Access to Science for Ayrshire
19 October 2010

held at
Kilmarnock College

initiated by
Willie Coffey MSP

FEEDBACK AND PROPOSED FURTHER ACTION

Supported by

KILMARNOCK COLLEGE and **East Ayrshire Council**

Table of contents

1 Summary of the event

1.1 Willie Coffey MSP initiated the Access to Science for Ayrshire event, held on 19 October 2010 at Kilmarnock College.

1.2 The key driver for the event was the lack of applications to the Scottish Government for 'Access to Science' funding from any Ayrshire-based organisations over a period of three years. Mr Coffey was concerned that this absence of applications from within Ayrshire highlighted that science received too low a priority in Ayrshire given that science plays an ever-increasing part in society and the economy.

1.3 Following an initial discussion, Heather Dunk, Principal of Kilmarnock College, offered accommodation at the college for an Access to Science summit, initially intended to be a single half-day meeting. Feedback from the Chamber of Commerce led to a widening of the event to incorporate all aspects of the Science, Technology, Engineering, and Maths (STEM) agenda.

1.4 Invitations went to the MSPs for the five Ayrshire constituencies, the three Ayrshire local authorities, Ayrshire Chamber of Commerce, Colleges, Universities, and a range of organisations with an interest in Access to Science, many of whom were already involved in Ayrshire. Through these contacts, the invitation to participate extended to others, including local STEM Ambassadors, who volunteer to support pupils, teachers, and schools in encouraging an interest in STEM subjects.

1.5 When the date of the event was agreed, the British Science Association offered to back up the summit by providing a briefing session for groups interested in submitting funding applications for activities linked to National Science and Engineering Week in March 2011. Science Connects offered to provide a briefing and induction event for the STEM Ambassadors programme.

1.6 After these developments, the event held on 19 October consisted of three sessions:

Session 1 was a 'Science Summit', chaired by Heather Dunk, Principal of Kilmarnock College at which a range of participants heard from Willie Coffey MSP, Ben Dipper of the Office of the Chief Scientific Adviser to the Scottish Government and Kirk Ramsay, Chief Executive of Glasgow Science Centre. This was attended by over 50 participants, mainly from Ayrshire based organisations, plus representatives of external agencies with an interest in some or all aspects of the STEM agenda, and interested individuals.

Session 2 was an induction event for the STEM Ambassadors programme, delivered by Aileen Hamilton of Science Connects. Alternatively, participants were able to undertake a tour of the college and to view its science facilities.

Session 3 was a briefing session for potential applicants for grant funding to run events for National Science and Engineering Week, in March 2011. This was co-ordinated and presented by Sandy Smith, Regional Officer (Scotland) at British Science Association. Dan Richards, National Science & Engineering Week Officer, British Science Association and Benjie Marwick Johnstone of the Young Engineers and Science Clubs, also gave presentations. This session was one of three briefing events organised by the British Science Association and attendees came from Ayrshire and surrounding areas.

1.7 More than 100 people, drawn from over 30 organisations registered to attend one or more of the sessions during the day. Through press coverage, expressions of interest also came from local residents with an interest in science engagement.

1.8 In addition to the provision of accommodation, Kilmarnock College also assisted with the administration of the event. East Ayrshire Council provided funding for refreshments, including a networking lunch for attendees. Students of the college prepared and served the lunch in the college's training restaurant.

1.9 Copies of a number of submissions made in support of the summit are attached.

2 General responses from participants

2.1 Across the three sessions, participants reflected that the event achieved its objectives; of raising the profile of science in Ayrshire and raising Ayrshire's profile in the science community, fostering co-operation, and building capacity.

2.2 The speakers and background materials triggered discussions and the wide range of attendees contributed insights to the issue from a variety of perspectives.

2.3 Those attending the event expressed considerable willingness to work together to address the issues raised. In particular, Heather Dunk offered continued involvement of Kilmarnock College in working to engage the private sector.

2.4 Despite emphasising the need for a higher profile for STEM subjects, participants highlighted the activity already taking place, particularly in Ayrshire schools, and that opportunities exist for a broader experience of science linked to the development of Curriculum for Excellence (CfE).

3 Issues identified during discussions

3.1 Attendees highlighted the need to disentangle what is a very large agenda – 'access' and 'science' both being very broad concepts - and to identify clear terms of reference for future action.

3.2 There is a need to identify linkages between action on access to science and likely outcomes in terms of changes in how Ayrshire residents participate in the wider society and economy.

3.3 It has to be recognised that outcomes are medium to long-term, and that this presents a challenge in arguing for resources against areas of expenditure providing more immediately visible returns.

3.4 The importance of inspirational teachers whether in formal education or in less formal settings was widely recognised, as was the need for partnership working and support for teachers.

3.5 The low number of applications for science funding might be due to a lack of science advisors in the area.

3.6 Beyond school, young people can pursue an interest in STEM subjects either through further or higher education or through an apprenticeship in appropriate industrial or commercial setting.

3.7 Ayrshire local authorities and other agencies and individuals need to develop a response to the 'Glasgow – City of Science' proposals and how Ayrshire might benefit from this development.

3.8 There is a need to emphasise the link between the study of STEM subjects and Scotland's place in the emerging society and economy, in which scientific and technological advances influence all aspects of life, from health to culture and the economy.

3.9 Scotland's universities and colleges have a continuing strength in scientific research and Ayrshire could be using that research base to support the development of local businesses.

4 Proposals for action

4.1 Key participants to be invited to join a short-life working group to put in place a cross-Ayrshire Action Plan to promote Access to Science for Ayrshire and to take forward proposals emerging from the event.

4.2 The working group should consider developing proposals for a Science Development Officer for Ayrshire with a remit to co-ordinate Continuing Professional Development (CPD) opportunities for teachers; promote industry links; stimulate school clubs focussing on STEM agenda; highlight relevant events, and generate inter-school challenges.

4.3 Initiate discussions with local STEM-based companies to secure their input to the development of greater access to science.

4.4 Schools should provide opportunities, for example through hands-on activities or work experience, for pupils to experience alternative methods of learning about STEM subjects.

4.5 Encourage the take up of opportunities for 'Adult only' evenings at the Glasgow Science Centre, which allow adults to increase their confidence in dealing with science issues and their ability to support younger learners.

4.6 Support the Scottish Maritime Museum to investigate further development as a centre for studying engineering in action.

4.7 Strengthen Ayrshire's links to the STEM Partnership, which started in Glasgow, but now encompasses Renfrewshire and East Dunbartonshire

4.8 Review the opportunities for greater joint working between schools and colleges to provide local access to the widest range of science and technology courses.

4.9 Ensure that schools, colleges, and students have an awareness of and access to the wide range of external resources, including from Glasgow Science Centre, Scottish Schools Equipment Resource Centre (SSERC), various science institutes, and the wide range of agencies working to promote the STEM agenda.

4.10 Encourage parents to consider the part that science and wider STEM subjects can play in a broadly based education, which is of benefit in many careers, even when the subject itself is not the focus of the job.

4.11 Provide further opportunities for people to ‘break out of their silos’ to see what happens elsewhere and to develop cross-Ayrshire and Ayrshire-centred networks.

4.12 Local authorities and Glasgow Science Centre to consider running an ‘Ayrshire Day’ at Glasgow Science Centre as part of the ECO Day programme during National Science and Engineering Week (NSEW) 2011.

4.13 The Glasgow Science Centre should consider running ‘Meet the Scientist’ days as an outreach programme for Ayrshire in 2011.

4.14 Encourage local groups to consider participation in National Science and Engineering Week in 2011 - and beyond.

4.15 Scottish Government to consider continuing to fund transport costs to enable Ayrshire schools and community groups to visit the Glasgow Science Centre.

4.16 Support the development of an Observatory and Visitor Centre at Craigengillen Estate, Dalmellington as an Ayrshire initiative linked to the Galloway Forest Dark Sky Park.

4.17 Investigate the use of GLOW (Scotland’s education intranet) to support greater co-operation between schools in Ayrshire.

4.18 Consider the development of an Ayrshire Science Festival.

Background Papers

Scottish Enterprise

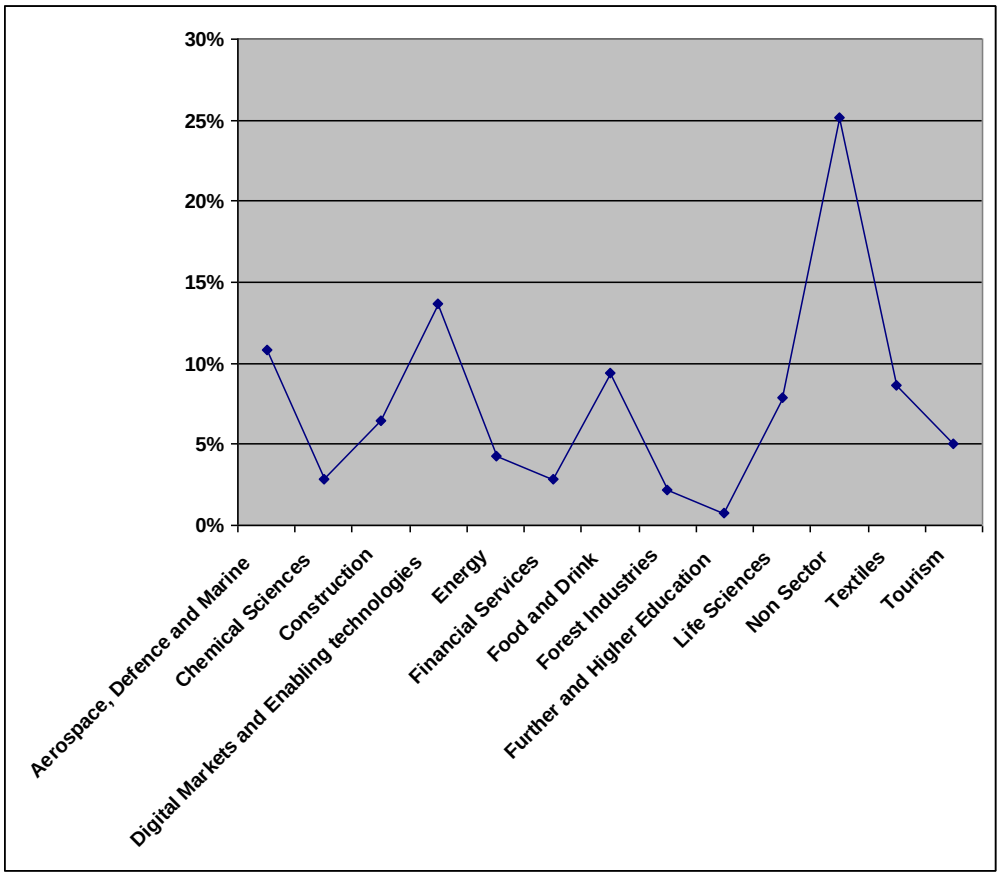
Scottish Enterprise works with a wide range of businesses across Scotland supporting them to achieve growth to sustain the Scottish Economy. Our focus is on helping businesses to increase productivity and boost innovation, priorities include:

- Encouraging companies to invest in innovation in order to develop new products, services and new ways of working

- Stimulate business innovation by encouraging companies to invest in R & D and strengthen links between Scottish companies and our universities.

Many of Scotland's industries, including life sciences, electronics, chemicals, food and drink and energy, have science at their core. These industries are dependent on innovation to create new products and new market opportunities and they could not exist without this underpinning science.

In Ayrshire, Scottish Enterprise engage with approx 140 companies and the table below shows a percentage breakdown of these companies by sector.



During the last financial year, eight Ayrshire companies were awarded innovation grant funding of over £1.6m towards almost £3.5m project costs.

East Ayrshire Council
Department of Educational and Social Services
Science Activities

Following publication of the Science Strategy in 2006, a number of activities and range of initiatives have taken place led by a science development officer whose responsibility it was to review and update courses and resources which could be used especially at the primary to secondary transition stage.

This initially was focused in Grange Learning Community with the expectation that this be rolled out across all authority schools.

In the primary sector, all primary schools have a named co-ordinator responsible for science curriculum developments. These staff have been working with the CfE experience and outcomes, which are now being implemented in schools.

Secondary science activity is overseen by a Quality Improvement Officer (QIO) who meets with science principal teachers three times a year to address areas of concern, facilitate sharing of resources, direct staff to training and development opportunities provided by the universities, Scottish Qualification Authority (SQA) and the Scottish Science Education Research Centre (SSERC).

Staff are updated on a range of science developments through SSERC, and developments in proposed new SQA courses are consulted upon through the network of science subject markers and a member of the Quality Improvement Team who was seconded to SQA to revise Higher Grade Biology. Upper secondary school students have access to SCHOLAR and staff have received updates on SCHOLAR developments to support SQA candidates. A small number of Science Departments are now offering the Science Baccalaureate. Opportunities for industrial visits have resulted in Biologists visiting Auchincruive, Chemists to UWS and Physicists to the defence contractors, Thales.

Over the years, East Ayrshire students have secured places in the Scottish Space School and won places to visit NASA in Houston. This year two students will be joining this prestigious group.

Other activities include habitat conservation with the RSPB, tree planting with EAC Rangers Service, fishery projects, developing nature gardens in school grounds, installation of bird boxes, visits to the Glasgow Science Centre etc to name but a few.

Despite a late uptake of GLOW within the authority, activity is beginning to increase and science materials and examples of interesting practice are now being posted for others to share.

With the implementation of CfE, schools are developing a wide range of interdisciplinary activities, which incorporate science in rich learning experiences, and, within the sciences themselves, the focus is on the social and everyday relevance of science in our lives.

Through Determined to Succeed, pupils are being increasingly exposed to STEM related activities and through a partnership with the Ayrshire Chamber of Commerce, local businesses with science related backgrounds are developing partnership with schools to raise the profile and importance of STEM in the economic growth of Ayrshire and beyond.

See article in Times Educational Supplement (Scotland) 8 October 2010 on Science Developments in Annanhill Primary and Grange Academy.

North Ayrshire Council
Education and Skills
Summary of Science Developments/ Activities 2009 – 10

- In August 2009, three seconded CfE Education Development Officers (EDOs) were appointed. The appointees were in post for session 2009-10. The posts covered Glow, numeracy and science. The main remit of each EDO was to support all North Ayrshire education establishments in taking forward CfE in each of these specific areas.

- The science EDO worked in partnership with the QIO with responsibility for science to put in place an action plan for the session. The science EDO also undertook training in the use of Glow (the Scottish Schools Digital Network) and created a Glow Science Strategy Glow Group to facilitate easier communication and sharing of good practice between nurseries, schools, and other education establishments.

- A Science Strategy Working Group was put in place to develop a North Ayrshire Science Strategy. The group had representation from a wide variety of stakeholders, including schools, QIO team and the Library and Information Service. The group met regularly over the course of the session. The Science Strategy is currently still in draft format (version 8) but will be finalised before 31st August 2010.

- Each school/ establishment identified a member of staff with responsibility for science to act as a science co-ordinator. This group met regularly, led by the EDO, and were engaged in exemplifying planning, science activities, projects (including interdisciplinary working) and assessment methodologies to support classroom teachers in the delivery of CfE experiences and outcomes from early to fourth level. As the co-ordinators developed materials, they used the Glow Science Strategy Group to share these resources and to highlight good practice. All staff have access to this Glow Group and are able to download content from the group and share their views/ opinions.

- The science EDO has also used this Glow group to identify other resources, including the Education Resource Service website where a Science Pathfinder was developed, and links to other useful websites. The group also has links to guidance materials produced by most organisations involved in science education in Scotland e.g. Her Majesty's Inspectorate of Education, Scottish Government materials, Learning and Teaching Scotland resources.

- The Science Strategy Glow Group is very well developed and is well on the way to becoming a ‘one stop shop’ for all science educational development needs.

- The science EDO attended school cluster meetings to highlight the development of the Local Authority Science Strategy, identify good practice, and establish a consistent approach to CfE developments with an emphasis on developing a seamless transition between levels. As a result, science cluster groups have been established. These groups met regularly after school and were involved in science development work, which, once completed, was fed back into the science strategy to update and refine documentation and exemplification. These groups will continue in the coming session, with an emphasis on assessment and moderation.

- The science cluster groups were also encouraged to provide 'in-house' CPD and peer mentoring. This has been very successful in one cluster in particular, the Greenwood Academy cluster, who hosted an in-service day for all science staff in the secondary and all primary and special school teachers. After an update on CfE developments, Greenwood Academy science teachers devised and delivered workshops focusing on simple, scientific experiments to do in primary schools to illustrate a number of scientific principles. The day was evaluated as very successful by all who participated.

- Science cluster groups have also been engaged in taking forward transition projects e.g. the Ardrossan Academy cluster developed a forensic science project for P7 pupils, "There has been a Murder!!".. The project was completed on the P7 induction days during the summer term at Ardrossan Academy. Pupils and teachers evaluated this very positively.

- Science cluster groups have all been encouraged to participate in STEM projects and other North Ayrshire projects, highlighted below. A STEM ambassador is in the process of visiting each school in North Ayrshire to highlight the service on offer. Other STEM involvement has included:

    - ICE Rapid Response Challenge
    - ICE Bridges to Schools, KNEX Challenge
    - STEM ambassador career talks.

- Other North Ayrshire projects include:

    - SNAP Space Project. Moorpark Primary School participated and created a SNAP Space Project Glow Group to showcase their work.
    - IOP Rocket Launcher project (all schools have 'rocket launchers' and staff training on using these devices has been well received).
    - North Ayrshire Transitional Project – the 'Art of Science' for 3 learning communities (Ardrossan Academy and Winton PS, Greenwood Academy and Towerlands PS, Auchenharvie Academy and Mayfield PS. This 'Space' project was co-ordinated by the Library and Information Service and funded by Determined to Succeed. Space resources were purchased for the secondary school and public libraries to support the project. Primary pupils visited their local libraries to research their topic and to complete a Glow survey about their visit. S1 and P7 pupils were involved in a one-day challenge event, which included talks by Dr Martin Hendry, Department of Astronomy and Physics, University of Glasgow and Phil Lavery of the Digital Learning Foundation; Star Show and Star Lab from Generation Science; Creative Learning sessions from Cultural Services and egg-drop and rocket launch challenges. A Glow Group has been established highlighting the events and science challenges of the day and providing pupils with an opportunity to evaluate and feedback their experiences.

- Industrial/ commercial links have been established between North Ayrshire and Chemring Energetics. Dykesmains Primary Schools has established links with Chemring, who participate in the school's annual world of work activity. Chemring Energetics also linked with West Kilbride Primary School, providing P6 and P7 pupils with an investigative laboratory challenge in school.

- Education and Skills hosted a very successful CfE Showcase at Greenwood Teachers' Centre on 19th March 2010. Science, as well as Numeracy and Glow,

were ‘showcased’ at this event. Many schools and some nurseries provided displays to illustrate pupils work in science. Pupils also participated in this event, taking part in workshops and interviewing and filming the activities. Professor Stuart Munro, OBE,(Scientific Director, Dynamic Earth) delivered a highly informative and entertaining ‘Keynote address’. Science workshops were delivered by:

- Peter Macklin, Development Officer, LTS, - Science Education in Scotland – “An Overview and Update of Current Developments”
- Aileen Hamilton, Science Connects – “Stempoints and STEM Ambassadors: An excellent source of external support to enrich science education in schools”.
- Stuart Strang, Towerlands Primary School and Stewart Burn, EDO – “Science Strategy – an Overview and Update”

Presentations, documents, and footage of this event were uploaded into a North Ayrshire CfE Showcase Glow Group. There was excellent feedback from delegates i.e. headteachers, teachers, QIOs and other invited guests. Feedback highlighted that the event generated a great deal of enthusiasm for science education amongst almost all participants.

- A resource for secondary schools, ‘Exploring Science’, directed at S1/2, was highlighted and evaluated very positively by a school trialling this programme (Greenwood Academy). Very generous discount allowed the purchase of this resource for secondary science departments, who also received initial training in its use.

- Through the subject leader networks, the EDO kept principal teachers up-to-date with the progress of the Science Strategy updates on the Baccalaureate SQA Qualification and updates on new NQ changes.

- The science subject-leader networks have also been used to take forward CfE developments in science and to highlight and share experiences, resources, and good practice.

- All secondary schools have access to SCHOLAR, and the Local Authority SCHOLAR link has met with Principal Teachers science (and other) at subject network meetings to bring them up-to-date with developments in the e-learning software.

- The Local Authority Education Resource Service website continues to develop its support for science education, and is an excellent resource for staff.

- An ‘Advanced Higher’ working group was set up to take forward support for the delivery of the Advanced Higher qualification in a number of subjects. This resulted in a Local Authority ‘Advanced Higher’ Website being setup and developed with input from subject specialists. This is still a work in progress and can be used to supplement SCHOLAR materials.

- A number of secondary schools arranged visits to Hunterston B Power Station to enrich pupils’ learning experiences. Three secondary schools have established close links with this establishment.

- Recently, meetings have been held with James Watt College and a steering group will be set up in the new term to look at increased joint working in relation to science and the establishment of local science pathways leading to degree courses.

South Ayrshire Council
Children & Community - Science Developments

Since the publication of the Science Strategy in 2006, the authority has initiated a wide range of CfE groups, one of which is Science. In terms of Science funding, the authority provided £36,000 to facilitate active learning in Science in all primary schools. The authority had a staff tutor in place from January to June 2007, who has a specialism in both science and primary teaching. See article in TES (6 January 2006 and 12 March 2010). The staff tutor is also a member of ASE, and has shared her experience and knowledge through the science group.

The science group was set up in 2007, with the publication of the draft experiences and outcomes that year. Several members of the group attended a launch event in Glasgow in January 2008, and were initially involved in trialling the draft experiences and outcomes, and feeding back their thoughts and ideas.

The group is made up of a mix of early years, primary and secondary practitioners, and range in experience from class teacher through to head teacher. The group has worked well together over the past few years, and as the group is cross sectoral, this has enabled a much greater development of materials, as well as allowing for in depth discussions and understanding.
Through the trialling activities, the group looked to develop planning materials, exemplar work and guidance and support with CfE. This entailed many twilight meeting and development work, alongside seeking the advice from QIOs and other members of staff from other local authorities, including East Renfrewshire, Lothian, North Lanark, Aberdeenshire, Inverclyde and Angus.

The group were also involved in initiating a CfE Glow group to share ideas and resources with teachers across the authority. The authority has trained all teachers in the use of Glow, and through this forum, the group have been sharing new and interesting practise, resources and support in CfE Science. Also accessed through Glow, staff have been making use of Glow science films, and have been using these resources with a wide variety of pupils and classes. The Science group have also highlighted, as well as participated in several Glow science meets in 2010, one of which (on the 9th June 2010) was held in Doonfoot Primary School.

Since the launch of both the draft and final experiences and outcomes, the group have been involved in presenting information to cluster groups, HT meetings, the authority CfE festival as well as the SLF in 2009 and 2010. Also through being involved in HT meetings, Science contacts have been identified in most primary schools, where information and resources can be shared quickly and effectively with all staff.

Staff in primary schools have access to SSERC resources through the SSERC bulletins and CPD courses. Other CPD courses, e.g. those developed by ASE are also highlighted through Glow, e-mails, and staff recommendation. ASE ran a Primary Science CPD opportunity on 12th November 2009, which will be repeated in February 2011. The council also have representation on the ASE annual Scottish conference. The authority also have close links with Millgate House publishing, and ran a CPD course in 2009, where several schools received the puppets for use in science investigations as part of attending the course. This association was also highlighted at the SLF in 2010.

Staff in secondary schools use SCHOLAR, have access to quarterly SSERC bulletins as well as CPD courses, and also share science developments through PT networks. Secondary pupils have access to a wide range of learning experiences in Science, from

Culzean Castle and the Glasgow Science centre to being involved in activities with senior pupils with the Scottish Agricultural College in September 2009 and 2010.

Since the publication of the final experiences and outcomes in April 2009, the group have completed unpacking the early, first and second level outcomes for staff to use as a template for planning in nursery and primary schools. Secondary staff have met separately, and have shared ideas, resources and materials, with a view to continuing to do this for interdisciplinary learning, and assessment materials. The group have accessed a wide range of CPD opportunities including the SSEC conference in May 2010, and have highlighted the opportunities that STEM and STEM ambassadors can bring to schools. Many staff will be attending a STEM twilight CPD course on 2nd December 2010. The authority have also organised an event on the 8th December on NQ developments in National 4 and 5.

The focus in session 2010 -2011 will be looking at assessment. The authority will be involved in producing a National Assessment Resource exemplar on substance misuse at third level, looking at interdisciplinary working on health and wellbeing through science and Personal & Social Education.

A resource for secondary schools, 'Exploring Science', directed at third level, was highlighted. A discount, as well as a recommendation from secondary teaching staff allowed the purchase of this resource for science departments by QIOs. Prior to this purchase, staff had access to Starting Science for Scotland textbooks, and Formative Assessment in Science resources through the PT networks in Science.

Staff in the authority work as markers, setters, vetters, and moderators in Science subjects with the Scottish Qualifications Authority. This continues to provide opportunities for staff development in Science, and allows staff to share their expertise across the authority.

In February 2010, the chair of the Science group was seconded as a Development Officer for CfE Science with Learning & Teaching Scotland. The chair of the Science group has also been involved with the development of revised Higher and Higher Human Biology, and is currently a member of the QDT for CfE Biology. The lead PT for Physics is involved in revised Higher Physics and Advanced Higher Physics developments.

Scottish Government
Office of the Chief Scientific Adviser – Science & Society Division
Relevant science engagement initiatives funded in 2010-11

Scottish Science Centres

Office of the Chief Scientific Adviser (OCSA) currently provides grant funding to support the delivery of high-quality science engagement activities at each of the four Scottish science centres:

- Glasgow (Glasgow Science Centre - www.glasgowsciencecentre.org);
- Edinburgh (Our Dynamic Earth - www.dynamicearth.co.uk);
- Dundee (Dundee Science Centre (Sensation) - www.sensation.org.uk);
- Aberdeen (Satrosphere - www.satrosphere.net).

OCSA also currently provides additional Transport Subsidy to support the transport costs to each centre for visitors from remote, economically and/or socially disadvantaged communities with its catchment. Half of the Transport Subsidy received by GSC is currently ring-fenced for Ayrshire communities. This funding is disbursed directly by each centre.

Science Engagement Grants

OCSA currently runs an annual competitive small grants scheme to support the delivery of a wide range of science engagement outreach activities across Scotland and across the breadth of STEM disciplines. Activities include public discussion events, workshops and debates and *Cafés Scientifiques*; exhibitions; schools outreach activities; family events; science busking; opportunities for practising scientists to meet the public and discuss their work. Further details and information on past and current funded projects is at: http://www.scotland.gov.uk/Topics/Business-Industry/science

This funding is complemented in 2010-11 by non-competitive funding provided to: Edinburgh International Science Festival ('Generation Science' programme of shows and workshops for primary schools); Engineering Development Trust's 'GO4SET' programme for secondary schools; and the British Science Association (Scottish grant scheme for National Science and Engineering Week 2011).

The Royal Society of Edinburgh

OCSA currently provides grant funding to support the delivery of several programmes of activity at the Royal Society of Edinburgh (www.rse.org.uk). One of these involves the RSE Fellows and other experts in the delivery of a range of science- and culture-based activities including: presentation and discussion events and lectures for the wider public; a schools programme delivering discussion fora, talks, lectures, masterclasses and summer camps.

Scottish Science Festivals

OCSA currently provides grant funding to support the development and delivery of 16 science festivals across Scotland. Although each festival is different, they all provide combinations of school, public and family events, and frequently involve business and industry in 'open-doors' events.

Science Careers Marketing Campaign

OCSA has recently funded a science marketing campaign under the strapline 'Do something creative. Do science', with the aim of tackling misconceptions about science subjects and careers held by many young people. The campaign creative highlights the link between science and young people's interests and hobbies (for example, sport, music, fashion), and ran in two phases from February 2009 to April 2010. A website has been established (www.infoscotland.com/science) and OCSA is currently considering options for the continued reinforcement of campaign messages.

Stem Clubs

OCSA is currently funding the maintenance and establishment of STEM clubs in 120 schools across Scotland from the Western Isles to the Borders. Delivered on behalf of OCSA by the four Scottish STEMNET contract holders (www.stemnet.org.uk), these are introducing around 5000 young people to STEM opportunities which may not otherwise have been available to them for a number of reasons (geography, resources etc.). STEM Clubs are not designed to be about writing, tests, or exams. Instead, they allow students to explore, investigate, and discover STEM subjects in a fun, stimulating learning environment away from the constraints of the school timetable. The STEM Clubs will help to tackle the UK's STEM skills shortage by transforming the way young people engage with STEM subjects, and they complement the network of Young Engineers and Science Clubs run by the Scottish Council for Development and Industry.

Big Bang

OCSA supported the first Big Bang Scotland event, in June 2010, to celebrate young people's achievements in the national STEM competitions and award schemes (including CREST Awards). These schemes reward creative project work, teamwork, problem

solving, and science communication skills in secondary school pupils. Several of the schemes depend on local industry mentors being involved to be a success. Many of the Scottish winners at the June event will represent Scotland at the UK competition finals, held at the Big Bang Fair in March 2011 (during National Science and Engineering Week).

Further Information

Further information about the wide range of science engagement opportunities and initiatives available across Scotland may be found at www.stemscotland.com and www.stemdirectories.org.uk

Edinburgh International Science Festival - Generation Science
Summary of Generation Science activities in Ayrshire

Generation Science, the schools touring arm of the Edinburgh International Science Festival, has been visiting Scotland's pupils in their own schools since 1991. We regularly cover the country from Stranraer to Shetland aiming to inspire, encourage, and challenge pupils and teachers to explore the world around them.

We deliver science shows and workshops suitable for nursery aged children right through to primary 7 and, sometimes, early secondary. The topics we cover are those that the teachers find more difficult to cover in class.

We use props, equipment, and resources that are not normally found in schools like giant inflatable domes, dry ice, or liquid nitrogen. We aim to reinforce class-work and provide first hand experiences of innovative and exciting science activities for the pupils.

From our digital records, we first visited a small number of Ayrshire primary schools in 2000 and performed four shows. From 2002 until 2005 we delivered every year around 60-85 shows.

From 2006 until present, we delivered between 90-135 activities per year.

From 2000, we have visited around 22,000 pupils in their schools in Ayrshire.

Through our network of individuals in the Generation Science Club and through some grant giving trusts we have been able to further subsidise shows for schools in Ayrshire some resulting in a free show for a class.

As part of our fundraising for the whole tour, we do target companies or businesses in areas where we have a relationship with the schools and/or local authority.

In terms of companies in Ayrshire, we have worked with British Energy now called EDF Energy for the past 10 years.

Useful weblinks

Young Engineers and Science Clubs:

New Young Engineers and Science Clubs can register here and receive start-up funding of £100.

CREST Awards

CREST gives young people aged 11-19 opportunities to explore real world projects in an exciting way.

The Big Bang Fair

To register and attend the Big Bang 2011, which will take place at ICC London ExCeL from 10 – 12 March.

National Science & Engineering Week

Activity packs are available to download free from the National Science & Engineering Week website.

STEM Ambassadors

STEM Ambassadors make a real difference by helping schools deliver STEM subjects to young people. You can register online.

Scottish Schools Equipment Research Centre (SSERC)

Explore the support available from SSERC, which provides a range of services and products to members in Scottish local authority establishments and to other individual subscribers or member establishments.

Edinburgh International Science Festival

For information about the annual Science Festival and the Generation Science touring programme that brings science to life in schools.

Scottish Enterprise

To find out more about STEM-based industries that have real competitive advantage in Scotland, including in: energy, life sciences, food and drink, and digital markets and enabling technologies.

Other weblinks appear in the text.