University of Southampton

Is it possible to shape a University's research portfolio and to develop synergies between top-down and bottom-up approaches?

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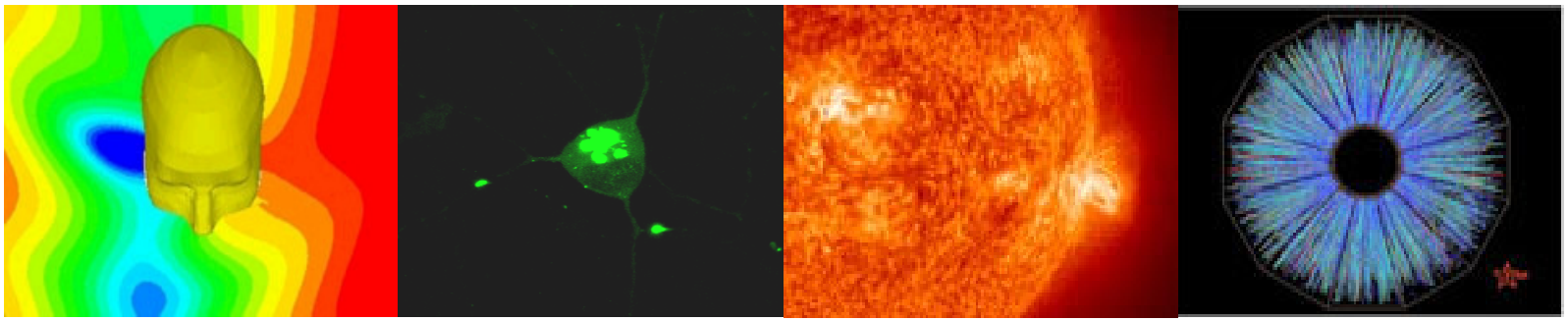


Case Studies

1. NanoScience
2. Energy

- Context:
  - ➔ External to the University
  - ➔ Internal to the University
- Institutional intervention
- Post-intervention outcomes
- Key determinants of successful “top-down” intervention

Context : External to the University

1. NanoScience	2. Energy
1986 – National initiative on Nanotechnology 1999 – Industrial Opportunities 2002 - A UK strategy for Nanotechnology 2003 – Nanotechnology Programme 2004 – Towards a European Strategy 2006 – Government Funding ~€110m p.a.	1997 – Kyoto Protocol 2003 – Energy Consultation 2005 – Research Council Delivery Plans 2005 – Microgeneration Strategy 2005 - Government Funding of ~€60m pa 2008 – Government Funding of ~€100m pa

Context : Internal to the University

- Small number of research groups (~7 – 9)
- Highly distinctive, innovative research areas
- Foci of activity
  - Chemistry (nanostructural materials)
  - Physics (nanomagnetics)
  - ECS (microfabrication/devices)
- Average grant income ~€1.1m pa
- Good record of cross-disciplinary collaborations

Institutional Intervention

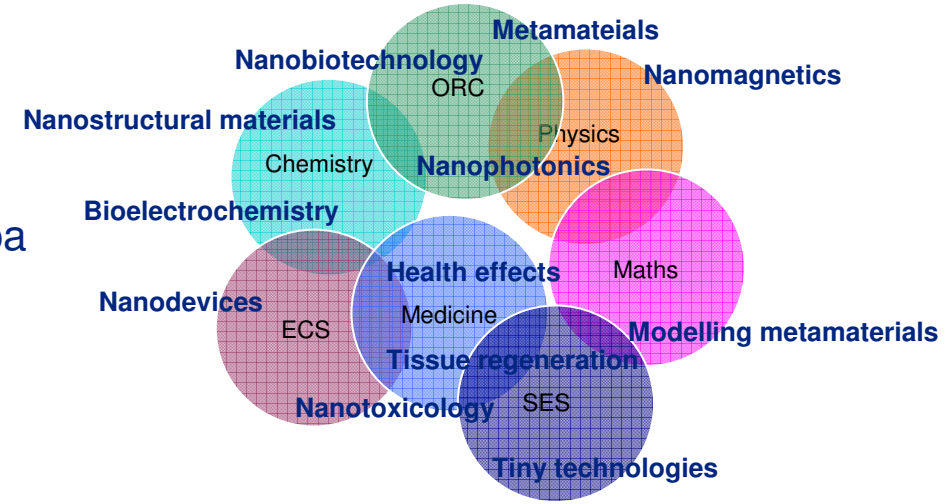
- **1998 – joint senior appointments (Champions) to build capacity in nanophotonics**
- **2000 – formation of Southampton NanoForum, with seed-funding (Merck and UoS)**
- **2005 – NanoScience formally adopted as a UoS strategic theme; NanoForum role extended to co-ordinate institutional investment in the theme; University investment of €2m over 5 years**

Institutional Intervention

- **Support broad base of cross-disciplinary nano-research**
- **Foster and pump prime cross-disciplinary opportunities**
- **Identify and support key new appointments**
- **Identify and support key infrastructure needs**
- **Advocate for NanoScience within the University**
- **Build a public face for nano-research at UoS**

Post – intervention

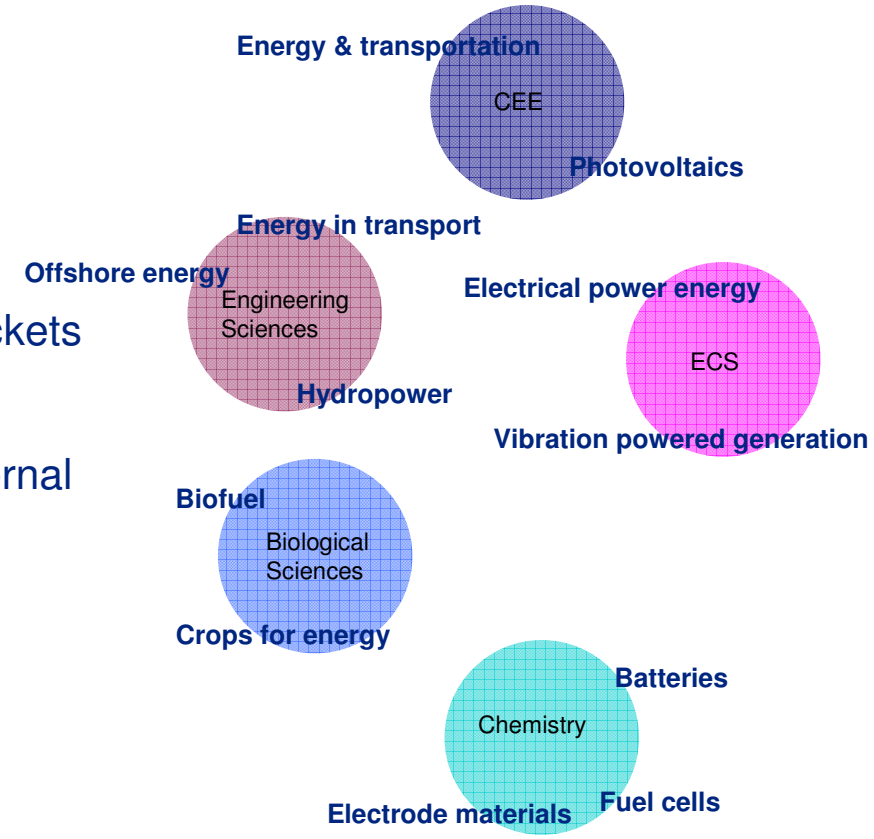
- Growth of research groups (~15-18)
- Portfolio of highly distinctive research areas
- Foci of activity
- Average grant income of ~€11m pa
- Extensive network of cross-disciplinary collaborations
- Increasing leadership role on national policy



Energy at UoS

Pre-2005:

- Large number of research groups (~12 – 14) with diverse and some identical interests;
- World-class research but only pockets of distinctive activities;
- Foci of activity, poor record of internal cross-disciplinary collaboration;
- Some cases of direct competition between groups;
- Failure to respond to new funding opportunities.



Institutional Intervention

- 2002 - Attempt to bring groups together to respond to external stimulus – FAILURE
- 2005 – Different approach - formation of UoS Environment Leadership Group, with 4 leaders:
  - Energy and the environment
  - Health and the environment
  - Biodiversity and the environment
  - Social impacts and the environment
- 2006 – Environment recognised as a UoS strategic theme.
  - Pump-priming funding from the University
  - Set up equivalent of Nano-forum

Institutional Intervention

- Key aims of the Energy and the Environment Group:
  - Work up a grand challenge programme “The Carbon Neutral City”;
  - Foster cross-disciplinary opportunities for funding;
  - To identify and support key new appointments;
  - To identify and support key infrastructure needs;
  - To act as advocate for energy research within the University.

Successful “Top Down” Approach

Key Determinants:

- Enthusiastic, dynamic and respected *“champion”*
- Pump-priming/investment aimed at:
  - Creating a strong interactions network
  - Building capacity in strategic areas
- Ownership of strategy by key stakeholders
- A core of distinctive researchers with the potential to influence national and international funding/policy
- Sustainable activity
  - Substantial external income
  - Not reliant on long-term institutional support.

The University of Southampton

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