

The background of the slide is a dark blue field filled with numerous bright blue, glowing light trails that curve and swirl in various directions, creating a sense of dynamic energy and technology.

Commercialising IP the Oxford Way
Linda Naylor - Head of Technology Transfer, Isis Innovation

Oxford University & Isis Innovation Ltd

- Oxford University is the oldest university in the English-speaking world (founded c.1188), and a leader in learning, teaching and research
- Today - Most Powerful UK Research University
 - Research Fortnight, December 2008 Research Assessment Exercise
- Highest University Research Spend in UK
 - £451 million (2008/2009)
- Isis Innovation Ltd is a company 100% owned by the University of Oxford, established in 1987
- Isis *helps* researchers *who wish to* commercialise the results of their research



Christ Church, Oxford



Ewert House, Oxford



Strategy

- The University – Reasons for doing Technology Transfer
- The Technology Transfer Office - Business Plan (cash/ service/ growth)
- A Technology----- Market
- Inventors - what do they want

Isis Return on Investment to the University

- University Investment in Isis for Commercialisation
- Financial Returns
 - Distributions back to University
 - Research Funding from spin-outs to University
 - Research Funding from Translation Awards to University
 - Hefce Third Stream Government Funding
 - Spin-outs Cash
 - Spin-outs Value
 - Oxford University Challenge Seed Fund
 - New Patents
 - Strategic IP Deals eg: Chemistry, IBME
- Other, non-financial, benefits to the University
 - Transferring technologies to improve lives
 - Promoting good news stories from University
 - University staff recruitment & retention
 - Managing Oxford Innovation Society



Isis Impacts

- The impact of Isis activities is seen through the take-up of new technologies and ideas that form the basis for new products and services.

Isis Success Stories – Outcomes Questionnaires

- PDQ-39
- Oxford Health Outcomes Questionnaires developed at the University's Health Services Research Unit
- PDQ-39 is a "Gold-standard" measure of health status for Parkinson's Disease
 - Widely validated and translated into over fifty languages
 - Isis has licensed the questionnaire to 17 pharmaceutical companies for use in clinical trials
- Knee, Hip, Shoulder and Elbow scores also licensed.



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Isis Success Stories – Spin out

- OXFORD IMMUNOTEC
- 2002 – Spun out by Isis
- Developing new ways to diagnose and monitor infection and disease
- Lead product is a TB diagnostic, T-SPOT.TB
 - In August 2008 successfully gained pre-market approval from the United States Food and Drug Administration
 - Also able to track the change in a person's immune status over time, and can be used to monitor disease progression.

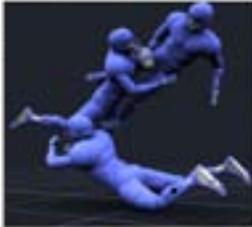


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Isis Success Stories – Spin Out

- NATURAL MOTION
- Euphoria software enables characters to interact and respond to their virtual environment
 - Used in films including Poseidon and Troy
 - Video games Grand Theft Auto IV and Star Wars: Force Unleashed
- Based on algorithms developed by founder & CEO, Tomcat Reil and Colin Mansley
- University Challenge Seed Fund grant in 2000 provided funding to get first programme started
- Spun out from Isis in 2001
- Based in Oxford and San Francisco



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Isis Innovation Staff

Managing Director

Tom Hockaday

Administration (12)

Business Support

Accounts

Gemma Allnutt

Marketing

Simon Gray

Renate Krelle

Jen Sheffield

Dr Fiona Story

Legal

Paresh Jasani

Central Administration

Office Manager

Jenny Bailey

Systems Administrator

Nelson Sa

HR

Alex Allan

Viv Parry

Facilities

Jane Tarry

Reception

Isabel Lavis

Technology Transfer

Group (31)

Head of Group

Linda Naylor

Project Manager Teams

Evert Geurtsen

Roy Azoulay

Chim Chu

Dr Jamie Ferguson

Brendan Spillane

Dr John Wilson

TBA

Dr Colin Story

Dr Dina Chen

Dr Alex Marshall

Dr Angela Oldacres

Dr Brijesh Roy

Andy Self

Dr Weng Sie Wong

Seed Investment Manager

Andrea Alunni

Operations Manager

Dr Mairi Gibbs

Administrator

Jan Newell

Project Manager Teams

Dr Carolyn Porter

Dr Ruth Barrett

Dr David Churchman

Dr Sarah Deakin

Dr Christine Whyte

TBA

Dr Rakesh Roshan

Dr Martin Procter

Dr Mark Gostock

Dr Jon Carr

Dr Bharti Ranavaya

Patent & Licence Admin Manager

Steven Bayliss

Post-Deal Admin

Kate Spanchak

Patent Administrator

Kim Jones

Oxford University

Consulting (6)

Head of Group

Steve Lee

Project Managers

Andrew Goff

Susan Clark

Gurinder Punn

Dr Josef Walker

Administrator

Kerry Antcliffe

Isis Enterprise (15)

Head of Group

Dr David Baghurst

Consultants

Dr Chris Moody

Dr Sarah Macnaughton

Dr Roger Welch

Elena Andonova

Ya-hsin Shen

Dr Costas Chryssou

Terry Pollard

Robert Swerdlow

Dr Suzy Wood

Dr Viraj Perera

Dr Stuart Wilkinson

tba

Administrator

Kristina Gren

Staff: 65

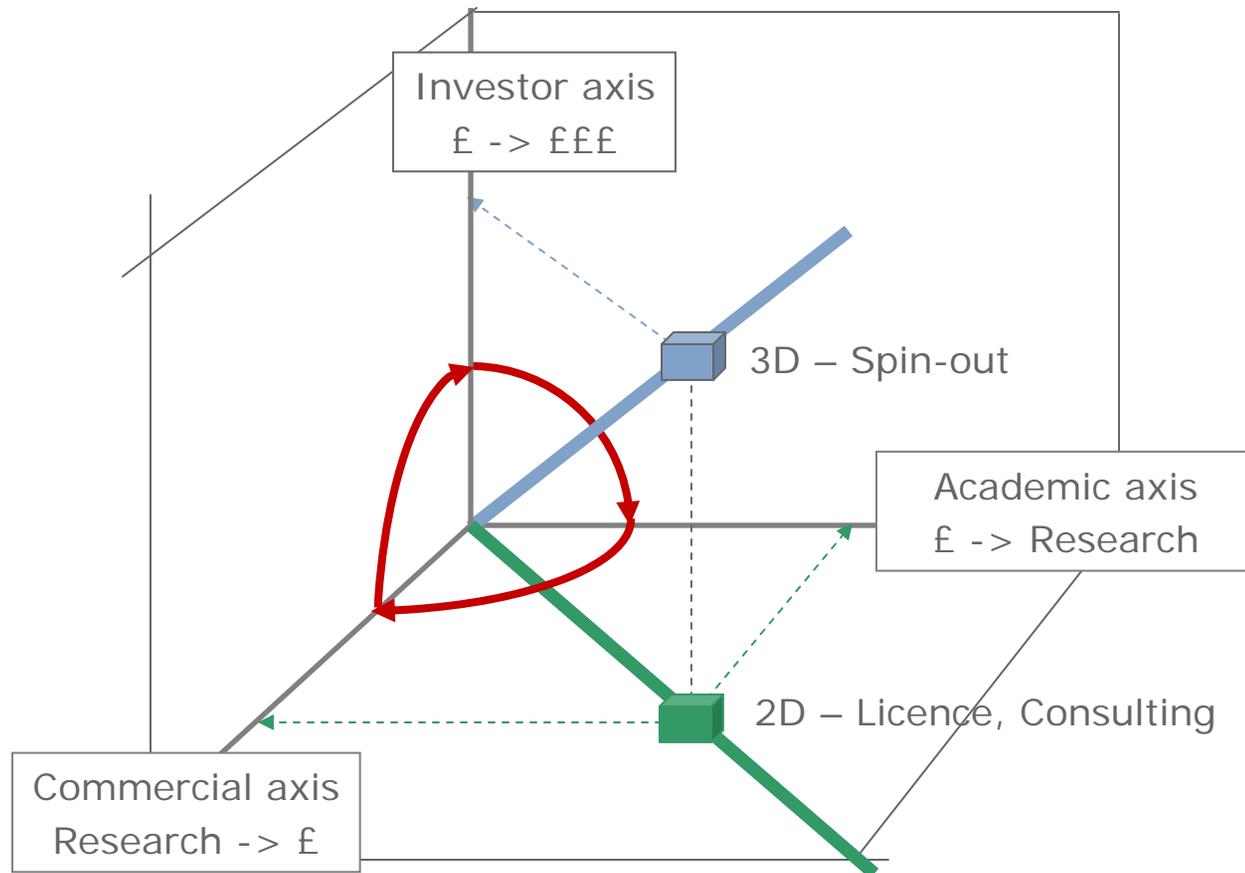
PhD's: 28

MBA's: 17

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Acting as Multi-dimensional Intermediaries



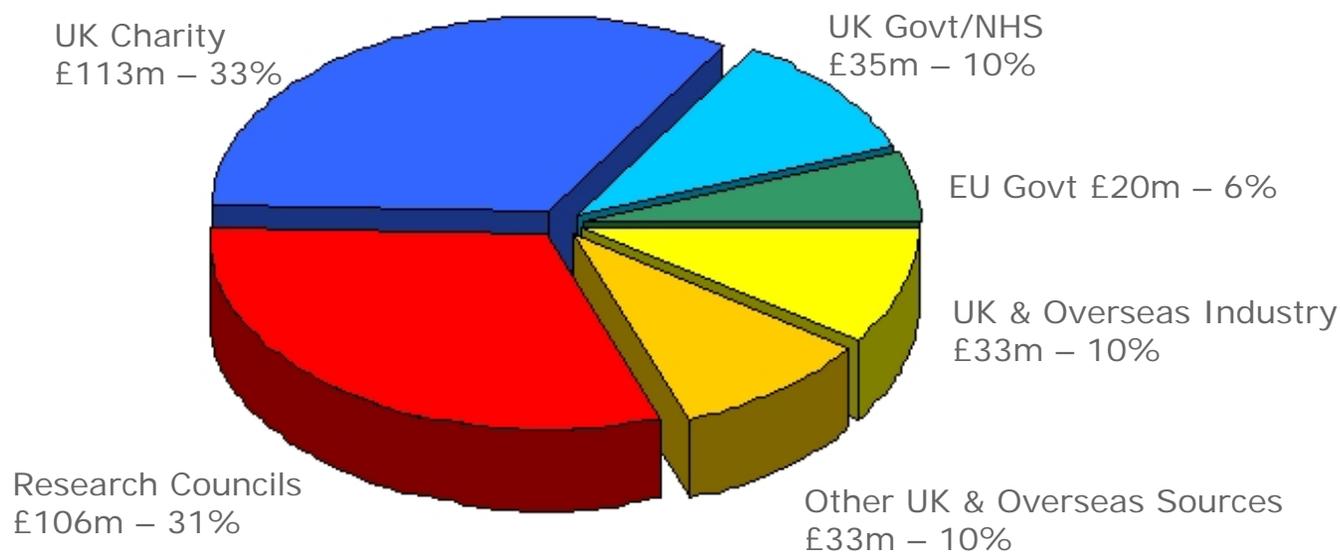


Intellectual Property Policy (from October 2000)

- University claims ownership of all employees' and students' IP rights resulting from University research activities
- The University *assists* those researchers *who wish to* commercialise their research
 - by patenting, licences, spinout companies (inc JVs) & consultancy
- Researchers share the benefits
 - Royalty shares from licences
 - Equity in spinout companies
 - Income from personal consultancy

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



University Divisions:

Medical Sciences	£217m
Mathematical, Physical & Life Sciences	£80m
Social Sciences	£31m
Humanities	£9m
Other	£3m
Total	£341m

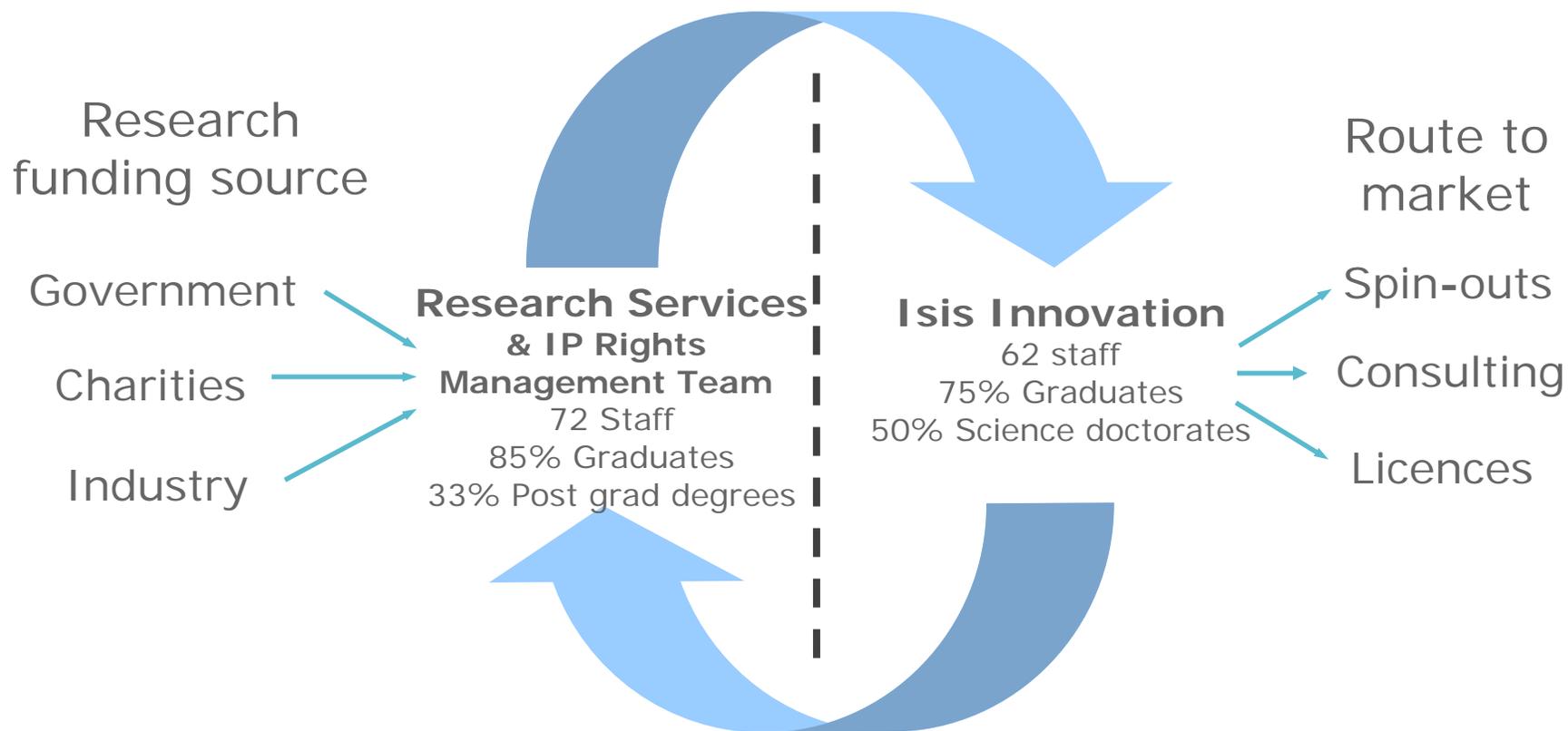
Total £341m
+ HEFCE £110m

Transfer of Intellectual Property

Assignment of intellectual property rights

Inside the University

Outside the University



Isis Innovation 2000 - 2010

Year Ending Mar:	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
University Investment £m	£1m	£1m	£1m	£1m	£1m	£1.2m	£1.2m	£1.2m	£1.2m	£2.5m	£2.5m
Staff	17	21	23	34	36	36	36	37	44	54	65
Open Projects	319	415	476	629	725	764	784	841	978	1112	1182
Patents filed (pa)	55	63	82	65	52	55	57	49	68	64	73
Licence Deals (pa)	21	36	42	37	31	38	45	50	74	69	93
Consultancy (pa)				34	50	48	59	89	102	151	157
Spin-outs (pa)	6	8	8	7	3	4	6	7	4	4	3
Annual T/O £	£0.9m	1.2m	1.7m	2.0m	2.3m	2.7m	2.9m	3.6m	4.8m	5.6m	7.5m



Licensing Agreements

- Licence partners selected on
 - Resources and intent to develop technology to market
 - In healthcare, ability and obligations to supply final products to developing countries where appropriate
- What terms and conditions does it contain?

Commercially:

- Exclusivity
- Territory & field of use
- Upfront payment
- Past patent costs
- Ongoing patent costs
- Milestone payments
- Annual minima
- Fee income royalties
- Royalties
- Development plan

Legally:

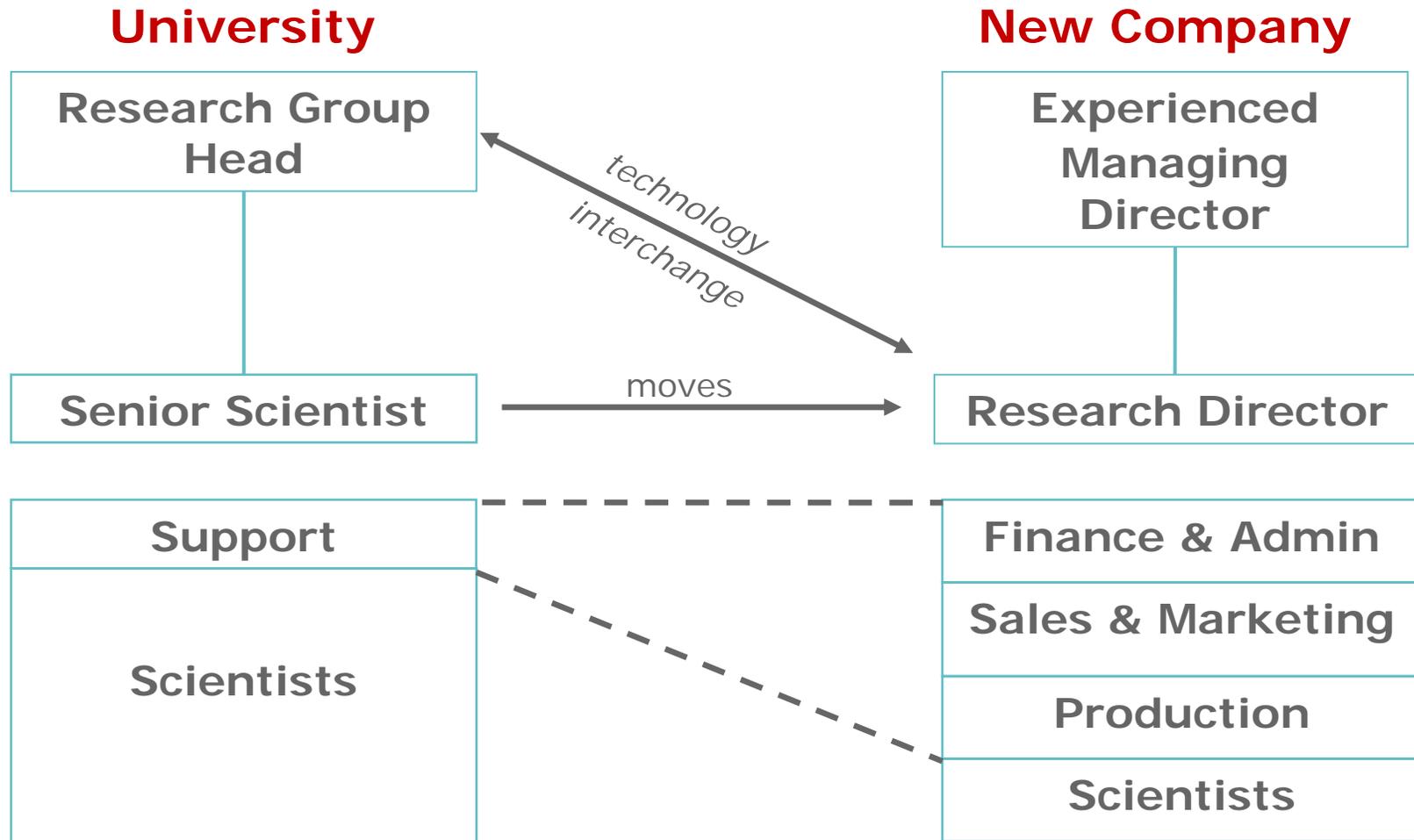
- Why a licence and not an assignment
- Warranties
- Thesis
- Reputation of University
- Licence back for non-commercial (research) use
- Improvement clause
- Advertising/packaging



Drug Discovery

- Some thoughts on patenting drug discovery projects
 - Think carefully about what we patent e.g. Pathway patents, assay patents where there is no clear market and where it is only supporting a specific project
 - Target patents where there is no clear or reasonable chance that the project will not advance to identifying a drug for the target and impact upon the timing of filing
 - SNP patents where the likely market is direct to consumer testing

Spin-out Strategy





Spin-outs – The Players

Founder _____
Researchers _____

Isis Project _____
Manager _____

Investor (1) _____
Investor (2) ? _____

Manager (1) _____
Manager (2)? _____

Lawyers _____

Accountants _____

Bankers _____

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Shareholder, Director,
Consultant

Isis - licence,
OSEM – University
shareholding, director

Shareholder,
Director

CEO, Shareholder

Lawyers

Accountants

Bankers

Shareholders

Advisers

Time →



The Oxford-Emergent Tuberculosis Consortium Ltd (OETC)

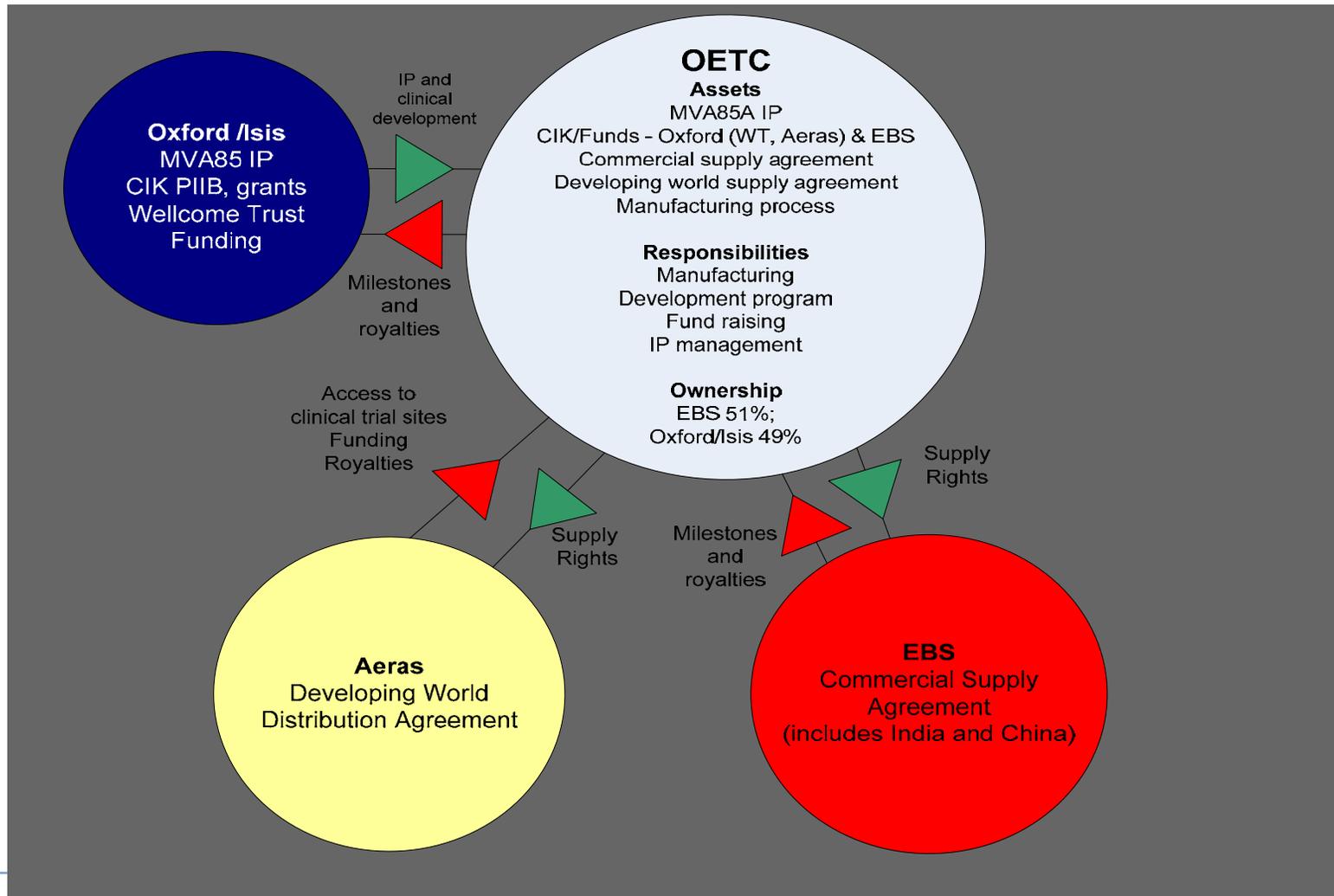


A joint venture corporate entity established in July 2008 by Isis Innovation Ltd and Emergent BioSolutions Inc.

Created to facilitate the further development and commercial delivery of MVA85A - the world's leading next generation TB vaccine.



The Oxford-Emergent Tuberculosis Consortium Ltd (OETC)



Investment Sources

Oxford University Challenge Seed Fund

- Launched with £4m in 1999
- University provided £1m; HM Treasury, Wellcome, Gatsby £3m
- £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

Isis Angels Network

- Business Angels, Seed/Venture Capital
- 100 members
- Events, No Charges

Oxford Invention Fund

- Donations to the University of Oxford as part of Oxford Thinking, the University's overall fund raising Campaign
- Invest in development of new technologies and innovation from Oxford

Translational Funding

- Helped Oxford Researchers raise £9.3 million last year



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, Oxford Biomaterials(Spinox), Zyentia, Oxitec, Oxford Immunotec, Oxford Risk, GlycoForm, BioAnalab
2003	4	Summit(Vastox) *, ReOx, Riotech, OCSI
2004	4	Avacta(OMD) *, G-Nostics, Surface Therapeutics, EKB Technology
2005	5	Oxford Nanopore Technologies, 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, Navetas(ISE), Organox
2009	3	Oxford Financial Computing, Zyoxel, Oxford Yasa Motors
2010	4	OxEms, Kepler Energy, IXO, Oxford PhotoVoltaic

Total external investment to date in 58 spin-outs since 2000: **£270m**

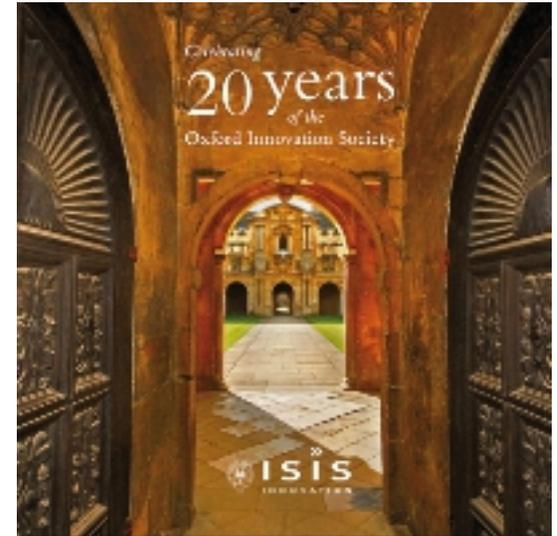
£40m 1st round Seed/Business Angels – average amount invested £850k; 1/3rd > £1m invested.

£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 175 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

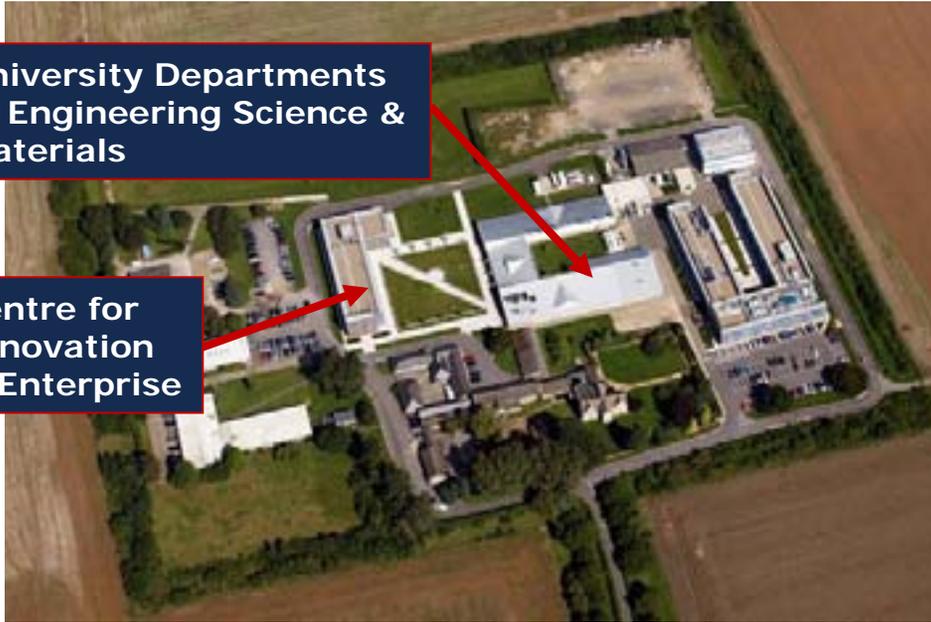


- Tea & coffee reception
- Academic presentation
- Sponsor presentation
- Champagne reception
- Dinner in College
- After dinner drinks

Begbroke Science Park

University Departments
of Engineering Science &
Materials

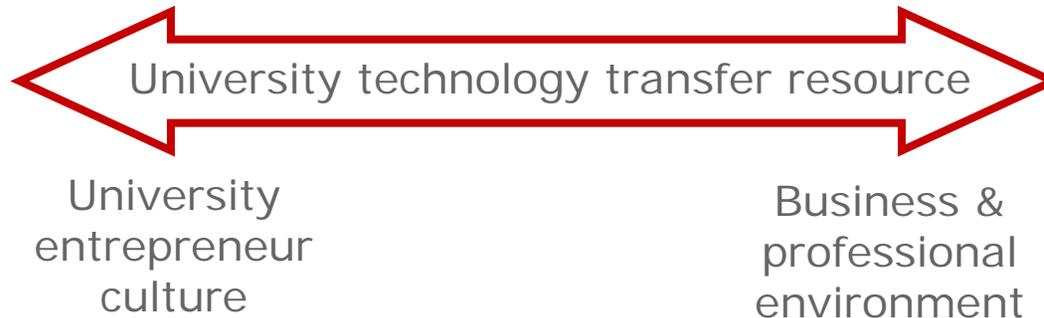
Centre for
Innovation
& Enterprise



- 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

Culture Change & Making Connections



- Universities and Businesses are very different; a university is not meant to be like a company, nor a company designed to be like a university; remembering this helps when trying to bring them together
- The ideas are in the University; if University provides strong TT resource, the cultures can be connected and ideas transferred
- If the University doesn't lead, the University may not receive its share of the benefits
- Technology is a cost; you don't make money out of technology; you make money out of a business that successfully commercialises technology



Conclusions – How Isis Works

- Universities

- Technology Transfer is a good thing
 - Part of University purpose; may make money for University and researchers
- It does not happen on its own
 - You need to invest resources in People, Patent budget, Proof-of-Concept
- You need a policy framework
 - Who owns the inventions; who shares the rewards
- It takes a long time ... So start and do not stop.

- Business

- Access to technologies, resources and expertise
- Help understand universities
- Help your business innovate

- Investors

- Source of investment opportunities
- Home for entrepreneurs

- Government

- Stimulates innovation and enterprise
- Improves society

www.isis-innovation.com

ISIS INNOVATION TECHNOLOGY TRANSFER FROM THE UNIVERSITY OF OXFORD

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"Isis delivers a positive return on investment to the University each year; this year transferring £4.5m to the University and its researchers"

Extract from the Isis Annual Report 2010

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

LATEST NEWS

- Isis publishes 2010 Annual Report**
Isis is pleased to publish its Annual Report for the year ending 31st March 2010.
- Isis to Support Scholarships for India's Future Leaders in Science, Business and Government**
Isis Enterprise is to work with Oxford's Saïd Business School on hosting scholarships for India's future leaders in science, business and government, the Prime Minister announces.
- Isis-SBS Fellowships 2010 Announced**
Two Oxford MBAs have been awarded this year's Fellowships.

Comments & Feedback
Let us know what you think of Isis Innovation

Isis Innovation Success Stories
Highlighting Isis Innovation's most recent successes.

Licensing Opportunities

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