

# Annual Review

April 2010 – March 2011



The background features a stylized, monochromatic architectural design in shades of green. It includes a large dome-like structure at the top with several curved ribs, and a series of columns or pillars below, some with decorative finials. The overall aesthetic is clean and modern.

**The Royal Society of Edinburgh  
contributes to the social, cultural  
and economic wellbeing of  
Scotland in the 21st Century**



LORD WILSON OF TILLYORN

“ The RSE Young Academy of Scotland will bring together the best of our emerging scientists, scholars and professionals to provide a distinctive and influential voice that will be central to the future leadership and vitality of Scottish society. ”

## President's foreword

As Scotland's National Academy, the RSE has made a major contribution to Scottish society for over 200 years through Fellows whose achievements resonate internationally. It is unique in Britain, as well as distinctive internationally, in the breadth of its Fellowship which ranges across the sciences, medicine, engineering, the social sciences, arts, humanities, business and public service. Its purpose is to promote excellence across the whole range of human understanding and the use of that knowledge in the betterment of the national and international society to which we belong.

In pursuing these objectives, the RSE is active on many fronts. It organises public lectures and promotes debate on major contemporary issues. It supports research, entrepreneurial activity and international exchanges. It contributes to primary and secondary education and engagement with the young. It contributes to the development of educational policy and policy for economic development. It undertakes major inquiries on issues of national and global significance; and it provides independent and expert advice across a wide range of topical issues.

These activities contribute significantly to Scotland's social, cultural and economic well-being. They are made possible by the strength and varied expertise of over 1,500 Fellows from a very wide range of disciplines. The time they spend in supporting and enabling the delivery of the activities of the RSE is an exceptional, and free, public resource, the annual value of which is in excess of £0.7 million. These Fellows are ably supported by the committed and hard working staff of the Society.

We are proud of what we achieve and the contribution we make on behalf of Scotland. This report highlights some of the impact we make, together with our key activities during the past year. It demonstrates clearly the public benefit we provide.

Looking ahead, it is important to mention also our plans for the RSE Young Academy of Scotland. This new initiative will bring together the best of our emerging scientists, scholars and professionals to provide a distinctive and influential voice that will be central to the future leadership and vitality of Scottish society. The Young Academy will be fully established in the coming year. We believe it will make a major impact.

This is my last Annual Review as President of the RSE. Sir John Arbuthnott succeeds me in October 2011 and I should like to take this opportunity to wish him every success. I should also like to convey my sincere thanks to all of the Fellows and staff who have supported me during my time in office. Being President of the RSE, and to have followed in the footsteps of so many great past Presidents, has been a great honour as well as a great pleasure.

Lord Wilson of Tillyorn KT GCMG

# Enhancing the capacity of world-class science and culture researchers working in Scotland

## More Research Funding, Capacity and Leadership

With funding from the Scottish Government we supported the work of a further five researchers during 2010/11, and continued to support 13 researchers who received their awards in previous years. Since 2003, £6.1m of government grant-supported fellowships in this programme have levered more than £46.8m of further research funding.

Since the programme began in 1982:

- > 62 of 78 Personal Research Fellows remain in Scotland
- > 21 Personal Research Fellows have been promoted to Professor
- > 97 % of Personal Research Fellows remain in academia
- > 88 % of 55 Support Research Fellows remain in Scotland
- > 24 Support Research Fellows have been promoted to Professor
- > 99% of Support Research Fellows remain in academia

Alongside the Scottish Government-funded programme, we awarded a further two research fellowships and scholarships and continued to support 12 researchers who received their awards in previous years. These researchers have levered an additional £4.1m into further research funding. These programmes would not have been possible without the support of BP, Lloyds TSB Foundation

for Scotland, the Caledonian Research Fund and bequests and legacies received.

## Raising Scotland's Research Profile

In 2010/11 our Research Fellows attended over 240 overseas and UK conferences and seminars and have published over 226 articles in journals with high impact factors (a measure of frequency with which the average article in a journal has been cited in a particular year). This has raised the world-wide recognition and standing of Scottish research.

## Enhancing the Understanding of Human Culture Past and Present

The Scottish Government funds the Arts & Humanities Awards and 2010/11 saw the largest number of awards made to date. We supported nine Small Research Grants, six Research Workshops, four Research Networks and two Major Research Grants. We continued to support two Research Networks in their second year of a two-year grant.

These awards encourage collaboration between academia and Scottish cultural institutions. The range of disciplines funded through this programme is extensive, with involvement from libraries,

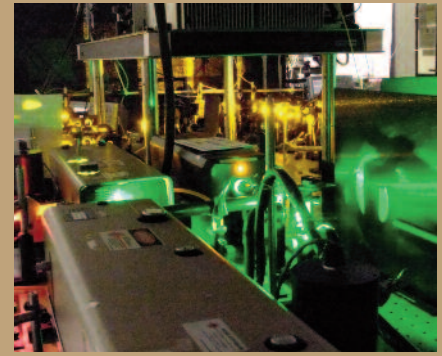
archives, museums, galleries, theatres and archaeological and historical institutions. Some awards are multi-disciplinary, bringing together the arts and sciences in innovative and creative projects. Knowledge exchange is an important requirement and the setting of the projects in the Scottish context is also a selection criterion.

The three-year Major Research Grants were awarded for the first time this year. One recipient is researching "The New Edinburgh Edition of the Collected Works of Robert Louis Stevenson" with the principal objective being the preparation and publication by Edinburgh University Press of the first thirteen volumes of a new standard edition of Robert Louis Stevenson, including the *Complete Essays* indexed for the first time, *The Dynamiter*, *The Amateur Emigrant*, *Prince Otto Weir of Hermiston*, *Kidnapped*, *Catriona*, *St Ives* and *Fables*.

The second recipient is researching "Colouring the Nation: 'Turkey Red' and Other Decorative Textiles in Scotland's Culture and Global Impact, 1800 to Present." This project will make accessible, through an online annotated catalogue and exhibition and through scholarly interpretation for academic and public audiences, the Scottish 'Turkey Red' and other decorative textile collections held at the National Museums of Scotland.



**The field of quantum information, while in its infancy, is becoming a commercial reality and will become nationally and internationally vital. The project will push Scottish research to the forefront of this field**



**PAUL GRIFFIN, 2009 SCOTTISH GOVERNMENT PERSONAL RESEARCH FELLOW**



**The research undertaken in this project will deliver varieties of barley that are more efficient at utilising resources such as water and nutrients and varieties that are more able to cope with environment change. This will mean that the profitability of the rural economy will be maintained**

**DR TIM GEORGE, 2007 SCOTTISH GOVERNMENT PERSONAL RESEARCH FELLOW**

**The project has enabled us to get to the stage of preparing a spin-out company based in Edinburgh much more quickly than would have been possible with a normal academic workload. This will help us to realise the full economic potential of a method conceived, built and proven in Scotland, and to provide local employment opportunities for suitably qualified people**

**PROFESSOR IAN MAIN, 2009 SCOTTISH GOVERNMENT SUPPORT RESEARCH FELLOW**



**A BIRD'S EYE VIEW OF A PLATFORM OPERATING IN THE NORTH SEA. PICTURE COURTESY OF BP**



**VISUAL ART / ARCHAEOLOGY PROJECT, PIER ARTS CENTRE, STROMNESS, ORKNEY**

**The impact of this research has reached far beyond that which I originally envisaged and would not have been possible without the support of the RSE**

**ANTONIA THOMAS, 2010 ARTS & HUMANITIES SMALL GRANT AWARDEE**



# Increasing Scotland's research and development connections internationally

## Facilitating Collaboration & Connection

During the year we enabled, with Scottish Government funding support, 59 researchers to travel to and from Scotland as part of their research work. This connected Scotland to more than 20 countries worldwide and amounted to the equivalent of almost four years of research time.

These connections helped facilitate an additional £371k of research funding from within and outwith Scotland; for example, two Scottish researchers successfully secured more than £100k of additional funding from Canada and Poland, which supported the collaborations they had made with researchers from these countries.

In addition to more funding, the grants which we awarded helped facilitate 57 papers in peer-reviewed journals and resulted in the creation of two visiting lectureships.

## Further Connecting with China

In 2006 we began to facilitate, again with Scottish Government funding support, and in partnership with the National Natural Science Foundation of China, a programme of joint research projects involving Scottish

and Chinese institutions. During this year the programme grew to 19 supported projects, with funding for seven new projects being awarded. These new projects are in the area of Information Science. Projects which started in previous years cover subjects such as Animal Health, Biological Sciences, Life Sciences, Management Science, Engineering and Public Policy.

These projects create longer-term collaboration between Scotland and China. For instance, the Scottish Fish Immunology Research Centre at the University of Aberdeen has significantly enhanced research collaborations with the Institute of Hydrobiology, Chinese Academy of Sciences. A total of six researchers from Wuhan visited or worked in Aberdeen, which has led to several joint publications in peer-reviewed journals. The work has been productive and has led to a nine-month visiting fellowship awarded by the Leverhulme Trust to Dr Jun Chen, to continue his work on chemokine functions in the Scottish Fish Immunology Research Centre (SFIRC). Based on this work, three manuscripts are being prepared and will be submitted for publication in the next few months. In addition, the RSE support has provided an excellent platform for scientists from Aberdeen to promote the research strength of SFIRC in Fish Immunology to the Chinese

research community, raising awareness internationally of Scotland's research strengths.

## Building and Maintaining Relationships

The Rt Hon Lord Patten of Barnes CH delivered our annual MacCormick European Lecture and explored the desirability and possibility of a European foreign policy.

In partnership with the French Embassy, London, the University of Edinburgh and the Collège de France, we began a three-year programme of science events designed to explore and publicly present areas of science where both Scotland and France have a powerful presence and to stimulate Franco-Scottish collaboration in science.

We continued our programme of strategic engagement and connected Scotland with Italy through signing a Memorandum of Understanding with the Accademia Nazionale dei Lincei (the Italian National Academy) which promotes and supports research activities between the countries.



The International Exchange Programme is an excellent scheme in helping Scottish scientists and researchers to engage with the excellent research centres around the world; thus, develop and progress their research career. I am very grateful for this award, which enabled me to successfully visit Professor Shen and his research group at Dalian University of Technology

DR YAKUN GUO, UNIVERSITY OF ABERDEEN

The RSE International Exchange Programme has made a very important contribution to my development as an independent researcher and has facilitated development of an important and enduring link with the Institute of Oceanology in Sopot. The funding we have received has resulted in significant new developments in our field and with the development of our multiple scattering model, I believe our research will impact on a much broader range of disciplines

DR DAVID MCKEE, UNIVERSITY OF STRATHCLYDE



THE RT HON LORD PATTEN OF BARNES CH DELIVERING THE MACCORMICK EUROPEAN LECTURE



I would just like to express my deep gratitude to the committee for awarding me the grant and to highlight that it has opened up a number of exciting and innovative opportunities that will enhance international collaboration for myself, my institution and my PhD student

DR MANDY PLUMB, ROBERT GORDON UNIVERSITY



# Improving connections between business and academia

## Boosting the Scottish Economy

In partnership with Scottish Enterprise, the Biotechnology and Biological Sciences Research Council and the Science and Technology Facilities Council, we awarded 12 Fellowships to encourage the commercialisation of technology based business ideas. This programme makes a significant contribution to the Scottish economy.

Since its inception in 1997, the Scottish Enterprise Fellowship programme has:

- > Created 61 companies which have employed more than 220 people
- > For the £5.5 million invested in the programme, facilitated in excess of £51 million follow-on investment over the past five years – £42 million of that from the private sector
- > For every £1 of taxpayer's money, levered £9 in follow-on investment

## Stimulating Business Innovation

Our Business Innovation Forum, which comprises senior business people and academics, produced a comprehensive report which discussed the issues surrounding the priorities for innovation and business development in Scotland, with a view to creating a supportive environment for businesses to grow and innovate.

The report, launched at a joint event with the Swiss Consulate, was prepared after extensive consultation with leading businesses in Scotland, and acted as a catalyst for bringing leading business people from Switzerland to contribute to discussion on how innovation was supported and encouraged in both countries.

## Rewarding Innovation

Since 2003, and with the support of the Gannochy Trust, we have administered and given an annual innovation award of £50,000 which recognises Scotland's young innovators. This year's recipient was Matt McGrath, founder of life sciences firm Aircraft Medical, which has

developed the world's first fully portable video laryngoscope, that has already been used in over 250,000 cases around the world and saved lives. This technological innovation, developed in Scotland, is designed to address the risk of failure to deliver oxygen to a patient once they have received a general anaesthetic prior to surgery.

This was the final year of this award and we are extremely grateful to the Gannochy Trust for its generous support over the time, which resulted in us being able to recognise the work of seven highly innovative and entrepreneurial individuals. Moreover, this support has helped contribute to Scotland's well-being through generating around £4 million of added value for the Scottish economy, as evidenced by an independent evaluation of the programme.



Advanced Pest Solutions launched 'Smidge that Midge' the biting insect repellent, in 2010 and it is fast becoming Scotland's Number One repellent. The RSE Enterprise Fellowship was fundamental to the formation of APS, giving me the confidence and commercial skills necessary to build the business and to develop our technology portfolio

DR ALISON BLACKWELL, CEO, ADVANCED PEST SOLUTIONS LTD,  
2003 SCOTTISH ENTERPRISE ENTERPRISE FELLOW

I am very grateful to The Royal Society of Edinburgh and to the Gannochy Trust for this award, and for the recognition of the social and economic significance of the McGrath® video laryngoscope. The prize will be invested in a research project to identify unmet clinical needs in anaesthesia and critical care practice

MATT MCGRATH, FOUNDER, AIRCRAFT MEDICAL



MATT MCGRATH RECEIVING HIS INNOVATION AWARD FROM LORD WILSON OF TILLYORN, PRESIDENT, RSE AND MR MARK WEBSTER, CHAIRMAN, GANNOCHY TRUST



GROUND WATER REMEDIATION PROJECT FOR CHROMIUM REMOVAL, GLASGOW

My time on the Enterprise Fellowship scheme proved invaluable in many ways. It provides excellent opportunities for networking with business leaders, entrepreneurs and, perhaps most importantly, with peers who are at a similar stage in their business careers. This was a wonderful support mechanism in the early days

DR LEIGH CASSIDY, CEO, EPONA TECHNOLOGIES LTD,  
2010 BBSRC ENTERPRISE FELLOW



# Enhancing the capacity of school-age children to adopt science as a career

## Supporting 21st-Century Education

Our Education Committee continued to contribute to the development of policy in relation to shaping 21st-Century education in Scotland, most specifically in relation to improving science, computing and history education in schools.

We produced and made available exemplar chemistry teaching materials for use in the classroom. This support of Curriculum for Excellence (CfE) implementation was a product of our Chemistry Exemplification Project, which began in 2009. We are currently working on a similar type of project in relation to computing and information science.

We published an advice paper on the topic of the teaching of History in Scottish schools, particularly in relation to the implementation of CfE. In preparing the paper we consulted with primary and secondary school teachers, teacher educators and History specialists, and representatives from Learning and Teaching Scotland, the Scottish Qualifications Authority and HM Inspectorate of Education.

We also hosted a seminar to discuss the role of universities and the contributions that they are able to make to society and we will, in the coming year, be facilitating further discussion of the key points which emerged.

## More Confident and Informed School Pupils

Using the expertise and voluntary commitment of our Fellows and others, our education programme for primary and secondary schools, reached out to, and shared knowledge and understanding with, c. 1600 pupils. Included in the programme were:

- A Christmas Lecture – “Reporting the World in an Age of Conflict” was delivered by Allan Little, the distinguished BBC World Affairs Correspondent, at Stranraer Academy. It was also webcast live by the BBC and followed in the evening by a similar lecture for adults;
- A discussion forum for S5 and S6 students from Glasgow and Fife schools considered conservation and biodiversity and the use of the media in raising awareness of environmental issues. The associated materials from this have been distributed to all schools in Scotland via the schools’ GLOW network and on the RSE web site. 88% of the students attending thought the event was very good or excellent at helping to increase their knowledge of the subject areas. 40% felt that it had inspired them to look into a career in a related area;
- Twenty seven interactive Start-up Science Masterclasses for S1 and S2 pupils in university venues around Scotland. 88% of those attending thought that they now know more about science;
- Twenty four schools talks for S3, S5 and S6 pupils on applied science and technology;
- A one-week Science Engineering & Technology (SET) Summer School for S5 pupils in the Lothians. 67% of the pupils attending thought they were more likely to apply to university as a direct result of the workshops, and 95% agreed that their confidence to handle university life had grown. 98% thought their awareness of opportunities in SET had increased;
- A national schools’ competition in liaison with the RSE Inquiry ‘Facing up to Climate Change’ – in which ten schools (five primary and five Secondary) from across the country participated.



**I hope I get to come back!**

PUPIL AT HERIOT-WATT MASTERCLASSES

**I just wanted to say thank you so much for your wonderful talk... I loved your magic tricks! It was a truly inspirational way of teaching science**

ABBY, AT 'BLACK HOLES, BLACK MAGIC AND INTERSTELLAR TRAVEL.' SHETLAND



**The classes definitely enthused her and I believe have made her start to consider a scientific career**

PARENT OF MASTERCLASS PUPIL, GLASGOW CLASSES



**The children had a really wonderful day with you and returned all fired up to pursue scientific careers and change the world, so thank you for treating them so well. The competition has truly inspired them**

MRS GERALDINE FLANIGAN, SAINT MARY'S PRIMARY SCHOOL



# Enhancing the public's appreciation and understanding of science and culture issues

## A More Informed and Knowledgeable Public

Almost 4000 people attended our programme of conferences, discussion forums and lectures. This inspiring and accessible programme comprised thirty six events which were multidisciplinary in nature.

The series covered sciences engineering, economics, medicine, history, philosophy, and arts & culture subjects. Amongst which were:

### *The Bell Rock Lighthouse, the Stevensons and Emerging Issues in Aids to Navigation*

On 1 February 1811 the Bell Rock Lighthouse, that quite extraordinary feat of Scottish engineering, first displayed its beam of light, warning shipping away from the notorious Inchcape reef and pointing them to the safety of the coastal refuges nearby. Two hundred years later, it is the oldest rock lighthouse in the world in continuous operation and, despite the march towards satellite navigation, the Bell Rock still stands as an essential sentinel in that part of the North Sea. This Lecture and Conference celebrated this very important bicentenary. While the Bell Rock and its development were the focus, the events also considered the value of the lighthouse, past and present; and looked to the future and the era of the satellite. They brought an understanding of the lighthouse heritage of which Scotland is so proud and for which it is held in global esteem, and a deeper understanding of the role of the lighthouse in the 21st Century. George Bernard

Shaw put it very well: "of all the edifices constructed by man, the lighthouse is the most altruistic. It was built purely to serve."

*The events were organised in partnership with the Northern Lighthouse Board and supported by Inchcape Shipping Services.*

### *Assisted Dying: The Debate, A Mock Trial*

Would it ever be possible to create legislation to allow assisted suicide which carried a guarantee that it would never be abused, and, even if that were the case, should such a law be enacted? These were the questions debated by philosophers and experts in end-of-life care in this public 'mock trial'.

The public 'mock trial' was accompanied by a conference for clinicians, lawyers and policy makers that focused the debate on the pure philosophical issue: "If you could develop a way of enabling assisted dying that was beyond abuse, beyond implicating others, what are the arguments for and against doing it?"

*The events were organised with support from the Faculty of Advocates.*

### *The Twin Towers: Ten Years – Ten Lessons on Sustainable Infrastructure*

The collapse of the World Trade Center towers represents one of the most dramatic failures of modern structural engineering. One of the most exhaustive and expensive failure analyses in history was conducted in the midst of speculation, controversy and conspiracy theories. In parallel, the world has seen an extraordinary evolution of the super-tall building. Seven of the ten tallest buildings in

the world have been built after 9/11. These not only include the tallest four, but eight of these buildings are outside the USA. Furthermore, a strong drive towards sustainability has driven tall building design to levels of innovation never seen before.

In this presentation Professor José Torero-Cullen FEng FRSE, BRE Trust/RAE Professor of Fire Safety Engineering, University of Edinburgh, extracted from a decade of questioning and innovation, ten lessons on what is sustainable infrastructure.

*The event was organised in partnership with the Royal Academy of Engineering*

### *Medieval Week*

The British Academy joined forces with the Royal Society of Edinburgh to present a week of events focusing on themes from medieval life and helping in the understanding of some of the major differences between then and current times.

Why were relics so highly valued by people? What was the significance of 'hogback' tomb covers? Was Robert the Bruce really the hero he is so often portrayed as? Why did Medieval poets turn Old Age into a person? Were the so-called Dark Ages really such a 'dark' period for culture? Was the Declaration of Arbroath mere propaganda? These were just some of the fascinating questions which were put under the spotlight during Medieval Week. Each day featured a discussion on a broad medieval topic, followed by a more formal lecture.

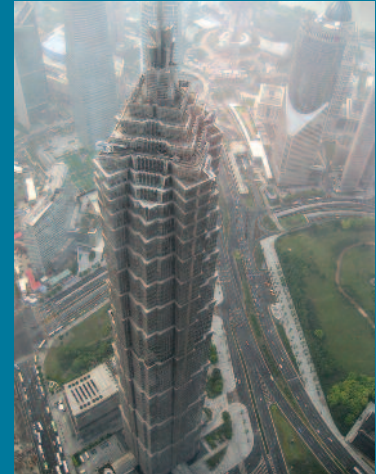


**I am motivated to read more [on this subject].  
The lecturer was excellent and the question  
session helped clarify further. Very well run.  
No improvements needed”**

ATTENDEE AT THE THOMAS REID LECTURE

**The information I have gathered from this  
presentation will allow me to be better  
prepared in terms of a holistic approach to  
designing tall buildings in the future**

ATTENDEE AT THE LECTURE: 'THE TWIN TOWERS:  
10 YEARS - 10 LESSONS ON SUSTAINABLE INFRASTRUCTURE'



THE JIN MAO TOWER, SHANGHAI



**The speaker gave a very lucid, unbiased  
and informative talk, greatly adding to my  
knowledge; especially being so thoroughly  
informed by “a man on the spot”**

ATTENDEE AT CHRISTMAS LECTURE - 'REPORTING THE WORLD IN AN AGE OF CONFLICT'

ALLAN LITTLE, BBC WORLD AFFAIRS CORRESPONDENT  
WHO DELIVERED THE 2010 CHRISTMAS LECTURE

**I think the importance of this sort of  
interaction with philosophers students  
have heard of can't be underestimated,  
and it has certainly boosted my students'  
confidence & helped them to realise that  
the questions that they find difficult are  
questions that big-shot philosophers  
find tricky too**

FROM A TEACHER ATTENDING THE ASSISTED DYING MOCK TRIAL  
WITH SOME OF HER HIGHER PUPILS.



THE BELL ROCK LIGHTHOUSE BY  
IAN COWIE, DECEMBER 2010



# Informing and influencing public policy decisions

## Parliamentary and Public Engagement

Drawing on the multi-disciplinary expertise of our Fellows and other experts, we provided a range of advice and comment on matters of public importance, all of which is publicly available through our website.

During the year we produced:

- 17 Advice Papers and one Report. 15 to the Scottish Government and/or the Scottish Parliament, two for the Curriculum for Excellence Management Board; one to the Scottish Qualifications Authority;
- Two briefing papers to the Scottish Parliament in relation to the Curriculum for Excellence and the Future of Agricultural Support;
- Oral evidence to Scottish Parliamentary Committees, including presentations at four meetings of the Cross-Party Group on Science & Technology;
- A Science and the Parliament event in partnership with the Royal Society of Chemistry, which attracted 34 exhibitors, more than 300 delegates, including MSPs, on the topic of 'Science and the Scottish General Election'.

## Facing Up to Climate Change

Our Inquiry Report – “Facing up to Climate Change: breaking the barriers to a low-carbon Scotland” was published in March. It was the result of extensive consultation across Scotland, during which evidence was taken from over 110 public, private and third sector organisations, as well as from around 40 individuals, a number of public meetings around Scotland, involving some 400 people, and a national Schools’ Competition. It was formulated by a Committee chaired by Professor David Sugden FRSE, an internationally renowned climate scientist based at Edinburgh

University, with members whose expertise covered the natural and social sciences, business, policy and education. The report makes ten Primary Recommendations aimed at helping policy makers to design policy in such a way that it overcomes the barriers. It calls for government and organisations to embed low-carbon policies across all functions and for closer engagement between people, civil society, market and state. Dissemination events sharing the report’s findings and recommendations have been taking place across Scotland.

## Our Influence

Our advice and comment has an influence. Some examples of this are:

Following our submission (featured in *The Scotsman*; *The Times Education Supplement Scotland*; and the *Financial Times*) to the Scottish Parliament Finance Committee’s Inquiry into the Efficient Delivery of Public Services, we were invited to submit a response and give oral evidence to that committee’s inquiry on Preventative Spending. Subsequently we were invited to contribute to a round-table evidence session on the Scottish Spending Review 2010 and Draft Budget 2011–12.

Following our submission to a Review of Teacher Education in Scotland, our Education Committee were invited to meet with former HMIE, Graham Donaldson, to discuss the issues being explored by his review.

The Scottish Government’s strategy for “Scotland’s Digital Future” reflected recommendations made in our Digital Scotland report: “The project will consider providing improvements to the core broadband network which is currently a critical weakness of the region. This is exactly the type of backbone network infrastructure advocated by both the Royal Society of Edinburgh and Reform Scotland in their respective recent reports”

The teaching of History in schools – our findings on the teaching of History in schools were referred to in the final report of the Scottish Government’s History Excellence Group. Liz Smith MSP commented “This is a first class paper. Thank you very much for sending it to the committee members” and subsequently tabled three Parliamentary questions for the Scottish Government in relation to the findings of our paper:

Scottish Parliament’s End of Life Assistance (Scotland) Bill Committee – *The Scotsman* commented that ... “In the circumstances, there is a lot of merit in the Royal Society of Edinburgh’s proposal that the results of any introduction of some form of assisted dying should be reviewed after an agreed limited time period. It is an idea that deserves serious consideration.”

In the Scottish Parliament’s European and External Relations Committee’s Report, published 23 June 2010, into the ‘Impact of the Treaty of Lisbon on Scotland’, there was substantial reference to our written submission from January 2010, particularly in relation to mechanisms for enhanced engagement and scrutiny of proposals.

Alcohol etc (Scotland) Bill – Scottish Parliament Stage 1 Debate. Mary Scanlon MSP and Helen Eadie MSP both referred to the evidence that members of our Working Group on this subject had provided when giving evidence to the Scottish Parliament’s Health and Sport Committee.

Our briefing paper prepared for all MSPs ahead of a Scottish Government-initiated Parliamentary Debate on the implementation of Curriculum for Excellence received a number of references during the course of the debate.



In the first instance, I would like to take this opportunity to congratulate the Royal Society of Edinburgh on producing such an excellent document. In particular, you have succinctly captured the digital issues facing the nation in terms of bandwidth requirements and the rapidly changing nature of the technology

INVERNESS CHAMBER OF COMMERCE ABOUT RSE'S DIGITAL SCOTLAND REPORT



## Both Ofcom and the ACS greatly welcome 'Digital Scotland' which we believe makes a significant contribution to focusing discussion on the field of communications in Scotland

OFCOM & THE ADVISORY COMMITTEE FOR SCOTLAND



Congratulations to the RSE on producing what strikes me as a very clear, succinct and perceptive report whose observations and recommendations I very much hope will be carefully considered and acted upon

DUNCAN TOMS, FORMER P/T HISTORY ABOUT THE TEACHING OF HISTORY IN SCOTTISH SCHOOLS

Ambitious subject experts such as those in the Royal Society of Edinburgh and many others are being listened to

MICHAEL RUSSELL MSP, CABINET SECRETARY FOR EDUCATION AND LIFELONG LEARNING ABOUT RSE'S CONTRIBUTION TO THE CURRICULUM FOR EXCELLENCE



# Recognising excellence

## Royal Medals

His Royal Highness The Duke of Edinburgh presented Royal Medals to two individuals at a ceremony held at the RSE in August 2010. These medals recognise intellectual endeavour which has impacted on the lives of other people, and were approved by RSE Patron, Her Majesty the Queen. The medallists were Professor Sir Fraser Stoddart FRS Hon FRSE for his outstanding contribution to chemistry and in particular in the field of molecular nanotechnology; and Dr James MacMillan CBE FRSE for his outstanding contribution to music in Scotland and beyond through his compositions.

## The IEEE / RSE Wolfson, James Clerk Maxwell Award

This annual award recognises groundbreaking contributions that have had an exceptional impact on the development of electronics and electrical engineering or related fields. It is named in honour of the 19th-Century Scottish mathematician

and physicist James Clerk Maxwell, who laid the foundations of electromagnetic wave theory, radio propagation, microwave techniques and radio communications. The Institute of Electrical and Electronics Engineers (IEEE) and the RSE, with funding support provided by Wolfson Microelectronics plc, created the award in 2006.

In 2010, the award of a US \$20,000 honorarium, and a gold medal and certificate, went to Dr Amar G. Bose FIEEE, Chairman, Bose Corporation, in recognition of his outstanding contributions to consumer electronics in sound reproduction, industrial leadership and engineering education.

## New Fellows

Recognised by their peer groups as having achieved excellence within their discipline or profession, one Honorary Fellow, four Corresponding Fellows and forty Fellows were newly elected to the RSE Fellowship. These new Fellows increased our Fellowship to a total of 1,546 Fellows, comprising 66 Honorary Fellows, 61 Corresponding Fellows and 1,419 Fellows.

Most of them were formally admitted at an Induction Day at which they were given an overview of the RSE, met the RSE staff and were provided with more details about the role of the Fellowship in delivering the wide range of activities reported elsewhere in this report.

We encourage all our Fellows to participate as much as possible in our activities, as their contribution is pivotal to us being able to do and achieve what we do. The time they spend in supporting and enabling the delivery of our activities is an exceptional free public resource, the annual value of which is in excess of £0.7 million.



THE ROYAL MEDAL OF THE ROYAL SOCIETY OF EDINBURGH



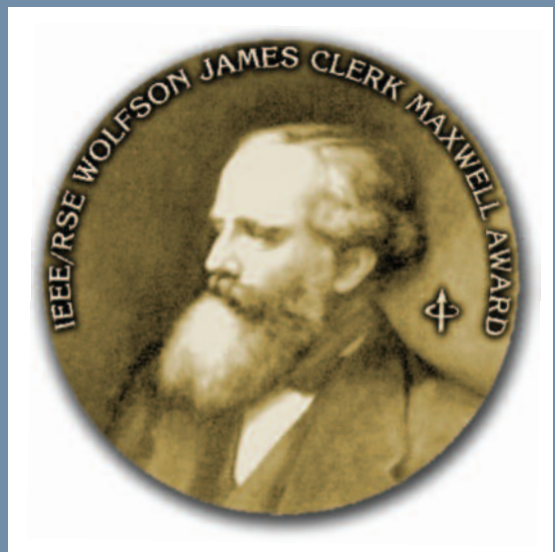
HRH THE DUKE OF EDINBURGH PICTURED AT THE PRESENTATION OF THE 2010 ROYAL MEDALS WITH AWARDEE, PROFESSOR SIR FRASER STODDART



NEW FELLOWS ARE TREATED TO A GUIDED TOUR OF THE RSE'S HISTORIC PREMISES DURING THE NEW FELLOWS' INDUCTION DAY, MAY 2010



HRH THE DUKE OF EDINBURGH PICTURED AT THE ROYAL MEDALS PRESENTATION WITH AWARDEE, DR JAMES MACMILLAN



THE JAMES CLERK MAXWELL MEDAL

# Reaching out

## RSE @ Dumfries & Galloway

Following on from a highly successful programme of activities that we held in Arbroath in 2008/09, which left the local community with a number of useful legacies, we began a similar project in Dumfries and Galloway this year.

Chosen for its rich diversity, natural and cultural resources, a programme of 35 events aimed at enhancing and improving the understanding and appreciation that people, particularly school-aged children, have for their local community, was successfully delivered across the Dumfries and Galloway region, from Langholm in the east to Stranraer in the west.

The programme included a series of talks, lectures, exhibitions, and workshops involving school children aged from 6 through to 18 years, college students and members of the wider public. The activities tapped into the knowledge and expertise of the RSE Fellowship and other relevant experts, and those aimed at school children also had strong links to the curriculum. Lecture topics included religion, engineering, sustainable energy, geography, history, horticulture, the visual arts, mathematics, medicine and theatre, whilst workshops covered 'poetry and physics', 'names and identity', 'facial reconstruction', 'renewable energy', 'storytelling', 'art and the environment', 'wildfowl and wetlands', 'money and saving', 'gardens in science and art' and 'the business experience'. There were also master classes for senior students in creative writing, drama, drawing, music and film.

Many of the events involved a wide range of partners, including primary and secondary schools, the local colleges, and local agencies / groups from within the area.

Reports of all public events and recordings have been made available on the society website and the Christmas Lecture, delivered by Allan Little, BBC World Affairs Correspondent at Stranraer Academy, was recorded and webcast 'live' by the BBC across the UK.

## Spreading Scientific Knowledge Worldwide

We continued to publish our highly esteemed scientific journals: six issues of *Earth and Environmental Science Transactions of the Royal Society of Edinburgh*, distributed worldwide to 350 libraries and academies; and six issues *Proceedings of the Royal Society of Edinburgh, Section A: Mathematics*, distributed worldwide to 500 libraries and academies.

Our Journals have a broad international spread in terms of their author and subscriber base, their distribution to the Americas, Europe, Australasia and Asia, and the peer review process that draws on an international bank of referees and editors.

The five-year impact factors for our Journals (a measure of frequency with which the average article in a journal has been cited in a particular year) increased on the previous year. *Transactions* now has an impact factor of 1.476 (up from 1.142) and *Proceedings A* an impact factor of 0.944 (up from 0.915).

We also published two editions of our *Science Scotland* magazine on the subjects of *Towards a Greener Future* and *Informatics*. These are distributed across the UK and worldwide to >3000 people per edition and are also available to view freely on the website.

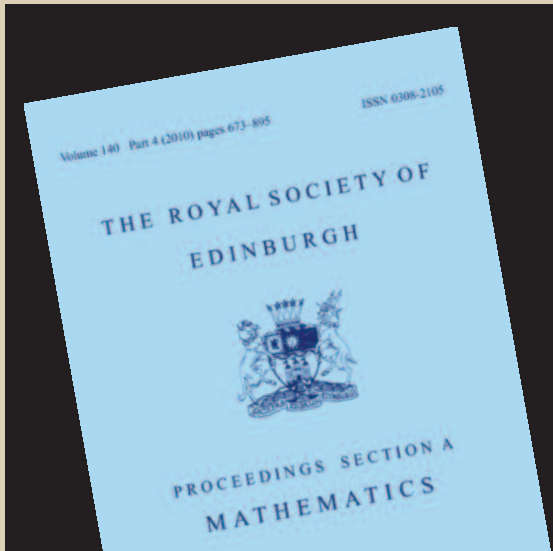
*Science Scotland* continued to increase people's awareness of cutting-edge science & technology activities in Scotland. During the year the website had almost 8,000 'unique' hits and was viewed by people in over 32 countries.

## Friends of the Society

Since 2009, the RSE has been developing a corporate engagement initiative entitled *Friends of the Society*, and a number of prominent organisations have joined the scheme, established with the purpose of cultivating the RSE's relations with Scotland's business sector.

The project continues to provide an opportunity for the Friends of the Society to find out more about the RSE and the important work it carries out. It also furnishes the RSE and its corporate partners with a platform to explore areas of potential mutual interest and we are working closely with our "Friends" to develop a number of projects.

During this review period, April 2010 – March 2011, the members were Aegon UK, Arup, BP, Lloyds Banking Group, RBS, Scottish Enterprise, Shell and Wood Group. More recently they have been joined by several others and we expect membership to grow further in the years ahead.



RSE FRIENDS OF THE SOCIETY 2010/2011



DRUMLANRIG CASTLE, DUMFRIESSHIRE, THE GROUNDS OF WHICH WERE USED AS ONE OF THE VENUES FOR THE RSE@DUMFRIES & GALLOWAY PROJECT



A WILDLIFE AND THE ENVIRONMENT WORKSHOP, RSE@DUMFRIES & GALLOWAY

# Financial review and future plans

The surplus for the year was £327,000, including two non-recurring items – an initial payment of a legacy from Dr Gethin Lewis of £62,500 and an exceptional pensions credit of £240,000, arising mainly from the revaluations of pension liabilities using the CPI rather than the RPI as an inflation measure. The underlying outcome for the year was a surplus of £19,000, compared to a £62,000 deficit in the previous year.

## Income and Expenditure

Total incoming resources were £5.95m (2010–£5.29m), an increase of 12%, mainly from increases in income relating to charitable activities. Voluntary and investment income of £1.34m, including the legacy payment and continuing contributions from the 'Friends of the Society' – corporate partners of the RSE was similar to the previous year.

Incoming resources from charitable activities of £4.61m increased by 17% from 2009–10. Promotion of research and innovation rose due to expansion of the Arts & Humanities research funded by the Scottish Government and the increased duration of Scottish Government Research Fellowships.

On a like-for-like basis, total expenditure increased by 9% (£0.50m), reflecting the increased expenditure on charitable activities. Including the exceptional pension adjustment, expenditure increased by 5% (£0.26m).

Expenditure on charitable activities increased by £0.48m. Grants payable in support of research and innovation made up the major part of the increase, rising from £3.64m to £4.01m. Expenditure on Scottish Government-funded research rose by £0.6m, offset by reductions in the CRF grants payable (as expenditure was reduced to balance income) and a fall in expenditure on Enterprise Fellowships due to the timing of appointments made. Expenditure on influencing public policy also increased, due principally to an increase in the volume of activity.

Governance and management costs have continued to be less than 3% of total recurring income.

The RSE's general fund increased by £410,000, largely attributable to an ephemeral pension credit and reduction in the pension liability. Realised and unrealised investment gains of £524,000 accounted for most of the increase in the designated and restricted funds.

## Young Academy

Plans are now well advanced for the creation of a Young Academy of Scotland. 336 applications were received from young academics and professionals and the first cohort will be chosen by the RSE Council. The reason for the RSE creating the Young Academy is the belief that the future vitality of Scotland will depend in large part on how we support and engage with the most talented and creative members of the rising generation.

Through the Young Academy, the intention is that the best and most forward-looking young scientists, scholars and professionals will be able to develop a distinctive, coherent and influential 'voice' to address many of the challenging issues facing their own particular areas of activity and also society more widely. It will provide a means of reaching beyond the individual domains in which its members work and provide an opportunity to interact across disciplines and professions. It will be part of a growing movement of Young Academies across Europe and thus provide an opportunity for its members to interact with their opposite numbers in Continental Europe. It will be the first such Young Academy in the UK.

## Future Plans

The Scottish Government has cut the RSE's grant by 16% for 2011–12 and future levels of grant are uncertain. The RSE Council continues to put forward strong evidence of the value of the activity that Government funds; and in reviewing the RSE's strategic framework and priorities beyond 2012, the Council will focus on the successful delivery of a varied programme of activities with public benefit outcomes. The Council will also seek, by developing partnerships with the corporate sector and others and by increasing its internal resources, to increase the income that the RSE receives from non-governmental sources.

# Financial review

## Group income and expenditure

	General Fund £'000	Designated funds £'000	Restricted income £'000	Restricted funds £'000	2011 total £'000	2010 total £'000
Grants, donations and legacies, rental and investment income	258	206	–	874	1,338	1,356
Incoming resources from charitable activities	78	–	4,179	354	4,611	3,937
<b>Total incoming resources</b>	<b>336</b>	<b>206</b>	<b>4,179</b>	<b>1228</b>	<b>5,949</b>	<b>5,293</b>
Cost of generating funds	(207)	(10)	–	(65)	(282)	(268)
Charitable activities	(237)	(56)	(4,179)	(949)	(5,421)	(4,933)
Exceptional FRS17 pension credit	240	–	–	–	240	–
Governance	(117)	–	–	(42)	(159)	(154)
<b>Total resources expended</b>	<b>(321)</b>	<b>(66)</b>	<b>(4,179)</b>	<b>(1,056)</b>	<b>(5,622)</b>	<b>(5,355)</b>
<b>Net incoming resources</b>	<b>15</b>	<b>140</b>	<b>–</b>	<b>172</b>	<b>327</b>	<b>(62)</b>

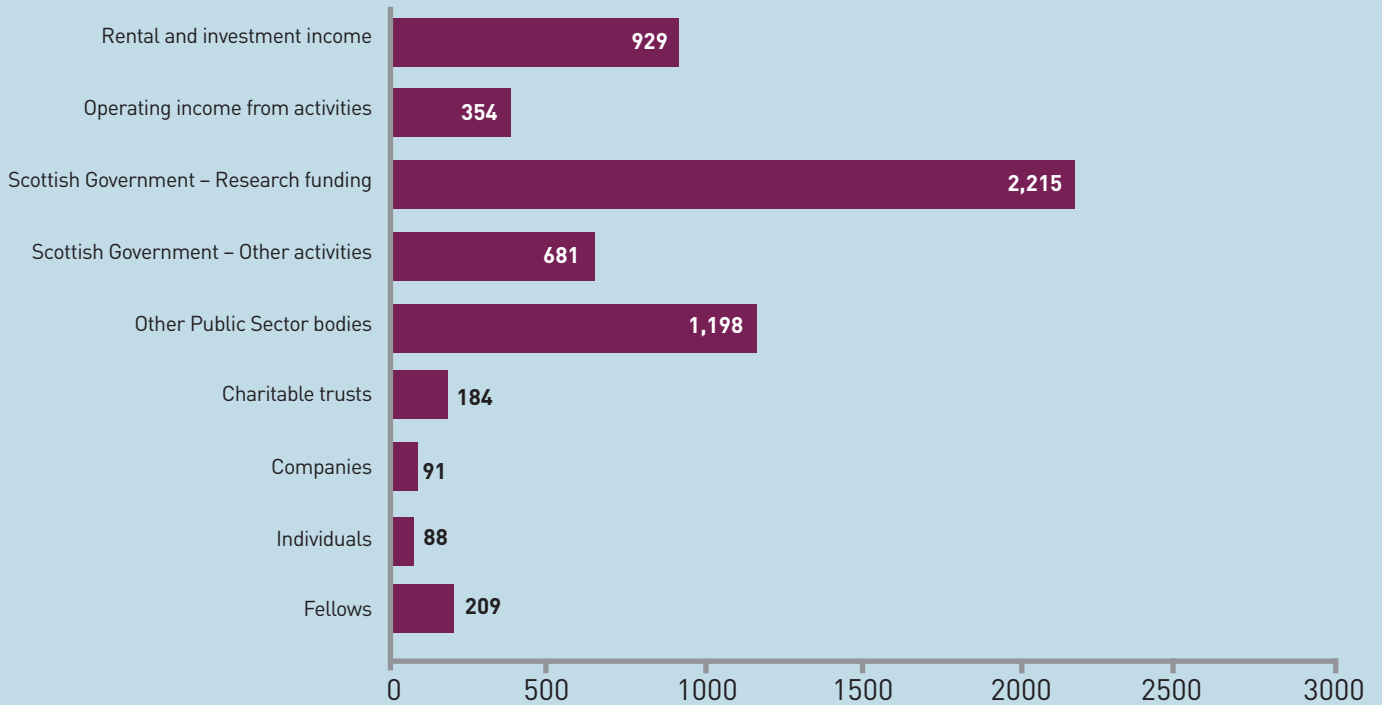
## Group balance sheet

	2011 £'000	2010 £'000
Tangible fixed assets	3,772	3,880
Investments	17,088	16,083
Current assets	1,217	771
Deposits	1,763	2,232
Cash	130	311
Current liabilities	(1,571)	(1,316)
Provisions for liabilities and charges	(217)	(390)
Pension fund asset/(liability)	–	(415)
<b>Total net assets</b>	<b>22,182</b>	<b>21,156</b>
<i>Represented by</i>		
General fund	758	348
Designated funds	7,699	7,487
Restricted income	–	–
Restricted funds	13,725	13,321
<b>Total funds</b>	<b>22,182</b>	<b>21,156</b>

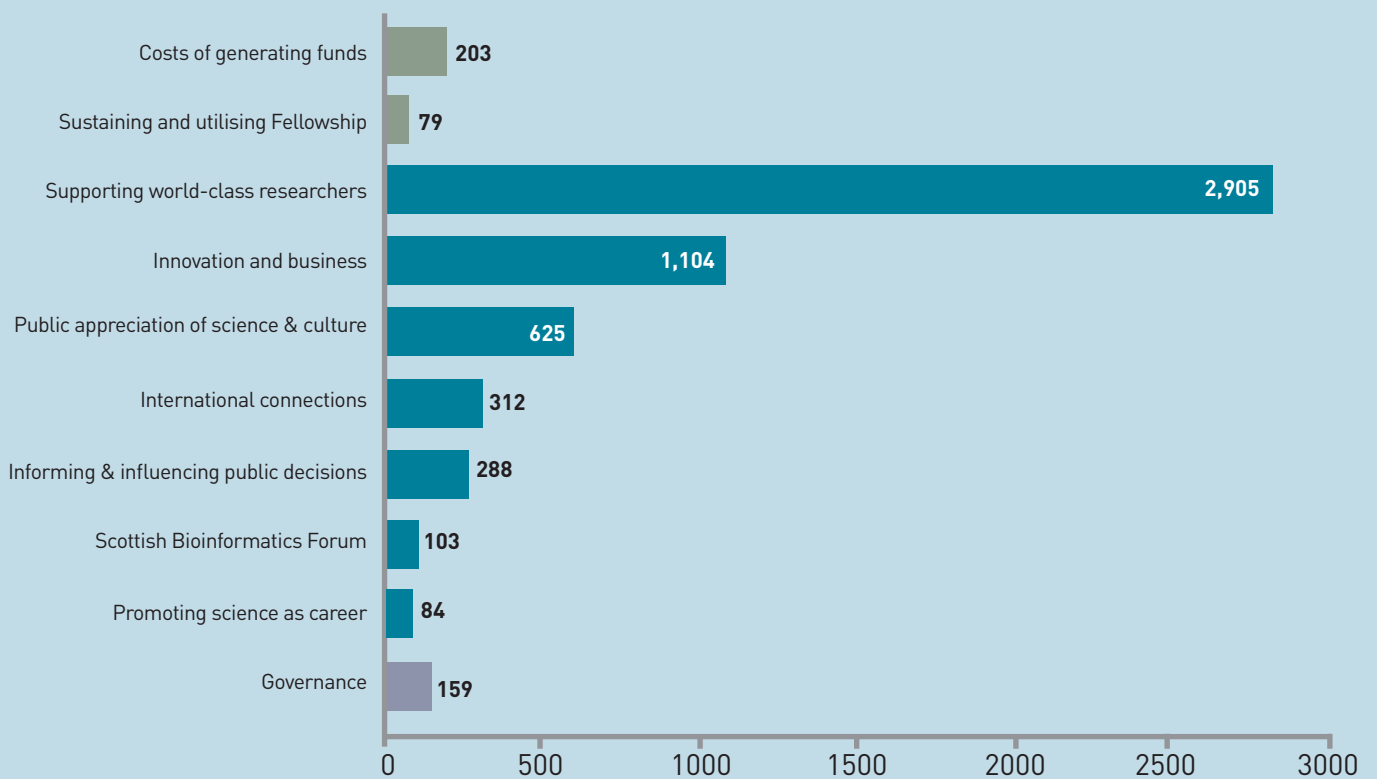
The figures above have been extracted from the audited accounts for the period ended 31 March 2011 which carried an unqualified audit report. The full Trustees' Report and audited accounts are obtainable in hard copy from 22 – 26 George Street, Edinburgh EH2 2PQ or on the RSE website [www.royalsoced.org.uk](http://www.royalsoced.org.uk).

# Financial review

## Income by source (£'000)



## Resources expended (£'000)



# Corporate governance and management

## Council Members and Trustees of the RSE

President:	Lord Wilson of Tillyorn KT GCMG PRSE
Vice-President:	Professor Jean Beggs CBE
Vice-President:	Mr John McClelland CBE
Vice-President:	Professor Hector MacQueen
Vice-President:	Professor Wilson Sibbett* CBE
General Secretary:	Professor Geoffrey Boulton OBE
Treasurer:	Mr Ewan Brown CBE
Fellowship Secretary:	Professor Peter Holmes OBE
Councillors:	Professor Cairns Craig OBE
	Professor Anna Dominiczak OBE
	Dr Ian Halliday CBE
	Professor Susan Manning
	Professor Sheila Rowan* MBE

---

## Executive Board

General Secretary:	Professor Geoffrey Boulton OBE
Treasurer:	Mr Ewan Brown CBE
Curator:	Professor Duncan Macmillan
Research Awards Convener:	Professor Alan Miller
International Convener:	Professor Sir David Edward PC KCMG
Programme Convener:	Professor John Richardson
Young People's Programme Convener:	Professor Mary Bownes OBE
Chair of RSE Scotland Foundation:	Professor John Coggins OBE
Education Committee:	Professor Sally Brown OBE

---

## Senior Management

Chief Executive:	Dr William Duncan
Director of Finance:	Kate Ellis
Director of Corporate Services:	Graeme Herbert
Director of Business Development & Communications:	Gordon Adam

*\*denotes Office-Bearers elected in October 2010*



The Royal Society of Edinburgh is Scotland's national academy. Founded in 1783, its Fellowship includes some of the best intellectual talent in academia, the professions and business. It facilitates public debate, research programmes, educational projects and strategy formulation. Its strength is its diversity and impartiality. The Society's unique multi-disciplinary approach enables it to draw from and link with a broad spectrum of expertise to advance the understanding of globally-important issues. In fulfilling its Royal Charter for the 'advancement of learning and useful knowledge', the RSE is seeking to contribute to the social, cultural and economic wellbeing of Scotland.

The Royal Society of Edinburgh  
22 – 26 George Street  
Edinburgh  
EH2 2PQ

T 0131 240 5000  
F 0131 240 5024  
E [rse@royalsoced.org.uk](mailto:rse@royalsoced.org.uk)  
W [www.royalsoced.org.uk](http://www.royalsoced.org.uk)

The Royal Society of Edinburgh is registered in Scotland as Scottish Charity No. SC000470  
The RSE Scotland Foundation is a connected charity, registered in Scotland as Scottish Charity No. SC024636  
ISSN 1742-1810

*This document is printed on 100% recycled paper*