Foreword

The Rt Hon George Reid MSP, Presiding Officer of the Scottish Parliament & Professor John Coggins, FRSE, RSE Vice-President

Our nation is world-renowned for its pioneering legacy of invention and innovation. Research and technological advances in areas such as medicine, agriculture and communications have transformed the lives of millions. Scotland’s expertise in R&D and the enterprising spirit of many researchers and entrepreneurs have made a major contribution to our economy. With increasing international competition, it is essential that we continue to produce and attract top people. We have particular opportunities in the medical sciences, the physical sciences, in engineering, and we need to link all of these together. Collaboration must be key to Scotland’s future prosperity and so we were delighted that The Royal Society of Edinburgh and Scotland’s Futures Forum were able to work in partnership on this event which took place in The Scottish Parliament on September 2.

Introduction

It was fitting that this gathering preceded The Royal Society of Edinburgh’s Research Awards presentation when RSE Research Awards Convener, Professor David Saxon presented over forty Research & Enterprise Awards and Prizes worth over £1.7 million. Selected by the RSE, these awards enable some of the brightest academics and potential entrepreneurs from home and abroad to undertake world-class research here in Scotland. The aim of the meeting was to seek further ways of attracting top researchers to Scotland and to stimulate debate on this important issue. This was the first major event of Scotland’s Futures Forum, which enabled leading members of the academic and business communities, as well as rising stars across a broad spectrum of disciplines to engage with the politicians in our Parliament.

Opening speeches were made by Dr Gary Crawley of the Science Foundation of Ireland; Mr Hugh Ilyine, Stem Cell Sciences Ltd; and Professor Peter Grant of the Scottish Science Advisory Committee. Breakout groups then considered the following key questions:

- Which stages of a researcher’s career need most additional support or present the greatest opportunities in attracting and retaining research talent?
- How can Centres of Excellence best be created and are they the most effective use of limited funds?
- Which subject areas or disciplines need most additional support or present the greatest opportunities in attracting and retaining research talent?

The discussion of each of the groups was summarised by group Chairs: Professor John Coggins, Professor Peter Holmes, Professor John Mavor, Professor Gavin McCrone and Professor David Saxon. This was just the beginning of the process, however, and we invite you to respond to the thoughts and conclusions contained in this report by contacting Scotland’s Futures Forum or the RSE and engage in the debate, looking towards Scotland’s future.
Attracting, retaining & recognising Scotland’s research talent

Friday 2nd September 2005

Programme

5.00pm  Welcome by the Presiding Officer of the Scottish Parliament, The Rt Hon George Reid, MSP
         Introduction, RSE Vice-President, Professor John Coggins, FRSE
         Opening Statements, Dr Gary Crawley, the Science Foundation of Ireland;
         Mr Hugh Ilyine, Stem Cell Sciences Ltd & Professor Peter Grant, FREng, FRSE, FIEE,
         FIEEEE, Edinburgh University and Member of the Scottish Science Advisory
         Committee (SSAC)

5.25pm  Break-out Workshops (in Committee Rooms): Attracting & Retaining Research Talent

6.15pm  Plenary Discussion (in Main Chamber), chaired by Professor John Coggins, FRSE
         Workshop Session Chairs Report Back:
         Professor John Coggins FRSE
         Professor Peter Holmes FRSE
         Professor John Mavor FREng FRSE, FIEE, FIEEEE
         Professor Gavin McCrone CB, FRSE
         Professor David Saxon OBE, FRSE
         Dr Ian Sword CBE, FRSE

7.00pm  The Royal Society of Edinburgh’s Research Awards Ceremony
         & Reception: Recognising Research Talent
         RSE Research Awards Convener, Professor David Saxon, OBE, FRSE announced
         the 2005 RSE Research & Enterprise Awards & introduced Awardees to the
         Presiding Officer, The Rt.Hon George Reid, MSP

7.30pm  Reception hosted jointly by the Presiding Officer of the Scottish Parliament,
         The Rt Hon George Reid, MSP & Professor John Coggins, FRSE (in the Garden Lobby)
Dr Gary Crawley

The Science Foundation of Ireland

Dr Crawley highlighted the Foundation’s work in recruiting and retaining talented researchers. The Irish government set up the SFI in 2000 to help foster a climate of research excellence, with a particular focus on bioscience and on information and communication technology. A recent review headed by Professor Sir Richard Brook, Director of the Leverhulme Trust, concluded that it had played a major role in helping to internationalise the Irish research system, and had been “a most positive driving force for change”.

A key problem which the SFI tackled was the difficulty of hiring new staff, since there were few retirements and departures among existing staff. It has set up a range of awards, still evolving, to attract scientists to come overseas and live and work in Ireland. It pays grants to Irish universities which not only cover equipment and postdoctoral and postgraduate students but can also cover the full annual salary of the principal researcher. These awards continue for several years, in the hope of the lead researcher finding a more permanent university post in that time.

Dr Crawley said the SFI’s “bread and butter grant” was a Principal Investigator Award paying up to €250,000 (£169,500) annually in direct costs for up to four years. It had also made ten Research Professor Awards of up to €500,000 (£339,000), paid annually for up to five years. Talented young scientists, up to five years after a PhD, can apply for the President of Ireland Young Researcher Award which pays €200,000 (£136,000) for up to five years. As a result of Ireland’s current economic boom, its wages are around 135 per cent of the European Union average.

Dr Crawley stressed that all the awards were very competitive and subject to international peer review. “The success rate is really quite modest, something like 20 per cent in many cases. In the past four years, SFI has funded about 170 investigators, of whom 25 per cent came from overseas.” Dr Crawley said Ireland had many advantages, including many expatriates who would like to return, relatively high academic salaries, an attractive quality of life, a vibrant and international capital city, and good funding prospects for science research. “I suspect that Scotland has some of these same advantages, and I suspect that you maybe are or certainly could capitalise on these pluses,” he said.
Mr Hugh Ilyine

Stem Cell Sciences Ltd

Mr Ilyine said his company had decided to relocate its headquarters from Melbourne Australia to Scotland because of the excellence of the scientific expertise at the University of Edinburgh. The ten-year-old company works with academic centres of excellence in several countries, and has particularly close links with Edinburgh’s Institute for Stem Cell Research, an acknowledged world leader.

But Mr Ilyine also stressed the importance of financial backing. There were concerns about the failure to commercialise research discoveries, said Mr Ilyine, and he believed this was linked to capital funding. When Stem Cell Sciences moved to Edinburgh, it was supported by Scotland’s leading business angel syndicate, Archangel Informal Investment, and the Scottish Co-investment Fund set up by Scottish Enterprise.

“I suspect without that, we wouldn’t have come, because you need to have capital along with people and creativity. Having creative capital available to bring people here is very, very important.” The company employs a number of Scots, but has also attracted international expertise, hiring Australian, French, Irish, Spanish and English staff. Mr Ilyine said if Scotland wanted to be best in the world, it should focus to begin with on being at least the best in Europe, rather than “worrying too much” about the United States.

He argued that the key to doing better than other countries was through bringing together researchers from different disciplines.

“We can’t live in our silos any more doing our work,” he said.

“If we look at the stem cell area, it is the integration of the embryology and the reproductive science and biology, it is the integration with the cell biology, for example at the Institute for Stem Cell Research at the University of Edinburgh. On top, it has to be work done in conjunction with the medical and clinical research and application that takes place in the hospitals. I would argue that without this, Scotland doesn’t have a chance to be a more interesting, more exciting and more gregarious place than other countries that may have more money and manpower.”

After 18 months in Scotland, he said he was extremely satisfied with life there, not only on a business and science level but also a personal and family level. “There are many fabulous things and sometimes I suspect Scotland doesn’t do enough to broadcast it. A little more blowing of the bugle out there would help to attract people here, to realise just how superb both life and the quality of science are.”
Opening statements

**Professor Peter Grant**  
FREng, FRSE, FIEE, FIEEE  
Head of The University of Edinburgh’s School of Engineering & Electronics & Chair of the Scottish Science Advisory Committee working group “Investing in Scientific Talent” (2004).

Professor Grant said the SSAC believed that attracting, retaining and recognising talent were among the most important challenges in addressing the future prospects for competitive science and technology in Scotland.

The SSAC recognised the need for selected professorial appointments in Scotland, bringing in appropriate staff in order to grow the country’s science and technology base. “In addition to attracting star researchers to Scotland, it is imperative that we have a research environment that attracts and supports particularly the young researchers, where some may be gaining experience in research as undergraduates,” he said.

The provision of a range of Research Fellowships and Enterprise Fellowships was a vital route by which high-fliers could gain expertise and experience early in their career. Professor Grant said that as a Head of School at Edinburgh, he personally knew of the importance of Enterprise Fellowships. These one-year fellowships, funded by Scottish Enterprise and run by the Royal Society of Edinburgh, allow young researchers to develop a company based around their ideas, backed by help from mentors, business experts and professional advisors.

Professor Grant said he used the terminology “spin-out company” for one which had come out of a university faculty, and in which the university owned some of the intellectual property.

“But I find now we have got more start-up companies which are actually formed by the PhD students. When they finish their PhDs, they move on to Enterprise Fellowships, and then they form their own smaller companies, and then these companies grow,” he said. “I find in my school that we have got almost as many start-up companies as we have spin-out companies. This is really important for Scotland, because this is the formation of new Small and Medium Enterprises and future SMEs for the benefit of us all.”

While the SSAC supported the ongoing and planned initiatives to allow universities and research institutes to attract major research figures to Scotland, it fully appreciated the importance of producing new generations of home-grown trailblazers, he said. And he urged young researchers to tell the SSAC how they thought the research environment could be improved.

The quality of the RSE research award winners demonstrated that Scotland had intellectual talent in abundance, and with their input, there was no reason why the nation’s science and technology could not reach new heights.
Question for discussion:

Which stages of a researcher’s career need most additional support or present the greatest opportunities in attracting and retaining research talent?

There is widespread agreement that the most important phase of a researcher’s life is the transition from a research contract to a permanent post. Scottish universities need to invest more in making themselves an attractive prospect, since there is a real risk of losing research talent at this stage. Young researchers planning for the future may go abroad or even leave higher education completely. It is at this point that researchers begin to establish networks, and if Scotland is seen to offer stimulating and productive opportunities, they are more likely to make a permanent career here.

Scotland’s innovative moves towards research pooling across a number of universities are likely to prove a draw in expanding researchers’ horizons and offering new challenges beyond a single institution. This is also a time when young researchers may be thinking of settling down and starting a family. The quality of life in Scotland is seen as high, but a major incentive for researchers to stay would be for universities to offer free or heavily subsidised childcare.

There is no need for a radical upheaval of current career paths, attempting to promote “research-only” careers. The standard academic model, which combines research, teaching and administration, is a good one, offering greater options throughout a researcher’s working life.

Research pooling from a base within universities is arguably a better option than free-standing institutes in disciplines such as physics and chemistry which would employ their own staff. The university base allows researchers to be flexible and responsive to new developments, while a separate institute would risk being preoccupied by its own survival.

Boosting home-grown research talent not only means striving to improve conditions for academics but also getting youngsters interested in the possibility of going to university in the first place. Outreach schemes for pupils are important in making them aware of the options.

Scotland also needs to attract outstanding researchers from elsewhere in the world. Excellence should always be a key criterion in making appointments, but universities need to ask themselves where the talents of a particular researcher would flourish most, and where they would best help the talents of others to flourish. The University of Dundee has been outstandingly successful in developing biological sciences in recent years, and has a policy of appointing brilliant researchers who can fit into existing teams of scientists and add value to them.

Post-doctoral students suffer from being dependent on established researchers for their funding until they can secure an academic post. The Royal Society of Edinburgh’s Research and Enterprise Fellowships are seen as a valuable source of support, but the number available are limited.

One solution could be for research councils to relax their policies and allow young scientists to apply for their own salaries, as is already the case with the Medical Research Council.
Which stages of a researcher’s career need most additional support or present the greatest opportunities in attracting and retaining research talent?

At present, there is an expectation that grant applicants have an academic post which will last beyond the period of the grant. This could be an opportune time to urge the research councils to adopt a common policy, as new Full Economic Costing rules require institutions to calculate the true costs of research, both direct and indirect; in return, grants will include an 80 per cent contribution towards these costs.

There are hopes that this will encourage universities to think more about career planning for young researchers. The uncertainty of short term contracts and the difficulty in establishing a career path leads many young researchers to leave, a significant waste of public money since their training may have taken ten years. They are also likely to have accumulated significant debts as undergraduates and postgraduates, making them anxious to find job security.

New legislation already means that researchers on short term contracts are eligible for redundancy payments, and universities have a growing responsibility to support their career development. There is a large ageing population in higher education and job opportunities are expected to increase as staff in their 50s and 60s retire.

But there is concern that young researchers’ expertise is not adequately recognised when they are part of a large research team. The transition from a temporary position to a permanent one is highly competitive, and there is a question over how to identify individuals’ contributions.

The growing trend for multidisciplinary teams also creates a need to help researchers retrain, since they will need to acquire basic skills in different disciplines in order to work together. Industry is showing great interest in multidisciplinary research, and the pharmaceutical industry in particular is also interested in clinicians, whether doctors, dentists or veterinarians, who have had research training as well. But there is a dearth of people with this combination of expertise because of a lack of funding opportunities for clinicians to take PhDs.

Support would also be valuable for academics in their mid or late career, enabling them to shed their teaching and administration responsibilities for a set period to concentrate on research.

Key Conclusions & Questions Arising:

- The most important time to support researchers’ careers is the transition from temporary to permanent status.
- Quality-of-life issues, such as university funded crèches, are important in retaining researchers.
- Research pooling is a potential attraction, creating opportunities for working beyond the boundaries of a single institution.
- More should be done to interest schoolchildren in going into higher education.
- It would be useful for young researchers to be able to apply directly to research councils for their salaries.
- Universities must do more to ensure there are good career paths for young researchers.
- There should be more encouragement for clinicians to undertake research training, since the combination of skills makes them a great asset to industry.
- How can young researchers working within large teams get sufficient recognition to help them move into a permanent post?
- It is important to support academics in mid or late career to concentrate on research for a time.
Question for discussion:

How can Centres of Excellence best be created and are they the most effective use of limited funds?

There is a tension between competition and collaboration in research. Rivalry may encourage researchers to work harder, but may also lead to a brain drain from some institutions. Collaboration may lead to complacency, but may also prevent unnecessary duplication of work.

There is some feeling that a degree of competition is healthy, and that a single Scottish centre of excellence in a particular subject risks losing its competitive edge. Establishing a discrete centre with its own site could also ossify a subject, and there is a belief that centres of excellence should develop from the bottom up and be flexible, allowing the spotlight to shift when necessary.

Rather than having centres of excellence in individual subjects, there is support for the idea of promoting Scotland itself as a centre of excellence. Scotland is a world leader in terms of research output but fails to broadcast this sufficiently. Selling Scotland as a centre of excellence could be backed by an advanced study institute, concentrating on different disciplines perhaps for a year at a time, which would act as a meeting place, think tank and focus for strategic debate.

There is enthusiasm for the new developments in research pooling, bringing together researchers from a range of universities. Groupings have already been established in both physics and chemistry, embracing a number of university departments. This is seen as evolutionary change supported by the scientists themselves rather than top-down policy-making and branding. This could also offer a solution to the debate on competition versus collaboration. While the research pools allow academics across the country to work together, they will still foster an element of competition, in that each grouping will want to be the best within the pool.

These research pools are expected effectively to become centres of excellence despite being spread across institutions. Presenting them nationally and internationally as one centre rather than a disparate group of individuals can be done through easily navigable web-pages with links to all the members.

There are fears that Scotland is suffering, or will suffer, a brain drain, exacerbated by more selective research funding in England, but there is a lack of clear evidence. There were similar perceptions in Australia, but a systematic, in-depth study revealed no major problem. There needs to be a proper assessment of the number of researchers coming in and leaving the country, and of what stage of their career they are at.

Universities themselves must make decisions about setting up centres of excellence. These are not initiatives that can be taken by the Scottish Parliament or Scottish Executive, since there is a strong danger of failure unless the academics themselves are committed to the venture.

But it is important to foster an environment in which people are encouraged to work together. The key to success is an alliance between individuals with a passion for their research who believe they have a genuine overlap in
How can Centres of Excellence best be created and are they the most effective use of limited funds?

interest. The imposition of an overarching centre is unlikely to have a clear focus, and risks wasting resources. It would also be unwise to concentrate resources on specific themes, since many key areas in existing centres of excellence began as small projects.

World-class research needs a critical mass of researchers, and Scotland is too small to be able to compete in every discipline since that will dilute the available funding. It needs to concentrate on being recognised internationally in certain niche areas, since major international companies increasingly work with only a few centres across the globe rather than funding a large number of small contracts.

Centres of excellence with a physical presence can have the advantage of being an economic multiplier, attracting ancillary services such as maintenance companies, shops and restaurants. But centres can also be virtual. There are already signs that Scotland’s research collaborations in physics and chemistry, which do not have a single base, are attracting talented researchers from outside Scotland, and not only expatriate Scots. One international researcher took up a professorship specifically because research pooling gave him the opportunity to work across two institutions.

Another benefit of the new alliances is the ability to offer prize studentships which are open to applicants from any country. These have brought in high calibre postgraduates from overseas. Legislative changes have opened up research council studentships to European Union applicants, but some disciplines face a dearth of local applicants, while there is strong demand from international students who are ineligible.

Academics are considering lobbying the research councils to change their rules.

There is concern that the Research Assessment Exercise (RAE) primarily rewards pure, blue skies research, but so far has not paid enough attention to applied research. There are instances of university departments which are very successful in knowledge transfer being given a low rating in the RAE. But commercialising academic research is of great importance to Scotland’s economy. There should be more opportunities to bring together academics and industrialists informally, since these can foster collaborations that lead to new businesses.

Key Conclusions & Questions Arising:

- Trying to establish individual centres of excellence may be too rigid, but Scotland itself could be marketed as a centre of excellence.
- The new collaborative research pools could develop into centres of excellence.
- Scotland should establish an advanced study institute as a meeting place, think thank and focus for strategic debate in different disciplines.
- Solid research is needed into whether Scotland suffers from a brain drain, and the proportion of researchers at different career stages.
- Universities, not politicians, must make decisions on setting up centres of excellence.
- Scotland’s research pooling initiatives are already showing signs of attracting international research talent.
- Scotland should seek international recognition in several niche areas rather than attempting to compete internationally in all disciplines.
- Applied research deserves greater recognition and support.
Question for discussion:
Which subject areas or disciplines need most additional support or present the greatest opportunities in attracting and retaining research talent?

There is a difficult choice to be made between investing in underdeveloped areas which Scotland believes are important for research and building on its existing research strengths. There are fears that research may suffer because of a lack of clarity about what the goal is.

But there is a firm belief that Scotland must maintain a broad educational base as vital to the development of specialist areas. It would be a mistake to invest in fashionable areas, which may subsequently disappear, at the expense of a solid foundation, since it is impossible to predict which areas will be most valuable to society and the economy in the long run.

It is also important not to take a narrow economic view: research into climate change, for example, has no direct impact on wealth creation but is critical for the country’s long-term well-being.

Planned growth in particular areas is possible, but takes time. A noted success story is the rise of life sciences at the University of Dundee, which have grown from a biochemistry department of 11 people to a faculty of 820 staff from 60 different countries; but this has taken 20 years.

Scotland’s small size makes it vulnerable to the loss of even a few key researchers. In the last Research Assessment Exercise, which assesses the quality of research across the UK, only 400 scientists were submitted at the top 5* level, the bulk from the University of Edinburgh and 100 from Dundee.

There is disappointment over the low level of investment in research and development by industry, only 5 per cent of the UK total compared to Scotland’s population share of 9 per cent. This is despite universities taking a much more positive attitude towards knowledge transfer and the commercialisation of research than they did in previous decades. Academics are encouraged to work closely with industry and to start their own spin-out companies, but links between higher education and business still need to be further improved.

Despite devolution, Scotland does not have a great deal of discretion over its research priorities. Many of these are largely determined at UK level through, for example, the research councils, the major charities and Whitehall government departments.

But there can be advantages in this, since it allows Scottish research to be coupled to major work south of the border, adding greatly to what can be achieved. This can help maximise the amount of funding Scottish universities bring in.

It is impossible to predict which areas of research should be supported because they will prove important. The timescale of research is often several decades and what appears promising at one stage could have faded within a few years. The significance of key research breakthroughs, such as the invention of the transistor and the development of optical fibres, was not recognised at the time. Nurturing areas such as life sciences, medicine, computer science, and energy and renewables is valuable, but research should be able to develop on a broad front.
Which subject areas or disciplines need most additional support or present the greatest opportunities in attracting and retaining research talent?

It is essential to have good conditions to attract researchers. In many areas, researchers can find very lucrative posts in industry, and universities need to make an academic career more attractive.

Research pooling, bringing together staff in one discipline from different universities, is a positive move in boosting research excellence. It enables a broader research community to decide which areas will be most productive.

There is a great deal of excitement about the potential of interdisciplinary research, with researchers from different subjects working together. New discoveries are expected to be as significant economically as scientifically. But despite widespread agreement that interdisciplinary work deserves support, there is concern that it is being hampered by traditional funding and assessment methods. Academics are frustrated by the lack of interdisciplinary evaluations of such research proposals: these are generally reviewed by experts from separate disciplines who are more likely to accept a single subject proposal.

There has been some support from the research councils for “discipline hopping,” short term grants enabling researchers to move from one subject area to another. But researchers say this is not leading to any sustained improvement. They are reluctant to make a shift that may only last for a year, and those taking up the option report that once they have established an interdisciplinary project, it is almost impossible to find funding to take it forward.

There can also be problems in maintaining state-of-the-art research equipment. This is often acquired through a special initiative underwriting costs for the first few years, while the equipment will have a longer lifespan. Universities may not have funds for specialised senior technicians who are able to operate the equipment to its full extent and develop new uses for it. Without expert technical staff, researchers’ progress is reduced. The problem is often masked by post-doctoral researchers taking on technical work, but their expertise is limited and this diverts them from research.

Key Conclusions & Questions Arising:

- Scotland should ensure it maintains a broad educational base rather than trying to predict which particular disciplines will be most valuable in future.
- Scotland has limited discretion to determine its own research priorities since much of the funding comes from UK bodies.
- The small size of the higher education sector means that areas of research strength are vulnerable to the loss of a few key researchers.
- Industrial research and development is disproportionately low compared to the UK as a whole, despite improving links between higher education and business.
- It is impossible to predict which subjects will be the research winners of the future. Excellent research is most likely to emerge if researchers have good working conditions.
- Potentially valuable interdisciplinary research is being hampered by a lack of interdisciplinary expertise in assessing it.
- Funds are needed for senior technical staff to maintain state-of-the-art research equipment over its lifespan.
- These costs can be hidden because post-doctoral researchers are carrying out maintenance work to the detriment of their own projects.
Summary

The consensus among Scotland’s research talent is that the country has much to be proud of and much to celebrate in terms of research excellence and innovation. Within the UK, it attracts a disproportionately high level of research council funding, has a disproportionately high number of world-leading research departments, and is among the world leaders in terms of research publications per capita. Yet it fails to broadcast its achievements adequately, a potentially damaging omission in an increasingly competitive global market.

Scotland can also promote an attractive quality of life, including affordable housing, spectacular countryside and a thriving cultural scene. But universities themselves need to make more effort to improve conditions for young researchers, who may otherwise seek posts in other countries or move out of higher education completely. The transition from temporary to permanent status is critical, and it is important that Scotland provides young researchers with secure career pathways so that they and their families have confidence that they can stay in higher education.

A recent innovation which is already proving a draw for both young and established researchers is research pooling. Scotland’s small size means that individual university departments struggle to achieve the necessary critical mass to produce outstanding research. The pioneering pooling strategy aims to overcome this by bringing together departments across a range of universities. Physics and chemistry are in the vanguard of these alliances, which will allow researchers to work beyond the boundaries of a single institution.

These research pools may well develop into centres of excellence, attracting international funding. The healthiest way for centres of excellence to grow is through the enthusiasm of academics themselves, rather than being externally planned. It is important not to be too prescriptive about subject areas, since these drop in and out of fashion. It is valuable to nurture a number of subject areas, such as life sciences and medicine, but it is of crucial importance to maintain a broad, solid educational base as a springboard for specialist research. Scottish higher education should maintain enough flexibility to respond to promising research whenever and wherever it emerges. And Scotland has the possibility of promoting itself as a centre of excellence on the international stage.

Ireland has been increasingly proactive in determining priority areas it wishes to support by creating research posts. Scotland does not have the same room for manoeuvre: many of its research priorities are determined at a UK level. But this can be of benefit in forging UK-wide research partnerships, and Scotland already punches above its weight in UK terms.

But links between higher education and industry are not as good as they should be, despite a growing willingness in universities to encourage researchers to create spin-out companies. Industrial research and development lags behind the UK average, and applied research has suffered from a lack of recognition compared to pure research, despite its importance to the economy.

Event Rapporteur: Olga Wojtas, Scottish Editor, Times Higher Education Supplement
Following a four-month scoping study, the Scottish Parliament has agreed to establish a Futures Forum. In a spirit of open learning and creativity the forum will:

- Expand the Parliament’s ability to learn from others and develop its capacity for futures thinking
- Bring MSPs into contact with new perspectives on longer-term issues
- Link the Parliament into existing networks, and relationships, with other organisations, companies and universities undertaking futures work, at home and internationally
- Enhance the Parliament’s profile both at home and abroad

You can get involved by:

- Signing up for a quarterly Futures Forum Newsletter giving details of the Forum’s work and forthcoming events
- Contributing your ideas on Scotland’s future and issues you think MSPs & others in public life should be considering
- Commenting on the Futures Forum, its work or direction

Please email: Robert.rae@scottish.parliament.uk

The Royal Society of Edinburgh (RSE) is an educational charity, registered in Scotland. Independent and non-party-political, we are working to provide public benefit throughout Scotland and by means of a growing international programme. The RSE has a peer-elected, multidisciplinary Fellowship of 1400 men and women who are experts within their fields. The RSE was created in 1783 by Royal Charter for “the advancement of learning and useful knowledge”. We seek to provide public benefit in today’s Scotland by:

- Organising lectures, debates and conferences on topical issues of lasting importance, many of which are free and open to all
- Conducting independent inquiries on matters of national and international importance
- Providing educational activities for primary and secondary school students throughout Scotland
- Distributing over £1.7 million to top researchers and entrepreneurs working in Scotland
- Showcasing the best of Scotland’s research and development capabilities to the rest of the World
- Facilitating two-way international exchange to enhance Scotland’s international collaboration in research and enterprise
- Emphasising the value of educational effort and achievement by encouraging, recognising and rewarding it with scholarships, financial and other support, prizes and medals
- Providing expert information on Scientific issues to MSPs & Researchers through the Scottish Parliament Science Information Service

For more information, please visit our website: www.royalsoced.org.uk

e-mail sbrown@royalsoced.org.uk   Tel 0131 240 5000
The Royal Society of Edinburgh

Telephone/Textphone +44 (0) 131 240 5000
Fax +44 (0) 131 240 5024
e-mail info@royalsoced.org.uk
www.royalsoced.org.uk

22-26 George Street, Edinburgh EH2 2PQ

The Royal Society of Edinburgh is Scottish Charity No. SC000470