

Networks of Expertise and Evidence for Public Policy Annual Report 2015



"Over the seven years since its launch, the Centre for Science and Policy has pioneered new ways of bringing academia and government together to tackle policy challenges. CSaP has successfully promoted long-term thinking and more robust networks of expertise and evidence for public policy.

2015 is the year in which the Centre came of age. Having served as its founding director from 2009 to 2015, I am delighted CSaP is playing a central role in supporting the University's mission, and that the Centre is in the excellent hands of a new management board. I am immensely proud of everything CSaP has achieved to date.

I look forward to contributing further to CSaP through continuing to meet Policy Fellows, participating in our events and chairing the newly constituted Advisory Council, which will play a key role in shaping the Centre's strategy."

Dr David Cleevely CBE FREng Chair, CSaP Advisory Council

# The Centre for Science and Policy in 2015

The policy challenges facing our world today demand ever-greater foresight, ingenuity and a willingness to collaborate across sectors. As this report illustrates, the Centre for Science and Policy has been helping its network to navigate challenges from climate resilience to new forms of healthcare; from national security to shaping innovation in the public interest.

The maturity of CSaP's unique network of academics and policy makers is demonstrated by the breadth and depth of our work during 2015. Our network now encompasses over 200 Fellows and more than 1100 researchers and, during the year, we welcomed more than 2500 participants to 43 events.

These achievements are testimony to the vision of David Cleevely, who served as CSaP's founding director until 2015. When David accepted the invitation to establish the Centre more than seven years ago, he brought a wealth of experience from his work as an entrepreneur, angel investor and government adviser. He established CSaP with three founding principles that have shaped our development:

- · an attention to the questions and constraints of policy professionals, in other words a focus on the 'demand-side';
- a commitment to fostering networks based on mutual understanding, respect and trust, and establishing the conditions for collaboration;
- a willingness to experiment, learn and adapt.

I am particularly looking forward to working with our network of affiliate universities to strengthen links between government and academia at EU, UK, devolved and local levels. In 2016, we will continue to promote our unique brand of creative collaboration, leading to fresh insights and a growing appetite for engagement between the research and policy worlds.

As he moves on to chair CSaP's Advisory Council, would like to express my gratitude to David for his inspirational work in founding the Centre.

In 2016, a year set to be every bit as challenging for governments as 2015 has been, CSaP's role in brokering links between research and policy will be more important than ever. The Policy Fellowships programme will remain at the core of our activities, and we will look for new ways to increase the value of the network - particularly through a new pilot scheme extending the Fellowships programme to a network of UK universities. This will enable us to strengthen links between universities and broaden the academic resources in the network.



**Dr Robert Doubleday Executive Director** Centre for Science and Policy

# **Policy Fellowships Programme**

Over the five years since its launch in 2011, the Policy Fellowship has brought more than 200 influential policy makers from government, industry and the third sector to Cambridge to build networks and working relationships with academics.

Our 200-plus Fellows have benefited from over 5750 face-to-face introductions through the Fellowship process, which has now reached more than 1100 academics, researchers and other experts.

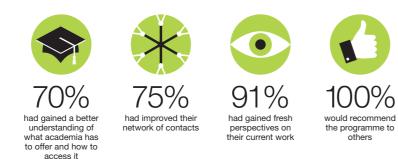
During 2015, 35 new Policy Fellows and Junior Policy Fellows, and 9 new Policy Leaders Fellows, were elected, between them making more than 1300 connections with over 500 experts in the course of the year. All three termly elections were again oversubscribed.

The Fellowship continues to be recognised across the University as the go-to network to connect research with the policy world. The Fellows – and the wider network of policy makers who can be reached through them – represent a uniquely valuable resource to Cambridge's academics, whether they are convening workshops, seeking expert speakers, or identifying the potential beneficiaries of research.

The value of this approach is increasingly being recognised by other leading academic institutions in the UK and elsewhere in Europe. In 2015, CSaP launched an affiliation scheme with UK higher education institutions; the CSaP Affiliate Network extends the benefits of our Policy Fellowships programme to other universities, and enhances Policy Fellows' access to world-leading researchers.

# **Benefits of the Policy Fellowship**

A survey of our Policy Fellows during the academic years 2013/14 and 2014/15 shows that, as a result of participating in the programme:

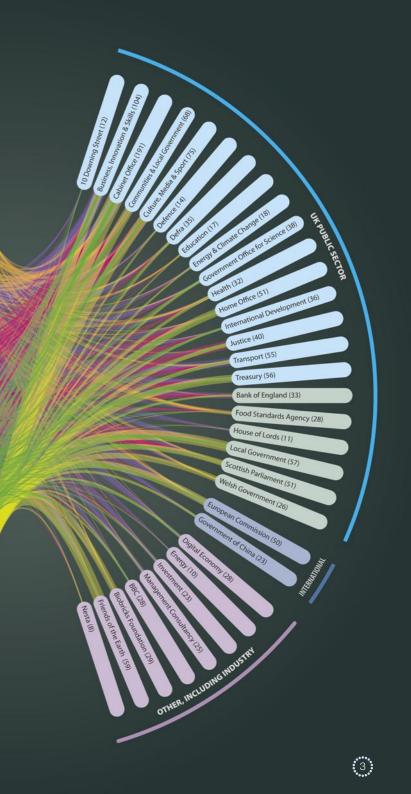


# CSaP Policy Fellowships Programme 2014/15:

Economics (35)

Education (1)

Meetings between Policy Fellows and researchers



# **Policy Fellows elected in academic years** 2013/14 and 2014/15

10 Downing Street - Daniel Korski, Policy Adviser, Technology 10 Downing Street - Christopher Lockwood, Deputy Head of PM's Policy Unit Cabinet Office - Natalie Black, Deputy Director, Cyber Defence and Incident Management, OCSIA Cabinet Office - Nigel Campbell, Chief Analyst, Implementation Unit Cabinet Office - Mitchell Harris, Deputy Private Secretary to the Minister for Government Policy Cabinet Office - Will Harvey, Lead for Public Sector Networks, OCSIA Cabinet Office - Liz McKeown, Chief Economist and Deputy Director for Analysis and Insight Cabinet Office - Alexandra Meagher, Policy Adviser, Social Investment & Finance Cabinet Office - Alice Newton, Associate Product Manager, Government Digital Service Cabinet Office – Sophie Odenthal. Fast Streamer Cabinet Office - Hannah Rignell, Head of Community Action. Office for Civil Society Cabinet Office - Richard Sargeant, Director, Performance and Delivery, Government Digital Service Cabinet Office - Philip Sinclair, Senior Policy Adviser, Innovation and Growth, Digital Team Cabinet Office - Simon Strickland, Senior Adviser, Strategy, National Security Secretariat **Defra – Gemma Harper,** Chief Social Scientist **Defra – Fiona Harrison.** Deputy Chief Scientific Adviser **Defra – Stuart Wainwright.** Deputy Chief Scientific Adviser. Strategic Evidence and Analysis Department for Business, Innovation and Skills – Amanda Brooks, Director, Innovation Department for Business, Innovation and Skills - Chris Carr, Deputy Director, Manufacturing, Services & Electronics Department for Business, Innovation and Skills - Debbie Gillatt, Director, Regional Growth Fund & Legacy Department for Communities and Local Government - Scott Dennison, Deputy Director, Economics Department for Communities and Local Government - Mark Lee, Deputy Director, Planning Department for Communities and Local Government - Ricky Taylor, Senior Economic Adviser Department for Culture, Media and Sport - Paul Crawford, Chief Economist Department for Culture, Media and Sport - Dominic Lake, Deputy Director, Arts, Libraries & Cultural Property Department for International Development - Ellen Wratten, Head of Emerging Policy, Innovation & Capability Department for Transport - Jessica Matthew. Deputy Director. Road User Licensing Department for Transport - Elliot Shaw, Deputy Director, Strategic Roads Investment **Department of Health – Mark Bale,** Deputy Head of Health Science and Bioethics Dstl - Neil Lindsay, Senior Adviser, Counter-Terrorism Science and Technology Centre Foreign and Commonwealth Office - Kenan Poleo, Regional Director, Science and Innovation Network Europe Foreign and Commonwealth Office – Jane Rumble, Head of Polar Regions Department Government Office for Science - Claire Craig, Deputy Head Government Office for Science – Andrew Greenway, Deputy Director, Horizon Scanning HM Treasury - Ciarán Hayes, Head of Higher Education, Science and Innovation HM Treasury - Rachel King, Head of Budget Project Management and Presentation HM Treasury - Alex Marsh, Head of Higher Education, Science and Innovation HM Treasury - Harriet Wallace, Deputy Director, Labour Markets and Distributional Analysis

Home Office - James Smith, Head of Science & Technology, Office for Security and Counter-Terrorism Home Office - Niva Thiruchelvam, Head of Student and Short-term Migration Policy Home Office – Nick Timothy, Special Adviser to the Home Secretary Ministry of Justice - Scott McPherson, Director, Law, Rights and International Bank of England - Seth Thomas. Senior Adviser Cambridge City Council - Andrew Limb, Head of Corporate Strategy Cambridgeshire County Council - Michael Soper, Research & Performance Team Manager Financial Conduct Authority – Peter Parker, Manager, International Strategy and Policy Coordination Food Standards Agency – Steve Wearne, Director of Policy Greater London Authority - Mark Kleinman, Assistant Director, Economic and Business Policy Greater London Authority - Shaun Lowthian. Senior Consultation and Intelligence Officer London Borough of Newham – Jane Kennedy, Research Business Manager NIHR Office for Clinical Research Infrastructure - Mark Samuels, Managing Director Ofgem – Rob Mills, Head of European Energy Markets Scottish Parliament - Jim Johnston, Clerk to the Finance Committee Welsh Government - Simon Brindle, Deputy Director, Legislation and Supporting Delivery, Social Services and Integration Welsh Government - Matthew Quinn, Director, Environment, Department for Natural Resources and Food UKTI - Louis Barson, Deputy Director for Science and Innovation European Commission DG-Connect - Anne-Marie Sassen, Policy Officer, Digital Agenda European Commission DG-Connect – Fabrizio Sestini, Team Leader, Internet Science Accenture – Tim Cooper, Director of Research Angel Investor – John Taysom **BBC – James Heath,** Director of Policy BioBricks Foundation – Linda Kahl, Director, Legal Program BT - Tim Whitley, Managing Director, Research and Innovation Building Research Establishment – Deborah Pullen, Group Research Director Coalition for a Digital Economy (Coadec) – Guy Levin, Executive Director Forum for the Future – David Bent, Director of Sustainable Business Friends of the Earth - Craig Bennett, Chief Executive Officer London Centre for Social Studies - Zeynep Engin, Director Nesta - Stian Westlake, Executive Director, Policy & Research Royal Society of Chemistry - James Hutchinson, Senior Programme Manager techUK - Antony Walker. Deputy Chief Executive Officer

We would like to thank Pembroke College for continuing to welcome our Policy Fellows to Cambridge. Affiliations shown are correct as at the time of election to the Fellowship

The Policy Leaders Fellowship - a select group of the most senior members of CSaP's network - meets once a term to share insights into the development of open and evidence-based policy making.

In 2015, Policy Leaders Fellows explored the topics of infection, the opportunities and risks of artificial intelligence, and neuroscience 'from molecule to mind'.

The inaugural Fellows (elected in 2013) have now reached the end of their two-year tenure, and we would like to thank the initial cohort for developing the concept and the culture of the Fellowship.

Three new Fellows are elected each term (by invitation). As at December 2015, Policy Leaders Fellows are:

# Sam Beckett

Director General, Economics & Markets, and Deputy Head, UK Government Economic Service Department for Business, Innovation and Skills

# **Deborah Bronnert**

Chief Operating Officer Foreign and Commonwealth Office

Nadia Calviño Director-General, Directorate-General for Budget European Commission

Sir Jon Cunliffe Deputy Governor for Financial Stability Bank of England

**Gareth Davies** Director General, Knowledge and Innovation Department for Business, Innovation and Skills

# Helen Edwards

Director General, Localism Deputy Permanent Secretary Department for Communities and Local Government

Sir Paul Grice Clerk and Chief Executive Scottish Parliament

# **Nick Joicey**

Director General, Strategy, International and Biosecurity Department for Environment, Food and Rural Affairs

Gavin Kelly Chief Executive Resolution Foundation

**Tim Kelsey** National Director for Patients and Information NHS England, National Health Service

**Charlie Massey** Director General, Strategy and External Relations Department of Health

John Pullinger National Statistician **UK Statistics Authority** 



and would benefit both itself and the wider community if it could make which Policy Leaders Fellows have generated in their discussions with academics

# Antonia Romeo

HM Government Envoy to the US Communications Service Providers Cabinet Office

**Philip Rutnam** Permanent Secretary Department for Transport

Jonathan Slater Secretariat Cabinet Office

Julia Unwin Chief Executive Joseph Rowntree Foundation

**Chris Wormald** Permanent Secretary Department for Education Head of the Government Policy Profession

Director General, Economic and Domestic Affairs



# Convening

Our workshops, seminars, lectures and annual conference provide a platform for policy professionals and researchers to discuss and debate high-priority public policy issues.

# **Policy Workshops**

Our policy workshops help researchers at Cambridge consider and realise the potential policy impacts of their work and provide decision makers in government with an opportunity to test and shape their thinking on a range of policy issues.

In 2015 we held seven policy workshops which addressed topics such as the economic impact of health research, the benefits of play in middle childhood and the Strategic Defence and Security Review (see the "spotlight" sections for more details)

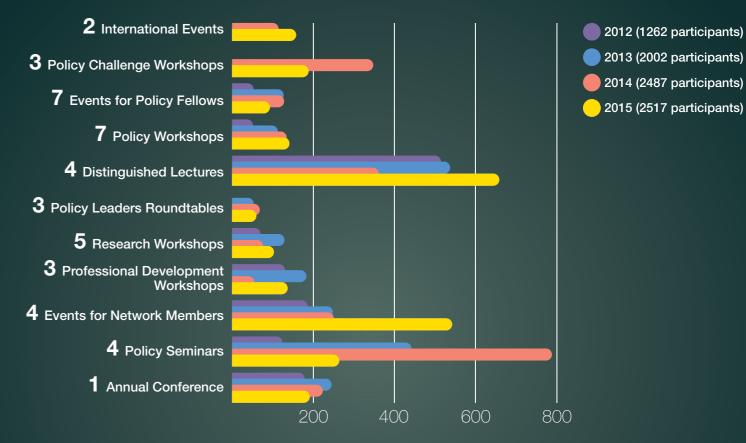
# Annual Conference: How can government make better use of expertise and evidence from the humanities?

Our fourth annual conference explored opportunities for improving the way government makes use of expertise from the humanities. Working in partnership with the British Academy, we invited historians, philosophers, artists, anthropologists, classicists and financial experts to present examples of the significant contribution these disciplines have made to public policy. "There is a crucial role for humanities research and evidence in policy development – from providing lessons from history to ethical analyses of complex challenges. CSaP's conference helped to turn the spotlight on this valuable input." Alun Evans Chief Executive and Secretary of the British Academy

# Statesmanship in a scientific age

As part of the Churchill 21st Century Leadership Programme, CSaP teamed up with Churchill College, Cambridge to organise a lecture and professional development workshop, at which early-career civil servants and researchers worked together to explore approaches to successful evidence-informed policy making.

# Number of participants by event type in 2015



# Breakdown of event participants in 2015

6% Business

16% Learned Societies, Charities, NGOs and others

23% Government

# 47% Universities - Cambridge

8% Universities - Other

CSaP works with strategic research initiatives and departments at the University of Cambridge to provide opportunities for PhD students and postdocs to understand the importance of their research to policy.

# **Professional Development Workshops**

CSaP's Professional Development Workshops provide early-career policy professionals and researchers with an insight into the role of expertise and evidence in policy making.



"Ensuring that scientists setting out on their careers understand the policy

In 2015 we held three workshops bringing together more than 100 researchers and civil servants. Topics included: science and 21st century leadership; how big data is being used to improve public policy and services; and linking transport, health and well-being.

# Secondments

Three years ago, CSaP introduced a policy placement scheme for early-career researchers at Cambridge to take up secondments in government. To date, we have placed 12 researchers into the Department for Business, Innovation and Skills (BIS).

This year, five researchers worked on a range of projects in BIS from preparing for the Spending Review to providing support to the Dame Ann Dowling Review, which examined how government could support the development of more effective collaboration between businesses and university researchers in the UK.

# Secondees in 2015

- Dr Heather Blackmore (MRC Institute of Metabolic Science)
- Paul Clarkson (Dept of Chemistry)
- Dr Karthik Depuru Mohan (Dept of Engineering)
- Dr Charlotte Lee (Dept of German & Dutch)
- Jacquelyne Poon (Dept of Plant Sciences)

# Internships

In 2015 we hosted seven PhD students from the universities of Bristol, Cambridge, Durham and Manchester through the RCUK policy internships scheme and the ESRC Doctoral Training Centre at Cambridge.

Internships at CSaP offer a unique career development opportunity, giving researchers the skills and confidence to work outside their own area of expertise, and as part of a team.

Our interns this year organised and took part in policy workshops, wrote and edited policy reports for non-expert audiences, and met with Policy Fellows to learn about the value of building connections between government and academia.

# Interns in 2015

- Sarah Connors, University of Cambridge (NERC)
- Nick Jones, University of Cambridge (ESRC Doctoral Training Centre)
- Matthew McGuire, University of Cambridge (ESRC Doctoral Training Centre)
- Leanne Melbourne, University of Bristol (NERC)
- Natalie Miazga, University of Manchester (BBSRC)
- Tom Rodger, Durham University (AHRC)
- Matt Wright, Durham University (AHRC)

"The internship has been an extremely valuable experience that has allowed me to demonstrate transferable skills in a working environment. I now have a much better understanding of how science translates into policy but also of how important CSaP's role is in bridging the gap between government and research." Vatalie Miazga

At the end of three months, interns will have gained and developed new skills in organisation,

communication and working collaboratively, as well as a much better understanding of the relationship between research, evidence and policy making.

# Research

While the challenges facing governments today place ever-increasing demands on scientific advice, there is also a widening appreciation of the complexity of relations between science and politics.

# Pathways to Impact

CSaP helps researchers at Cambridge to apply for funding from the Research Councils and elsewhere by designing policy-related knowledge exchange activities. In 2015 CSaP contributed to 18 proposals valued at £14.5m, covering topics such as the education of women in India, the internet of things, ideas of consent, the national grid, genomic licensing and comparative EU land law.

Our workshops and Policy Fellowships can be tailored to support the policy engagement of particular research projects. CSaP's tried and tested approaches can help ensure research is effectively connected to live policy problems.

"CSaP provided invaluable support for my application for a major research grant on multilingualism. In particular it offered advice on impact and policy issues and put me in touch with the relevant civil servants in Whitehall." Wendy Ayres Bennett Professor of French Philology and Linguistics

# Future Directions for Scientific Advice in Europe

CSaP published a collection of essays edited by Robert Doubleday (CSaP) and James Wilsdon (University of Sussex), and funded by the Mercator Foundation and the European Commission. The collection was launched in Brussels in April and was the focus of a meeting in Berlin in June.

"A debate on the ways in which science can and should shape policy in the EU and its governance structures led to a collection of essays ... both the debate and the publication have helped to shape how policy makers think about scientific advice in the EU." Robert Madelin Senior Adviser for Innovation, European Commission



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# Climate Change Risk Assessment Project

CSaP was commissioned by the UK's Foreign and Commonwealth Office (FCO) to edit a collection of essays that illustrated the links between climate change risk assessment and policy making on mitigation. The essays were written by leading climate scientists from (among others) the Met Office Hadley Centre, the Potsdam Institute, and the Harvard University Centre for the Environment.

"CSaP's work editing our risk assessment report was invaluable – they helped translate the complex scientific information into language that policy makers could easily understand, which helped hugely in getting the report's message across." Simon Sharpe

lead of Climate Risk Team, Science, Innovation and Climate Department, FC0

# Spotlight on...

# Climate and cities

A major theme of CSaP's work in 2015 was climate and cities, with a particular focus on how cities can adapt in response to changing futures.

for Sustainability and the Environment led at an event hosted by the European Bank for Reconstruction and Development

Building on the success of this collaboration,

of seminars on climate and sustainability.

# SPOTLIGHT ON | CLIMATE & CITIES



Katrina Williams leads on international science and resilience in the Department for Energy and Climate Change (DECC). Having worked in both Defra and DECC in recent years, issues such as Bovine TB, neo-

nicotinoids in pesticides, and fracking have all at various points come within her purview.

# CONNECTIONS

During her Policy Leaders Fellowship, Katrina met with researchers from Engineering. Chemistry and Judge Business School on issues ranging from energy policy to behaviour change. A roundtable discussion



on the intelligent use of modelling in government convened experts, including Dr Chris Hope, Reader in Policy Modelling at Cambridge; Charlene Rohr, Director of Choice Modelling and Valuation at RAND Europe; and Professor Sir David Spiegelhalter, Winton Professor of the Public Understanding of Risk at Cambridge.

# OUTCOME

Katrina used what she had learned to feed directly into a modellers' group in her department. Her Fellowship also helped her value complexity, and learn to express it, resisting temptations to reduce problems to a single message.

"There's an enormous role for academia to challenge civil servants by exploring options that the political limitations of the civil service might not allow. Just good conversations and good communication between policy makers and academics can be immensely beneficial."

Resilient cities

STANKI CS.P INT.

CONNECTIONS

Investing in climate resilience

As Head of Climate Change Adaptation at the EBRD, Craig Davies leads on mainstreaming climate resilience into EBRD's investment operations in Central and Eastern Europe, Central Asia, the Caucasus, Turkey and the southern and eastern Mediterranean.

The EBRD is an 'innovation bank' created to make a difference in our countries of operation by financing investments that go beyond business-

as-usual and support market adoption of improved technologies and practices.

My main aim for the Policy Fellowship was to identify a focused number of areas where our operations and business needs intersect with the research interests of motivated academics.

The most concrete impact of my Fellowship and the one where there has been a lot of follow-up - was on the topic of climate resilience in buildings, and cities more generally. The network that was established through my Fellowship helped to form an expert panel on climate resilience in buildings. This enabled us to kick off a whole new area of business development looking to invest in ways that improve the climate resilience of buildings - both commercial and residential - in climate-vulnerable countries, particularly those which have high exposure to heat and water stress in the southern and eastern Mediterranean.

We believe that the work we are doing will help households, communities and businesses deal with increasing climatic variability and climate extremes. The connections that I have made at Cambridge will certainly have contributed to that outcome.

"The Fellowship has enabled me to connect with people I would otherwise never have come across. It enabled me to reach out to a wider network of practitioners and highly experienced and knowledgeable academics, enabling us to explore new ideas and expand our business operations."

The workshops on Resilient Cities brought together Policy Fellows from the Department for Communities and Local Government, the Greater London Authority, and the European Bank for

environments and modes of governance.



The Cambridge Forum for Sustainability

understand the effects of climate change on

cities and urbanising populations. A series of

address how policy makers might better

and the Environment partnered with CSaP to

Reconstruction and Development, with researchers from architecture, archaeology and international development, manufacturing, mathematics, and urban regional systems.

workshops focused on the adaptation of existing built

# OUTCOME

Building on the success of the network created through the workshops, CSaP supported the EBRD in convening an expert panel to advise on climate resilience and resource efficiency in buildings, which will inform EBRD's investment planning in this sector in the highly climate-vulnerable countries of North Africa and the Middle East.

"We held a very useful debate here at the EBRD, where leading academics such as Professor Paul Linden, Director of the CFSE, highlighted the work done in California on low energy cooling and passive ventilation systems." Dr Craig Davies

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# SPOTLIGHT ON | CLIMATE & CITIES



Dr Craig Davies. Associate Director and Head of Climate Change Adaptation, EBRD

# Spotlight on...

# Innovation

In 2015 our network was able to harness all the strengths of Cambridge's innovation ecosystem to inform European, national and business policy.

from the Cabinet Office and experts across the University of Cambridge directly influenced how government procurement creates opportunities for SMEs.

A workshop exploring how policy, better support innovation provided new Innovation in the European Commission.

And a conversation between a BT Policy Fellow and the Head of the Cavendish Laboratory led to a workshop with Cavendish academics and BT technical researchers to consider new ways that fundamental physics can be used to deliver higher internet speeds over greater distance.

# SPOTLIGHT ON | INNOVATION

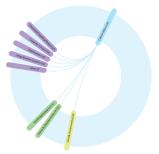


Philip Sinclair is Head of Innovation and Growth in the Cabinet Office. At the start of his Policy Fellowship, Philip was responsible for creating an online procurement service https://www.gov.uk/contracts-finder-to

enable large contracts issued by government to be broken into smaller units that would be more accessible to SMEs. The purpose was to improve competition, reduce costs and promote innovation.

# CONNECTIONS

Philip used his Policy Fellowship to engage with researchers at the Institute for Manufacturing, Judge Business School and the Computer Laboratory, as well as with behavioural experts and local entrepreneurs. The connections he made provided the impetus for Philip to test ideas and concepts early on in the design process.



# OUTCOME

All public sector opportunities and future opportunities (pipelines) are now on one website. Opportunities are presented in a robust standardised way, and published via an open API. All data on the platform is open and searchable by price, location and sector.



**Dr Karthik Depuru-Mohan** is a researcher in Mechanical and Aerospace Engineering at Cambridge. In 2015 he was seconded into the Department for Business, Innovation and Skills (BIS) to carry out an international comparison of

research and innovation systems.

# CONNECTIONS

Karthik used his secondment to build connections in government. He worked with a global network of policy officers and conducted interviews with senior university figures to gather data and relevant information.

"Working in a government department is always very different to working in an academic setting and Karthik quickly adapted to the pace and need to work collaboratively with others."

Dr Bryony Butland Assistant Director Research Strategy, Bl

# OUTCOME

The result of Karthik's work was a comprehensive overview of 20 different countries, which is already proving to be a useful source document to BIS, both as part of the Spending Review and to inform future policy debates about research and innovation systems. Karthik has since been invited to present his work at the Global Science and Innovation Forum meeting and has received positive responses, particularly from the Royal Society and Research Councils.

# How do you make Europe a global pro-innovation actor?

In October, CSaP hosted a Policy Workshop with Robert Madelin, President Juncker's recent appointment as Senior Adviser for Innovation, to explore the policy, regulatory and financial initiatives that could better position Europe as a global proinnovation actor.

The purpose of the workshop was to distil policyrelevant insights from the deep knowledge and experience of the Cambridge ecosystem.

"The CSaP workshop was a great success. It highlighted the need for a greater understanding of innovation in Europe and the potential it has for economic and job growth."

**Jean-Claude Juncker** President, The European Commission

# From fundamental physics to GDP

A conversation between CSaP Policy Fellow Tim Whitley and Professor Andy Parker, Head of the Cavendish Laboratory at Cambridge, led to a workshop with Cambridge academics and BT technical researchers, funding for PhD students, and joint proposals to the EPSRC to support ongoing work.

A workshop with academics from the Cavendish Laboratory considered new ways of applying fundamental physics to deliver higher connection speeds over greater distance – a question that has huge purpose and significance for customers, the nation and for GDP (given that the economic value of businesses is

linked strongly to their connectivity).

One of the topics I was interested in when I embarked on the Fellowship was the Internet of

Things, and how we could move towards becoming an enabler and purveyor of insight. A meeting with Ying Jin in the Department of Architecture helped me think about how we live together, why cities are the way they are, and how they could be in the future. When I think about a smart city I come to it from a telecoms perspective, inevitably thinking about bits and bytes and how to connect things. However, this novel perspective, which places people at the heart of the city, provoked me to rethink the kinds of environments that people will want to live and work in.

Even for a company like BT, which has very established links and a 30-year relationship with Cambridge, the diversity of the University is breathtaking but also difficult to navigate. While BT has a solid base in Cambridge, CSaP's ability to augment that with its high-impact, highly efficient network allows us both to deepen ongoing relationships and add new parties.

"One of the most powerful things about the CSaP Policy Fellowship is that it provoked me to ask questions that I would not have otherwise considered. Almost immediately you find yourself engaged in conversations which are interactive, hugely relevant and valuable."



# SPOTLIGHT ON | INNOVATION



Dr Tim Whitley, Managing Director, Research and Innovation, BT

# Spotlight on...

# Health

During 2015, connections madethrough the Policy Fellowships Programme led to a series of ground-breaking discussions on the economic and societal impact of health research.

Given the importance to health policy of having access to the best evidence, and the excellence of biomedical research in Cambridge, it's no surprise that policy makers in this area continue to be strongly represented in CSaP's network, and to make regular visits for workshops and oneto-one meetings.

For example, CSaP organised a one-day visit to Cambridge by the HM Treasury team led by Paul Doyle, HM Treasury's Director of Health and Social Care, to discuss the relationship between public-funded health research and economic growth.

As part of the visit, Professor John Bradley, Director of the NIHR Biomedical Research Centre, hosted a discussion that brought together experts from Cambridge University, AstraZeneca, The Babraham Institute, GSK and Medimmune with policy makers from NIHR.

# SPOTLIGHT ON | HEALTH



Mark Samuels is founding director of the NIHR Office for Clinical Research Infrastructure. Mark's Policy Fellowship contributed to a NIHR study on the relationship between science funding and economic growth – Growth

through health research: The NIHR as an engine for growth published in March 2015.

# CONNECTIONS

Mark used his Fellowship to expand his network in Cambridge beyond the medical researcher he would usually engage with, meeting with economists, design engineers and experts in industria policy and architecture.



to my projects and collaborations. I have spent all this time thinking about how the NIHR's visit – that make the call on future developments. thinking, even before the recent Spending Review."

# OUTCOME

Coming to Cambridge during the early stages of his study on science funding and economic growth made a significant contribution to the scope of Mark's project, and helped him to understand and present the research. The connections he made are ongoing and there have been spin-off benefits such as linking Cambridge academics to other stakeholders and policy makers in his network.



Dr Kathy Liddell is Director of the Centre for Law, Medicine and Life Sciences (LML) at the University of Cambridge. Kathy's research focuses on biotechnology and bio-information, with the aim of understanding and improving

the legal frameworks that govern this complex and fast-moving field

# CONNECTIONS

Dr Mark Bale (a CSaP Policy Fellow from the Department of Health) was able to connect Kathy's research group with other key parts of government. A meeting with Linda Kahl (Policy Fellow from BioBricks) raised



awareness of new areas in science and innovation that could help Kathy and her group better understand questions on openness and innovation in genomics.

# OUTCOME

Kathy's meetings with Policy Fellows, and the subsequent policy workshop, led to the publication of a report on the debates, policy frameworks and recommendations for further research, and (as Mark Bale explains opposite) helped deliver a new government priority on genomics. Kathy plans to follow-up with another event in January 2016 building on earlier discussions around IP licensing practices for large synbio and genomic bio-resources.

"The CSaP policy workshop on genomic medicine and intellectual property issues was networks, helping to reinvigorate my earlier research and bring it up-to-date.

# Realising genomic medicine: intellectual property issues

Working with Dr Kathy Liddell, Director of the Centre for Law, Medicine and Life Sciences, CSaP organised a policy workshop to discuss intellectual property (IP) policy, strategies and licensing practices for genomic medicine.

The workshop report concluded that with substantial public and commercial support, innovative science and thoughtful policy development, genomic medicine had the potential to revolutionise healthcare and contribute to economic growth.

### (w) The benefits of play in middle childhood

A workshop CSaP organised on behalf of the ESRC and Unilever discussed the strength of available evidence on the benefits of play in middle childhood, and where research could productively be focused.



With contributions from Professor Helen Roberts, a medical sociologist at UCL, and Dr David Whitebread, a senior lecturer in the psychology of education at Cambridge, the workshop report concluded that play in middle childhood was key to human well-being and that significant work needed to be done to increase the visibility of the importance of play.

# Delivering government priorities for genomics

Dr Mark Bale leads for the Department of Health on emerging healthcare science areas and their ethical, legal and policy implications. The connections made during his Policy Fellowship helped him to deliver a huge new government priority on genomics.

I am involved in delivering the '100,000 Genomes Project', which is a scheme that aims to sequence 100,000 whole genomes from NHS patients. It intends to do many things for many people - deliver benefits to patients, allow access to researchers, and provide opportunities for industry partners whilst maintaining public trust and confidence.

The CSaP Policy Fellowship enabled me to reacquaint myself with Dr Kathy Liddell -

who, this year, set up a new centre at Cambridge focusing on the legal and ethical challenges at the forefront of medicine and the life sciences - and make several new connections, including Dr Hilary Burton at the Public Health Genomics Foundation. These connections led to a Policy Workshop, which

medicine.

The workshop achieved what we're increasingly calling 'open policy making'. It's a good example of how you can take a problem, bring together the various actors and come up with a plan that works for everyone. A report of the workshop has since been published and has contributed to the policy approach that Genomics England is adopting. The next step will be to work with researchers to identify the questions that need to be answered and see whether they fit with our policy needs.

"The Fellowship has helped my own professional development, giving me the confidence to act as an expert in a cog in a machine, and enabled me to build on the connections I have made to engage others."

set out to identify and influence key issues in IP affecting the development of genomic



Dr Mark Bale. **Deputy Head of Health** Science and Bioethics, **Department of Health** 

# Spotlight on...

# **Risk and** resilience

Facilitating knowledge exchange on the threats facing local, national and international communities has been a key pillar of CSaP's work over the past year.

Risk and resilience – the threats societies face and how we cope with them – are recurrent policy priorities for any government, and this was reflected in the focus of CSaP's activities in 2015.

A collaboration with Cambridge's Engineering Design Centre led to a workshop exploring the concept of resilience in government and industry, and how engineers can help design resilient systems.

As a result of discussions during his Policy Fellowship, a Senior Adviser in the National Security Secretariat asked CSaP to organise a roundtable discussion for the Cabinet Office team undertaking the Strategic Defence and Security Review.

CSaP continues to host the External Champion to RCUK's Partnership for Conflict, Crime and Security Research (PaCCS), which delivers high quality research to help improve understanding of global security challenges.

# SPOTLIGHT ON | RISK & RESILIENCE

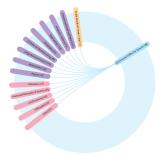


Elizabeth Surkovic is Deputy Director for Science in Government at the Government Office for Science. She spent her Policy Fellowship exploring risk assessment, appetite for risk, and resilience to emergency scenarios.

Following these discussions Liz worked with CSaP on a series of workshops exploring how the behavioural sciences can inform government planning and responses to emergency situations.

# CONNECTIONS

CSaP brought officials from several government departments together with academics from a range of disciplines (including architecture, economics, education, engineering, behavioural science, medicine, public health and security) for a series of meetings to examine the



evidence base. These resulted in the publication of a briefing on how government can better understand how the public behaves in an emergency situation.

### OUTCOME

The category of 'personal reaction' has been added to all the case studies that make up the National Risk Register. GO-Science has used insights from the briefing as the basis for a policy checklist for emergency response planners and managers. To date, they have trialled the checklist with one topic (space weather), and plan to trial it more widely in the future with a range of different risks.

"CSaP's Policy Challenge provided an important stimulus for the development of a behavioural advice into their emergency planning.

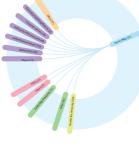


Dr Colin Wilson is Head of Strategic Planning, HM Passport Office. In his previous role at the Home Office's Centre for Applied Science and Technology, Colin focused his attention during his Policy Fellowship on: the need for

enforcement agencies to test for a wide range of drugs in a robust way; issues around how government interacts with the security industry; communication of risk; and the importance of randomised control trials.

# CONNECTIONS

Colin met with industrialists, entrepreneurs and venture capitalists, who explained that companies would be willing to invest more in developing new technologies for enforcement agencies if they met an emerging market need. He



spoke with Professor David Spiegelhalter about risk calculation and perception, and a meeting with Professor Larry Sherman encouraged him to use randomised control trials in new areas.

# OUTCOME

The model for Home Office procurement of technology has changed as a result of the conversations Colin had: instead of commissioning equipment, the Government now owns the standard but it is otherwise a commercial arrangement. Colin's discussions with venture capitalists also helped shape the venture capital sections of the Strategic Defence and Security Review.

# POLICY WORKSHOP

# Academic input into the Strategic Defence and Security Review

At the request of one of our Policy Fellows, we ran a roundtable discussion for the Cabinet Office team undertaking the Strategic Defence and Security Review (SDSR). The purpose of the discussion was to discuss academic input into the SDSR, exploring the major questions that the academic community considers important to the SDSR process.

The meeting took place in Cambridge, and was chaired by Sir Richard Dearlove (former Chief of the Secret Intelligence Service). The main points raised centred on: options for strategic focus; prioritising people vs technology; cyber expertise and governance; making use of expertise; drivers of innovation and a more entrepreneurial culture; strategic communications; and the appetite for risk.

"CSaP's policy workshop provided an excellent opportunity to test and shape our initial thinking and challenge our emerging view of the strategic context. The discussions on drivers of innovation, building cyber expertise in the UK, and on the broader need to promote an entrepreneurial culture really helped to refine our thinking in these areas."

### Conrad Bailey

Director, Strategic Defence and Security Review Cabinet Office

# **Resilient systems thinking**

CSaP worked with Nathan Crilly and his team to deliver a workshop examining how concepts of resilience differ between government departments, academia and industry, and how engineers can design more resilient systems.

My group conducts research into the design of systems, be they technical, social or sociotechnical. Resilience is used as an umbrella term for all sort of concepts in a system (adaptability, flexibility, robustness), so it is often unclear guite what is meant when someone describes a system as requiring, possessing or lacking resilience.

This workshop explored resilience concepts with

respect to different types of systems and from the perspective of different domains. We learned how individuals coming from different backgrounds understand resilience and

communicate resilience. It was especially interesting to see participants recognise that they could benefit from each other's approaches to resilience.

We created a synthesis of what was discussed at the workshop and what we learned and, as a result, have been able to think about and represent resilience in a domain-neutral way. Our findings have since been presented at a number of forums.

Much of the value of the workshop was having people describe the resilience of their system in terms that other people could understand. It became clear that when resilience claims are made, the boundaries that define the system are often left implicit, as is the assumed purpose of the system.

# SPOTLIGHT ON | RISK & RESILIENCE



Dr Nathan Crilly. Engineering Design Centre, University of Cambridge



# **Governance: Management Committee**

CSaP's Management Committee meets once a term and reports to the Councils of the Schools and to the University's Research Policy Committee. It is chaired by Professor David Runciman.

Following a consultation on how CSaP's governance should reflect the way in which the Centre has developed in recent years, a new Management Committee has been established.

For the previous six years, CSaP's Executive Committee proved an invaluable source of oversight, guidance and advice. The Centre would like to thank all those who served on it.

The members of the Management Committee are:

**Professor David Runciman (Chair)** Head of Department, Department of Politics and International Studies

Dr Robert Doubleday (Secretary) Executive Director, Centre for Science and Policy

Professor Ottoline Leyser CBE Director, Sainsbury Laboratory

Professor Christoph Loch Director, Cambridge Judge Business School

**Professor Richard Prager** Head of School, School of Technology

# **Governance: Advisory Council**

CSaP's Advisory Council meets twice a year and advises on CSaP's strategy and activities, paying particular attention to the views of stakeholders. It is chaired by Dr David Cleevely.

Dr David Cleevely CBE (Chair) Entrepreneur and Government Adviser Dame Fiona Reynolds DBE Master, Emmanuel College Cambridge

**Dr Claire Craig CBE** Director, Science Policy, Royal Society

Professor Dame Athene Donald DBE Master, Churchill College Cambridge

Professor Dame Ann Dowling OM DBE President, Royal Academy of Engineering

**Rt Hon Lord Willetts** Executive Chair, Resolution Foundation

**Clare Moriarty CB** Permanent Secretary, Defra

Dr Geoff Mulgan CBE CEO, Nesta

**Chris Wormald** Permanent Secretary, Department for Education

**Professor Nick Pearce** Director, Institute for Policy Research University of Bath

Julia Unwin CBE CEO, Rowntree Foundation

**Dr Adrian Weller** Senior Research Fellow, Department of Engineering University of Cambridge

Lord Wilson of Dinton GCB Cabinet Secretary (1998 - 2002)



**Dr David Cleevely** 

# Financial Report – Year to 31 July 2015

CSaP's network and programmes are supported by a small team based in Cambridge which brings together all the necessary skills and expertise in event management, marketing, programme development, networking and research.



Dr David Cleevely CBE Chair, Advisory Council

Katie Collins Administrator

Dr Robert Doubleday Executive Director

Dr Ben Earley Pathways to Impact Coordinator

Dr Nick Gray Policy Fellowships Programme Dr Clare Moran Policy Fellowships Coordinator

Jackie Ouchikh Head of Programmes

Dr Miles Parker OBE Senior Research Associate

Dr David Rose Research Associate

Henry Rex Policy and Communications Officer Dr Tristram Riley-Smith

External Champion, Partnership for Conflict, Crime and Security Research

Dr Alice Vadrot Visiting Research Fellow The Centre for Science and Policy is grateful for the support of its principal funders – particularly the David and Claudia Harding Foundation, the Isaac Newton Trust and the University of Cambridge for its HEIF contribution – without whose generous support none of our achievements to date would have been possible, and to the organisations who have sponsored or supported particular activities during 2015, including the British Academy, Churchill College Cambridge, the Economic and Social Research Council, the European Commission and Stiftung Mercator.

	FY 2013 / 2014	FY 2014 / 2015
Income	263k	417k
Expenditure	507k	584k
Net income	(244)k	(167)k
Total funds brought forward as at 1 Aug	627k	383k
Total funds carried forward as at 31 July	383k	216k



# A note of thanks

CSaP would like to record its gratitude to all the members of the University and others who have given their time this year to support our programmes and

Ian Abbott-Donnelly (IBM Europe): Prof Christopher Abell (Dept of Chemistry): Dr Maria Abere (Pentroke College Cambridge): Prof Bill Adams (Dept of Geography): Dr Jean Adams (Centre for Diet and Activity Research): Dr Prabhat Agarwal (European Commission): Marin Abbe (European): Dr Prabhat Agarwal (European): Comparison): Marin Abbe (European): Dr Anne Alexander (Centre for Research in the Arts Social Sciences and Humanities): Prof Paul Alexander (Dept of Physics): Dr Harriet Alexandrova (Dept of Fhistory and Philosophy of Science): Alessandro Allegra (Royal Society): Graham Alen (Wolfson College Cambridge): Dr Harriet Alexandrova (Dept of Fhistory and Philosophy of Science): Alessandro Allegra (Royal Society): Graham Alen (Wolfson College Cambridge): Dr Harriet Alexandrova (Dept of Engineering): Dr Rosamunde Almond (Cambridge Forum for Sustainability and the Environment): Prof Ash Amin (Dept of Geography): Prof Phil Alimentdinger (Dept of Lingineerson (Parson Pices): Prof Ross Anderson (Camputer Laboratory): Prof Christopher Andrew (Faculy of Hatory): Partiet Alavia (Dept of Christopher Andrew): (Faculy of Hatory): Prof Julia Admission (Marson (Parson)): Prof Julia Admission (Parson): Prof Julia Admission): Prof Julian Admission (Parson): Parson (Iternationa): Prof Julian Admission): Prof Julian Admission (Parson): Prof Julian Admission): Prof Julian Admission (Parson): Prof Julian Admission): Prof Julian Admission (Parson): Prof Julian Admission): Prof Julian Admission: Prof Julian Admissio

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# Contact

Centre for Science and Policy University of Cambridge 10 Trumpington Street Cambridge CB2 1QA

+44 (0)1223 768392 enquiries@csap.cam.ac.uk www.csap.cam.ac.uk

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