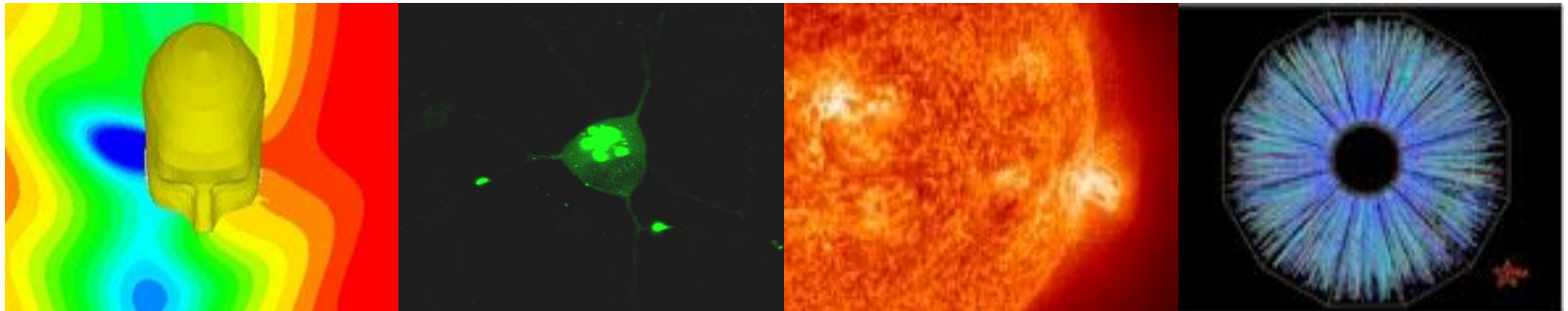


**University  
of Southampton**

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

**Professor Bill Wakeham  
Vice-Chancellor, University of Southampton**





# 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

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



# Context : Internal to the University

- ✿ **Small number of research groups (~7 – 9)**
- ✿ **Highly distinctive, innovative research areas**
- ✿ **Foci of activity**
  - ✿ **Chemistry (nanostructural materials)**
  - ✿ **Physics (nanomagnetism)**
  - ✿ **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**

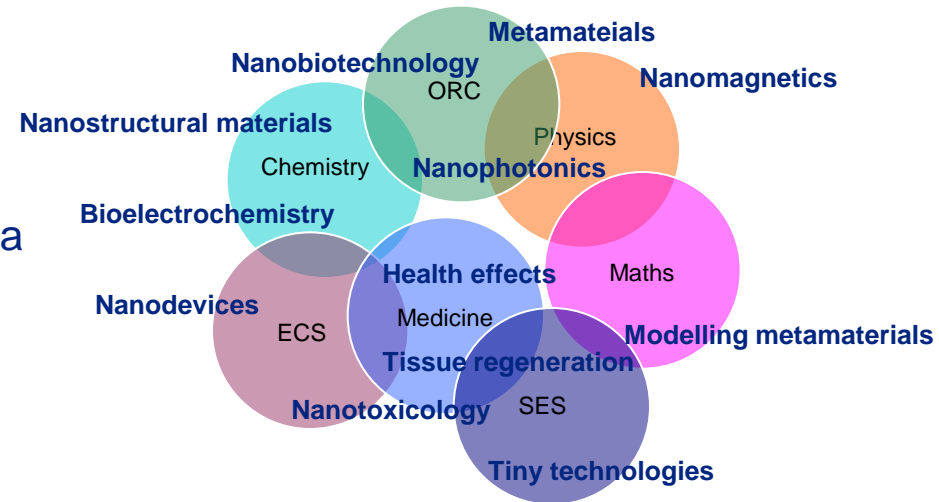


# Institutional Intervention

- ✿ **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

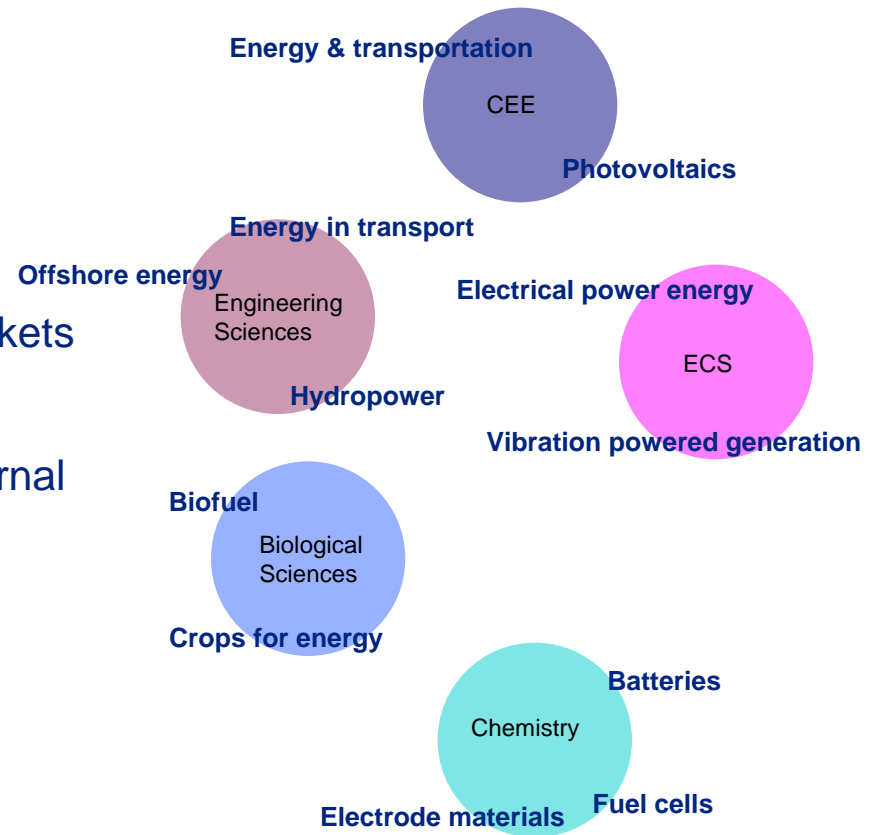
- ✿ Growth of research groups (~15-18)
- ✿ Portfolio of highly distinctive research areas
- ✿ Foci of activity
- ✿ Average grant income of ~€11m pa
- ✿ Extensive network of cross-disciplinary collaborations
- ✿ Increasing leadership role on national policy



# 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

- ✿ 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.



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