



Scottish Funding Council
Promoting further and higher education

Comhairle Maoinachaidh na h-Alba
A' brosnachadh foghlam adhartach agus àrd ìre

Universities: Progress and Ambitions

Summary of progress 2015-16



Scottish Funding Council
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UNIVERSITIES: PROGRESS & AMBITIONS

SUMMARY OF PROGRESS 2015-16



SFC is incredibly proud of what our universities do for thousands of students each year, and for the research and invention they pursue.

SFC provides the funding that enables them to do this work and stimulates change and development. Our job is to make the most we possibly can of these great national assets so that they deliver the biggest possible contribution to Scotland's educational, social, cultural and economic life.

In this report you will see the great work that we and the universities have been able to do together. Working in partnership with universities, colleges and many, many others we have made great progress in widening access, articulation, meeting the needs of employers, growing our culture and stimulating enterprise – to highlight just a few areas.

Scotland's universities are playing their part in bringing about the Scottish Government's vision for a smarter, fairer, wealthier and greener Scotland. This year in return for the Scottish Government's £1 billion investment, universities have confirmed their ongoing commitment to:

- Improving access to people from under-represented backgrounds.
- Delivering high quality learning, and retaining and supporting students to completion.
- Delivering the right learning in the right place.
- More effective transitions from college to university.
- Develop highly skilled graduates ready for work.
- Delivering world-leading research.
- Supporting innovation and strengthening collaboration with industry.
- Reducing their impact on the environment.

This summary sets out some of the achievements of Scotland's higher education institutions in relation to the above seven key priority areas.

SFC has used the most recent available date to assess progress in this report. In most cases this is HESA¹ data for academic year 2014-15. The data draws on the measures of progress identified in SFC's *University Outcome Agreement Guidance for AY 2014-15 to 2016-17: refresh*². A full explanation of these measures can be found in the technical annex of this guidance (Annex C).

¹ Higher Education Statistics Agency

² <http://www.sfc.ac.uk/communications/Guidance/2015/SFCGD162015.aspx>

Universities are improving access to people from under-represented backgrounds

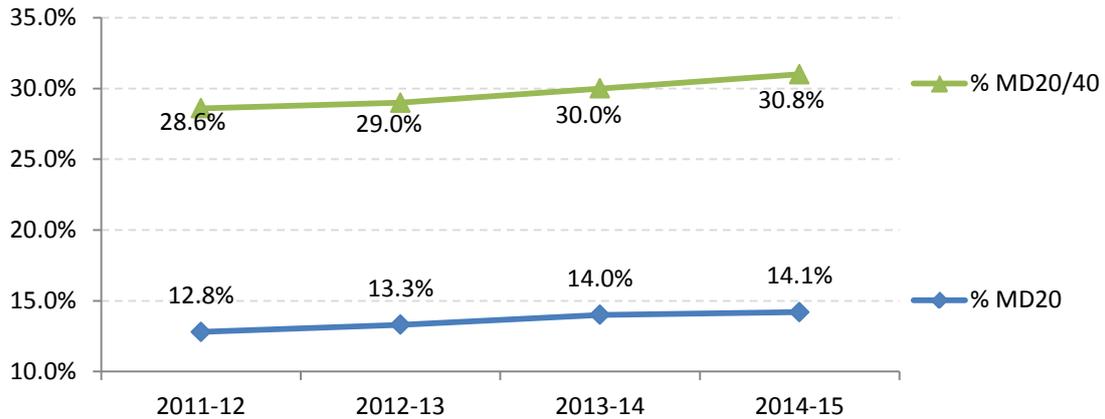
In their Outcome Agreements for 2016-17, institutions have restated their ambition to removing barriers to accessing higher education, with commitments *to increase* the proportion of Scotland-domiciled undergraduate entrants from the 40% most deprived areas³, *to work* with schools with low progression rates to higher education, and *to develop* strategies to recruit and support under-represented groups across the curriculum.

From 2013-14 SFC has provided additional access places targeted at those institutions with the highest student demand in order to allow greater recruitment of students from the most deprived areas (i.e. SIMD20 and 40 quintiles). These places were allocated to institutions based on proposals outlining evidence of expected student demand, and resource and assistance put in place to support and retain access students. Over 2,100 access places have been allocated to institutions over the past three years, 2013-14 to 2015-16. For 2016-17 SFC will provide funding for a fourth and final tranche of 680 places to institutions.

With the assistance of SFC funded additional access places universities have made steady progress in recent years in increasing participation from the most disadvantaged areas of Scotland. In 2014-15 the sector's recruitment of students from the 40% most deprived areas in Scotland is at an all-time high of 31%, ahead of SFC's original national ambition of over 30% by 2016-17. To meet the First Minister's ambition for 2021 to equalise the opportunity to go to university across all of Scotland's communities, we expect institutions to commit to improving access and progress of learners from deprived backgrounds in their outcome agreements. We believe that the sector is on track to achieve this ambition by 2020, and we will continue to ask that this ambition be reflected in the recruitment of students from deprived backgrounds by individual institutions.

³ SFC uses the first (MD20) and second (MD40) quintiles of the Scottish Index of Multiple Deprivation (SIMD) as its preferred measure for identifying deprivation and monitoring progress with widening access to universities.

Scotland-domiciled undergraduate entrants from the 20% and 40% most deprived areas



The 40% most deprived areas comprise the 0% to 20% most deprived quintile AND the 20% to 40% most deprived quintile, as defined by the Scottish Index of Multiple Deprivation (SIMD).

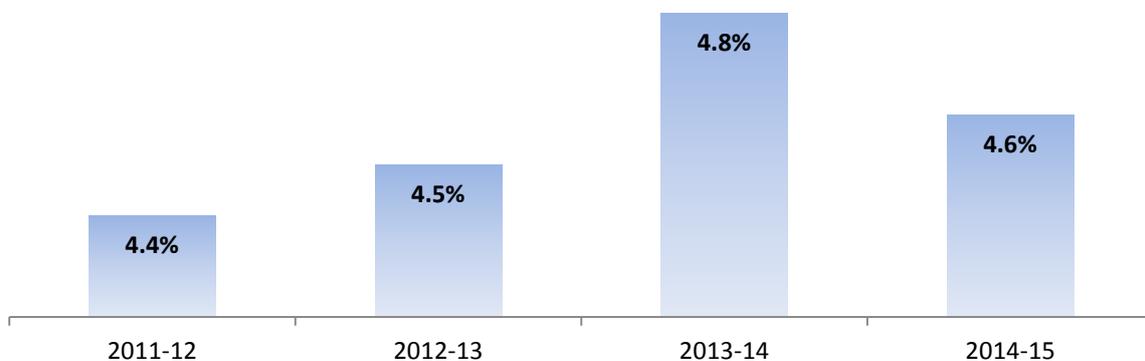
Source: SFC/HESA (see page 13 of SFC Outcome Agreement technical guidance)

The sector's overall performance is made up of a wide variety of different contributions from different institutions, which reflects institutional diversity within the sector. Institutions located close to areas with high concentrations of SIMD20 and 40 datazones, and with a strong focus on regional recruitment, such as Glasgow Caledonian and the University of the West of Scotland, have the highest proportion of entrants from SIMD20/40 backgrounds (40.6% and 50.8% respectively).

Institutions with higher entry tariffs where demand for places is usually significantly in excess of the number of places available, have in the past faced greater challenges in widening access to their undergraduate programmes. It is, however, amongst this group that we have seen the greatest progress over the past three years, with universities such as Dundee (35.5% in 2014-15, up from 26.8% in 2011-12), and Heriot-Watt (28.8%, up from 21.8%) achieving step changes in the recruitment of students from SIMD20/40. Other in demand institutions, particularly those remote from conurbations and/or areas with high levels of deprivation, have found recruitment more challenging but have nevertheless improved over recent years, e.g. St Andrews (14.1%, up from 8.6%) and Aberdeen (15.7%, up from 14.9%). While we want to see greater improvement, all of Scotland's universities are committed to removing barriers and widening participation to their programmes. For example, all of Scotland's HEIs have now adopted, or are in the process of adopting, contextualised admission processes that take into consideration the background and particular challenges faced by individual applicants in the application process.

The proportion of Scotland-domiciled undergraduate entrants from low-progression schools taking part in the Schools for Higher Education Programme (SHEP)⁴ provides a useful measure that, taken together with SIMD data and other evidence, gives us a broader and more rounded understanding of institutions' progress with widening access. This measure has remained largely static for the sector as a whole over the past three years, 4.6%, (1,596 entrants) in 2014-15, from 4.4% (1,414 entrants) in 2011-12. It captures, however, the particular success of institutions that have targeted their access and outreach activities on engagement with students from low progression schools. For example, this is an approach which has seen the University of Edinburgh's SHEP entrants rise to 9.7% in 2014-15 (6% in 2011-12), and the University of Dundee's to 7% in the same year (0.5% in 2011-12).

Proportion of Scotland-domiciled undergraduate entrants from the SHEP schools



Source: SFC/HESA (see page 14 of SFC Outcome Agreement technical guidance)

Improving outcomes for care experienced learners

Young people from care-experienced backgrounds are amongst the most disadvantaged in our society and have some of the worst educational outcomes. Currently, 4% of young people with care experience go from school to university compared to 38% of school leavers as a whole. Working with agencies such as *Who Cares? Scotland*, *NUS Scotland* and others, SFC has developed an ambition that there be no difference in the outcomes of care-experienced learners compared to their peers. The First Minister has recently given a commitment to guarantee a university place for every care experienced young person meeting the entry requirements, and to provide them with a full bursary for the duration of their programme of study.

⁴ Schools in the SHEP programme typically have rates of progression to higher education that are significantly below the national average.

The number of undergraduate entrants declaring a care experienced background has increased from 266 in 2013-14, to 311 in 2014-15, a rise of 17% or 45 students⁵. This is a significant step towards achieving SFC's national ambition to increase entrants from this group by 50% to 400 by 2018-19. For 2016-17 we look to the sector to deliver an increase of 50 additional university students from care experienced backgrounds, and are working closely with them to improve data capture and analysis to better monitor progress.

Commission on Widening Access

Scottish universities have engaged positively in the work of the Commission on Widening Access (COWA) led by Dame Ruth Silver. The Commission was established to advise the Scottish Government on how best to meet its ambition for fairer and more equal access to higher education. COWA issued its final report, *Blueprint for Fairness*, in March 2016, making a number of recommendations related to universities. The Scottish Government has welcomed the report and stated at the time of its publication its support for the recommendation on undergraduate intake targets. Since then it has also responded positively to other recommendations, and we expect a comprehensive response to the final report early in the new session of the Scottish Parliament. Key recommendations from the report include:

- A series of targets to ensure that, by 2030, students from the 20% most deprived areas make up 20% of Higher Education entrants.
- The creation of a Commissioner for Fair Access to drive the agenda across the country and the development of a Scottish Framework for Fair Access.
- New admissions thresholds for students from the most deprived backgrounds.
- Entitlements to the offer of a place and full bursary for students with care experience who meet admissions thresholds.
- A more collaborative approach to delivering access programmes by universities, colleges and schools.

Addressing gender imbalances

Many programmes at our universities are heavily 'gendered', that is they tend to have a high concentration of either males or females. These courses are often those most closely related to particular occupations, such as nursing, engineering or teaching, and therefore have a significant effect on subsequent career options. In February 2016 SFC published the interim report for its Gender Action Plan⁶ (GAP) setting out our approach to reducing these imbalances. The final report is due to be

⁵ HESA Care Leaver information:

www.hesa.ac.uk/index.php?option=com_studrec&task=show_file&mnl=13051&href=a%5e%5eCARELEAVER.html

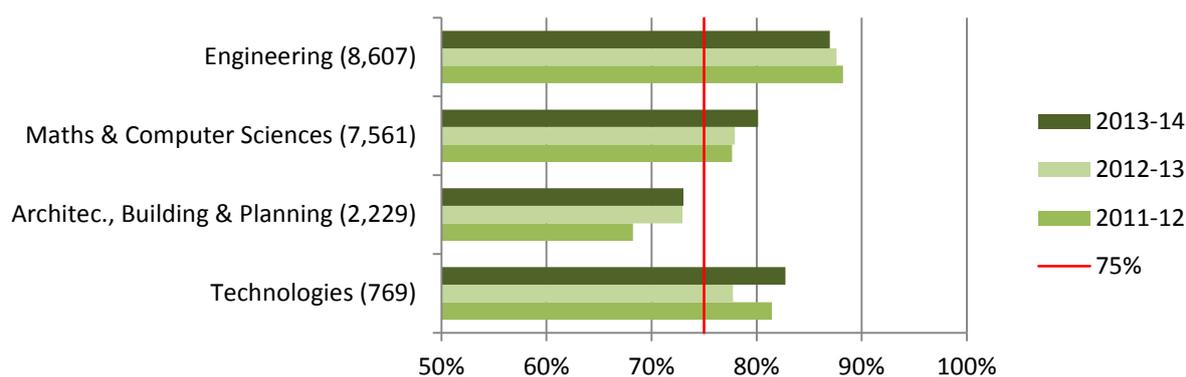
⁶ Gender Action Plan interim report:

www.sfc.ac.uk/communications/Corporatepublications/2016/SFCCP022016.aspx

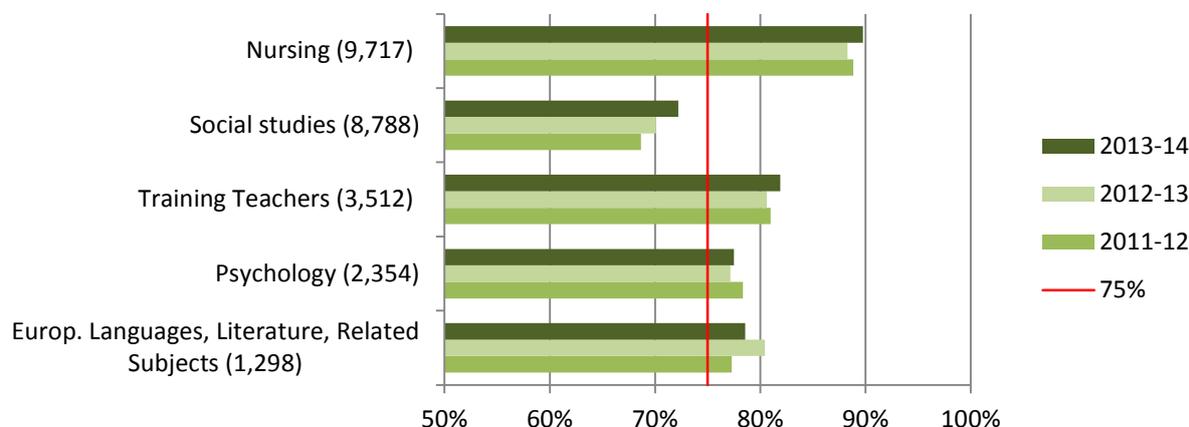
published in the summer 2016 and this will help shape our Outcome Agreement guidance from 2017-18 onwards. SFC recognises, however, that meaningful and sustainable change will only be secured through strong leadership and partnership working, requiring a collaborative approach with the university and college sectors, schools and local authorities, and the new Commission for Widening Access amongst others.

In their Outcome Agreements for 2016-17, a number of institutions have identified those subject areas with significant gender imbalances (i.e. >75%), and the actions and activities they have undertaken to secure improvement. SFC will use these responses to inform the final GAP report, with the ambition that by 2030 no subject areas have a gender imbalance of >75%, and that the gap between male and female participation in undergraduate study is reduced to 5%. The proportion of Scotland-domiciled undergraduate entrants to university in 2014-15 was 42.3% male, 57.7% female, a gap of 15.4% (this gap has remained at c16% since 2009-10).

Male dominated subject areas in universities⁷



Female dominated subject areas in universities



Source: SFC/HESA

⁷ Brackets indicate number of students in the subject area for the three years 2011-12 to 2013-14.

The Athena SWAN Charter⁸ was established in 2005 by the Equality Challenge Unit to encourage and recognise institutions' commitment to advancing the careers of women employed in delivering STEM subjects in higher education and research. In May 2015 the charter was expanded to recognise work undertaken in non-STEM subjects and now recognises work undertaken to address gender equality more broadly, and not just barriers to progression that affect women. The commitment of Scottish HEIs to advancing gender equality has been recognised by 11 institutional and 46 Athena SWAN awards. In the April 2015 round 13 new awards were conferred on Scottish institutions, 13.5% of awards across the UK.

Below we have outlined a number of examples of best practice and innovative new approaches to widening access and reducing gender imbalances from across the sector.

The **University of Stirling** have developed a new initiative to remove barriers to professions traditionally dominated by one or other gender, and support students from deprived backgrounds into higher education. *So you want to be in the Professions?* will be managed through a range of approaches including targeted outreach activities, provision of an alumni role model mentor, and a student mentor. Every participant upon successful completion of the programme will receive a contextualised offer to study at the University of Stirling. As of May 2016 the project has engaged over 200 students in its initial phase.

Summer schools have proved a popular and effective way for universities to engage potential students from deprived and less advantaged backgrounds. The **University of Strathclyde** has set up a summer school, *Engineering – the Future for Girls*, to encourage secondary school girls to consider a career in engineering. The summer school is designed to engage girls in a wide range of engineering challenges that will inspire them to be amongst the next generation of engineers. The initiative is targeted at girls in the third and fourth year of high school.

Glasgow Caledonian University has developed a comprehensive support framework for students from a declared care-experienced background. Students are offered free accommodation in university halls of residence and priority financial support through a care leavers' bursary. In 2014-15 the University also established a number of pre-entry stage outreach activities in collaboration with Glasgow City Council and local secondary schools, to ensure a more effective transition to higher education, (whether to GCU, another university or HN study at college). The GCU approach has a number of key strands including: one-to-one mentoring programme to support senior pupils research and plan academic and career options; partnership working with schools to offer additional complementary support for pupils; taster campus

⁸ <http://www.ecu.ac.uk/equality-charters/athena-swan/>

visits to institutions and tailored workshops in schools; support on applications and interviews; and monitoring and evaluating work to inform future developments.

Universities are working more closely with schools and community groups to engage with pupils to promote access to Higher Education. The **University of Aberdeen's** Children's University hosted its first Graduation Ceremony in June 2015. The initiative aims to foster an enjoyment in learning and raise aspirations amongst pupils from the age of seven to 14. **Queen Margaret University's** South East Scotland Academies Partnership (SESAP) has developed four pioneering academies for senior school pupils which maximise educational opportunities and develop transferable skills. The academies aim to smooth the transition between school, college, university and employment, and support the development of Scotland's key growth industries. The project is continuing to grow with over 400 pupils from over 50 schools in Edinburgh, East and Mid-Lothian, and the Scottish Borders signed up. The four academies are in Tourism and Hospitality; Creative Industries; Food Science and Nutrition and Health and Social Care. Glasgow Caledonian University's Caledonian Club works with over 2,200 nursery, primary and secondary school pupils, and 385 parents annually from local communities in Glasgow. Early evidence shows that pupils working with the club have higher levels of self-confidence, self-esteem and better communication skills and they (and their families) are more likely to aspire to access further and higher education.

Universities are delivering high quality learning, and retaining and supporting students to completion

Universities are committed to enhancing the quality of their learner experience and increasing the number of students who successfully complete their programmes of study.

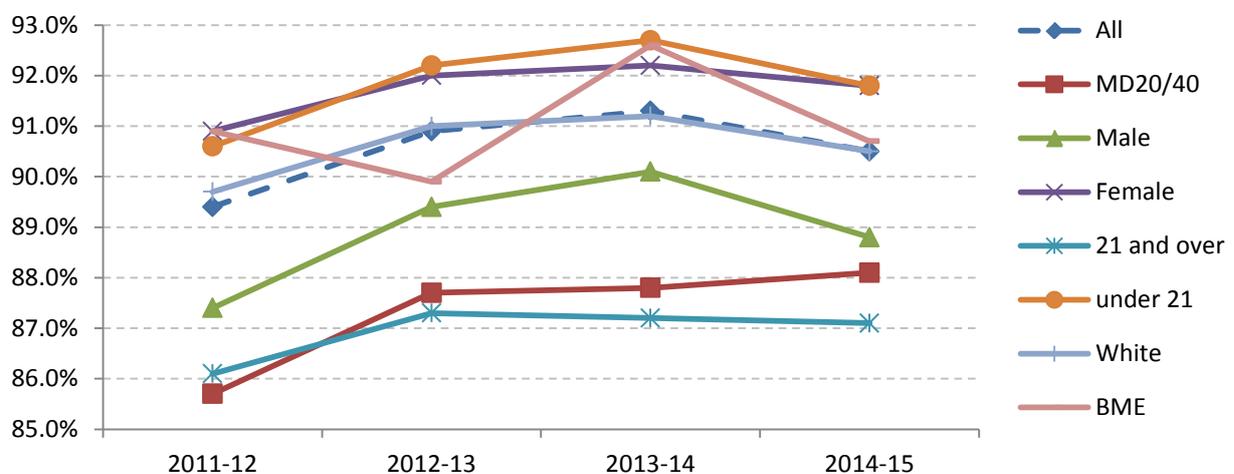
Retention

In 2014-15 retention rates for Scotland-domiciled undergraduate entrants to Scottish universities increased to 90.5% from 89.4% in 2011-12, close to SFC's national ambition of at retaining at least 91% by 2016-17. There has been a broad upward trend across most protected characteristics during that period, as the charts below show.

Retention rates for entrants from the SIMD20/40 areas have improved year-on-year, but still lie 2 points behind those of all entrants (88% in 2014-15). Older student too (>21) are also more likely to return in year 2 than their peers (87%). Individual institution data for 2014-15 shows a wide range on institutional outcomes, highlighting the particular challenges faced by those institutions that have been more successful in attracting students from under-represented backgrounds or learning

pathways. The University of the West of Scotland, for example – delivering almost a quarter of the sectors articulation, and with over half its students from SIMD20/40 backgrounds – has the sectors lowest retention rate at 84.5%. In 2015 SFC repurposed its regional coherence funding to focus support on those institutions that are able to demonstrate and maintain a significant commitment to the support, retention, and successful outcomes of students from the most disadvantaged and deprived backgrounds. The *Widening Access and Retention Fund* will allocate almost £15m funding annually to eight HEIs for this purpose.

Proportion of full-time first year Scotland-domiciled entrants from protected characteristic groups and deprived backgrounds returning to study in year two



Source: SFC/HESA

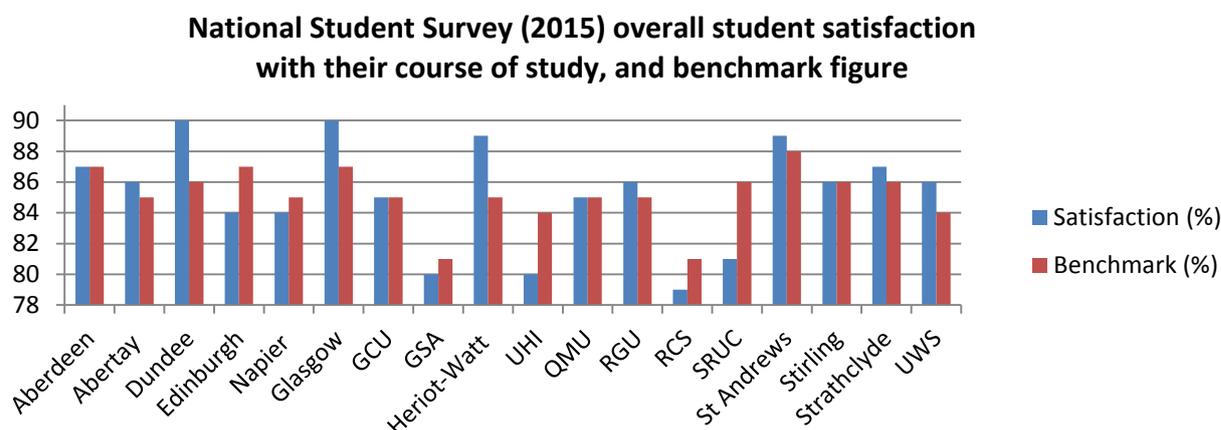
High quality learning

Five universities were reviewed in 2014-15 as part of QAA Scotland’s current cycle of Enhancement-led Institutional Reviews (Edinburgh Napier, Heriot-Watt, Glasgow Caledonian, St Andrews, and West of Scotland universities). The reviews concluded that each institution had in place effective systems for managing academic standards and enhancing the student learning experience, and identified positive practice, as well as some areas for development. These reports are available from the QAA website⁹.

The results of the 2015 National Student Survey (NSS) provides evidence that the quality of the learner experience at Scottish universities has been maintained at a high standard over the past year. In 2015 86% of students at Scottish institutions were satisfied with the overall quality of their programme of study, (87% in 2014, 86% in 2013), the same level as the averages for the UK and England, (Wales 85%, Northern Ireland 89%). At an institutional level the universities of Dundee, (90%, +4

⁹ www.qaa.ac.uk

points above its benchmark figure¹⁰), Glasgow (90%, +3), Heriot-Watt (89%, +4), and St Andrews (89%, +1), maintained their strong reputations for student satisfaction, and were amongst the best performing institutions in the UK. Edinburgh (84%, -3), UHI (80%, -4), and SRUC (81%, -5) performed below expectations, and have put in place measures and resources to improve, (in the case of SRUC issues have been identified with a particular programme).



Source: HEFCE

The **University of Stirling** and its partner colleges have recognised that one key factor in the retention of students on the integrated degree courses (articulation from college to university) relates to their expectations of, and differences between, college and university study. The partners have joint curriculum teams for each of the integrated degree programmes and there are Project Officers based at the University and colleges who monitor integrated degree students (for attendance and academic progression) closely throughout the academic year to ensure that students from non-traditional backgrounds receive the targeted support they need when they need it.

The **University of Dundee** has put the quality of the learner experience at the heart of everything it does, and has been rated first in Scotland for student satisfaction in the 2015 National Student Survey (alongside the **University of Glasgow**), and in the top three in Scotland for the last four years. The quality of the learner experience at the University has also been recognised by the Times Higher Education Student Experience Survey which has rated Dundee as the top institution in Scotland for six successive years. Amongst the sector leading support available to students are: a peer connection scheme providing buddying and mentoring to enable students to settle into and make the most of their time at the University; academic skills enhancement and support from the Centre for the enhancement of Academic Skills,

¹⁰ Benchmarks are based on the sector average satisfaction levels adjusted to reflect the mix of students at each institution to show where we would expect each institution to be.

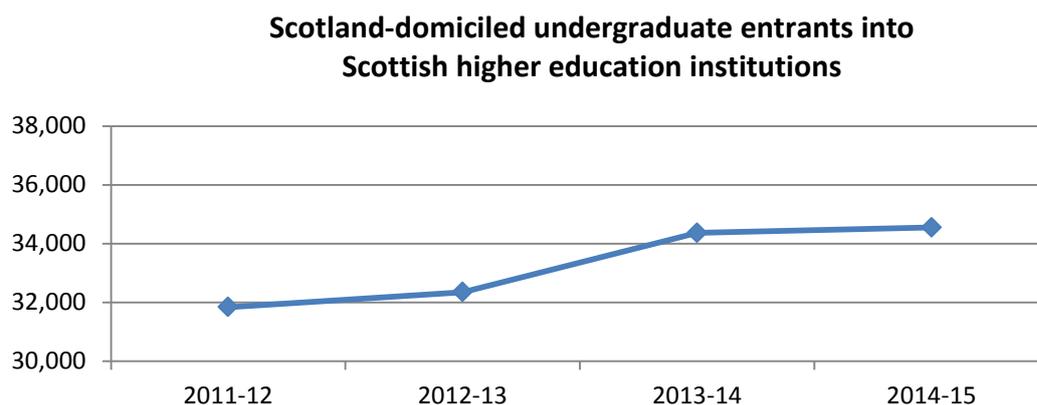
Teaching, Learning & Employability (CASTLE) offering help with skills which might include preparing assignments, dissertations, research skills, time management, or exam and revision strategies; and a highly regarded careers service offering support and guidance to all students throughout their degree and continuing for up to 5 years after graduation.

Universities are delivering ‘the right learning in the right place’

In their Outcome Agreements, institutions have committed to providing education that best meets the changing social and economic needs of Scotland and supports a flourishing and diverse culture. Some of the ways they have said they will do this include offering more opportunities to study STEM subjects, supporting the National Gaelic Language Plan, and collaborating where possible to secure effective and efficient provision to meet the needs of industry and public services, e.g. engineering and nursing.

SFC has a statutory duty to ensure coherent provision across Scotland. We discharge this duty by providing funded places to institutions for high quality HE programmes, working closely with institutions (and employers) to ensure that gaps in provision are identified and addressed, and staging interventions (e.g. facilitating collaboration) and providing strategic funding to support nationally unique and important provision.

Since 2011-12 the number of Scotland-domiciled undergraduate entrants into Scottish HEIs has grown steadily from 31,838 students to 34,555 in 2014-15.

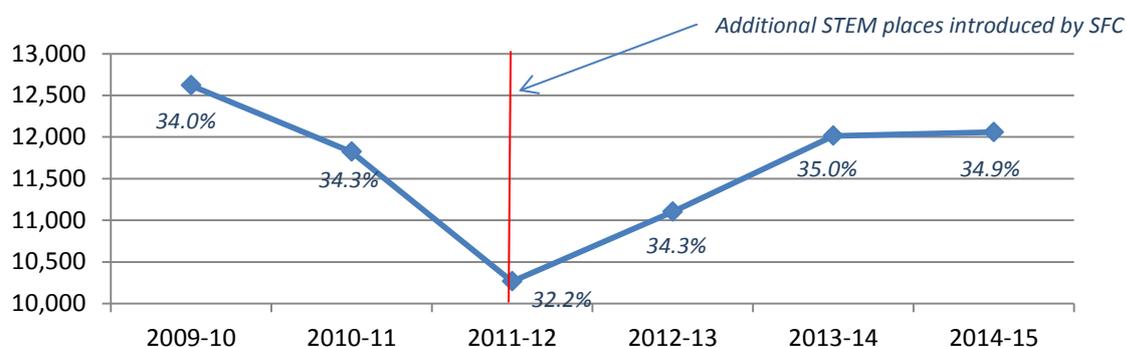


Source: HESA/SFC

SFC has made 300 additional places available for four years from 2012-13 (1,200 in total) to support the provision of Science, Technology, Engineering and Maths (STEM) subjects, with the places embedded into institutions’ core teaching grants from 2016-17 onwards. These places have been distributed amongst those institutions with the highest quality research in STEM subjects and have helped

sustain the proportion of undergraduate entrants to STEM courses at slightly over a third of all provision, to meet demand for graduates in strategic and high added value sectors such as the life-sciences and energy.

Scotland-domiciled undergraduate entrants on Science, Technology, Engineering and Maths programmes



Source: SFC/HESA (see page 25 of SFC Outcome Agreement technical guidance)

In their Outcome Agreements institutions have described how they have responded to evidence of current and future skills requirements of employers, and better targeted recruitment of courses of national and regional economic significance. SFC made 342 additional undergraduate *Skills for Growth* places available for three years from 2012-13 (1,026). We allocated these places in response to proposals submitted by institutions that demonstrated evidence of industry need, skills gaps, industry support, strong student demand, and high quality work-placements as integral elements of the programme. Places were awarded to eleven institutions mostly to STEM-focussed programmes that support the energy and life-sciences sectors. Institutions have reported these additional places have been taken up by students, supporting the development of critical mass in key areas of provision.

For 2016-17 SFC will provide funding for a further 171 additional *Skills for Growth* places, with the expectation that institutions secure industry funding to match these places.

In 2014 **Scotland's Rural College (SRUC)**, was recognised as Scotland's national provider of land-based education and training. SRUC was founded in 2012 following the merger of the three land-based colleges¹¹ and the Scottish Agricultural College to create a tertiary education provider delivering comprehensive skills, education and business support for Scotland's land-based industries. On behalf of SFC, SRUC led the development of a new *National Strategy for Land-Based Education and Training*¹², published in August 2015, consulting over 9,000 business and organisations in the process, to understand how the delivery of land-based provision

¹¹ Barony College, Elmwood College and Oatridge College

¹² http://www.sfc.ac.uk/web/FILES/ReportsandPublications/national_land_based_strategy.pdf

could change to better meet industry demand. As part of the Outcome Agreement process universities and colleges are asked to use the strategy as the basis for reviewing the distribution and demand for land-based programmes, and explore opportunities for collaborative growth or rationalisation to ensure a cohesive and sustainable approach to land-based education.

Gaelic at undergraduate level is available at the **University of Glasgow** and the **University of the Highlands and Islands (UHI)** with Masters level programmes at the **Royal Conservatoire of Scotland** (MA Learning and Teaching Gaelic Arts), and at the **University of Edinburgh** (MA in Gaelic and Education). **UHI** has introduced a Gaelic Pathway programme for primary teacher training as well as piloting a PDGE for secondary Gaelic Medium education in 2015/16. Universities also offer a wide range of opportunities for students to maintain their fluency and develop Gaelic culture through a range of initiatives including accredited and non-accredited language programmes and residency schemes collocating Gaelic speaking students.

Robert Gordon University's School of Nursing and Midwifery has worked closely with colleagues at the **University of Abertay** to develop collaborative research and education programmes in partnership with NHS Boards. The school is also actively involved in discussions with **University of the Highlands and Islands** on opportunities for collaboration in the delivery of education and research to support remote and rural healthcare provision. The school works closely with all of its NHS partners to ensure programmes are fit for purpose and that they address core NHS Scotland values.

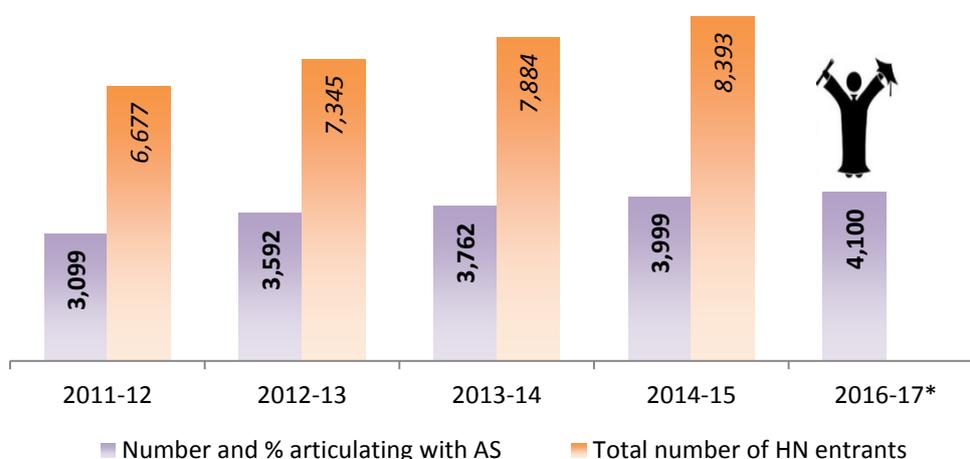
Universities are smoothing the transition from college to university

As a direct result of close partnership working between colleges and universities, there has been a steady increase in the number of learners articulating with advanced standing (that is, transitioning from college into year two or three of university). Close to 4,000 learners articulated with advanced standing in 2014-15, an increase of 900 students from the 2011-12 baseline of 3,099.

Articulation is an alternative to the traditional route of progressing to year one of university from school, and has proven to be an effective pathway for widening access to undergraduate programmes at university. Over a quarter of articulating students are from the 20% most deprived areas. We believe that there is further scope for growth, and we have an aspiration for the number of students articulating with advanced standing to reach 4,100 by 2016-17, towards our national ambition of 4,500 students by 2018-19.

Scotland-domiciled learners articulating from college to degree level courses with **advanced standing**

second or third year of university



* SFC aspiration

Source: National Articulation Database (compiled from data from FES, HESA and SQA)

Most articulation is delivered through five institutions that act as regional ‘hubs’ for articulation from local colleges to university partners¹³. These five hub institutions accounted for 66% of all articulation with advanced standing in 2014-15 – some 5,569 students – with the University of the West of Scotland alone accounting for 22.5% of the sector total. Since 2008 SFC has provided funding to develop regional infrastructure to support development of articulation arrangements at these regional hubs, and from 2013-14 we have provided over 1,000 additional places each year for 3 years¹⁴ to expand the scale of ‘2+2’ or ‘1+3’ (HNC to year 2, HND to year 3) guaranteed articulation partnerships between colleges and universities. Institutions have reported 100% enrolment to these places, and a fourth and final tranche of 1,118 places will be made available in 2016-17.

Outlined below are a number of examples where college and university partners have worked together to develop new and innovative learning pathways, and programmes that enable students to make the most of the opportunities our colleges and universities have to offer.

The **University of Stirling** and **Forth Valley College** have jointly developed four integrated honours degree programmes. The programmes integrate the development of technical skills and industry awareness with academic excellence, and are based on a 2+2 model of articulation. The College and University have worked with over thirty industrial partners in designing and delivering the

¹³ Robert Gordon University for the North East; Abertay University for Tayside and Fife; Napier University for Edinburgh, the Lothians and Borders; Glasgow Caledonian University for the Greater Glasgow area; and the University of the West of Scotland for the South West.

¹⁴ 1,020 additional places in 2013-14; 1,089 in 2014-15; and 1,118 in 2015-16.

programmes, to ensure that graduates are work ready and meet the critical skills requirements of key industry sectors. All students are undergraduates of a four year degree programme from day one and enrolled at both institutions, studying mainly in the college in years one and two, and the University in years three and four. There is an expectation of progression from the outset, and a desire to develop a sense of identity as both a college and university student. The four joint programmes are BSc (Hons) in Applied Biological Sciences, Applied Computing, Heritage and Conservation, and Digital Media. The programmes have been supported by the allocation of 103 additional funded articulation places from SFC.

The **University of St Andrews'** Medical School has formed a partnership with **Perth College** enabling students following the College's HNC in Applied Sciences to articulate to the University's six-year Medical degree. *Pathway to Medicine* combines the scientific theory and practical skills necessary to prepare students for the demands of medical training. The programme has been specifically designed to enable students with ambitions of becoming a doctor to study medicine where they have been prevented from doing so, either through social or educational disadvantage.

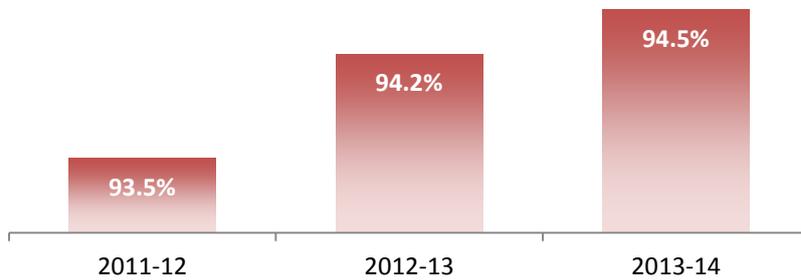
Edinburgh Napier University and **Queen Margaret University** jointly provide a vocational stage and screen degree to address unmet demand from students and the creative industries. The majority of students on the programme articulate from colleges across Scotland, and formal articulation arrangements are in place with Edinburgh, Fife, and Dundee and Angus colleges. The programme equips graduates with a specific, relevant and industry ready skill set that will enable them to succeed in Scotland's growing entertainment and creative industries.

Universities are developing highly skilled graduates ready for work

Institutions are committed *to increasing* the proportion of students entering graduate-level occupations, *enhancing* skills for the work place and *developing* students for a competitive international labour market.

Longitudinal data on graduates entering positive destinations is not yet available for 2014-15. Available data does, however, show a sustained increase in those leaving university for employment or further study, from 92.3% in 2009-10 to 94.5% in 2013-14.

The percentage of Scotland-domiciled graduates entering **positive destinations**

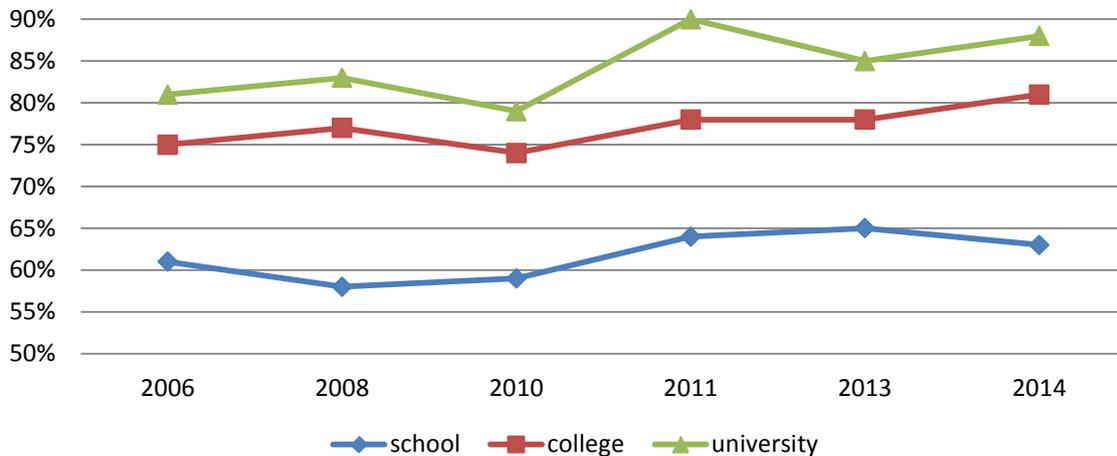


Positive destinations data for 2014-15 will be available in July 2016.

Source: HESA Destinations of Leavers in Higher Education (DLHE) survey

In surveys of employer opinion on the work readiness of Scottish graduates, there is a clear premium placed on university education and training, with 88% in 2014 (the most recent data available) rating graduates as either well or very well prepared for work, a clear acknowledgment that a university education adds real value in terms of skills and attributes, and students' employability.

Employer Skills Survey: work readiness, proportion well prepared and very well prepared



Source: UKCES Employer Skills Survey (2006-2013) and Employer Perspective Survey (2014)

We have seen above how universities support learner journeys and deliver high quality learning opportunities that match the needs of business and public services. Through curricular and extra-curricular activities, universities across the sector are developing new and innovative ways to foster students' prospects, supporting them in the transition to employment or further study, and in the application of their learning. For example 55% of final year students at the University of St Andrews had internship experience, and 76% of its 2014 graduates are now working full-time in graduate level roles. This reflects the importance the University attaches to

employability and career development, with 99% of students using the University's extensive careers services resources and services.

The **University of the Highlands and Islands** has developed a Masters programme to meet the bio-medical industry's need for graduates with the skills required to conduct high-level research in an industry environment. The development of the *MSc Applied Bioscience Skills* programme has been led by senior researchers in diabetes and lipidomics, one of the University's key research strengths, and in consultation with local and national employers involved in the biotechnology and life sciences sector.

Edinburgh Napier University works closely with the tourism industry to develop graduates who are ready to lead the development of the tourism industry in Scotland. Building on the knowledge exchange between the University and the sector, the collaboration is directed specifically at meeting industry needs. The new leadership model for Scottish tourism is developed in collaboration with the Edinburgh Tourism Group and funded by Scottish Enterprise.

Glasgow Caledonian University launched the *GCU Law Clinic* in 2014 to provide free and confidential advice and assistance to those who do not qualify for Legal Aid and who cannot afford to pay legal fees. The Clinic is staffed by GCU law students, supervised by qualified legal practitioners, who provide legal advice, draft legal documents, represent clients in court, and negotiate on behalf of clients in contractual disputes. **GCU** is also working to address skills gaps in technology industries by offering work-based degree programmes in partnership with two global IT companies, IBM and CGI. The model of delivery allows students to split their time between studying at the university and working for their employers.

Universities are delivering world-leading research

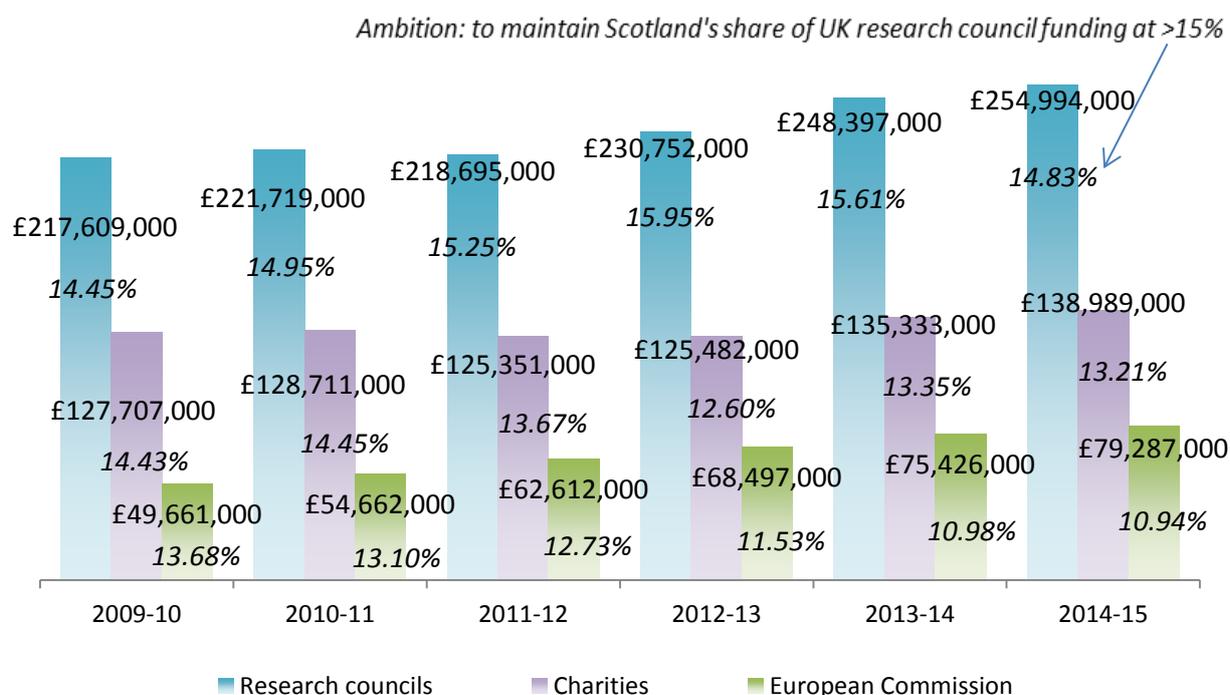
The outcome of the Research Excellence Framework (REF2014¹⁵) demonstrates the strength and depth of research activity across Scottish HEIs with 4* (world-leading) research carried out in all of Scotland's 19 HEIs. 77% of submissions from our universities were judged to be either 4* or 3* (internationally excellent), compared to 54% in 2008. REF2014 was the first exercise to assess the impact of research on the economy, society, culture, public policy or services, health, the environment or quality of life. 86% of research submitted by Scottish universities was found to have 'very considerable' or 'outstanding' impact, outperforming the UK as a whole and

¹⁵ REF is the new system for assessing the quality of research in higher education institutions in the UK, and replaces the Research Assessment Exercise (RAE), last conducted in 2008. The REF is conducted jointly by the four UK HE funding bodies (SFC, HEFCE, HEFCW and DELNI).

demonstrating universities' commitment to seeing the potential of their research realised to the benefit of the whole country.

During 2014-15 SFC invested over £232m to support research excellence through the Research Excellence Grant, and an additional £28m over 2 years (2013-14 and 2014-15) through the Global Excellence Initiative. This funding has given our institutions a platform to compete with the best universities in the UK and internationally, winning a disproportionate share of competitively won research grants. In 2014-15 the sector won a record £255m in UK research council funding, some 14.8% of the total, slightly below SFC's target share of >15%. The sector's research income from all sources (excluding SFC core funding) stood at £769m in 2014-15, an increase of 13.2% on the previous year (£679m).

Amount and percentage share of UK income from Research Councils, research charities and the European Commission



Note: percentages show Scottish HEIs share of UK total

Source: SFC/HESA (see page 30 of SFC Outcome Agreement technical guidance)

Edinburgh and Glasgow universities, Scotland's largest, multi-faculty research intensive institutions, account for over half of all research income won by Scottish HEIs (32% and 22% respectively), and almost two-thirds of Scotland's share of competitively won research income from the UK research councils (42% and 21% respectively). However, as the REF2014 demonstrated, research excellence exists in all of Scotland's higher education institutions. Dundee, Heriot-Watt, and Strathclyde universities have all seen dramatic growth in research income over the past 5 years

of 22%, 31% and 44% respectively, and REF2014 ranked Queen Margaret University's research into Speech and Language Sciences as second in the UK, validating SFC's approach that encourages and supports institutions to focus resource on areas of excellence and unique expertise.

Research pooling

Since 2003 SFC has invested £150m in research pools to foster dynamic collaboration and enhance the sustainability, effectiveness and international competitiveness of Scottish research – a sum matched by partner HEIs. The research pools have been successful in establishing critical mass, attracting leading international researchers, and providing access to advanced equipment and technology on a shared basis, as evidenced by the outcome of REF2014 and in the sustained growth in the sectors research income.

In 2014 SFC have made available up to £8m over 5 years (to be matched by institutions) to sustain central administration, and enable the continued collaborative benefit of clustering research, support to graduate training, knowledge exchange activity, and international development. As their original funding comes to an end successful pools are invited to submit proposals for five years additional support. In the case of the SINAPSE¹⁶ research pool these investments have supported the appointment of 4 new Chairs in imaging related disciplines, the refurbishment of radiopharmaceutical production laboratories, and procurement of MRI compatible EEG equipment for scanners in Glasgow, Edinburgh, Aberdeen and Dundee.

Industrially Generated Red Blood Cells for Transfusion is a collaborative project involving researchers from the Scottish National Blood Transfusion Service and the universities of **Glasgow, Heriot Watt, Edinburgh** and **Dundee**. There are 2.2 million blood transfusions every year in the UK and meeting this growing demand is increasingly challenging. This project seeks to grow red blood cells from stem cells in a laboratory, and researchers are now able to produce a bag of non-synthetic blood, with the potential to scale-up within reach. The researchers are aiming to produce O- type blood, which can be used to treat 98% of the population, with potentially huge impact on health provision in Scotland and across the world. Four patents have been filed, and the research partners aim to begin their first human trials in 2019, with commercial production scheduled for 2023.

The **University of Aberdeen** and **Heriot Watt University** have each been awarded £250,000 from the Oil and Gas Authority to investigate the potential for hydrocarbon

¹⁶ Scottish Imaging Network: A Platform for Scientific Excellence, including the universities of Edinburgh, Glasgow, Stirling, Dundee, St Andrews and Aberdeen.

exploration in the North Sea and the North Atlantic. The funding is part of a package of measures announced by the Prime Minister to support the UK oil and gas industry and boost future exploration during the current downturn in the sector. The funding will allow Aberdeen and Heriot Watt to apply their world leading research in petroleum geology research to assess prospects for exploration in the Rockall Basin in the North Atlantic, and the Western Platform and Mid North Sea High areas of the North Sea respectively. Both universities will collaborate closely and share expertise across both areas to secure maximum impact.

*The **Glasgow School of Art's** Mackintosh Environmental Architecture Research Unit (MEARU) has built on years of research into energy-efficient housing to make a tangible difference to residents in aging 1960s social housing in the Wyndford area of Greater Glasgow. Research on housing at Wyndford has resulted in benefits to its residents as well as providing a viable model for helping to reduce fuel poverty in existing housing schemes elsewhere. MEARU evaluated innovative solutions to improve the efficiency of housing in the area. Improved energy costs and comfort for the residents of this large-scale housing scheme enabled the Cube Housing Association to comply with the 2015 Scottish Housing Quality Standard and become a leading and innovative landlord and housing developer.*

Supporting innovation and strengthening ties with industry

Higher education institutions are continuing *to develop*, and be involved with, new and innovative structures for industry-university collaboration and *to exploit* research for the benefit of the economy, society and our shared culture. In 2014-15 Scottish HEIs worked with over 26,000 organisations –18,000 of them from Scotland – providing consultancy, research and development and other forms of knowledge transfer activity, generating over £418m in income to support their teaching and research activities.

Innovation Centres

The first eight SFC funded Innovation Centres¹⁷ (ICs) launched in 2012 are now well established. The Centres facilitate collaboration between universities and businesses to deliver transformational change and growth in key industry sectors. Amongst their range of activities ICs offer Masters-level programmes with close industry engagement, often in the form of placement with an IC industrial partner. One of these programmes, the MSc in Stratified Medicine and Pharmacological Innovation –

¹⁷ Digital Health and Care Institute; CENSIS (sensors); Scottish Aquaculture IC; Construction Scotland IC; Industrial Biotechnology IC; Stratified Medicine Scotland IC; Data Lab (big data) IC; and Oil and Gas IC (OGiC). More detail on each IC is available here:

<http://www.sfc.ac.uk/Priorities/Innovation/FundedInnovationCentres.aspx>

delivered in partnership with five Scottish universities – received the 2015 Herald Higher Education Award for Outstanding Employer Engagement. The award was made in recognition of the contribution made to the training of a new generation of medical scientists to develop innovative and more effective forms of personalised medicine.

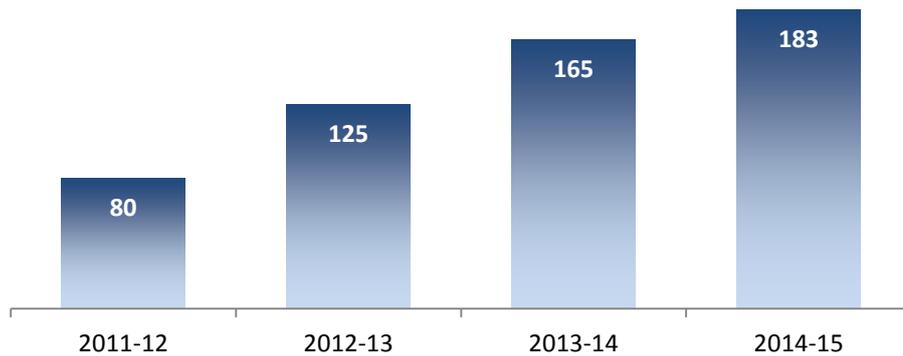
In March 2015, the Scottish Aquaculture Innovation Centre (SAIC) announced funding for two research projects initiated by the salmon industry. The projects aim to boost the numbers, quality and welfare of farmed cleaner fish used in commercial salmon farms to control sea lice which is an industry-wide challenge. One of these projects is worth £4.05m over 3 years, with only 21% of the cost coming from SAIC and 74% provided by the industrial and academic partners. The other project included only 37% of its funding from SAIC with the remainder coming from industrial and academic partners.

Supporting small and medium-sized companies

Small and medium sized companies (SMEs) are the bedrock of the Scottish economy accounting for 55.6% of private sector employment and 39.4% of private sector turnover. SFC has sought to facilitate engagement between SMEs and universities to support sustained economic growth. One such initiative is the Innovation Voucher Programme funded by SFC and administered through Interface¹⁸. The £5k vouchers provide an opportunity for SMEs to access academic experts to help solve problems and help them grow – applying our universities world leading know-how to support companies that may not have the scale or resources to undertake their own research and development activities. We have seen sustained growth in the uptake of vouchers over the past 3 years, and during 2015 the programme passed a key milestone with the approval of the 1,000th voucher, a collaboration between Abertay University and Droman Crime Solutions to support more effective policing, (see case study below).

¹⁸ Founded in 2005 and funded by SFC Interface supports businesses seeking to access academic support from Scotland's 23 higher education and research institutes.

The number of SFC Innovation Vouchers



Source: SFC (see page 33 of SFC Outcome Agreement technical guidance)

Abertay University and Droman Crime Solutions are jointly developing a demonstrator of cyber security training for police officers through the use of games based learning. The application of the games technology expertise from the team at Abertay will simulate cybercrimes and provide training in incident response. This will be evaluated in partnership with Police Scotland. The resulting product combined with Abertay's internationally recognised expertise in computer games education will allow the partners to take a leading role in deployment of this new type of training across the UK and EU. To date there has been significant interest in the project from law enforcement agencies outside Scotland.

The **University of St Andrews** and the Data Lab¹⁹ innovation centre have launched Scotland's first engineering doctorate in Computer Science. The programme is an advanced research apprenticeship offering in-depth research training for research engineers developed and delivered in collaboration with industry sponsors. The programme will apply analytics and data science to problems facing industry and create exciting new opportunities for economic, social and scientific development. Five Data Lab Prize Studentships, will also be awarded as part of the initiative to research engineers who are judged to be offering the most exciting and innovative proposals for data-driven or data-intensive research. The Studentships will provide up to 50% of the fees and stipend for the four-year programme, with the Industry Partner matching this funding.

The *Mirage* project brings together the technology industry and university partners to collaborate on the production of materials integral to manufacturing a variety of goods that use sensors – from asthma inhalers to infrared cameras. Backed by CENSIS²⁰ and Scottish Enterprise, researchers from four leading technology companies and universities led by the **University of Glasgow** will focus on the creation of cutting-edge, quality mid-IR sensors in high volumes with greater sensitivity, lower cost, reduced energy use and a longer lifespan than existing

¹⁹ <http://www.thedatalab.com/>

²⁰ Centre of Excellence for Sensor and Imaging Systems, www.censis.org.uk

products. These can be employed in a wealth of applications including: gas analysers, methane sensors, distributed feedback lasers and a vast array of industrial processes. The £6m project aims to boost turnover for the projects industry partners by £135m over the next 10 years, cut their production costs by up to 50%, and expects to deliver up to £56 million to the Scottish economy over the next 10 years.

Universities are working towards reducing their impact on the environment

Universities are working towards becoming environmentally sustainable in their operation. All institutions in the sector now have Carbon Management Plans, under the Universities and Colleges Climate Commitment for Scotland (UCCCfS). The UCCCfS programme is delivered by the Environmental Association for Universities and Colleges (EAUC) and funded by the SFC. The commitment is a public declaration that institutions acknowledge the Scottish Government targets to reduce carbon emissions (80% by 2050), and will address the challenges of climate change and reduce their carbon footprints.

In November 2015, fifteen of Scotland's nineteen HEIs took part in the first (and voluntary) year of climate change reporting. This new reporting scheme will be mandatory for all publicly funded bodies from November 2016 under the Climate Change (Scotland) Act 2009. Institutions will be asked to report under 4 main headings: climate change management; carbon emissions; climate change adaptation; and sustainable procurement. This new reporting framework will be reflected in SFC's guidance for the next outcome agreement cycle to be issued later this year.

SFC has awarded the **University of Edinburgh** £30,000 to develop a high level carbon prediction tool. The tool could be rolled out across the sector, and will enable institutions to model different business variables and predict carbon emission consequences each time these variables are changed. This will prove invaluable in helping institutions develop business cases for renewable projects, and to target investments more effectively to achieve the greatest impact on emissions. As part of the project the University will also provide a review and recommendations of best practice in the sector. SFC is also collaborating with EAUC to explore ways to identify the most effective and efficient forms of investment for carbon reduction.

The refurbishment of the **University of Glasgow's** main library will reduce its energy usage by 440,000 kWh, and save 81 tonnes of carbon emissions annually. Further savings will be made by extending the life of the building by up to 60 years, reducing the environmental costs of further construction. It is estimated that an investment of £160,500 in the cladding and insulation element of the refurbishment will pay for itself in around nine years in reduced energy costs.

The **University of Edinburgh** has taken innovative measures to enhance the environmental performance of its laboratories and research spaces, and to improve the sharing of best practice with colleagues from across the University. Peer-to-peer audits have generated innovation and led to the rapid sharing and replication of new ideas across the University, contributing towards the development of a strategic approach to sustainable research and teaching. Innovations include the first scheme in the UK to recycle scientists' disposable gloves, efforts to manage and recycle pipette tips, and a project to recover and reuse helium. The University's approach was recognised at the prestigious 2015 Green Gown Awards²¹.

The **University of St Andrews** was awarded a Highly Commended Green Gown award for its student engagement programme. Under the *Transition Town* banner students, staff and the local community work together to help individuals and groups minimise their impact on the environment and become more self-sustaining, strengthening community ties in the process. Projects include the 'edible campus' which is now harvesting over 600kg of veg, the 're-use project' which diverts over 1.2 tonnes of household goods from landfill, the establishment of Scotland's first all-electric car club and the organisation of Scotland's 'Transition Towns' conference. Over 3,000 people each year have been engaged across energy, travel, food, economy and behaviour change saving 1,104 tonnes of carbon whilst supporting academic study and institutional change.

²¹ Established in 2004, the Green Gown Awards recognise the exceptional sustainability initiatives being undertaken by universities and colleges across the UK. The Green Gown Awards are administered by the Environmental Association for Universities and Colleges (EAUC) and are governed by a cross agency steering group.