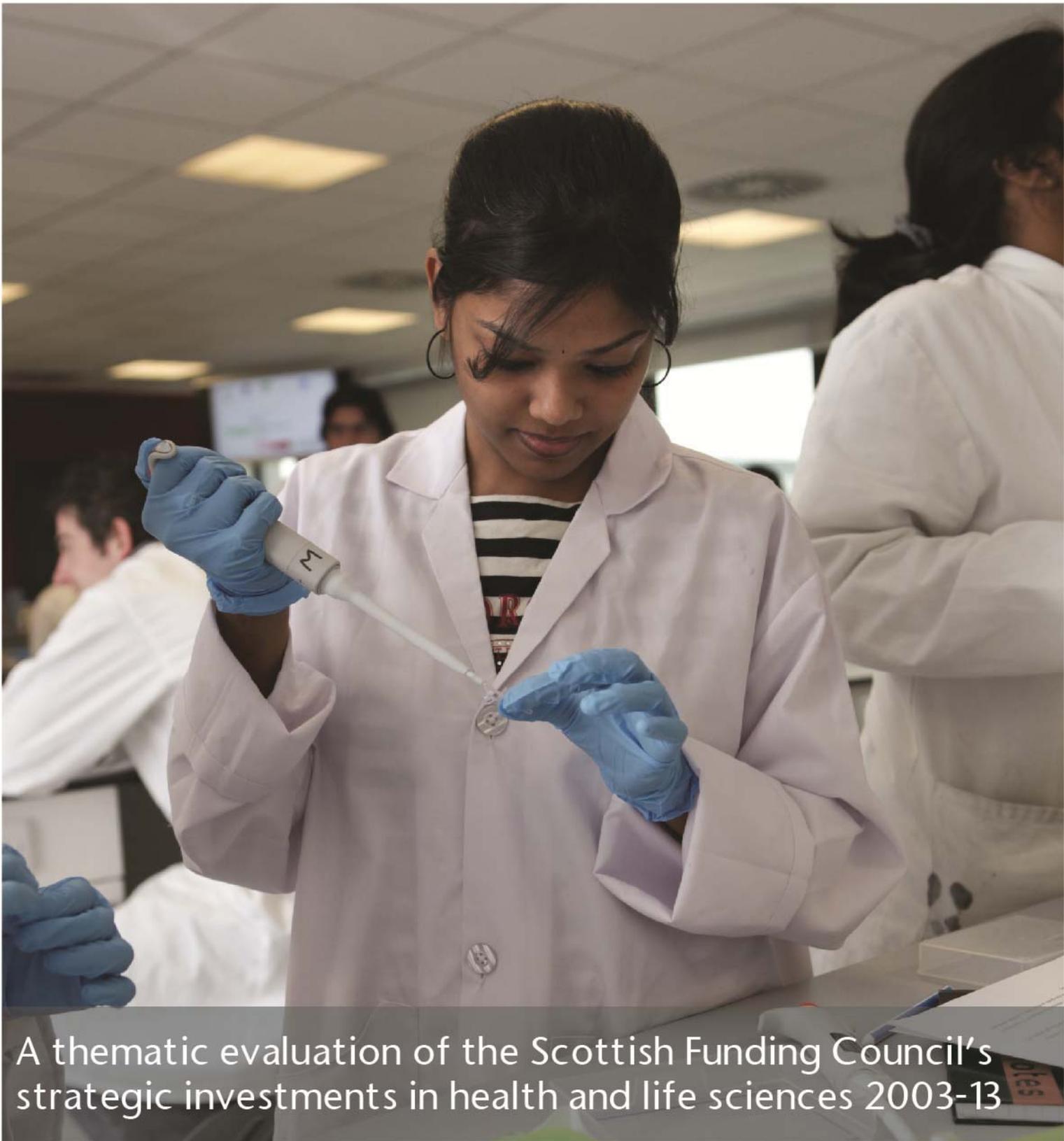




Scottish Funding Council
Promoting further and higher education

Strategic Investments: Health and Life Sciences

Summary of key findings



A thematic evaluation of the Scottish Funding Council's strategic investments in health and life sciences 2003-13

Evaluation of Strategic Investments: Health and Life Sciences

Summary of Key Findings

1. The Scottish Funding Council's (SFC) strategic infrastructure¹ investments in colleges and universities play a fundamental role in delivering SFC's strategic priorities.² This thematic evaluation provides a summary of the main outputs and outcomes from the projects that we have supported. It covers all SFC strategic investments (56 in total) made by the SFC in health and life sciences over the 10 years from 2003 to 2013³.
2. For the first time, we have a substantive evidence base about our investments in a thematic area of high importance to the SFC and the wider economy. This helps to enhance our understanding of the collective outputs, outcomes and impacts of these investments. It also highlights what has worked well and areas for further consideration.
3. Overall, the evaluation reveals a very positive picture of the achievements of our investments in the area of health and life sciences. In particular, the investments have successfully leveraged in significant additional funding and, over the period studied, have contributed to a step change in higher education collaboration. They have enhanced the international competitiveness of Scottish research and have contributed to more extensive knowledge exchange and business engagement between universities and business. Our investments have also made important contributions to other SFC priorities including training, skills and employability.
4. The outputs delivered by our investments were consistent with the objectives of the wide ranging SFC strategic funding schemes in operation between 2003-13. These schemes were designed to support the delivery of our strategic priorities such as, in the case of the Strategic Research Development Grant 2003-09 (SRDG), enhancing research excellence and strengthening areas of the research base of strategic importance to Scotland.
5. Importantly, the investments provided a significant return on the SFC's investment and delivered valuable outcomes and impacts for the Scottish colleges and universities, for the Scottish health and healthcare sector and for the Scottish economy.
6. The evaluation highlights that strategic investments with a clear strategic priority focus can effectively deliver significant cultural change at the institutional, disciplinary and sector level such as in relation to collaboration where a strong collaborative culture was seen to have developed over the period evaluated.
7. The evaluation also identified aspects of the investments which merit further consideration such as the low level of co-funding for research and engagement activities attracted from business, the limited scale of formal links which projects had with international academic partners and the low incidence of public engagement and college-university collaborative activity demonstrated by projects.

¹ Infrastructure includes salaries of academic, support and technical staff, facilities and equipment costs.

² SFC's strategic investments aim to support development and change in the further and higher education sectors across their teaching, research and other activities. Between 2003-13, SFC's strategic investments accounted for 16% of the total SFC spend of £10.3bn

³ See Annex 2 for the list of investments included in the evaluation.

8. In addition, the evaluation findings highlight the need to more fully understand how the value from our major investments can best be sustained to successfully exploit new opportunities and maintain a high quality Scottish research and education base in this area in Scotland.

Background

9. Our interest in understanding the outcomes and impact of our funding for colleges and universities is not restricted to strategic infrastructure investments. In 2012, SFC introduced outcome agreements with individual institutions in both the further and higher education sectors. Outcome agreements are intended to monitor and evaluate the outcomes delivered by institutions individually and collectively in return for the Scottish Government's annual £1 billion investment.⁴
10. The health and life sciences are a major part of the Scottish higher education research and education base. For example, around half of the research staff (Full Time Equivalents) at Scottish Higher Education Institutions (HEIs) work within these areas. This total is made up from 22% working in the area of clinical medicine, 22% working in biosciences and 6% working in allied health subjects. Between 2003 and 2012, Scottish HEIs secured a total of £4.4bn in research grant income from sources such as research councils, charitable bodies and government. Over half of this income was for research in the health and life sciences.⁵ In addition, in the period from 2003-2013, around one third of the SFC's higher education main quality research base and teaching grants were paid annually to Scottish HEIs in respect of health and life sciences activities.⁶
11. The health and life sciences also account for a sizeable share of the post graduate students studying at Scottish HEIs. Between 2003-12, 18% of post graduate students overall (27% of the research post graduates and 16% of the taught post graduates) were studying in the health and life sciences area⁷

Annex 1 provides background information about the design and scope of the review. Annex 2 lists the 56 investments included in the evaluation and provides limited information for each, including start date and whether project funding completed.

SFC's strategic investments in health & life sciences

12. Between 2003 and 2013, we invested **£143M** on strategic projects in the health and life

⁴ <http://www.sfc.ac.uk/funding/FundingOutcomes/FundingOutcomes.aspx>

⁵ HESA Statistics 2003/04 - 2011/12: www.hesa.ac.uk .

⁶ SFC Funding Statistics 2003-13

⁷ HESA Statistics 2003/04 - 2011/12: www.hesa.ac.uk

sciences through several strategic funding schemes. This included **£141M** on research, innovation and knowledge exchange (RIKE) projects (49 projects) and **£2M** on widening access and skills and employability projects (7 projects). Skills and employability activities were not solely restricted to the seven investments focused on these priorities as more recent RIKE investments commonly included such activities.

13. The scale of activity supported by our strategic investments in the health and life sciences is, however, much larger than that identified in the projects included in the evaluation. The evaluation also identified other SFC strategic investments, in particular 'research pools', which were not focused specifically on the health and life sciences, but which contained research and training activities relevant to this area.

Characteristics of investments

14. The evaluation revealed that the investments' aims and objectives and deliverables were strongly focused on SFC's Corporate Plan Priorities over the period studied. Investments also demonstrated strong alignment with the Scottish Government's priorities for health and the economy.
15. The key characteristics of the forty nine strategic investments in research, innovation and knowledge exchange (RIKE) are outlined below.

Characteristics of the RIKE investments:

- Investments ranged in size from £50K to £27M; nearly half were between £1-3M. The range in scale of investments included, at the lower end, six KE projects where the SFC contribution to the investment was £50K or less and four Strategic Research Development Grant (SRDG) feasibility projects where the investment was around £100K. At the other end of the range, there were five projects where the SFC investment was over £10M. The latter included two SRDG investments, one 'research pool' and two innovation centres
- Funding duration varied between 12 months (e.g. SRDG feasibility studies) and five years (e.g. 'research pools'). Larger scale projects were often extended by some 12 months to accommodate delays in recruiting personnel with the appropriate expertise or in obtaining specific research equipment
- Projects used funding to support new staff posts, to purchase new specialised equipment and to facilitate training and knowledge exchange activities. Seven of the 49 investments involved contributions to new buildings or refurbishment of existing buildings
- The majority of projects were complex, multi-faceted, multi-goal investments. None were concerned solely with 'blue skies' research
- Investments covered a wide range of topics including drug discovery, diagnostics, therapies and medical devices as well as healthcare delivery policy and practice, reflecting key strengths in the academic research base as well as areas of demand from external partners such as the NHS
- Investments contributed knowledge, training and skills to many areas of the life sciences sector, with the largest number of projects contributing to the translational and clinical medicine area and to the pharma industry
- Clinical medicine was included in over 50% of the projects
- Investments were frequently multi-institutional and multi-disciplinary, with more recent projects displaying strong linkages with other research investments in this thematic area
- Thirty-six of the 49 investments involved collaborations of Scottish HEIs. About half of such investments involved two or three institutions, with the remainder including some much larger collaborations, the largest of which involved ten HEIs
- Investments were concentrated in the Universities of Dundee, Glasgow, Edinburgh, Aberdeen and St Andrews, where the Scottish medical schools are located

- The University of Dundee was involved in the largest number of collaborative projects either as lead institution or as a collaborating partner
- More than two-thirds of investments involved an external (non-HEI) partner such as business or the NHS
- Fifteen investments (mainly SRDGs) involved only academic partners with four of these involving formal partnerships with UK HEIs out with Scotland. One of the four also involved a partnership with a European university

16. The remaining investments in the evaluation, seven widening access, skills and employability investments, had the following characteristics.

Characteristics of the widening access and skills & employability investments

- SFC funding was on a smaller scale than RIKE investments; all but one project was less than £350K
- Funding was used for increasing capacity and for the costs of activities such as co-ordination, engagement and marketing
- The focus was largely on widening access to healthcare professions, and skills training for workforce development, enhancing organisational effectiveness and graduate employability
- The college sector was involved in four of the seven widening access and skills and employability investments (colleges led on three of these)
- Three out of the seven projects were led by institutions based in Dundee
- External stakeholders such as business or the NHS were involved in all seven projects

17. The evaluation also highlighted the limited scale of formal links which our strategic investments had with academic partners in the rest of the UK, Europe and more widely.

Outputs from investments ⁸

18. Investments successfully delivered a wide range of strategically important and innovative outputs within their funding period, which was typically five years or less. Outputs were investment-specific and reflected the conditions of the funding awarded. Examples of key outputs are shown below.

Examples of key outputs from SFC Strategic Investments

- Cohorts of postgraduate students, early career researchers and practitioners who gained effective skills, expertise and qualifications
- New workforce training packages and tools developed and delivered
- New health & life sciences knowledge created and disseminated through publications and other activities within the international research community and through engagement with business and government
- New technology platforms developed for use by academia and business
- New infrastructure created at both colleges and HEIs for research (new collaborations and networks) and training activities for students, researchers and the wider workforce;
- Novel databases created for research and wider communities
- Knowledge exchange outputs delivered, including patents and spinouts

19. A small number of the strategic investments in RIKE involved longer term, exploratory studies. These included projects involved in drug discovery, the development of new therapies and disease diagnosis. Such investments were awarded SFC funding for five years although it was known at the outset that, given the cutting edge nature and complexity of these investments, some of the agreed project outputs and outcomes were not certain to be delivered within this time frame. In these cases, the investments had delivered some intermediate outputs but were seen to be on a pathway to delivering key health and economic outputs and outcomes on a much longer timescale than the evaluation was able to examine.

⁸ Data on outputs relates only to investments where SFC funding had been completed. See Annex 2

Outcomes resulting from investments⁹

Key outcomes for universities

20. The collaborative activities involved in these strategic investments, particularly the RIKE projects, helped to embed a culture of collaboration across the health and life sciences area of the Scottish academic research base, both in terms of institutions and disciplines.
21. This culture of collaboration has led to enhanced linkages and coherence across the research base. It has created an effective infrastructure platform upon which current strategic investments in research and training are building. The evaluation identified that SFC strategic investments such as the 'research pools' and the more recent innovation centres have capitalised on the outcomes of earlier investments such as those made under the SRDG scheme.
22. In the case of the strategic investments primarily concerned with enhancing the quality and capacity of the research base, their outputs helped to competitively secure further funding to sustain research activities. The evaluation revealed that all such investments had been successful in securing funding to continue research activities.
23. Many of the investments, however, were seen to have experienced difficulties in securing financial support to continue other types of activities, such as network co-ordination, engagement and knowledge exchange activities which were critical to their sustainability. As a result, a small number were not able to sustain the broader benefits of the entity which had been created by the SFC investment.

Other outcomes for universities and colleges

24. The evaluation identified other important **outcomes for universities and colleges**. These included:
 - Establishment of effective and on-going working relationships between colleges and universities and the NHS, business and policy makers, particularly those in the Scottish Government
 - Creation and retention of relevant expertise in the health and life sciences research area
 - New international talent attracted to the Scottish academic research base in part by the innovative research activities and the state of art facilities in the health and life sciences area in Scotland.
25. Investments also delivered key **outcomes for health and healthcare**, such as contributions to:
 - Improving health treatments and the prevention of chronic diseases
 - Enabling independent assisted living
 - Developing cost-effective and assessable healthcare
 - Efficiency improvements in NHS service delivery

⁹⁹ Data on outcomes relates only to investments where SFC funding had been completed. See Annex 2

- Training of the NHS workforce
- Enhancing the quality of patient care and quality of life.

26. A key **outcome for the economy was the** contribution of investments to creating a more developed workforce in the health and life sciences sectors in Scotland. Other outcomes were the contributions to creating new businesses, jobs and other opportunities arising from the innovation potential created by the research base.

Funding leverage as a result of SFC investments¹⁰

27. Within the limitations of the available data, the evaluation examined the returns on investments in relation to co-funding, further funding and other types of returns.

Co-funding

28. SFC investment acted very successfully as seed corn or pump-priming to attract co-funding from other stakeholders. This demonstrated strong alignment of the investments' aims and objectives with other funders' strategic priorities and also provided projects with the opportunity of larger scale funding.
29. Two-thirds of the strategic investments attracted co-funding at the outset. A large proportion of RIKE investments were agreed on the basis of co-funding from partner HEIs at an average level of £1.10 for every £1 invested by SFC. Co-funding from other organisations (mainly public sector) was lower at £0.60 for every £1 that SFC invested. The widening access and skills and employability investments attracted £0.50 from external co-funders for every £1 that SFC invested.

Further funding

30. Further funding for the continuation of activities, mainly research activities, was successfully leveraged from other sources by all 17 RIKE investments, where SFC funding had been completed. The SFC investment in these 17 projects totalled £20M. All were funded under the Strategic Research Development Grant. The projects went on to secure some £243M of further funding from other funders within the evaluation timeframe¹¹. Most of this further funding was secured competitively from UK, European and international research funders.

The further funding secured by investments represents a rate of return of some

- £12 secured by investments for every £1 that SFC invested; or
- £4 for every £1 invested by all funders i.e. SFC and co-funding combined.¹²

¹⁰ Data on investment returns relates only to these investments where SFC funding had been completed. See Annex 2

¹¹ The total leverage secured by these investments is likely to be higher if viewed over a longer period. See Annex 1.

¹² In the absence of comparative data on rates of return on similar types of investments made by other organisations, the evaluation sought to estimate for comparative purposes using HESA data, the rate of return on SFC's formulaic investment in the health and life sciences area within the Scottish academic research base. This identified that over the same time period, for every £1 SFC invested in this area at Scottish HEIs, the HEIs secured £3 in non-SFC research grant income.

31. The further funding which projects secured from business was smaller in scale and was often provided as 'in-kind' support, involving the allocation of staff time to projects or the loan of equipment. The value of this 'in-kind' support was not recorded systematically by projects.
32. One of the widening access and skills and employability investments secured further funding (approx. £200k) to continue collaborative, strategic planning and training activities around workforce development in the health and care sector.

Other returns on investments

33. The RIKE investments contributed effectively to strengthening a culture of collaboration within the Scottish HEI research and education base. This has created additional value from the original SFC investment through efficiency improvements, such as the wider sharing of facilities and expertise, and through the stimulation of new opportunities for innovation as a result of the development of new partnerships with other researchers and with business.

Sustaining the value of investments in the longer term

34. The evaluation identified that much of the value in the RIKE strategic investments was being sustained as a result of the majority of projects either securing further funding to continue to deliver project outputs and outcomes or through embedding the project's legacy in an ongoing collaboration with other RIKE projects.
35. In the case of the widening access and skills and employability investments, much of the value created through projects was being sustained as a result of being embedded in colleges' and universities' training and recruitment policy and in new training and education infrastructure.

Scope and Design

1. The scope of this thematic evaluation has been largely determined by its aims and objectives which sought to look at the benefits arising from investments made in a broad thematic area rather than focusing on the outputs and outcomes of individual projects or programmes of projects.
2. The evaluation was focused on the strategic investments made by the SFC in Scottish higher or further education institutions in the health & life sciences area within the ten year period, 2003-2013. The evaluation was not concerned with SFC's substantial formulaic funding for colleges and universities.
3. In total, fifty six relevant strategic investments covering research, innovation & knowledge exchange (RIKE), widening access and skills & employability were identified as relevant to the review; the majority were made in HEIs (only four involved colleges) and focused on research, innovation & knowledge exchange.
4. The ten year evaluation time period was largely determined by the need to identify a sufficiently large sample of strategic investments where SFC funding had been completed in order to examine the output, outcomes and impacts of investments
5. The evaluation included a **mapping exercise** to provide a broad, strategic overview of all 56 strategic investment made in the 10 year period and an **analysis of the outputs, outcomes and impacts** of those investments (23) where SFC funding had been completed.
6. There were a number of factors which influenced the type and level of analysis which could be undertaken in the evaluation; the investments were very wide ranging in their nature and scale, the documents which were used for recording progress were not standardised and the information recorded on outputs, outcomes and impact lacked consistency in the detail recorded.

The evaluation was based wholly on documentary analysis. This approach was selected in order to assess the potential for using existing documents as a basis for future SFC impact evaluation activity. Documents used for the evaluation analysis included the original proposal and award of grant, progress reports where available and the 'end of award' report. The latter was submitted no later than 12 months following the end of SFC funding. **Given that outcomes from strategic investments can arise over a long period, those identified in this evaluation should be considered as early outcomes and an indication of future potential.**

SFC Strategic Investments included in the Evaluation¹³⁺¹⁴

Strategic Research Development Grant: Feasibility Studies		
Project Name: e-Health: Addressing Evaluation, Implementation and Integration (HAVEN)		
Develop a strategy for collaborative e-Health implementation and evaluation research and the creation of an internationally recognised centre of excellence in e-Health implementation in Scotland able to support policy makers and practitioners.		
Lead Inst: University of Glasgow	Start Date: 2007	Completed: 2008
Project Name: Medical Visualisation		
Identify with a wide range of stakeholders including medical schools and medical practice, future areas of research that address 3D digital visualisation and its impact in medical contexts, e.g. education/skills/training.		
Lead Inst: Glasgow School of Art	Start Date: 2007	Completed: 2008
Project Name: Centre for Obesity Research and Epidemiology (CORE)		
Examine how the setting up of infrastructure for multi-disciplinary research on obesity would lead to the strengthening of this area of the research base and address a strategic need for Scotland by improving the health of the Scottish population.		
Lead Inst: The Robert Gordon University	Start Date: 2005	Completed: 2006
Strategic Research Development Grant		
Project Name: Interdisciplinary Centre for Medical Photonics		
Bring together a team of academic clinicians working with biological and physical scientists to exploit novel emerging techniques in photonics in the study of disease processes at the cellular and molecular levels. The aim is to develop an interdisciplinary programme in medical photonics to create an impact on healthcare through a deeper understanding of disease detection and management.		
Lead Inst: University of St Andrews	Start Date: 2003	Completed: 2007
Project Name: Genetic Health in the 21st Century (21CGH)		
Establish an ethically sound population and family- based multidisciplinary infrastructure to identify the genetic basis of common complex diseases. The project focuses on the identification, study and follow-up of individuals with a disease diagnosis and their 'at risk' relatives.		
Lead Inst: University of Edinburgh	Start Date: 2003	Completed: 2010
Project Name: Scottish Structural Proteomics Facility		
Development of a sustainable interdisciplinary centre of excellence with the capability to utilize modern genomics to increase understanding of pathogen physiology. The Centre aims to provide new drug leads to combat emerging multiply resistant infections agents.		
Lead Inst: University of St Andrews	Start Date: 2003	Completed: 2008
Project Name: Scottish School of Primary Care (SSPC)		
Develop research capability and capacity in primary care through support for underpinning infrastructure in Scottish		

¹³ The list includes all 56 SFC strategic investments in the health & life sciences which were awarded funding between January 2003-January 2013.

¹⁴ Ongoing investments includes projects where SFC funding had been completed by January 2013 but where the end of award report had not been received by SFC.

HEIs and the undertaking of research in strategic topics such as palliative care.		
Lead Inst: University of Edinburgh	Start Date: 2003	Completed: 2007
Project Name: Scottish Bioinformatics Research Network (SBRN)		
Create personnel and computing infrastructure to support collaboration and research activities in the bio-informatics area at the universities of Dundee, Edinburgh and Glasgow through the use of "grid" computer technology and through the Scottish Bioinformatics Forum (SBF) to widen collaboration within Scotland to both academic and business communities.		
Lead Inst: University of Dundee	Start Date: 2003-04	Completed: 2011
Project Name: Genomics Forum		
Provide a forum for the ESRC's Genomics Network of Social Scientists to engage with policy makers, commercial enterprises, funders and wider public. The forum provides a location for natural scientists, medical researchers and social scientists to exchange ideas/findings and to debate, and to host leading genomic researchers for short periods up to 3 months.		
Lead Inst: University of Edinburgh	Start Date: 2004	Completed: 2012
Project Name: HealthQWest (NMAHP)		
Establish a sustainable strategic partnership to create a research consortium of international repute in nursing, midwifery and allied health professions.		
Lead Inst: Glasgow Caledonian University	Start Date: 2005	Completed: 2011
Project Name: Centre for Integrated Healthcare (CIHR) (NMAHP)		
Establish a sustainable strategic partnership to improve the infrastructure of NMAHP research across the three HEIs in Edinburgh and the NHS and other partners in order to develop a step-change in capability and leadership in NMAHP research relating to Scottish Government priorities for Healthcare.		
Lead Inst: Queen Margaret University	Start Date: 2005	Completed: 2010
Project Name: Alliance for 'Self-care' Research (NMAHP)		
Establish an alliance for 'self-care' research in Scotland to undertake research to provide an evidence base for enhancing 'self-care', and to build capacity and capability amongst nurses, midwives and allied health professionals as next generation researchers.		
Lead Inst: University of Stirling	Start Date: 2005	Completed: 2011
Project Name: Radical Solutions for Researching the Proteome (RASOR)		
Provide key infrastructure to support an interdisciplinary research collaboration in proteomic technologies.		
Lead Inst: University of Glasgow	Start Date: 2005.	Completed: 2011
Project Name: Mobilising Advanced Technologies for Care at Home - MATCH		
Develop a research base and infrastructure for advanced technologies in support of social and health care at home.		
Lead Inst: University of Stirling	Start Date: 2005	Completed: 2012
Project Name: Nano metrology for Molecular Science, Medicine and Manufacture		
Develop a high quality, innovative research environment in nano metrology through bridging the molecular measurement gap to innovation in emerging areas of strategic importance, such as disease pathology, diagnostic tools in nano medicine, new drug treatments, and their translation into the healthcare and chemical industries.		
Lead Inst: University of Strathclyde	Start Date: 2006.	Ongoing
Project Name: Clinical Skills Centre - Matthew Hay Project (Building)		
Contribution to consortium (including University of Aberdeen and NHS Grampian) to the capital costs of building a new facility to provide comprehensive teaching and learning facilities in healthcare on the University of Aberdeen's Forresterhill site.		

Lead Inst: University of Aberdeen	Start Date: 2006	Completed: 2009
Project Name: Scottish Collaboration of Trialists (SCoT) Establish a Scottish trials infrastructure which will ensure Scotland's competitiveness in conducting clinical trials through collaborations of multidisciplinary expert trialists, harnessing technology and support for national clinical networks.		
Lead Inst: University of Aberdeen	Start Date: 2006	Completed: 2010
Project Name: ARC - Addressing Research Capacity in the Highlands and Island (ARC) Enhance and grow the UHI's academic research capacity and infrastructure in health science with potential for high regional impact. Part of a wider capacity- building project including environmental science and agronomy.		
Lead Inst: University of the Highlands and Islands	Start Date: 2006	Completed: 2011
Project Name: Scottish Facility for Compound Screening and Library Synthesis Creation of a new facility to allow drug targets discovered within Scottish universities (focused on infections, diseases, cancer, diabetes and allergy) to be tested against up to 100,000 chemicals to identify those which have the potential to be commercialised as research tools or contribute to the development of new medicines.		
Lead Inst: University of Dundee	Start Date: 2006	Completed: 2010
Project Name: Scottish School of Primary Care (SSPC) Continue the development of an academic- based, virtual school of primary care researchers in Scotland with the aim of stimulating and co-ordinating a cohesive academic and demand- led programme of research and training.		
Lead Inst: University of Dundee	Start Date: 2007	Completed: 2011
Project Name: Physical Organic Chemistry: opportunities in synthesis, materials and pharmaceuticals Catalyse and sustain a new dimension in the UK's research capability in physical organic chemistry at the Universities of Strathclyde and Glasgow, funded in partnership with the Engineering and Physical Sciences Research Council as part of a Science and Innovation Award.		
Lead Inst: Universities of Glasgow and Strathclyde	Start Date: 2007	Ongoing
Project Name: Interdisciplinary Centre for Human and Avian Influenza Research Establish an interdisciplinary Centre of Excellence to carry out research on human and avian influenza viruses to act as a hub to encourage scientist/clinicians' interactions in this field and to train the next generation of scientists.		
Lead Inst: University of Edinburgh	Start Date: 2007	Ongoing
Project Name: Scottish Patient Safety Research Collaboration (SPSRN) Establish the Scottish Patient Safety Research Network to provide a long term contribution to both the research agenda and evidence-based policy/practice in the management of patient safety in NHS Scotland and beyond. A key objective was to harness a 'critical mass' of internationally recognised researchers with the breadth of expertise required to integrate organisational, human factors and clinical investigations into patient safety.		
Lead Inst: University of Aberdeen	Start Date: 2007	Completed: 2012
Project Name: Post Genomic Technologies in the Personalised Treatment of Cancer Establish an infrastructure for cancer pharmacogenetics research through the setting up of a research collaboration.		
Lead Inst: University of Dundee	Start Date: 2007	Ongoing
Project Name: Biomarkers for Battling Chronic Disease Establish a proteomics platform for biomarker discovery and identification in chronic diseases.		

Lead Inst: University of Glasgow	Start Date: 2007	Ongoing
Project Name: Scottish Institute for Cell Signalling (SCILLS) Develop leading research strengths and critical mass of expertise in an area of cell signalling, termed 'protein ubiquitylation', as a basis for drug discovery and of interest to the pharmaceutical industry.		
Lead Inst: University of Dundee	Start Date: 2008	Ongoing
Project Name: The Scottish Senior Clinical Fellowship Scheme (SCREDS) Establish a Senior Clinical Fellowship Scheme in Scotland to strengthen clinical academic medicine and dentistry.		
Lead Inst. University of Edinburgh	Start Date: 2009	Ongoing
Project Name: The Scottish Imaging Network: A Platform for Scientific Excellence (SINAPSE) Establishment of a shared, standardised environment for brain imaging to meet emerging opportunities and challenges posed by neuroscience research in Scotland, including enhancing research excellence, building research capacity in the area and increasing the impact on patient health.		
Institutions involved: Universities of Edinburgh, Aberdeen, Dundee, Glasgow, St Andrews and Stirling	Start Date: 2008	Ongoing
Project Name: Scottish Universities Life Sciences Alliance (SULSA) Creation of a research pooling partnership in the life sciences at Scottish universities to maintain and advance Scotland's global position through the creation collaborative infrastructure, recruiting international leaders, funding world class research facilities and acting as a single focus for industry contacts. SULSA aims to develop Scotland's inter-related research strengths in Cell Biology, Systems Biology, Translational Biology and Synthetic Biology.		
Institutions involved : Universities of Aberdeen, Dundee, Glasgow, St Andrews, Strathclyde and Edinburgh	Start Date: 2007	Ongoing
Knowledge Exchange Schemes (HE Strategic Funding)		
Project Name: Bio-industry skills, Knowledge and People Exchange (BIOSKAPE) Collaborative KE project to link companies and universities to address key skills and knowledge exchange needs of the life sciences industry in Scotland.		
Lead Inst: University of Aberdeen	Start Date: 2010	Ongoing
Project Name: Novel and Collaborative Approaches to Knowledge Exchange in Translational Medicine Develop translational imaging knowledge and expertise to meet industry demand for radio chemists, imagine analysers and translational imaging researchers.		
Lead Inst.: University of Edinburgh	Start Date: 2010	Ongoing
Project Name: Industry SUPA People Innovative Research Exchange (INSPIRE) Collaborative KE project to link companies and universities in the area of physics and the life sciences to enhance business academic relationships through industrial studentships, exchange programmes and KE events.		
Lead Inst: University of Dundee	Start Date: 2010	Ongoing
Project Name: Jobs, Health & Wealth Establishment of KE infrastructure to support a public-private target development fund and to translate novel HEI research into innovative new drug candidates meeting demands of pharma industry.		
Lead Inst: University of Dundee	Start Date: 2011	Ongoing
Project Name: Harnessing the Heritage of Football: Creating Meaningful Activities and Therapeutic Reminiscence Work with People with Dementia Generate research based interventions and resources to improve the health and wellbeing of individuals with		

dementia and family carers and to promote dementia awareness.		
Lead Inst: Glasgow Caledonian University	Start Date: 2011	Ongoing
Project Name: The Art of Meaningful Access		
Innovative application of a tool developed for simulating visual impairment to arts settings to increase wellbeing of partially sighted.		
Lead Inst: University of Edinburgh	Start Date: 2011	Ongoing
Project Name: Facilitating engagement with Hospital Grounds Green Space Design Development and Management for Health and Wellbeing		
Development of multi stakeholder engagement to develop best practice guidance for engagement in different healthcare green-space settings.		
Lead Inst: University of the Highlands and Islands	Start Date: 2011	Ongoing
Project Name: Towards a Training Model for Effective Ethical Translation in Healthcare settings in Scotland		
Development of effective intercultural training and guidance for translators and translation users in healthcare settings and the undertaking of knowledge exchange with relevant groups.		
Lead Inst: University of Glasgow	Start Date: 2011	Ongoing
Project Name: Sunshine, Health and Wellbeing in Housing		
Examine, along with housing sector partners, whether good access to sunlight in the home has positive influence on general health and wellbeing and to disseminate findings for housing management and design.		
Lead Inst: Glasgow School of Art	Start Date: 2011	Ongoing
Project Name: Visualising the Invisible: developing Innovative Approaches to Visualisation to help NHS Staff prevent and control Healthcare Associated Infections		
Exchange knowledge of innovative dynamic visualisation practices and initiatives to counter healthcare associated infections to improve their effectiveness within the NHS.		
Lead Inst: The Robert Gordon University	Start Date: 2011	Ongoing

HE Strategic Funding		
Project Name: Transforming Research into Better Oral Health for Scotland		
Align research in oral health across Scotland with a focus on making an impact on oral health and delivering on Scottish Government priorities in this area.		
Lead Inst: University of Glasgow	Start Date: 2011	Ongoing
Project Name: A Strategic Partnership to deliver Industrially Generated Red Blood Cells for Transfusion		
Translate excellent academic science in the biological area in partnership with biochemistry and bioengineering and business partners into successful, demand- driven and cost effective therapy. This project aims to take the translational activities to the stage of clinical trials. Further investment by industry would be needed to develop fully scalable technologies to produce blood in commercial quantities.		
Lead Inst: University of Glasgow	Start Date: 2011	Ongoing
Project Name: Scottish School of Public Health		
To develop the capacity to undertake large collaborative public health research programmes in Scottish HEIs to tackle chronic disease and reduce inequalities.		
Lead Inst: University of Edinburgh	Start Date: 2010	Ongoing
Project Name: MSD Scottish Life Sciences Fund for the Scottish Universities Life Sciences Alliance		
Establishment of a fund to support projects in Scottish universities which are relevant to MSD's scientific interests in		

the field of drug discovery.

Lead Inst: University of Dundee

Start Date: 2012

Ongoing

Project Name: Innovative Medicines Initiative (IMI)

To establish a pharmaceutical research collaboration between BioCity Scotland and the University of Dundee to host the European Lead Factory in the Innovative Medicines Initiative.

Lead Inst: University of Dundee

Start Date: 2013

Ongoing

Innovation Centres

Project Name: Digital Health Institute (DHI)

Support the development through industry and academic partnerships of new products, services and processes for the health and care markets in order to meet the challenge of demographic change in Scotland and globally. The DHI will focus on technologies which enable a rebalancing of health and care provision away from hospitals and institutions to facilitate independent living. This transformation demands long term innovation involving a collaboration of medical design, informatics and business knowledge.

Lead Inst: University of Edinburgh

Start Date: 2013

Ongoing

Project Name: Stratified Medicine Scotland (SMS)

To create a new innovation hub with industry and academic partners that becomes a leading centre for specialist stratified medicine clinical trials. The SMS-IC will position itself to exploit a much larger and longer term opportunity through the development of new "global translational informatics outputs" that enable the effective delivery of stratified medicine and care pathways at the patient, clinician and healthcare system level.

Lead Inst: University of Glasgow

Start Date: 2013

Ongoing

Widening Access, Skills and Employability

Project Name: Development Officer – Health Education

To create a new health education development officer (HEDO) post in the Scottish Further Education Unit with the remit of developing a strategic plan for Scotland's colleges' engagement with the health sector and promoting effective partnership arrangements between colleges and the NHS.

Lead Inst: The Scottish Further Education Unit

Start Date: 2009

Completed: 2012

Project Name: Managed Educational Network (MEN) for Clinical Skills Training in Scotland

Development of a Scottish Clinical Skills Strategy and an enhanced educational and training network across Scotland

Lead Inst: University of Dundee

Start Date: 2008

Completed: 2011

Project Name: Skills Utilisation Pilot Project – Life Sciences

To investigate the skills needs and skills utilisation of the life sciences industry to inform the development of an effective collaboration between life sciences companies, colleges and universities to help support business success in generating innovation growth and competitiveness.

Lead Inst: Dundee College

Start Date: 2009

Completed: 2012

Project Name: Tayside Healthcare Workforce Development Project – Assistant Practitioner

Creation of a post to co-ordinate/collaborate activities between NHS leads and the college delivering training for healthcare support workers and assistant practitioners.

Lead Inst: Dundee College

Start Date: 2010

Completed: 2012

Project Name: Skills Programme for Research Imagers (SPRI-NG)

To expand and enhance imaging training in order to enhance the skills of the workforce in clinical research and drug development.

Lead Inst: University of Edinburgh (SINAPSE partners involved)

Start Date: 2010

Ongoing

Project Name: Pilot Project to support industrial work placements in the Scottish Life Sciences Sector

A national pilot undergraduate – industry work placement project to address the skills needs within the Scottish Life Sciences sector involving 12 month student placements within Scottish Life Science companies and academic supervision.

Lead Inst: University of Aberdeen (SULSA

Start Date: 2010

Ongoing

partners involved)		
<p>Project Name: Working in Health Access Programme (WHAP) and network (WHAN)</p> <p>Collaboration of Scottish Medical Schools along with other Scottish HEIs and colleges to undertake projects to improve equality of opportunity and increase the number and diversity of individuals admitted to university to study a health related course (medicine, veterinary medicine, dentistry, pharmacy and nursing and allied health professionals) from backgrounds with little tradition of participation in higher education.</p>		
Lead Inst: University of Glasgow	Start Date: 2003	Completed: 2009