

Commons Science and Technology Committee inquiry into managing IP and tech transfer: Russell Group response

Summary

- The UK is a world-leader in innovation and university-business collaboration, and our comparative advantage derives from excellent research within our world-class universities. It is a myth that the UK is good at research but poor at innovation; the UK's leading universities perform extremely well compared to top international competitors including in the US. Russell Group universities are very successful at commercialising their research and lead the way in producing innovative new spin-out companies and licensing their intellectual property (IP); they employ pioneering IP management methods, reinvest IP income to incentivise further innovation, and build long-term relationships with a full range of businesses including SMEs.
- Technology Transfer Offices (TTOs) and research offices have been integral to these successes, carrying out a range of critical functions which add value to and speed up commercialisation processes. In exchange for protecting IP and providing expert advice and support across a wide range of areas, it is right that universities seek a fair and equitable share of the financial benefits of success in spin-outs and through licensing to reinvest in research, teaching and future commercialisation activity.
- Any suggestion universities and TTOs are focused on short-term returns from IP is misleading. Protecting IP and maximising the chances for a return on investment are not mutually exclusive aims. Universities must cover the cost of the research they conduct, and it is reasonable to require payments for IP generated from university research in order to support further activities. This is not a form of short-term return but a fair and proportionate return on investment for the university's intellectual contribution.
- **In order to maintain the UK's leading position in technology transfer, it is important the treatment of university IP should remain at the discretion of the university.** Being able to vary approaches to IP and commercialisation depending on individual circumstances (e.g. on the nature of the research and company to be spun-out or technology to be licensed) provides the UK with a major competitive advantage. **A single, one-size-fits-all approach to technology transfer would not be fit for purpose and introducing any new regulation in this area would be counterproductive.**
- There remain significant gaps in the UK's funding pipeline to take a research idea through to a final product or service, and existing support mechanisms could be better targeted to support the UK's leading universities in translating research and knowledge into economic benefit to the UK. For example, lifting the cap on HEIF would target the limited resources on those universities best able to deliver the greatest impact. The creation of a proof of concept fund available across the research spectrum could help to address the existing funding gap and drive innovation.

1. Context

- 1.1 The Russell Group represents 24 leading UK universities which are committed to maintaining the very best research, an outstanding teaching and learning experience and unrivalled links with business and the public sector. The aim of the organisation is to help ensure that our universities have the optimum conditions in which to flourish and continue to make social, economic and cultural impacts through their world-leading research and teaching. We

provide strategy, policy development, intelligence, communications and advocacy for our member institutions.¹

- 1.2 Our leading universities are a crucial part of the nation's knowledge base and absorptive capacity for new ideas. **Russell Group universities in particular contribute out of all proportion to their size on key economic measures**, and are highly effective and successful in the commercial exploitation of their research. Our recent publication and film, *Engines of Growth*, demonstrates how research conducted by Russell Group universities gives rise to a range of impressive economic and social impacts.²
- 1.3 **Russell Group universities lead the way in producing innovative new spin-out companies and licensing their IP.** In 2014-15, Russell Group universities accounted for:³
 - (a) 68% of all IP income generated by UK universities (over £106 million)
 - (b) 70% of IP income involving SMEs (excluding software licenses)
 - (c) 59% of all spin-out companies still active after three years
- 1.4 Russell Group universities also significantly outperform other universities in the value of their spin-outs and start-ups, accounting for over 52% of the turnover of all spin-outs and start-ups with some HEI ownership in 2014-15 (a total of £560 million, up 40% on the previous year).
- 1.5 In addition, spin-outs, start-ups and social enterprises formed by Russell Group universities and their academics/ graduates employed nearly 16,000 full time equivalent staff (FTE) in 2014-15.

2. How the UK compares to other markets internationally in technology transfer

- 2.1 **The UK is a world-leader in innovation and university-business collaboration, and our comparative advantage derives from excellent research within our world-class universities.** The UK ranks second out of 143 countries (after Switzerland) in the Global Innovation Ranking – ahead of the US, Singapore and Germany; and fourth in the world for university-business collaboration on R&D.⁴
- 2.2 **The UK's leading universities perform well compared to international competitors in commercialising their research**, spinning off companies, licensing IP and patenting innovative new products and technologies:
 - HEFCE research shows that UK universities produce a similar number of spin-off companies to those in the US per million pounds of research funding, and both produce substantially more than Japanese universities. UK universities also attract a higher share of their research income from industrial sources than those in the US (7.2% in the UK compared to 6.5% in the US).⁵

¹ More details available here: <http://www.russellgroup.ac.uk/>

² Based on an analysis of a sample of Research Excellence Framework (REF) impact case studies from Russell Group universities we found that research underpinning a small sample of case studies resulted in at least £21 billion of wider economic benefits – 100 times the initial investment. See:

<http://www.russellgroup.ac.uk/media/5324/engines-of-growth.pdf>

³ HEFCE HEBCI stats 2014-15

⁴ The Global Innovation Index 2015; World Economic Forum 2016 'Global Competitiveness report 2015-16'

⁵ Research resource per spin-off is the same in the US and the UK (£48m per spin-off). Source: HEBCI survey 2013-14, report on the survey:

<http://www.hefce.ac.uk/media/HEFCE/2014/Content/Pubs/2015/201513/2015-13.pdf>

- The UK and the US represent approximately 72% of all university patent applications, and universities in both countries make the same number of patent applications when controlling for research income.⁶⁷
 - The UK performs better than Switzerland, Germany and France on the number of licence agreements it produces per 1,000 research staff – with 16.3 licence agreements per 1,000 staff versus 12.1, 5.0 and 4.3 respectively.⁸
 - The University Innovation Ecosystem Benchmark developed by the MIT Skoltech Initiative shows that the Universities of Cambridge and Oxford and Imperial College London are among the top ten most highly-regarded university-based technology innovation ecosystems in the world.⁹
- 2.3 **The comparable performance of the UK's leading universities with many in the US is even more impressive considering the distinctly different market conditions within which universities in both countries operate.** It is well known that seed and venture capital funds in the US are more developed than in the UK, and the resulting gap in early stage funding means it can be more difficult for universities in the UK to progress technologies towards commercialisation.

3. How Russell Group universities undertake technology transfer activities

- 3.1 **Universities carry out a number of critical functions to support spin-out companies and licence technology through their Technology Transfer Offices (TTOs), research offices and business development teams.** They provide a central resource of trained and experienced professionals who can provide expert support to their academic and business partners, adding value to and speeding up commercialisation processes. There are a range of ways in which this critical support is provided, all of which require specialist expert legal and commercial understanding. These include:
- Identifying commercial value and evaluating commercial potential to assess the value of the opportunity and recommend the best route to success
 - Helping to raise finance and attract external investment by connecting businesses with highly active potential investors ('business angels') as well as connecting innovators with manufacturers, distributors, co-developers and suppliers overseas
 - Providing coaching, mentoring and training to academics to equip them with the skills they will need in taking forward a business idea
 - Investing internal university seed funds where appropriate to de-risk the technology and help bridge the "valley of death"
 - Providing access to university facilities and dedicated incubation and acceleration spaces to develop technology further
 - Offering specialist legal advice and administrative support which would not otherwise be available
 - Establishing the source, ownership, and consents for the background IP, and registering patent applications and IP, both of which can often be lengthy and expensive processes
 - Negotiating equity, licence and corporate agreements

⁶ http://www.wipo.int/edocs/pubdocs/en/wipo_pub_944_2011-chapter4.pdf

⁷ HEBCI survey report

⁸ See: http://ec.europa.eu/invest-in-research/pdf/download_en/knowledge_transfer_web.pdf

⁹ The University of Cambridge ranks third in the world, Imperial College London fourth and the University of Oxford fifth. Source: Ibid.

- 3.2 In addition, universities also support their students to start businesses by providing entrepreneurship skills, such as IP management, writing a business plan, raising finance and marketing, as well as providing seed funding.¹⁰
- 3.3 **The IP commercialisation process, from idea to revenue, is complicated.** The timescale for protecting and commercialising IP varies and the process can be very costly. Valuation of IP assets can also be extremely challenging due to market uncertainty related to early stage university technologies, including timescales to market, investment needs and avenues to achieving commercially viable outcomes. The support which universities provide is therefore invaluable for guiding non-experts through decision-making processes.
- 3.4 As registered charities, universities are legally obliged to apply their income and property towards the advancement of education and research, and any income generated through commercialisation must be used for the public benefit. **In this context and in exchange for providing expert advice and support across a wide range of areas, it is right that universities seek a fair and equitable share of the financial benefits of success in spin-outs and through licensing to reinvest in research, teaching and future commercialisation activity, and to reward academics appropriately.**
- 3.5 **Any suggestion universities and TTOs are focused on short-term returns from IP is misleading.** Universities are required to cover the cost of the research they conduct, and indeed, where public or charitable funders are involved, generally only receive 80% or less of the full cost of research. Therefore, requirements for royalty payments for IP generated from university research are not a form of short-term return but are instead a return on investment for the intellectual contribution to the company which helps to ensure the financial sustainability of the university. In all but exceptional cases, universities do not receive quick returns from commercialisation and expect to wait for a number of years for a return from investment in a spin-out or from royalties in licensing, if a return is received at all.
- 3.6 Furthermore, where public funders and charity partners are involved, requirements are often placed upon the university to secure a fair commercial return from the exploitation of the IP – something which the university is contractually obliged to do. Seeking a fair return for intellectual contribution and maximising the chances for a return on investment are not therefore mutually exclusive aims.
- 3.7 A number of Russell Group universities offer different options to academics and investors enabling them to decide whether or not to utilise the services offered by TTOs or research offices. Where there is no university involvement in supporting a spin-out, the share of revenues from net royalties is typically reduced to reflect the fact that support services have not been utilised. Decisions by academics and investors not to utilise university support services are however a relatively rare occurrence as the willingness and expertise to help put a spin-out together does not often exist outside of the university.
- 3.8 **Indeed, the number of licensing deals and spin-out investment rounds completed each year by universities shows how often parties reach agreement:** in 2014/15 alone Russell Group universities issued nearly 4,000 non-software licences and created over 75 spin-out companies.¹¹ **Annex A** contains a number of illustrative examples of successful spin-outs at Russell Group universities – all achieved with help from their respective TTOs, research offices and/or business development teams.

¹⁰ For example, in 2014-15, there were over 1,500 active graduate start-ups created by graduates of Russell Group universities employing over 4,300 people.

¹¹ HEBCI 2014/15

4. How the UK's leading universities are pioneering new approaches to IP management and investment

- 4.1 Russell Group universities have led the way in pioneering innovative new models for IP management:**
- (a) **Easy Access IP** makes a wide range of IP available free of charge to businesses and individuals. Easy Access IP was first introduced by the University of Glasgow in 2010 and later adopted by Bristol, Birmingham, Durham, Exeter, and King's College London. By the start of 2015, Easy Access IP had been adopted by 24 universities and research organisations both in the UK and abroad, with positive preliminary evaluation results.¹²
 - (b) A number of our universities provide **accelerator facilities and advice for external emerging businesses as well as staff and graduate start-ups, and spin-outs**, and are extremely effective in supporting start-ups and SMEs.¹³
 - (c) A number of our universities are committed to working with others to develop and **disseminate good practice on technology transfer** both within the UK and abroad.¹⁴
 - (d) Many Russell Group universities have also introduced schemes aimed exclusively at **engaging SMEs in knowledge exchange**, such as Innovation Voucher schemes, and work streams to improve the productivity of SMEs in the local region.
- 4.2 Furthermore, Russell Group universities have helped to pioneer and develop a new approach to early stage technology investment, “patient capital”. This successful model is being copied elsewhere in the world including in the US.** Patient capital “evergreen” funds take a much longer investment time horizon than traditional venture capital companies as they do not have fixed term investment periods. Instead they reinvest any proceeds back into new start-ups and their existing portfolio of companies to make returns over longer, open-ended periods. Investors in patient capital companies are willing to forgo an immediate return in anticipation of more substantial returns further down the road. Adopting this long-term focus is an essential requirement for developing scientific academic start-ups where risks are high and the time-lag from research expenditure to commercialisation can be many years.
- 4.3** Though many evergreen funds have been set up in the UK over the past three decades, **the rise of dedicated, university-associated patient capital businesses is the result of the innovation of UK universities and their TTOs finding a means to fill the early stage funding gap.** The first to pioneer the patient capital model include Imperial College London's TTO which also makes investments in IP developed at, or associated with, the University of Cambridge, the University of Oxford and University College London. For example, Imperial Innovations supported the creation of Circassia Pharmaceuticals PLC, an Imperial College London spin-out which is developing a ‘vaccine’ approach to treating the causes of allergic reactions, using internal patient capital funding as well as attracting private investment. In 2014, Circassia was floated on the main market of the London Stock Exchange, raising £200m, and now employs over 200 people. In 2014, patient capital companies invested more

¹² See: <http://www.ncub.co.uk/reports/easyaccessip.html>

¹³ For example, SETsquared is a collaboration between the Russell Group universities of Bristol, Exeter and Southampton and partner universities of Bath and Surrey, that aims to accelerate the growth of innovation and technology businesses to stimulate economic growth in the regional economy.

¹⁴ For example, the University of Oxford's Oxford University Innovation arm (formerly ISIS Innovations) and the University of Liverpool are collaborating with Aston, Oxford Brookes and Middlesex on learning and development activities for the development of knowledge exchange staff.

into UK start-ups than venture capital, and therefore represent an increasingly important enabling factor in the success of new ventures associated with universities and beyond.¹⁵

5. How to build on the success of leading universities in managing IP and technology transfer

- 5.1 Universities' technology transfer policies reflect specific institutional characteristics such as strengths in different disciplines as well as the surrounding ecosystem. Different spin-out companies vary significantly in their routes to market, the amount of investment required and the market opportunity to address.¹⁶ The current environment enables the UK's leading universities to set their own IP policies and experiment with innovative new approaches to IP management and investment. Such a system has meant our top universities now rival those in the US for their expertise in delivering technology transfer and has led to the development of innovative approaches such as those outlined in the section above.
- 5.2 Existing IP arrangements enable Russell Group universities to engage extensively with business and other private sector funders of research, for example enabling us to attract £907 million in contract research in 2014-15 (75% of the total to UK universities) in addition to collaborative research arrangements where public funding is also involved. This activity directly benefits the UK, attracting vital foreign direct investment, supporting high-value and high-skill research jobs, as well as underpinning the creation of new knowledge and innovations that provide major social and economic benefits.
- 5.3 The variety of approaches to IP management in the UK is extremely advantageous and has enabled the UK to become a world-leading innovation hub that attracts entrepreneurs and FDI. **The treatment of IP can and should vary according to the circumstances depending on the nature of the research and company to be spun-out or technology to be licensed, and the broader environment in which the university is operating. A single, one-size-fits-all approach to technology transfer would not be fit for purpose and introducing any new regulation in this area would be counterproductive.** In turn, this means it is **vital universities should have and maintain autonomy to manage their own IP**, using their expertise to make decisions about how best to spin-out and licence IP in order to drive economic growth. There is evidence that investors value the approach taken by universities to their IP, as it tends to be 'clean' and professionally protected.¹⁷
- 5.4 There are a number of Government initiatives which currently support a wide array of activities leading to innovation and economic impact developed from universities' research and knowledge transfer activities. However, there are a number of ways in which existing mechanisms can be refined in order to leverage maximum impact from our universities' excellent research and innovation activities:
 - (a) **The Higher Education Innovation Fund (HEIF)** is highly effective at developing knowledge-based interactions between universities and businesses. It has enabled universities to build their innovation infrastructure and expertise in technology transfer and should be maintained for the long-term. HEIF is most effective when it is targeted to support research-intensive universities where it can have the greatest effect.

¹⁵ Tony Hickson, 'Patient Capital: A new way of funding the commercialisation of early-stage UK science' (2016): http://www.imperialinnovations.co.uk/media/uploads/files/Patient_Capital_A_new_way_of_funding_UK_Science.pdf

¹⁶ See footnote 13.

¹⁷ Joint response by AURIL and PraxisUnico to the consultation on 'Intellectual assets at the university-business interface: seizing the opportunity'.

- (b) Similarly, **Impact Acceleration Accounts** are valuable sources of funding for knowledge exchange activities, including for vital proof of concept work, and should be expanded and maintained across all Research Councils.
 - (c) A recent evaluation commissioned by Innovate UK of proof of concept funding available to businesses and universities has shown that such funding tends to be fragmented and is not always consistently available. The creation of a **proof of concept** fund available across the research spectrum could help to address the existing funding gap and drive innovation.
 - (d) **University Challenge Funds** were instrumental in promoting collaboration across institutions, attracting private sector investment in university companies, and developing seed funds in universities. Additional tax incentives, building on the past strengths of the University Challenge Fund, would be beneficial to address the gaps in the funding pipeline and take research from conception to commercialisation.
 - (e) In order to drive further private investment in R&D, boosting productivity and economic growth, the eligibility criteria for the **Research and Development Expenditure Credit (RDEC)** could be amended to ensure that all research business conducts with universities is automatically eligible for tax relief. This would incentivise greater business-university collaboration as it would provide a clear guarantee that an RDEC claim will be successful.
- 5.5 Furthermore, current uncertainties in liability for VAT on new research facilities and the supply of research services create unnecessary barriers to collaborations between businesses and universities. Recent interpretation of VAT legislation has hindered equipment-sharing between institutions, businesses, charities and other partners - unless special arrangements such as cost sharing groups are established, incurring a heavy administrative burden. VAT liability on university floor space used for business purposes is a disincentive to co-location of business and university research activities. **It would be helpful for Government to consider how VAT legislation and guidance can be simplified to avoid hindering collaboration between universities and businesses.**

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Annex A – illustrative examples of spin-out companies formed with the assistance of university TTOs, research offices and/or business development teams:

- **NaturalMotion**: an Oxford-based mobile gaming company, NaturalMotion formed as a spin-out to commercialise fundamental blue-skies research into the control of body movement at the **University of Oxford** and was recently sold for £500 million. Oxford's technology transfer arm – Oxford University Innovation (formerly Isis Innovations) – provided initial investment of £25,000 seed funding and worked with the company to develop prototypes for investors. OUI also supported a patent application, which was granted in 2012, and introduced NaturalMotion to further investment from business angels.
- **Solexa**: a **University of Cambridge** spin-out from the Department of Chemistry, Solexa, offers genome sequencing that costs as little as \$1,000 per genome. Solexa was acquired in 2007 for \$600 million by San Diego-based Illumina, which holds 80% of the world market share of gene and genome sequencing technology. Solexa-Illumina has generated an annual turnover of over £750 million from an initial public investment in basic research of only £275,000. Use of the technology has the potential to have a profound impact on human health allowing the sequencing of rare cancers to be mapped for more effective treatment.
- **MTEM Ltd**: the **University of Edinburgh**'s School of GeoSciences developed an electromagnetic method to detect sub-sea and underground hydrocarbons. Edinburgh Research and Innovation (ERI), the University's commercial arm assisted MTEM's founders in winning a Scottish Enterprise proof of concept award, provided support for patent applications and facilitated connections with potential venture capitalists. In November 2004, MTEM Ltd was launched from the University of Edinburgh with £7.4 million of funding from three investors. After completing the first commercial marine survey in the North Sea, Petroleum Geo-Services (PGS) bought MTEM Ltd. for \$275 million. MTEM was the biggest-ever spin-off company from a Scottish University, the University of Edinburgh's share of the sale was £8.6 million, of which £2.6 million funded 164 PhD studentships.
- **Nanoco**: a **University of Manchester** spin-out company Nanoco has developed pilot scale-up operations for quantum dots for display applications allowing energy efficient lighting and televisions, which are being carried out by industrial partners such as Dow Chemicals. The spin-out received funding from several sources, including the Manchester Technology Fund, a seed investment fund operated by the University of Manchester, which provides early stage equity funding to university spin-out technology companies. Nanoco has global partnerships with companies and headquarters in Manchester where its R&D facilities are located. By 2013, Nanoco had a market capitalisation value of £384 million.
- **Permasense Ltd**: An **Imperial College London** team developed new pipe-corrosion technology to improve safety in the oil and gas industry. Imperial Innovations patented the IP and formed a company, Permasense, to manufacture and market the technology. These products are now used in refineries around the world, including all BP oil refineries.
- **Biovex**: In 2011 Biovex, a spin-out company originating from **University College London**, was acquired by US Biotechnology company Amgen Inc. in a deal worth \$1 billion. The company, initially known as NeuroVex, was spun out from UCL with initial funding identified and secured by UCL from one of the UK's foremost biotechnology entrepreneurs. The company has since completed Phase III studies on its anti-cancer vaccine targeting melanoma and has submitted a Biological License Application to the US FDA awaiting product approval.
- **Ultrahaptics**: A **University of Bristol** spin-out, Ultrahaptics uses ultrasound waves to put feeling into touchless interfaces. The spin-out was supported by the University's Research and Enterprise Development (RED) team who evaluated the IP and market potential for the technology, and provided further support through an EPSRC Impact Accelerator Award to develop a prototype and conduct further market research. Together, RED and the research team fleshed out a business plan, filed the first patents and started to engage with potential customers. Ultrahaptics also received support from the Bristol SETsquared Centre – the University's award-winning business incubator. By 2016, Ultrahaptics employed 40 members of staff.
- **Alesi Surgical**: A spin-out company founded on the innovative research work of Dr Neil Warren at **Cardiff University**, Alesi has developed and launched Ultravision, a revolutionary electrosurgical smoke clearing

system for use in laparoscopic surgery. Ultravision was developed via funding received from Cardiff University's University Challenge Fund (for early proof of concept work). Distribution agreements have been established to supply the laparoscopic surgical smoke handling system to hospitals in the UK, Germany, France, Italy, Sweden, Denmark, Norway, Austria, Switzerland, the Benelux countries and Ireland. Ultravision will be offered to approximately 40% of the European population. The technology won the prestigious Royal College of Surgeons' Cutlers' Prize for the best surgical innovation in March 2014.

- **Synairgen:** A respiratory drug development company spun-out of the **University of Southampton**, Synairgen struck a deal potentially worth up to \$232 million with AstraZeneca to co-develop an asthma drug, code-named SNG001. Synairgen received strong support by university-identified investor I2IPO Group PLC and Southampton also assisted the company with filing its first two patents. SNG001, an inhaled interferon beta medicine, is based on technology developed by academics at Southampton. Synairgen has been floated on London's Alternative Investment Market.
- **Locate Therapeutics:** A company spun-out of the **University of Nottingham**, Locate Therapeutics has announced the completion of an equity investment from the precious metal and technology group, Heraeus Holding as part of a multi-million pound funding package. Locate Therapeutics has developed a material which can be squirted into broken bones, which hardens within minutes creating a biodegradable scaffold which the bone is then able to grow over. The company's funding package includes a grant of £1.4 million from Innovate UK, funding from the Wellcome Trust and the University of Nottingham, which has helped the company to develop TAOS™ a patented platform polymer technology with multiple medical applications.
- **Warwick Effect Polymers:** A technology spun out of the **University of Warwick** can grow polymers (plastics) cheaply and easily, to specific designs under precise control. The technology, known as Living and Controlled Radical Polymerisation, is now being tested by major companies for use in a range of products as diverse as hairspray, anti-obesity drugs and inkjet printer ink. The spin-out company commercialising the technology, Warwick Effect Polymers Ltd, has generated revenues of more than £8.5 million annually.
- **Tracsis:** A **University of Leeds** spin-out company, Tracsis, was formed in 2004 to commercialise software to tackle train crew scheduling issues. Since 2008, the software has been used by bidders in all UK rail franchise tenders and is used by 70% of the train companies currently operating in the UK as well as operators in Sweden, Australia and New Zealand. Rapid expansion through acquisition has led to a portfolio of activities that now covers operations systems, traffic management and hardware for asset condition monitoring. The company's success led to floatation on the London Stock Exchange in November 2007, achieving a market capitalisation of nearly £140 million (August 2016) and an annual turnover in excess of £32 million. The company has received multiple awards, including the UK Stock Market Award for Best Technology Plc (2015).
- **Applied Graphene Materials:** Over the course of four years **Durham University's** TTO, Business Engagement (BE) Team, and Research Office (RO) combined efforts with external investors to convert research into graphene synthesis into an AIM listed company, Applied Graphene Materials PLC (AGM). Durham TTO staff worked with academics to protect the IP, create a business plan, raise investment, and (via an embedded TTO Director) build a properly functioning business. In addition to this, the BE team and RO provided assistance to nurture collaborations between the University, AGM and other businesses. This directly secured a £2 million research grant into the University in 2012 involving AGM, P&G and Dyson. AGM Plc listed on AIM in 2013 and has raised investments totalling over £20 million. It maintains strong links with Durham University and employs 50 people at its manufacturing plant in Redcar in the North of England.
- **Simpleware:** A University of Exeter spin-out has been acquired by Synopsys the world's 15th largest software company. Simpleware was founded in 2000 by Philippe Young Professor of Mechanical Engineering at University of Exeter to model the effect of impacts/ accidents on the human body. The outcome was a technology that converts 3D scans into detailed CAD models with a range of applications in the life sciences, consumer products, mil-aero and oil and gas industries. Simpleware won consecutive Queen's Awards for Enterprise in 2012 and 2013, recognising its innovation and overseas business. The University retained a small shareholding in the company and supported the company throughout its development.