

## Brief for Scottish Government debate on the *Contributions of colleges and universities to Scotland's success, 14 June 2016*

### **Overview**

Scotland's 19 higher education institutions are very proud to contribute to Scotland's:

1. **Economy**: an annual economic impact of over £7 billion GVA which puts HE third to Scotland's energy and financial services sectors in terms of economic contribution.
2. **Talent pool**: a total of over 230,000 undergraduate and postgraduate students, 91% positive destinations and 86% overall student satisfaction.
3. **Society and a fairer Scotland**: driving progress on widening participation with over 6,000 additional widening access and articulation students since 2013-14.
4. **Research and innovation**: the essential base of £230m of SFC research funding, gives direct leverage of over £750 million of research grants and contracts into Scotland annually including over 15% of competitive UK Research Council funding.
5. **Schools and colleges**: University partnerships that deliver more choice and greater opportunities, better facilities and better transitions for learners at all levels.
6. **Culture and communities**: Over 1.8 million people attended **free** performing arts events, exhibitions, lectures, and museums run by universities in 2014/15.
7. **Business**: driving innovation in partnership with 26,000 organisations each year, of which over 18,000 are in Scotland.
8. **Global standing**: creating £1.5 billion of export earnings from outside Scotland and responsible for key "pull" factors that contribute to Scotland's attractiveness to inward investors.

The contribution that universities make to Scotland is underpinned by the public funding they receive. Public investment in universities is then multiplied by a factor of 7 giving a huge return on investment. Beyond economics, the return on investment that universities deliver is actually much greater as so much of the sector's social and cultural contribution cannot be easily quantified.

The higher education sector will need a sustainable and competitive funding settlement in the 2016 spending review to keep delivering its important, and varied, roles within Scotland.

## 1. The HE contribution to Scotland's economy:

The HE sector contributes £7 billion in gross value added to Scotland every year.

Universities have a four-fold role in generating economic value:

- I. They are a **growing** 'industry' employing 38,000 people directly and supporting 140,000 jobs in the Scottish economy indirectly.
- II. They have an **export** role, worth £1.5 billion to Scotland, based on international student recruitment, transnational education and success in winning research contracts from outside of Scotland.
- III. They **support** indigenous Scottish business to grow with their skills needs, CPD and innovation.
- IV. They help **attract** inward investment to Scotland based on a competitive offer of high talent, research and the creation of 'clusters' of both.

Universities have the following regional impact economically:

- Aberdeen City & Shire: £1,232.3 million GVA and 16,868 jobs;
- Dundee City Region: £1,152.6 million GVA and 18,572 jobs;
- Edinburgh and South East Scotland: £3,273.0 million GVA and 42,705 jobs;
- Glasgow and Clyde Valley: £3,702.2 million GVA and 47,316 jobs;
- Highlands and Islands: £649.1 million GVA and 5,779 jobs;
- Mid Scotland: £748.5 million GVA and 8,501 jobs; and
- South West Scotland: £555.1 million GVA and 4,806 jobs.

(source: Biggar Economics 2013-14)

Scotland's universities are key partners in the development of our cities and regions. This has been most evident recently in the development of city deal bids.

The Scottish Government acknowledges this role in its *Agenda for Cities*: "Our colleges and universities are key players in the local and national economies, major employers, creators of new businesses, generators of innovation which leads to business growth, and catalysts for inward investment. As such, they play an important part in city region partnerships."

Our universities are a major pull-factor in the attraction of inward investment into Scotland – creating jobs at all levels. Examples include:

- US-based analytics and software services provider SAS expanded its research and development operations in Scotland in spring 2013, creating nearly 100 jobs safeguarding another 126. Speaking of the company's expansion in Scotland, Mikael Hagstrom, from SAS said: "The initial investments allowed SAS to see the real Scottish potential with access to the **excellent pool of talent from Scottish universities and its strong culture of innovation**".
- US-based company Daktari established a new base in Inverness in spring of 2013, creating up to 120 jobs. The Inverness base produces cartridges for hand-held HIV monitoring devices and forms part of the growing life sciences sector in Inverness. Mr Rodriguez, Chief Executive, said: "Inverness, Scotland, offers companies like ours...a **highly educated work force** and an ability to expand rapidly to support the demand for our new product".

## **2. The HE contribution to Scotland's talent pool:**

Graduates from Scotland's 19 higher education institutions have very high levels of positive destinations on leaving higher education.

- 91% of graduates from Scottish universities were in work or further study six months after graduating. The UK average is 88%. This figure rises to 94% for Scottish domiciled graduates. (source: HESA Destination of Leavers from Higher Education survey).
- 85 per cent of new graduates were judged to be 'well prepared' for work in the latest Employers Skills Survey.
- Universities work closely with employers to ensure that higher education courses capture the needs of employers in each field and prepare students with the right set of skills and attributes to thrive in employment.

## **3. The HE contribution to society and a fairer Scotland:**

All of Scotland's universities are committed widening access. There has been progress but universities are keen to do more:

- 14% of Scottish-domiciled entrants to university in 2013/14 are from SIMD20 postcode areas. This figure is an improvement on 12.8% in 2011/12 (source: SFC Learning for All).
- There has been a 34% increase in the number of students articulating from college into university with advanced standing (full credit) for their HNC or HND in 5 years. That's over 3,700 students now articulating per year with full credit. (source: SFC Learning for All)
- There was a 24% increase in the number of offers Scotland's universities made to SIMD20 applicants in five years. Offers to SIMD20 applicants rose from 4,230 in 2010 to 5,280 in 2015. By contrast, the number of offers made to SIMD80-100 applicants fell by 21% in the same period (source: UCAS Scottish Provider data, June 2016).

Scotland's universities deliver a wide range of widening access initiatives whatever an individual's stage of life, from nursery through to older age, and whatever a person's circumstances or interests. The following are just a few of the many examples of projects and initiatives our universities currently run:

- **Glasgow Caledonian University's** [Caledonian Club](#) works with young people from the age of three to 18, and families in deprived areas of Glasgow and London to raise educational aspirations and to deliver project-based activity in-school and campus and to engage with the community.
- **The University of Edinburgh** runs [Educated Pass](#) a project which works with local boys' football teams to raise aspirations and awareness of higher education through passion for football, for boys - particularly those from under-represented groups University of Edinburgh is supported by Stevenson College, Telford College, Jewel & Esk College and West Lothian College.
- **The University of Aberdeen's** ['Aim4Uni'](#) initiative supports schools with low rates of participation in higher education through the North of Scotland,, ensuring that pupils in schools with the potential to study at university are encouraged and supported to do so. As well as work with school pupils and teachers, the Aim4Uni project supports

parents within target schools by supporting in-school provisions, such as Parents Nights and Careers Events.

- **The University of Dundee's [DUAL Summer School](#)** provides mature students and school leavers with six weeks of intensive tuition. It gives them room to prove they can take a place at University, and helps acclimatise them to the demands they will face. The initiative attracts a mix of school leavers and more mature students, who fall just short of the entry tariff but are identified as having the potential to succeed.
- **Access to Creative Education in Scotland – ACES** is a project provided by **Glasgow School of Art; Robert Gordon University, the University of Dundee and the University of Edinburgh** is a project which provides encouragement and advice to secondary pupils (S4-S6) with an interest in studying art and design based courses (including architecture) and is aimed at people who may be under-represented in the undergraduate student population.
- **[REACH](#)** (access to law, medicine, veterinary medicine and dentistry) gives secondary pupils aged S4 to S6 from non-traditional backgrounds more insight into studying medicine as well as practical experience that would help with an application. **The Universities of Edinburgh, Aberdeen, St Andrews, Dundee and Glasgow** provide taster sessions and student experience days as well as opportunities to talk to current students, help obtaining work experience and support preparing for UCAS applications and the UK Clinical Aptitude Test. Reach currently works with more than 200 target secondary schools across Scotland. These target schools are chosen because they have low rates of progression into higher education. Pupils also qualify for Reach support if they would be the first in their families to go to university, if they are in receipt of educational maintenance allowance and/or if they are care leavers.
- **The University of the Highlands and Islands** offers a range of access courses to help people into university study which are designed for those who have been away from study for a number of years or lack the usual entry requirements.

Our publication, [Access All Areas](#), showcases a range of projects to widen access across all 19 higher education institutions.

### Where next on access?

Universities Scotland welcomed the report of the Commission on Widening Access (CoWA). Higher education will take a bold approach on access. Universities will show leadership in delivering greater coordination and shared recognition of bridging programmes, more articulation from college and a review of their admissions processes.

- We remain concerned about over-reliance on SIMD, which is known to be only about 50% accurate in identifying deprivation at the level of an individual.
- We would like to see action taken to avoid the displacement of other highly able and deserving students in a system of finite places for Scottish and EU-domiciled applicants.
- Any expansion of places should be funded expansion as public funding is already falling short of the full cost of every undergraduate place for a Scottish and/or EU-domiciled student. Public funding only meets 94% of the full cost (source: TrAC data from SFC).

#### **4. HE contribution to ground-breaking and life-changing research**

The university sector's research excellence is one of Scotland's greatest assets:

- every one of Scotland's higher education institutions undertakes research judged to be of "world-leading" quality (source: REF2014)
- 85.8 per cent of Scottish research was judged to have "outstanding" or "very considerable" impact. This compares to the UK average of 83.9 per cent (source: REF2014).

World-class research provides a vital foundation to innovation in our economy.

Scottish research contributes to major advances in health, the environment and agriculture, amongst other things:

- **Health.** Research at the **University of Edinburgh** and Massachusetts resulted in the Global Registry of Acute Coronary Events (GRACE) and the GRACE Risk Score, which has saved lives by helping doctors better manage the treatment of heart patients. Previously, it was very difficult to predict what would happen in the heart after early Acute Coronary Syndrome (ACS) symptoms. The GRACE study involved more than 100,000 patients in 30 countries. The GRACE risk score has had positive impacts on clinical practice and on policy and public health.
- **Environment.** Scientists at the **University of Stirling** are leading research into bumblebees with huge importance for their future survival. Research at Stirling has looked everything from ecology, foraging range and dietary requirements of the bumblebee to the damaging effects of agricultural pesticides. Their research played a key role in the European Union announcing a two-year moratorium on use of neonicotinoid insecticides on flowering crops.
- **Agriculture.** Research at **SRUC** developed the Concept 2000 poultry transporter, a fan ventilated animal transporters and new legislative requirements around animal transportation. The research has influenced commercial practice in a positive way. It has improved animal welfare during transportation and increased efficiency for the agricultural industry by reducing losses and improving product quality in meat.
- **Health.** Algorithms developed by University of Glasgow researchers have helped NHS Blood and Transplant tackle the complex problem of increasing the number of kidney transplants in the UK. The University has developed sophisticated algorithms which allow the NHS to increase the number of 'paired exchanges' of kidneys by 40% between 2008 and 2013. The research has increased the quality of life for patients freed from long term dialysis and is expected to save the NHS an estimated £16 million over the next 10 years.

#### **Dual support funding for research is so important to our success:**

Scotland's universities attach tremendous importance to 'dual support' funding mechanism for research. Dual support funding means the Scottish Government's research grant helps to cover core costs such as research staff, infrastructure and facilities. This allows universities to go out and compete for the second significant strand of research funding from Research Councils, contracts from business, charities and other bodies.

Dual support funding means that Scotland's universities pull in over £750m in research contracts for the Scottish economy, off the back of £230m of Scottish Government core funding for research.

## 5. The HE contribution as a partner with colleges and schools

Partnerships between universities, schools and colleges contribute to better facilities, more choice, greater opportunities and improved attainment amongst pupils as well as smoother transitions between school and university and college and university.

### **More subject choice leads to more opportunities**

A number of universities across Scotland are working with schools to provide additional support at Higher and Advanced Higher Level so pupils have more opportunities.

- The Advanced Highers Hub at **Glasgow Caledonian University**, the Dundee City Campus Model run by **Dundee University and Abertay University** and the S6@Uni project run by **Aberdeen University** all look to help pupils attain qualifications in the senior phase.
- **The Open University in Scotland** runs a Young Applicants in Schools Scheme (YASS) which gives S6 students in Scotland the opportunity to bridge the gap between school and full-time university. Over 500 young people from more than 100 schools took Open University modules last year.
- The Early Learning of Chinese Project at the **University of Edinburgh** sees native-Mandarin speaking students from the University of Edinburgh visit P1 classes to tell the pupils about their home culture and teach them Chinese characters, tones and words.
- The **University of Strathclyde's** Languages Ambassadors Programme draws upon the university's undergraduate students to promote languages through mentoring and assisting languages teaching in partner schools in Glasgow.

### **Transitions**

Six regional articulation hubs, led by a university in that region, help support learners moving from college to university and to expand the number of articulation opportunities.

- **Queen Margaret University Edinburgh's** Direct Entrant Week is a good example of specific transition programme for college entrants. Built based on feedback from entrants the programme is a great development opportunity focusing on the change in learning styles.
- The **University of Stirling** and Forth Valley College's '[Twogether](#)' run applied biological sciences and heritage and conservation degrees that go beyond traditional 2+2 articulation arrangements. Both degree programmes are wholly integrated; jointly designed, developed and delivered by the college, university and industrial partners.
- **The University of St Andrews** has articulation agreements with local colleges through HNC Applied Sciences and has developed a '[Pathway to Medicine](#)' with Perth College whereby places are made available to study Medicine at St Andrews for students coming through a specifically designed HNC Applied Sciences programme.

### **Facilities**

- **Heriot-Watt University** and Borders College share the Scottish Borders Campus which means more students benefit from access to better facilities including Heriot-Watt University's library service. Both partners work towards a shared vision for the region.
- **The University of Glasgow, University of West of Scotland** and Dumfries & Galloway College share facilities in Crichton College. It brings FE and HE opportunities to a region where choice had previously been extremely limited. As well as education and research, business engagement is a focus of the Crichton campus.
- **Aberdeen University** makes its library and archives fully accessible to local primary schools with a programme of free workshops linked to the Curriculum for Excellence four days a week.

## 6. HE contribution to Scotland's cultural life and communities

Universities' partnerships are an important element of Scotland's cultural and civic life. This is most evident in a vast programme of public lectures and the hosting of debates and exhibitions across the country.

- Over 1.8 million people attended **free** events including performing arts, exhibitions, public lectures and museums run by our 19 higher education institutions in 2014/15 (source: HE-BCI).

Universities also work in local communities in a wide variety of ways, for example:

- **The Glasgow Caledonian University** Law Clinic was launched in 2014 to provide free and confidential advice and assistance to those who do not qualify for Legal Aid and cannot afford to pay legal fees.
- Qualified **Glasgow Caledonian University** postgraduate optometry students deliver eye care provision at Hunter Street Health Centre for homeless people and asylum seekers.
- Over the past seven years, **Glasgow University** Settlement has successfully supported 22 Find a Solution projects, recruiting students to help find innovative solutions to challenges faced by local charities.
- In tandem with its Students' Association, **Edinburgh Napier University** created V-Base – a one-stop shop for volunteering opportunities for students, with over 60 partners across the community.
- **The Royal Conservatoire of Scotland, Glasgow School of Art** and universities' arts departments provide key infrastructure for the arts in Scotland, collaborate closely with Scotland's major arts and media organisations (e.g. Scottish Ballet, Scotland's national orchestras, the BBC).

Universities' partnerships are evident in local infrastructure, for example:

- **The University of Glasgow's** work with Glasgow Life and the National Library of Scotland to redevelop Kelvin Hall as a cultural hub of learning, discovery and sport.
- **St Andrew's work** with the local community to resurrect the Byre Theatre and secure its future.
- The Aberdeen Sports Village as a world class facility for the North East of Scotland, developed through a partnership between the **University of Aberdeen**, Aberdeen City Council and sportscotland, which provides sport and exercise opportunities for students, schools and the wider community.
- **The University of Stirling** is Scotland's university for sporting excellence and hosts national teams alongside many clubs and individuals from the local community.
- **Heriot-Watt University** will host the National Performance Centre for Sport, in partnership with sportscotland and the City of Edinburgh Council.

## 7. HE contribution to business, industry and social enterprise through innovation

- Scotland's universities work with over 26,000 organisations each year – over 18,000 of them in Scotland – on a variety of innovation projects.

Working with industry, Scotland's universities have drawn in major infrastructural investments such as the Advanced Forming Research Centre at the **University of Strathclyde**, the ARCHER supercomputer at the **University of Edinburgh** and the Drug Discovery Unit at the **University of Dundee**.

Universities want to do more to make it easier for business and industry to collaborate with universities on innovation. The Universities Scotland [five point plan for innovation](#) looks to do that through a set of 5 actions including: talking to the Industry Leadership Groups about their innovation needs, the barriers as they see them and how they can be dismantled; simplifying contracts; and, increasing awareness of the innovation support universities can offer business.

Examples of successful university-business partnerships on innovation:

- Partnering with universities for innovation have helped Scotmas Group, a Scottish company working in water treatment, and biosecurity, compete more effectively in the market place and grow the business. Alistair Cameron, Managing Director, says: *“programmes such as Interface have enabled us to seek out and engage with specialist researchers and access University facilities...Knowledge Transfer Partnerships have allowed us to embed staff within Universities for a 2 year period with full access to academic resources and equipment. Without the ongoing support and engagement of Scottish Universities, we would have been unable to achieve the sales success and export growth we have seen over the past years.”*
- Universities make their research facilities available to business as part of the innovation process and Interface will help a business to find the [specialist equipment and facilities](#) they are looking for in the HE sector. **Scotlab**, based in Glasgow, used computer-aided design and 3D printing at the **University of Strathclyde** to create their Altium-i10, a portable device that would simulate the effects of high altitudes to be used by athletes to improve performance. They later also worked with the **University of the West of Scotland** to evaluate the performance capability and functionality of the device through field tests.
- **Robert Gordon University** partnered with Oil and Gas UK as it needed to understand the changing shape and size of the offshore workforce for offshore ergonomics, health and safety and specifics such as emergency helicopter evacuation and survival suit design. The study looked at the measurements of 600 offshore workers and the data will inform changes in industry practice and health and safety legislation.
- **Edinburgh Napier University** teamed up with technology consultancy, FarrPoint, to explore new ways of identifying cyber security threats as part of a two-year research programme. The findings will allow FarrPoint to give clients a brand-new and unique perspective on cyber security matters.
- **The Royal Conservatoire of Scotland** partnered with Solar Bear, an award winning multi-discipline theatre company based in Glasgow that launched Deaf Youth Theatre. A ten-week pilot social enterprise exercise with the Conservatoire, funded by an



innovation voucher, tested the concept of a short course in deaf theatre. The courses now run 40 weeks of the year. RCS and Solar Bear since created a BA Performance in British Sign Language and English – the only course of its kind in the UK.

## **8. Contribution to Scotland's global standing**

The university sector in Scotland is:

- a major exporter in its own right to the value of £1.5bn per annum.
- This export income includes >£450m in student fees, >£450m student spend in Scotland and >£400m for research and innovation contracts.
- a key partner for Scottish industry in securing international opportunities;
- a key driver of foreign direct investment;
- a supporter to students across Scotland in developing the 'global citizenship' skills they need to engage, create and benefit from opportunities across the globe;
- the focus of a huge network of alumni across the globe who carry an understanding of, and affection for, Scotland;
- a driver of broader, global cultural links; and
- a key participant in a wide range of international development action, assisting nations and organisations across the world in responding to global challenges.

## **The funding challenge facing Scotland's universities**

The summer's spending review decisions will be very important to Scotland's universities.

The sector wants to continue to grow the contribution it makes to its stakeholders. But HE funding fell by 7% in real terms between 2008-2014 and has fallen again by 4%, in cash terms, between 2014-2016.

We look forward to working, constructively and creatively, with the Scottish Government to ensure that over the period of the spending review to 2019-20, the allocation for higher education from the Scottish Government's budget will support accessibility to HE and the continued success of our world class, research-excellent and internationally competitive universities.

**ENDS**

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