

# Glasgow Caledonian University

## Economic Impact 2013/14

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A report to



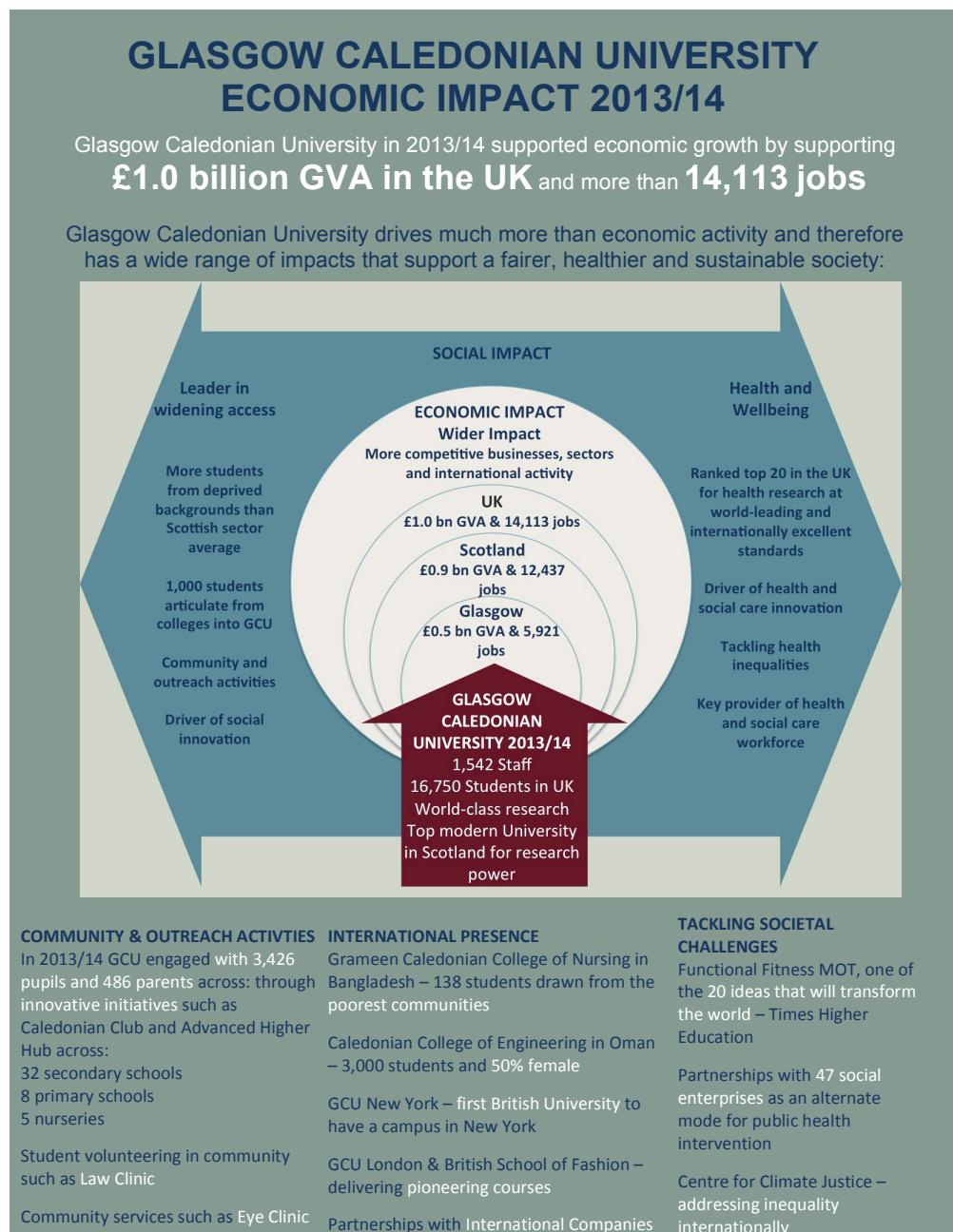
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# 1 EXECUTIVE SUMMARY

The economy has a more skilled and healthier population working in a more sustainable environment due to the activity of Glasgow Caledonian University (GCU). This is underpinned by its world-class research as confirmed by the Research Excellence Framework (REF) 2014 results. Overall, it is the top modern University in Scotland for its research power. Some of this impact on the impact economy can be captured in monetary terms.

GCU is driven by its social mission for the common good. This leads GCU to be a social innovator and create social impact. Therefore quantitative impacts are a significant underestimate of the overall impact of GCU. This is summarised in the following figure.



Glasgow Caledonian University is a source of social and economic impact through the many roles it has including:

### **As an enterprise**

Glasgow Caledonian University is an enterprise as it generates revenue and employs staff. In the academic year 2013/14 the University employed 1,542 people. The University spends money on supplies, staff wages and invests millions in capital projects. This spending together with its income supports an economic activity worth an estimated £133.9 million in the UK and supports 2,563 jobs.

### **Attracting students**

There are over 16,750 students matriculated at Glasgow Caledonian University. Students spend in the local economy, work part time, volunteer with local organisations. The total impact of these activities is £271.1 million GVA in the UK and 9,372 jobs. The students also benefit from the education they receive from the University with a graduate premium worth an estimated £429.6 million over their working lives.

### **As a leader in widening access**

GCU is a leading university for widening access, with 21% of students coming from the most deprived backgrounds (compared to the Scottish sector average of 13%) and 39% of students coming from the 40% most deprived backgrounds (compared to the sector average of 29%). The University has developed strategic partnerships with local Colleges, and 1,000 Scottish students articulate to Levels 2 and 3 of degree programmes at the University on completion of HN study at Scottish Colleges. GCU also undertakes a number of community and outreach activities, which in 2013/14 engaged with 3,426 pupils and 486 parents, across 32 secondary schools, 8 primary schools and 5 nurseries.

### **Contributor to tourism**

Glasgow Caledonian University is a driver for tourism in Glasgow. This is through attracting potential students to Open Days, friends and relatives of the staff and students and the business tourism associated with the conferences and events held at the University. The total impact of this is £3.0 million GVA and 105 jobs.

### **Addresses business needs**

The University also supports businesses needs through consultancy, contract research, spinning out companies and being the academic partner in collaborative Knowledge Transfer Partnerships. The total impact of this in 2013/14 was £32.1 million and 597 jobs in the UK.

### **Addresses skills needs**

Glasgow Caledonian University supports the business community by identifying and addressing their skills needs. This includes providing continued professional development courses, student placements, training courses for staff and the Business Academies. These activities support a further £27.0 million GVA in the UK and 445 jobs.

## **Contributes to providing a health and social care workforce**

Glasgow Caledonian University is one of Scotland's leading providers of health and social care education. The University trains 16% of Scotland's nurses, teaches degrees in 7 of the 13 allied health professions, is the only University in Scotland to offer a degrees in Optometry and Vision Sciences and is the sole university provider of training for paramedics. In addition to this the University places students within the health and social care sector and provides continued professional development courses for workers in this sector. The impact of the latter two activities is an estimated £49.2 million GVA in the UK and 1,030 jobs.

## **Driver of health and social care innovation**

As well as contributing to the workforce of the health and social care sectors the University is also a driver of health and social care innovations and an essential contributor to delivering the solutions to addressing key societal issues including health inequalities and dealing with long term conditions. This is based on its world class research. GCU is ranked in the top 20 in the UK for health research at world-leading and internationally excellent standards. Some of this can be approximated in monetary terms as a contribution of £44.3 million to the UK.

## **Driver of social innovation**

GCU's motto 'for the common good' means that it drives to be a social innovator. This is shown by the fact that it has been designated a Changemaker Campus, by Ashoka U, an initiative of Ashoka, the world's largest network of social entrepreneurs. This designation is to recognize colleges and universities that have embedded social innovation as a core value. Innovative activities include the Yunus Centre for Social Business and Health which is looking at how social enterprises can be an alternate mode for delivering public health intervention and has engaged with 47 enterprises.

## **Providing a sustainable environment**

GCU's drive to make a positive contribution to society means contributing to a sustainable environment. This involves reducing carbon by 33% since 2008-2009, reduction in electricity use over that time period by 17%, raising the recycling rate to 90% and sending no waste to landfill.

This also has an international impact through supporting the Centre for Climate Justice to become a focal point for climate justice activity, delivering a unique MSc in Climate Justice and being a repository of research that contains over 1,000 academic papers. This will ultimately ensure that a climate justice approach is incorporated into economic development and mitigate the effect climate change will have on the disadvantaged and vulnerable.

## **Delivering graduate productivity**

Graduates from GCU add to the UK economy as a result of the education they receive. This is proxied by the graduate premium, which amounts to £429.6 million.

## **Total contributor to the economy**

The total contribution of Glasgow Caledonian University in the UK is £560.6 million GVA and 14,113 jobs. Including graduate productivity the GVA contributed by GCU rises to £990.2 million.

Table 1.1 – GCU GVA Impact in 2013/14

	Glasgow City	Scotland	UK
Core Impact	97.1	114.3	133.9
Student Impact	95.4	236.5	271.1
Additional Visitors Impact	0.8	2.3	3.0
Addressing Business Needs Impact	9.2	20.2	32.1
Addressing Skill Needs Impact	11.7	21.9	27.0
Health Care Workforce Impact	21.5	45.6	49.2
Health Care Innovation Impact	7.7	41.4	44.3
TOTAL GVA (£m)	243.5	482.2	560.6
Graduate Productivity	248.2	399.2	429.6
<b>TOTAL GVA with Graduate Productivity (£m)</b>	<b>491.7</b>	<b>881.4</b>	<b>990.2</b>

*Note: Totals may not sum due to rounding.*

Table 1.2 – GCU Employment Impact 2013/14

	Glasgow City	Scotland	UK
Core Impact	1,675	2,083	2,563
Student Impact	3,368	8,562	9,372
Additional Visitors Impact	36	86	105
Addressing Business Needs Impact	173	385	597
Addressing Skill Needs Impact	184	355	445
Health Care Workforce Impact	485	967	1,030
Health Care Innovation Impact	-	-	-
Graduate Productivity	-	-	-
<b>TOTAL EMPLOYMENT</b>	<b>5,921</b>	<b>12,437</b>	<b>14,113</b>

*Note: Totals may not sum due to rounding.*

An assessment of the current impact of GCU underestimates its impact to the economy has GCU's impact is anticipated to grow even further in the future. This is due to GCU developing a variety of new initiatives from research to widening access, which will develop its research expertise and put the University in an even stronger position to tackle society's challenges.

## **2 INTRODUCTION**

This report presents the findings of an economic impact study of Glasgow Caledonian University for 2013/14 undertaken by BiGGAR Economics in autumn 2014. This impact assessment updates a previous study undertaken by BiGGAR Economics for the academic year 2011/12.

### **2.1 Glasgow Caledonian University**

Glasgow Caledonian University is a University for the Common Good. This social mission underpins everything the University does and drives its creation of wider economic, social, health and environmental impacts.

There were over 16,750 students studying with GCU in 2013/14. As well as a campus in Central Glasgow, there is also a campus in New York and a campus in London. In addition, there were around 3,270 students at the Caledonian College of Engineering, the University's affiliated overseas campus in Oman. A further 150 students study at the Caledonian College of Nursing which was established in 2010 in Dhaka, Bangladesh.

GCU's research priorities reflect the ethos of the University to deliver its mission by working towards solving three societal challenges: enabling communities in the UK and internationally to build inclusive societies and live healthy lives in sustainable environments. Its journey towards world-class research across its key research themes is shown by the results from the Research Excellence Framework (REF) 2014.

The REF is carried out across all research disciplines, broken down into 36 subject areas which are referred to as Units of Assessment, or UoAs. GCU made submissions to 9 of the 36 UoAs, and the REF panel assessed and graded these submissions. Overall 154 UK institutions submitted to REF 2014 and GCU is the top modern University in Scotland for its research power. Other results include:

- the University is ranked in the top 20 in the UK for health research at world-leading and internationally excellent standards (ie 3\*/4\*);
- 89% of the University's research activity in Allied Health Professions is in the highest categories of world-leading (4\*) and internationally excellent (3\*);
- the impact of our health research was ranked as equal first in the UK (with 46 other Universities);
- the research impact in the Built Environment was rated as top 20 in the UK at world-leading and internationally excellent standards (ie 3\*/4\*);
- almost two-thirds of GCU's work in Social Work and Social Policy was rated world-leading and internationally excellent (3\*/4\*). 80% of its Social Work and Social Policy impact was rated as world-leading (4\*);
- all the submissions had elements of world-leading research (i.e. rated at 4\*);
- double the level of submissions (from the last research assessment exercise in 2008/09) were 3\*/4\* (55%); and

- GCU's weighted Quality grade-point average as an institution is significantly better than in 2008.

## **2.2 Impact Approach**

The approach in this study aims to demonstrate how the activities of Glasgow Caledonian University (GCU) create benefits and impacts for the economy.

The report identifies a range of impacts, which are created by GCU and highlights their importance and how GCU creates them.

Part of this process is to quantify impacts where possible. This quantification is expressed in terms of:

- Gross Value Added (GVA), which measures the monetary contribution of the organisation or individual to the economy; and
- employment, which is measured in full time equivalent (fte) jobs supported.

It takes account of impacts through the economy (multiplier impact) and impact that occurs outside the study area (leakage).

The study areas considered are:

- Glasgow City – defined as the local authority area of Glasgow City Council;
- Scotland – including Glasgow City; and
- the UK – including Scotland.

Monetary figures highlight only part of the value of an impact. This report recognises that it is not possible to quantify all of the impacts of a higher education institution because:

- the data for monetisation of many of the benefits is at an early stage of research;
- not all economic value can be converted into monetary value;
- monetary value does not capture aspects such as quality and equality; and
- monetary value is static and does not capture the dynamic activities that drive economic and social impact.

## **2.3 Report Structure**

The remainder of this report is structured as follows:

- chapter 3 discusses how GCU's core activities of turnover, direct employment, purchase of supplies, staff spending their wages and spending on capital projects supports economic impact;
- chapter 4 illustrates how attracting students to study at GCU creates impact;
- chapter 5 describes how GCU creates economic impact through attracting additional visitors;

- chapter 6 describes how GCU addresses business needs and how this results in additional economic activity;
- chapter 7 shows how GCU addresses the skills need of businesses and organisations at an individual level, organisational level and sector level and how this results in additional economic activity and support sectors;
- chapter 8 discusses how GCU makes a significant contribution to the health and social care workforce throughout a professional's career. Some of this training can be quantified;
- chapter 9 describes the need for health and social care innovation and how GCU delivers this. Some of the impacts of this can be illustrated in monetary terms;
- chapter 10 describes the additional value that graduates from GCU add to the UK economy as a result of the education they receive;
- chapter 11 summarises the total quantifiable impact of GCU;
- chapter 12 highlights some of the activities that GCU undertakes in its drive to be a social innovator and a University for the Common Good;
- chapter 13 describes GCU's contribution to a sustainable environment both in terms of its own activities and globally;
- chapter 14 describes how GCU's economic and social impact is anticipated to significantly increase;
- chapter 15 draws together the findings of the report; and
- the technical appendix describes in further detail how the economic impact is estimated.

## **3 CORE UNIVERSITY IMPACTS**

This section describes the core operational impacts of Glasgow Caledonian University.

### **3.1 Core Activities**

The core economic impacts associated with GCU are those that occur through the day-to-day operations of the University. The core economic impacts that are covered in this chapter include:

- direct impacts – these are the impacts resulting from the University's income and employment;
- supplier impact – the University purchases goods and services that increase the turnover of businesses and support jobs in its supply chain;
- staff spending impact – staff spending their wages increases the turnover of businesses in the economy, which generates wealth and supports employment; and
- impact of capital spending – expenditure on capital projects supports additional economic activity in businesses in the wider economy, particularly in the construction and IT sector.

The key assumptions required to estimate the impact of this activity are given in Table 3.1.

Table 3.1 – Key Assumptions for the Core Impact 2013/14

	Value	Source
Income	£118.4m	GCU Financial Statements 2013/14
Staff – Headcount	1,542	GCU HR
Staff – Full time equivalents	1,392	GCU HR
% living in Glasgow City	71%	GCU HR
% living in Scotland	27%	
% living in UK	2%	
Expenditure on wages	£60.4m	GCU Financial Statements 2013/14
Expenditure on goods and services	£20.7m	GCU
% purchased from Glasgow City	12%	GCU
% purchased from Scotland	27%	
% purchased from UK	61%	
Annual capital spending (av.2011-2016)	£8.0m	GCU
% capital suppliers from Glasgow City	25%	BiGGAR Economics Assumption
% capital suppliers from Scotland	80%	
% capital suppliers from UK	95%	

## 3.2 Economic Impact

The method for deriving estimates for the economic impact of GCU's core activities discussed above is described in the Technical Appendix. This uses the key assumptions in Table 3.1 to estimate the values in Table 3.2.

Table 3.2 – Core Economic Impact 2013/14

	Glasgow City	Scotland	UK
<b>GVA (£m)</b>			
Direct	84.8	84.8	84.8
Supplier Spending	0.9	2.9	11.7
Staff Spending	10.2	21.4	30.6
Construction Spending	1.0	5.2	6.8
<b>Total GVA</b>	<b>97.1</b>	<b>114.3</b>	<b>133.9</b>
<b>Employment (FTEs)</b>			
Direct	1,392	1,392	1,392
Supplier Spending	21	71	290
Staff Spending	243	530	762
Construction Spending	18	90	119
<b>Total Employment</b>	<b>1,675</b>	<b>2,083</b>	<b>2,563</b>

The University's core activities in 2013/14 supported economic activity that had a monetary value estimated at £97.1 million GVA and 1,675 jobs in Glasgow City, £114.3 million GVA and 2,083 jobs in Scotland and £133.9 million GVA and 2,563 jobs in the UK.

## **4 STUDENT IMPACTS**

There were over 16,750 students studying with GCU in 2013/14. Almost 240 of these students were studying at GCU's professional postgraduate campus in London. In addition, there were around 3,270 students at the Caledonian College of Engineering, the University's affiliated overseas campus in Oman. A further 150 students study at the Caledonian College of Nursing which was established in 2010 in Dhaka, Bangladesh.

Students support economic and social impacts through their spending, part time work and volunteering, which are considered in this chapter.

### **4.1 Impacts from Students**

The impacts associated with GCU's students include:

- student spending impacts – students have an impact on the economy through their spending in the same way that staff have an impact by spending their wages;
- students' part-time work – without students some businesses would not have the additional labour they require to increase their economic impact; and
- student volunteering – The National Union of Students (NUS) estimates that students volunteer 44 hours annually. The value of this is estimated using an approach suggested by Volunteering England.<sup>1</sup>
- avoiding a spell of unemployment – this impact derives from the University's social mission to recruit students from a wide range of backgrounds, including some that might otherwise be unemployed. Almost 40% of the University's full time undergraduates in 2013/14 came from the 40% most deprived areas in Scotland;
- studying in colleges – this impact derives from the attendance of some of the University's international students at Scottish Colleges before joining GCU. The Impact of these students studying in Scotland is attributed to the University, as without the pathway to a GCU course, they would not be in Scotland.

A key impact of students is their increased productivity from obtaining an undergraduate or postgraduate degree, which is considered in Chapter 10.

The key assumptions required to estimate the impact of GCU's students are given in Table 4.1.

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<sup>1</sup> <http://www.volunteering.org.uk/component/gpb/is-there-any-way-of-measuring-the-economic-value-of-the-work-our-volunteers-are-doing> (Accessed 1st October 2014)

Table 4.1 – Key Assumptions for Student Impact 2013/14

	Value	Source
Full time students studying in Glasgow	12,826	GCU
Undergraduate	11,321	GCU
Postgraduate	1,505	
% living in Glasgow	47%	
% living in Scotland	98%	GCU
% living in UK	100%	
Annual spend by Glasgow students	£9,876	GCU Website
Full time students studying in London	239	GCU
Annual spend by English students in London – adjusted for inflation	£13,059	Department for Business Innovation and Skills - Student Income and Expenditure Survey 2011/12
Proportion of full time students who work	57%	Endsleigh Insurance and National Union of Students Survey 2013
Proportion of labour supply that is additional in Glasgow	90%	BiGGAR Economics Assumption
Proportion of labour supply that is additional in London	25%	BiGGAR Economics Assumption
Proportion of employed students who work for GCU	5%	BiGGAR Economics Assumption
Average number of hours worked per week	17.5	BiGGAR Economics Assumption
Proportion of students who volunteer	35%	BiGGAR Economics Assumption
Average number of hours volunteered per year	44	National Union of Students 'The Student Volunteering Landscape'
% of full time undergraduates from 40% most deprived wards	39%	GCU
Current cost of unemployment per annum	£16,000	BiGGAR Economics Assumption
International students at Scottish Colleges before joining GCU	55	GCU

The method for deriving estimates for the economic impacts of GCU's students discussed in this chapter is described in the Technical Appendix. This used the key assumptions in Table 4.1 to estimate the values in Table 4.2.

Students through their spending, part-time work and volunteering supported economic activity in 2013/14 with an estimated value of almost £95.4 million GVA in Glasgow City, £236.5 million GVA in Scotland and £271.1 million GVA in the UK. Students also supported an estimated 3,368 jobs in Glasgow City, 8,562 jobs in Scotland and 9,372 jobs in the UK.

Table 4.2 – GVA and Employment Impact supported by Students 2013/14

	Glasgow City	Scotland	UK
<b>GVA (£m)</b>			
Student Spending	20.8	54.7	61.2
Student Part Time Work	57.0	145.0	156.4
Student Volunteering	0.6	1.3	1.3
Reducing Unemployment	16.6	34.6	51.2
International Students in Colleges	0.3	0.7	0.8
<b>Total GVA</b>	<b>95.4</b>	<b>236.5</b>	<b>271.1</b>
<b>Employment (FTEs)</b>			
Student Spending	1,797	4,715	5,282
Student Part Time Work	1,562	3,828	4,067
Student Volunteering	-	-	-
Reducing Unemployment	-	-	-
International Students in Colleges	7	18	19
<b>Total Employment</b>	<b>3,368</b>	<b>8,562</b>	<b>9,372</b>

Some of this impact is due to international students who contribute to the place where they are staying in four ways: through student spend, part-time work, volunteering and visits to them from friends and family. In 2013/14, there were 1,359 non-EU students studying with the University in Glasgow and 194 international students studying with the University in London. This analysis has assumed that all international students in Glasgow live in the Glasgow City study area. The University's international students are estimated to contribute £20.2 million GVA to the Glasgow City economy in 2013/14, supporting 958 jobs, £24.5 GVA to the Scottish economy supporting 1,158 jobs and £28.6 million GVA to the UK economy supporting 1,396 jobs.

## 5 ATTRACTING ADDITIONAL VISITORS

### 5.1 Impact from Visitors

GCU supports economic activity by attracting visitors and visitor expenditure to the study areas. Tourism impacts are generated by:

- friends and family visiting students and staff – there were 1.9 million visiting friends and relatives trips to Scotland in 2013, of which 321,000 trips were to Glasgow<sup>2</sup>;
- open day visits from applicants – over 8,700 prospective students attended GCU's open days in 2013/14; and
- people attending conferences and events at GCU.

The method for deriving estimates of tourism impacts generated by GCU is described in the Technical Appendix. This results in visitor expenditure supporting an estimated £0.8 million GVA and 36 jobs in Glasgow City, £2.3 million GVA and 86 jobs in Scotland and £3.0 million GVA and 105 jobs in the UK.

Table 5.1 – GVA and Employment Impact supported by Additional Visitors 2013/14

	Glasgow City	Scotland	UK
GVA (£m)			
Visiting Friends & Relatives	0.4	0.6	0.7
Open Days	0.3	0.4	0.4
Conferences and Events	0.2	1.3	1.9
<b>Total GVA</b>	<b>0.8</b>	<b>2.3</b>	<b>3.0</b>
Employment (FTEs)			
Visiting Friends & Relatives	16	23	25
Open Days	12	12	12
Conferences and Events	9	51	69
<b>Total Employment</b>	<b>36</b>	<b>86</b>	<b>105</b>

<sup>2</sup> VisitScotland, Tourism in Scotland's Regions 2013, 2014

## **6 ADDRESSING BUSINESS NEEDS**

Glasgow Caledonian University helps to generate economic activity by supporting businesses both in the local area and further afield. It does this in a variety of different ways including:

- undertaking contract research projects with businesses;
- providing businesses with access to GCU's expert knowledge through consultancy services;
- supporting the development of spin-out companies; and
- facilitating knowledge exchange between academia and industry through the knowledge transfer partnership programme.

Each of these sources of impact is quantified below. The method for deriving estimates of GCU's knowledge exchange impacts is described in the Technical Appendix.

### **6.1 Contract Research**

Businesses can enter into direct contract research contracts with GCU. Contract research involves businesses commissioning the University's researchers to work on problems specific to their needs. In doing so, GCU supports businesses to innovate and increase their competitive advantage allowing businesses to generate additional turnover and growth.

In 2013/14 GCU was engaged in contract research contracts with a total value of £3.3 million. By helping businesses innovate and be competitive through contract research projects, GCU supports economic activity. The monetary value of this in 2013/14 was an estimated £6.0 million GVA and 98 jobs in Glasgow City, £12.9 million GVA and 221 jobs in Scotland and £23.4 million GVA and 406 jobs in the UK.

Table 6.1 – GVA and Employment Impact supported by Contract Research 2013/14

	Glasgow City	Scotland	UK
GCU income from Contract Research = £3.3 million			
GVA (£m)	6.0	12.9	23.4
Employment (FTEs)	98	221	406

### **6.2 Consultancy**

Undertaking consultancy activities allows academics and researchers at GCU to transfer their skills, knowledge and expertise into industry. This benefits businesses and organisations as it provides them with an improved awareness and understanding of their activities and implementing the advice and guidance can improve their operations. Consultancy can provide advice that allows the business or organisation to build on strengths, address weaknesses, capture opportunities or mitigate threats.

In 2013/14 GCU undertook 77 consultancy contracts with a value of £598,801. 11% of these contracts were with companies based in Glasgow City, 61% with companies in the rest of Scotland and 22% of contracts were with companies located elsewhere in the UK.

Table 6.2 – GVA and Employment Impact supported by Consultancy 2013/14

	Glasgow City	Scotland	UK
GCU Consultancy Contracts = 77			
GCU Income from Consultancy = £598,801			
GVA (£m)	0.3	2.8	4.0
Employment (FTEs)	5	48	69

By providing advice to businesses and organisation through consultancy, GCU supports economic activity. The monetary value of this in 2013/14 was an estimated £0.3 million GVA and 5 jobs in Glasgow City, £2.8 million GVA and 48 jobs in Scotland and £4.0 million GVA and 69 jobs in the UK.

### 6.3 Spin-Outs

The research activity of GCU also generates economic activity through spin-out companies. There are two active spin-out companies from GCU, Biopta and Glycologic, both of which are in the life sciences sector. They were spun-out in 2002 and are based in Glasgow. In contrast to many high tech spin-outs, the longevity of these spin-outs demonstrates the ability of GCU to spin-out companies that will create lasting wealth and employment opportunities for the Scottish economy.

Table 6.3 – GVA and Employment Impact supported by Spin-Outs 2013/14

	Glasgow City	Scotland	UK
Number of Spin-Outs = 2			
GVA (£m)	1.2	1.5	1.6
Employment (FTEs)	29	40	44

Through its spin-out companies GCU supported economic activity with an estimated monetary value of £1.2 million GVA and 29 jobs in Glasgow City, £1.5 million GVA and 40 jobs in Scotland and £1.6 million GVA and 44 jobs in the UK.

### 6.4 Knowledge Transfer Partnerships

GCU participates in the knowledge transfer partnership (KTP) programme, which exists to facilitate knowledge exchange between academia and industry across the UK. The findings of a strategic review of the KTP programme undertaken in 2010<sup>3</sup> have been applied to the 26 KTPs GCU has been involved with in the last six years, and the 4 KTPs that are currently ongoing.

<sup>3</sup> Regeneris Consulting (February 2010), Knowledge Transfer Partnerships Strategic Review  
Glasgow Caledonian University Economic Impact 2013/14

The value of the economic impact supported by KTPs in 2013/14 was an estimated £1.7 million and 42 jobs in Glasgow City, £3.0 million GVA and 75 jobs in Scotland and £3.1 million GVA and 78 jobs in the UK.

Table 6.4 – GVA and Employment Impact supported by KTPs 2013/14

	Glasgow City	Scotland	UK
Number of completed KTPs = 26			
Number of ongoing KTPs = 4			
GVA (£m)	1.7	3.0	3.1
Employment (FTEs)	42	75	78

## 6.5 Summary Addressing Needs of Businesses Impact

GCU supports economic activity by addressing the needs of businesses through its knowledge exchange activities. This chapter has demonstrated the range and scale of these activities.

The total monetary value of this activity in 2013/14 was an estimated £9.2 million GVA and 173 jobs in Glasgow City, £20.2 million GVA and 385 jobs in Scotland and £32.1 million GVA and 597 jobs in the UK.

Table 6.5 – Total Addressing Business Needs Impact 2013/14

	Glasgow City	Scotland	UK
GVA (£m)			
Contract Research	6.0	12.9	23.4
Consultancy	0.3	2.8	4.0
Spin-outs	1.2	1.5	1.6
Knowledge Transfer Partnerships	1.7	3.0	3.1
<b>Total GVA</b>	<b>9.2</b>	<b>20.2</b>	<b>32.1</b>
Employment (FTEs)			
Contract Research	98	221	406
Consultancy	5	48	69
Spin-outs	29	40	44
Knowledge Transfer Partnerships	42	75	78
<b>Total Employment</b>	<b>173</b>	<b>385</b>	<b>597</b>

## **7 ADDRESSING SKILL NEEDS**

GCU undertakes a number of activities to address skill needs on an individual and company basis. The teaching at GCU is focused on ensuring that students are equipped with the necessary skills and experience for the workforce, through the placements that students undertake. In addition, once graduates are in the workforce GCU provides additional training through continuing professional development (CPD) or other training courses to address individual skill needs. In addition, GCU addresses company skill needs through the provision of bespoke training courses, under the banner 'Business Academies'.

### **7.1 Student Placements**

Students contribute to organisations while studying by undertaking placements. It is assumed that a student will make a contribution to an organisation if the placement is long enough for the organisation to invest in training or provide the student with a project to carry out, therefore only longer term placements are considered. This section only considers the impact of non-health and social care placement.

The economic impact of these student placements can be estimated to be £1.9 million GVA and 33 jobs in Glasgow City, £4.4 million GVA and 76 jobs in Scotland and £4.8 million GVA and 83 jobs in the UK.

Table 7.1 – GVA and Employment Impact supported by Placements (non health) 2013/14

	Glasgow City	Scotland	UK
Number of students undertaking placements = 227			
GVA (£m)	1.9	4.4	4.8
Employment (FTEs)	33	76	83

### **7.2 Continuing Professional Development**

As well as providing qualified graduates for the labour market, GCU plays an important role in developing the skills of the existing workforce by providing continuing professional development (CPD) for businesses.

By increasing workforce skills through CPD, GCU supports businesses to become more productive and therefore supports economic activity. The monetary value of this in 2013/14 was an estimated £6.7 million GVA and 99 jobs in Glasgow City, £11.5 million GVA and 177 jobs in Scotland and £14.8 million GVA and 230 jobs in the UK.

Table 7.2 – GVA and Employment Impact supported by non-health CPD 2013/14

	Glasgow City	Scotland	UK
GCU Income from non-health CPD = £2.4 million			
GVA (£m)	6.7	11.5	14.8
Employment (FTEs)	99	177	230

## 7.3 Training Courses

The University provides training in a variety of ways including:

- Howden Academy – Howden is a global engineering company headquartered in Scotland with 4,200 employees in 17 countries. It has worked in partnership with the University since 2008 to develop the Howden Academy to train its engineers. The Academy has helped the company to attract and retain employees, as well as providing new personnel with a quicker route to full productivity than the previous “on the job” training by the company. This is achieved by reducing the time to equip graduate level engineers with the specific skills required for delivering Howden’s activities;
- Built and Natural Environment part-time courses – there are over twenty undergraduate and post graduate courses ranging from Electrical Power Engineering to Construction Management that can be taken part time. Many of the students on the part time courses are likely to be employed in the profession or in professions closely associated with the industry; and
- Engineering courses – these are part time courses aimed at engineers without degree education. Employers allow their employees to attend one day per week.

The assumptions in Table 7.3 were used to estimate the impact of GCU’s provision of training courses. This is explained further in the Technical Appendix.

Table 7.3 – Key Assumptions for Training Courses Impact 2013/14

	Number of Students	Cost (£)
Howden Academy	34	£130,870
Built and Natural Environment	235	£2,500 per student
Engineering	504	£1,100 per student

The monetary value of this impact is estimated to be £2.6 million GVA and 41 jobs in Glasgow City, £5.1 million GVA and 77 jobs in Scotland and £5.6 million GVA and 87 jobs in the UK.

Table 7.4 – GVA and Employment Impact supported by Training Courses 2013/14

	Glasgow City	Scotland	UK
GVA (£m)	2.6	5.1	5.6
Employment (FTEs)	41	77	85

## 7.4 Business Academies

GCU have refined an approach to the design and delivery of professional and corporate education under the banner ‘Business Academies’. This approach is designed to help businesses and organisations develop the capacity to meet their long term strategic needs by developing bespoke programmes. There are two aspects of this approach. The first is to help people who have proceeded directly into employment immediately after school to catch up with their education, as

further progress often requires a degree. The second aspect is to develop capacity around a particular agenda due to a change in company circumstances. For example, there could be a need to develop the international business skills of staff as the company has moved into international markets. Examples of the programmes undertaken include:

- Transnet Freight Rail – GCU delivers a BSc in Railway Operations Management as well as Diplomas of Higher Education and Certificates of Higher Education to South Africa's largest freight organisation, Transnet. This is the first programme that offers a formal qualification in railway operations management in South Africa;
- Scottish Council for Voluntary Organisations (SCVO) – GCU delivers the UK's first ever work-based Masters in Citizenship and Human Rights with SCVO;
- SSE – the organisation faced a need to recruit people to support key areas of SSE's expanding businesses to accelerate the development of employees with management potential. Therefore GCU delivers and awards BA Business and Management Studies and HE Dip Business and Management Studies to SSE employees; and
- Institution of Railway Operators (IRO) – GCU delivers with IRO its Professional Development to provide nationally recognised qualifications, from Certificate through to degree level.

In 2013/14, GCU generated a total income of £0.6 million from its business academies. The monetary value of this impact is estimated to be £0.4 million GVA and 10 jobs in Glasgow City, £1.0 million GVA and 24 jobs in Scotland and £1.9 million GVA and 47 jobs in the UK.

Table 7.5 – GVA and Employment Impact supported by Business Academies 2013/14

	Glasgow City	Scotland	UK
GCU Income from Business Academies = £0.6 million			
GVA (£m)	0.4	1.0	1.9
Employment (FTEs)	10	24	47

This impact is likely to be an understatement of the impact of these courses as the aim of these courses is long term and integrated with other changes in the organisation to secure its long-term future. Therefore it is difficult to assess the impact of the courses in isolation. An evaluation of one of these programmes found a range of organisational benefits. These benefits provide an indication of how companies and organisations are more effective due to these courses and include:

- staff reporting that they had an increase in confidence, initiative and focus;
- staff reported improvements in soft skills such as delegation and communication as well as hard skills such as financial management and project management;
- saved time;
- improved reporting procedures leading to improved performance;

- efficiency measures leading to saved costs; and
- learning programmes that lead to staff upskilling quicker and thereby increasing efficiency and productivity.

Table 7.6 – Business Academies Delivering Impact

Need	Role of GCU	Activities	Benefit to businesses and organisations	Benefit to economy
Increase capacity to meet long term strategic needs.	Work with businesses and organisations to understand what they need in terms of capacity development.	Bespoke courses from diplomas to part time degrees	Staff that are more skilled and confident. They are therefore able to change processes and practices resulting in improvement in performance and productivity.	More competitive businesses and organisations being able to deliver their purpose better.

These Business Academies also have a social impact, which is discussed further in Chapter 12.

## 7.5 Supporting Sectors

The knowledge and expertise built up by GCU addresses skills needs at a wider sectoral level as well as at an organisational level. An example of this is the UK fashion sector which supports over 800,000 jobs directly (2.8% of total employment) and including multiplier impact 1.31 million jobs (4.5% of total employment). In addition there are significant impacts for the UK economy in terms of raising the profile of the UK and making the UK distinctive.

There is strong demand from the sector and from students for programmes that are about fashion business and marketing rather than fashion design with business. This was identified as a skills gap in a report published by the British Fashion Council.<sup>4</sup> GCU are well placed to meet this demand due to its twin strengths in fashion and business that have been developed over two decades. This led to the setting up of the British School of Fashion at GCU's campus in London to offer postgraduate programmes relating to fashion business education in addition to one of the world's only MBAs in Luxury Brand Marketing.

In addition this strength in businesses and branding means that businesses are keen to access the skills of GCU. This is shown by the partnerships with companies such as Marks & Spencer and Arcadia Group. There are three key areas which businesses require assistance with:

- strategy development;
- understanding consumers; and
- specific projects.

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<sup>4</sup> 'The Value of the UK Fashion Industry' British Fashion Council and Oxford Economics

As with the previous section, the impact on businesses of working with GCU is long term and depends on which stage of the business cycle they are in. If they are addressing a decline, it could result in jobs saved, if it is to grow then the impact would be jobs created. In addition while the productivity of graduates are captured monetarily by the graduate premium, this doesn't represent the difference graduates could make as industry leaders and contributing to the maintenance and growth of a globally renowned sector.

Table 7.7 – Supporting the UK Fashion Industry

Need	Role of GCU	Activities	Benefit to sector	Benefit to economy
Business skills gap	Work with industry to understand what they need to become more economically sustainable or stable.	Courses	Providing future industry leaders.	Supporting a sector that supports 4.5% of total employment in the UK.
Strategy Development		Consultancy		
Understanding consumers		Lectures	Improve competitive advantage of businesses.	
Specific projects	Being a credible partner to businesses through experience and flexibility of approach.	Overall approach of growing with organisations		

## 7.6 Summary Addressing Skill Needs Impact

By addressing the skill needs of businesses and individuals GCU supports economic activity. The total monetary value of this activity in 2013/14 was an estimated almost £11.7 million GVA and 184 jobs in Glasgow City, almost £21.7 million GVA and 355 jobs in Scotland and almost £27.0 million GVA and 445 jobs in the UK.

Table 7.8 – Total Addressing Skill Needs Impact 2013/14

	Glasgow City	Scotland	UK
<b>GVA (£m)</b>			
Student Placements	1.9	4.4	4.8
CPD	6.7	11.5	14.8
Training Courses	2.6	5.1	5.6
Business Academies	0.4	1.0	1.9
<b>Total GVA</b>	<b>11.7</b>	<b>21.9</b>	<b>27.0</b>
<b>Employment (FTEs)</b>			
Student Placements	33	76	83
CPD	99	177	230
Training Courses	45	77	85
Business Academies	10	24	47
<b>Total Employment</b>	<b>184</b>	<b>355</b>	<b>445</b>

## **8 CONTRIBUTION TO HEALTH AND SOCIAL CARE WORKFORCE**

GCU makes a significant contribution to the health and social care workforce throughout a professional's career. This chapter:

- describes the GCU's wide ranging portfolio of health and social care courses;
- estimates the impact resulting from placements undertaken during this training; and
- estimates the impact resulting from continuing professional development.

### **8.1 Healthcare Courses at GCU**

#### **8.1.1 Nursing and Midwifery**

The University contributes significantly to the teaching of nurses and midwives. GCU offers education in all four areas of nursing; adult, children, mental health and learning disability. The number of nursing and midwifery students in 2012 in initial entrant (pre-registration) training in Scottish Higher Education Institutions was 10,189 students<sup>5</sup>. In 2013/14 GCU had 1,668 students on pre-registration courses, which is 16% of the total number of students in Scotland in 2012. Notably, 195 students at GCU were on the pre-registration course for the child field of nursing which is 31% of all nursing (child) students in Scotland. GCU also provides 31% of all nursing students in the field of learning disabilities in Scotland.

#### **8.1.2 Social Work**

In 2013/14 GCU had 229 students studying social work, of which 165 were undergraduates and 64 were postgraduates. There are 8 Universities in Scotland providing social work degrees and 77 providers in the UK of which Glasgow Caledonian University is ranked in the top 3 universities in Scotland for social work and 13<sup>th</sup> in the UK.<sup>6</sup>

#### **8.1.3 Allied Health Professions**

There are thirteen roles that are considered as allied health professions.<sup>7</sup> GCU provides training in seven of these roles making the University one of two main providers of allied health professionals in Scotland:

- podiatry;
- diagnostic radiographers;
- dieticians
- occupational therapists;
- orthoptists;
- physiotherapists; and

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<sup>5</sup> [http://www.isdscotland.org/wf\\_nursing/](http://www.isdscotland.org/wf_nursing/) (Accessed 30<sup>th</sup> October 2014)

<sup>6</sup> Guardian University Guide 2015 Subject Tables

<sup>7</sup> <http://www.scotland.gov.uk/Topics/Health/NHS-Workforce/Allied-Health-Professionals>

- therapeutic radiographers.

In particular GCU is the only provider of degrees in Optometry and Vision Sciences in Scotland.

#### **8.1.4 Scottish Ambulance Service**

GCU is the training partner of the Scottish Ambulance Service, which provides emergency services, responding to over 600,000 A&E incidents each year. As well as this, the Patient Transport Service undertakes 1.1 million journeys every year to ensure that patients are able to attend hospital appointments. Together the two organisations have developed a new way of delivering training by setting up the Scottish Ambulance Academy. It is the only education establishment in the UK to be formally endorsed by the College of Paramedics and it is also certified by the Health Professions Council (HPC), which is set up to regulate health and care professionals with titles protected by law.

The Scottish Ambulance Service has stated that the opportunity to train in clinical simulation areas alongside other healthcare professionals will have a significant benefit in terms of professional development. Over 200 staff a year are trained at the Academy. This training will have an impact by increasing the standard of patient care. Co-locating with GCU provides added value in terms of access to state of the art facilities, being embedded with the School of Health and Life Sciences and interacting with a wide range of health and social care practitioners. This is particularly important to address the need of the service to transform healthcare by better managing patient flows and linking more effectively with primary care as stated in the Scottish Ambulance Service 2014-15 Local Delivery Plan.

#### **8.1.5 Other Roles**

The University also provides training for other roles in health and social care including oral health science, pharmacology, microbiology and diabetes care management.

### **8.2 Health and Social Care Placements**

Students make a contribution to the health and social care labour force through the time they spend on placements. Placements form a key part of health and social care training, with for example, half the time of a nursing course spent on placement. In 2013/14, 3,088 students in the School of Health and Life Sciences undertook placements as part of their programme.

The economic impact of this can be estimated to be £20.6 million GVA and 465 jobs in Glasgow City, £43.2 million GVA and 916 jobs in Scotland and £46.6 million GVA and 976 in UK.

Table 8.1 – Impact supported by Health and Social Care Student Placements

	Glasgow City	Scotland	UK
Number of students undertaking placements = 3,088			
GVA (£m)	20.6	43.2	46.6
Employment (FTEs)	465	916	976

### **8.3 Health and Social Work CPD**

GCU also provides specialist CPD in health and social care and are generally professional development courses for post registration. CPD is vital for health and social care professions in order to ensure that professionals remain able to practice safely, effectively and legally. This is demonstrated by the fact that for health and social care professionals to remain registered with their organising body they must demonstrate evidence of undertaking CPD.

The monetary value of this in 2013/14 was an estimated £0.8 million GVA and 15 jobs in Glasgow City, £2.4 million GVA and 41 jobs in Scotland and £2.6 million GVA and 45 jobs in the UK.

Table 8.2 – Impact supported by Health and Social Care CPD 2013/14

	Glasgow City	Scotland	UK
GCU Income from health CPD = £0.4 million			
GVA (£m)	0.8	2.4	2.6
Employment (FTEs)	20	51	54

### **8.4 Summary Health and Social Care Impacts**

The monetary value of GCU's impact on the health and social care workforce is estimated to be £21.5 million GVA and 485 jobs in Glasgow City, £45.6 million GVA and 967 jobs in Scotland and almost £49.2 million GVA and 1,030 jobs in the UK.

Table 8.3 – Total Health and Social Care Workforce Impacts 2013/14

	Glasgow City	Scotland	UK
GVA (£m)			
Student Placements	20.6	43.2	46.6
CPD	0.8	2.4	2.6
<b>Total GVA</b>	<b>21.5</b>	<b>45.6</b>	<b>49.2</b>
Employment (FTEs)			
Student Placements	465	916	976
CPD	20	51	54
<b>Total Employment</b>	<b>485</b>	<b>967</b>	<b>1,030</b>

## **9    HEALTH AND SOCIAL CARE INNOVATION**

Excellent delivery of healthcare requires more than just the adequate provision of existing services. Innovation is essential if society is to address the pressures of delivering healthcare services.

The Scottish Government's 2020 Vision<sup>8</sup> is that by 2020 everyone is able to live longer healthier lives at home, or in a homely setting and, that we will have a healthcare system where:

- we have integrated health and social care;
- there is a focus on prevention, anticipation and supported self-management;
- when hospital treatment is required, and cannot be provided in a community setting, day case treatment will be the norm;
- whatever the setting, care will be provided to the highest standards of quality and safety, with the person at the centre of all decisions; and
- there will be a focus on ensuring that people get back into their home or community environment as soon as appropriate, with minimal risk of re-admission.

GCU has a significant contribution to this vision in terms of both the type of healthcare workers it provides and how these healthcare workers are trained.

GCU contributes to health and social innovation through the training of its health and social care workers. This training is not just focused on delivering services but also on developing new models of health and social care. This is described in further detail in this section as well as how GCU delivers health and social care innovation through the delivery of research, learning and teaching and through the application of its research.

### **9.1    Excellence in Research**

The REF exercise in 2014 confirmed the University as a world-class research institution. The University is ranked in the top 20 in the UK for health research at world-leading and internationally excellent standards. In addition:

- 89% of the University's research activity in Allied Health Professions is the highest categories of world leading and internationally excellent; and
- almost two-thirds of the University's work in Social Work and Social Policy was rated world-leading and internationally excellent.

### **9.2    Health and Social Care Innovation in Practice**

The University is a key provider of education and training for health and social care workers in Scotland, both in terms of enabling students to be registered as a health and social care professional but also to provide specialised professionals post registration.

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<sup>8</sup> Scottish Government, *2020 Vision*, 2011.

The delivery of this training is enhanced by the fact that the University provides training for such a large variety of potential and specialised professionals. The scale of GCU as a provider of these courses in Scotland can be shown in the table below which indicates that along with Queen Margaret University, GCU provides most of the allied health professional accredited courses. In addition, it provides courses for most of the other key health and care courses that are regulated by the HPC.

Table 9.1: Provision of Degrees Accredited by the Health and Care Professions Councils by Scottish Universities who provide more than one accredited course

	GCU	QMU	Strathclyde	RGU
Allied Health Professions				
Art/Drama/Music Therapists				
Podiatrists				
Radiographers (Diagnostic & Therapeutic)				
Dieticians				
Occupational Therapists				
Orthoptists				
Prosthetics/Orthotists				
Physiotherapists				
Speech & Language Therapists				
Other Health and Care Professions				
Biomedical Scientists*				
Hearing aid dispensers				
Operating Department Practitioners				
Paramedics**				
Practitioner Psychologists***				

Source: Health & Care Professions Council. \*University of Abertay Dundee and University of the West of Scotland are also providers, \*\*with the Scottish Ambulance Academy, \*\*\*University of Edinburgh and University of Glasgow are also providers.

Health and social care students are trained to provide a service but as well as this they are trained to be innovative in their practice. A key part of this involves different professions learning from and about one another to improve collaboration and the quality of care. Therefore GCU, as a key provider of nurses, social care providers, allied health professionals and other health and care professions, is in a unique position to provide Inter Professional Education (IPE) not just in terms of being the largest provider of IPE but also in the development of IPE practice. GCU has been rated as one of the leading Universities in this field in the UK and globally.

IPE is vital for the delivery of care and innovation and practice as innovation in practice can come through new ways of working such as improving collaboration and methods of communication between professionals. This can have an impact by improving better pathways for conditions.

Innovation in practice greatly benefits society by improving health outcomes. This has a benefit that is more easily measured due to cost savings from greater efficiency of resources. However it is difficult to precisely assess the value of innovation in practice as it is embedded in the working practice of health and social care professionals. Some of the outcomes of these innovations are hard to measure such as those that relate to better sharing of information with other professionals and the greater empowerment of service users. In addition as it is something that is constantly occurring it would be difficult to capture every innovation that occurs and difficult to monetise these benefits

It is also difficult to assess how much the University contributes to this as innovation in practice depends on a range of factors from strategic direction to the availability of funding. What can be said is that the University provides the resource for innovation in practice to occur and due to the career long training, the training environment and the research the University provides, this resource is better able to innovate. For example, the Scottish Government has added a National Outcome in 2011 which states that 'our people are able to maintain their independence as they get older and are able to access appropriate support when they need it.' The delivery of this depends on the type of health and social care professionals trained by GCU.

This shows the importance of innovation in practice, so although the method adopted in this analysis will only be a rough approximation of the value of innovation in practice, the process of this estimation will show the many ways innovation in practice can occur and how it can result in cost savings and better health outcomes. In addition the importance of innovation in practice means that this topic should be highlighted and quantified so that the magnitude and scope of its benefits to Scotland can be shown. The first step in this estimation is to look at examples of innovation in practice and the estimation of the benefit and value of these.

### **9.2.1 Examples of Innovation in Practice**

Allied health professions are key not just to delivering healthcare but also in supporting education and social care<sup>9</sup>. To reflect the importance of allied health professionals there are a growing number of studies that have sought to quantify the impact of specific allied health projects. Examples given by the Allied Health Professions Federation include<sup>10</sup>:

- £28,000 per person per year saving from postponing entry into residential care – interventions by occupational therapists keep patients with dementia out of residential care services for longer than patients who do not receive Occupational Therapy Support;
- £555 million cost savings from improved health and wellbeing in the NHS – physiotherapists contribute to these cost savings. An example is an intervention by West Suffolk Hospital NHS Trust that introduced a system of priority treatment referrals to a local physiotherapist for injured staff. The number of days lost to sickness absence was reduced by 40% and the direct costs of musculoskeletal injuries to the Trust were reduced by more than £170,000;

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<sup>9</sup> Scottish Government "AHPs as agents of change in health and social care - The National Delivery Plan for the Allied Health Professions in Scotland, 2012 – 2015" (2012)

<sup>10</sup> AHPF "AHP Key Facts Bulletin 1 and Bulletin 2" (2010)

- £13 billion annual public expenditure on malnutrition – an approach that is led by dieticians which ensures all aspects of malnutrition identification, treatment and training are addressed in primary care, can lead to a reduction in expenditure of up to 23%;
- cost savings from speeding rehabilitation after strokes and road traffic accidents – double vision often follows strokes and road traffic accidents. Assessment and treatment by an orthoptist can enable an immediate return to work which results in cost savings and increased productivity;
- £650 million cost of ulcerations and amputations – foot ulcers occur in many diabetes patients and they precede most amputation cases. It is estimated that 100 people a week lose a limb due to foot ulceration as a complication of diabetes and 80% of these amputations could have been prevented through an early intervention team that includes specialist podiatrists and dieticians. An example of a team was established in Southampton, which had two podiatrists, a dietician and a specialist nurse and created savings of £1.2 million in the first three years, mostly due to reducing inpatient stay from 50 to 18 bed days.

In addition research has estimated the annual social and economic cost of mental health is £10.7 billion. The number of allied health professionals working for NHS Scotland in mental health is 11%.<sup>11</sup> In recognition of the importance of their role in mental health services the Scottish Government has developed an action to increase their effectiveness further.<sup>12</sup>

Research has also found that productivity losses due to death and disability from strokes were estimated to be approximately £1.5 billion annually.<sup>13</sup> Allied health professionals contribute directly to reducing productivity losses by providing services such as physiotherapy and occupational therapy to stroke survivors to manage a wide range of issues<sup>14</sup>.

These quantitative measures of current and potential impact and the cost of conditions do not include the significant impact to the person in terms of wellbeing and quality of life for example by staying in their own homes, avoiding amputation or returning to work.

Many of these examples are a result of conditions that are projected to grow such as dementia<sup>15</sup> and diabetes.<sup>16</sup>

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<sup>11</sup> Scottish Government "From Strength to Strength: Celebrating 10 Years of the Allied Health Professions in Scotland" (2011)

<sup>12</sup> Scottish Government "Realising Potential: An Action Plan for Allied Health Professionals in Mental Health" (2010)

<sup>13</sup> Saka O., McGuire A. and Wolfe C, "Cost of Stroke in the United Kingdom" Age and Ageing (2008)

<sup>14</sup> Stroke Association "Struggling to recover" (2012)

<sup>15</sup> [http://alzheimers.org.uk/site/scripts/documents\\_info.php?documentID=412](http://alzheimers.org.uk/site/scripts/documents_info.php?documentID=412)(Accessed 21st November 2012)

<sup>16</sup> [http://www.diabetes.org.uk/About\\_us/News\\_Landing\\_Page/Diabetes-cases-expected-to-rise-700000-by-end-of-decade/](http://www.diabetes.org.uk/About_us/News_Landing_Page/Diabetes-cases-expected-to-rise-700000-by-end-of-decade/) (Accessed 21st November 2012)

## 9.2.2 Estimating the Value of GCU's Contribution to Innovation in Practice

The estimation of the value of innovation in practice in Scotland will be approximated by using some of the examples in the previous section.

### Postponing Entry into Residential Care

The estimation of this impact assumes that if the University postponed 5% of the annual adult long stay admissions, this could result in 669 admissions being postponed. This is estimated to have a value of £18.7 million. The key assumptions in Table 9.2 were used to estimate the value of this impact.

Table 9.2 – Postponing Entry into Residential Care

	Value	Source
Number of adult long stay admissions (2012)	£2.9 million	Scottish Care Homes Census 200-2012
Number of admissions that GCU could contribute to postponing	5%	BiGGAR Economics Assumption
Value of postponing entry into care	£28,000	AHP Key Facts
Value attributable to GCU	£18.7 million	BiGGAR Economics

### Foot Ulcerations and Amputations Prevented

The cost of preventable foot ulceration amputation in people with diabetes in Scotland is £51.8 million. This figure is based on applying the cost of ulceration and amputation per person with diabetes in the UK to the number of people with diabetes in Scotland. If GCU contributed to reducing this cost by 5%, this would have a value of £2.6 million.

Table 9.3 – Reduction in Costs of Foot Ulcerations and Amputations

	Value	Source
Estimated UK costs of foot ulcers and amputations in people with diabetes, 2010/11	£986 million	Hex et al, Estimating the current and future costs of Type 1 and Type 2 diabetes in the UK, 2012
Number of ulcerations and amputations preventable	80%	Diabetes UK, <i>Putting Feet First</i> , 2013
Prevalence of diabetes in adult population – Scotland 2013	5.6%	Diabetes UK
Prevalence of diabetes in adult population – UK 2013	6.0%	Diabetes UK
GCU contribution to reducing cost	5%	BiGGAR Economics Assumption
Value attributable to GCU	£2.6 million	BiGGAR Economics

In addition to this cost saving it is estimated that there are 450 amputations in Scotland. Each amputation that doesn't occur has an estimated value in terms of quality of life. If the University contributed to a reduction in amputation rates of 5%, this could have a value of £3.4 million.

Table 9.4 – Quality Life Gains through Reduction in Foot Ulcerations and Amputations

	Value	Source
Amputations in Scotland	450	Diabetes UK, Putting Feet First, 2013
Estimated monetised QALY gains	£151,412	Kerr, Foot Care for People with Diabetes: The Economic Case for Change, 2012
GCU contribution to reducing amputations	5%	BiGGAR Economics Assumption
Value attributable to GCU	£3.4 million	BiGGAR Economics

### Malnutrition

The estimated cost of malnutrition that could be prevented by better utilisation of dieticians in Scotland is base don the per capita cost of malnutrition in the UK. If GCU contributed to reducing these costs by 5%, this would result in a value of £12.4 million.

Table 9.5 – Malnutrition Prevented by Dieticians

	Value	Source
Cost of malnutrition in the UK	£13 billion	Elia, Russell, Combating Malnutrition; Recommendations for Action, 2009
Estimated potential reduction in cost due to dieticians	23%	
Value attributable to GCU	£12.4 million	BiGGAR Economics

### Health and Wellbeing in NHS Staff

The estimated cost savings from achieving a target reduction in staff sickness in NHS Scotland due to musculoskeletal issues is £32.3 million. This is based on the cost of musculoskeletal related staff sickness per NHS staff in England applied to the number of NHS Scotland staff. If GCU contributed 1% to this cost this would have a value of £0.3 million.

Table 9.6 – Reduction in Staff Sickness due to Musculoskeletal Issues

	Value	Source
Annual cost saving of meeting decrease of staff sickness in NHS	£555 million	NHS Health and Wellbeing Review Final Report, 2009
Percentage of staff sickness in England due to musculoskeletal issues	45%	
Number of NHS England staff 2013	1,197,733	NHS Workforce Statistics
Number of NHS Scotland staff 2013	156,625	NHS Scotland Staff Survey 2013 National Report
GCU contribution to reducing cost	1%	BiGGAR Economics Assumption
Value attributable to GCU	£12.4 million	BiGGAR Economics

### Impact in Study Areas

The impact that occurs in Glasgow City is based on its per capita share of the Scottish impact.

The impact that occurs in the UK as a whole is based on a ratio of where students work after they graduate.

#### **9.2.3 Summary**

The start of this section described how important innovation in practice is to society through improving health outcomes. It also discussed the difficulty in fully capturing its value. This section has approximated the value of innovation in practice using examples of current and potential interventions where current and potential benefits have been valued. To reflect the difficulty in assessing the University's contribution to innovation in practice, conservative assumptions regarding how much of this value can be attributed to the University has been applied. This results in GCU's contribution to innovation in practice being approximated by a value of £37.5 million in Scotland.

This is mostly likely an understatement of the University's contribution as most of this value relates to cost savings and does not include other sources of value such as increased productivity and increased quality of life. This contribution and therefore its value is likely to increase due to an increase in conditions such as dementia and diabetes.

Table 9.7 – Innovation in Practice Summary

	Glasgow City	Scotland	UK
Estimated value of innovation in practice (£)	4.2	37.5	40.3

## **9.3 Health and Social Care Innovation Projects**

GCU drives health and social care innovation through a range of projects stemming from its research and the application and delivery of its research. Some examples of GCU changing practice through its research are highlighted below.

### 9.3.1 Functional Fitness MOT

The Functional Fitness MOT was designed at GCU to highlight the different components of fitness necessary for older people to maintain independent living. It was also created to help highlight the importance of physical and mental health and raises awareness of the 2011 UK Chief Medical Officers' physical activity guidelines for older adults (65+ years).

GCU have been working with the BHF National Centre for Physical Activity and Health (BHFNC) at Loughborough University and Later Life Training (LLT) to promote the use of the Functional Fitness MOT.

Participants in the course have gone on to undertake regular fitness classes. This has also led to an increase in mental wellbeing as a result of the greater social interaction engaged in by participants.

The Functional Fitness MOT has been designated by Times Higher Education as one of the 20 ideas that will transform the world.

Table 9.8 – Delivering Social Innovation – Functional Fitness MOT

Need	Role of GCU	Benefit
Few professionals understand the importance of strength and balance activities.	Developing the tool and promoting its use.	350 physical, health, exercise and fitness professionals engaged across UK in the first year.
Address the needs of the ageing population and improve their physical and mental health.		In an evaluation 93% of respondents reported sharing the information learnt with others.
Lack of awareness of the UK Chief Medical Officers' physical activity guidelines for older adults.		Increased levels of physical and mental wellbeing in course participants.

### 9.3.2 Reducing Healthcare Associated Infections

Healthcare Associated Infections (HAI) affect a significant amount of hospital patients. Early research indicates that 10% of hospital patients acquire an infection costing the NHS Scotland an estimated £183 million a year.<sup>17</sup> GCU have led research that has reduced HAI by stimulating policy debate and investment in new healthcare practice and influencing policy decisions, evidence guidelines, and educational practices.

<sup>17</sup> SPICe, *SPICe Briefing: Healthcare Associated Infections*, 2011

Table 9.9 – Delivering Health Innovation – Reducing Healthcare Associated Infections

Need	Role of GCU	Benefit
10% of hospital patients acquired a healthcare associated infection (HAI) costing the NHS £183 million a year.	<p>Research in HAI for 17 years.</p> <p>Made important changes to national and international screening methods.</p> <p>Stimulated debate on the national policy for screening in Scotland Europe.</p> <p>Engaging with the community to promote hand hygiene.</p>	<p>Reducing HAI in the UK and Europe.</p> <p>Contributing to cost savings of £7.5 million to the NHS through changes in meticillin-resistant <i>Staphylococcus aureus</i> (MRSA) screening.</p> <p>5,400 pupils from 62 classes engaged in promotion of hand hygiene.</p>

### 9.3.3 Centre for Living

As well as specific research projects, GCU are innovating in terms of its overall approach to health and social care research and teaching as indicated by the Centre for Living. This will integrate GCU's leading research in health and wellbeing with its excellence in learning and teaching activities and community engagement in order to develop and deliver highly-specialised treatment to help people lead better lives. In the long term it is anticipated that community health services will be offered in conjunction with a range of partners in the health and social care fields.

In particular, GCU are focused on the key challenges of the prevalence of long-term chronic health conditions (such as diabetes) and enhancing the lives of those living with these conditions, as well as tackling health inequalities, as there are a range of indicators regarding the gap in health outcomes between the most deprived and least deprived areas of Scotland. By bringing together world-leading health-related research, advanced learning and teaching programmes, and the provision of specialised social health care through community partnerships, the Centre for Living will enable GCU to respond more effectively to some of society's key health challenges, including health inequalities, the prevalence of chronic diseases and the cost and burden of coping with long-term conditions. These challenges will only become ever more important with the demands of an ageing population.

Table 9.10 – Delivering Social Innovation – Centre for Living

Need	Role of GCU	Benefit
Respond more effectively to society's key health challenges.	Drive social innovation by bringing together its strengths and activities to enhance its research and clinical teaching and to deliver a range of services to the public.  Provision of a resource for third sector partners, the community and citizens to deliver significant impact.	Reduce cost and burden of coping with long term conditions which cost the health service billions of pounds <sup>18</sup> and mental health problems account for social and economic costs equivalent to 9% of Scotland's GDP.

### 9.3.4 Social Returns to Research

GCU carries out a wide range of research related to health issues. Research by the Wellcome Trust on the value of medical research in the UK considers two types of return: health gains (net of the health care costs of delivering them) and economic gains.

This section considers the value of health gains – these are the wider health returns to patients who ultimately benefit from the research. This is discussed further in the Technical Appendix. This finds that the social return on medical research is £1.38 for every £1 spent on medical research.

This is applied to the research income received by the School of Health & Life Sciences, which in 2012/13 was £2.9 million. The key assumptions required to estimate some of the impact of the GCU's medical research is given in Table 9.11 and details of the method are provided in the Technical Appendix.

Table 9.11 – Key Assumptions for Medical Research Impact 2013/14

	Value	Source
School of Health & Life Sciences Research Income	£2.9 million	GCU
Social Return to Medical Research	£1.38	Wellcome Trust research

This results in an estimation of some of the impact of GCU's medical research as being almost £4.0 million at the Scottish and UK level, £3.6 million of which is in Glasgow City.

Table 9.12 – Social Returns to Medical Research Impact 2013/14

	Glasgow City	Scotland	UK
GVA (£m)	3.6	3.9	3.9
Employment (FTEs)	-	-	-

<sup>18</sup> Audit Scotland, *Managing Long Term Conditions*, August 2007

### 9.3.5 Summary Health and Social Care Innovation Impact

The impact that occurs in Glasgow City is based on its per capita share of the Scottish impact. The impact that occurs in the UK is based on a ratio of where students work after they graduate.

The estimated monetary value of health and social care innovation is £7.7 million GVA in Glasgow City, £41.4 million GVA in Scotland and £44.3 million GVA in the UK.

Table 9.13 – Total Health and Social Care Innovation Impact 2013/14

	Glasgow City	Scotland	UK
GVA (£m)			
Innovations in Practice	4.2	37.5	40.3
Returns to Medical Research	3.6	3.9	3.9
<b>Total GVA</b>	<b>7.7</b>	<b>41.4</b>	<b>44.3</b>
Employment (FTEs)			
Innovations in Practice	-	-	-
Returns to Medical Research	-	-	-
<b>Total Employment</b>	<b>-</b>	<b>-</b>	<b>-</b>

## **10 GRADUATE PRODUCTIVITY IMPACTS**

This section describes the additional value that graduates from GCU add to the UK economy as a result of the education they receive.

### **10.1 Graduate Productivity**

One of the main ways in which knowledge is transferred from GCU into industry is when its graduates start working and begin applying what they have learned in the work place. The skills students learn and the experiences they have while at University directly enhance their future productivity. This enables them to contribute more to their employer and generate a greater benefit for the UK economy than they would otherwise be able to.

The GVA of this productivity gain includes the additional profits that graduate employers are able to generate by employing graduates and the additional employment costs they are willing to pay in order to generate these additional profits.

The subject of graduate earnings premiums has been well researched so information about the earnings premium of graduates is readily available and can be used to provide a measure of the additional contribution graduates make to the economy each year. Unfortunately information about the additional profits of graduate employers is not readily available so the impact presented in this section is likely to underestimate the true productivity impact of learning.

Information about the graduate premium for different subject areas is provided in a research paper produced by the Department for Business Innovation & Skills<sup>19</sup>, which considered data from the Labour Force Survey between 1996 and 2009. The analysis considered the after tax earnings of a graduate compared to the after tax earnings of a non-graduate. The direct and indirect costs were then subtracted from the gross graduate premium for each degree subject to give the net graduate premium. In this way the total graduate premium gives the combined personal economic benefit that the years graduates will obtain rather than the increase in national productivity associated with the degree, which will be higher.

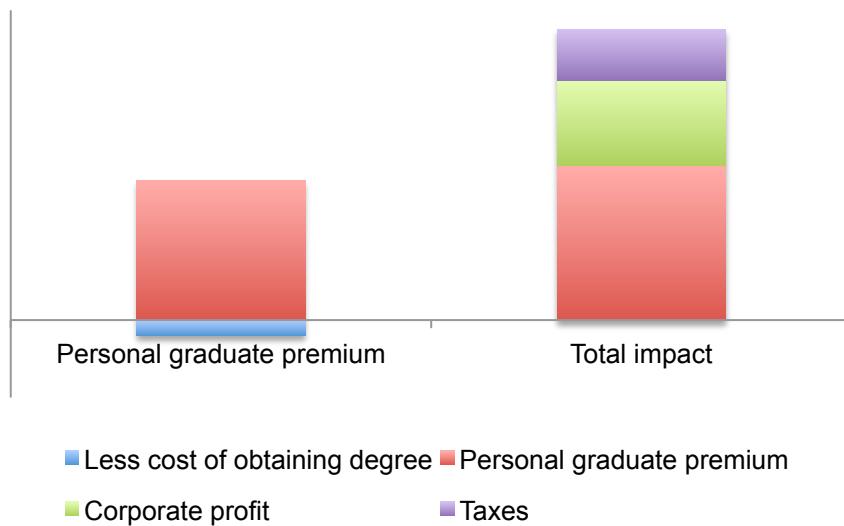
The UK wide benefits from the increased productivity of graduates will also include the corporate profit associated with each graduate as well as the taxes paid to the Treasury.

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<sup>19</sup> Department for Business Innovation & Skills (June 2011), *The Returns to Higher Education Qualifications*.

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Table 10.1 – Personal Graduate Premium Benefit Vs. Economic Benefit



#### 10.1.1 Graduate Premium Of GCU Students

The subject that a student graduates in determines the earnings premium that they can expect to achieve over the course of their working life, as shown below. The average for all undergraduate degrees is £101,442.

Table 10.2– Graduate Premium By Degree Subject

	Graduate Premium (£)
Agriculture	60,131
Architecture, building and planning	125,337
Biological sciences	65,788
Business and administrative studies	115,295
Creative arts and design	5,945
Education	115,843
Engineering	128,120
European languages	61,501
Historical and philosophical studies	21,843
Law	161,436
Linguistics, classics and related	49,036
Mass communication	19,460
Mathematical and computing sciences	136,629
Medicine and dentistry	371,432
Non-European languages	45,165
Physical /environmental sciences	92,063
Social studies	98,793
Subjects allied to medicine	145,633
Technologies	62,512
Veterinary sciences	146,181
Average Undergraduate	101,442
Postgraduate degree	50,195

Source: Department of Business, Innovation and Skills, *The Returns to Higher Education Qualifications, 2011*

The impact associated with graduates from GCU was estimated by applying the graduate premium for each degree subject to the number of graduates in each subject area. In this way it was estimated that the total graduate premium across the UK in 2013/14 amounted to £429.6 million. The impact within each study area was estimated by applying assumptions about the proportion of graduates who remain in each study area after graduation to the total impact.

Table 10.3 – Graduate Premium by Study Area (£m)

	Glasgow City	Scotland	UK
Location of graduates	56%	89%	96%
Total graduate premium	248.2	399.2	429.6

## **11 SUMMARY OF QUANTIFIABLE IMPACTS**

### **11.1 Quantitative Impacts**

In 2013/14 Glasgow Caledonian University supported economic activity in Glasgow City worth an estimated £491.7 million GVA and 5,921 jobs, in Scotland this was estimated to be £881.4 million GVA and 12,437 jobs and in the UK it was estimated to be £990.2 million GVA and 14,113 jobs.

Table 11.1 – Glasgow Caledonian University GVA Impact 2013/14 (£m)

	Glasgow City	Scotland	UK
Direct	84.8	84.8	84.8
Supplier Spending	0.9	2.9	11.7
Staff Spending	10.2	21.4	30.6
Construction Spending	1.0	5.2	6.8
Subtotal Core Impact	97.1	114.3	133.9
Student Spending	20.8	54.7	61.2
Student Part Time Work	46.4	116.7	156.4
Student Volunteering	0.6	1.3	1.3
Reducing Unemployment	16.6	34.6	51.2
International Students in Colleges	0.3	0.7	0.8
Subtotal Student Impact	84.7	208.0	271.1
Visiting Friends & Relatives	0.4	0.6	0.7
Open Days	0.3	0.4	0.4
Conferences	0.2	1.3	1.9
Subtotal Additional Visitors Impact	0.8	2.3	3.0
Contract Research	6.0	12.9	23.4
Consultancy	0.3	2.8	4.0
Spin-outs	1.2	1.5	1.6
Knowledge Transfer Partnerships	1.7	3.0	3.1
Subtotal Addressing Business Needs	9.2	20.2	32.1
Student Placements	1.8	4.1	4.5
CPD	6.7	11.5	14.8
Training Courses	2.6	5.1	5.6
Business Academies	0.4	1.0	1.9
Subtotal Addressing Skill Needs	11.6	21.7	26.8
Health and Social Care Placements	20.6	43.2	46.7
Health CPD	0.8	2.4	2.6
Subtotal Health Care Workforce	21.5	45.6	49.2
Innovations in Practice	4.2	37.5	40.3
Returns to Medical Research	3.6	3.9	3.9
Subtotal Health Care Innovation	7.7	41.4	44.3
Graduate Productivity	248.2	399.2	429.6
<b>TOTAL GVA (£m)</b>	<b>481.1</b>	<b>852.9</b>	<b>990.2</b>

*Note: Totals may not sum due to rounding*

Table 11.2 – Glasgow Caledonian University Employment Impact 2013/14

	Glasgow City	Scotland	UK
Direct	1,392	1,392	1,392
Supplier Spending	21	71	290
Staff Spending	243	530	762
Construction Spending	18	90	119
Subtotal Core Impact	1,675	2,083	2,563
Student Spending	1,797	4,715	5,282
Student Part Time Work	1,271	3,078	3,271
Student Volunteering	-	-	-
Reducing Unemployment	-	-	-
International Students in Colleges	7	18	19
Subtotal Student Impact	1,662	4,156	4,496
Visiting Friends & Relatives	16	23	25
Open Days	12	12	12
Conferences	9	51	69
Subtotal Additional Visitors Impact	36	86	105
Contract Research	98	221	406
Consultancy	5	48	69
Spin-outs	29	40	44
Knowledge Transfer Partnerships	42	75	78
Subtotal Addressing Business Needs	173	385	597
Student Placements	33	76	83
CPD	99	177	230
Training Courses	45	85	92
Business Academies	10	24	47
Subtotal Addressing Skill Needs	188	362	453
Health and Social Care Placements	465	916	976
Health CPD	20	51	54
Subtotal Health Care Workforce	485	967	1,030
Innovations in Practice	-	-	-
Returns to Medical Research	-	-	-
Subtotal Health Care Innovation	-	-	-
Graduate Productivity	-	-	-
<b>TOTAL EMPLOYMENT</b>	<b>5,921</b>	<b>12,437</b>	<b>14,113</b>

Note: Totals may not sum due to rounding

## 11.2 Value for Money

In 2013/14 Glasgow Caledonian University directly contributed £84.8 million GVA to the UK economy. This implies that the GVA multiplier of the University is 11.67 and means that each £1 GVA directly generated by the University supports a total economic impact of £11.67 for the UK economy.

Glasgow Caledonian University supported 14,113 jobs throughout the UK economy in 2013/14. This includes 1,392 fte jobs of people who are directly employed by the University, which means that every job directly created by the University supported a total of more than 10 jobs throughout the UK economy.

In 2013/14 the University received total income of £118 million and generated a total economic impact of £990.2 million. This implies that GCU generated £8.36 GVA for every £1 income earned.

GCU received £67.1 million of its income as funding body grants. This suggests that every £1 invested by funding bodies generates £13.13 for the Scottish economy and £14.75 GVA for the UK economy.

These multipliers are summarised in Table 11.3.

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Table 11.3 – Glasgow Caledonian University Impact Multipliers

	Total impact multiplier
Direct GVA : Total GVA	11.67
Direct Jobs : Total Jobs	10.14
Total Income : Impact	8.36
Funding Body Income : Impact	14.75

## **12 SOCIAL INNOVATION**

GCU's motto, 'for the common good', means that it drives to be a social innovator. This is indicated by the fact that it has been designated a Changemaker Campus by Ashoka U, an initiative of Ashoka, the world's largest network of social entrepreneurs.

This designation is to recognize colleges and universities that have embedded social innovation as a core value and showcase the ways in which they have built supportive environments for changemaking across the entire institution – from admissions to the curriculum, career services and community and alumni engagement.

Ashoka U define the following terms:

- social innovation – new strategies, concepts, ideas and organizations that meet social needs of all kinds — from working conditions and education to community development and health — and that extend and strengthen civil society;
- social impact – the transformational effect of an activity on the social fabric of the community and well being of individuals.

Through the Changemaker Campus designation Ashoka U highlight innovative models and strategies of university-based social innovation. There are currently 29 Changemaker Campus including Brown, Duke and Dublin City. GCU is the second campus in the UK.

### **12.1 Social Innovation and Health Innovation**

Chapter 9 discussed the contribution of GCU in tackling healthcare. Addressing health inequalities is a further aspect of healthcare that GCU is also involved in. This is a particular issue for Glasgow as a quarter of its citizens are defined as deprived, with life expectancy gaps of up to 28 years between the richest and the poorest.<sup>20</sup>

Health inequalities are a complex issue and the problem of how to reach and transform the health and wellbeing of the most disadvantaged in society is difficult to tackle. This is something that is being explored by the Yunus Centre for Social Business and Health, which is looking at how social enterprises can be an alternative mode for delivering public health intervention, allowing a combining of social and health innovation.

This is a new area of research in public health and consequently there is limited research and evidence in the field, which is something the Centre is seeking to rectify. The growing awareness of the potential of this area in tackling health issues is shown award of a £1.96 million Medical Research Grant.

The Centre also has two other main areas of activity; microfinance and health economics. The area of microfinance, like the area of social enterprise and

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<sup>20</sup> Marmot M, Allen J, Bell R and Goldblatt P (2011) Building of the global movement of health equity: from Santiago to Rio and beyond. Lancet doi:10.1016/S0140-6736(11)61506-7. and Ministerial Task Force on Health Inequalities (2008) Equally Well. Scottish Government, Edinburgh.

public health, is an area that is lacking in research. Health economics is an area that is in demand due to budgetary pressures.

As well as research the Centre also has a focus on sharing and growing knowledge with partners through:

- research and policy engagement;
- collaborations with strategic bodies for research on microcredit, social enterprises and health economics;
- maintain and build relationships with NHS Scotland and with the NHS in the UK more widely;
- creation of University network around Professor Yunus; and
- enhancing the reputation for health economics, social business and social enterprise.

Table 12.1 – Impact of Delivering Social and Health Innovation

Need	Role of GCU	Research Themes	Benefit	Numbers Engaged
<p>Need for new approaches to tackling health inequalities.</p> <p>Lack of research into social enterprises as a public health intervention and the benefits of microfinance.</p> <p>Greater need for health economics due to budgetary pressures.</p>	Supporting cutting edge research.	<p>Entities and interventions to tackle social vulnerability.</p> <p>Create a Knowledge Exchange Forum on social enterprise and health in Scotland.</p>	<p>Innovation in public health intervention.</p> <p>Provide the evidence to inform strategy and research.</p>	47 social enterprises engaged.

## 12.2 Grameen Caledonian College of Nursing

An example of GCU's social innovation in practice is in 2010, in partnership with Professor Muhammad Yunus (Nobel Laureate) GCU established the Grameen Caledonian College of Nursing in 2010 in Bangladesh. There are only 26,899 registered nurses in Bangladesh for a population of 150 million, compared to the UK's 680,000 registered nurses serving a population of 60 million. The fact that only 15.5% of births in Bangladesh are attended by skilled personnel further highlights the shortage of health care staff.

The vision of the College is to provide young women with the opportunity to study at higher education level thereby breaking the cycle of early marriage, pregnancy and poverty while at the same time contributing towards an improvement in both capacity and capability in human resources for health.

In providing quality education in nursing GCU is contributing to the development of the health care workforce in Bangladesh and helping to overcome the shortage of nurses. In addition, the College's nursing students are young women from Grameen Bank borrower families, thereby reaching the poorest rural communities in Bangladesh and helping to break the cycle of poverty and expectations for rural women. The College today has 138 students and 37 members of staff, with the College's Principal being drawn from GCU's School of Health and Life Sciences.

Table 12.2 – Grameen Caledonian College of Nursing Impact

Need	Benefit	Numbers Engaged
Break cycle of poverty and expectations for rural women	By providing education at an international level GCU is helping to empower women.	In March 2013, the first graduation ceremony was held with 38 graduates receiving their diploma in Nursing Science and Midwifery.
	This leads to increasing earnings potential and value to self and the community being realised.	The second cohort of 40 students graduated in December 2013.
	In turn, this impacts upon rural communities by improving health and increasing financial stability.	To date 78 nurses have graduated from the Grameen Caledonian College of Nursing
Increase capacity and capability in human resources for health	Bangladesh has a severe shortage of nursing staff. In providing quality education in nursing, the use of innovative teaching techniques and addressing the unique health needs of communities GCU is supporting the development of the health care workforce in Bangladesh.	The four top students of the first batch were offered full scholarships to continue their BSc Nursing studies at GCU. Three were awarded by GCU and one by Medtronic, a medical instrument company based in the USA.
	This will have an impact on the quality of healthcare provision in Bangladesh, improving the health and wellbeing of people in Bangladesh as well as supporting reduced mortality.	The first batch of graduate nurses have been appointed as staff nurses in private hospitals or Grameen Health Care services, or gone onto further higher education to complete their BSc Nursing degrees.

### 12.3 Caledonian College of Engineering in Oman

GCU's international activities contribute socially to their local areas. The Caledonian College of Engineering in Oman is one of GCU's international affiliate colleges. It provides University education from professional development courses through to postgraduate degrees to over 3,000 students.

The College addresses the strong demand for University level education in Oman and the need for engineering skills to strengthen and grow the economy. The College also plays a role in driving social change, particularly with attitudes to gender. Approximately 50% of the students are female, which is high for an

engineering college, as globally engineering is one of the subjects that women are least likely to study. In particular, the College is contributing to increasing the level of female participation in the workforce in Oman.

Table 12.3 – Caledonian College of Engineering in Oman Impact

Need	Role of GCU	Activities	Benefit	Numbers Engaged
Strong demand for tertiary education and engineering skills in Oman.	The Caledonian College of Engineering is a collaboration between GCU and Vellore Institute of Technology in India. Provides academic staff and student exchange.	Undergraduate and postgraduate courses.  Professional development courses for industry.  Active since 1996.	Increasing the level of female participation in the engineering sector, with 50% of students female.	3,265 students.

## 12.4 Transforming Lives

As part of Glasgow Caledonian University's mission to promote the common good, the University undertakes a number of community engagement initiatives with schools, families and children of all ages.

GCU's Caledonian Club was established in 2008 and works across five communities in Glasgow with below Scottish average progression rates into Higher Education. Activities begin in nursery and support pupils at all stages of the educational journey, including primary and secondary school. The aim of the activities is to increase aspirations, develop key life skills and promote positive post-school destinations in an engaging and innovative manner.

With the opening of GCU's London campus, the GCU London Club has also been established and is now in its third year. The premise for the Club is the same as the Caledonian Club with the focus mainly on primary school engagement. The London Club has developed partnerships with primary schools within walking distance of GCU London in the local community of Tower Hamlets. The London Club offers targeted projects designed to enhance the school curriculum, through the provision of unique learning opportunities, and utilises undergraduate student mentors as positive role models and cultural ambassadors.

In addition to these, GCU has established SCETT (Schools and Colleges Engagement and Transition Team) to support secondary school pupils in making the transition to study at University. Pupils benefit from a linked set of activities throughout S5 and S6 with student mentor role models that build upon the transferable skills needed for university study. The programme also supports pupils with their UCAS applications and thereby strengthens progression routes as well as providing young people with the confidence and support to make life choices.

The Advanced Higher Hub opened in August 2013 and works in partnership with Glasgow City Council and a number of Glasgow Secondary schools. The Hub

curriculum offers seven Advanced Highers and provides school pupils with the opportunity to undertake their studies on campus twice a week, providing a bridge between their school and university studies. Many schools, particularly in Glasgow, struggle to provide a range of Advanced Higher courses for their S6 pupils. GCU therefore supports S6 pupils to develop their learning, build life skills and grow in confidence in preparation for University life.

Finally, GCU's official Glasgow 2014 Legacy Project is the innovative reCYCLE initiative. This project provides refurbished bikes for young people in Glasgow. In conjunction with a local community development organisation, GCU offers the bikes and bike maintenance training for young people. In doing so, GCU provides young people with the opportunity to learn new skills and at the same time offers them an affordable mode of transport for job interviews or college.

Overall, in 2013/14 GCU engaged with 3,426 pupils and 486 parents, across 32 secondary schools, 8 primary schools and 5 nurseries.

Table 12.4 – Outreach and Community Engagement Impact

Description and objective	Activities	Benefits	Numbers Engaged
Caledonian Club GCU's multi-award winning widening participation and community engagement initiative.	Nursery engagement e.g. pre-school nursery classes along with parents and family members visit GCU for drama activities. A follow-up music project focused on healthy eating also takes place.	Raise aspirations in young people and families.	In 2013/14, the Caledonian Club engaged with 2,205 pupils and 386 parents.
	Primary school engagement The Club undertakes activities with almost all age groups, including pupils working with student mentors to create a newsletter reflecting on their time at primary school.	Enhance the school curriculum by providing unique learning experiences.	Of these, 1,384 pupils were secondary school pupils engaging in post school destination related activities.
	Secondary school activities An S3 project run by the Club allows pupils to visit GCU to find out about the academic schools and subjects on offer. S6 pupils can shadow a university student for a day.	Build key life skills in Club members and student mentors, such as team working, problem solving and decision-making.	
GCU London Club	Primary school engagement For example, Year 3 pupils research, write and illustrate their own book with the help of student mentors. GCU Graphic Design students convert their work into a book. Concludes with a book launch celebration with pupils and their families.	Provide positive role models.	In 2013/14 GCU London Club engaged with almost 200 primary school pupils and 100 parents.
SCETT Established to support school pupils making the transition to study at University.	S5 and S6 pupils benefit from tailored personal statement and UCAS advice as well as preparation for University by examining study skills. Pupils can also opt into additional Higher English and Maths supported study sessions at GCU.	Provide a better understanding of higher education prospects and opportunities and promote positive post-school destinations.	In 2013/14 SCETT engaged with 768 S5 and S6 pupils. Overall, 118 pupils enrolled on the programme submitted an application to study at GCU.
	Participants must be considering a GCU course that they can articulate into as one of their five options on	Provide a bridge between school and university studies.	Works with 6 Glasgow secondary schools and 14 West of

	UCAS.		Scotland colleges.
Advanced Higher Hub Providing Advanced Higher teaching for S6 pupils on campus.	Offers pupils the opportunity to undertake their Advanced Higher studies twice a week on campus. Pupils have access to high quality teaching staff and all of GCU's student facilities.	Support S6 pupils to develop their learning, life skills and confidence in preparation for University.	In 2013/14, the Hub had 97 pupils across 11 classes with a 74% Advanced Higher exam pass rate, 94% average attendance and completion rate. In 2014/15 there are 156 pupils across 14 classes.
reCYCLE  GCU's official Glasgow 2014 Legacy Project, endorsed by Glasgow City Council.	GCU has been working with the Glasgow Bike Station, Tiso and Evans. The project involves GCU students, staff and wider community donating bikes. These bikes are refurbished and donated to young people who need them through SiMY Community Development, a Townhead based organisation that helps young people. GCU has also provided bike maintenance training on campus.	Provide opportunity for young people to learn new skills and an affordable mode of transport for job interviews or college.	

## 12.5 Private Sector Partnerships

An example of GCU's approach to social innovation can be seen in how GCU's partnerships with the private sector have been developed to deliver projects that transform lives.

The Transnet Foundation has a project called Phelophepa Health Train, which is the world's first primary healthcare hospital on wheels. The train is a mobile healthcare clinic that travels around rural communities in South Africa providing eye, dental and general health checks for isolated communities and where possible dispensing treatment. The project is 20 years old and for 35 weeks a year it visits a different rural community each week.

Through the University's relationship with Transnet Freight Rail a five-year contract has been signed for GCU to contribute to this project. This has resulted in 32 GCU ophthalmic students boarding the Phelophepa trains, in teams of 4 to 6, for two weeks each to carry out eye examinations and provide eye care advice to children and adults in rural communities. In many South African rural communities there is often only a single doctor for every 5,000 people. The Phelophepa trains use the existing rail networks to make quality medical care accessible for remote communities.

Another example is the relationship between the British School of Fashion and M&S has resulted in £50,000 a year being given to support the M&S Fashion

Scholar to support selected students on fashion courses at The British School of Fashion.

Table 12.5 – Relationships with Businesses Impact

Partner	Activities	Benefit	Numbers Engaged
Transnet Freight Rail	GCU ophthalmic students providing eye examinations and advice to rural communities in South Africa via the Phelophepa trains.	Benefits for people in South Africa – the people that are examined and given advice to will have improved health leading to a better quality of life. They are also likely to have improved socio-economic prospects arising through being better able to work or study.  GCU students – students can witness the challenges of primary healthcare delivery in other places, gain experience and have the opportunity to apply the skills they have learned in a real world context.	32 GCU students on the Phelophepa train for two weeks seeing up to 100 patients every day. More than 1,000 people in South Africa would benefit.
M&S	Scholarships	Diversifying future business leaders of fashion.  Providing opportunity for talented students to further their career in fashion business.	6-7 Scholarships a year

## **13 SUSTAINABLE ENVIRONMENT**

Through improving health outcomes and searching for social solutions to challenges such as inequality GCU contributes to a sustainable environment.

### **13.1 Sustainability of Campus**

In line with its commitment to make a positive contribution to society GCU seeks to make its campus sustainable and has had many achievements such as becoming a zero waste campus. This work towards creating a sustainable campus have been widely recognised by a number of significant awards. These include:

- EcoCampus – the University recently became the first higher education institution in Scotland to be recognised with a prestigious gold EcoCampus award. EcoCampus is a high-profile environmental management system developed specifically for the higher education sector. GCU was the first Scottish university to join the scheme and attain bronze and then silver status. It will now work towards the top platinum status;
- Green Tourism Business Scheme – Caledonian Court, GCU's student accommodation, was recently awarded Gold in this scheme. The Green Tourism Business Scheme, originally developed in partnership with Visit Scotland, encourages tourism businesses to be environmentally friendly, whether they be hotels or guest houses, bed and breakfasts, self-catering or visitor attractions;
- Soil Association Catering Mark – Cordia, GCU's catering contractor, was recently awarded with Bronze. The Catering Mark provides an independent endorsement that food providers are taking steps to improve the food they serve, using fresh ingredients which are free from undesirable additives and GM, and better for animal welfare;
- Global Green Award – Caledonian College of Engineering, GCU's partner institution in Oman, has won an international award for its sustainability initiatives. The award recognises the College's outstanding environmental achievements and sustainable practices, including the introduction of a paper free environment, research focused activities on renewable energies, and the use of solar energy to meet the needs of the campus' electricity demands; and
- Cycle Friendly Campus Award – GCU has being selected by Cycling Scotland as one of five organisations in Scotland to pilot the new Cycle Friendly Campus Award, an initiative that encourages more active travel amongst university and college students.

Table 13.1 – GCU's Sustainability Achievements

Description	
Carbon reduction since 2008-2009	Reduction of 33%
Carbon reduction 2013-14	6,876 tonnes
Value of carbon reduction in 2013-14	£30,804
Reduction in gas used since 2008-2009	4%
Reduction in electricity used since 2008-2009	17%
Recycling rate	90%
Amount of waste sent to landfill	0%

There are also wider impacts through GCU's approach. For example the focus on waste minimisation means that GCU works with local charities to reuse waste such as working with the Glasgow Play-Resource Association who use fabric offcuts in craft workshops and play sessions and working with charities such as the Salvation Army and the British Heart Foundation to trial furniture re-use opportunities.

## 13.2 Climate Justice

Climate justice is safeguarding the rights of the most vulnerable and sharing the burdens and benefits of climate change and its resolution equitably and fairly. Climate justice pulls together several areas, such as economic development, food security, climate change and social justice. There are not that many organisations or individuals that combine all four areas so there is a significant gap and interest in climate justice research.

GCU has addressed this gap by creating a centre of excellence in climate justice research and teaching and learning that is the primary resource for researchers, analysts and policy makers seeking knowledge in this area.

This highlights GCU's approach in social innovation by conversing with global thought leaders and identifying areas where it could address challenges in the areas that it has strength in. In this area, activity around climate justice has been built up around an initial connection with Mary Robinson through her Magnusson Lecture in 2011.

The importance of climate justice is reflected in the Scottish Government's funding of the projects, making £6 million available to projects addressing climate justice. The expertise built up by the Centre for Climate Change means it can apply for funding and has successfully received funding from the Scottish Government to build sustainable capacity in achieving equity and entitlement in accessing water in Malawi.

Table 13.2 – Climate Justice

Need	Role of GCU	Activities	Benefit	Numbers Engaged
Climate change will disproportionately affect the disadvantaged and vulnerable.	The Centre for Climate Justice a focal point for climate justice research and activity.  Taking the global lead in creating a repository for the collection and collation of researched data.	Repository of research. MSc in Climate Justice. Leading dialogue and discussion. Undertaking climate justice research. Delivering climate justice projects.	Raising awareness of climate justice and therefore incorporating a climate justice approach into development.	The hub contains over 1,000 academic papers.

## **14 FUTURE IMPACT**

Glasgow Caledonian University is constantly growing in terms of size, activity and excellence. Therefore it is anticipated that the University's impact will become more significant in the future. In particular the following sources of impact are expected to make a significant contribution to the Scottish and UK economy in the future:

### **14.1 Centre for Healthy Living**

The planned Centre for Healthy Living will contribute to addressing chronic diseases, which are the leading cause of mortality and morbidity in Europe. In addition to the health and social impacts of chronic diseases and the burden on health services, they also have a significant economic impact from increasing early retirement to reducing labour productivity and the amount of people working.<sup>21</sup> The impact of chronic diseases is anticipated to increase with the aging population making it even more necessary that innovative initiatives are developed to tackle chronic diseases.

The scale of the challenge can be shown by the fact that in Scotland, around two million people, 40% of the Scottish population have at least one long-term condition<sup>22</sup>. Long-term chronic conditions become more prevalent with age, with nearly two-thirds of people having developed a long-term condition by the age of 65. This is particularly important when considered against the backdrop of an ageing population. According to Audit Scotland<sup>23</sup>, the number of people in Scotland aged 75 and over is projected to rise by 75% from 0.37 million to 0.65 million over the period 2004 to 2031. This indicates that the proportion of people experiencing long-term chronic conditions and the associated financial pressures on health services will increase significantly. In addition, older people are also more likely to have more than one long-term condition, with 27 per cent of people aged 75-84 having two or more chronic conditions.

With the planned Centre for Healthy Living, Scotland will have an additional innovative initiative to tackle one of society's greatest challenges.

### **14.2 Research**

It is anticipated that GCU's future impact from research will grow as the University builds on its growing excellence and new initiatives have time to build up the funding, expertise, partnerships and reputation required to increase activities and impact.

The impact of research can have a long lag between input and eventual economic and societal impact. For example attracting research funding can take time as expertise needs to be developed in order to submit a competitive proposal. However if resources and focus are maintained in these areas, growth will become cumulative as the increase in reputation and funding feed into more staff students and vice versa. In addition the persistent and/or urgent nature of

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<sup>21</sup> World Health Organization 2010, on behalf of the European Observatory on Health Systems and Policies 'Tackling chronic disease in Europe – Strategies, interventions and challenges' 2010

<sup>22</sup> Scottish Government, <http://www.scotland.gov.uk/Topics/Health/Services/Long-Term-Conditions>, (Accessed January 2015).

<sup>23</sup> Audit Scotland, *Managing Long-term Conditions*, August 2007

some of society's greatest challenges such as inequalities and climate change require innovative new ways of looking at problems. Therefore new research groupings need to be set up, which will not immediately have an impact but due to the process described above and the nature of the issue they are addressing will have a significant impact in the future.

It is anticipated that GCU's research excellence will grow in the way described above as its research power has been growing stronger as demonstrated by the REF 2014 and GCU has a variety of new research initiatives described in the report which are tackling society's most significant problems. GCU's track record in developing research expertise can be shown by the example of the example of the British School of Fashion, which has built its research excellence to be recognised as being at the forefront of fashion business research and collaborating with the leading international fashion companies.

### **14.3 GCU New York**

GCU in 2014 opened a campus in New York and is the first British University to have a campus in the city. The opening of this campus is anticipated to strengthen the University's existing strength such as in social business and fashion. Its presence in the city will enable Scottish companies to have a base in the city, provide them with networks and events to attend. Through the University's links with partners in the city, the Scottish economy will increase its international links and reputations, which will also benefit individual businesses as well as the economy as a whole. Through its courses, GCU will widen the impact of its knowledge and expertise such as promoting sustainable fashion through its talks and courses.

### **14.4 Caledonian Club**

The Caledonian Club has a long-term vision to facilitate true social change in the communities Glasgow Caledonian University serves. The vision for the project proposes a linked set of activities sustained over a period of 15 - 30 years. The Caledonian Club has been operating since 2008 therefore the project is still in its early stages. As the project develops, lessons are learned and young people progress through life, it is anticipated that the impact of the Caledonian Club will increase.

### **14.5 Future Impact 2020**

Not all of these future impacts can be quantified but in order to give an idea of what the impact could be in the future a scenario has been developed that looks at what the impact of the University could be in 2020 if its aim to increase its current income from research grants and contracts from £5.2 million in 2013/14 to £7.0 million in 2020. This is an increase of 35%. It is assumed that this increase in research income would support the following assumptions:

- increase in business needs impact – of all the impacts that GCU supports, spin-offs, consultancy, contract research and KTPs are the most sources of impact that are mostly directly related to research activity. Therefore it is assumed that the current impact of these activities increase by 35% in 2020 in line with the increase in research income;

- social returns to medical research – in addition social returns to medical research is also directly related to research activity. Therefore it is assumed that the current quantifiable social impact of medical research increases by 35% in 2020 in line with the increase in research income;
- increase in core impact – an increase in research income by 35% would increase baseline income by 2%. It is assumed that expenditure on goods and services and staff would also increase by 2%;
- increase in student related impacts – to reflect the growth in research activity the current number of postgraduate students will grow by 50% from the 2013/14 figure of 1,744. This will affect the student related impacts;
- increase in visits to friends and family – a rise in postgraduate students will increase the number of visits by friends and family; and
- graduate productivity – an increase in students will increase the number of graduates and will increase graduate productivity.

The 2% increase in total income in 2020 resulting from the increase in research income will increase the University's impact by 7% in all study areas. This results in a GVA impact in Glasgow of £524.1 million, in Scotland of £940.4 million and £1,057 million GVA in the UK.

## 15 SUMMARY OF IMPACT

GCU is driven by its social mission for the common good. This leads GCU to be a social innovator and create social impact. Therefore the quantitative impacts described so far are a significant underestimate of the overall impact of GCU.

For example, GCU's mission and its position as a significant provider of the health and social care workforce both in terms of training to be professionals and CPD together with its leading health research means that it is key to delivering the Scottish Government's 2020 Vision for Health and Social Care. GCU does this through:

- delivering health and social care innovation in practice by training students not just to be healthcare providers but to be healthcare innovators by being in a national and international leader in delivering interprofessional education;
- delivering health and social care innovation projects such as the Functional Fitness MOT which is one of the projects described by Times Higher Education as one of the 20 projects that will change the world; and
- innovating its research and learning by bringing it together in the Centre for Living together with community partners to respond more effectively to society's key health challenges, which have a significant cost that could be in the billions.<sup>24</sup>

GCU is at the cutting edge of social and health innovation through the activities of the Yunus Centre for Social Business and Health, which is looking at how social enterprises can be an alternative mode for delivering public health intervention. The Centre has engaged with 47 social enterprises.

GCU has also developed the Caledonian Club, which works across five communities in Glasgow with below Scottish average progression rates into Higher Education. The expertise, knowledge and reputation gained by this has led to further projects to support children in having the skills and knowledge to choose the most suitable career choices and to succeed in their chosen path. This is part of a wide range of community and outreach activities, which in 2013/14 enabled GCU to engage with 3,426 pupils and 486 parents, across 32 secondary schools, 8 primary schools and 5 nurseries.

GCU has an impact internationally; one of the many projects that have been created due to its partnership with Professor Yunus is the Grameen Caledonian College of Nursing in 2010. This seeks both to improve the opportunities available to young women and improve Bangladesh's capacity and capability in human resources for health. The College today has 138 students and 37 members of staff, with the College's Principal from GCU's School of Health and Life Sciences.

Another international impact which arises from its partnership with international thought leaders is the Centre for Climate Justice with Mary Robinson. This has led to the creation of a repository for the collection and collation of research data, which has over 1,000 academic papers.

Some of GCU's impact on the economy and society can be quantified such as through its direct employment, spending on wages, supplies and capital

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<sup>24</sup> Audit Scotland, *Managing Long Term Conditions*, 2007

expenditure, activity of students, the visitors it attracts and addressing business and skills needs. In 2013/14 Glasgow Caledonian University supported economic activity in Glasgow City worth an estimated £491.7 million GVA and 5,921 jobs, in Scotland this was estimated to be £881.4 million GVA and 12,437 jobs and in the UK it was estimated to be £990.2 million GVA and 14,113 jobs.

GCU received £67.1 million of its income as funding body grants. This suggests that every £1 invested by funding bodies generates £13.13 for the Scottish economy and £14.75 GVA for the UK economy.

An assessment of the current impact of GCU underestimates its impact to the economy as GCU's impact is anticipated to grow even further in the future. This is due to current activities undertaken GCU that are by their nature are long term and the impacts will not be fully apparent immediately such as the Caledonian Club project. Future impact is also anticipated due to the University building on its growing research expertise, which will put the University in an even stronger position to tackle society's challenges.

## **16 TECHNICAL APPENDIX**

### **16.1 Approach**

Economic impact is reported in two ways:

- Gross Value Added (GVA) measures the monetary contribution of the organisation and individual to the economy; and
- employment, measured in full time equivalent (ftes) jobs supported.

Each area of impact requires the use of three types of economic assumptions:

- turnover to GVA ratio – used to estimate the GVA impact of the spend in an area. This is obtained from the UK Annual Business Survey 2012, published in 2013;
- turnover per employee – used to estimate the employment impact of the spend in area. This is obtained from the UK Annual Business Survey 2012, published in 2013; and
- GVA and employment multipliers – used to estimate supplier and income impact created by businesses that directly benefit from additional spend in the area.

### **16.2 Direct Impact**

The direct operational Gross Value Added (GVA) of the University was calculated by subtracting all of the non-staff expenditure from the total operational income of the University.

### **16.3 Supplier Spending Impact**

The first step in estimating this impact is to estimate how much of the supplier spending occurs in each study area.

GVA impact of the spend on supplies is estimated by considering the spend on supplies by sector. The spend in each sector supports different GVA depending on the turnover to GVA ratio for that sector (the UK Annual Business Survey<sup>25</sup> gives a breakdown of these figures for industries and smaller sectors). The impact throughout the economy is estimated by applying GVA multipliers appropriate to the sector.

The employment impact of the spend on supplies is estimated by applying the turnover per employee in the industries relevant to the spend. The impact throughout the economy is estimated by applying employment multipliers appropriate to the sector.

### **16.4 Staff Spending Impact**

The first step in estimating this impact is to estimate how much of the staff spending occurs in each study area.

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<sup>25</sup> ONS, UK Annual Business Survey 2012, 2013

This requires two steps. The first is that the level of salary paid in each study area was assumed to be proportional to the number of staff that live in each area. The second is an assumption of how much of a person's wage is spent in each study area. This assumption is different for the staff living in each study area.

The economic impact of staff spending as measured by GVA and employment supported, is estimated by applying economic assumptions appropriate to the sector as described in the previous section (i.e. turnover/GVA ratio, turnover/employee ratio, GVA multiplier and employment multipliers).

## 16.5 Capital Spending Impact

The first step in estimating this impact is to estimate how much of the capital spending occurs in each study area.

The economic impact of capital project spending as measured by GVA and employment supported, is estimated by applying economic assumptions appropriate to the sector as described in the previous section (i.e. turnover/GVA ratio, turnover/employee ratio, GVA multiplier and employment multipliers).

## 16.6 Student Spending Impact

This impact considers:

- how much students spend;
- where they spend it; and
- what they spend it on.

The amount of money that full-time students at the GCU London campus spend was based on the cost of living from the Department of Business Innovation & Skills<sup>26</sup>, broken down into categories and adjusted to take account of whether they are undergraduate or post graduate which determines how long they spend studying in the area. In addition the analysis excludes money spent on University accommodation, as this will have been accounted for in the University's turnover and is therefore part of the direct impact analysis.

For full-time students at GCU Glasgow the methodology was the same, but the amount of money that students spend was based on the cost of living breakdown provided by GCU on their website.<sup>27</sup>

The economic impact of student spending as measured by GVA and employment supported is estimated by applying economic assumptions (i.e. turnover/GVA ratio, turnover/employee ratio, GVA multiplier and employment multipliers).

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<sup>26</sup> Department for Business Innovation & Skills, Student Income and Expenditure Survey 2011/12, June 2013

<sup>27</sup> GCU, <http://www.gcu.ac.uk/student/money/managingyourmoney/costofliving/> (Accessed October 2014)

## **16.7 Student Part Time Work Impact**

The part-time work that students undertake also contributes to the economy. The economic impact of students' paid employment comes from the additional GVA of the businesses that employ them and the multiplier effect that these additional workers have on those businesses' supply chains.

This impact considers:

- the number of students who work;
- additionality of labour – what proportion of jobs undertaken by students would have been unfilled without the availability of student labour;
- proportion of employed students who work for the University – these students are removed from the analysis as their contribution is already included in the core activities; and
- average hours worked per year by a student with a part time job; and
- additional GVA that students generate for their employees - is calculated using the GVA per employee ratios for the industries in which students most frequently find work.

Applying these assumptions to the number of full time students studying with the GCU results in an estimation of how much labour is additional to the economy. The additional GVA that students generate for their employees is calculated using a GVA per employee ratio.

## **16.8 Student Volunteering**

Students also make an impact through volunteering. The National Union of Students report into student volunteering indicates that 31% of students in higher education devote time to volunteering. In order to reflect the wide range of volunteering activity that is undertaken at GCU as well as the emphasis that GCU places on volunteering as an important part of the overall student experience and as part of the University's Common Good goal, it was assumed that GCU's volunteering rate would be higher than the national rate. It was therefore assumed that 35% of students at GCU volunteer.

Applying this to the number of full-time students gives an estimate of the number of students volunteering. The quantitative value of this is estimated using a method by Volunteer England:

- average hours worked – A National Union of Students report provides this information;
- average wage – the average wage of a student is assumed to be equivalent to the national minimum wage.

## **16.9 Lowering Unemployment**

Almost 40% of the University's full time undergraduates in 2013/14 came from the 40% most deprived areas in Scotland. Some of these students may otherwise have been unemployed as there are barriers faced by these students in applying to other Universities and there are 'too few high-quality progression routes to

follow as they make the transition from being in full time education to being in full time work<sup>28</sup>. The costs of unemployment ranges from costs to the exchequer of benefits, to future costs in terms of earnings due to increased risk of not being in work<sup>29</sup>, increased risk of depression<sup>30</sup> to estimated lifetime costs of

£97,000.<sup>31</sup> There are many reasons for students to be not in education, employment and training, therefore this report has taken a conservative estimate of lifetime costs of having a spell of youth unemployment as £16,000.

The number of young people this impact affects is estimated by applying the following assumptions together:

- number of students in Glasgow City and Scotland that come from deprived backgrounds – this is estimated by applying the percentage of the full time undergraduates in 2013/14 who were from deprived areas to the number of students coming from Glasgow City and Scotland;
- assumption of unemployment created – this is assumed to be 50% of the number of students from deprived areas.

The GVA figure estimated is an underestimate of the costs of youth unemployment both to the economy and society. In particular youth unemployment relates to:

- reduced levels of mental and physical health – unemployment and lower educational attainment is related to increased incidence of mental health issues. The psychological effect of unemployment increases the probability of poor physical health outcomes; and
- reduced social mobility – not attending University can have an impact not only on a person's social mobility it also affects the mobility of the next generation thus increases the inequality of a society.

## 16.10 International Students in Colleges

Some of the international students who attend Glasgow Caledonian University have studied at a college in Scotland. The impact of these students studying in Scotland is attributed to the University, as without the pathway to a Glasgow Caledonian University course, they would not be in Scotland.

The impact of this year's stay in Scotland comes from the same sources as students at the University including the impact from spending, working part time, volunteering and visits from friends and family. Therefore the impact per person of these sources of impact has been applied to the estimated number of international students in Scottish colleges.

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<sup>28</sup> Third Sector Leaders ACEVO, "Youth unemployment: the crisis we cannot afford: (2012)

<sup>29</sup> The ACEVO Commission on Youth Unemployment ' Youth unemployment: the crisis we cannot afford' 2012

<sup>30</sup> Princes' Trust ' The Cost of Exclusion – Counting the cost of youth disadvantage in the UK' 2007

<sup>31</sup> Godfrey, C., Hutton, S. Bradshaw, J. Coles, B., Craig, C., and Johnson, J., 'Estimating the Cost of being "Not in Education, Employment or Training" at Age 16-18, Department for Education and Skills (2002)

## **16.11 Visits from Friends and Family**

It is expected that friends and family who are not normally resident in the local area will visit staff and students of the university. These trips are referred to as visiting friends and relatives (VFR). The expenditure of these visitors generates GVA and supports jobs in the tourism sector.

The first step towards calculating this impact is to estimate the number of visits from friends and family that students and staff will receive. VisitScotland compiles data on the number of VFR trips from domestic or from overseas visitors<sup>32</sup>. The number of domestic VFR trips per person is multiplied by the number of students and staff at the University to provide an estimate of the visits stimulated by the University.

The economic impacts of the spend from visitors to friends and family was estimated by using economic assumptions and the average spend per trip based on VisitScotland data.

## **16.12 Open Days, Conferences and Events**

In 2013/14 GCU hosted 11 open days for prospective students, attracting a total of 8,705 visitors. There were 27,446 attendees to commercial and corporate events hosted at the University. A breakdown of where attendees travel from was provided by GCU. This was applied to the number of attendees who stay overnight. Expenditure on University accommodation was deducted from this in order to avoid double counting. In this way the additional spend generated by attendees to open days, conferences and other events at GCU could be estimated. The economic impact of this additional spend is estimated by applying economic assumptions.

## **16.13 Contract Research, Consultancy and CPD**

Universities support local businesses by undertaking contract research on behalf of businesses, providing consultancy services, or providing CPD. It is reasonable to assume that the businesses that commissioned consultancy services, contract research projects or CPD would only have done so if they expected these projects to generate positive returns. Detailed information about the level of these returns is not available for GCU's clients; however, an estimate can be made based on the findings of research from similar activity elsewhere.

BiGGAR Economics has evaluated the economic impact of several knowledge transfer initiatives around the UK<sup>33</sup>. These initiatives have covered a range of different types of engagement from small consultancy projects and access to University equipment and facilities through to company sponsored PhDs. The findings of these studies have shown that businesses investing in these types of activities receive an average direct return on investment of 360%. That is that every £1 invested by businesses generated £3.60 GVA in direct economic benefits.

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<sup>32</sup> VisitScotland, Tourism in Scotland's Regions 2013.

<sup>33</sup> Most recently this has included an economic impact study on behalf of Interface, the organisation responsible for facilitating engagement between industry and Scotland's higher education institutions.

The GVA impact of services provided to businesses by GCU was therefore estimated by multiplying the amount spent by businesses on these services (i.e. GCU's income from these services as reported in the Higher Education Business Interaction Survey) by £3.60. The employment impact was then estimated by dividing the direct GVA impact by GVA/employee in relevant sectors and the indirect effects were captured by applying appropriate multipliers.

## **16.14 Spin-Outs**

The Higher Education Business Interaction Survey (HEB-CI) provides information on the level of employment and turnover of GCU spin-out companies. The economic impact of spin-out companies can then be estimated by multiplying the number of employees in each company by an estimate of the GVA/employee in the relevant sector. The impacts of further spending rounds are captured through the application of appropriate GVA and employment multipliers.

## **16.15 Knowledge Transfer Partnerships**

A strategic review of the KTP programme undertaken in 2010 found that on average, KTPs undertaken in Scotland contributed £713,000 GVA to the Scottish economy, equivalent to an annual impact of £118,800 in the six years after the KTP is completed. It is assumed that the annual impacts for the duration of the project are only 10% of the impacts after the KTP has been completed, as the outputs of the knowledge exchange will not have been realised. The same study found that on average, each KTP projects supports the creation of three jobs.

By multiplying the impacts from this strategic review by the number of KTP projects undertaken by the University it was possible to estimate the economic impact that the KTPs have in each area.

## **16.16 Student Placements**

Students contribute to organisations while studying by undertaking placements. It is assumed that a student will make a contribution to an organisation if the placement is long enough for the organisation to invest in training or provide the student with a project to carry out. As a result, only longer-term placements are considered. The same approach was used for students on health and social care placements and students on placements in other subject areas.

The value to organisations of students is estimated by applying the following assumptions:

- estimating the number of weeks on placements – this is estimated by multiplying the number of students on placement by the duration of the placement; and
- GVA of a student – students on non health and social care placements are assumed to have 38% of the productivity of the average worker in the sector. This is to account for the fact that students will not have the same level of experience and therefore will not have the same productivity. As health and social care students undertake a number of placements and significant practical training they are assumed to have 75% of the productivity of the average worker.

The total GVA impact of placements is then attributed to the study areas, on the assumption that 65% of the impact occurs in Glasgow City and all of the impact occurs in Scotland. Indirect effects are captured by applying appropriate multipliers.

## **16.17 Training Courses**

This impact is estimated by assuming that the value of training to the organisations is equivalent to the cost of the training. The cost of training is estimated as either the cost of the contract or the cost per student multiplied by the number of students on the course. Indirect effects are captured by applying appropriate multipliers.

## **16.18 Business Academies**

This impact was estimated using the same method for contract research, consultancy and CPD.

The GVA impact of the business academies was therefore estimated by multiplying GCU's income from this activity by £3.60. The employment impact was then estimated by dividing the direct GVA impact by GVA/employee in relevant sectors and the indirect effects were captured by applying appropriate multipliers.

## **16.19 Social Returns To Medical Research**

Research by the Wellcome Trust on the value of medical research in the UK considers two types of return: health gains (net of the health care costs of delivering them) and economic gains<sup>34</sup>. This section considers the value of health gains – these are the wider health returns to patients who ultimately benefit from the research.

The value of health gains was assessed in the Wellcome Trust report using the quality adjusted life years (QALY) method<sup>35</sup>. This is a widely used method developed by health economists to assess how many extra months or years of life of a reasonable quality a person might gain as a result of treatment. Although the QALY method is not perfect, it is widely used and is the accepted method of evaluating potential NHS treatments in the UK. The economic value of the QALY improvement delivered by a particular medical intervention can be assessed by considering the opportunity cost of the investment i.e. by considering what level of improvement could have been achieved by investing the same resources directly in frontline services.

The key finding of the report was that the sum of the total health and economic gains of medical research in the UK gave a total rate of return of around 39%. This included an economic return of 30% and a health gain of just over 9%. This means that a £1.00 investment in public/charitable CVD research produced a stream of health benefits thereafter that is equivalent in value to earning £0.09 per year in perpetuity.

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<sup>34</sup> Medical Research: What's it worth? Estimating the economic benefits from medical research in the UK, For the Medical Research Council, the Wellcome Trust and the Academy of Medical Sciences, November 2008

<sup>35</sup> Ibid.

Assuming a discount rate of 5% this implies that over a 20 year period each £1 invested in medical research would deliver a total return of £1.38. The value of the health care gains from medical research was therefore estimated by applying this multiplier to the total value of research undertaken in the School of Health and Life Sciences. This value was then attributed to each of the study areas on a population share basis.