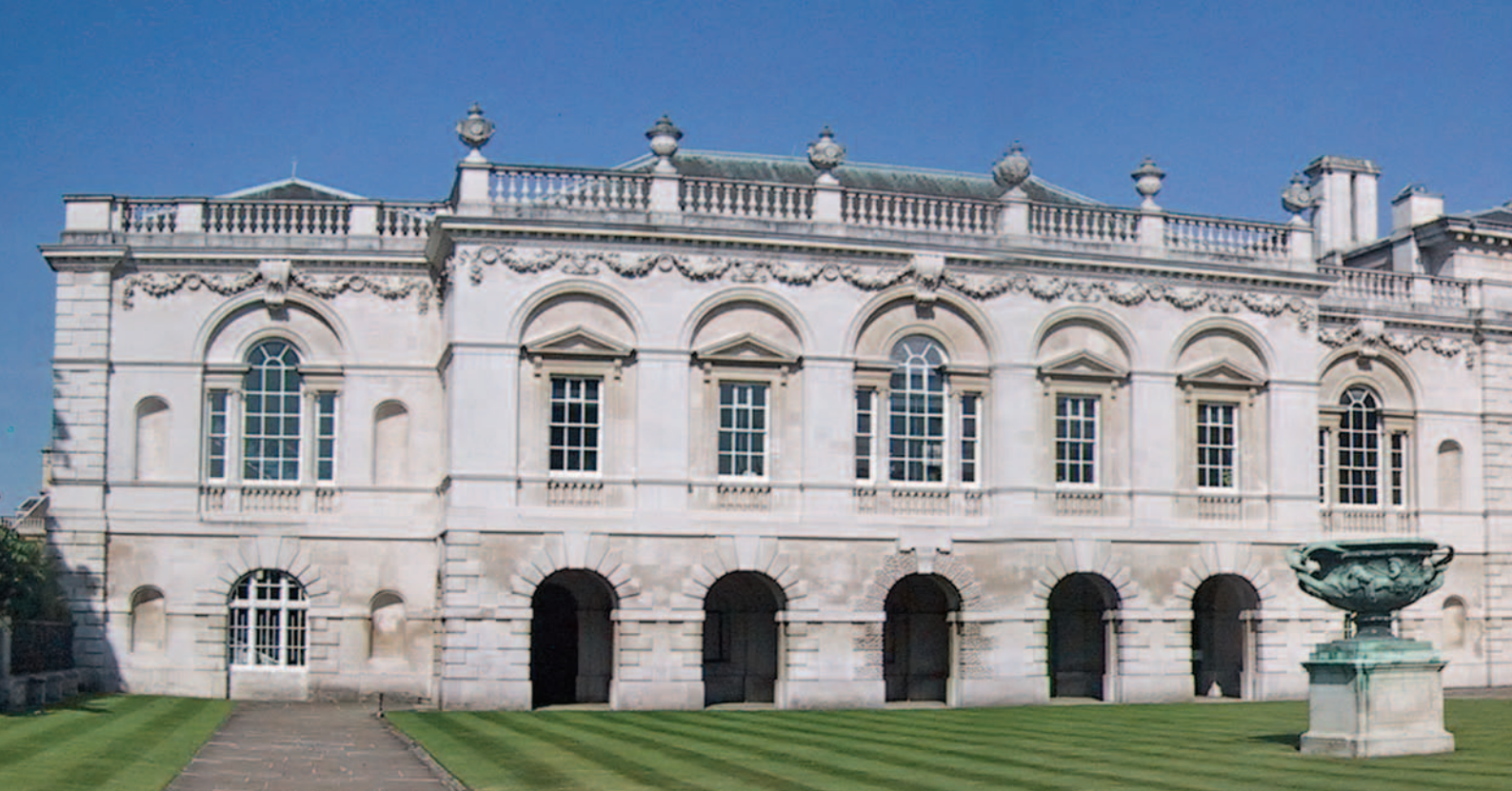


Annual Review 2004-2005

cambridge **enterprise**  
commercialising University technology







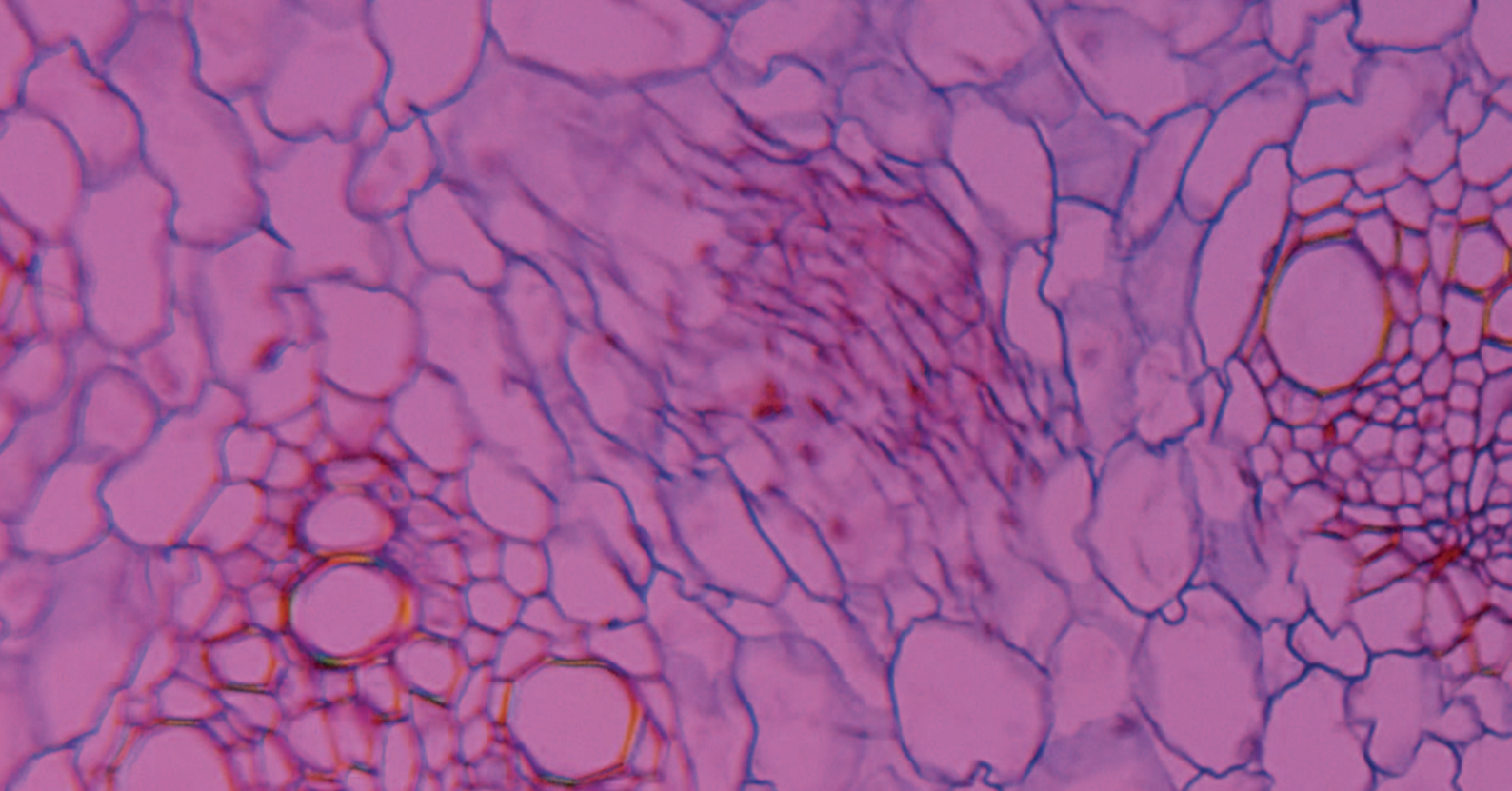
## Overview of the year

This has been another good year for innovation within the University with 127 invention disclosures received by Cambridge Enterprise (CE). The team have worked hard with inventors to complete 40 commercial licence deals and 70 consultancy contracts. Entrepreneurial activity in the University has been high with three spin-outs and 30 start-ups formed, calling on the advice and support of CE. This has also been a good year financially as records have again been broken on licence income – reaching £2.71 million – and consultancy income has stayed steady at £1.58 million. We have returned £2.08 million of royalty income to inventors and departments, bringing the total returns over the last six years to £4.99 million and £4.44 million respectively from licensing activity.

The coming year brings a number of new and exciting challenges – further development of the consultancy service, and of course working towards our own incorporation as a wholly-owned subsidiary company of the University. These changes will help us to continue to develop the services and support offered to academics who wish to commercialise their technology, ideas and expertise.



Dr Anne Dobrée  
Interim Director, Cambridge Enterprise



### CASE STUDY

Cambridge Enterprise has entered into an exclusive license with Xencor Inc. of San Francisco, California for the modification of antibody constant regions developed by Drs Mike Clark and Kathryn Armour of the Department of Pathology.

The technology has the potential to improve the performance of antibody therapeutics, particularly anti-cancer treatments. The inventors decided to assign their personal IP to the University and to work with CE hoping to direct some of the income to support further research in this area.

The inventors, Xencor and Cambridge Enterprise look forward to seeing this invention benefiting patients through improved treatments.

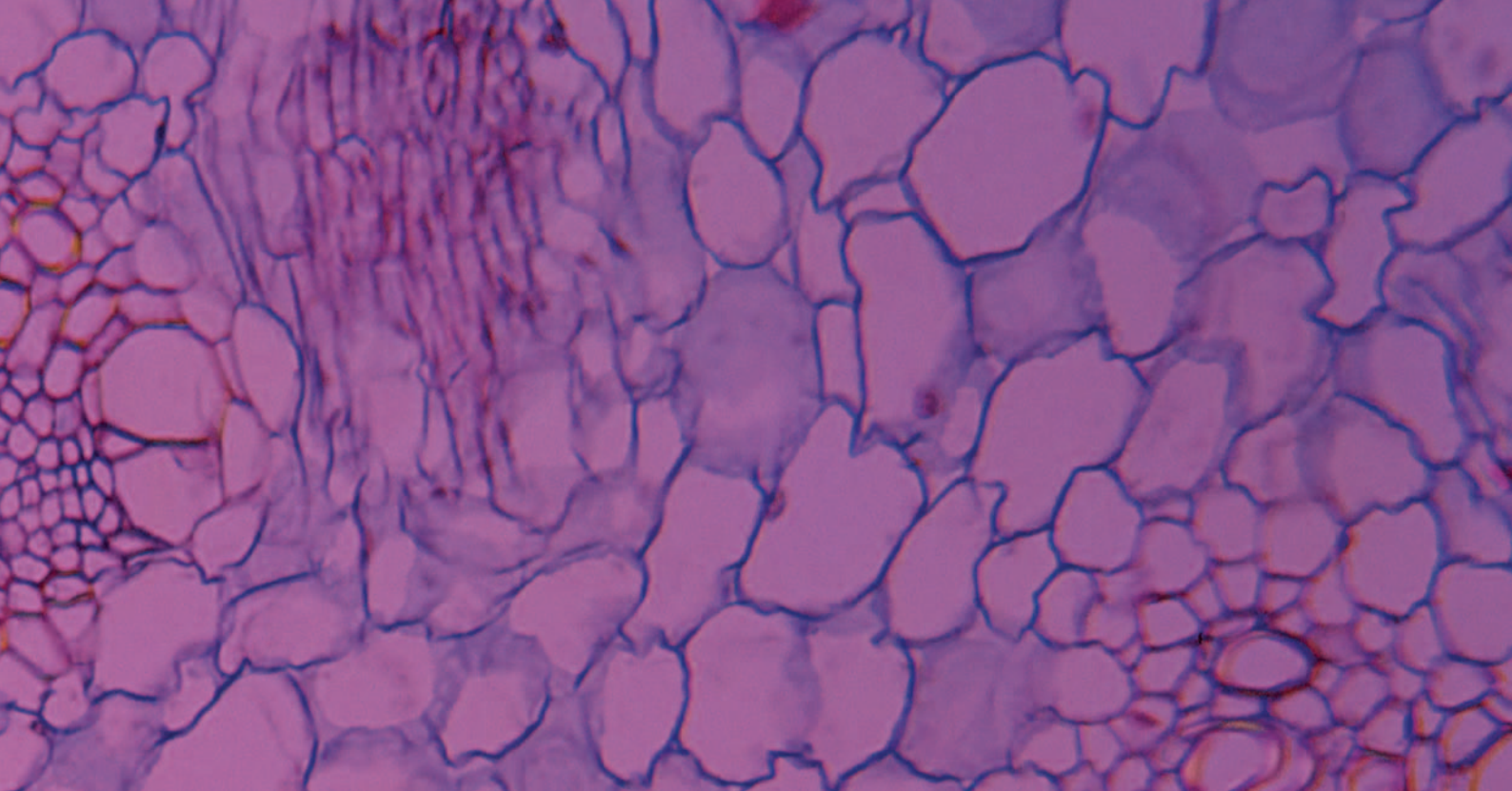
Dr Alastair Hick  
Head of Life Sciences

## Life Sciences

The Life Sciences team deals with University intellectual property (IP) with applications in the health and life sciences sectors as well as IP arising from work carried out at Addenbrooke's Hospital through the Cambridge Enterprise at Addenbrooke's project. A number of technology areas have been strong this year with successful commercialisation deals signed. Of particular interest are a range of software products for use in diagnosis of cognitive disorders, management of patient information, and research into patients in neurocritical intensive care, that have all been licensed to commercial partners and are generating income.

Cambridge Enterprise has also licensed a number of drug targets and enabling technologies that may lead to the therapeutics of tomorrow in lots of areas such as cancer stem cells, inflammation, and antibody engineering. New technologies have been taken on in the areas of cancer therapeutics, neurodegeneration, and the diagnosis and treatment of psychiatric disorders. These have been assessed for commercial potential, the IP protected and appropriate commercialisation routes developed.

An exciting new project developed over the past year is a reagent database for research materials developed at the University. This will be launched in Autumn 2005 and will allow the rapid commercialisation of research reagents and other materials from the University in a cost effective manner for academics, Cambridge Enterprise and our commercial partners. It will also allow research materials to be made available to a much wider community than through traditional academic routes.



## Physical Sciences

The Physical Sciences team is responsible mainly for technology arising from the Engineering, Physics, Chemistry and Materials Science departments. As always Cambridge Enterprise has seen a hugely diverse range of innovations with applications across an equally diverse range of industries.

In addition to seeking out new licensees, maintaining and developing relations with existing licensees and spin-outs is an important part of the work, and this year has seen a number of new technologies licensed to such companies, including Cambridge Display Technology, Plastic Logic, TeraView and Metalysis.

Cambridge Enterprise has also worked with Metalysis to revise the licence structure relating to the FFC process, to streamline relationships and to help Metalysis to complete a new investment round.

Other new licences of particular note are for a portfolio of eight patents relating to the manufacture of carbon nanotubes, licensed to Thomas Swan and Co, and for a new suite of software known as ONETEP, licensed to Accelrys ([www.accelrys.com](http://www.accelrys.com)). ONETEP uses sophisticated quantum mechanical calculations to simulate the properties of solids and surfaces from first principles with no experimental input and extends the capabilities of CASTEP (see case study) to larger assemblies of atoms.

The Proof of Concept Fund has been a valuable innovation this year, to help fill the funding gap between research and commercialisation. Of particular note is the grant made to a team from Chemical Engineering which has allowed the development of credible prototype equipment to recover aluminium and oil from Tetrapak packaging. The team won the Cambridge University Entrepreneurs' £50k Business Creation Competition, and is now in the process of forming a company (Enval) based on Challenge Fund and angel investment.



### CASE STUDY

CASTEP is a state of the art software package developed by Mike Payne's group in Physics, that can be used to calculate the properties of materials from first principles and which has remarkably diverse applications from nanotechnology to the pharmaceutical sector.

The 1993 licence to Accelrys has been followed by close collaboration with the research team and has been highly beneficial to all concerned. Customers have received a fully supported product; the financial returns have been used partly to fund improvements to the code, and the scientists have benefited from use of the new code which, in turn, has stimulated extensive research collaborations to explore novel applications.

Recently, Cambridge Enterprise has worked with the research team to extend the licence agreements with Accelrys for both further developments of the code, as well as entirely new functionality for predicting NMR spectra.

Dr Malcolm Grimshaw  
Head of Physical Sciences



Bill Matthews  
Fund Manager  
Cambridge Enterprise Seed Funds

## Cambridge Enterprise Seed Funds / Business Creation

**Seed Funding** at the University of Cambridge is an integral part of the Cambridge Enterprise organisation. Over the year, the funding operations have expanded in scope with responsibility for the Venture Capital Fund as well as for the Challenge Fund. The combined fund provides greater resources for investment in start-up companies founded by academics.

The two funds have invested in 40 companies over the last 10 years. This year there have been a further five investments in Delta G, Camfridge, Inotec AMD, British Stem Cell Registry and Lumora. In addition, the Challenge Fund made its first realisation by placing some of its Smart Hologram shares with external investors. The two funds have substantial funds to continue a positive programme of supporting academic founders in the future.



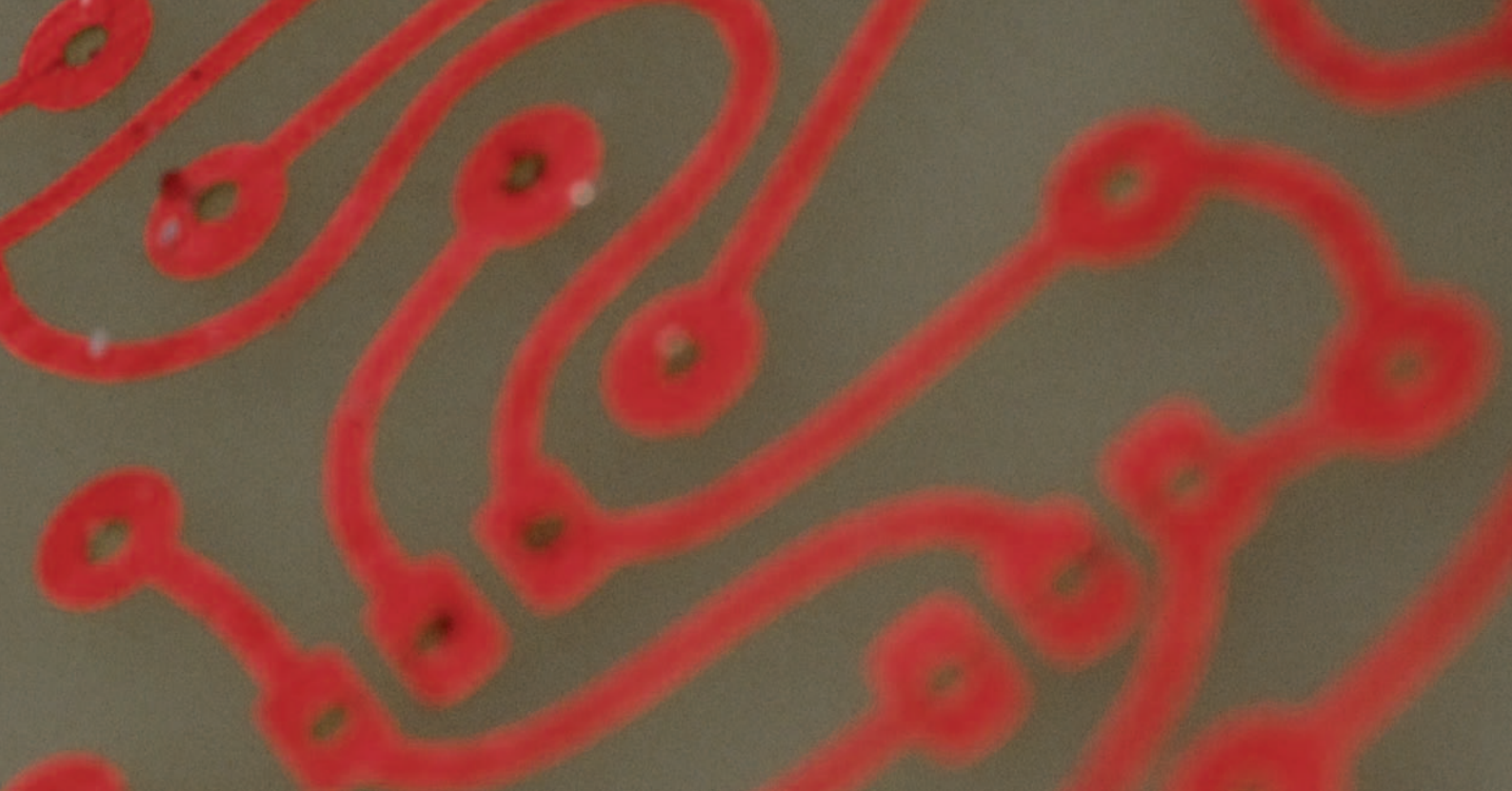
*Business Creation activities continue to go from strength to strength as demonstrated by the excellent quality of presentations at our first Investors' Forum. This biannual event is one way Cambridge Enterprise can maintain an efficient interface between University entrepreneurship and the commercial world which is vital for new ventures and technology commercialisation generally.*

Dr Peter Luebcke  
Business Creation Manager

The sad death of Sir Alastair Morton during the year deprived us of our fund Chairman. We were fortunate that Lord Freeman agreed to replace him as chairman of the seed funding operations as well as taking a lead role in the re-structuring of Cambridge Enterprise. There is a strong board of internal and external directors who have supported the seed funding programme in the University over the last few years.

*"I am delighted to be helping in the creation of Cambridge Enterprise, combining a number of services to the University's academic innovators such as patenting, licensing, consultancy management and seed funding for start-up companies. The Venture and Challenge Seed Funds have made an excellent start and will play a vital role in the future of University exploitation of academic innovation."*  
Lord Freeman, Chairman, Cambridge Enterprise Seed Funds

**Business Creation** activities within Cambridge Enterprise move from strength to strength with an increase in the number of new start-ups coming forwards for help and guidance. Business Creation now has a focal point for such start-ups in the form of the Investors' Forum which runs twice yearly to connect entrepreneurs to investors across the broad range of technology sectors and investment stages. Business Creation is also adding to the existing mentor and business Surgery programmes, new and innovative ways for start-ups to interface with the local and regional business communities. These initiatives build on the existing synergy the University has with these communities.



## Consultancy

2004-2005 saw a positive change in the way personal consultancy activities in Cambridge are both perceived and managed. The University has provided a company for consultancy and other commercial purposes in the form of Cambridge University Technical Services (CUTS, formerly Lynxvale Ltd) for over three decades. These services, including insurance cover, are available to staff of the University through Cambridge Enterprise, on a purely voluntary basis, except in the case of private clinical practice work where use of CUTS is prescribed. CUTS' consultancy turnover in this period was £1.58 million.

Undertaking consultancy is a very effective way of making available the expertise of the University's staff for the benefit of industry, government and other third parties. Its value to the University in stimulating further interactions and research collaborations is now well recognised, in addition to the professional and financial benefits obtained by the academics themselves.

Cambridge Enterprise has responded positively to these developments and, with the intention of growing these activities further, has moved from a reactive mode to a more focussed activity under the direction of Dr Richard Jennings in the new role of Head of Consultancy Services. Dr Jennings was formerly Director of the Wolfson Industrial Liaison Office and has been a director of CUTS for over 11 years.



*The diversity of consultancy projects through which knowledge is transferred from the University's departments, and the variety of organisations with which we work, continues to be amazing. This year alone topics ranged from providing advice to major civil engineering contractors, the green ventilation of buildings, to the ethics of tax avoidance.*

Dr Richard Jennings  
Head of Consultancy Services



*It is through our relationship with industry and professional service providers that we have created a unique “eco-system” which supports the commercialisation of technology from the University. Additionally, the sponsorship provided for events allows us to expand our activities which connect University to industry. Thank you to all of our sponsors and supporters.*

Mrs Shirley Jamieson  
Head of External Relations

## External Relations / Collaborations

An important aspect of Cambridge Enterprise’s (CE) work is to build a bridge between the University and industry. These relationships are important to help our academics, inventors and innovators see the successful commercialisation of their technology either through licences or new company ventures.

Cambridge Enterprise actively engages with a wide variety of organisations which include venture capitalists, angels, corporates and their venture arms and specialist companies seeking technology.

Annually a number of activities are undertaken to reach out into CE’s community. These include an event, Ideas to Reality, held every year to celebrate the achievements of individuals and companies that have signed off commercial agreements. Last November our staff spent Enterprise Week taking doughnuts to researchers as part of an awareness raising event.

In September 2004 the second Celebration of Biotechnology in Cambridge was held which brought together the University’s top life science researchers with industry. Over 300 guests gathered for the event at King’s College Great Hall. The second biotechnology map was launched showing why Cambridge is Europe’s leading biotechnology cluster.

In June 2005 the 5th Annual Gala Networking Reception and Dinner (at the Guildhall, London) jointly hosted with the MIT Entrepreneurship Center was held. On the evening the 450 guests heard during the dinner, elevator pitches from the UK and USA winners of the Business Plan Competitions.

Additionally, Cambridge Enterprise jointly hosts the Horizon events with Research Services Division. Held four times a year Horizon focuses on the most exciting areas of interdisciplinary research and touches on issues such as the impact of disruptive technology. The events attract a wide audience from industry and investment communities.



## Enterprise Champions

A number of departments have nominated an Enterprise Champion to provide informal advice to department members on interacting with business and commercialising research. The Champions meet once a term with Cambridge Enterprise to give feedback on CE's services.

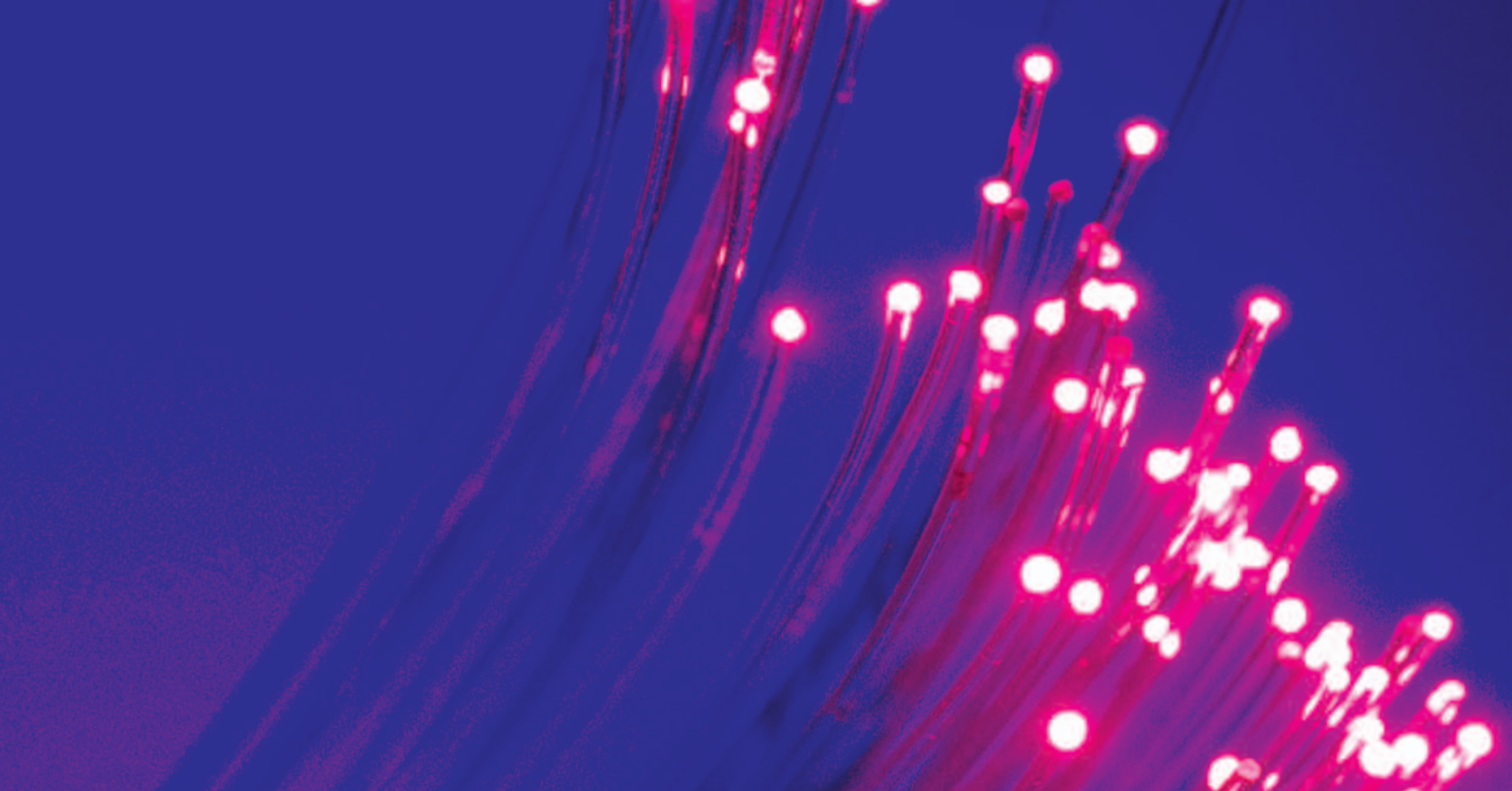
Academics are invited to discuss their inventions with their department's Enterprise Champion if they wish to do so.



*The Enterprise Champions forum provides an excellent opportunity to gain insights into other parts of the University, to help design and develop courses and further promote enterprise.*

Dr Shai Vyakarnam  
Enterprise Champion  
Centre for Entrepreneurial Learning  
Judge Business School

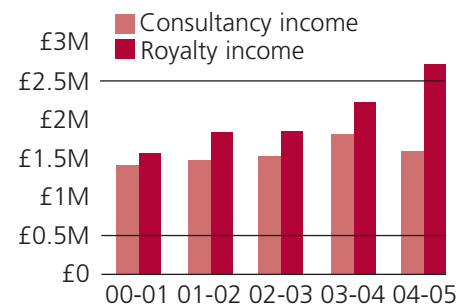
Department	Champions
Biochemistry	Prof. Peter Leadlay
Biotechnology	Prof. Chris Lowe
Cambridge Engineering Design Centre	Dr Terry Dickerson
Centre for Entrepreneurial Learning	Dr Shai Vyakarnam
Chemical Engineering	Mr David Carter
Chemistry	Prof. Stephen Elliot
Clinical Veterinary Medicine	Prof. Duncan Maskell
Engineering	Mr Philip Guildford
Materials Science and Metallurgy	Dr Rachel Hobson
Mathematics	Dr Emily Shuckburgh
Pathology	Prof. Nabeel Affara
Pharmacology	Dr Tai-Ping Fan
Physics	Prof. Mike Payne



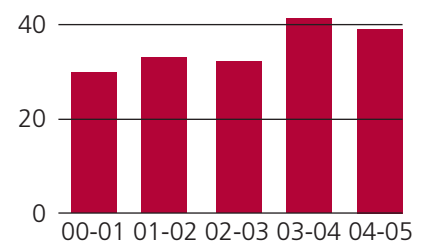
## Selected statistics for 1 August 2004 – 31 July 2005

<b>Inventions and patents</b>	<b>2004/05</b>	<b>2003/04</b>
Number of Invention Disclosures	127	141
Number of UK priority patent applications filed	41	61
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<b>Agreements</b>		
Licences granted	40	41
Spinouts	Camfridge Enecsys Enval	Cambridge Lab-on-Chip Protein Logic Zinwave Novexin CellCentric
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New start-ups assisted	30	28
Consultancy contracts	70	93
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<b>Income/costs</b>		
Licence income	£2.71 million	£2.21 million
Patent costs	£689,000	£688,000
Patent reimbursement	£485,000	£386,000
Consultancy income	£1.58 million	£1.79 million

**Income over the last five years**



**Number of commercial deals completed over the last five years**



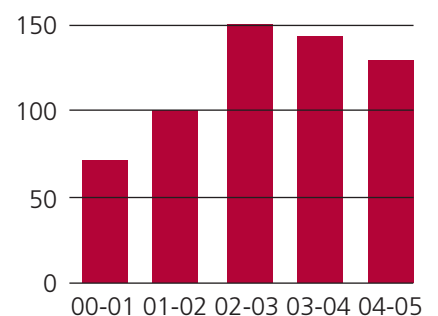
### Cambridge Enterprise Seed Funds

Of the 20 companies started by the Challenge Fund, 11 have attracted almost £33 million of outside investments.

Akubio	Daniolabs
BlueGnome	Genapta
Cambridge Lab-on-Chip	Lumora
Cambridge Semiconductor	Metalysis
Camfridge	Smart Holograms
CellCentric	

The University's Venture Fund has so far invested in 40 companies and has seen four of the companies quoted.

**Invention disclosures over the last five years**



## Contacts at Cambridge Enterprise

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### **Consultancy**

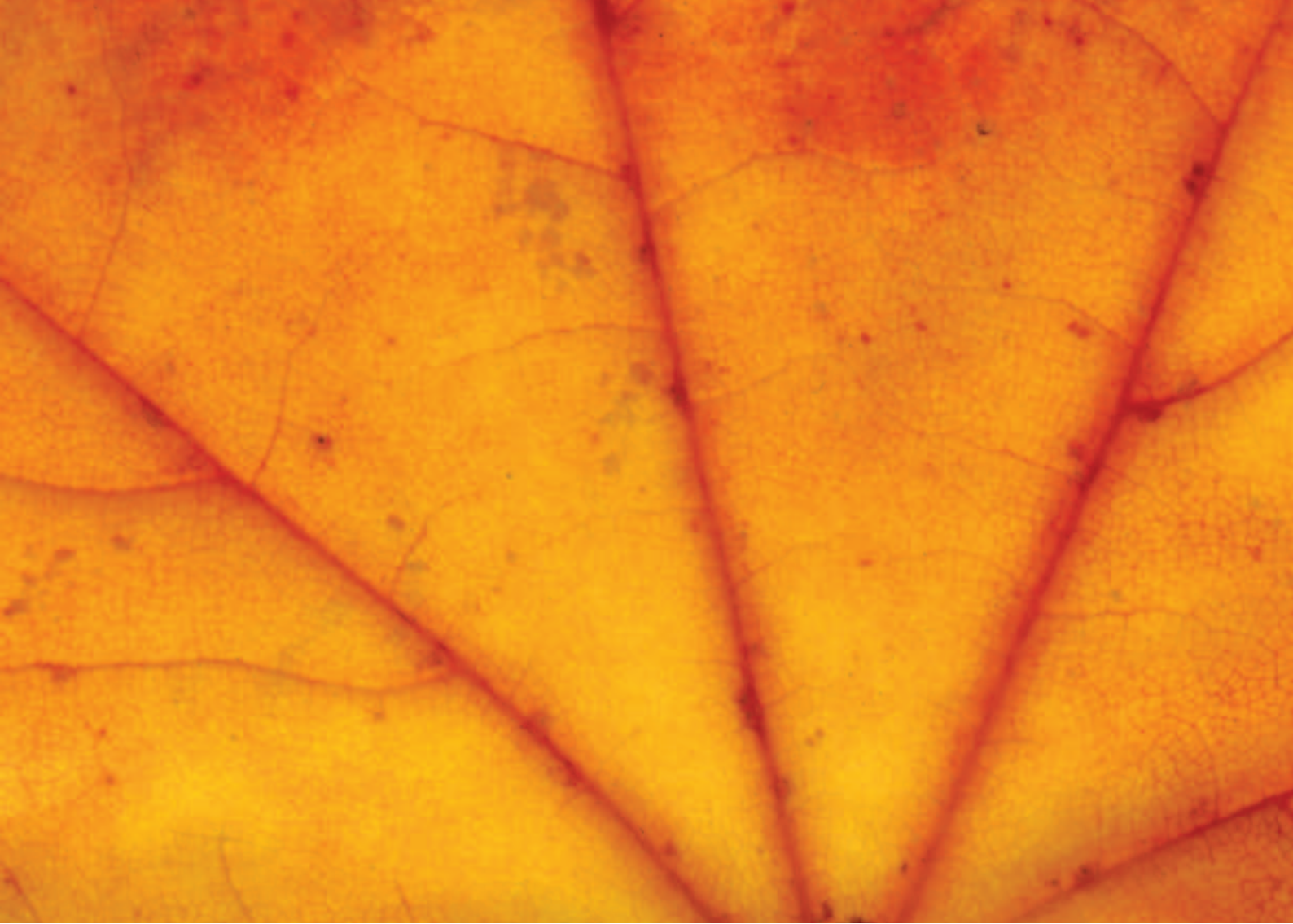
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