitioner group in the UK. He has encouraged a broad outlook on OR within the defence environment, promoting and facilitating many links with the wider OR community and supporting innovative approaches proposed by younger practitioners, seeking to make available the opportunity and resources to enable them to pursue their ideas. He is well known and highly regarded for his gentle manner and his integrity. It is for this long-term encouragement of OR in his own organisation that Roger has been awarded the Companionship of OR. However, he has also served the wider OR community in many ways, for example, as a member of EPSRC's Strategic Advisory Team, a representative on the panel appointed to undertake EPSRC's recent International Review of UK research in OR, chair of the Government OR Service, chair of the Heads of OR Committee, member of Council and guest co-editor of a special issue of JORS.

### **Frank Kelly**

Frank Kelly is Professor of the Mathematics of Systems at the University of Cambridge. He is renowned for his wide ranging work on modelling communications networks, which was the subject of his 1996 Blackett lecture. Professor Kelly has received a number of awards for this work including the 1991 Lanchester prize of the Operations Research Society of America (ORSA) and the 2005 Kobayashi award of the IEEE. The citation for the Lanchester prize reads: "In a series of six major papers ... Frank P. Kelly has taken the leap from the theory of Erlang which aptly described the village telephone exchange of 1917, to a theory that is fully capable of the analysis of today's global telecommunications network". The Kobayashi award cites, in particular, his work with colleagues in Cambridge and at BT's Martlesham laboratories in developing the concept of Dynamic Alternative Routing, which has influenced call routing strategies worldwide, and his application of the economic theory of pricing to congestion control and fair resource allocation, which has reshaped how researchers study future directions for the Internet. In 2003 he was appointed Chief Scientific Adviser to the Department for Transport – a role which also calls for understanding of congestion and charging. Although Frank's primary allegiance is to statistics – he is a Fellow and current council member of the Royal Statistical Society – his work represents an important contribution to the theory and practice of what everyone here would recognise as operational research, and for that reason we are delighted to welcome him as a Companion of OR.

### **Graham Rand**

The Companionship of OR is awarded to Graham Rand in recognition of his outstanding contribution to The Operational Research Society and to IFORS, the International Federation of Operational Research Societies, over a period of over 30 years. At all times since 1974 Graham has been involved in some way – usually in several ways - with either or both of the ORS and IFORS. His first involvement was as UK contributing editor to International Abstracts in OR (IAOR) from 1974 to 1979; he then took over the editorship of IAOR until 1991, when he became editor of the Journal of the Operational Research Society for a period of 5 years to 1996. He became IFORS Publications coordinator in 1998 and managing editor of International Transactions in OR from 2000 to 2005. His involvement has not been limited to publications; he was chair of the conference committee for OR 26, held in Lancaster in 1984, and of the Programme Committee for the 12th IFORS Conference, held in Greece in 1990. He became a Vice-President of IFORS in 1998. Graham has also been actively involved in many ways in supporting OR in developing countries.

All this constitutes an impressive catalogue of activity, but it by no means covers all of Graham's contributions to OR, which also include chair of North West OR group, chair of the study group for OR in developing countries, chair of national events committee, council member – and one of, perhaps the, longest innings as member of an ORS committee with 22 years unbroken service on the publications committee.

### **John Ranyard**

The Companionship of OR is awarded to John Ranyard for his substantial contribution to OR and The OR Society following his term as President from 1988 – 1989. Since that time he has chaired the committees of two successful national conferences, in York in 1993 and Chester in 2005; edited the Journal of the OR Society for 5 years from 1997 to 2002; and founded and chaired two committees of the society, the membership committee which was established in 1996 and the electronic services committee which started life in 1997 as a working group to explore the setting up of the society's website. Together with Robert Fildes he conducted the ORS sponsored investigation into the success and survival of OR groups and has since written and talked widely about that work and other aspects of OR practice. All of this builds on his substantial contribution to the profession prior to becoming President of ORS; 20 years as head of the Yorkshire Unit of British Coal OR Executive– including two years as chair of the ORE Manager's Committee, a founding member and co-chair of the Heads of OR Committee, a Vice President of the society, chair of National Events committee, chair of the Yorkshire and Humberside OR Group and member of the EPSRC OR panel.

### **Jonathan Rosenhead**

The Companionship of OR is awarded to Jonathan Rosenhead for his substantial contribution to OR following his term as President of The OR Society from 1986-1987. We would like to highlight three distinct, but inter-related themes of that contribution. Firstly his continuing support of and contribution to Community OR, a field of activity which grew from Jonathan's initiative in establishing the Community OR Unit at Northern College during his term as President. Secondly, his influence in drawing together the different threads of "soft OR" to create what has come to be recognised as the coherent field of study in methods for Problem Structuring. An important contribution in this regard is his editorship of the book, *Rational Analysis for a Problematic World* (1989) and its 2001 sequel, *Rational Analysis for a Problematic World Revisited*, co-edited with John Mingers. And thirdly his contribution to OR in developing countries, which is reflected in many ways, in particular his co-chair, with Arabinda Tripathy of the 1st and 5th ICORD (International Conferences on OR in Development) conferences in 1992 and 2005. At the first of these the Ahmedabad declaration, a policy statement which sought to secure support for OR in developing countries, was adopted unanimously. This declaration can now be seen to have had a significant effect on IFORS policy. Through these, and his many other contributions, Jonathan continues to both challenge and exert a strong positive influence on OR.

## **Citations for Companion of OR 2001**

### **Ken Bowen**

Ken Bowen is one of the few "original" operational researchers still working. Ken began his OR work towards the end of World War 2, and continued mainly in the Defence environment until his (first) retirement, at which stage he was Head of Research at Defence Operational Analysis Establishment (DOAE) at West Byfleet. He has been an Honorary Professor at Royal Holloway since that time, and still turned out for the cricket team in his late seventies!

He continues to provide the "30 Years Ago" abstract every month for the society's newsletter. Ken has devoted his whole working life to OR, and there are many colleagues, friends, students, etc who would support the proposal that this honour be bestowed on him.

## **D White**

Professor White's contribution to the literature and development of OR is quite extraordinarily extensive and wide ranging. Many will be familiar with some part of his work but few who have not seen his full bibliography will realise what a remarkable list of publications he has to his credit. (A list of these published in the IMA Journal of Mathematics Applied to Business and Industry, Vol 6, No 2, 1995 contained over 130 entries in print in 1992). His books on decision theory, decision methodology, dynamic programming and OR techniques have become definitive texts for these subject areas, while his papers in the fields of Markov decision processes, multi-objective decision making, and applications of heuristics have made major contributions to our discipline.

The society has already acknowledged Professor White's research achievement through the award of the Beale Medal. However, impressive as they are, Doug's books and articles by no means exhaust his contributions to OR. In a number of institutions his activities as teacher, research supervisor, and academic leader have left an indelible mark. His rigorous approach, accepting nothing less than highest standards, but coupled with a generous and supportive demeanour has provided an enormously valuable experience to those fortunate enough to have worked with him.

Early in his career he created the department of OR at the University of Strathclyde, becoming its first Professor and Head, there providing an exceptional quality of leadership and creativity to which many can personally attest. He established the OR Centre (and within it the health Services OR Unit), a team of independently funded applied researchers, which played an important role in engendering a strong liaison with business and industry, both within and beyond Scotland, a relationship which continues to this day.

Subsequently, in Manchester University, Professor White established and led the new Department of Decision Theory to which he recruited a powerful team whose research and other work created a new and important academic presence in the North west of England. This is probably the right point to note the remarkable number of UK professorships filled by Professor White's proteges. I can enumerate eight (nine if we add Canada) without difficulty, all of whom paid their respect by attending the 1994 Celebration of Doug's career and imminent retiral, and at which all recorded the exceptional importance to their subsequent careers of the periods under his leadership. At the same meeting Professor White's international reputation was vouchsafed by the presence of delegates from Japan, Canada, and from the USA where he spent some years as visiting professor, enhancing his own reputation as well as that of our discipline.