

The Cambridge Way

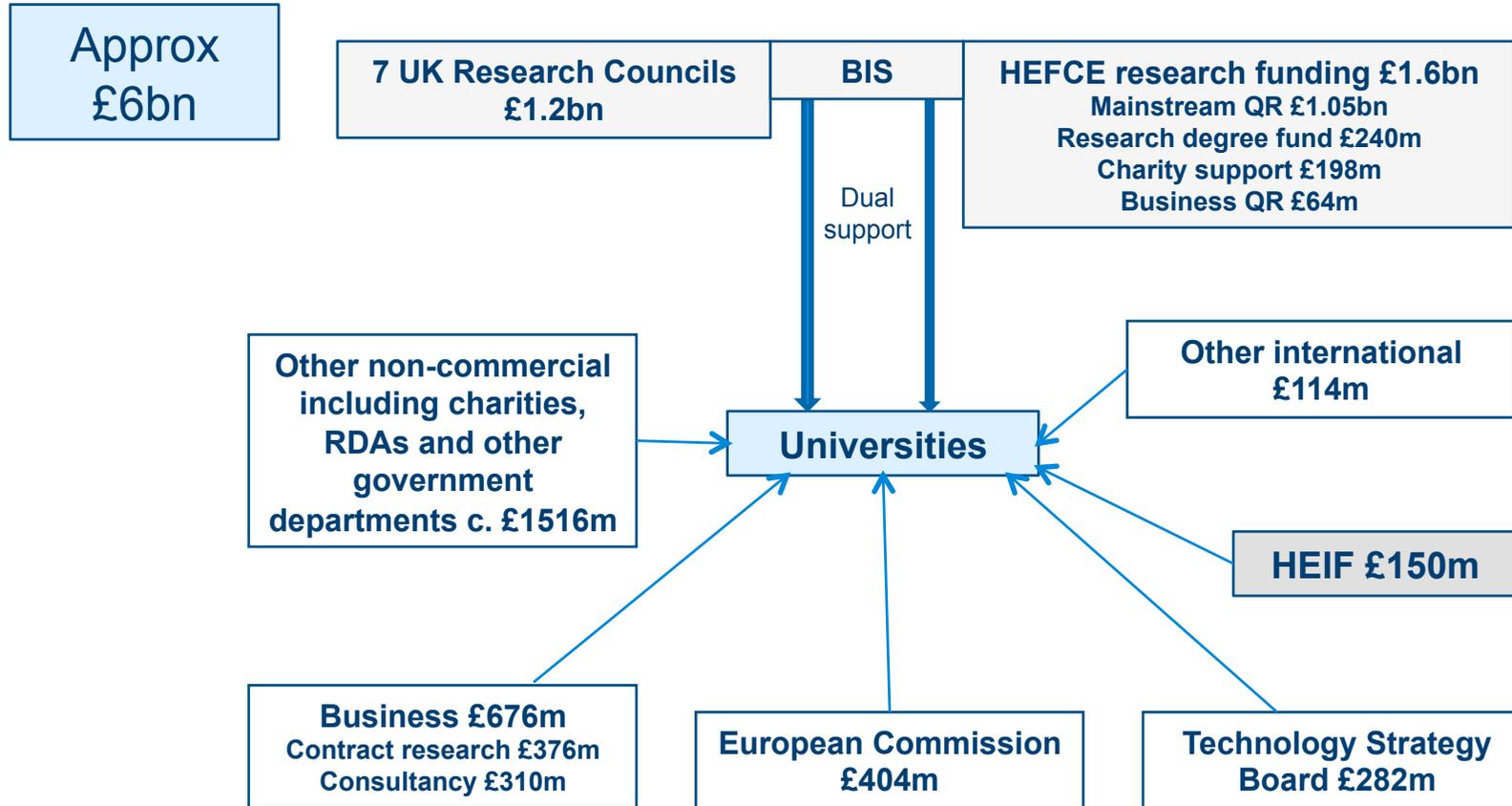
The Cambridge Enterprise model for technology transfer and the possibilities available with the International Outreach Programme

Tech Transfer Think Tank:4T Bergamo, Italy

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How is research in HE funded?



Source: Steven Hill, Head of Research Policy, HEFCE 2014

Key indicators from the HE-BCI survey

Income to UK HEIs	2010-11	2011-12
	£millions	
Collaborative research	887	871
Consultancy	377	398
Contract research	1,072	1,113
Facilities and equipment related services	131	139
CPD and CE	617	651
Regeneration and development programmes	207	180
IP (including sale of shares)	71	79
Total	3,362	3,431
GDP inflator applied to convert cash to real terms values at 2011-12 prices	102%	100%
Outputs from UK HEIs	2010-11	2011-12
Patent applications	2,256	2,274
Patents granted	757	826
Formal spin-offs established	268	191
Formal spin-offs still active after three years	999	998
% UK higher education institutions that provide:	2010-11	2011-12
Enquiry point for SMEs	92%	89%
Short bespoke courses on client's premises	84%	84%
Distance learning for businesses	83%	81%
Required contracting system for all consultancy	76%	73%

Source: GDP deflator from National Accounts figures (ONS 28 March 2012)

University of Cambridge

- University established in 1209
- 18,243 students
- Over 100 departments, faculties and schools
- 1500 Professors and lecturer
- 3000 researchers
- 88 *Nobel Laureates*



World Class Ranking *QS World University Rankings 2013 (2012)*

- | | |
|------------------|------------------|
| 1. MIT (1) | 6. Oxford (5) |
| 2. Harvard (3) | 7. Stanford (15) |
| 3. Cambridge (2) | 8. Yale (7) |
| 4. UCL (4) | 9. Chicago (8) |
| 5. Imperial (6) | 10. Caltech (10) |



Cambridge Enterprise Ltd – Who are we?



“Cambridge Enterprise exists to help University of Cambridge inventors, innovators and entrepreneurs make their ideas and concepts more commercially successful for the benefit of society, the UK economy, the inventors and the University”

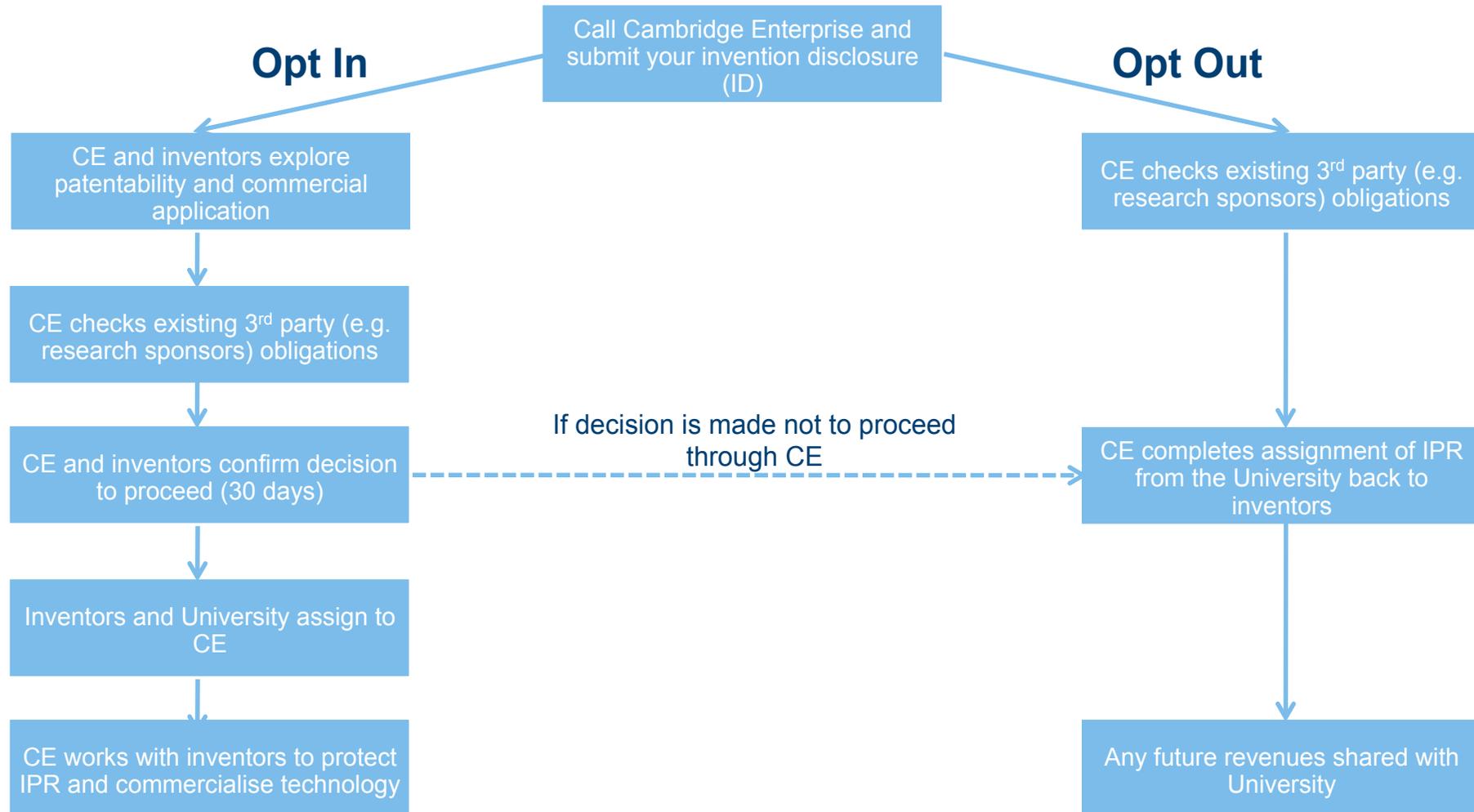
7 Key Principles

1. Attract and accept into the portfolio those cases that have the strongest potential to make a significant positive impact and where using commercial channels is the most reasonable means to carry the idea forward
2. Take the course that supports commercialisation of the technology and work creatively to add value to the technology through the use of patent, proof of concept and internal and external evaluation resources
3. Work effectively with University inventors and innovators to support their aspirations, manage conflicts, comply with University regulations and encourage synergy with the mission of the University
4. Engage with industry and investors early to understand their requirements and find the best partner (licensee or start-up senior management and investors) to take the idea forward
5. Negotiate fair and reasonable terms that reflect the contribution of the assets and expertise being transferred
6. Negotiate and close the greatest number of the best possible deals
7. Look after the deals once they are closed to encourage commercialisation and optimise returns

Intellectual Property Policy

- Subject to any funding agreements with research sponsors:
 - Researcher decides if they wish to commercialise their work
 - If so, this **must** be disclosed to the University which has the right to apply for registerable intellectual property rights
 - Cambridge Enterprise makes initial invention commercial evaluation
 - Provides an option for inventors to commercialise IP independently of the University, subject to funding terms
 - Students own IP they create on their own only and when they are the sole inventor and there is no obligation to a sponsor
 - Copyright in software belongs to academics

IP Policy at Cambridge: Opt In / Opt Out



University revenue sharing from licensing technology

Net Income (opt in)	Inventor(s)	Department(s)	University
First £100,000	90%	5%	5%
Next £100,000	60%	20%	20%
Above £200,000	34%	33%	33%

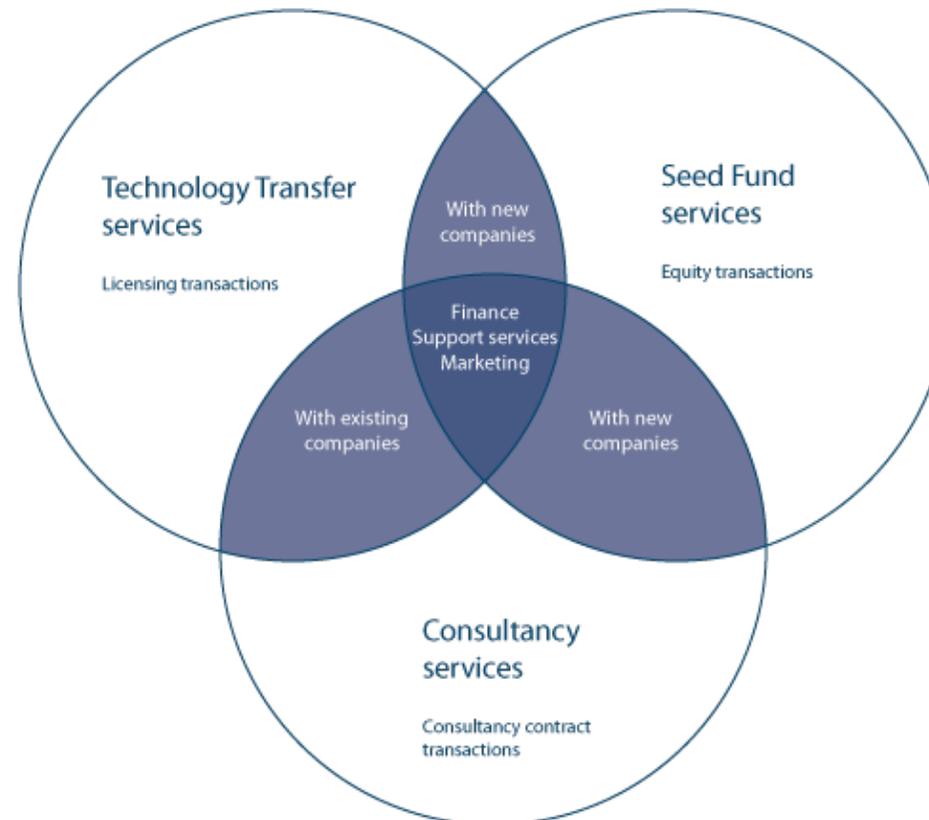
Net Income (opt out)	Inventor(s)	Department(s)	University
First £50,000	100%	0%	0%
Above £50,000	85%	7.5%	7.5%

Cambridge Enterprise Group

Organisational Structure – as of December 2006

Cambridge Enterprise restructured as a Limited Company

The University of Cambridge is the sole shareholder



Technology Transfer Services

In co-operation with the academic:

- Identification/evaluation of commercially valuable research
- Patent strategy, drafting and filing with qualified agents and counsel
- IP case and portfolio management
- Identification and engagement with commercial partners
- Negotiation of commercial deals
- Management of the post-deal relationship
- Support proof of concept work and translational research

£1.3m invested in patents and proof of concept 2012/2013

Cambridge Enterprise Seed Funds

Support to University Spin-outs:

1. Access to Capital and Management:

- Cambridge Enterprise Seed Funds and Affiliated funds through the CE Venture Partners

2. Mentors:

- Access to experienced business people, on an individual basis and at group presentations such as Mentoring Breakfasts

3. Specialist Surgeries and Support:

- Confidential one-to-one sessions with professional advisers with a range of expertise including legal, business and financial issues.

65 companies in which Cambridge Enterprise holds equity

A Selection of Biotechnology Companies Formed by University of Cambridge Staff & Students

Astex Therapeutics Ltd



Fragment Based Drug Discovery
www.astex-technology.com
December 1999

Biotica Technology Ltd



Therapeutic Polyketides
www.biotica.co.uk
April 1997

CellCentric Ltd



Epigenetics
www.cellcentric.co.uk
May 2004

Chroma Therapeutics Ltd



Novel Anti-Cancer Medicines
www.chromatherapeutics.com
September 2001

Daniolabs Ltd



Phenotype Driven Drug Discovery
www.summitplc.com
Acquired by Summit plc
March 2007

De Novo Pharmaceuticals Ltd



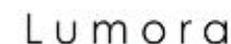
In Silico Drug Design
www.denovopharma.com
December 1999

KuDOS Pharmaceuticals Ltd



DNA Inhibitors & Other Small
Molecule Anti-Cancers
www.kudospharma.co.uk
December 1997

Lumora Ltd



Molecular IVD Products Based On
Novel Bioluminescent Reporting
www.lumora.co.uk
October 2002

Paradigm Therapeutics Ltd



Novel Drug Targets
www.takeda.com
Acquired by Takeda Pharmaceutical
Company March 2007

Psynova Neurotech Limited



Novel Biomarkers for
Neuropsychiatric & Other Mental
Illnesses
www.psynova.com
August 2006

Smart Holograms Ltd



Visual Sensor Technology
www.smartholograms.com
March 2002

Solexa Inc.



The Analysis of DNA
www.illumina.com
Acquired by Illumina January 2007

A Selection of Technology Companies Formed by University of Cambridge Staff & Students

BlueGnome Ltd



Statistical Modelling Software for
Drug Discovery
www.cambridgebluegnome.com
October 2001

Breathing Buildings Ltd



Novel Low Energy Ventilation
System
www.e-stack.co.uk
January 2006

Cambridge Display Technology Ltd



Application of Light Emitting
Polymers
www.cdttltd.co.uk
July 1992

Cambridge Flow Solutions Ltd



Consultancy & Provider of CFD
Software
www.cambridgeflowsolutions.com
February 1999

Cambridge Semiconductor Ltd



Power Electronics
www.camsemi.com
July 2000

CEDAR Audio Ltd



Signal Processing
www.cedaraudio.com
February 1989

Enval Ltd



Recycling & Environmental
Technologies
www.enval.com
February 2005

Granta Design Limited



Software for Engineering Materials
IT
www.grantadesign.com
April 1994

Hypertag Ltd



Wireless Information Access &
Proximity Services
www.hypertag.co.uk
December 2003

Metalysis Ltd



Generic Electrolytic Processes
www.metalysis.com
October 2001

Plastic Logic Ltd



Development of Plastic
Semiconductors
www.plasticlogic.com
November 2000

ZinWave Ltd



Unified Wireless Infrastructure
www.zinwave.com
November 2000

Consultancy

“Consultancy is one of the simplest ways for business to interact with universities and draw on their research. . .In particular increasing consultancy may be one way of bringing more companies into contact with universities”

(Lambert Report, 2004)

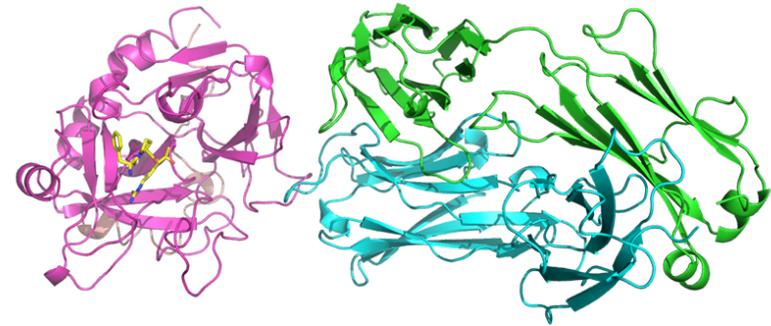
Monitoring lung function

- Traditional spirometers are only effective for 2 out of 3 patients who need treatment
 - Not effective in children, elderly or unconscious patients
- Pneumacare's Pneumascan monitor
 - uses video motion capture technology
 - monitors lung function in real time
 - enables greater analysis of lung activity.



Case Study : Antithrombotic Antibody

- Antibody found in the circulation of a patient who had presented with an inter-cranial bleed.
- Found to be a potent anti-coagulant but patient had no symptoms of a bleeding disorder.
- Demonstrated to be a potent anti-thrombotic agent in animal models.
- CE funded the development of an synthetic IgG.
- Patented and licensees sought.



Case Study : Formation of XO1

- Technology attracted interest of contacts at Index Ventures.
- An asset centric company formed called XO1.
- €8 million invested.
- CE licensed the technology for an equity stake and a royalty stream.
- Development of the technology now being progressed aggressively.



Group performance 2012/13

£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



International Outreach Programme

Tailored service to assist overseas governments and HEIs to develop knowledge transfer systems and improve the commercialisation of University research.

- Involvement of senior CE staff with strong expertise in the relevant area
- 2 dedicated associates with significant experience in innovation and commercialisation within the Cambridge region provide training and development of suitable programme
- Able to call on other experts across the University and network to contribute to the tailored programme

Kazakhstan



Nazarbayev University, Astana Kazakhstan.

A report outlining a strategy to develop a vibrant eco-system for the creation, sharing and commercialisation of knowledge around Nazarbayev University based on the Cambridge experience

Colombia



- **RUPIV** - University Network for Innovation in the Cuaca Valley

Funded by UK government (Prosperity Fund) and INNpulsa

9 month training & mentoring programme for a group of technology commercialisation specialists including UK training, training in Cali and remote mentoring

- **Ruta N** - Centre for Business and Innovation in Medellin, Colombia.

Vision: to enable Medellin to become a globally competitive city.

5 month training & mentoring programme delivered by Cambridge Enterprise specialists locally in Medellin and remotely

- **National project** - Funded by UK government (Prosperity Fund) and INNpulsa

9 month training & mentoring programme for a group of technology commercialisation specialists across Colombia including training in the UK and Colombia plus remote mentoring

Key Messages

- High level support is essential
 - Governmental, institutional, academics
- Impact agenda supports importance of commercialisation
- Commercialisation and impact takes time
- Non traditional forms of TT/KT should not be overlooked
- Can use several types of TT/KT together to optimise value and success
- UK active in many mechanisms for TT

Thanks



www.enterprise.cam.ac.uk



UNIVERSITY OF
CAMBRIDGE
enterprise

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Group Performance 2012/13

- **124 new IP disclosures** received
- **204 patent applications** filed
- **109 licences** signed: 76 for commercial purposes and 33 for other purposes, including research licences
- **802 active IP and licence agreements** under management including 222 research licences
- **313 consultancy disclosures** received (new consultancy projects)
- **245 consultancy agreements** signed
- **£16.6 million** in knowledge and technology transfer income including equity realisations
- **£15 million of income was or will be returned** to academics and University departments, or to the University seed funds