

National Security Fellows

A Knowledge Exchange Trial

The Original Model

- **CSaP Policy Fellowships** provide an opportunity for decision makers from government and industry to forge useful connections with researchers.
- **A Policy Fellow spends 5 days at Cambridge**, meeting up to 30 researchers and attending seminars.
 - Immersion is carefully tailored, with academics chosen for the relevance to a list of questions drawn up by the Fellow.
- The Policy Fellow quickly establishes his/her own network of contacts in academia, and gains fresh insight into the impact of scientific research.
- This programme is welcomed in academia as an effective pathway to impact, and in government /industry as an efficient form of development.

The GU Challenge

At the Royal Society in June we were challenged to adapt this model for NS customers:

- More than one Fellow
- Not just the University of Cambridge
- Cyber-Security & Information Assurance

The Process

- Select the National Security Fellows
- Work with Fellows on questions
- Build the tailored network of researchers
- Design & implement the programme:
 - 2 days in Cambridge: individual meetings with 11 academics + 1 workshop + High Table dinner
 - 1 day at UCL: 19 academics from 12 universities in four panels
 - 2 days in Oxford: individual meetings with 13 academics + High Table dinner

The National Security Fellows

- **Ciaran:** a Cyber Security Researcher at the Centre for the Protection of National Infrastructure. He advises both HMG and industry and leads CPNI's Research and Advice development programmes.
- **Ian:** Technical Lead for Public Sector Services at CESG; he has responsibilities for pan-Government information security policies and has staff involved in strategic academic outreach (including Centres of Excellence and Cyber-Security Research Institutions).
- **Kevin** is HMGCC's principal consultant for Internet Technologies; he is Networking Technology Champion and oversees innovation & research programmes in the IT/comms division, including network- & internet-related horizon scanning and research.

Themes & Questions

1. Threats, Vulnerabilities and Mitigations

eg What are the biggest threats/risks to society given its growing dependence on cyber? How will this change in the future?

2. The Nature of the Cyber-World

eg What is the impact to society of a split population of digital haves and have-nots?

3. Partnership: Academic Research, Government & Industry

eg Effective security (at a high level) relies upon a range of disciplines: how do we collectively collaborate on shared problems?

4. The Economics, Man't & Communication of Cyber-Security

eg How do we quantify the benefits and risks of cyber security for Board-level decision-makers?

The Institutions

(Number of Researchers)

A range of universities ... with an Oxbridge focus

Aberdeen (1)
Bristol (1)
Open University (1)
Royal Holloway (1)
Southampton (1)
University of West of England (1)
Bath (2)
Imperial (2)
Lancaster (2)
Queen's Belfast (2)
University College London (4)
Cambridge (12)
Oxford (13)

The Disciplines

(Number of Researchers)

A range of expertise, with a cyber-focus

Political Science (1)

Philosophy (2)

Engineering (2)

Mathematics (2)

Social Science (3)

Behavioural Science (3)

Management /Risk Studies (5)

Computer Science (25)



Professor Alex Oliver

**Professor in Philosophy, Faculty of Philosophy, and
Fellow of the Judge Business School, University of
Cambridge**

His research focuses mainly on metaphysics, logic and philosophy of mathematics; he also conducts a great deal of research in the area of Philosophy and Public Affairs.

He co-founded *The Forum for Philosophy in Business*, which brought together philosophers and academics in cognate disciplines with practitioners at the highest levels of government and businesses. He has been appointed as the Mind Association's Senior Research Fellow for 2012-13.



Professor Viktor Mayer-Schönberger

**Professor of Internet Governance and Regulation,
and Director of Advancement, Oxford Internet
Institute, University of Oxford**

His research focuses on the role of information in a networked economy. He previously spent ten years on the faculty of Harvard's Kennedy School of Government.

He is on the advisory boards of corporations and organizations around the world, including Microsoft and the World Economic Forum, and he is a personal adviser to the Austrian Finance Minister on innovation policy.



Professor Anne Trefethen

**Chief Information Officer , Oxford E-Research
Centre, University of Oxford**

Her research interests include creating accessibility to complex computing systems through high-level languages and multi-touch technology, and extreme computing with a focus on energy-aware algorithms.

She has as worked for almost 20 years in industry and academia with a focus on numerical algorithms and software, computational science and high-performance computing.



Professor John Naughton

**Professor of the Public Understanding of
Technology, Open University**

A systems engineer with a strong interest in the social impacts of networking technology, especially in teaching and learning.

He has written extensively on technology and its role in society, authoring a well-known history of the Internet, *A Brief History of the Future*, and a study of the changes in our media ecosystem brought about by technological advances.

Scoring the Meetings/Panels

- Average score: “How useful was this to you and your work (out of 5)?” **3.57**
- How many of the 24 events received the top score (5) from at least one Fellow? **11**
- How many of the 24 events received the top score (5) from all three Fellows? **1**

Scoring the Programme

- How well has the Programme covered your questions and objectives (out of 5)? **4**
- Has the Programme been a good investment of your time & public funds (out of 5)? **4**
- How likely are you to consider the researchers you met as a future source of science advice (out of 5)? **3.66**
- Are you now more or less likely to seek advice from academics (out of 5)? **4.33**
- Would you recommend we continue the Scheme, and would you recommend it to colleagues (out of 5)? - **4.33**

Spreading the Word

How are you going to share insights with colleagues?

- In-House Blog
- Briefing Colleagues
- Writing Formal Report

Improvements?

“Fortunately my own interests on the technology side aligned with those of colleagues on the policy/relationship side.

However it would be good to focus on one or the other – i.e. decide if the Fellowship is about the relationship of government and academia; or one of matching technologists in government to those in academia.

With almost any other technology subject, the interests would not have aligned so well.”

The High Point?

- “Definitely the different perspectives provided by the variety of disciplines. I wasn't expecting to learn so much from e.g. philosophy academics.”
- “A couple of individuals left me awe-struck with their combination of depth of experience (knowledge and years) and common sense views.”

The Views of a Fellow

Kevin

- is HMGCC's principal consultant for Internet Technologies; he is Networking Technology Champion and oversees innovation & research programmes in the IT/comms division, including network- & internet-related horizon scanning and research.

His background is in software engineering having worked for 9 years as an embedded software engineer in industry, followed by 11 years at HMGCC as a software and then systems engineer. He is one of HMGCC's Distinguished Engineers and now spends most of my time supporting engineering, futures and innovation work at HMGCC.