



UNIVERSITY OF
CAMBRIDGE
enterprise

Annual Review 2013

From the Pro-Vice-Chancellor (Research)



Professor Lynn Gladden

In Cambridge, we are committed to achieving excellence in research and scholarship, and to ensuring that our research contributes to the well-being of society. The excellence and diversity of our research means that in addition to our strength in

fundamental research, we are well-placed to make significant contributions to the economic growth of the UK.

Cambridge is Europe's leading technology cluster, and the University is at its heart. The 1,500 companies in the cluster have a combined annual turnover of £13 billion and employ more than 57,000 people. The constant exchange of ideas between the University and the companies in and around Cambridge is one of the many characteristics that makes the cluster so successful.

At Cambridge, we give individuals the freedom to pursue their research objectives, while simultaneously giving them the opportunity to work together on global challenges, through programmes such as our Strategic Research Initiatives and Networks, which are harnessing researchers' skills and expertise, resulting in ground-breaking developments and enhancing real-world impact.

This approach means that we cannot predict where or how the next big discovery will come, but we are best placed to develop and commercialise game-changing innovations when they arise. Continued government support and funding of fundamental research is vital to ensure that the UK continues to be a world leader in using the ingenuity and creativity in its universities to find solutions to the problems facing our world.

Professor Lynn Gladden
Pro-Vice-Chancellor (Research)
University of Cambridge

From the Chief Executive



Dr Tony Raven

Cambridge Enterprise exists to help ensure that University research achieves a real and meaningful impact on society, whether through new innovations for industry and society, the creation of new companies, or sharing University expertise

with partners in industry, government and the non-profit sector.

This has been a remarkable year for Cambridge Enterprise, marked by the largest ever realisation for our seed funds from the \$95 million sale of BlueGnome to Illumina. The University's proceeds have been returned to our seed funds, so that they can support the next generation of companies: last year, Cambridge Enterprise invested a record £2.27 million in University spin-outs, more than triple the amount invested in 2011/12. In addition, the launch of Cambridge Innovation Capital means that we now have the means to support Cambridge companies from proof of concept all the way to exit.

Other highlights for the year include the \$11 million investment secured by XO1, which is developing a revolutionary new treatment for thrombosis; sales of the quantum modelling software CASTEP passing \$30 million; and the total amount of follow-on funding raised by our portfolio companies exceeding £1.25 billion. In addition, Cambridge Enterprise's engagement of researchers in the arts, humanities and social sciences has resulted in some of our largest consultancy contracts.

I would like to thank our academic colleagues and business partners as well as the Cambridge Enterprise team and our directors, for their enthusiasm for ensuring the continuing and future impact of Cambridge research.

Dr Tony Raven
Chief Executive
Cambridge Enterprise Limited

Industry partners

The University's research, reputation and expertise carry enormous value the world over. This can be seen in the calibre of our industrial partners, who work with our researchers to find solutions to business problems, or help develop Cambridge research into products with real impact. Some of the companies we are working with include:



DOW CORNING



TOSHIBA
Leading Innovation >>>



Key performance indicators

Cambridge Enterprise is responsible for the commercialisation of University of Cambridge research. The company delivers its mandate through three overlapping business units: technology transfer services, consultancy services and seed fund services. Over the past financial year, Cambridge Enterprise achieved the following:

£8.9 million

operating income from licensing and consultancy transactions, of which £7.3 million was returned to the University, academics and departments

517

disclosures

comprising 124 IP disclosures, 313 consultancy disclosures and 80 new business ideas

109 licences

signed, 76 for commercial purposes and 33 for other purposes, including research licences

802 active agreements

under management, including 259 research licences

204 patent applications

filed, of which 32 were priority applications, 39 were PCT applications and 133 were national applications

£1.3 billion

in follow-on funding raised by Cambridge Enterprise portfolio companies since 1995

Over 1,200 researchers

supported by Cambridge Enterprise, at all stages of the commercialisation process

£7.7 million

equity realisation from the sale of BlueGnome, a 93x return on the University's investment

3.6x return

on investment made by the University seed funds since 1995

22% increase

in signed consultancy contracts over 2011/12, worth a total of £5.3 million

£7.5 million

in translational funding won by researchers with the support of Cambridge Enterprise

£1.3 million

invested in patents and proof of concept by Cambridge Enterprise

Towards the 'holy grail' of anticoagulant drugs

\$11 million in funding has been secured by a new Cambridge spin-out to develop a revolutionary new drug for thrombosis, a condition which causes heart attacks and strokes.

A new spin-out company from the University of Cambridge and Addenbrooke's Hospital, XO1 Ltd, raised \$11 million in funding this year to develop a new anticoagulant drug that has the potential to save millions of lives by preventing heart attacks and strokes without causing bleeding.

The funding, from leading life science investor Index Ventures and Cambridge Enterprise, is being used to develop ichorcumab, an antibody invented by researchers from the University and Addenbrooke's, part of Cambridge University Hospitals. Ichorcumab targets thrombin, the enzyme responsible for blood clotting.

"This is the most exciting drug candidate I have seen in 20 years in the industry," said Dr David Grainger, Venture Partner at Index Ventures and Chief Scientific Officer of XO1 Ltd. "It has the potential to save millions of lives."

Anticoagulants, such as warfarin and the newer generation of drugs that directly target thrombin and another coagulation factor (fXa), are widely used to prevent thrombosis, a major cause of heart attacks and strokes. However, as blood clotting is essential to prevent excessive bleeding, the use of these drugs is limited by the bleeding side-effects that they cause. An anticoagulant drug which does not cause bleeding is considered the 'holy grail' in this area of research.

"Undoubtedly higher doses of these anticoagulant drugs could prevent the majority of heart attacks and strokes," said Dr Trevor Baglin, Consultant Haematologist at Addenbrooke's. "But we can't give higher doses because the bleeding they would cause would itself be fatal. Ichorcumab has the potential to change all that."

Ichorcumab is a synthetic antibody based on a naturally occurring antibody found in a patient at Addenbrooke's in 2008. "This patient arrived in A&E with a head injury, and we rapidly discovered a degree of anticoagulation consistent with severe haemophilia," said Dr Baglin, who treated the patient in question. "We thought it might be fatal. But to our surprise the bleeding stopped quite normally."

The observation led Dr Baglin – and his colleague Professor Jim Huntington at the University's Cambridge Institute for Medical Research – to design a synthetic version of the antibody in the patient's blood that was responsible for this extraordinary anticoagulation.

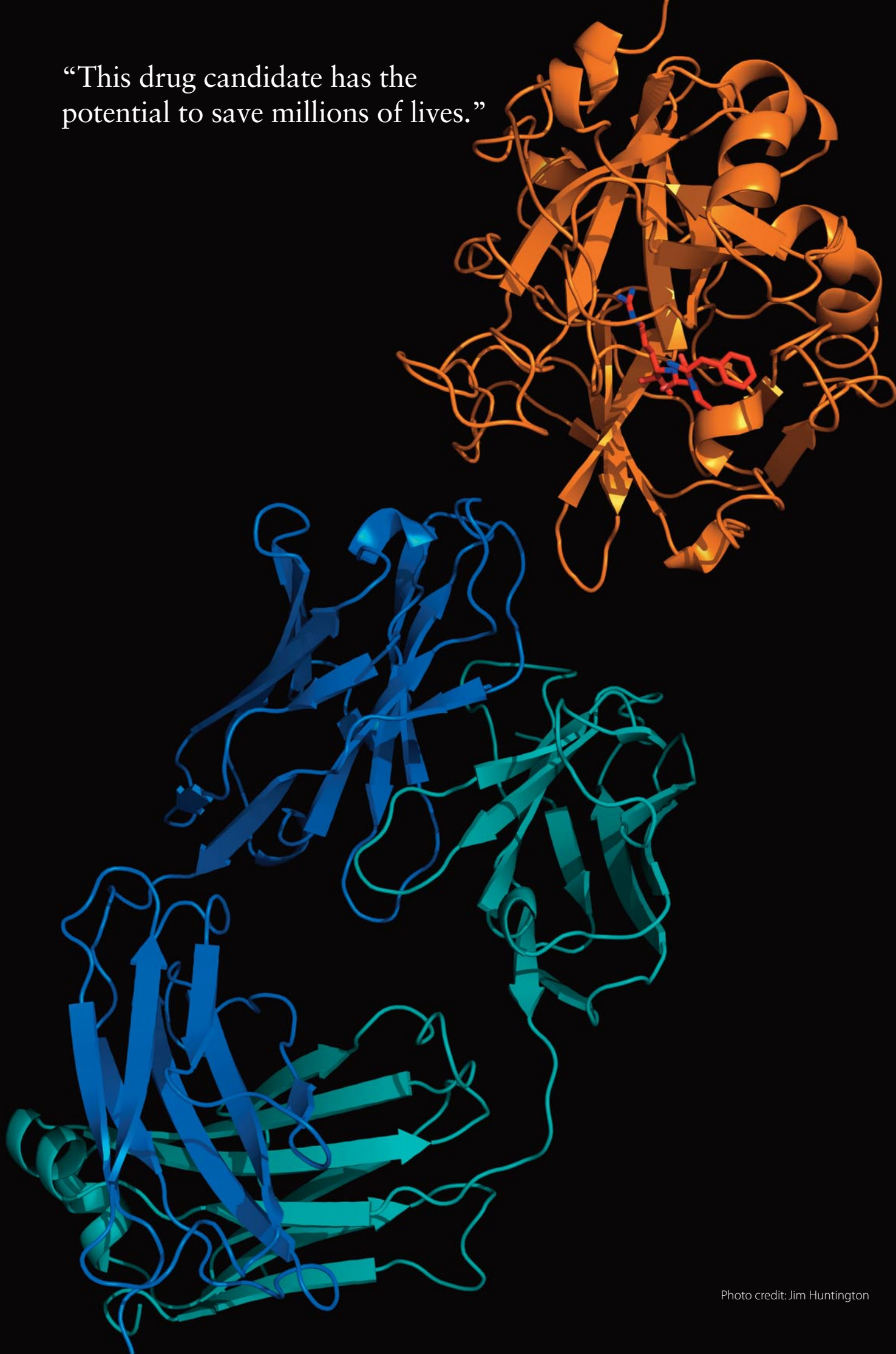
"This antibody can deliver a high degree of anticoagulation without increased bleeding: something we've never seen before," said Professor Huntington.

The investment in XO1 will be used to complete the preclinical development of ichorcumab, and to manufacture substantial quantities of the antibody. "We expect to begin trials in human volunteers within two years," said Dr Grainger.

"This represents the largest investment in a life science company by Index Ventures to date, underlining the transformative potential we see in this drug candidate," said Kevin Johnson, Partner at Index Ventures.

Cambridge Enterprise funded the inventors to carry out proof of concept work and commissioned the first developmental batch of ichorcumab, and put the appropriate licence agreements in place. Additionally, Cambridge Enterprise's seed funds invested in XO1 alongside Index Ventures.

“This drug candidate has the potential to save millions of lives.”





The University of Cambridge is the initiator and leader of a revolutionary new open innovation project taking place at the Stevenage Bioscience Catalyst, enabling researchers and industry to work together to develop new treatments.

Fluorescent light micrograph of a section through a spinal cord affected by multiple sclerosis (MS)

New collaborations with industry

Cambridge is the first university to establish a programme of scientific open collaboration with GlaxoSmithKline and other partner organisations, in order to advance drug discovery and the development of new medicines.

Revolutionary treatments which could alleviate pain in people with hypersensitivity to heat, provide a new regenerative therapy for multiple sclerosis (MS) sufferers, and relieve symptoms in those with cat and dog allergies, are being developed by University of Cambridge researchers at Stevenage Bioscience Catalyst (SBC), the UK's first open innovation bioscience campus.

First announced in 2012, the programme gives University researchers access to the drug development expertise of GSK, Johnson & Johnson, and other pharmaceutical companies, while giving industry access to Cambridge research and know-how, in order to accelerate the development of new medicines.

SBC brings together academia and industry with the goal of developing new innovations in the life sciences through collaboration. A key element of the open innovation environment fostered through SBC is enabling scientific exchange to flourish without the need for exclusive research collaboration agreements between partners. The open innovation model allows Cambridge scientists to freely interact with other pharmaceutical, biotech and contract research organisations, SBC tenants and academic institutions.

There are now three University research projects in place at SBC. Professor Peter McNaughton is working on a novel approach to alleviating the pain associated with heat. Billions of dollars are spent each year on the treatment of pain, but there is currently no effective treatment for the extreme pain associated with hypersensitivity to heat.

Professor Robin Franklin of the Wellcome Trust-Medical Research Council Cambridge Stem Cell Institute is developing a new regenerative therapy

for MS, which affects almost 100,000 people in the UK, 400,000 in the US, and several million worldwide.

The research of Dr Clare Bryant of the University's Department of Veterinary Medicine has identified how the most common cause of severe allergic reactions to cats, the Fel d 1 protein, triggers an allergic response. At SBC, Dr Bryant and her team will build on this research to develop new therapies for allergic asthma.

"This is a groundbreaking approach to early stage drug discovery, which is typically enormously time-consuming and expensive," said Professor McNaughton. "The exchange of scientific ideas and overall atmosphere of collaboration at SBC can help us as researchers, as well as our industrial colleagues, become more efficient in developing new ideas which will lead to better drugs and improved clinical treatments."

Cambridge is the first university to establish this type of arrangement. Recently, the University, in a bid led by University College London, was awarded a share of £50 million in funding from the Higher Education Funding Council for England (HEFCE) to enable the two universities to work together at SBC, in part to establish a range of collaborative training programmes to develop the next generation of entrepreneurial researchers, particularly in drug discovery. The collaboration is directly supported by the National Institute for Health Research University College London Hospitals' Biomedical Research Centre, and will be further expanded through UCL Partners.

Cambridge Enterprise is managing the University's relationship with SBC. It is anticipated that between three and five University research projects will be located at SBC at any one time.

Supporting and sustaining growth

With its new funds, Cambridge Enterprise is now able to provide financial support to help new businesses from proof of concept to exit.

The most successful technology companies and inventions have often come – and will continue to come – from fundamental, curiosity-led research. Although taking an idea from the laboratory and translating it into a successful product or business is a long and complex process, Cambridge Enterprise has now built the funds and support needed by spin-outs from the very earliest stages all the way to exit.

At the start of this journey, Cambridge Enterprise's **proof of concept** fund provides early stage support for inventions, and also supports translational funding schemes. In 2012/13, Cambridge Enterprise supported 73 applications, 36 of which were successful. This funding is supporting researchers developing solutions for cancer, diabetes and MS.

Cambridge Enterprise can then support University entrepreneurs through the process of creating a new business around their research, by helping them build the commercial teams and raise the necessary finance to develop new products and companies.

To help the company leave the laboratory, Cambridge Enterprise can provide **seed funding** to Cambridge companies, typically in amounts of up to £500,000 from the University seed funds and the University of Cambridge Enterprise Fund, which is backed by alumni and friends of the University.

For the year ended 31 July, the University funds approved 11 investments totalling £2.27 million, more than triple the amount invested in 2011/12.

The Cambridge Enterprise team works with its portfolio companies to help them secure later stage funding, whether that is through existing relationships with co-funders, long-running programmes such as the Cambridge Enterprise Venture Partners, or new initiatives like Cambridge Innovation Capital.

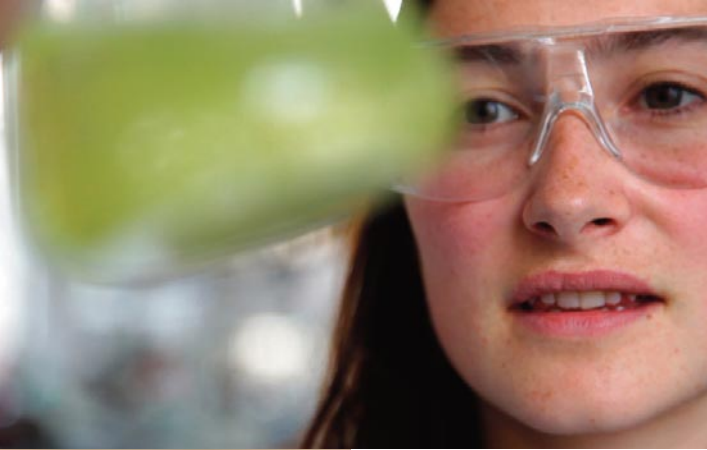
Cambridge Innovation Capital (CIC) is a new £50 million investment business which has been established, with the support of the University, Invesco Perpetual, Lansdowne Partners, ARM and other partners, to provide long-term finance that will help companies bridge the critical middle stage of commercial development, the so-called 'valley of death'.

Finally Cambridge Enterprise now has substantial resources to help the most promising companies as they grow. CIC will invest, with a long-term perspective, in University spin-outs and other companies in the Cambridge Cluster – removing the pressure to deliver the early exits associated with the traditional venture capital model. With this final piece of the puzzle, the University has put in place a funding route that will support the best companies all the way from start-up to exit.

"With the launch of CIC, the University and our co-investors are taking an important step in supporting the continued economic growth of the region and the country," said Professor Sir Leszek Borysiewicz, the University's Vice-Chancellor.



There are currently
1,500+
 TECHNOLOGY-BASED
 FIRMS in
 the CAMBRIDGE cluster



57,000
 ARE
 EMPLOYED

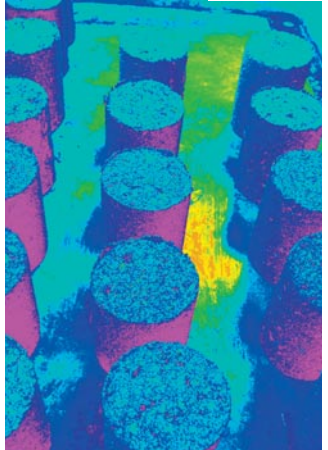
With the first £50 million in funding from Cambridge Innovation Capital, the University can now provide financial support to young companies from proof of concept through to exit.



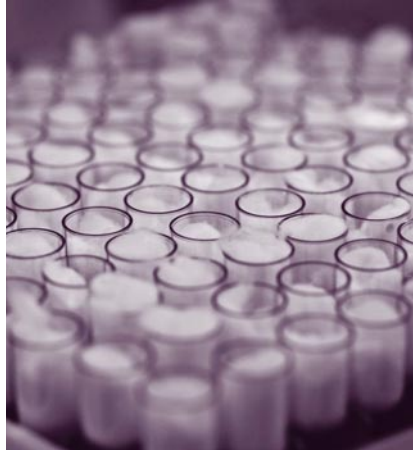
£13+ BILLION
 TOTAL REVENUE



£1.3bn
 FOLLOW-ON FUNDING
 raised by
 UNIVERSITY OF CAMBRIDGE
SPIN-OUTS
 in the Cambridge Enterprise portfolio



80%
 ...the THREE-YEAR SURVIVAL RATE of
 CAMBRIDGE ENTERPRISE INVESTMENTS
 (compared to 58% nationally)





Researchers from the University's Institute of Criminology are supporting police forces implement evidence-based policing policies, which can cut violent crime rates in half.

Photo credit: Fred Hoogervorst

An ounce of prevention

A large-scale policing experiment in Trinidad and Tobago has shown that ‘hotspot policing’ – tightly managing the number, location and frequency of police patrols – can reduce violent crime rates by 50%, simply by concentrating police resources where and when they are needed most.

An evidence-based approach to policing, developed and championed by researchers at the University of Cambridge, is transforming the nature of police work in communities around the world, including the small Caribbean nation of Trinidad and Tobago.

In a country where the homicide rate is approximately 40 times higher than that of England and Wales, and few crimes ever result in prosecutions and convictions, the Trinidad and Tobago police force needed to consider a major strategic shift in order to lower crime rates.

Stephen Williams, Trinidad and Tobago’s acting police commissioner since August 2012, learned about hotspot policing and how it can reduce crime rates, while he was a student in the University of Cambridge’s Police Executive Programme.

Through Cambridge Enterprise’s consultancy team, the Trinidad and Tobago Police Service contracted with Professor Lawrence Sherman to train over 200 police leaders in evidence-based policing, through lectures, seminars, discussions, research projects, data management, supervisions and examinations.

The most important aspect of the project is a randomised control trial to demonstrate and implement evidence-based policing in 40 police districts across the country. Each of the districts was paired with its most similar district, based on the number of serious violent crimes, such as homicides, shootings and armed robberies. In each of the 20 pairs, one was randomly assigned to implement the new system of policing, and the other continued with the previous approach.

“The basic idea is if you put more patrol time into hotspots where most crimes occur, crime will go

down in those hotspots,” said Professor Sherman, Director of the University’s Institute of Criminology, its Lee Centre of Experimental Criminology and its Police Executive Programme. “But the criticism of this approach has always been that you don’t know if you’re causing the crime to go down, or if you’re just pushing the crime someplace else.

“The best way to test that, which has never been done before, is to take a district with between 50,000 and 100,000 people and eight to ten hotspots, and increase patrol in the hotspots. If patrol just pushes crime around, then it’s likely to get pushed to another hotspot.”

Evidence-based policing has been demonstrated as an effective way to reduce crime rates in 25 different experiments worldwide, but never at the scale of the Trinidad and Tobago project. By selecting the high-priority focus for police resources, testing what makes the most difference in those hotspots, and tracking the results so that there is real accountability for shift commanders, evidence-based policing can make a huge difference in crime rates, especially in a country where regular police patrols are not the norm.

Early results from the experiment are extremely promising. In November 2013, results from the first two months of the experiment showed that shootings and homicides had been cut almost in half in the districts using evidence-based policing.

“We don’t see our work as a process of getting people to memorise things; we see it as a process of getting people to understand,” Professor Sherman said. “This is the way that organisations should be learning, and the University has a definite role to play in that.”

The need for speed

The adoption of the ‘Inerter’ – a component in vehicle suspension systems that helps cars take corners faster without losing control – is now being expanded from Formula 1 to other types of motor sport, and could be used in railways in future.

The Inerter, which was kept a closely guarded secret for many years, is now a standard component on most Formula 1 cars. The device, a third component in passive suspension systems, allows drivers to take corners at higher speeds without coming off the track. It was first used competitively in the 2005 Spanish Grand Prix which Kimi Raikkonen won for McLaren.

The Inerter grew out of research on mechanical networks and suspension systems, started more than 20 years ago by Professor Malcolm Smith of the University’s Department of Engineering. In the 1990s, he worked with the Williams Formula 1 team on active suspension systems, which proved so successful that they were eventually banned. Following the ban, Professor Smith started looking at the fundamentals of passive suspension. Building on electrical theory first devised in the 1930s, he set out to determine what the optimal impedance would be for a suspension system, without a separate power source inside the circuit.

Standard suspension systems are based around two components – springs and shock absorbers, or dampers. Together, these components absorb and dissipate energy in order to improve a vehicle’s ride and handling. Even in Formula 1 cars, where passenger comfort is not as important as in domestic vehicles, standard suspensions are tuned in such a way that there is a constant trade-off between sensitive handling, which requires a harder suspension, and good mechanical grip, which requires a softer suspension.

Professor Smith realised that this poor trade-off between handling, comfort and grip could be

resolved if a third type of component was added to the suspension system to make it more flexible: the Inerter.

At first glance, the Inerter looks like a conventional shock absorber, with an attachment point at each end – one end may be attached to the car body and the other to the wheel assembly. A plunger slides in and out of the main body of the Inerter as the car moves up and down. This causes the rotation of a flywheel inside the device, which is designed in such a way that the force between the attachment points is in proportion to their relative acceleration.

In combination with the springs and dampers, the Inerter reduces the effect of the oscillations, helping the car retain a better grip on the road.

The device was patented by Cambridge Enterprise in 2001, and licensed exclusively to McLaren, who completed extensive testing on the device before using it in competition. Confidentiality restrictions associated with the original licence were lifted in 2008, and the device was then licensed to Penske Racing Shocks to provide Inerters to other Formula 1 teams.

Penske have since begun supplying Inerters to other motor sports, including IndyCar, where they have been used since 2012.

Professor Smith’s group has also been developing Inerters which are of much lower cost than those used in motorsport. These devices show great potential for railway suspension systems, where they would reduce wear on the tracks and wheels, lowering costs for the carriers, while providing a more comfortable ride for the passengers.

First developed at Cambridge, the Inerter is used in Formula 1 and other motorsports – helping drivers take corners at speed without losing control.



The University's proceeds from the sale of BlueGnome will be used to support the next generation of Cambridge spin-outs.



Improving IVF success rates

Having developed a technology that can improve IVF success rates by 65%, in just over ten years BlueGnome has gone from a two-person start-up to one of the region's biggest success stories. This year, the US-based genetic analysis company Illumina, Inc acquired BlueGnome for \$95 million.

Cambridge graduate Dr Nick Haan founded BlueGnome in 2002, together with Graham Snudden. While at Cambridge, Dr Haan developed algorithms to improve the analysis of data in the life sciences; these were used to analyse data from DNA microarrays, allowing data analysis to be automated, saving time and reducing human error in the process.

The initial funding to support the company came from the University Seed Funds, which are managed by Cambridge Enterprise. The University's proceeds from the sale, representing a 93x return on its original investment, will be used to support the next generation of Cambridge spin-outs.

"I think the key to our success has been to take know-how from the University and immediately put it on a commercial footing," says Dr Haan. "Not to look for investment to build something up in a way that would constrain us later, but to immediately get the customers and try to find out where they thought we could add value.

"We had a very fast technology, so we looked for an application where speed and sensitivity was more important than resolution, which is how we got involved in in vitro fertilisation (IVF). The greatest cause of IVF failure is whole chromosome imbalance. Currently, embryos are cultured outside the body of the mother for up to six days before implantation. Genetic testing frequently occurs late on the fifth day, leaving as little as 12 hours to obtain a result. We found a piece of the market where we were able to solve a problem."

Around half of all human embryos stop developing before the blastocyst stage on day five of the

process. As a result, many patients undergoing IVF treatment are implanted with many embryos at once, increasing the likelihood of potentially risky, multiple pregnancies.

In order to reduce the number of multiple pregnancies, some IVF clinics instead use single embryo transfer (SET). The global adoption of SET is still limited, and its overall lower pregnancy rate underscores the need for improved screening techniques with which to select the best embryo for transfer.

In close collaboration with IVF centres, BlueGnome developed its 24sure platform, which allowed technicians to count the chromosomes within a single cell in 12 hours, thereby helping to identify those embryos with the best chance of leading to healthy pregnancies and live births. Whole chromosome abnormality (aneuploidy), where the wrong number of chromosomes is present, is a major cause of miscarriage and IVF failure.

Aneuploidy rates can be up to 40% in young patients, and over 70% in patients over the age of 40. In several clinical studies, BlueGnome technology has been shown to increase IVF success rates by 65% when compared to current methods. The company's products are supplied to hospitals, specialist genetic centres, and IVF clinics in more than 40 countries.

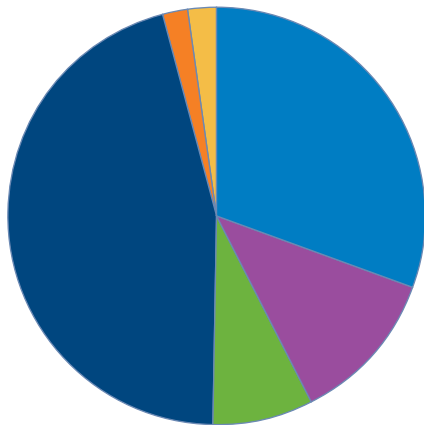
The success of BlueGnome's business model and products has led to numerous accolades and awards, including the International Trade category of the Queen's Award for Enterprise, the UK's most prestigious business award.

Financial performance

Economic impact from research

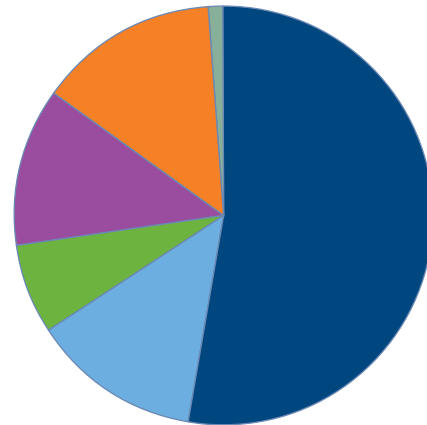
Total group income from licensing, consultancy and equity transactions in 2012/13 was £16.6 million, of which £15 million was or will be distributed to academics, departments and others, or returned to the University seed funds, to recognise their contributions, encourage their further participation in knowledge transfer and support the next generation of Cambridge entrepreneurs.

Distribution of group income 2012/13



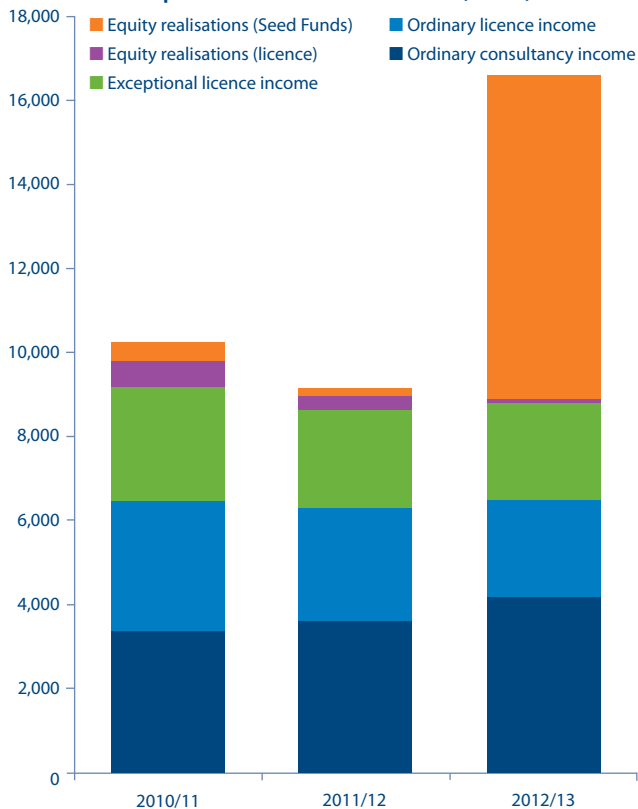
- Distributions to academics and others
- Distributions to departments
- Investment in patent assets and proof of concept
- Returned to Seed Funds
- Support for group
- Charitable donation to the University

Income distribution by School 2012/13

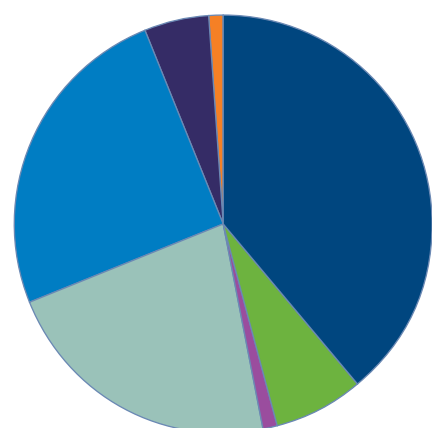


- School of Arts and Humanities
- School of Biological Sciences
- School of Clinical Medicine
- School of Humanities & Social Sciences
- School of Physical Sciences
- School of Technology
- Other

Group income 2010/11 – 2012/13 (£'000)



Sources for 2012/13 operating costs (including investment in patent assets)



- Margin contribution from consultancy & licensing services – ordinary
- Margin contribution from consultancy & licensing services – exceptional
- Margin contribution from equity realisations
- Grant funding
- University funding for services
- Fees for fund management
- Other income

Financial performance

Group income & expenditure summary

Year to 31 July 2013

	2012/13 £'000	2011/12 £'000	2010/11 £'000
Group income:			
Income generated from activities (ordinary)	6,485	6,292	6,465
Income generated from activities (exceptional)	2,531	2,358	2,711
Equity realisations (exceptional)	7,766	476	1,044
University & HEIF funding	1,735	2,081	1,782
Fees for services	599	495	325
Other income	120	39	134
Total group income	19,236	11,741	12,461
Group costs, IP investments & distributions:			
Operating costs (staff costs, other costs & interest payable)	(2,897)	(2,908)	(2,656)
Investment in IP assets (patent & proof of concept)	(1,276)	(1,044)	(1,070)
Distributions to academics & others	(5,138)	(4,948)	(5,781)
Distributions to University	(2,201)	(2,423)	(2,417)
Returns to University Seed Funds	(7,680)	(162)	(429)
Total group costs, investments & distributions	(19,192)	(11,485)	(12,353)
Net income/(expenditure) for the year	44	256	109

Group accounts

The group income & expenditure summary comprises consolidated results for Cambridge Enterprise Limited and its wholly owned subsidiary company, Cambridge University Technical Services Limited, presented in a management accounts format.

Equity managed by Cambridge Enterprise

	Total £'000
Investment valuations as at 31 July 2013	13,865
Investment valuations as at 31 July 2012	19,129
Equity realisations for the year to 31 July 2013	7,766

£5.1 million
returned to University
researchers

£1.9 million
returned to University
departments

£7.5 million
in translational funding won
by researchers with the
support of Cambridge
Enterprise

Equity portfolio

Biotech



Clean tech



Diagnostics



Equity portfolio

Industrial apps/clean tech



CamSemi



Cambridge Superconductors Ltd



Fibrecore Developments Ltd



Paramata



Q-Flo Ltd



TeraView



Medtech

CAMBfix

Clinical & Biomedical
COMPUTING LTD

Inotec AMD LTD

Other healthcare

Microbial Technics Ltd

Other technology (including software)

Advex Corporation



CEDAR 

iLexIR
NLP Consultancy

INPUTDYNAMICS

Jukedeck



The CRISP Consortium Ltd

Governance & structure

Cambridge Enterprise is a wholly owned affiliate of the University of Cambridge.

Board of Directors

Chair

Edward Benthall

Non-Executive Directors

Dr Alan Blackwell	Reader in Interdisciplinary Design
Charles Cotton	Cambridge Phenomenon Limited
Professor Lynn Gladden	Pro-Vice-Chancellor (Research)
Dr Mike Lynch	Non-Executive Director
Professor Florin Udrea	Professor of Semiconductor Engineering

Executive Directors

Dr Tony Raven	Cambridge Enterprise Limited
Dr Richard Jennings	Cambridge Enterprise Limited

Company Secretary

Registry	University of Cambridge
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Nominated Officer of the Shareholder

Director of Finance	University of Cambridge
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Investment Committee

John Lee	Chair
Professor Gehan Amaratunga	1966 Professor of Engineering
Charles Cotton	Cambridge Phenomenon Limited
Laurence Garrett	Highland Capital Partners LLC
Dr Hermann Hauser	Amadeus Capital Partners Limited
Derek Jones	Babraham Bioscience Technologies Limited
Dr Henry Kressel	Warburg Pincus LLC
Professor Chris Lowe	Professor of Biotechnology
Sir Keith Peters	Emeritus Regius Professor of Physic
Andrew Sandham	NeoVen Limited
Dr Robert Swann	Technology company entrepreneur

Senior Management Team

Dr Tony Raven	Chief Executive
Dr Richard Jennings	Deputy Director
Boris Bouqueniaux	Head of Support Services
Dr Anne Dobrée	Head of Seed Funds
Dr Malcolm Grimshaw	Head of Physical Sciences
Shirley Jamieson	Head of Marketing
Mark Parsons	Head of Finance & Accounting
Dr Paul Seabright	Head of Consultancy Services
Dr Iain Thomas	Head of Life Sciences

Company Information

Cambridge Enterprise Limited

University of Cambridge

Hauser Forum, 3 Charles Babbage Road, Cambridge CB3 0GT

Company Number: 1069886

Registered in England and Wales.

Registered Office: The Old Schools, Trinity Lane, Cambridge CB2 1TN

Cambridge University Technical Services Limited

Company Number: 5749230

Registered in England and Wales.

Registered Office: The Old Schools, Trinity Lane, Cambridge CB2 1TS

The image shows a detailed micro-hotplate design on a substrate. It features a large, semi-circular central region with a complex, multi-layered structure. This structure includes several concentric, curved channels and a central area with a grid of small, circular features. The design is rendered in a color palette of red, orange, yellow, and green, highlighting different material layers or regions. The overall layout is rectangular, with a vertical strip of material on the left side and a horizontal strip at the bottom. The text is located in the top-left and bottom-left corners of the image.

The micro-hotplates designed by Cambridge CMOS Sensors are being developed into miniature gas sensors which can be incorporated into mobile phones.

Cambridge Enterprise Limited
University of Cambridge
Hauser Forum
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Cambridge CB3 0GT UK

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