

Integrated Power-point Presentations



The 6th SEAMEO RIHED Study Visit Programme on in the UK:

> **Learning Best Practices** at the World-class Universities

> > 14-21 October 2012









































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The 6th SEAMEO RIHED Study Visit Programme in University Research Management in the UK: Learning Best Practices at the World-class Universities 14-21 October 2012

PROGRAMME

Date/Time	Activities	Remarks
Sun 14 Oct	- Forward journey	For Thai
(Day 1)	- Arrive London (suggest arriving before 07:00 am, Sunday 14	participants, flight
	October)	with Thai Airways TG910, depart from
	Programme Begins	Bangkok on 00:25
		am. arrive at
	- Culture visit @ Blenheim Palace	London on 07:15
		am, Sunday 14
	- Lunch @ Paddyfields Restaurant	October
	- Culture visit @ Christ Church	
	- Dinner @ Kings Arms Restaurant	
	Check in and Overnight at The Oxford Hotel, Oxford	
Mon 15	- Breakfast @ the hotel	
Oct	Deposit for University of Oxford	Hairragaitre of
(Day 2)	- Depart for University of Oxford	University of Oxford
08:45	Arrive at New College.	(Based on New
		College)
09:45	Session 1: Introduction to the programme, UK higher	Address:
	education system, comparison and contrast of UK	Holywell Street
	universities and universities in Southeast Asia Ashok Naidu	Oxford, OX1 3BN
	Director, EDS	
11:00	- Coffee Break	
11:30	Session 2: Governance, leadership and management in	
	contemporary higher education	
	Sir David Watson	
	Principal, Green Templeton College, University of Oxford	

13:00	- Lunch @ the Dining Hall, New College, University of Oxford
14:00	Cultural Visit: Oxford Open Bus City Tour
18:00	- Dinner @ Pierre Victorie
	Overnight at The Oxford Hotel, Oxford
Tue 16 Oct	- Breakfast @ the hotel
(Day 3)	- Depart for University of Oxford (8.15 hrs)
09:00	Session 3: Technology Transfer from the University of Oxford
	Dr Sarah Macnaughton
	Project Manager
	ISIS Innovation, University of Oxford
10:30	- Coffee Break
11:00	Session 4: Developing strategy in a university context
	Professor Michael Shattock
	Professor of Higher Education Management, Institute of
	Education, University of London
12:15	- Lunch @ the Dining Hall, New College, University of Oxford
13:15	Session 5: Walking tour at New College
	David Palfreymen
	Director, Oxford Centre for Higher Education Policy Studies,
	New College, University of Oxford
14:30	Session 6: Managing a university research strategy
	Professor Michael Shattock
	Professor of Higher Education Management,
	Institute of Education, University of London
15:00	- Coffee (arranged by EDS)
16:30	Session 7: The Ashmolean Museum and its role in education,
	teaching and research (and short tour of the Museum) or
	Punting at Oxford
18:00	- Dinner @ Eastgate Townhouse Restaurant
	Overnight at The Oxford Hotel, Oxford

Wed 17	- Breakfast @ the hotel	Oxford Brookes
Oct	- breaklast & the hotel	University
(Day 4)	- Check out of Holiday Inn Oxford	Address:
(Day 4)	- Check out of Holiday IIII Oxford	Oxford Brookes
	Depart for Oxford Brooker University (9.30 hrs)	
	- Depart for Oxford Brookes University (8.30 hrs)	University,
00.00	Walana	Headington
09:00	Welcome	Campus, Gipsy
	Arrival and tea and coffee	Lane, Oxford OX3
		OBP, UK
09:15	Session 8: Introduction in Promoting Excellence in Research	
	Prof Alistair Fitt,	Contact person:
	Pro Vice-Chancellor Research and Knowledge Transfer	Ms. Loredana
	Oxford Brookes University	Faraon
		Email:
10:00	Session 9: Introduction to Oxford Brookes University and	lfaraon@brookes.a
	<u>Partnerships</u>	c.uk
	Mr Richard Side	Tel: +44 (0) 1865 48
	Assistant director, Oxford Brookes International	8774
	Oxford Brookes University	Mobile: +44 7971
		31639
10:30	- Coffee break	
10:45	Session 10: Research capacity and capability	
	Mrs Sarah Taylor, Research Support Manager	
	Oxford Brookes University	
11:30	Session 11: Graduate Office and Faculties	
	Ms Jill Organ, Assistant Academic Registrar (Head of Graduate	
	Office)	
	Oxford Brookes University	
	,	
12:15	Session 12: Rehabilitation Research	
	Professor Helen Dawes: Research Lead Department of Sport	
	and Health Sciences	
	Oxford Brookes University	
	enger at 2. contect conveniency	
13:00	- Lunch @ Oxford Brookes University (Sandwich)	
13:45	Session 13: Management and Innovation in Universities	
	Professor Sean Wellington, Strategy and Development in	
	Faculty of Technology, Design and Environment	
	Oxford Brookes University	
	ONJOIN DIVOKES OFFICE SILY	
14:30	Session 14: Research and Commercialisation in Technology	
17.30		
	Professor Ray Ogden, Associate Dean Basearch and Knowledge Transfer, Oxford	
	Associate Dean Research and Knowledge Transfer, Oxford	

	Brookes University	
	,	
15:30	- Depart for Coventry	
18:00	- Dinner @ Bear Inn Restaurant	
10.00	Simer & Sear IIII restaurant	
	Check in and Overnight at Holiday Inn, Coventry	
Thu 18 Oct	- Breakfast @ the hotel	University of
(Day 5)	- Depart for University of Warwick (8.30 hrs)	Warwick Address:
	Depart for Chiversity of Warwick (0.50 ms)	The University of
09:15	Arrival Reception, International Digital Laboratory	Warwick
	Mrs. Sarah Patrick	Coventry CV4 7AL,
	Senior Liaison Officer (Institutional Relations), International	UK
	Office.	Contact person:
09:30	Session 15: Tour of Digilab International Digital Laboratory	Mrs. Sarah Patrick
	Mr. David Mullins	Senior Liaison
	Director of External and International Relations, WMG	Officer(Institutional
		Relations),
10:00	Welcome Address	International Office
	Prof. Stuart Croft Pro Vice Chanceller, University of Warwick	Email:
	Pro-Vice-Chancellor, University of Warwick	sarah.patrick@war wick.ac.uk
10:20	Session 16: Research Management at the University of	Tel: +011 44 247
	Warwick	652 2647
	Dr. Peter Hedges	
	Director, Research Support Services, University of Warwick	
11:00	- Coffee Break	
11.00	Correct Break	
11:30	Session 17: University Campus Tour	
42.00	Look Cite and a fixed to the first	
12:00	- Lunch @ University of Warwick (Buffet)	
13:30	Session 18: Research Management at Warwick Business	
	School	
	Lecture Theatre M2, Teaching Centre, Warwick Business	
	School Stanban Brammar	
	Stephen Brammer Associate Dean for Research and Professor of Strategy,	
	Warwick Business School	
14:00	Session 19: Campus Tour of Warwick Business School	
	Pamela Pinski External Relations Officer (International), Warwick Business	
	External Netation's Officer (international), wal wick business	1

	School	
15:00	- <u>Visit to the Transport Museum Coventry</u>	
18:00	- Dinner @ The China Red Restaurant	
	Overnight at Holiday Inn, Coventry	
Fri 19 Oct	- Breakfast @ the hotel	
(Day 6)	- Check out Hotel in Coventry	Universities UK Address: Woburn House, 20
06:00	Depart for Universities UK	Tavistock Square,
09:30	Cassian 20. LIK High on Education Devalorments	London, WC1H
09:30	Session 20: UK Higher Education Developments Will Hammonds, Policy Researcher,	9HQ
	Universities UK	Contact person:
		Mr. Will
10:30	Session 21: UK Higher Education, Internationalisation and	Hammonds
	South East Asia	Email: william.hammonds
	Andy Heath Policy Officer for Asia	@universitiesuk.ac.
	UK Higher Education International Unit	uk
12:30	- Lunch @ The Durhan Ox Restaurant	Mr. Andy Heath Email:
14:30	Cultural Visit @ Greenwich Royal Observatory, Meridian Line and National Maritime Museum	andy.heath@intern ational.ac.uk
18:00	- Dinner @ Thai Break Restaurant	
Sat 20 Oct	Check in and Overnight at Thistle Marble Arch Hotel, London - Breakfast @ the hotel	
(Day 7) 8.30	Cultural Visit in London	
0.30	London City Tour, Tower of London, Buckingham Palace	
12:00	- Lunch @ New World Restaurant	
13:00	Relax in London Oxford Street	
18:00	- Dinner @ Devonshire Restaurant	

	Programme Ends	
19:00	Depart for Airport (fight at late night)	
	For Thai participants: Flight with Thai Airways TG917, depart from London on 21:30 pm., Saturday 20 October	
	For Malaysian participants: - Personal arrangement - Flight with Malaysia Airlines MH1, depart from London on 22:00 pm., Saturday 20 October	
Sun 21 Oct- Mon 22 Oct	Return journey For Thai participants: arrive at Suvarnabhumi Intl Airport on 15:15 pm., Sunday 21 October	
	For Indonesian participants: Flight with Singapore Airlines SQ 0319, depart from London on 18:30 pm., Monday 22 For Malaysian participants: - Flight with Malaysia Airlines on Monday 22	
	- arrive at Kuala Lumpur on 17:25 pm., Sunday 21	

The 6th SEAMEO RIHED Study Visit Programme on University Research Management (URM) in the UK:

Learning Best Practices at the World-class Universities

Brief Summary

The 6th SEAMEO RIHED Study Visit Programme on University Research Management in the UK: Learning Best Practices at the World-class Universities was successfully held on 14-21 October 2012. This trip organised visits for 20 university executives from Indonesia, Malaysia and Thailand to University of Oxford, Oxford Brookes University and University of Warwick. In addition, the visit provided sessions with Universities UK (UUK) and UK Higher Education International Unit. The delegation took this opportunity to learn URM in the UK's higher education context, to draw on experiences as well as to share knowledge and to seek potential collaboration with universities and institutions in the UK.

Higher education has a fundamental value in itself and universities in the UK are, in many ways, world-class: in research, in attracting international students, and in contributing to the development of the country's economy. Britain considers its higher education as a major contributor to the economic success and social well being of the country. Higher education is one of its national assets, whose excellence in teaching and researching is world recognised. As higher education in the UK is experiencing reform nowadays, The visit was a great opportunity to look at higher education policy reforms, meanwhile, study responses from higher education institutions (HEIs) regarding research management.

The first two days of the programme were based on New College, University of Oxford. Guest speakers were invited from several HEIs:

- Mr. Ashok Naidu, Director of Education & Development Strategies International provided a brief introduction to the programme, summarised some similarities and differences between UK universities and Southeast Asian universities.
- Sir David Watson, professor of Higher Education Principal, Green Templeton College, University of Oxford, gave a presentation on Governance, leadership and management in contemporary higher education.
- Dr. Sarah Macnaughton, project manager, ISIS Innovation, Universitiey of Oxford, took ISIS as an example, demonstrated good practices on commercializing university research regarding aspects of technology transfer, research funding flow, research innovation and spin-outs strategy, etc.
- Professor Michael Shattock, Professor of Higher Education Management, Institute of Education, University of London, presented strategic management and strategy on managing university research.

On the third day, the visit was organised to Oxford Brookes University (OBU), which has strong partnerships with institutions, organisations, businesses and industries both locally and around the world. OBU believes that through the development of partnerships, they can widen access and improve student experience, foster links with business and industry, continue to develop their professional associations and provide a platform for pursuing research excellence. Presentations at OBU included:

- Professor Chris Cooper, Pro Vice Chancellor and Dean of Business Faculty, Oxford Brookes University, briefed OBU's university strategy on promoting excellence in research with the highlights on research capacity building, research support and promotion, knowledge transfer and commercialisation, as well as challenges the university is facing.
- Mr Richard Side, Assistant Director, Oxford Brookes International, Oxford Brookes University, provided a snapshot on OBU with the emphasis on its partnerships.
- Mrs Sarah Taylor, Research Support Manager, Oxford Brookes University, shared OBU's Research and Knowledge Transfer Strategy. She further elaborated support for research, especially the structure and supports from Research and Business Development Office (RBDO).
- Ms Jill Organ, Assistant Academic Registrar, Oxford Brookes University, briefly presented the Graduate Office and its role in University's Research Degree Programmes.
- Professor Helen Dawes, Research Lead Department of Sport and Health Sciences, Oxford Brookes University, shared a rehabilitation research, which has produced 10 publications and 1 patent as of 2012. She demonstrated how their research group collaborates with industries, charity, private donations and research councils. At the same time, it involves communities to work jointly.
- Dr Sean Wellington, Associate Dean of Strategy and Development, Faculty of Technology, Design and Environment, Oxford Brookes University, gave and overview of Faculty of Technology, Design and Environment. In addition, he took four examples to elaborate their innovations in teaching, research, enterprise and partnership working.
- Professor Ray Ogden, Associate Dean of Research and Knowledge Transfer, Oxford Brookes University, drew attention to research and commercialization in technology. He emphasised the involvement of commerce and industry in terms of increasing focus, fundings and competencies.

Next day, the delegation visited the University of Warwick which was ranked seventh overall in the UK in the 2008 Research Assessment Exercise. The programme began with a tour in Digilab International Digital Laboratory, which followed a Welcoming address by Professor Stuart Croft, Pro Vice-Chancellor for Research, University of Warwick. Two presentations were given during the rest of the day:

- Dr Peter Hedges, Director of Research Support Services (RSS), University of Warwick, showed the overview of RSS, and its functions and achievements in sourcing and creating funding opportunities as well as developing proposals and plans to secure funding for research.
- Professor Stephen Brammer, Professor of Strategy, Associate Dean of Research, Warwick Business School (WBS), University of Warwick, introduced research activities

going on in WBS, the emphasised issues related to building and maintaining research environment. He further elaborated the way they support and develop research excellence at multiple levels.

The last day, the programme provided a platform for the delegation to interact with guest speakers from the Universities UK (UUK) and UK Higher Education International Unit:

- Mr Will Hammonds, Policy Researcher, UUK, provided a holistic picture on UK higher education developments and shared the role of UUK.
- Mr Andy Health, Policy Officer for Asia, UK Higher Education International Unit, introduced his organisation with an enlarged picture on research achievements and potential collaboration with ASEAN countries.

The reforms of UK's higher education policy and their impacts on institutions and universities were reflected in most of the presentations during the visit. This reveals a clear picture for all the participants in terms of how UK HEIs strengthen their research management, maintain a leader position in the international educational arena and identify appropriate agenda for the future.



A comparison and contrast of UK & South-East Asian Universities, Introduction to the Program & Inter-disciplinary Research

Colin Flint OBE
Ashok Naidu

EDS UK



UK / Britain

- England
- ♦ Scotland
- Northern Ireland
- Wales

- ♦ Britain
- ♦ UK

Population ~66 million





Number of universities

UK

♦ 100+

South-East Asia

♦ 400+



Private universities

UK

South-East Asia

◆ 1 (another soon to start)Buckingham University

Many

(but all universities act commercially)



New universities?

UK

South-East Asia

 Several in recent years, including former Polytechnics Several in recent years, including Rajabhat Universities, Nottingham



Oldest university

UK

South-East Asia

Oxford University 1190?

◆ 2nd oldest =
 Cambridge University
 1206?

ChulalongkornUniversity, Thailand

~1917

University of Indonesia 1851



Types of UK universities

- ♦ Ancient (Oxford, Cambridge)
- ♦ Old (e.g. Edinburgh, Durham)
- ♦ "Red-brick" (e.g. Birmingham, Manchester, Leeds, Liverpool)
- New
 - (a) 1960's (e.g. York, Lancaster, Sussex)
 - (b) former polytechnics (e.g Oxford Brookes, Huddersfield)

Government Policies and their evolution



Number of students in each university

UK

South-East Asia

♦ 5,000-30,000

♦ 5,000-30,000

Open University180,000inc 25,000 overseas

Open Universities many students



Number of foreign students

UK

South-East Asia

Many ~12%(and increasing)

Some, more in Malaysia



Degrees

UK

- ♦ Bachelors
- Masters
- Doctorate
- ◆ Professional
- Vocational

South-East Asia

- ◆ Bachelors
- Masters
- Doctorates
- ♦ Some Vocational



Doctorate

UK

South-East Asia

- Little taught input
- Research focus
- Students independent
- ♦ 3 year full-time
- ♦ 6 years part-time

- Considerable taught input
- Students supported
- **♦** Time =



Expectations that students will...

UK

South-East Asia

Question, debate and challenge

♦ ...



University academics

UK

South-East Asia

- ♦ Not civil servants
- Not government employees
- Employed by the university

Mixture

Visiting Scholars



"Style"

UK

South-East Asia

All have both teaching and research role (but will change?)

Increasingly working with Industry

- Mainly teaching universities, with some research
- Industry participation selective



Key issue in UK universities currently

Increase in student fees
2011 starters = ~ £3,000 per year
2012 starters = ~ £9,000 per year

♦ Student loans

◆ Universities can set fee up to maximum of £9,000; most have chosen £9,000



Interdisciplinary Research

♦ We define interdisciplinary research as occurring where the contributions of the various disciplines are integrated to provide holistic or systemic outcomes



Why Inter-disciplinary Research

- Need driven by demand for quicker innovation
- the nature of the subject is interdisciplinary (e.g. transport, environment)
- Sharing resources and optimisation
- Wider investigative base
- Increased attraction to funders



The Process

- ♦ Iterative steps with strategies and criteria
- ♦ Investigative framework and questions
- Identifying relevant disciplines, theories, methods, phenomena, literature
- Evaluating disciplinary insights
- Reconciling and integrating disciplinary insights
- Reflecting, communicating, testing



The Value

- Strategic value
- Bringing together disciplinary methodologies
- Structured & Shared Goals
- Seeks to integrate diverse insights
- ♦ Increased commercialization
- relevant to policy making in complex areas
- ◆ Faster delivery



Skills needed by interdisciplinary researchers

- flexibility, adaptability, creativity
- curiosity about, and willingness to learn from, other disciplines
- an open mind to ideas coming from other disciplines and experiences
- good communication and listening skills
- an ability to bridge the gap between theory and practice
- a good team worker

Governance, leadership and management in UK higher education

Sir David Watson

Professor of Higher Education
Principal, Green Templeton College, Oxford
Workshop for South-east Regional University
Senior Executives (SEAMO)
New College, 15 October 2012

Outline

- (1)HE Leadership from the "outside-in"
- (2) HE Leadership from the "inside-out"
- (3) Governance, Leadership and Management
- (4) Testimony from the front line

(1) "Outside-in" perspectives: living with ambiguity

The University and Society: expectations

- Conservative and radical
- Critical and supportive
- Competitive and collegial
- Charitable and commercial
- Autonomous and accountable
- Excellent and equal

- Entrepreneurial and caring
- Certain and provisional
- Short and long term
- Ethical and Technical
- Traditional and innovative
- Ceremonial and iconoclastic
- Local and international
- Private and public



"Twe decided to pursue a military career in the private sector."

World-classness

What counts:

- Research
- Media interest
- Graduate destinations
- Infrastructure
- International "executive" recruitment

What doesn't count:

- Teaching quality
- Social mobility
- Services to business and the community
- Rural interests
- Other public services
- Collaboration
- The public interest

(2) "Inside-out" perspectives: the question of morale

HE "exceptionalism"

- Stability
- "Flatness:" professionally argumentative communities
- Public purpose/social business

Academic membership: the "psychological contract"

- Honesty (inc. scientific procedure)
- Reciprocity
- Manners
- Self-motivation
- Discipline
- Respect for the environment
- Collective agreement

The question of civility

- "bullying does not occur exclusively in formal hierarchical relationships between managers and their line reports, although this is the most commonlyobserved relationship...bullying is also reported as occurring between peers, subordinates, line managers and external customers or clients" (CMI, 2008, Bullying at Work 2008: the experience of managers. 3.6).
- Sims, D. (2005) "You Bastard: a narrative exploration of the experience of indignation within organisations." Organization Studies 26 (11), 1625-1640.
- Twale, D.J., and De Luca, B.M. (2008) Faculty Incivility: the rise of the academic bully culture and what to do about it. San Francisco: Jossey Bass.

(3) Governance, Leadership and Management: boundaries and relationships

Governance

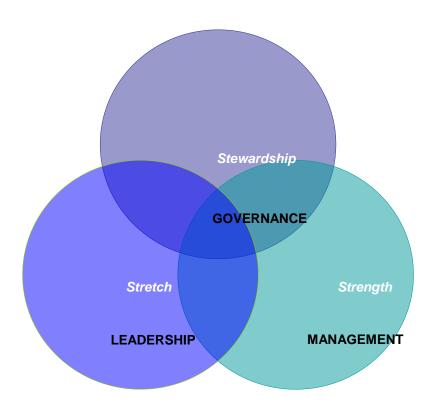
Governance is mainly about stewardship or trusteeship. This entails safeguarding the assets of the institution, including not only money and property but also values and intellectual capital. Above all governors exist to provide direction and reassurance – inside and outside the university – about the good sense and security of the mission.

Leadership

Leadership is subtly different from governance. It involves extending the vision of the university and pressing its performance, so that the university is as good as it can be. It is exercised at all levels of the institution, but in an especially visible way by the senior management team. They have to get the balance right between "ambition and realism;" to challenge the members of the institution, but also to retain their confidence.

Management

Management is about making the systems work. This is not just about low-level functions (although they matter). It is about having high quality, responsive systems for academic programmes, for research projects, for people, for finance, and for facilities and estates (to name just a few).



What is strategy?

- The bigger picture
- The longer look
- Using evidence
- •A fad?

"Strategic planning: who needs it?"

"The problems of strategic planning are essentially three-fold: futurology is a (very) inexact science; who owns and implements the strategy in strategic planning; and how inflexible it is."

Adrian Furnham, Management and Myths, pp.131-34

Setting strategy: some headlines

- Getting the money right
- •The "zone of freedom of action"
- Performance indicators (getting things in proportion)
- Understanding granularity
- Bench-marking (including league tables)
- Dealing with the counter-intuitive
- Reassuring stakeholders
- Ambition and realism

David Watson, Organisational leadership, management and strategic planning in UK HE.

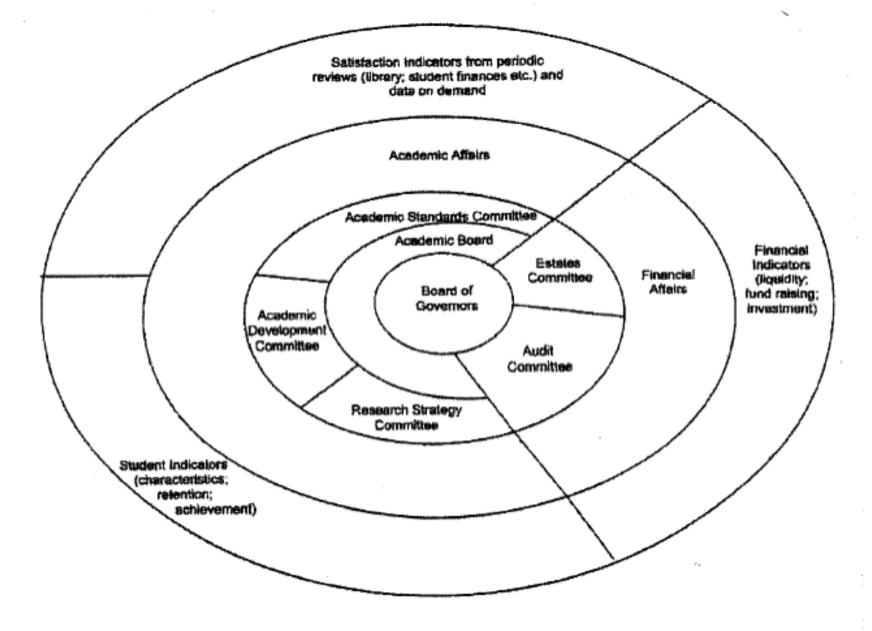


Figure 3.1 Self-study at the University of Brighton: roles and responsibilities

(4) From the front line

Implications for leadership

- End of the "cult of the CEO"
- Successful leaders know "where the organisation is heading; what is going on; who they are; and how to build a strong team"

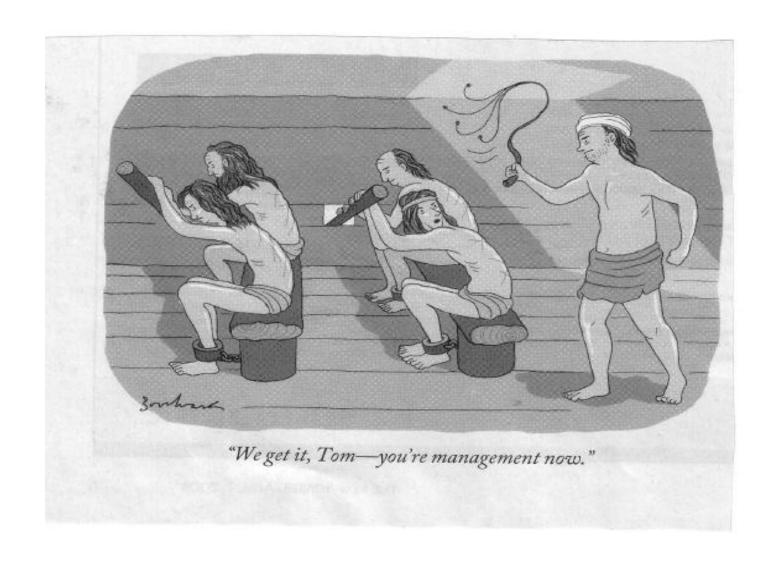
- Reflective pragmatism
- Emotional intelligence
- Strategic "humbition" (Kaufman)
- Self-knowledge
- A "grown-up" culture

Richard Reeves and John Knill, *The 80-minute MBA*, pp. 43-68

"A grown-up culture"

"The leadership priority seems to be to create and preserve a grown-up internal culture, where emotionally intelligent interactions predominate, which neither over-claims nor over-blames, and which has a good, research-informed, sense of itself, its possibilities, and its position in the scheme of things"

Guest Editorial, *HEQ*, 62:4, 319-22



"Work-life balance" or "self-care"

- [Work-life balance] "is based on three flawed assumptions: life is good, work is bad, and they are divisible" (Richard Reeves and John Knell, *The 80 Minute MBA*, p. 81)
- "We often lead a split role; we own all of our skills in the role of therapist but forbid ourselves to use them in the role of employee" (Gerhard Wilke, AUCC Journal, 2000, 4, quoted in David Watson, The Question of Morale, p. 130-31)

The duty of self-care

- The zone of self-management
- Lines in the sand
- Officers of last resort
- Families and tribes
- "Third-space professionals"

(Celia Whitchurch, Professional Managers in UK Higher Education)

Manfred de Vries on "the healthy leader"

"Healthy leaders":

- Can work through their own anxiety and ambivalence.
- Their lives are in balance and they can play.
- They can acknowledge their depression and work it through.
- Those who accept the madness in themselves may be the healthiest leaders of all."

Harvard Business Review (2005)

The Checklist Manifesto (2010) Based on WHO "Safe Surgery Saves Lives" Program

Definition of professionalism..

- •First is an expectation of selflessness: that we who accept responsibility for others...will place the needs and concerns of those who depend on us above our own.
- •Second is an expectation of skill: that we will aim for excellence in our knowledge and expertise.
- •Third is an expectation of trust-worthiness: that we will be responsible in our personal behaviour towards our charges.
- •Aviators, however add a fourth expectation, discipline: discipline in following prudent procedure and in functioning with others (USAir Flight 1549, 19 January 2009).

(Pp. 182-83)

The Vice-Chancellor's checklist (after Gawande, 2010)

- 1. Do you have a surplus on in-year financial transactions?
- 2. Can you modify your long-term financial commitments within five years?
- 3. Have any major cross-subsidies existed for more than three years?
- 4. Have you had a one-on-one conversation with each member of the governing body during the last year?
- 5. Can you tell me something in detail about six (or more) individual students?
- 6. Could you tell me the names of five of the last ten members of staff you met in the university?
- 7. Could you stand (in reasonable detail) behind every statement made on behalf of the university in its undergraduate and postgraduate prospectuses?
- 8. What do you have to say to the university about your own academic work?

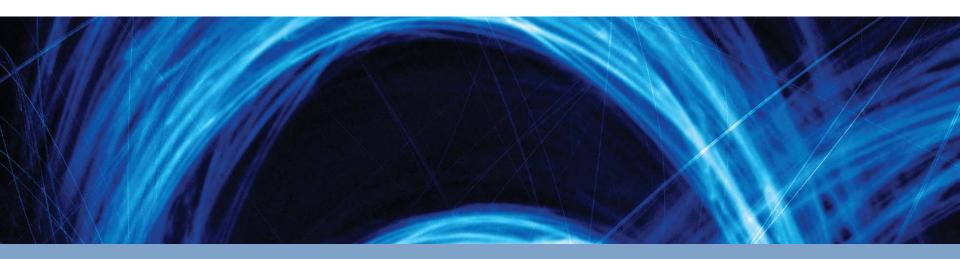


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Discussion





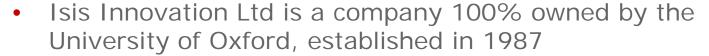
Technology Transfer from the University of Oxford

May 12



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
 - £501 million (2010/2011)



- Isis helps researchers who wish to commercialise the results of their research
- A world-class Technology Innovation business
 - Isis 9th highest British filer of PCT patent applications (WIPO Data, 2010)
 - Highest European University PCT applicant (WIPO Data, 2010)



Christ Church, Oxford



Ewert House, Oxford



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



Resources to Support Commercialisation

UNIVERSITY CONGREGATION

UNIVERSITY COUNCIL

Medical Sciences Division

Four Academic Divisions

Maths,
 Physical &
 Life Sciences
 Division

Humanities
Division

Intellectual Property Advisory Group

Administration

Oxford Entrepreneurs Student Society



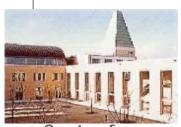
Begbroke Science Park



Research Services



Isis Innovation Limited



Social

Sciences

Division

Centre for Entrepreneurship & Innovation



Isis Return on Investment to the University

- University Investment in Isis for Protecting Oxford IP
- Financial Returns
 - Distributions of royalties 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
 - Contributing to the 'Impact' of the University
 - University staff recruitment & retention
 - Managing Oxford Innovation Society
 - "Oxford again way out at the top for spin-outs" UK Life Science Report 2010









Isis Innovation Ltd

A profitable company 100% owned by the University of Oxford



Oxford Technology Transfer
IP, Patents, Licences, Spin-outs,
Material Sales, Outcome Questionnaires,
Seed Funds, Isis Angels Network, Oxford
University Hospitals NHS Trust



Oxford Expertise Consulting, Services



Isis Consulting Business
Technology Transfer and
Innovation Management



Isis Innovation Staff

Managing Director Tom Hockaday

Administration (14) **Business Support**

HR

Carolyn Hall

Alex Allan Viv Parry Marketing

Simon Gray

Barney Cullum Renate Krelle Dr Fiona Story Accounts Gemma Allnutt Legal Paresh Jasani

Central Administration

Office Manager

Jenny Bailey

Systems Administrator Nelson Sa **Facilities** Jane Tarry Reception Isabel Lavis

Technology Transfer Group (36) Head of Group Linda Naylor

Technology Transfer Technology Transfer Teams Teams

Evert Geurtsen

Roy Azoulay Dr Manjari Chandran-Ramesh Dr Nikolaos Chalkias

Chim Chu Dr David Churchman

Dr Jamie Ferguson

Dr Andy Robertson Brendan Spillane

Dr Paul Ashley

Dr Angela Calvert Dr Matthew Carpenter Dr Sarah Deakin

Andy Self Dr Weng Sie Wong

Dr Carolyn Porter

Seed Investment

Manager Andrea Alunni

Operations Manager

Dr Mairi Gibbs

Administrator

Jan Newell

Dr Susan Gale

Dr Ruth Barrett

Dr Alex Marshall

Dr Brijesh Roy Dr Natasha Tian

Dr Richard Reschen Dr Gayatri Sharma

Dr Rakesh Roshan

Dr Jon Carr Dr Mark Gostock Dr Martin Procter Dr Bharti Ranavaya Dr Christine Whyte

Dr Louis Pymar

Patent & Licence **Admin Manager**

Steven Bayliss

Post-Deal Admin

Kate Spanchak

Patent Administrator

Zuzana Weberova

PhD's: 37 MBA's: 18

Oxford University Consulting (6)

Head of Group Andrew Goff

Project Managers

Susan Clark Gurinder Punn Dr Josef Walker

Administrators

Kerry Antcliffe Katie Bromfield

Isis Enterprise (21) **Head of Group**

Dr David Baghurst (Asia)

Consultants Ya-hsin Shen (Hong Kong) Terry Pollard

Kenji Aiba (Japan)

Dr Chris Moody Robert Swerdlow

Dr Costas Chryssou

Dr Roger Welch

Dr Giles Kimminau Gaurav Misra

Dr Wenming Ji

Dr Sarah Bond

Dr Steve Cleverley

Dr Sarah Macnaughton Elena Andonova

Dr Viraj Perera

Dr Robin Carter

Eva Baltar (Spain)

Manuel Fuertes (Spain)

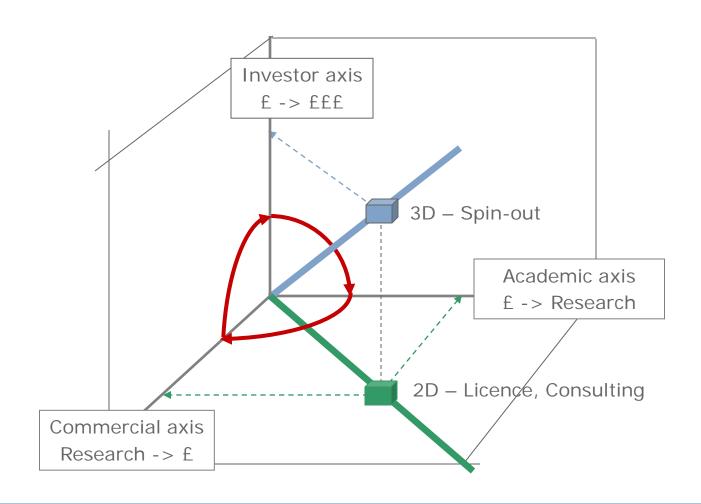
Administrators

Shelagh Harrison, Chloe Cairns

isis-innovation.com

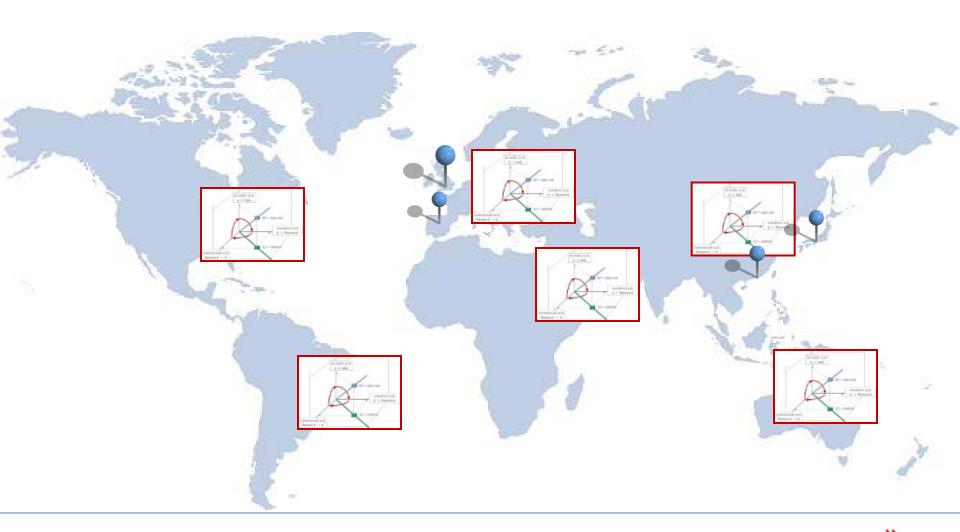
Staff: 77

Acting as Multi-dimensional Intermediaries





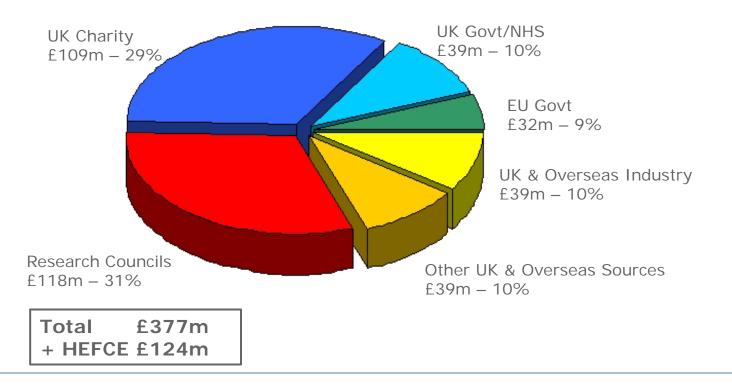
Intermediaries - International





Oxford Research Funding 2010-2011 £501million

- Highest University Research Spend in UK
- 4,700 researchers and 8,700 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



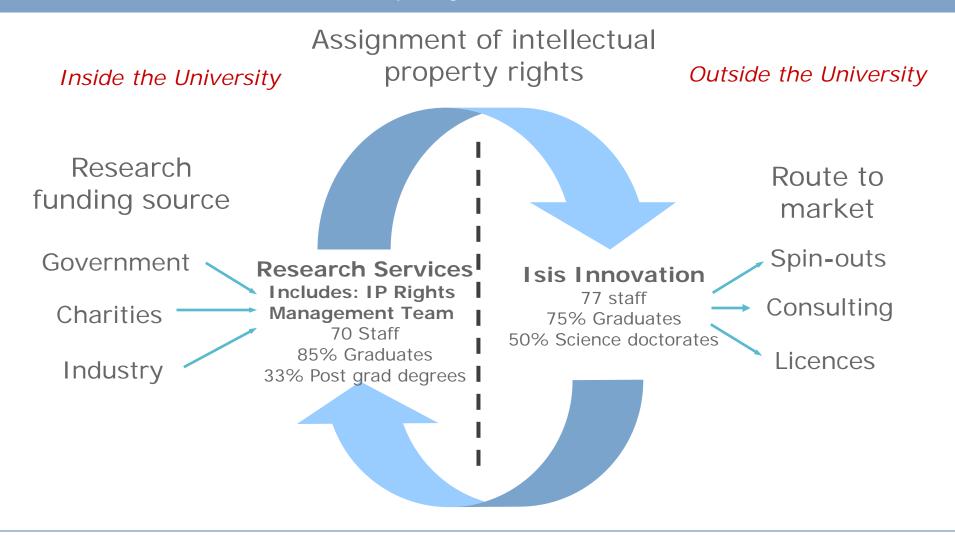


Intellectual Property Policy (from October 2000)

- 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 & consultancy
- Researchers share the benefits
 - Royalty shares from licences
 - Equity in spinout companies
 - Income from personal consultancy

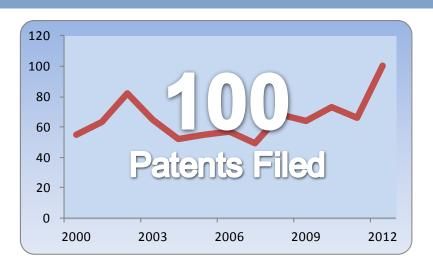


Transfer of Intellectual Property

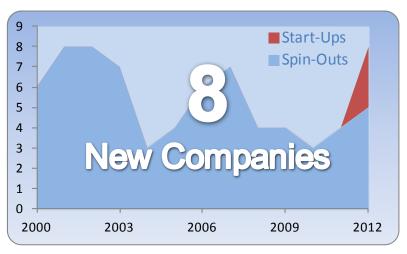


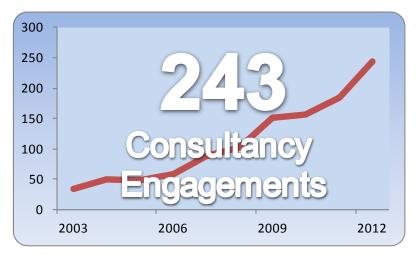


Isis Innovation, year-ending March 2012





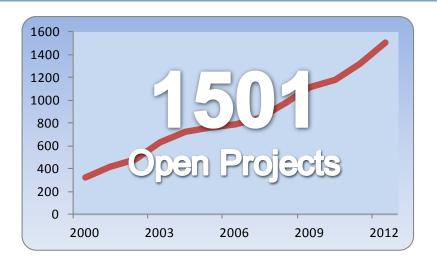


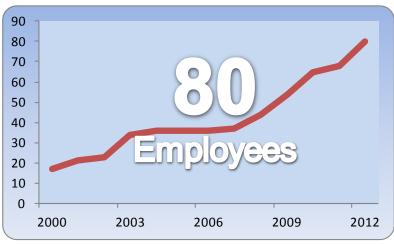


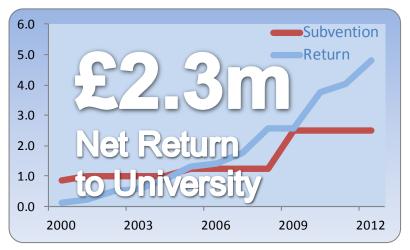


Isis Innovation, year-ending March 2012











Technology Licensing

- Licensing out of University of Oxford Intellectual Property Rights
- Isis currently manages 1,320 Patents & Patent Applications; and 330 active licensing deals
- Technologies marketed to Oxford Innovation Society Members and then other companies
- Licence partners selected on
 - Resources and intent to develop technology to market
 - In healthcare, awareness of access of final products to developing countries
- Exclusive & Non-exclusive, Geographical Territory and Technology Field controls
- Fees, milestones, running royalties appropriate to technology and marketplace
- Royalties
 - Patent budget £2.5m per annum & royalties
 - Isis pays patent costs & recovers these from royalties

Total net revenue	Researchers personally	University General Fund	Department Funds	Isis Innovation
to £72k	60%	10%*	0%	30%
to £720k	31.5%	21%	17.5%	30%
over £720k	15.75%	28%	26.25%	30%





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



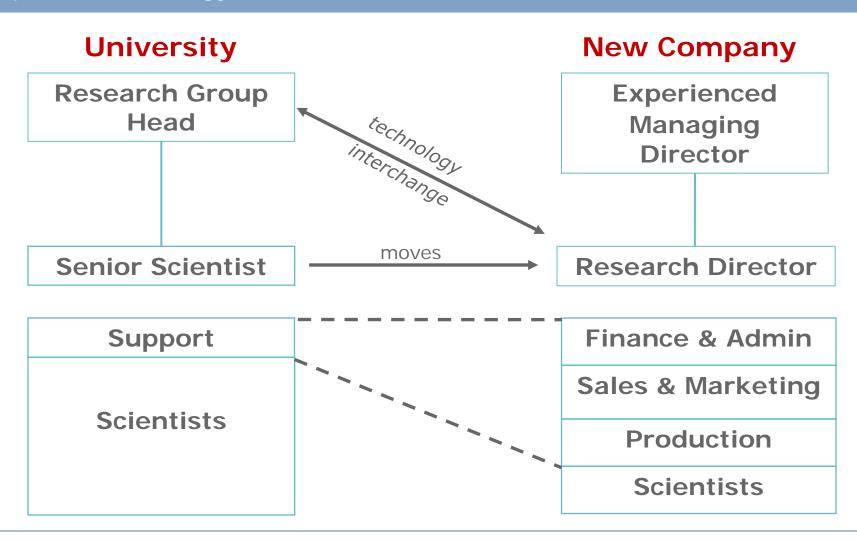
Oxford Spin-outs (post 2000)

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*, Cytox, OxTox
2007	4	Eykona Technologies, Clinox, Oxford Biodynamics, Crysalin
2008	4	Semmle, Oxford-Emergent TB Consortium, Navetas(ISE), Organox
2009	3	Oxford Financial Computing, Zyoxel, Oxford Yasa Motors
2010	4	OxEms, Kepler Energy, IXO, Oxford PhotoVoltaic
2011	5	Oxyntix, Oxtex, Oxford Multi Spectral, Oxford Imaging Detectors, OCB

Total external investment to date in 63 spin-outs since 2000: **£327m** £42m 1st round Seed/Business Angels – average amount invested £850k; 1/3rd > £1m invested. £285m follow-on Venture/Institution Capital * stock exchange listing



Spin-out Strategy





Spin-outs – The Players

Founder Shareholder, Director, Researchers Consultant Isis - licence, Shareholders Isis Technology University shareholding, **Transfer Manager** N director (OSEM) V Investor (1) Shareholder, Investor (2)? **Director** Ε S Manager (1) CEO, Shareholder Manager (2)? M Lawyers Lawyers Ε Advisers N **Accountants Accountants** Т **Bankers Bankers**



Time

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



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

Isis Angels Network

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





Isis Software Incubator, established in 2010

- Support for early-stage software ventures from Oxford University
- Assists the creation and development of a software business opportunity, whether or not a company has yet been incorporated
- Isis provides commercial mentoring, negotiation support, services, desk space, access to business networks
- Projects that have a credible business concept and need:
 - Substantial work to develop IP and build a realistic commercial prospect
 - · With entrepreneurial founders
 - But do not need patents, investors, full-time management

Successful exits

Pilio Ltd – environmental monitoring tool

An Isis project since 2007, with no realistic
licensing prospects. Entered the Software Incubator
in December 2010, exited
in September 2011 as a
trading company with
customers and cash
in the bank

TheySay Ltd – sentiment analysis

An Isis project since 2008 with very limited licensing prospects. Developed a 3rd party application whilst in the incubator, exited in December 2011 having completed one significant commercial contract, with outlook for follow-on business very strong



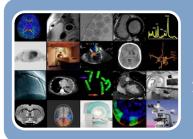
Oxford University Consulting



Providing external organizations with access to University expertise & resources.



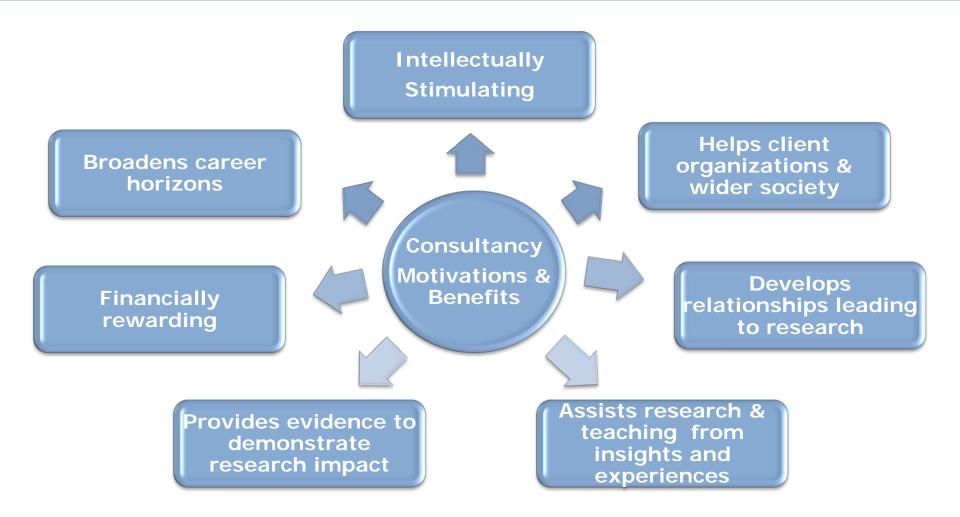
Helping academics identify and manage consulting opportunities.



Supporting Departments in arranging external services (including consultancy) work.



Academic consultancy – Motivations & Benefits



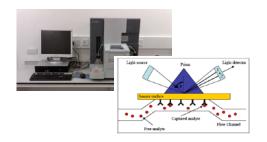


Oxford University Consulting

- Personal Consultancy for a Physics academic to advise on climate prediction models to underpin 'Fate of the World', a game which simulates the real social and environmental impact of global climate change.
- Departmental Consulting for a member of the University's
 Department for Education to join a Panel, convened by the
 Government Chief Scientific Advisor. The panel drew up criteria
 for a review of the government's Department for Education to
 consider use of science and analytical evidence in its strategy,
 policy and decision making.
- Departmental Services providing access for a global biopharmaceutical company to the Biophysics equipment and expertise from the Department of Biochemistry to support the client's R&D programme.









Isis Enterprise

- Created in 2004 as a division of Isis Innovation
- Isis Enterprise helps technology providers and seekers to source, develop and commercialise new innovations.
- Isis Enterprise clients and services:
 - Governments: Policy and benchmarking studies
 - Companies: Innovation management
 - Universities and Research Institutes: Technology transfer partnerships
 - Research Funding Bodies: Translational funding, impact reviews
 - Investors: Technical and market due diligence
 - Science Parks: feasibility studies, innovation ecosystem development
- An international consultancy business:
 - Last year we worked on projects for clients in 30 countries
 - An office in Hong Kong
 - Our staff are often seconded out to work on client projects



Isis Enterprise

We link technology providers with technology seekers

Isis Enterprise - skilled translators

Technology Providers

- Universities
 SMEs
- · Research institutes
- Large companies

Facilitators

- Government
- Research funders
- Investors
- Science Parks

Technology Seekers

- Start-ups
- SMEs
- Large companies

 Maturity
 ideas
 products
 companies

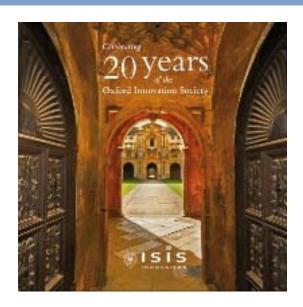
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Often with support from governments, research funders etc.



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



- 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 north 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



Oxford & Entrepreneurship

- Oxford Centre for Entrepreneurship & Innovation
 - Within the Saïd Business School
 - Development of the Oxford Science Enterprise Centre, est. 2000
 - Brings together innovators from across the world, as well as the high-tech companies based around Oxford oxford centre for entrepreneurship and innovation
 - Building a Business,
 - The SBS Venture Fund
- Oxford Entrepreneurs Student Society
 - 'Idea Idol' competition
 - Ideas to Market
 - Changemaker speaker series
 - Enterprising Women speaker series
 - Emerging Markets speaker series





Culture Change & Making Connections





University entrepreneur culture

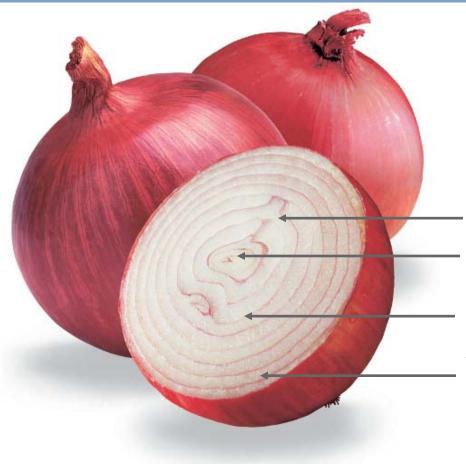
Business & professional environment



- 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



Layers in the Innovation Ecosystem



Innovative companies, investors, entrepreneurs,

University People – Researchers, TTO, Administrators

Professional advisers – patent attorneys, lawyers, accountants, banks, commercial property managers, pr, head-hunters, consultants, students, journalists

Other universities



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



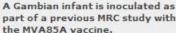
Vision for Isis

- Technology
- Innovation
- For People

- From Oxford and elsewhere
- Successful exploitation of new ideas
- Health & Wealth of Society



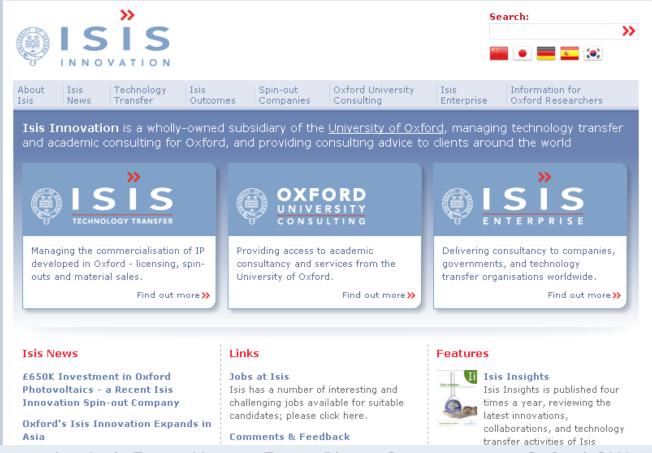








www.isis-innovation.com





Developing Strategy in a University Context

Michael Shattock

www.ioe.ac.uk





Introduction: two themes

STRATEGY some principles

STRATEGY implementation



Some definitions

- Tactics; strategy; vision
- Strategic management is "the art and science of formulating, implementing and evaluating cross functional decisions that enable an organisation to fulfil its objectives"

(David 1996)



Text book strategies

- Environmental scan (IPEST)
- SWOT analysis
- Porter's Five Forces Framework
- Ansoff's Growth Matrix
- Delphi technique
- Rational planning-Intended strategy
- Emergent strategy
- Foresight planning
- Scenario planning
- De facto strategy
- This is not an exhaustive list



Why don't they fit?

What is the core business?

Mixed economy organisations

Conflicting public and internal expectations



Some strategy principles

The road map or the swamp?

"When you are lost on a highway a road map is very useful, but when you are lost in a swamp where topography is constantly changing a road map is of little help. A simple compass which indicates the direction to be taken and allows you to use your own ingenuity in overcoming various difficulties is much more useful"

(Hayes, 1985, Harvard Business Review 63,6)



Some strategy principles - cont

- Evolutionary or the big bang approach to strategy?
- Bottom up or top down?
- Environmental fit
- Being competitive
- Building on staff capabilities
- Coherence and complementarity
- Financial viability—the resource base



Strategy and implementation

Strategy is easy—implementation is difficult



Implementation: an example

The EU "has today set itself a new strategic goal for the next decade: to become the most competitive and dynamic knowledge based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion." EU Lisbon 2000

"Europe is no longer setting the pace in the global race for knowledge and talent, while emerging economies are rapidly increasing their investment in higher education....too few European higher education institutions are recognised as world class in the current research orientated global university rankings...And there has been no real improvement over the past years" EU 2011

(quoted from lecture by Ellen Hazelkorn EAIR 2011)



Strategy and implementation - cont

- "the strengthened steering core" (Clark 1998)
- "the small turning circle"—centre-department/ academic discipline vis à vis centrecollege/faculty/school of study relationships (Shattock 2010)
- resource allocation and strategy
- the management information data base
- finance led strategic planning



Strategy and implementation - cont

Managing the day to day—coherence, opportunism and communication

"Every time an institution hires or dismisses a faculty member, starts a new programme or curtails an old one, decides to recruit students or staff in one way or another, it is creating a strategic plan through its actions. The greatest influence managers have over their institutions is through the daily choices in what Baldridge and Okimi (1982) once called 'jugular vein decisions', which 'build their institution's internal strength and condition it to respond favourably to opportunities or threats. Cumulative, every day decisions can have a lot more impact on an institution's destiny than any master plan'. These decisions ... create 'emergent strategies' (Mintzberg 1994) that 'converge in time in some sort of consistency or pattern' (Hardy, Langley, Mintzberg and Rose 1983)."

(Birnbaum 2000)



Strategy and implementation - cont

Momentum



Reputation and strategy

- Reputational reinforcement
- League tables the strategy impact
 "Comparing current with preferred rank, 70% of all respondents [heads of institutions] wish to be in the top 10% nationally and 71% want to be in the top 25% internationally." (Hazelkorn 2007)
- Reputation and morale



Strategy defined

Strategic management is "the art and science of formulating, implementing and evaluating cross-functional decisions that enable an organisation to fulfil its objectives."

(David 1996)



References

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- Hayes, R H (1985) "Strategic planning—forward or reverse? Are corporate planners going about things the wrong way round? *Harvard Business Review* 63 (6)
- Hazelkorn, Ellen (2007) "The impact of league tables and ranking systems on higher education" *Higher Education Management and Policy 19 (2)*
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Managing University Research Strategy

Michael Shattock

www.ioe.ac.uk





The UK background

- The dual funding system: the Funding Council and the Research Councils: institutional and project funding
- The 'Haldane principle' and its replacement by 'Impact'
- The Research Assessment Exercise



The traditional approach to research strategy

- Appoint the best people
- Establish a good research infrastructure
- Human resources policies which nurture and incentivise research
- Academic and research freedom



International trends in research management

- Selectivity and research concentration
- The economic importance of research—Impact
- Interdisciplinarity rather than single discipline
- Establishment of research themes
- Globalisation and research partnerships
- Competitiveness and league tables



The modern approach: four case studies

- Dublin City University (DCU) Ireland
- Monash University, Melbourne, Australia
- University College, London (UCL), UK
- Warwick University, UK



DCU

- Four advertised posts for Theme Leaders plus admin support: Life Sciences, Public Policy, Humanities and Business/ Finance
- Recruitment issues
- Integration/ isolation—relationship with deans



Monash

- Cross disciplinary research centres
- International recruitment of Directors
- Resources
- Relationships with academic departments



UCL

- National and international rankings, size
- The four 'Grand Challenges': Global Health, Sustainable Cities, Intercultural Interactions, Well-Being
- Support for research themes and interdisciplinary research centres
- Overseas research campuses



Warwick

- 11 Global Priority Programmes: Food Security, Energy, Innovative Manufacturing, Science and Technology for Health, Public Policy, Global Governance, Individual Behaviour, Digital Change, Development
- Synergy with Research Council priorities
- Leadership; relationship with academic departments



Some lessons from the case studies

- Bottom up or top down?
- Relationship with existing departmental structures
- Relationship with Government, industry and society
- Research strengths outside the designated research themes
- Recruitment and resource allocation
- Marrying the traditional with the modern approach
- Organisation and communication



Possible weaknesses of the modern approach

- Freezing research structures; how to maintain flexibility
- The effect on individual creativity
- Internal organisational issues
- How far should university research priorities be determined by state policies and priorities?



SEAMEO delegation visit

Wednesday 17th October 2012

Professor Alistair Fitt,
Pro Vice-Chancellor,
Research and Knowledge Transfer



WELCOME!

It's a great honour for us to have you here!

SEAMEO has a fastgrowing reputation

Particularly for its centres





QUESTION

Are you going to have another SEAMO?





Promoting excellence in research

- 1. Why research is important to us University strategy
- 2. How research is funded in the UK how the REF works
- 3. What we expect our academics to do
- 4. PhD students
- 5. Building research capacity
- 6. Research support and promotion RBDO structure
- 7. Knowledge transfer and commercialization spin outs



1. Why research is important to us

- For many of us it's why we do the job that we do
- It's the ultimate intellectual test
- It makes us money, and enhances university reputation
- Gives us a chance to make a lasting mark
- Nothing more satisfying
- Earns money, IPR and prestige for "UK PLC"
- For some of us it dominates our lives and thinking

NOTE: THE UK AND THE USA LEAD THE WORLD BY MANY RESEARCH MEASURES – EUROPE IS NOWHERE



1. University Strategy 2020

Vision

"Oxford Brookes University will provide an exceptional, student-centred experience which is based on both internationally significant research and pedagogic best practice. We will build on a tradition of distinction in academic, professional and social engagement to enhance our reputation as a university which educates citizens for lives of consequence."



1. Research and knowledge transfer: strategic goal

"We will be a university that is committed to externally recognised world-leading research which is exploited and disseminated for the benefit of our communities".

We value both applied and blue skies research;

We expect our research to be of the highest quality;

Wherever appropriate, we capitalise on our research through knowledge transfer activities;

Our research should benefit our students; our academic community; our local, national and international partners.



1. Strategic Objectives

Objective 1: Focus* on the areas of research that are, or have the potential to be, recognized as world and encourage multi- and interdisciplinary research activity across the University

Objective 2: Increase the exploitation and dissemination of our highest quality research and our collaboration with other Higher Education Institutions and the public, private and third sector

^{*} we do not aim to support all areas equally!



This means:

Increasing research capacity through:

- Developing critical mass (staff and research students) in areas which are, or have the potential to be, world leading
- "Backing winners" by selectively investing in the bits of research that are "best in class"
- Using a strong disciplinary base to develop inter- and multidisciplinary research groups
- Increasing PhD student numbers
- Increasing research income through both bits of the dual funding system as we as via Europe, charities, consultancy, IPR, spin-outs – HEIF etc.



It also means.....

Being "outward facing"; e.g. being active in learned, professional and disciplinary societies and research councils; contributing to national and international debate and policy formulation

Building external research partnerships,

Building external research partnerships, networks and collaborations with other UK HEIs, public, private and third sectors and international partners.

NOTE - THE BEST RESEARCH IS INTERNATIONAL!



University strategy put simply

Brookes is a special university with a special reputation

We've climbed to about 40th in the league tables

The only way we'll get higher is by research.

- that's why our research is so important to us

(Sarah Taylor will say a little more about university strategy later)



2. Dual Research funding in the UK

RCUK

Public money given to the Research Councils to run competitions ("grants") to distribute money to universities. The competitions sort of go on continuously and about £3.2 bn is available each year (AHRC, BBSRC, EPSRC, ESRC, MRC, NERC, STFC). About £22m (JISC) and about £300m TSB) is also available

REF (used to be "RAE")

Public money distributed to universities (about £1.6 bn per year) via a once-every-seven-years competition where each university enters its best researchers.



2. Teaching funding in the UK

HEFCE

Public money given to Universities – about £4.5 bn per year for teaching – universities considered to be a public good

CANCELLED BY THE COALITION

– BILL SENT TO STUDENTS

Yes, the teaching budget dropped by 80% in a single year and went from £4.5 bn down to £0.8 bn!



2. Teaching funding in the UK

- Virtually ALL UK students now pay fees of £9,000 per year
- Students are loaned the money by the government
- Fees are paid by the Treasury to universities
- Loan collected back from students when they get a job that pays a salary of more than £21,000
- Universities in the UK essentially privatised



2. Total public spending in the UK

ITEM	TOTAL (£ bn)
Pensions	129
Health care	124
Education	93
Defence	47
Welfare	110
TOTAL	703

TOTAL PUBLIC SPENDING 2012 ~ £703 bn
COMPLETE TOTAL FOR RESEARCH ~ £5 bn per year (< 1%)



2. The way the RAE (REF) works

A BIG COMPETITION EVERY 6 years:

Here's how it works for Mathematics (imaginary example)

- Each University decides whether or not to "make a return" to the mathematics unit of assessment
- Suppose we decide to make a mathematics return at our University
- Let's say that in our Mathematics Department we have 34 academic staff
- Each must submit their "best four papers" published between 2008-2013
- Only staff in post on the census date (October 31st 2013) are allowed to take part
- We can choose how many of the staff to submit
- Some will be included, some excluded. Normally we choose the ones with the best papers.



2. The way the RAE (REF) works

AT THE END OF 2013 (after the census date):

- Suppose we submitted 20 staff out of our 34 academics
- An external "REF PANEL" (peer review) grades each of the 20x4 papers that we submitted, rating them 4*, 3*, 2*, 1* or 0*
- 4^* = world leading research (0^* = no good)
- The panel also grades our RESEACH IMPACT using this scale
- The panel also grades our RESEARCH ENVIRONMENT using this scale
- The following weightings are applied:

PAPERS: 65%, IMPACT: 20%, ENVIRONMENT: 15%



2. The way the RAE (REF) works

EVENTUALLY MATHEMATICS GETS AN "AVERAGE QUALITY PROFILE"

STAFF	4*	3*	2*	1*	0*
20	15%	45%	30%	5%	5%

WE NOW CALCULATE THE "AVERAGE STAFF % DISTRIBUTION"

STAFF	4*	3*	2*	1*	0*
20	3.0	9.0	6.0	1.0	1.0
MULTIPLIER	3	1	0	0	0
FINAL SUM	9.0	+ 9.0	+0.0	+0.0	+0.0 = 18.0

The final "QUALITY WEIGHTING" (18.0) is multiplied by a constant sum of money (for mathematics £11,000) to give a total of $18 \times £11,000 = £198,000$



2. The final result.....

FOR EACH OF THE NEXT 6 YEARS

MATHEMATICS AT OXFORD BROOKES GETS

£198,000 per year for its research funding



2. A brutal system – but with good points

- ✓ COMPLETELY FORMULAIC
- ✓ COMPLETELY TRANSPARENT
- **✓ DONE COMPLETELY BY PEER REVIEW**
- **✓ ACTUALLY FAIRLY EFFICIENT**
- **✓EVERYBODY KNOWS THE RULES**



2. But also some very bad points.....

- You may be fired if you are not returned in the REF
- Funding is fixed for a long period
- "Transfer market" we'll pay you £50K to move before October 31st
- "Let's have lots of authors so we can return each others' papers"
- How do you rate a paper with reliable accuracy?
- The REF may dominate research thinking in the UK
- Turns research into a funding game with strange rules



2. Oxford Brookes in the RAE

Sarah Taylor will give you full details of our performance later

She will also tell you abut our aspirations for REF 2014 and beyond.



3. What we expect our academics to do

The UK model has "academic staff doing everything"

It's not like the Eastern European model where research happens in research institutes and teaching in universities

A typical (imaginary) academic department (e.g. History) consists of:

- 30 academic staff
- 7 administrators
- 45 PhD students
- 15 post-doctoral research assistants
- 3 emeritus professors



3. It's hard for academics.....

We expect a lot of our academic staff

For them to be "successful", we expect them to:

- Carry out high quality teaching, using the latest methods
- Produce top quality research, outputs for the REF
- Supervise PhD students
- Win Research Council grants

They may also do:

• Consultancy, knowledge transfer, public engagement, scholarly duties, spin-out activity, learned society duties (the list can be very long)



3. It's hard for academics.....

It can be very hard for young academics to know what to do:

- How much time to spend on research/teaching/PhD students?
- Where to go to get money?
- What journals to publish in?
- How much time to spend doing consultancy?
-there are many other things to consider

Since this is hard, we try to give quite a lot of training for young academics. Training is linked to PDR (Personal Development Review)

"Just chatting" (informal mentoring) can be VERY helpful for everybody



4. PhD students

PhD students are the "engine of research". Having lots of good PhD students:

- Gives a dynamic edge to a research department
- Promotes to a great research atmosphere
- Allows you to do research that might not otherwise have got done
- Eventually provides the next generation of academics
- Leads directly to more money in the RAE/REF
- Leads to joint publications and awards
-there are many other benefits too



4. PhD students

We currently have about 350 PhD students, in all parts of the university. WE WANT MANY MORE

Good universities have lots of PhD students

The key issues to deal with to increase PhD numbers tend to be:

- PhD applications
- Supervision capacity
- Money



4. PhD students - PhD applications

For us, this is not much of a problem.

In all but a few parts of the university we have plenty of students who WANT to do a PhD.

When this is a problem, the solution normally involves:

- Being smart and efficient about the applications process
- Building capacity through groups of researchers
- being imaginative about finding attractive sources of funding
- Make sure that the advertising is all in place
- Being proactive about attracting students



4. PhD students – supervision capacity

In a few parts of the university we have too few qualified supervisors.

This is a problem that can be dealt with:

- Don't be too conservative: everybody has to have their first PhD student at some time!
- Think about supervisor training and sharing best practice
- Consider joint supervision/group supervision/mentoring
- If your PhD monitoring system is good, then any problems can be picked up early



4. PhD students – money

This is our biggest problem.

Students will soon leave their first degrees with lots of debt - how can we help to fund them for a PhD?

Currently we have students will many different forms of funding ranging all the way from fully funded to completely self-funded

- Offer a range of funding packages optimise the use of your valuable money
- Be imaginative with funding sources look in new places
- Use split site, dual and joint PhDs with other universities
- Different funding mechanics may be required in different subjects
- Allow the students to do paid teaching during their studies



5. Building research capacity

THE REAL QUESTION: How do we build research capacity?

Currently in Oxford Brookes we have:

- Some research areas that are world leading
- Some that are nationally excellent
- Some where research is just starting to develop

So how do we develop our research portfolio?

Overall in the UK the RAE/REF has meant that we have had to think about this a lot more

We don't just "leave it to develop itself" like we used to do.



5. Building research capacity

Several elements are crucial to build research capacity:

- Hire good researchers whenever possible
- Build research capacity through PhD students who continue their careers here
- Use central research money to support strategic initiatives
- Support interdisciplinary research themes
- Increasing critical mass via "new blood" appointments
- Increasing research grant income
- Support researchers in as many ways as possible:



5. Building research capacity

Supporting individual and group research through:

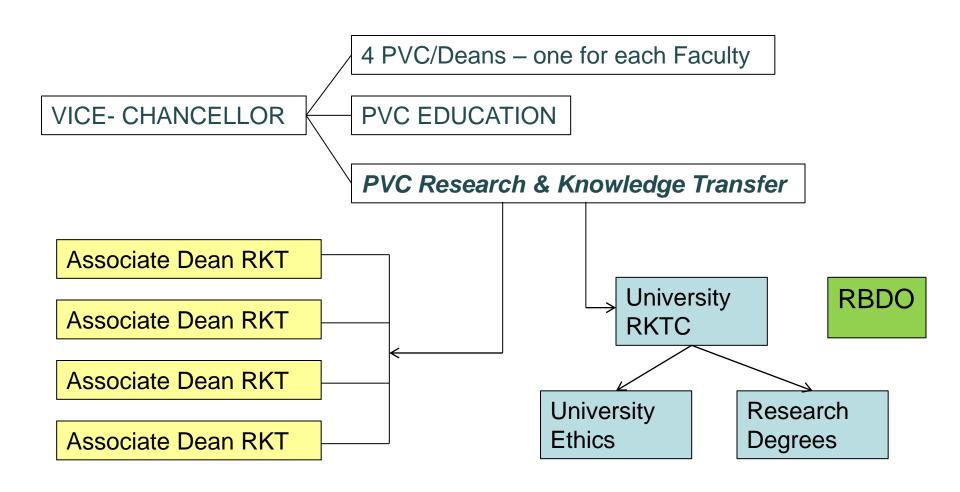
- Workload planning and personal research plans
- Central Research Fund; e.g. time for writing research grants, finishing monograph; funding for international conference attendance, research visits, pilot projects, hosting research events etc.
- Sabbatical scheme

Establishing and nurturing international links:

Visiting research fellowship scheme



6. Research - University structure





6. Research support and promotion - RBDO

The researchers who do the research need support.

They cannot do all of the administration that goes with the research.

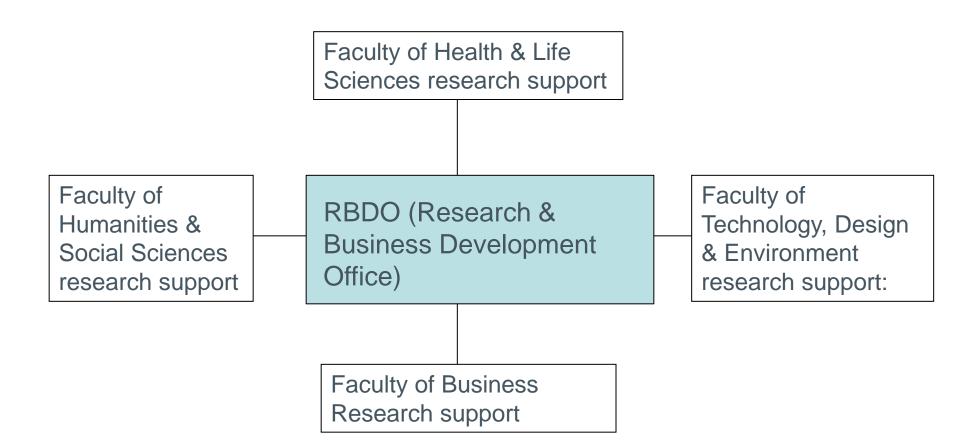
Every research University has a problem to wrestle with

- If the research support is centralised, then it will lose touch with the researchers and the research departments: "us and them"
- If the research support is devolved and there is no "centre", then there will be anarchy everybody doing things in different ways and no uniformity of process. This is expensive and inconvenient.

SOLUTION: have the best of both worlds – "hub and spoke" model



6. Research support – hub & spoke model





6. Research support – role of RBDO

RBDO has a total of 23 staff who do carry out various key tasks

They do fantastic work and we could not do without them

Sarah Taylor from RBDO will give you many more details about RBDO a bit later

Having something like RBDO can avoid a lot of problems.....



6. Research support – RBDO can control this!

Having RBDO can avoid a lot of common problems:

- "I costed it myself I thought that it would come out cheaper that way!
- "It's OK I don't mind doing research for a cigarette company!"
- "Oh dear I didn't realise that human experiments would require ethical approval. They weren't badly injured though......"
- "Errrm yes I signed to say that we'ed provide the £100,000 electron microscope that's OK, isn't it?"
- "I have the money for the PhD student's first year and I promised them that I'd arrange the rest later"
- "I signed all the IPR away I don't care about that sort of thing"
- "I didn't put anything in about insurance or tax too complicated!"



6. Research support – in faculties

Each of the 4 faculties has a research support network:

- Research manager research accountants research administrators
- Faculty RKTC (Research & Knowledge Transfer Committee)
- Faculty grants panel to make sure that only high quality bids are sent
- Scanning the horizon for faculty-specific funding opportunities



7. Knowledge transfer & commercialization

We do blue-skies research, and applied research
BUT WE ALSO DO KT (Knowledge Transfer) and commercialization
Experience has taught us that it is essential to make sure that
everybody understands the rules. In this way everybody can benefit
The issues:

- An academic's work can sometimes be commercialized, and can become very valuable
- The academic should get something but they did the work while they were being paid by the university so it's NOT ALL THEIRS.
- Need to have careful arrangements in place so that everybody understands what the rules are
- This way everybody can be a winner.



7. Knowledge transfer – University policy

Key documents:

- Research & Knowledge Transfer Strategy 2010
- Intellectual Property Policy & Regulations, 2006
 - Commitment to exploitation and dissemination of high quality research
 - The University will meet its obligations to funders to exploit and disseminate
 - Knowledge transfer activity is included in measures of assessment by HEFCE
 - IP is owned, protected and used for the general good of the whole University community
 - The University will not infringe the rights of others



7. So, you have an invention.....

Ownership

- For all staff the University owns IP generated in the course of employment
- Research students assign their rights to IP on enrolment
- Undergraduates and taught post-graduates are exempt
- Some exceptions copyright in scholarly works, commercially funded research

Disclosure

- Keep appropriate records laboratory notebooks
- Disclose to Dean and RBDO using Invention Disclosure Form
- Keep it confidential! no publication or unintended public disclosure



7. Commercialisation.....

Commercialisation – we can help you with:

- Assessing market potential
- Commercial options licensing, spin-outs
- Finding partners, customers, finance
- Rewards to Inventors
- Working with Isis Enterprises, OxIGT and other sources of business support
- Other routes to knowledge transfer



7. Other forms of rewards for academics

Academic Trust Funds

- Available where a staff member is eligible for an additional private payment
- Funds held in an interest-bearing account specific to the individual
- May be used for equipment, staff development, scholarship and travel
- University enhances payment by 10%

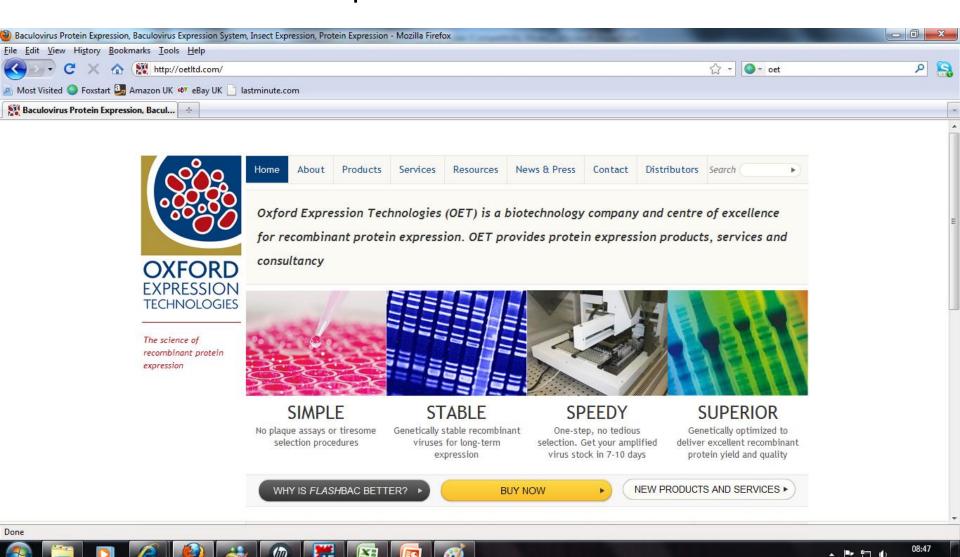
Consultancy

- Various forms of arrangement can be made
- Usually the university takes a small fee for insurance, overheads etc.

Brookes spin out - WildKnowledge



Brookes spin out - OET





WELCOME TO OXFORD BROOKES UNIVERSITY

SEAMEO Study Tour Wednesday 17th October 2011

Richard Side
Associate Director, Oxford Brookes International



Overview of Oxford Brookes

- History
- Some facts and figures
- New Developments
- Organisation of the University
- What we offer
- Study Programmes
- Teaching Partnerships







Our Location

- 1 hour by train to London and direct buses to airports
- Student city
- Centre for industry and enterprise
- 154,000 people: 32,000 students
- Cosmopolitan and multicultural city
- 60 miles (95km) from London









Our History

HISTORY

- First founded in 1865 as Oxford School of Art
- Became Oxford City Technical School in 1891
- John Henry Brookes becomes vice-principal in 1928
- Main campus moves to Headington in 1949
- Becomes Oxford College of Technology in 1956, then Oxford Polytechnic in 1970
- Becomes Oxford Brookes University in 1992
- In 2007 the state of the art engineering building was opened
- Janet Beer became our Vice-Chancellor in 2007
- Shami Chakrabarti (Director of Liberty) became our Chancellor in 2008

IN SEPTEMBER 2010 WAS NAMED THE BEST POST-1992 UNIVERSITY IN THE UK FOR THE 10^{TH} YEAR RUNNING



Key Facts

- 18,000 students
- 14,000 UG, 4,000 PG 17% of students are non-UK
- Turnover of about £170m makes healthy surplus
- Motto: "excellence in diversity"
- Campuses:
 - Harcourt Hill
 - Headington (Gipsy Lane)
 - Marston Road
 - Wheatley



Directorates

DIRECTORATES:

- Academic & Student Affairs
- Corporate Affairs
- Estates & Facilities Management
- Finance & Legal Services
- Human Resources
- Learning Resources
- Oxford Brookes Information Solutions



Departments

Faculty of Business	Faculty of Health & Life Sciences	Faculty of Humanities & Social Sciences	Faculty of Technology, Design & Environment
Business School	Department of Biological and Medical Sciences	School of Education	School of Architecture
Oxford International Centre for Publishing	Department of Clinical Health Care	Department of English and Modern Languages	School of Arts
Oxford School of Hospitality Management	Department of Psychology	Department of History, Philosophy and Religion	Department of Computing and Communication Technologies
	Department of Social Work and Public Health	School of Law	Department of Mechanical Engineering and Mathematical Sciences
	Department of Sport and Health Sciences	Institute of Public Care	Department of Planning
		Department of Social Sciences	Department of Real Estate and Construction



New Developments





Library and teaching space – our vision









Partnerships -UK

 Oxford Brookes works in partnership with regional further education colleges (UG/PG and FnD)

Foundation degrees:

- degree level qualifications designed jointly with employers.
- combine work based learning with academic study
- opportunity to continue working
- study for a degree at a local college.



Partnerships - outside UK

Programme delivery (Transnational Education TNE)

- Increased priority in Internationalisation Strategy
- Increasing demand for delivery of programmes overseas
- Physical limitations for on campus recruitment



Teaching Partnerships

- Brookes has currently 12 international and EU partnerships Brookes or dual awards
- Around 8,500 students on Brookes programmes
- Include franchises and flying faculty
- Biggest is with ACCA global partnership (3,740)
- Others in India, Malaysia, Hong Kong, Poland, Hungary, France



Research capacity and capability

Sarah Taylor,

Research Support Manager

Research and Business Development Office



Research Assessment Exercise (RAE) 2008

Results for Oxford Brookes:

4*	3*	2*	1*	U/C
8%	26%	44%	20%	2%

- more than three-quarters of our research activity was judged 'international
- one third was graded 'internationally excellent/world leading'
- Brookes submitted to 19 of the 67 separate units of assessment, and of these 15 had some research classified 'world leading'



RAE2008 vs RAE2001

	RAE2008	RAE2001
Income	£23,331,677	£11,851,427
Students in FTE	1307.5	1136
Doctorates awarded	245	188
Staff in FTE	226.03	256.40
QR money allocated	£4,280,000	£2,741,000

- Note increase in income and students
- Note decrease in FTE staff returned aiming for high quality profile. Not reflection of number of staff involved in research



Analysis of Research Base

- Saw that we had pockets of excellence but these were often small and diverse
- No problem with "lone researcher" model but can be great strength in collaboration, as well as more opportunities
- Need to ensure that if a researcher leaves, our strength in a given area can be maintained



RESEARCH AND KNOWLEDGE TRANSFER STRATEGY 2010-2015

- Objective 1: Focus on the areas of research which are, or have the potential to be, recognised as world leading and encourage multi- and interdisciplinary research activity across the University
- Objective 2: Increase the exploitation and dissemination of our highest quality research and our collaboration with other Higher Education Institutions and the public, private and third sector.



RESEARCH AND KNOWLEDGE TRANSFER STRATEGY 2010-2015

- We believe that undertaking scholarship and research is non-negotiable; it is fundamental to our mission as a University and should be supported as a core activity, as important as teaching
 - Expect 90% of the research submitted to exercises which assess research to be judged as international quality, and the percentage of internationally excellent or world leading research to rise to 60% by 2020
 - Aim to raise proportion of staff submitted to assessment exercises to 75%
 - Provide a research environment which ensures strong foundations
 - Will not dilute disciplinary strength



RESEARCH AND KNOWLEDGE TRANSFER STRATEGY 2010-2015

- As a university our mission is to ensure our students benefit from the transfer of knowledge and from the dissemination of our research and their engagement with it
 - expect our researchers to engage in activities which raise their profile and that of the university.
 - value of developing international partnerships, both at research group level and institutionally
 - expect our applied research to translate into meaningful application and we will support the development of knowledge transfer and enterprise activities
 - increase the volume of applied, user-driven research and other knowledge transfer activity, including commercialisation of intellectual property



Addressing the Issues

- We require all new academic staff who do not already have a strong research profile, to have a PhD
- Support for new researchers "First Three Years" programme and mentoring and support in Faculties
- Bridging funds to retain contract research staff between contracts
- Workload plans up to 5 years for research
- Significant investment in new posts over the last 5 years



Support for Research

- Research Services Office set up in 1994 with c 12
 FTE now called Research and Business
 Development Office (RBDO) with 25+ FTE
- Some Schools had access to some administrative support. Now each Faculty has Research Manager, student support and all have grants officers
- Dean of Research 0.5 FTE now Pro V-C Research at 1.0 FTE
- Schools had a fractional Research Director, now have an Associate Dean, Research at 1.0 FTE



Support for Research – Research and Business Development Office

- Work to support staff submitting applications to external funders
- Look for funding opportunities
- Provide support for academic staff and Faculties in running grants
- Support the ethics approval processes
- Have dedicated Contracts Manager to facilitate contractual issues
- Support external processes such as the REF
- Working on issues related to research such as management of research data
- Bought CRIS to manage and support research



Support for Research - commercialisation

- RBDO work with staff to develop their ideas to see if they can be commercialised
- This can be patents, licensing, exploitation of knowhow, consultancy, continuing professional development (CPD)
- Have Higher Education Innovation Fund (HEIF) from government to support commercialisation. Roughly £1.65M a year
- Allows Faculties and staff to generate income which can be used to support their research

The Graduate Office:

Working with Faculties to deliver the University's Research Degree Programmes

Jill Organ Head of the Graduate Office



The Graduate Office

Part of the Academic Registry providing a one-stop-shop for all central administration supporting:

- The Graduate College
- Faculties
- The Research Degree Sub-Committee
- Research Students and their programmes
- Postgraduate Tutors, Supervisors and Research Administrators
- Internal and external reports, funding returns, Funding Council Studentship Grants, scholarships
- Marketing



Enquiry to Enrolment

- Process and respond to enquiries
- Managing the application process
- Supporting the offer process
- Annual enrolment

Develop, manage and monitor the University's Research Degree Programmes

- Research and Knowledge Transfer Committee (RKTC)
 Overall responsibility to Academic Board for the quality and standards of research programmes and degrees
- Graduate College Steering Group
 Responsible to RKTC for promoting and developing high-quality research degrees and training in the University and providing research students voice at a senior level
- University Research Degree Sub-Committee (RDSC)
 Responsible to RKTC for all managing all aspects of the current
 programmes and for developing policies and regulations
- Faculty Research Degree Committees
 Responsible to RDSC for monitoring and delivering research programmes within the Faculties



Supporting progression during the Programmes

Research Degree subject Sub-Committees

- The Humanities, Environment and Social Sciences Sub-Committee and the Science and Technology Sub-Committee:
- Registration
- Transfer from MPhil to PhD
- Changes to mode of study
- Suspension
- Examination
- Conferment



Organise Central Training

Supporting the work of the Research Training Co-ordinator:

- Research Student generic transferable skills training
- Supervisor training
- The Research Training Stakeholder Forum
- Manage the Central Training Fund



Research Student Forum and Postgraduate Society

Research Student Forum:

- Student representation
- Organise regular meetings, networking and social events

Postgraduate Society:

Provide administrative and financial support for activities

Professor Helen Dawes

BROOKES UNIVERSITY

Research Lead Department of Sport and HealthSciences
Elizabeth Casson Trust Chair, Oxford Brookes University
Director of Movement Science Group, Oxford Brookes University
Associate Research Fellow in Neurology, University of Oxford
Visiting Professor, University of Cardiff





REHABILITATION AT OXFORD BROOKES

2005: Helen Dawes, Ken Howells and 1 PhD student

2012: multidisciplinary research group

- Professor
- •Reader
- Manager
- •4 Academic researchers (physiologist, programmer, sport science, bioengine
- •5 Clinical researchers (Rehab clinicians, AHPs, psychologist)
- Statistician
- 2 Post doctoral researchers and 2 Research Assistants
- Visiting Researchers and Clinicians
- •10 PhD students (8 externally funded)
- •6 MSc students and 7 BSc project students
- User steering groups- adult and children

Work with:

Industries / Charity / Private Donations/ Research Councils

Elizabeth Casson Trust

Brainmarker

Wildkey

Huntington's Disease Association

NIHR

BRU

Stroke Association

MS Society

Parkinson's UK

Wellcome Trust

Department of Health

Thames Valley Primary Care Trust

Cornwall Primary trust

Welsh Assembly

Glaxo Smith Kline

Oxford University

IHDN

RIMD Trust

Clear Trust

Technology Strategy Board

South East Health Technologies Alliance (SEHTA)









NHS Cornwall and Isles of Scilly











NH5



National Institute for





The Elizabeth Casson Trust



COLLABORATORS

Universities

University of Oxford: Functional Imaging Brain FMRIB

University of Birmingham, Dept of Primary Care and Sport Science

Maastricht University, NL, Dept Primary Care

University of East London: School of Health and Life Sciences

University of Cardiff: Faculty of Medicine

Zuyd University, NL: Dept of Technology

Oxford Brookes University: Faculty of Health and Life Sciences,

Oxford University: Dept of Psychiatry

University of Bristol: Exercise, Nutrition and Health Sciences,

Oxford University: Dept of Clinical Neurology

Oxford University: Biomedical Research Unit

Manchester University: Health Sciences

Queen Margaret, Edinburgh: Life Sciences

Oxford Brookes University: Dept of Mathematics

University of Jordan, Jordan E, Dept of Rehabilitation

Hospitals Universities Geneva, Geneva



COLLABORATORS

Hospitals

Oxford University NHS Trusts
Stroke Mandeville NHS
Oxford Primary Care NHS Trust

Enterprise

Brain-Marker, NL Wild Knowledge, UK

Charities

Huntington's Disease Association
UK Spinal Cord Injury Research Network
MS Society UK
Parkinson's UK
Stroke Association



OXFORD BROOKES UNIVERSITY





- 10 Publications
- 1 Patent
- Keynote of work at National/International Conferences





- 'Who Am I Exhibition' Science Museum London Movement Prints
- Dance production
- Poetry 'Movement Prints'
- Local Schools Movement Prints
- Stroke Association Campaign
- Invited National/International Presentations
- Industry SME's
- 4000 prints of research booklet translated into practice PASS







OXFORD BROOKES UNIVERSITY

BSc - PhDs In UK 5 * depts.

MSc PhDs in UK 5 * depts and World top 300 Universities

PhD Associate Prof/Lecturers/RA

Maastricht University
University of Jordan
HUG Geneva
University of Oxford
and World top 300 Universities





- Gifted and Talented 100 local school children
- Exercise Classes for charity support groups
- Charity and Support Group Talks
- Patient and professional training sessions and materials



RESEARCH THEMES

Optimise body function, activity and participation for health and wellbeing in adults and children with neurological/neurodevelopmental/neurodegenerative conditions

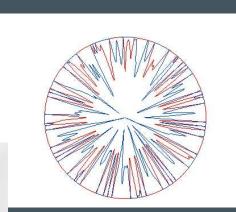
~5 million people

Exercise

Rehabilitation

Movement

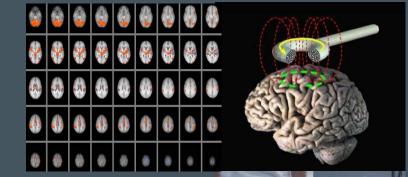




REHABILITATION











CURRENT PROJECTS

Rehabilitation

- Dual tasking and community mobility after stroke
- Car driving- understanding mechanisms of control
- Walking understanding mechanisms of control
- Physiotherapy for people with osteoporotic spinal fractures
- Effective therapy delivery systems and models [hospital and community]



EXERCISE

"Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it." Plato

The evidence is overwhelming exercise/physical activity benefits health and well being for all; a 'wonder drug' or 'miracle cure'. (Chief Medical Officer UK2010)



CURRENT PROJECTS

Exercise in neurological populations [Adults & children]

- Impact on function, mobility, health wellbeing, fatigue
- Disease progression [MCI, PD, HD, MS]
- Dose (minimal) and recovery
- Speed and power training in disability sport
- Exercise and Brain Health and wellbeing

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0	Nothing at all
0.5	Extremely light (Just noticeable)
1	Very light
2	Light
3	Moderate
3 4 5	Somewhat hard
	Hard
6	
7	Very hard
8	·
9	
10	Extremely hard (almost maximal)
	Maximal





CURRENT PROJECTS

Movement Science

- Mechanism and control of movements and walking
- Measurement tools: Diagnosis and monitoring
- Virtual gym
- Modeling movement: Imaging techniques
- Stimulated motor learning-relearning



Development of DataGait

Base.253.176114.AC-02-E9-16-27-1B-37-3B-,-9.457031.0.945313.-1.476563.0.808594.-0.121094.0.515625.0.007813.-0.027344.0.027344.-0.649319.-0.025638.-0.758834.-0.043568 Base, 253.186114, AC-02-E9-16-27-1B-37-3B-, -9.457031, 0.945313, -1.464844, 0.820313, -0.082031, 0.523438, 0.011719, -0.023438, 0.03125, -0.649471, -0.025853, -0.758706, -0.043394, Base, 253.196114, AC-02-E9-16-27-1B-37-3B-, -9.457031, 0.941406, -1.464844, 0.839844, -0.085938, 0.519531, 0.015625, -0.023438, 0.035156, -0.649617, -0.026043, -0.758585, -0.043213 Base, 253, 206114. AC-02-E9-16-27-18-37-38-, -9.453125.0.9375.-1.46875.0.84375.-0.121094.0.503906.0.015625.-0.023438.0.035156.-0.649715.-0.025917.-0.758499.-0.043334.-9.6 Base, 253.216154, AC-02-E9-16-27-18-37-38-, -9.449219, 0.945313, -1.472656, 0.808594, -0.136719, 0.5, 0.015625, -0.023438, 0.035156, -0.649731, -0.025675, -0.758474, -0.043687, -9.63 Base,253.226154,AC-02-E9-16-27-1B-37-3B-,-9.445313,0.945313,-1.476563,0.753906,-0.144531,0.484375,0.019531,-0.027344,0.03125,-0.649694,-0.025472,-0.758497,-0.043953, Base, 253.236154, AC-02-E9-16-27-1B-37-3B-, -9.445313, 0.941406, -1.484375, 0.738281, -0.171875, 0.476563, 0.019531, -0.027344, -0.649601, -0.025172, -0.75857, -0.044229, Base, 253.246154, AC-02-E9-16-27-1B-37-3B-, -9.449219, 0.933594, -1.488281, 0.777344, -0.175781, 0.503906, 0.019531, -0.027344, 0.03125, -0.6495, -0.024822, -0.758654, -0.044472, -9. Base, 253.256174, AC-02-E9-16-27-1B-37-3B-, -9.453125, 0.933594, -1.488281, 0.828125, -0.144531, 0.535156, 0.023438, -0.023438, 0.03125, -0.649419, -0.024654, -0.758726, -0.044521, Base, 253.266174, AC-02-E9-16-27-1B-37-3B-, -9.46875, 0.9375, -1.484375, 0.839844, -0.109375, 0.53125, 0.027344, -0.023438, 0.027344, -0.649412, -0.024683, -0.758739, -0.044381, -9.6 Base, 253.276174, AC-02-E9-16-27-18-37-3B-, -9.472656, 0.945313, -1.46875, 0.792969, -0.105469, 0.5, 0.027344, -0.027344, -0.027344, -0.649525, -0.024751, -0.758644, -0.04432, -9.6365 Base, 253.286174, AC-02-E9-16-27-18-37-38-, -9.464844, 0.941406, -1.460938, 0.742188, -0.109375, 0.484375, 0.011719, -0.023438, 0.03125, -0.649635, -0.024728, -0.758549, -0.044344, Base, 253, 296209, AC-02-E9-16-27-1B-37-3B-,-9, 460938, 0.9375,-1, 460938, 0.730469,-0.089844, 0.5, 0.003906,-0.023438, 0.03125,-0.649716,-0.024743,-0.758483,-0.044282,-9.63737 Base, 253.306209, AC-02-E9-16-27-1B-37-3B-, -9.460938, 0.9375, -1.472656, 0.753906, -0.066406, 0.496094, 0.003906, -0.023438, 0.027344, -0.649723, -0.024857, -0.758484, -0.044092, -0.024857, -0.758484, -0.044092, -0.024857, -0.758484, -0.044092, -0.024857, -0.758484, -0.044092, -0.024857, -0.758484, -0.044092, -0.024857, -0.0248 Base, 253.316209, AC-02-E9-16-27-18-37-38-, -9.457031, 0.933594, -1.480469, 0.761719, -0.066406, 0.484375, 0.007813, -0.023438, 0.027344, -0.649685, -0.024968, -0.758525, -0.043875, -0.024968, -0.048675, -0.Base, 253.326209, AC-02-E9-16-27-1B-37-3B-, -9.453125, 0.925781, -1.488281, 0.742188, -0.082031, 0.503906, 0.007813, -0.023438, 0.023438, -0.649579, -0.024953, -0.758627, -0.043692 Base, 253.336226, AC-02-E9-16-27-1B-37-3B-, -9.457031, 0.917969, -1.492188, 0.71875, -0.09375, 0.539063, 0.007813, -0.03125, 0.023438, -0.649465, -0.024845, -0.758737, -0.043541, -9. Base, 253.346226, AC-02-E9-16-27-1B-37-3B-, -9.460938, 0.917969, -1.5, 0.722656, -0.128906, 0.550781, 0.007813, -0.03125, 0.027344, -0.649305, -0.024604, -0.758879, -0.043596, -9.636126, -0.024604Base, 253.356226, AC-02-E9-16-27-18-37-38-, -9.460938, 0.921875, -1.507813, -0.757813, -0.164063, 0.515625, 0.011719, -0.027344, 0.03125, -0.649127, -0.024259, -0.759027, -0.043865, -0.049127, -0.043865, -0.049127, -0.Base, 253.366226, AC-02-E9-16-27-18-37-38-, -9.453125, 0.925781, -1.511719, 0.8125, -0.152344, 0.476563, 0.015625, -0.023438, 0.035156, -0.64898, -0.024038, -0.759147, -0.044086, -9. Base, 253.376257, AC-02-E9-16-27-18-37-38-, -9.449219, 0.921875, -1.515625, 0.839844, -0.132813, 0.472656, 0.015625, -0.027344, 0.035156, -0.648863, -0.023903, -0.759247, -0.044163 Base, 253, 386257, AC-02-E9-16-27-1B-37-3B-, -9.453125, 0.917969, -1.515625, 0.824219, -0.136719, 0.5, 0.019531, -0.03125, 0.035156, -0.648757, -0.023723, -0.759338, -0.04424, -9.6348 Base,253.396257,AC-02-E9-16-27-1B-37-3B-,-9.457031,0.917969,-1.515625,0.828125,-0.148438,0.535156,0.019531,-0.03125,0.035156,-0.648646,-0.023474,-0.759431,-0.044401, Base,253.406257,AC-02-E9-16-27-18-37-3B-,-9.464844,0.921875,-1.515625,0.832031,-0.144531,0.558594,0.015625,-0.035156,0.03125,-0.648559,-0.023243,-0.759503,-0.04457, Base, 253, 416304, AC-02-E9-16-27-18-37-3B-, -9, 464844, 0, 925781, -1, 511719, 0, 820313, -0, 121094, 0, 550781, 0, 007813, -0, 035156, 0, 03125, -0, 648519, -0, 023149, -0, 759535, -0, 044652 Base, 253.426304, AC-02-E9-16-27-18-37-38-, -9.464844, 0.929688, -1.503906, 0.824219, -0.105469, 0.527344, 0.007813, -0.035156, 0.03125, -0.648565, -0.023175, -0.759495, -0.044657, -0.04657, -0.04667, -0.0467, -0.0467, -Base, 253.436304, AC-02-E9-16-27-1B-37-3B-, -9.464844, 0.929688, -1.496094, 0.839844, -0.09375, 0.5, 0.015625, -0.035156, -0.035156, -0.648693, -0.02332, -0.759387, -0.044553, -9.6347 Base, 253.446304, AC-02-E9-16-27-18-37-38-, -9.460938, 0.933594, -1.492188, 0.832031, -0.074219, 0.492188, 0.027344, -0.035156, 0.035156, -0.648834, -0.023669, -0.759271, -0.044281 Base, 253.45642, AC-02-E9-16-27-1B-37-3B-, -9.460938, 0.941406, -1.484375, 0.828125, -0.101563, 0.519531, 0.027344, -0.03125, 0.035156, -0.648953, -0.023845, -0.759164, -0.044293, -0.0442 Base, 253.46642, AC-02-E9-16-27-1B-37-3B-, -9.464844, 0.945313, -1.472656, 0.84375, -0.160156, 0.558594, 0.019531, -0.027344, 0.035156, -0.649061, -0.023518, -0.759049, -0.044858, Base, 253, 47642, AC-02-E9-16-27-1B-37-3B-, -9.46875, 0.941406, -1.464844, 0.839844, -0.195313, 0.558594, 0.007813, -0.027344, 0.035156, -0.649179, -0.022777, -0.758917, -0.045758, -0.045 Base, 253.48642, AC-02-E9-16-27-1B-37-3B-, -9.46875, 0.9375, -1.46875, 0.796875, -0.183594, 0.523438, 0, -0.027344, 0.035156, -0.649252, -0.022013, -0.758826, -0.046587, -9.636219, 0. Base, 253.496521, AC-02-E9-16-27-18-37-38-, -9.460938, 0.941406, -1.472656, 0.769531, -0.15625, 0.484375, 0, -0.027344, 0.035156, -0.649307, -0.021507, -0.758757, -0.047172, -9.6363 Base, 253.506521, AC-02-E9-16-27-1B-37-3B-, -9.460938, 0.945313, -1.472656, 0.78125, -0.148438, 0.480469, 0.007813, -0.023438, 0.035156, -0.649351, -0.021124, -0.758701, -0.047645, Base, 253.516521, AC-02-E9-16-27-1B-37-3B-, -9.460938, 0.945313, -1.476563, 0.800781, -0.164063, 0.488281, 0.019531, -0.019531, 0.035156, -0.64934, -0.020623, -0.758688, -0.048211, Base, 253.526521, AC-02-E9-16-27-1B-37-3B-, -9.46875, 0.941406, -1.480469, 0.8125, -0.171875, 0.488281, 0.023438, -0.023438, 0.03125, -0.649327, -0.019994, -0.758679, -0.048801, -9.64801 Base, 253, 536636, AC-02-E9-16-27-1B-37-3B-, -9.472656, 0.9375, -1.480469, 0.800781, -0.152344, 0.480469, 0.019531, -0.03125, 0.03125, -0.649354, -0.019505, -0.758643, -0.049182, -9.6 Base, 253, 546636, AC-02-E9-16-27-1B-37-3B-,-9, 46875, 0, 933594, -1, 484375, 0, 777344, -0, 105469, 0, 480469, 0, 019531, -0, 035156, 0, 027344, -0, 649364, -0, 019469, -0, 758646, -0, 049019, Base, 253.556636, AC-02-E9-16-27-18-37-38-, -9.460938, 0.941406, -1.476563, 0.773438, -0.082031, 0.488281, 0.019531, -0.03125, 0.023438, -0.649405, -0.019689, -0.758626, -0.048708, Base, 253, 566636, AC-02-E9-16-27-1B-37-3B-, -9.457031, 0.953125, -1.457031, 0.804688, -0.117188, 0.492188, 0.015625, -0.03125, 0.023438, -0.64956, -0.019683, -0.758486, -0.048822, -1.457031, 0.804688, -0.117188, 0.492188, 0.015625, -0.03125, 0.023438, -0.64956, -0.019683, -0.758486, -0.048822, -1.457031, 0.804688, -0.117188, 0.492188, 0.015625, -0.03125, 0.023438, -0.64956, -0.019683, -0.758486, -0.048822, -1.457031, 0.804688, -0.117188, 0.492188, 0.015625, -0.03125, 0.023438, -0.64956, -0.019683, -0.758486, -0.048822, -1.457031, 0.804688, -0.117188, 0.492188, 0.015625, -0.03125, 0.023438, -0.64956, -0.019683, -0.758486, -0.048822, -1.457031, 0.804688, -0.117188, 0.492188, -0.015625, -0.03125, 0.023438, -0.64956, -0.019683, -0.758486, -0.048822, -1.457031, 0.804688, -0.117188, 0.492188, 0.015625, -0.03125, 0.023438, -0.64956, -0.019683, -0.758486, -0.01868, -0.01 Base, 253.576673, AC-02-E9-16-27-1B-37-3B-, -9.457031, 0.953125, -1.445313, 0.832031, -0.171875, 0.519531, 0.015625, -0.027344, 0.023438, -0.64971, -0.019176, -0.75833, -0.049452, -0.049424, -0.049424, -0.049424, -0.049424, -0.049424, -0.0494 Base,253.586673,AC-02-E9-16-27-1B-37-3B-,-9.460938,0.941406,-1.445313,0.835938,-0.191406,0.542969,0.015625,-0.027344,0.027344,-0.649797,-0.018394,-0.758225,-0.05020 Base, 253.596673, AC-02-E9-16-27-1B-37-3B-, -9.460938, 0.929688, -1.460938, 0.824219, -0.164063, 0.546875, 0.015625, -0.027344, 0.03125, -0.649765, -0.017797, -0.758239, -0.050616 Base, 253, 606673, AC-02-E9-16-27-1B-37-3B-, -9, 460938, 0, 933594, -1, 472656, 0, 804688, -0, 105469, 0, 554688, 0, 015625, -0, 023438, 0, 03125, -0, 64966, -0, 017835, -0, 758342, -0, 050418, -0, 105469, 0,





INERTIAL MEASUREMENT UNITS

Combination of multiple sensors

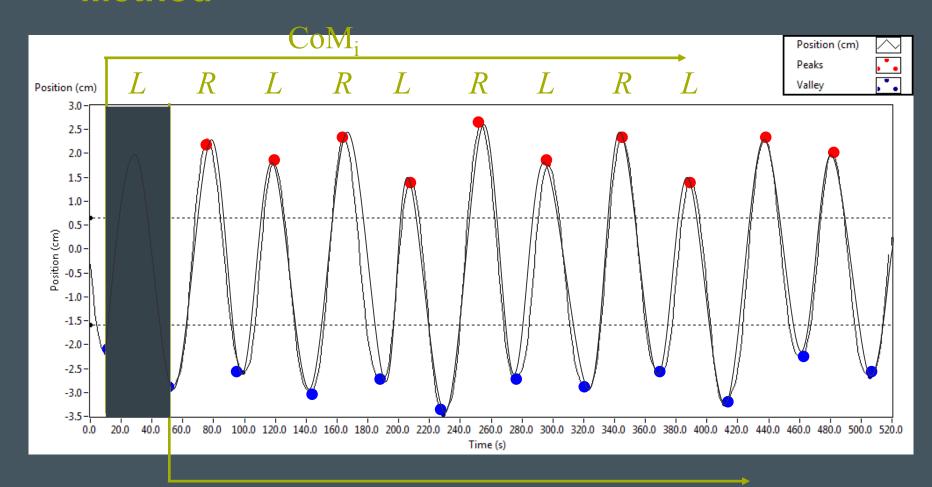
- Accelerometers
 - Acceleration in x,y,z
 - Gravitational component (up and down)
- Gyroscopes
 - Rate of turn around x,y,z
 - Angle of sensor (roll, pitch, yaw)
- Magnetometers
 - Compass (North East South West)





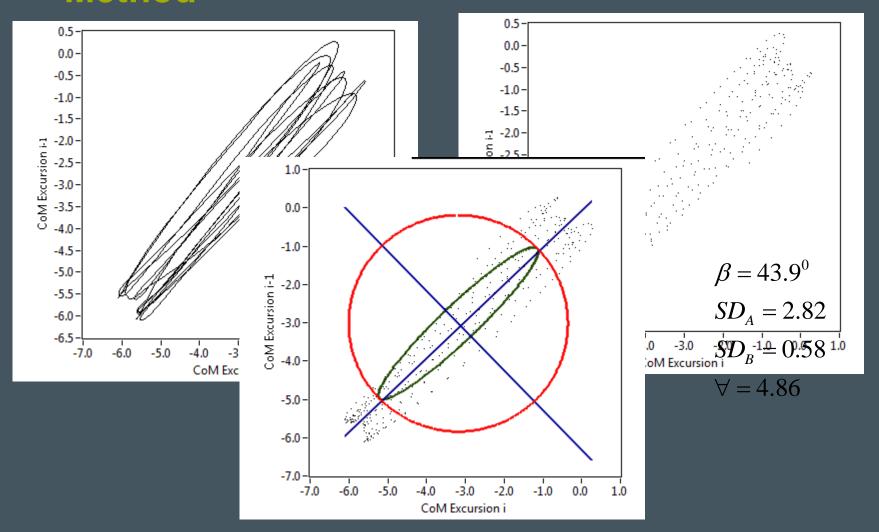


Method





Method



Different conditions



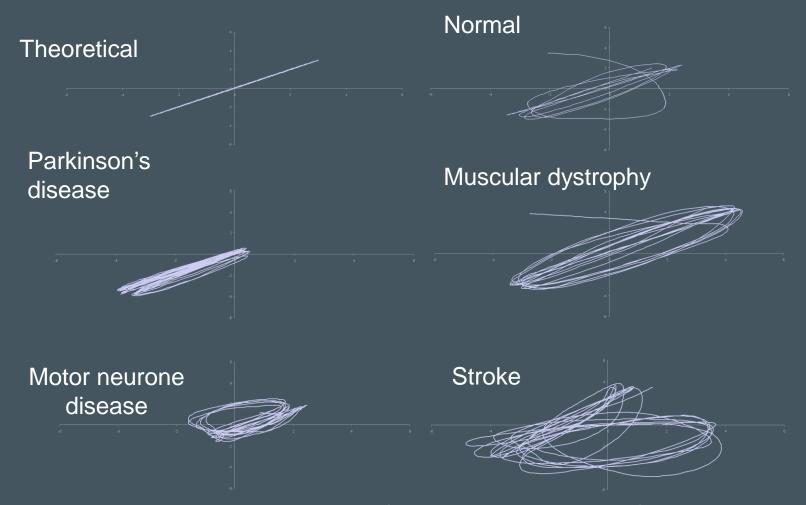


Figure 1: Non-linear symmetry plots of a representative participant from each group during a single assessment. Units on the x- and y-axes are arbitrary units



Stroke recovery

Acute (<10days)

 $\overline{6}$ = 2.3°

 $SD_A = 3.09$

3 months after

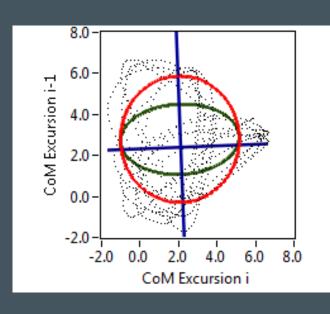
 $\theta = 21.80$

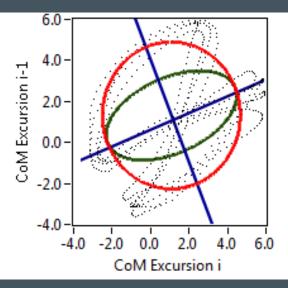
SDA = 3.58

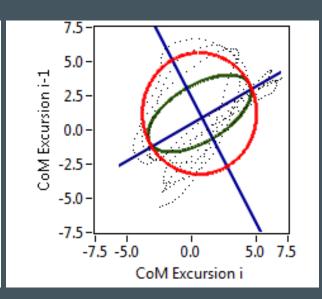
6 months after

 $\underline{\theta} = 28.60$

SDA = 4.44







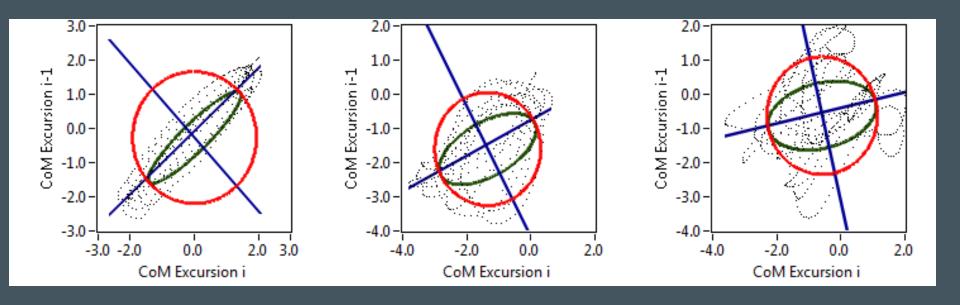


HUNTINGTON'S

TDA

Pre-sym

Symp





Ongoing

Research



- Walking & control [elderly and neurological conditions]
- Monitoring and detecting onset of movement disorders.
- Normative Database: Science Museum 2100 per
 4200 dataset
- AP development
- Virtual gym IMU and Kinnect

Professor Helen Dawes



Research Lead Dept. Health & Sport Science
Elizabeth Casson Trust Chair Oxford Brookes University
Director of Movement Science Group Oxford Brookes University
Associate Research Fellow in Neurology University of Oxford



INNOVATION AND MANAGEMENT IN UNIVERSITIES





INNOVATION AND MANAGEMENT IN UNIVERSITIES

Dr Sean Wellington
Associate Dean Strategy and Development
Faculty of Technology, Design and
Environment

BROOKES UNIVERSITY

OVERVIEW OF PRESENTATION

- Overview of Faculty of Technology, Design and Environment
- Innovation in:
 - Teaching
 - Research
 - Enterprise
 - Partnership Working
- Leadership and Management
 - Vision and values
 - Distributed leadership
- The Future



Faculty of Technology, Design and Environment

The Faculty has six departments providing specialist and interdisciplinary teaching, research and knowledge transfer across a wide range of subject areas:

- School of Architecture
- School of Arts
- Department of Computing and Communication Technologies
- Department of Mechanical Engineering and Mathematical Sciences
- Department of Planning
- Department of Real Estate and Construction



STUDENT NUMBERS

- Approximate student numbers, 2011/12:
 - Undergraduate Home/EU = 2760
 - Undergraduate Overseas = 208
 - Postgraduate Taught Home/EU = 559
 - Postgraduate Taught Overseas = 210
- These figures include programmes delivered by partner institutions in the UK and overseas
- Postgraduate Research = 98



School of Architecture

- one of the largest architecture schools in the UK, with around 660 students
- one of the country's leading schools
- top architects and the social and cultural advantages of a historic university city
- strong international links, especially to Europe, the USA and South-East Asia
- an international reputation in research
- close links with many of the country's pre-eminent design practices as well as prominent figures from abroad



School of Arts

- broad portfolio spanning Fine Art, Film, Music and Publishing, with around 600 students
- world-class degree courses, Masters and PhD opportunities, Foundation Art & Design and innovative short courses
- specialist research units including Social Sculpture and Sonic Art - renowned for their unique and interdisciplinary approach to contemporary arts practice. The School also houses world-leading researchers in Popular Music and Operatic Studies
- the School is home to the Oxford International Centre for Publishing Studies



Department of Computing and Communication Technologies

- blends excellence in teaching and knowledge transfer with world-leading research in areas that span Computer Science, Media Technology and Communications
- distinctive portfolio of undergraduate and postgraduate courses with around 600 students
- strong links with industry
- modern, well-equipped laboratories and audio/video facilities, including a fully equipped TV studio



Department of Mechanical Engineering and Mathematical Sciences

- provides professionally accredited mechanical, automotive, motorsport, mathematical and statistical courses with around 720 students
- strong links with industry Oxfordshire a 'hub' for automotive activity, for example motorsport and 'clean' technologies
- excellent laboratories and workshops located in a purpose-built facility



Department of Planning

- one of the most diverse departments of Planning in the UK and Europe, with around 240 students
- clients and projects covering subjects from local concerns to multi-national organisations, government and industry
- environment, design and development subjects
- courses, research and consultancy ranging from local area regeneration to urban planning in developing countries



Department of Real Estate and Construction

- subject areas include property management, property investment and property and land appraisal, acquisition and development
- around 490 students and courses include aspects of valuation, economics, law, finance and investment, construction and maintenance, business and information technology
- teaching provides the high level of relevant skills and knowledge needed in the commercial world



Innovation in Teaching

Example: Centre for Development and Emergency Practice (CENDEP) – MA Development and Emergency Practice



MA Development and Emergency Practice

- Founded in 1991
- Over 600 students have attended the programme
- Provides a unique academic setting for the study of international development, conflict, disaster management, urbanisation, humanitarianism and human rights
- In 2000 the course was awarded the Queen's Anniversary Prize for Higher and Further Education



Education and training for humanitarian aid workers The university has gained an international reputation for pioneering education and training for humanitarian aid workers. Combining innovative practice-based study with a multidisciplinary academic approach, its unique emphasis on educating humanitarian practitioners for work in war, political violence and disaster is a model for others. The Centre for Development and Emergency Practice (CENDEP) at Oxford Brookes University offers a pioneering MSc course in Development Practice. It also promotes best practice in humanitarian work overseas and provides appropriate training for local community leaders and public officials.

The Royal Anniversary Trust



Innovation in Research

Example: MINI E Trial



MINI E TRIAL

Taking place in the South East UK, in partnership with BMW Group. Scottish and

Group, Scottish and Southern Electricity, SEEDA, Oxfordshire County Council and Oxford City Council. This is a TSB funded project aiming to understand the realworld use of electric vehicles in the hands of typical drivers.





Innovation in Enterprise

Example: Knowledge Transfer Partnership (KTP) – Motion Capture



Motion Capture

- This Knowledge Transfer Partnership (KTP) project brought together OMG plc and Oxford Brookes University in an outstanding collaboration
- The project built a highly-automated motion capture system capable of working outdoors under general lighting
- The project was named best KTP project in the UK for 2009
- New products are being marketed by the company based on this innovation



Innovation in Partnership Working

Example: Old Fire Station Project





Old Fire Station Project

- Oxford City Council and Crisis, the national charity for single homeless people, are working together to redevelop and refurbish the Old Fire Station to create a centre for creativity, skills development and enterprise
- The School of Arts is supporting the project and will be introducing a new Studio Award Scheme, where two Arts graduates will be awarded a studio space for 12 months whilst working alongside the Old Fire station and Crisis Skylight to deliver training and workshops in arts practice and arts therapy



Leadership and Management

- The new Faculty/Departmental structure was formally launched in September 2011
- The new departments are responsible for specialist and interdisciplinary teaching, research and knowledge transfer across a wide range of subject areas
- Shared vision and values
- Distributed leadership



The Future

- New student funding arrangements from 2012
- Continue to provide an excellent student experience
- Build on our world-class research activity
- Develop mutually-beneficial partnerships, local/regional/international



FURTHER INFORMATION

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Student numbers

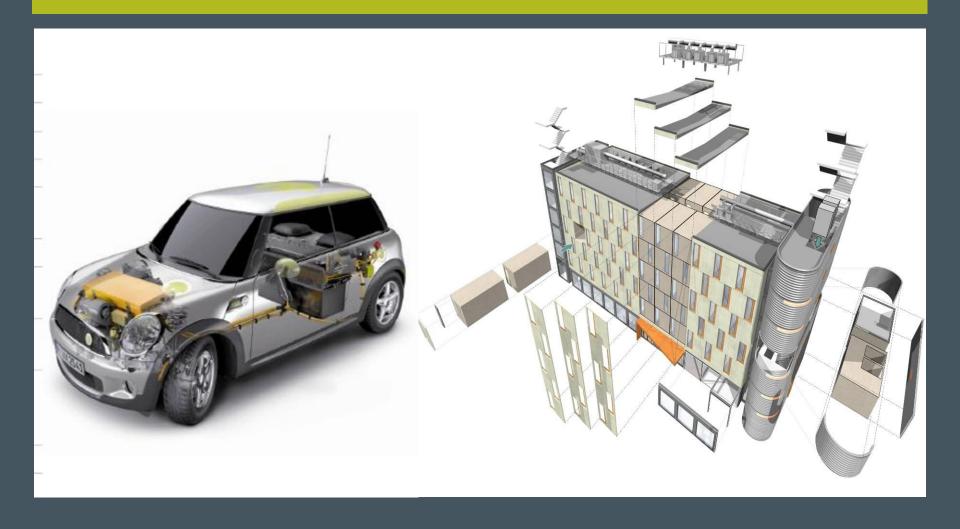
For the academic year 2011–12, WBS has over 7,200 students and participants enrolled. The breakdown by programme and course is:

Undergraduate Programme	
BSc Accounting & Finance	624
BSc Management	555
BSc International Business	105
BSc International Management	115
BA German & Business Studies	39
BA Law & Business Studies	183
BSc Joint Degrees with Sciences	54
All undergraduate degrees	1,675
Masters Portfolio	
MSc Accounting & Finance	55
MSc Business Analytics & Consulting	86
MSc Finance	142
MSc Finance & Economics	75
MSc Financial Mathematics	44
MSc Information Systems & Management	84
MSc Management	99
MSc Management Science & Operational Research	23
MSc Marketing & Strategy	103
MA Industrial Relations & Managing HR/International Employment Relations	76
MA Management & Organizational Analysis	53
All master's degrees	840
The Warwick MBA	
The Warwick MBA by distance learning	1,582
The Warwick MBA by full-time study	61
The Warwick Executive MBA	409
The Warwick MBA corporate streams and Global Energy MBA	259
All MBAs	2,311
Research	
Doctoral Programme	172
All research degrees	172
Executive Education	
Customised & Open Diplomas & Certificates	1,403
Public Management Programmes	
The Warwick MPA	53
The Warwick Diploma in Local Government Management	276
The Warwick Diploma in Public Leadership & Management	78
The Warwick Diploma & Masters in Police Leadership & Management	195
The Warwick Masters in Public Leadership & Management	72
All Public Management programmes	674
Visiting & exchange students	
Visiting & exchange students	171
Grand Total	7,246

1 of 1 18/10/2012 16:03



Commercialisation of Research





Role of the Research & Business Development Office

- Maintaining good practice and procedures for research and consultancy proposals
- Identifying research funding opportunities
- Identification, appraisal and exploitation of Intellectual Property
- Marketing and sales support for business services and training courses
- Collating management information on research performance and business interactions





University Policies for Knowledge Transfer

- Commitment to exploitation and dissemination of high quality research
- Intellectual Property is owned, protected and used for the general good of the whole University community
- Policies for funding 'Proof of Concept', patenting and exploitation activities and for distributing 'HEIF' funds to achieve greatest benefit
- Policies in place to manage intellectual property, ensure a fair reward to inventors and respect the IP of others





Selected areas of engagement







Automotive Construction General Engineering



Facilities





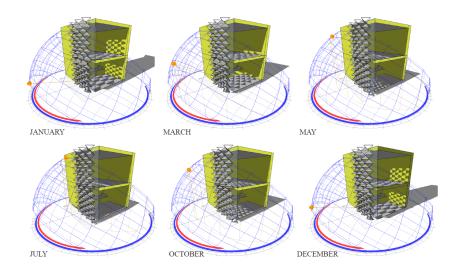






Advanced computational and analytical capabilities







Staff





Modes of working

- Consultancy and knowledge transfer
- Research grant funded activities
- Internal 'QR' funded activities
- Close to industry working and partnering
- Multi-partner and collaborative working with commerce and industry, and with other academic and research institutes.
- Patent and licensing and other forms of commercialisation



BMW Oxford





Mini Futures





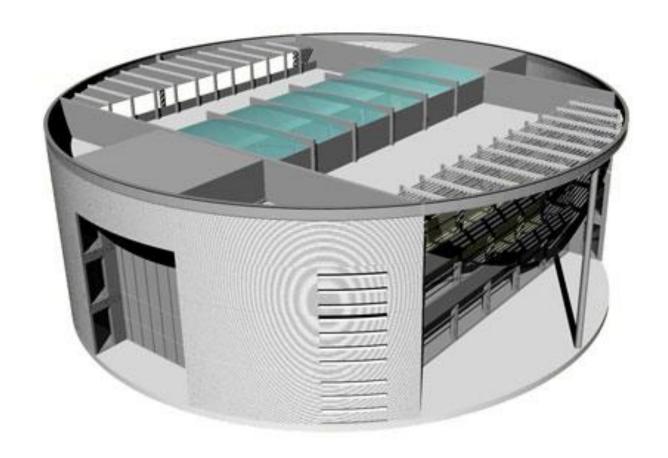
MINI E

- 2 year project involving:
 BMW, Oxford Brookes
 University, Scottish &
 Southern Energy and SEEDA
- 40 MINI Es involved in field trials
- Installation of public and private (home) charging points
- Analysis of vehicle data and energy use
- Development of business models





Demonstration Buildings



OXFORD

TSB 'Retrofit for the Future'





22 August 2011 Last updated at 14:53







Oxford retrofit cuts energy consumption by 85%

Two council tenants in Oxford have had their home turned into a showcase for energy efficient technology.

Steve and Shirley Bishop are taking part in a research project looking at the best ways to reduce CO2 emissions in existing UK housing

The couple have seen their energy consumption cut by 85% and hope to see bills drop from £600 a year to £150.



The Victorian property on Nelson Street has been retrofitted with a number of energy-saving measures

Project leader, Prof Rajat Gupta, from Oxford Brookes University said findings would inform future government policy.

The Victorian terraced property on Nelson Street has been fitted with a number of energy-saving measures and will be studied over a two-year

Mrs Bishop, who has lived there for 21 years, said the changes had improved her quality of life and even helped with her asthma.

She said: "It's bright warm, no draughts... the air quality is amazing, it's somehow fresher."

Optimum technologies

There are 86 other houses across the country taking part in the government's Retrofit for the Future programme.

The information will be used to decide on the most cost effective ways of reducing carbon emissions.

Related Stories

Bond designer criticises eco-town

Solar cells use cheap metal oxide

Building smart homes of the future



Bicester Ecotown

Technical and policy support to development teams including: planning policy, climate resilience, comfort and low carbon technologies







Demonstration home

Site

Location



UK, EU and international steel sector

activities



- One of only 2 UK strategic partners since 2002 (other steel Construction Institute)
- Novel umbrella agreement covering portfolio of research activities
- Shared IPR and exploitation routes
- Complementary industrial funding to support EU and other bids
- High impact factor (past successful R&D estimated to account for 5% of total current UK steel production)
- University encouraged to proactively contribute business strategy
- Many other university axes dropped. Demonstrable mutual benefits essential.

BROOKES LINIVERSITY

Light Steel Framing Developments EU MegaProject5









Light Steel Framing Developments Science Museum







Early Developments





Modular construction

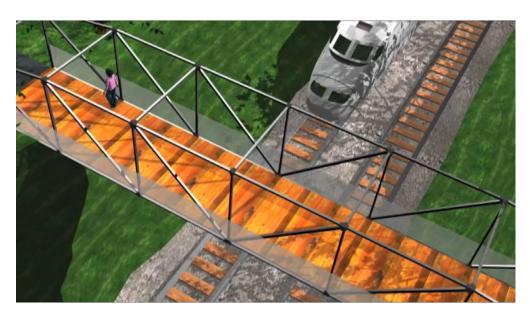






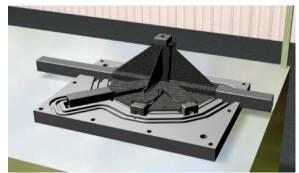
Joining Technology Truss structures











Project Partners



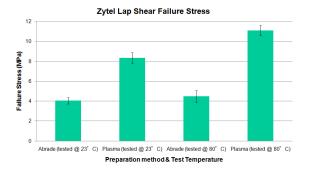


Electric motor bonding





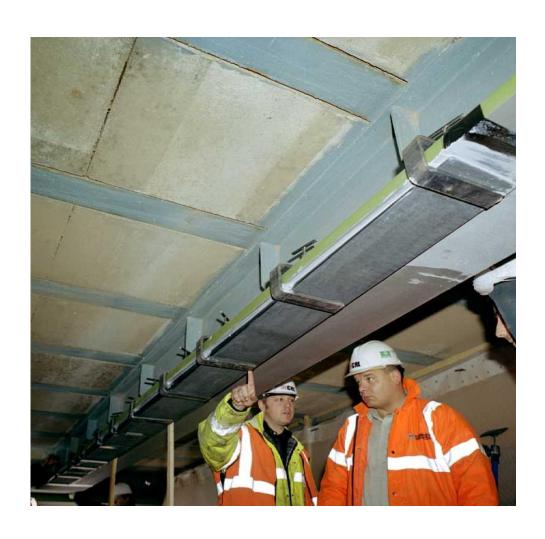






Bonded strengthening and upgrade

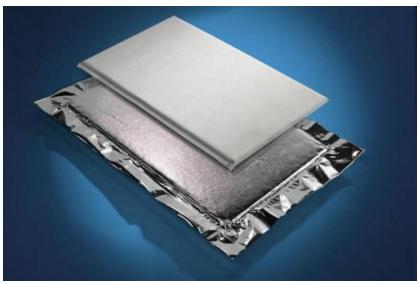






Renewable and Low energy systems



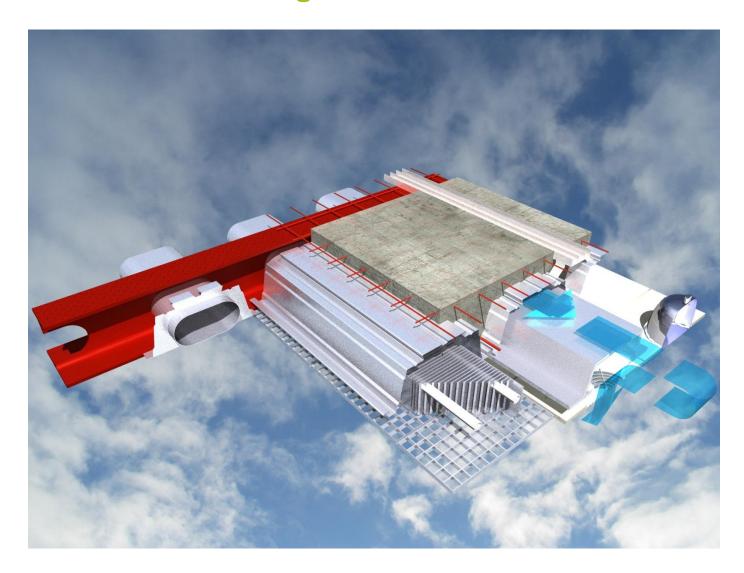


Transpired Solar Collectors

Vacuum Insulation Systems



Fabric Thermal Storage





Sustainable vehicle engineering





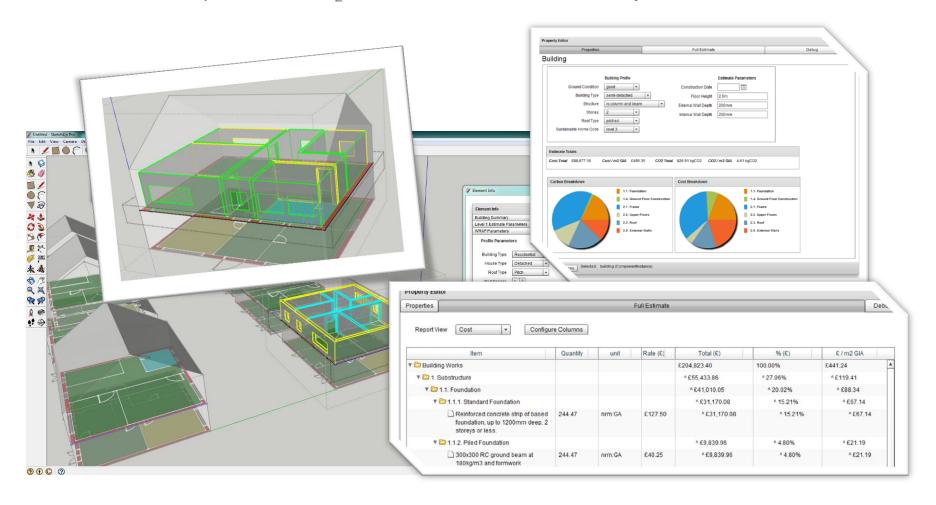
- Current areas of engagement include:
- Induction charging
- Light weighting
- CO2 reduction
- Particulate control
- Alternative and mixed fuels





Low Impact Design Explorer (LIDX)

Users can easily develop 3D models of building developments in Google Sketchup and see the implications of their decisions on multiple performance measures such as embodied and operational CO₂, waste and cost simultaneously.

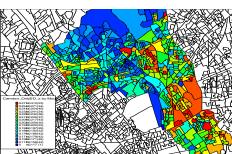




Research Council work in urban retrofit

Aim is to develop knowledge and capability to overcome the separation between the 'what' and 'how' of urban scale retrofitting in order promote a managed socio-technical transition in built environment and urban infrastructure.









Laboratory Commercialisation



- Use of new structures and building physics laboratory to generate income to benefit research
- Partnership with SCI and TRADA to increase skills and reduce costs
- Working with trade organisations including MCRMA and Buildoffsite to secure market.



Accreditation





Lloyds Register agreement to adopt lab for all CE marking and other industry accreditations.



Overview

- Many forms of commercialisation across a wide variety of areas.
- Multi-partner projects increase scale, competencies and overall 'traction'.
- Firm belief that involvement of commerce and industry gives increased focus and currency to research agenda.
- University benefits financially from commercial and industrial research funding and from the proceeds of commercial exploitation.
- Major benefit to 'impact' component of REF
- Significant USP of parts of the Brookes research portfolio in comparison with other institutes.

Welcome South East Asia Ministers of Education

Professor Stuart Croft, Pro-Vice-Chancellor, Research Dr Peter Hedges, Director Research Support Services

18th October 2012



Warwick profile

First students enrolled in 1965.

23,420 students

- 12,979 Undergraduate
- 10,441 Postgraduate
- 1/3 from outside the UK
 4912 staff (1389 academics and researchers).

Annual turnover £419 million.
Only 20% of income from HEFCE grants.

Ranked 7th in the UK's 2008 Research Assessment Exercise (RAE).







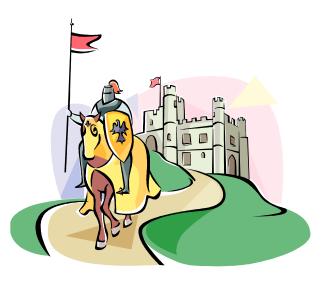
Summary

Research Support Services

- Who are we?
- What do we do?
- Why is it important?
- How can we help you?



Academic Perceptions!



Knights in Shining Armour?

Villains?





...or just a barrier?

Who are we?

- C.60 administrative, clerical and IT support staff within the Registrar's Department;
- With financial, legal, IT, marketing, project management (and more) skills;
- Working closely with academic and departmental support staff (located in departments/regular surgeries held);
- Working closely with the Pro Vice Chancellors for Research;
- Administer the Research Development Fund (RDF);
- Supporting the University's Research Committee and Research Ethics Committee (and subcommittees).



What do we do?

- Source/create research funding opportunities;
- Develop applications, bids, proposals, tenders, business plans and negotiate legal agreements to secure funding for research (~1500 applications worth >£325m in 2011-12);
- Formally accept funding awards (> 600 new awards of value, >£75m in 2011-12); and financially manage projects (invoicing and expenditure claims management) (~£85m income in 2010/11);
- Statutory role the Administrative Authority i.e. the legal entity.



External Sources of Income

Total 2011-12	£ 86.4m
Overseas & other	£1.8m
European Union	£6.6m
Charities	£7.3m
Industry & Commerce	£4.7m
Central Govt, Local Auth. & Public Corps	£33.5m
Research Councils	£32.4m



External Funding Trends

Research Councils

Central Govt, Local Auth. & Public Corps

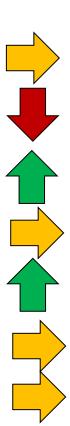
Industry & Commerce

Charities

European Union

Overseas & other

Overall Grants and Awards





Vision 2015 – we aim to...

- Double Warwick's turnover;
- Double Postgraduate research students;
- Establish new multidisciplinary research centres;
- Increase our cohort of ISI Highly Cited researchers
- Develop new international research collaborations.



However....

- Comprehensive Spending Review impact on Government R&D;
- Changes to PhD funding;
- Pressure on full economic costing;
- Increasing competition for EU funding;
- Enhanced support for industrial partnerships



Research Development Fund (RDF)

- £500,000 available in 10/11 across 2 schemes:
 - Strategic Awards
 - Development Awards
- Strategic Awards pump-priming support of up to £25,000 per award for new research initiatives of strategic importance, ideally of an interdisciplinary nature, which must lead future bids for external funding. One deadline per academic year. The next deadline is likely to be July 2012.



Research Development Fund (RDF)

- Development Awards provide limited funding to develop research capabilities aligned to the University Strategy.
- Online submission process
- Further information on the RSS webpages: http://www2.warwick.ac.uk/services/rss/funding/rdf/



Other Options for Support

Institute of Advanced Study (IAS)

- Short-term Visiting Fellowships;
- Augmentation Awards (for externally-funded visiting fellows);
- Early Career Summer/Easter Vacation Research School Awards;
- Incubation Awards;
- Facilities;

http://www2.warwick.ac.uk/go/ias



Other Options for Support

Warwick Impact Fund

- Impact Development Awards to modest support for impact activity specifically related to the University Strategy and Global Priority Programmes (GPPs).
- **Strategic Impact Awards** pump-priming support for the development of new impact activities and initiatives which are creative and innovative and clearly of a strategic nature.
- **Proof of Concept Awards** To support the commercial exploitation of University Intellectual Property and "Know How", developing innovative new products and processes.

http://www2.warwick.ac.uk/insite/news/intnews2/impactfund_201 1_2015



Other Options for Support

Global Research Priorities

- A key part of the University research strategy aiming to focus our world-class, multidisciplinary research on key areas of international significance
- The current GRPs are: Connecting Cultures; Energy; Food Security; Global Governance; Individual Behaviour; Innovative Manufacturing; International Development; Science and Technology for Health; Sustainable Cities.
- The GRPs aim to bring together the scholarly expertise of Warwick academics from across faculties and departments to tackle global challenges.
- Funding is available for a range of activities including networking, external engagement, workshops, meetings, feasibility studies etc.



=

Research Support Systems

A number of different systems available to support funded research activity at Warwick including those to support

- Finding of funding opportunities
- Creation and tracking of research proposals
- Approval of research proposals
- Showcasing research profile
- Monitoring and reporting on research activity



Research Ethics

RSS supports the oversight of research ethics at Warwick. Some issues you need to be aware of are:

- The Research Code of Practice updated and adopted by Senate & Council, July 2011;
- Information & support available to academic staff on procedures for ethical oversight of research;
- New <u>website</u> launched in 2012.



Research Support Services on the web

http://www2.warwick.ac.uk/services/rss/





Research in Warwick Business School SEAMEO Visit - 18th October 2012

Stephen.Brammer@wbs.ac.uk

Associate Dean (Research)



Aims

- To briefly say something about the range of research activity going on in WBS
- To emphasise issues related to the nature of the research environment we're aiming to build and maintain
- To discuss how we support and develop research excellence at multiple levels

Our mission

"To be the *leading university-based* business school in *Europe*."

"To produce and disseminate worldclass, cutting edge research that is capable of shaping the way organisations operate and businesses are led and managed."

About us...

- Big
- Diverse
- International
- Inter-disciplinary and methodologically plural
- Collaborative



Performance & Assessment



- High quality outputs (65%) Journals, Books etc
- Impacts outside academia (20%) effects on government policy, practices in organisations, public awareness and wellbeing
- Research environment (15%) how we support sustained research excellence

Supporting excellence - individuals

- Sustained excellence in research stems from continuous engagement by high-quality people; Teaching loads are managed to create space for research
- We invest in attracting and retaining superb staff, and in developing the next generation through our PhD programme
- Generous support budgets are available to fund conference attendance, research expenses, pumppriming of new projects
- All staff have designated mentors

Supporting excellence - groups

- Staff are organised into 10 subject groups –
 we've invested strategically to generate critical
 mass in a number of areas Entrepreneurship,
 Health Management, Global Energy, Behavioural
 Science
- Groups are co-located, host visitors, hold seminar series, run working paper series etc
- Some staff are located across two groups to *promote cross-group collaborations*

Supporting excellence - school

- Research office 3 dedicated staff support for developing and costing research grant/funding applications, induction for new staff, research information
- WBS solutions 10 staff manage and develop IT infrastructure, e-conferencing/telepresence facilities
- Communications and external relations 10 staff help with translation, media relations, dissemination and knowledge exchange events
- Laboratory space a dedicated space to support experimental behavioural research

Supporting excellence – university and beyond











Conclusions & Questions

- Creating an environment within which research excellence can be sustained is a complex business in an increasingly competitive world
- We do this by attracting, retaining and developing great people, surrounding them with a supportive environment (including other great people for them to collaborate with), and encouraging engagement and collaboration
- Questions?



UK Higher Education developments

18 October 2012

Will Hammonds, Policy Researcher, UUK



Outline of presentation

- Introduction to UUK
- Context: UK HE
- Forces currently affecting the sector
- Recent developments
- Specific challenges for science research and innovation policy



Universities UK

UUK history and structure

- Founded the Committee of Vice-Chancellors and Principals 1919
- A single voice for universities speaking to government
 - The media face for higher education
 - Central policy and research function looking at higher education policy and its effects
 - Conferences and seminars
 - International promotion and engagement
- UK Board primary decision making body, informed by members through policy networks and member conferences
- Universities UK
- Higher Education Wales
- Universities Scotland
- Semi-autonomous units (Medical Schools Council, Dental Schools Council, Concordat to Support the Career Development of Researchers)



UUK leadership

- UUK is headed by a president
 - Elected for 2 years from among the members
 - Current president is Eric Thomas, VC of University of Bristol
- President also chairs the UUK board
 - 24 elected members
 - Meets 4 times a year
- UUK is managed on a day-to-day basis by a Chief Executive
 - Current Chief Executive is Nicola Dandridge
- Employs c.80 staff across organisation
- Turnover c.£5m a year



UK Higher education

- The sector is diverse institutions, ranging in size and mission, but all essentially delivering high-quality teaching, research, and knowledge transfer.
- Certain features continue to characterise the sector:
 - Institutions are highly autonomous, operating in a competitive environment
 - The predominant mode of delivery of undergraduate education is full-time
 - The distribution of research funding is highly competitive and highly concentrated
 - Funding from private sources (especially business and industry) remains a relatively small element within the overall funding streams of universities
- A nationally coordinated approach to higher education regulation by government and by the sector itself



Some facts and figures (09-10)

- Total UK students- 2,493,415
 - UG 1,914,710
 - PG 578,705
- Undergraduate modes
 - Full time 1,333,900
 - Part-time- 580,810
- Student numbers by domiciles
 - UK- 2087615 (83.7%)
 - Other EU- 125,045 (5%)
 - Non-EU- 280,760 (11.3%)



Sector governance









STATISTICS AGENC

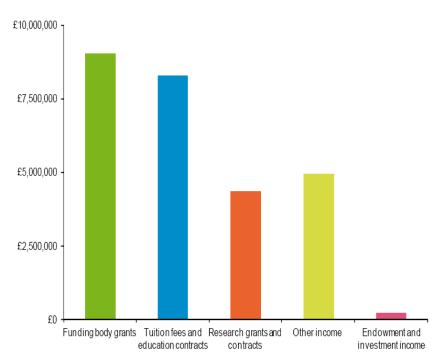


- All institutions are autonomous in terms of teaching, admissions and management
- There are also a number of government and sector agencies involved in the coordination of the sector:
 - Department for Business Innovation and Skills: The government department responsible for higher education and scientific research
 - Higher Education Funding Councils (England, Scotland, Wales): 'Arms length' allocation of student numbers and research funding to institutions
 - Quality Assurance Agency: Sector owned quality standards body
 - Office for the Independent Adjudicator for Higher Education:
 Complaints and disputes
 - Office for Fair Access: Fair access
 - Higher Education Statistics Agency: Collection and dissemination of statistics about publicly funded UK higher education

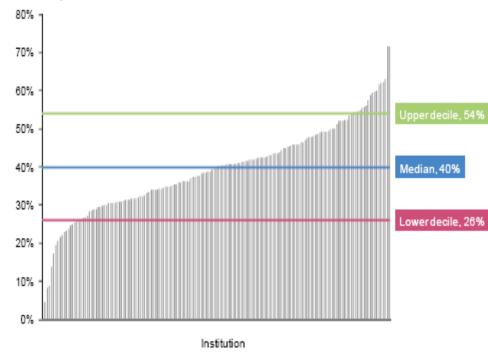


Income to UK higher education institutions 2009-10

1.14a Income of higher education institutions by source of income 2009/10 (£ thousands)



2.26 Percentage ratio of total funding body grants to total income by institution 2009/10



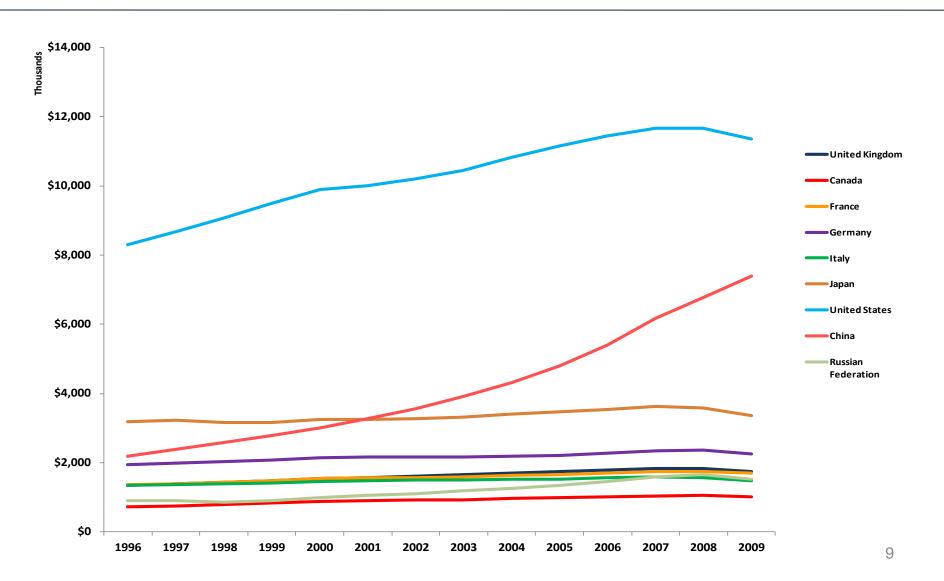
Source: HESA Finance Record 2009/10

Source: HESA Finance Statistics Return 2009/10





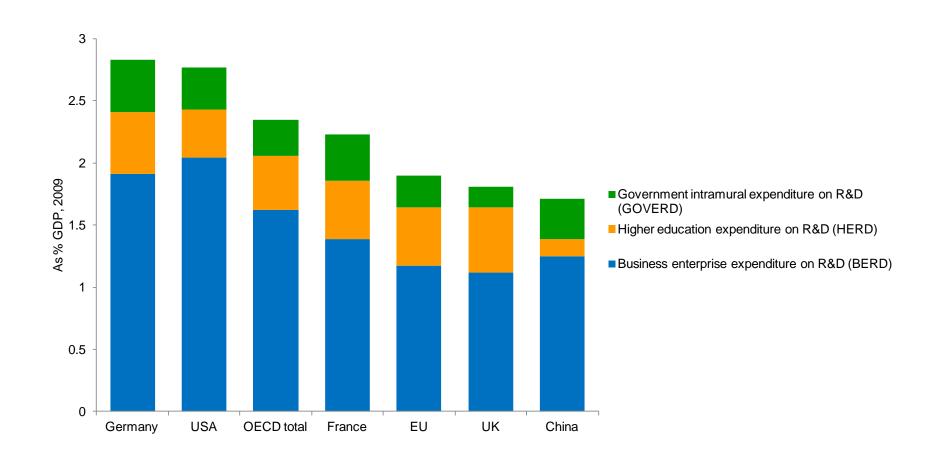
Gross UK Expenditure on R&D







UK science and research - Investment as % of GDP

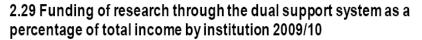


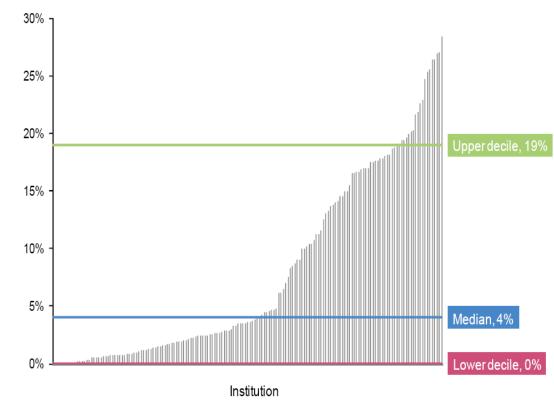




Research funding

- Dual support system
- Core research funding Quality Related (QR)
 - Higher Education Funding Councils
 - 2011-12 £1,558 million
 - Research evaluation framework 2*, 3* and 4* (2008)
- Project based funding
 - full economic costs (fEC) of projects that they commission.
 - Seven research councils, organised by discipline – plus Umbrella Body Research Councils UK





Source: HESA Finance Return 2009/10



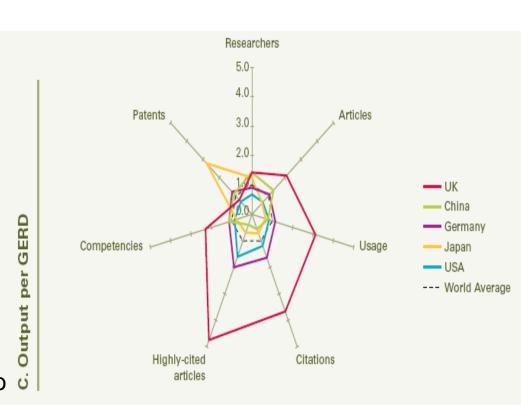


Research output

In terms of global shares of R&D inputs and outputs, in 2010 the UK represented

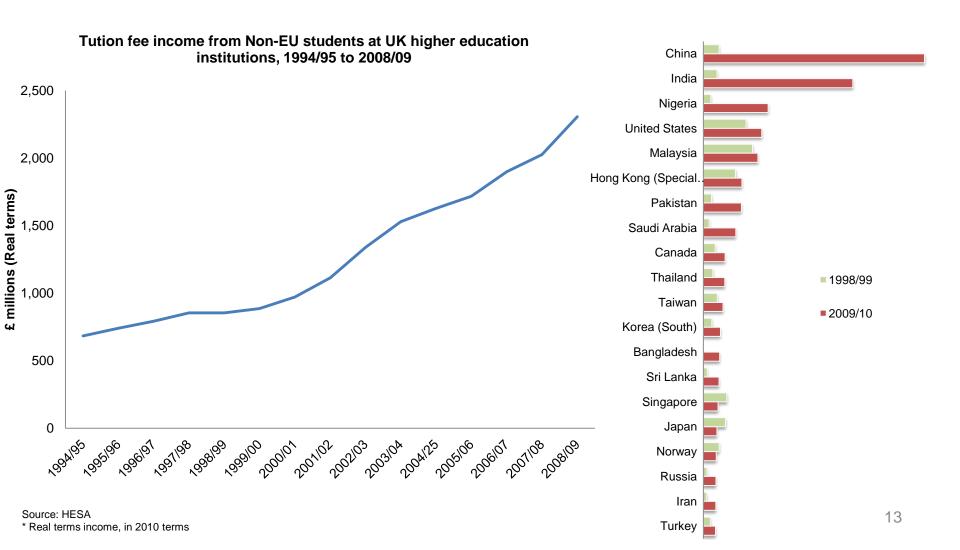
- •0.9% of population
- •3.9% of Researchers
- •3.0% of Gross Expenditure R&D
- •6.4% of articles
- •9.4% of article usage
- •10.9% of citations
- •14.0% of highly-cited articles
- •2.2% of patent applications

•In terms of research outputs and performance the UK is second only to the USA.



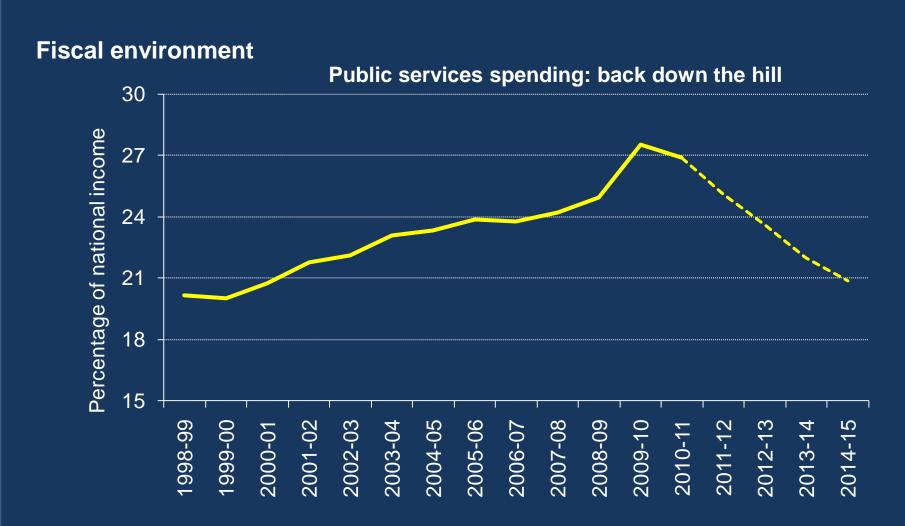


International students





The forces currently affecting the sector





Public spending cuts

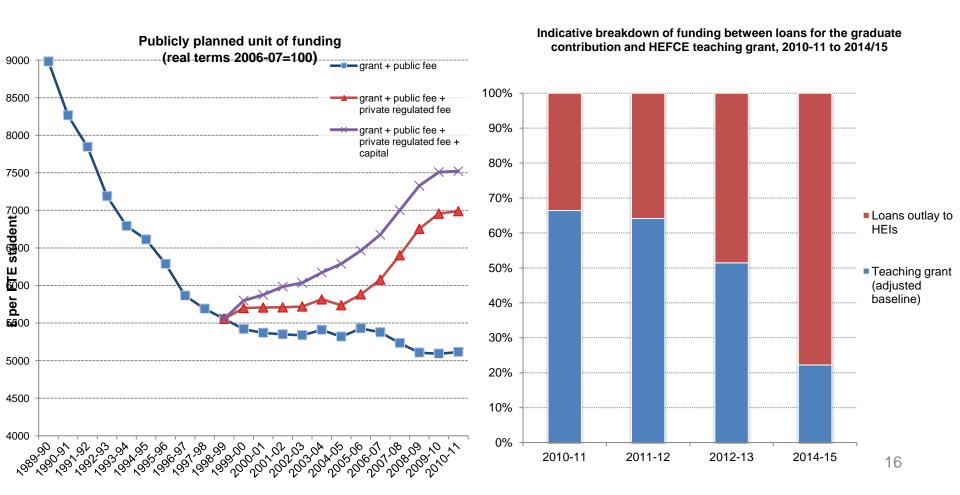
2010 Spending review

- A resource cut for Department of Business Innovation and Skills (BIS) of 25% but the annual higher education budget faces a cut of 40% over the period of the Spending Review.
- Research funding is protected with a ring-fence (£4.6bn), but decreases in real-terms by 8.9%
 and efficiency savings will need to be found across the dual support system.
- Significant implications for institutional (QR) funding and Research Council funding with shift toward concentration into 'research intensives'
- The main cut is in grant for undergraduate students to be replaced with the shift to tuition based student funding



Funding reform

Transfer to tuition fee funding with government backed loans





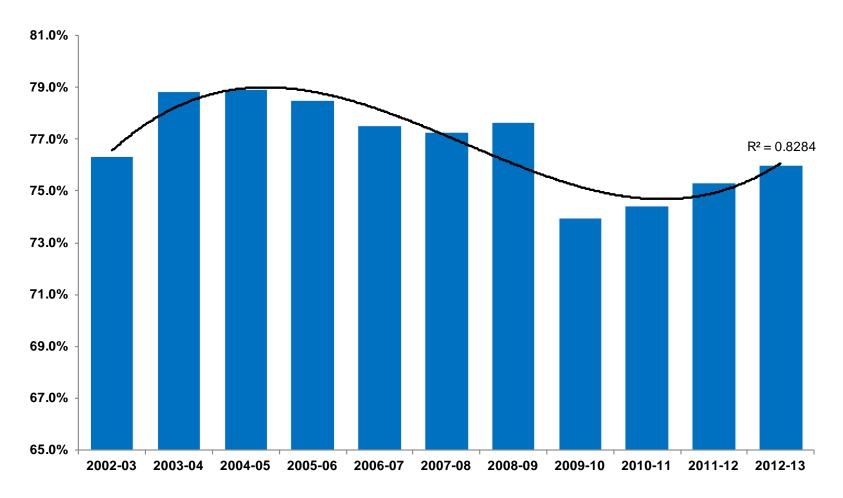
Sector reform – regulation

White paper: Students at the heart of the system

- Introduction of a 'structured market' designed to increase competition and choice:
 - Revisions to student number allocations for public institutions
 - For profit providers given access to student support student loans
 - Incentives introduced into the system for public institutions to keep fees down below £7500
 - De regulation of places for students with AAB to encourage competition at the 'top end' of the market
- Revisions to the regulatory system to open up and simplify:
 - Open up degree awarding powers and university title to new providers
 - Stream line the regulatory regime to respond to a greater level of complexity and new funding relationships
- Legislation expected 2012 now delayed



Mainstream QR funding accounted for by top 25 research institutions* in England according to share of mainstream QR, 2002-2012



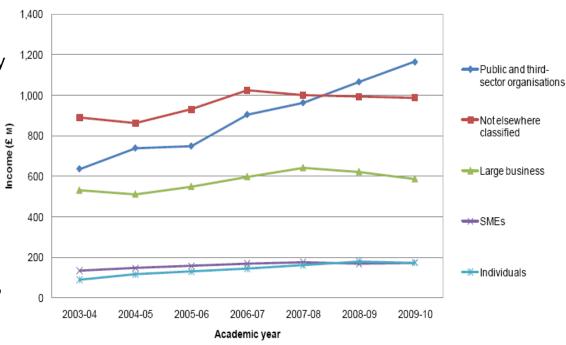
Source: HEFCE QR related funding data (http://www.hefce.ac.uk/research/funding/qrfunding/)

^{*} Top research institutions measured by overall amount of QR funding received in each year



Economic growth and innovation agenda

- Universities role in the economic recovery
 - Highly skilled knowledge economy
 - R&D output and skills
 - Regional economic multipliers employers, students and knowledge transfer
- Technology Strategy Board
 - Emphasis on encouraging engagement with small and medium enterprises
 - Knowledge Transfer Partnerships,
 - the Small Business Research Initiative
 - Catapult centres



Source: HE-BCI Part B Tables 1, 2, 3 and 4c

Contract by organisation type	SME	Non-SME	Non-commercial
Number	7%	35%	58%
Value	4%	33%	63%
Average value per contract	£18,917	£32,449	£37,525 19



Immigration

Managed migration points based system

- Points based system for employment route 'Tier 2'
- Students come under their own route 'Tier 4'
 - No cap on international student numbers
 - Fees still set by the individual institution
 - Language requirements based on university standards
 - Process apply to the university and the process of obtaining a visa starts from there
 - Post study work provision now under tier 2



Possible consequences

- 1. Shift in the balance of public and private funding and changing expectations of students
- 2. Increased differentiation of resources with the sector
- 3. Re-structuring within the sector (collaboration, merger, partnerships)
- 4. Increased plurality of providers (private providers and HE/FE)
- 5. Pressure to innovate in terms of business models, with greater focus on efficiencies and value for money
- 6. New types of providers



UUK response

UUK Strategic Plan 2010-2013

- 5 Strategic Aims:
- 1. To support and enhance the strength and success of universities in the UK
- 2. To promote the international competitiveness of UK universities
- 3. To inform and shape the future agenda for higher education
- 4. To provide high quality services to members
- 5. To be an effective and responsive organisation



UUK response

Policy, communications, and campaigning

International

- Immigration
- Higher Education Export work

Funding

- Public funding/SR
- Efficiency
- Markets and privatisation
- Health funding
- Teacher education.
- Research & innovation
- Regional agenda

Quality

- Quality Assurance System
- HE Public Information
- Student Charters
- Better Regulation

Cross-cutting work

- Social Mobility
- HE in FE
- Scenario Planning



Questions

william.hammonds@universitiesuk.ac.uk

UK higher education, internationalisation and South East Asia



Andy Heath
Policy Officer for Asia
UK Higher Education
International Unit

October 2012



UK Higher Education International Unit



Mission

To represent the UK higher education sector internationally and to empower, with skills and knowledge, the sector to secure maximum value from international opportunities.



















MISSION / VISION

Strategic priorities

Priority One

Build capacity of UK
HE sector to capture
international
opportunities

Priority Two

Shape international and European policy

Priority Three

Represent UK higher education internationally

Priority Four

Provide market intelligence to the UK HE sector to help them identify opportunities

THROUGH PARTNERSHIPS AND COMMUNICATIONS

Key objectives

- Enhance transnational education
- Facilitate engagement and relationships/exchanges with key markets
- Build expertise and promote best practice
- Maximise relationships with key organisations
- Develop a national mobility strategy
 Inform the development of UK HE international policy
 Prioritise engagement
 - sectors
 Influence European Union decision-makers

with key international HE

- Promote and increase the UK's involvement and expertise in the ongoing
- developments in EU policy
 Share knowledge within the sector

- Increase the profile and representation of UK HE internationally
- Promote the strength and diversity of UK HE
- Develop and foster international networks
- Provide a strong UK voice in Europe
- Enhance the knowledge and awareness of key priority countries
 Excellence in communication

Support, enhance and

Identify and promote

opportunities to UK HEIs

UK HE sector

develop the capacity of the



UK's international performance

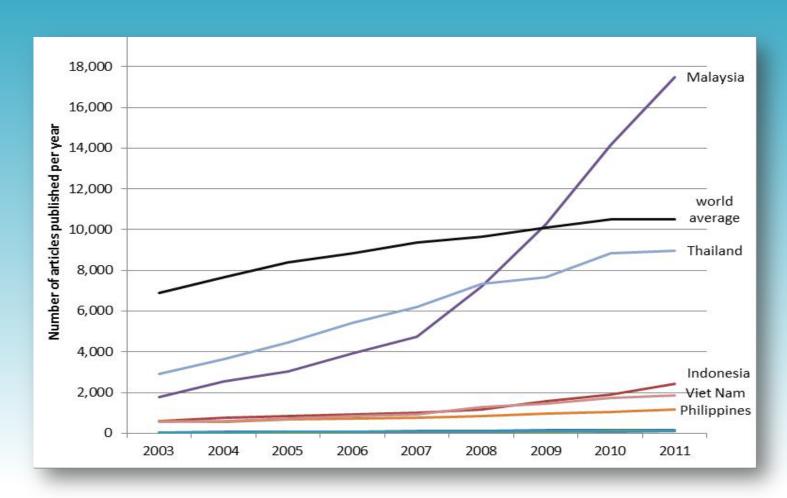


- UK universities have a world-wide reputation for excellence
- 2nd only to the US attracting international students
- Number of international students in UK higher education more than doubled in past 10 years
- International research collaboration



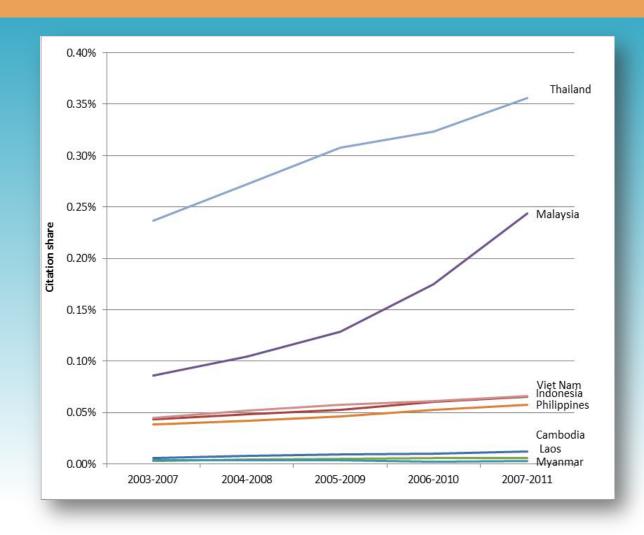
ASEAN scientific output





ASEAN citation share





Three levels of research systems



High output	Medium output	Low output
Malaysia	Indonesia	Cambodia
Thailand	Vietnam	Laos
Singapore	Philippines	Myanmar

Are internationally-authored articles more highly cited?



	Nationally-authored	Internationally-authored
Thailand	1.0	2.2
Malaysia	1.0	1.9
Indonesia	1.0	6.0
Vietnam	1.0	2.9
Philippines	1.0	4.9
Laos	1.0	1.9
Cambodia	1.0	0.8
Myanmar	1.0	2.8



Why does internationalisation lead to better research?



Seeking Excellence

- Scientists seek to work with the most outstanding scientists in their field
- Collaboration brings with it the benefit of scale

Capacity-building

 Collaboration enables access to facilities, funding equipment and networks



International collaboration is becoming the norm



Global trend is towards multilateral, international research

- Just 26% of papers are the product of one institution alone
- Over 35% of papers are international

Regional collaboration an emerging trend

- Driven by regional research strategies
 - ASEAN
 - EU
 - African Union



How to promote international collaboration



- 1. Funding for internationally collaborative projects
- 2. Student and academic mobility
- 3. Joint degrees, split-site PhDs
- 4. Research centres



1. Funding for internationally collaborative projects



UK-ASEAN Knowledge Partnership

- A new project from the UK government
- Funding from UK and ASEAN governments, private sector and HEI partners
- One main 'pillar': encouraging development of research capacity and collaboration
- Project still being designed.



2. Student and academic mobility



UK-Indonesia Dikti Scholarship scheme

- The International Unit has proposed a sector-wide PhD scholarship scheme with DIKTI
- We want 150 Indonesian scholars a year come to the UK's world-class universities
- Indonesian lecturers up-skill to PhD level building capacity of Indonesian universities
- Creates long lasting links which will lead to joint research



3. Joint degrees and split-site PhD programmes



Imperial College London and Singapore

- Imperial runs two split-site PhD programmes with National University of Singapore and Nanyang Technological University
- 3 or 4-year programmes which results in a joint award conferred by both institutions.
- Split-site PhDs act as a catalyst for collaborative research/international partnerships



4. Research institutes



Fudan Tyndall Centre

- Collaboration of UEA, Fudan University and 7 UK universities
- Harnesses partners' various strengths in climate change research
- Physical hub for researchers as each partner university



The European context



- The 'Europe 2020' strategy follows on from the Lisbon Strategy (2000-2010) that set out to create "the most competitive and dynamic knowledge-based economy' in the world
- 3% of the EU's GDP should be invested in R&D by 2020
- The share of early school leavers should be under 10% and at least 40% of the population aged 30-34 should have completed tertiary or equivalent education

Next generation of EU HE and research programmes



- New budgetary cycle: 2014-2020
- Rationalising, simplifying, connecting
- Focus on added value of European level
- Europe in international context



Horizon 2020: key strands



- Excellent Science (€24.6 billion)
 - 77% increase for ERC;
 - Special attention to Future and Emerging Technologies (FETs);
 - International co-operation encouraged
- Societal Concerns (€31. 7 billion)
 - Health, demographic change and wellbeing;
 - Food security, sustainable agriculture and bio-economy;
 - Secure, clean and efficient energy;
 - Smart, green and integrated transport;
 - Climate action, resource efficiency and raw materials;
 - Inclusive, innovative and secure societies.
- Industrial Leadership (€17.9 billion)



Next steps



Engagement with South East Asian organisations

- ASEAN University Network
- SEAMEO-RHID

Secure maximum participation in UK-ASEAN Knowledge Partnership programme

Sector-wide scholarship schemes with other ASEAN countries?



Thank you



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