

Technology Commercialisation from the University of Oxford

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This Presentation

- The University of Oxford
- Introduce Isis Innovation
- Describe the activities of Isis Enterprise and explain some of my objectives for visiting New Zealand

The University of Oxford

The Old...

- Oxford University is the oldest university in the English-speaking world (founded c.1188)



The New...

- Today - Most Powerful UK Research University
 - Research Fortnight, December 2008 Research Assessment Exercise
- Highest University Research Spend in UK
 - £451 million (2008/2009)
 - Over 12,000 researchers
- Isis Innovation has been actively commercialising intellectual property since 1987 (currently 61 staff)



A company 100% owned by the University of Oxford



Technology Transfer

IP, Patents, Licences, Spin-outs,
Material Sales, Seed Funds,
Isis Angels Network



Academic Consulting

Problem Solving, Multi-disciplinary
Academic Teams, Advising Government



Isis Consulting Business

Technology Commercialisation and
Open Innovation support, working with
clients in the UK and around the world

Isis Innovation – the foundations

Key Principles:

- The first priority is to transfer technology for the benefit of society, financial returns are an additional benefit
- Isis only works with researchers who wish to commercialise the results of their research
- Any financial returns are shared between the University, the academic inventors, and their academic departments

Investment:

- The University provides Isis with an annual patent budget of £2.5m
- Isis is the 5th highest British PCT patent applicant
 - WIPO Data, 2002-2008 composite; behind Unilever, GSK, BT, Qinetiq

Isis Innovation – the results

- Isis currently manages 1,320 Patents & Patent Applications; and 330 active licensing deals
- 74 spinout companies, 54 since the year 2000
- Total external investment in spinouts since 2000: £266m
- Oxford University Challenge Seed Fund
 - Launched with £4m in 1999
 - Total of £5.7m invested in 102 projects – development, seed equity
 - Resulting in Equity stakes in 31 spin-outs, 4 completed licensing deals & 33 active technology projects
 - These 31 spin-outs have attracted £80m seed/venture investment
- Over 150 academic consulting contracts in 2009



Greener Emission Fuels

Silent & Clean Power

Energy from Waste

A New Steam Revolution



Isis Enterprise

- Isis Enterprise offers consulting advice in technology transfer, commercialisation and open innovation
- Last year Isis Enterprise delivered work for clients from 30 countries

- Isis Enterprise clients and services:

- Governments:

- Policy and benchmarking studies

- Companies:

- Out-licensing support, in-licensing support, technology scouting, interim management, open innovation partnerships, investor readiness and business planning

- Universities and research institutes:

- TTO recruitment, training, secondments in Oxford, long-term partnerships, project specific support and access to commercial networks

- Investors:

- IP valuation, technical and market due diligence



Making business sense
of climate change

Why am I in New Zealand?

- Traditional Isis Innovation activities
 - Companies that may wish to license Oxford University IP
 - Partners and Customers for existing spinout companies
 - Potential Investors in new spinout companies
- Isis Enterprise
 - TTOs at early stage of development interested in learning from Isis experience
 - Established TTOs interested in long-term partnerships and access to Oxford commercial and investor networks
 - Identify innovative NZ based start-up companies where assistance in entering EU markets might be useful
 - Identify NZ markets of interest to UK based clean-tech SMEs and possible local partners
 - More generally identify interesting research activities and areas of emerging IP, including for potential future introductions during technology scouting projects
 - Spot areas of complimentary research and technology commercialisation
- Networking... identify other opportunities for Isis Enterprise

Some thoughts in the clean-tech area

- Oxford spinout companies
 - Catalysts for second generation synthetic fuel production from waste
 - Smart electricity meters
 - Innovative electric motors (initially for automotive applications etc)
 - Protective coatings for PV solar panels
- Emerging technologies/potential spinout companies
 - Wind turbines (for medium scale applications) – high efficiency without gearbox
 - Next generation solar cell materials
- Other innovative technologies with Isis Enterprise involvement
 - Mixed wood waste (contaminated and clean) separation and processing
 - Next generation battery technology
 - Low power consumption communication technology for mobile devices
 - High-performance, low-weight, low-cost composite materials

The screenshot shows the Isis Innovation website homepage. At the top left is the Isis Innovation logo, which includes a circular emblem with a book and a lamp, followed by the text 'ISIS INNOVATION'. To the right of the logo is the text 'TECHNOLOGY TRANSFER FROM THE UNIVERSITY OF OXFORD'. A search bar is located in the top right corner with the label 'Search:' and a double arrow icon. Below the logo and search bar is a horizontal navigation menu with the following items: 'About Isis', 'Isis News', 'Licensing Opportunities', 'Spin-out Companies', 'Material Sales', 'Oxford University Consulting', 'Isis Enterprise', and 'Information for Oxford Researchers'. The main content area features a large blue banner with a quote from Professor Sir Mike Brady: "I have had much satisfaction from all my published academic papers, but nothing compares to the incredible satisfaction of seeing my research out there being used in daily life." Below the quote is his name and title: 'Professor Sir Mike Brady, Professor of Information Engineering, University of Oxford, Non-executive Director, Isis Innovation Ltd.' To the right of the banner is a 'LATEST NEWS' section with three news items: 'Isis and Cosmos Technology To Accelerate Technology Transfer in Bulgaria', 'Isis Innovation Annual Report 2009', and 'Electric Motors Spin-out Secures Funding'. Below the banner is a paragraph stating: 'Isis Innovation is a wholly-owned subsidiary of the University of Oxford, founded to exploit know-how arising out of research at one of the World's premier research institutions'. At the bottom of the page are two logos: 'ISIS ENTERPRISE Technology Transfer Consulting' and 'OXFORD UNIVERSITY CONSULTING Experts from Oxford'.

ISIS INNOVATION TECHNOLOGY TRANSFER FROM THE UNIVERSITY OF OXFORD

Search:

About Isis | Isis News | Licensing Opportunities | Spin-out Companies | Material Sales | Oxford University Consulting | Isis Enterprise | Information for Oxford Researchers

LATEST NEWS

Isis and Cosmos Technology To Accelerate Technology Transfer in Bulgaria
» A new venture has been established to identify, commercialise and secure funding for the most promising technologies for Bulgaria.

Isis Innovation Annual Report 2009
» The latest Isis Annual Report is now published, describing Isis' tenth consecutive year of annual growth.

Electric Motors Spin-out Secures Funding
» Oxford Yasa Motors Ltd has secured £1.45 million in investment to take lightweight electric motors developed at the University of Oxford to market.

Isis Spin-outs in Telegraph High Growth Index
» Two Isis spin-outs have featured in Telegraph High Growth Index.

Isis Insights
» Thought-pieces on technology

"I have had much satisfaction from all my published academic papers, but nothing compares to the incredible satisfaction of seeing my research out there being used in daily life."
Professor Sir Mike Brady
Professor of Information Engineering, University of Oxford
Non-executive Director, Isis Innovation Ltd.

Isis Innovation is a wholly-owned subsidiary of the [University of Oxford](#), founded to exploit know-how arising out of research at one of the World's premier research institutions

ISIS ENTERPRISE Technology Transfer Consulting





OXFORD UNIVERSITY CONSULTING Experts from Oxford

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The background of the slide is a dark blue field filled with glowing, ethereal light trails and patterns. These patterns resemble fiber optic cables or data streams, with some forming large, curved arcs and others appearing as fine, intersecting lines. The overall effect is one of dynamic energy and technological complexity.

Additional Slides

University of Oxford - Research Themes

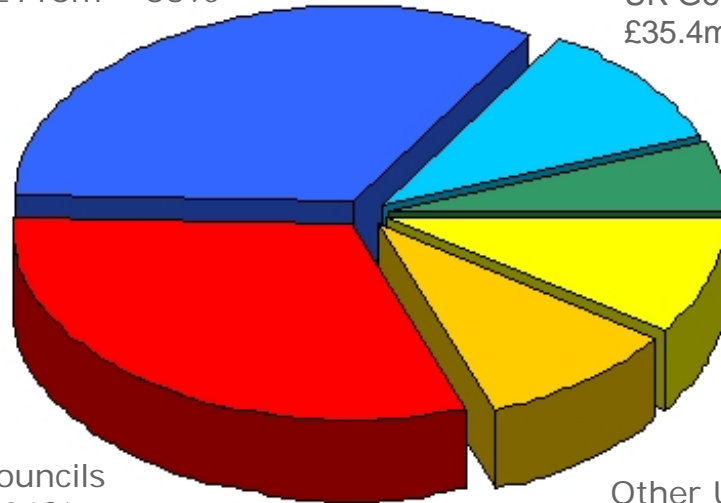
Medical Sciences	Maths, Physical & Life Sciences	Social Sciences	Humanities
Cancer	Chemistry for Biomedicine	Global Governance	World Religion
Infectious Diseases, Immunology, Pathogens	Computational Biology	Global Public Health Issues	Applied Ethics
Diabetes, Endocrinology, Metabolism	Climate Prediction, Science of Energy & Environment	Energy: Policy and Society	Post-Colonial Literature
Cardiovascular Disease	Biomedical Engineering	Environment and Business	Latin America: Culture, Language and Literature
Genomics	E-Science	Politics & International Relations	Oriental Studies: Korea, Japan, India, Middle East
Musculo-skeletal Science (joint & bone)	Bio-Nanotechnology	Area Studies: China, South Asia, India	Modern Chinese & South Asian Studies
Neuroscience	Quantative Finance	Evolutionary & Cognitive Anthropology	Philosophy of Cognitive Science & Neuroscience
Reproduction & Development	Quantum Information Processing	Poverty & Refugee Studies	Ethnomusicology
			

Oxford Research Funding 2008-2009 £451million

- Highest University Research Spend in UK
- 4,400 researchers and 8,000 postgraduate students
- R & D Spend by UK Companies, Oxford would be ranked 9th 2009 EU Industrial R&D Investment Scoreboard
- Most Powerful UK Research University - 2008 Research Assessment Exercise Research Fortnight

UK Charity
£113m – 33%

UK Govt/NHS
£35.4m – 10%



Research Councils
£105.8m – 31%

EU Govt £19.8m – 6%

UK & Overseas Industry
£33.3m – 10%

Other UK & Overseas Sources
£33.2m – 10%

Total £340.5m
+ HEFCE £110.5m

University Divisions:

Medical Sciences £217.3m

**Mathematical,
Physical
& Life Sciences** £80.4m

Social Sciences £30.7m

Humanities £9.1m

Other £3m

Total £340.5m

Isis Innovation 2000 - 2009

Year Ending Mar:	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
University Investment £m	£1m	£1m	£1m	£1m	£1m	£1.2m	£1.2m	£1.2m	£1.2m	£2.5m
Staff	17	21	23	34	36	36	36	37	44	54
Open Projects	319	415	476	629	725	764	784	841	978	1112
Patents filed (pa)	55	63	82	65	52	55	57	49	68	64
Licence Deals (pa)	21	36	42	37	31	38	45	50	74	69
Consultancy (pa)				34	50	48	59	89	102	151
Spin-outs (pa)	6	8	8	7	3	4	6	7	4	4
Annual T/O £	£0.9m	1.2m	1.7m	2.0m	2.3m	2.7m	2.9m	3.6m	4.8m	5.6m

Oxford Spin-outs (pre 2000)

1959		Oxford Instruments *
1977		Oxford Lasers
1988		Oxford Glycosciences *
1989		Oxford Molecular *
1992		Oxford Asymmetry *
1994		PowderJect *
1995		Oxford Gene Technology
1996		Oxford Biomedica *
1997		Oxagen
1998	5	Opsys, Synaptica, Prolysis, Celoxica *, Sense Therapeutic
1999	6	Medigene(Avidex) *, Oxxon Pharmaccines, Dash, Oxonica *, AuC Sensing, OMIA

* Stock Exchange Listing

Oxford Spin-outs (post 2000)

2000	7	Third Phase, Mindweavers, Oxford BioSignals, Oxford BioSensors, TolerRx, OXIVA, Pharma DM
2001	7	OxLoc, Oxford Bee Co, Oxford Ancestors, Novarc, Oxford ArchDigital, Natural Motion, Inhibox
2002	9	Pharminox, Minervation, Spinox, Zyentia, Oxitec, Oxford Immunotec, ORRA, GlycoForm, BioAnalab
2003	4	Summit (Vastox) *, ReOx, Riotech, OCSI
2004	4	Avacta(OMD) *, G-Nostics, Surface Therapeutics, EKB Technology
2005	5	Oxford Nanolabs, Oxford RF Sensors, Oxbridge Pulsars, Celleron, Oxford Catalysts *
2006	7	TDeltaS, Oxford Medistress, Particle Therapeutic, Aurox, Oxford Advanced Surfaces *, Cyttox, OxTox
2007	4	Eykona Technologies, Clinox, Oxford Biodynamics, Crysalin
2008	4	Semmler, Oxford-Emergent TB Consortium, ISE, Organox
2009	3	Oxford Financial Computing, Zyoxel, Oxford Yasa Motors

Total external investment to date in spin-outs since 2000: **£266m**

£36m 1st round Seed/Business Angels – average amount invested £850k; 1/3rd > £1m invested.

£230m follow-on Venture/Institution Capital

* stock exchange listing

Oxford Innovation Society

- Established by Isis in 1990 to foster University/business links
- An open innovation network
- Since 1990 over 100 companies have joined
- Companies pay an annual fee of £6,800 for membership
- Membership Benefits:
 - Ready access to the academics and University
 - Interactions with other Members, leaders in technology innovation
 - Advance notification of all marketed patent applications
 - Invitations to thrice-yearly meetings and dinners
 - Customised research presentations and seminars
 - Regular newsletters and portfolios

OIS Meeting & Dinner

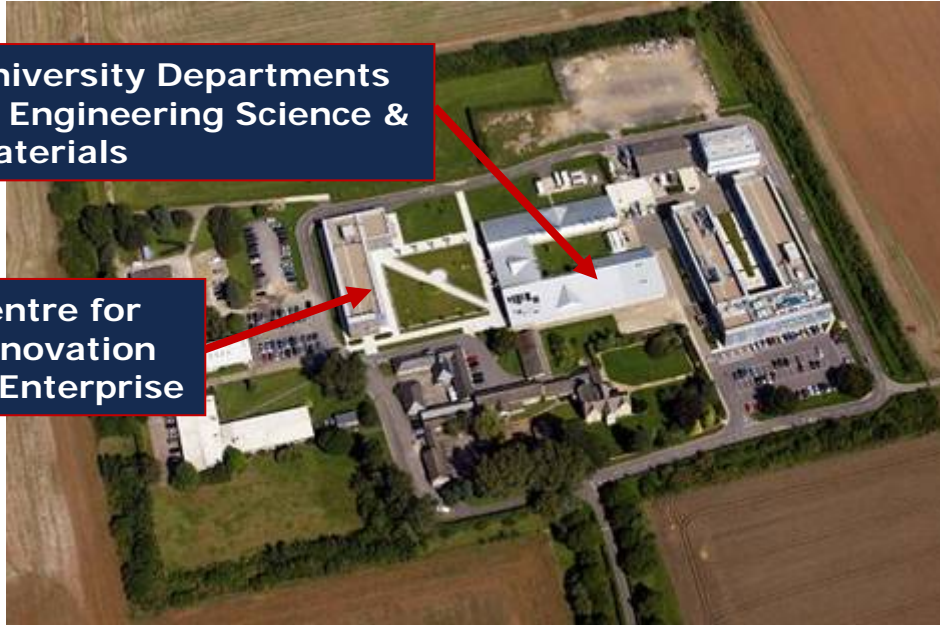


- Tea & coffee reception
- Academic presentation
- Sponsor presentation
- Champagne reception
- Dinner in College
- After dinner drinks

Begbroke Science Park

University Departments
of Engineering Science &
Materials

Centre for
Innovation
& Enterprise



- Spin-outs on site:
- Prolysis/Biota Europe
- Oxford Gene Technology
- Oxonica
- Oxford Advanced Surfaces
- Oxford Biodynamics
- Particle Therapeutics

- Owned & operated by Oxford University, 5 miles west from the city centre
- University research labs;
- University Supercomputer operated by e-research centre
- Business incubator & premises for new companies
- Central meeting room and café