

Call for Evidence - The Fruits of Curiosity: science, innovation and future sources of wealth

The Royal Society seeks your input to our recently launched *Fruits of Curiosity* inquiry. This is your opportunity to shape the focus of this important study into the role that science will play in equipping Britain to meet the economic, social and environmental challenges of the next twenty years.

We welcome evidence, data and case studies in response to the questions below, as soon as possible, and before Friday 11th September 2009. Please see below for response details.

Background to 'The Fruits of Curiosity' project

On 1 April 2009, the Royal Society announced an inquiry, entitled *The Fruits of Curiosity: science, innovation and future sources of wealth*. This will look beyond the current 10-year Investment Framework to assess the long-term direction of UK science and innovation policy. It will measure the different forms of value created by science, engineering and medicine for the UK's economy and society. And it will consider the role that science will play in equipping Britain to meet future economic, social and environmental challenges.

The *Fruits of Curiosity* study will consider ways to maintain our scientific and research strengths in a period of intensifying global competition, accompanied by new opportunities for collaboration. It will recommend how more ideas can be translated into products, services and economic opportunities.

The inquiry takes place against the backdrop of an economic crisis which has prompted intense debate about the sectoral mix of the UK economy. In his Romanes Lecture in Oxford on 27 February 2009, the Prime Minister argued that the recession may provide an opportunity to "rebalance" the economy, away from finance and towards more research-intensive, high-technology sectors.

The Royal Society is keen to challenge the separation of 'pure' and 'applied' research, and move towards a richer understanding of how a vibrant and diverse research base creates value in many different ways: through the supply of skilled individuals; through contributions to wealth creation and quality of life; or through discovering more about the world we live in.

We hope the study will have an impact on UK science policy similar to that of the US National Academies' 2005 study 'Rising Above the Gathering Storm', which shaped many of the policies now being adopted by President Obama's administration.

The study will be led by Sir Martin Taylor, Vice President of the Royal Society and will draw on the expertise of a high-level Advisory Group:

Sir Martin Evans FRS, Director, Cardiff School of Biosciences

Sir Richard Friend FRS, Professor of Physics, University of Cambridge

Professor Rachel Griffith, Deputy Research Director, Institute for Fiscal Studies

Dr Emily Holmes, Department of Psychiatry, University of Oxford

Professor Richard Jones FRS, Professor of Physics, Sheffield University

Professor David MacKay, Professor of Natural Philosophy, Cavendish Laboratory, University of Cambridge

Sir Mark Walport, Director of the Wellcome Trust

Sir Alan Wilson FRS FBA, Chairman, Arts and Humanities Research Council

Professor Ben Martin, Professor of Science and Technology Policy Studies, Science and Technology Policy Research Unit (SPRU)

Paul Mountford, President, Emerging Markets, Cisco

Professor Helga Nowotny, Vice-President, European Research Council

Sir Paul Nurse FRS, President, Rockefeller University, New York City (via video link)

Lord Sainsbury of Turville FRS, Gatsby Charitable Foundation

Lord Waldegrave of North Hill, Provost, Eton College

Professor Glynis Breakwell, Vice-Chancellor, University of Bath

Professor Ann Dowling DBE CBE FRS FREng, Professor of Engineering, University of Cambridge

Professor Wendy Hall DBE FREng, Professor of Computer Science, University of Southampton

Richard Lambert, Director-General, Confederation of British Industry (CBI)

Dr David Roblin, Vice President, Head of Research and Site Director, Pfizer, Sandwich Laboratories

Call for Evidence

This is your opportunity to shape the focus of this major project, which will be launched in the first half of 2010, during the Royal Society's 350th anniversary. It will also contribute fresh thinking to debates in the lead-up to the next General Election and Spending Round.

This call for evidence seeks input in the form of ideas, evidence and suggestions from all organisations and individuals with an interest in the future direction of science and innovation policy and investment. We are particularly keen to gather robust evidence to inform future science policies.

Some topics that you may wish to comment on are listed below. The study will not be able to cover all issues in equal depth, and will have to prioritise. The list below is by no means exhaustive, and we welcome comments on other issues that you think we should consider:

The long-term direction of policy for science

1. What role should curiosity-driven research play in the UK science base in the next 15-25 years?
2. Which elements of policy for science and innovation over the past 10 years have been successful and should be maintained? Where is there room for improvement?
3. How will increasing support for science in the US, China and elsewhere impact on the UK's international standing and attractiveness as a place to undertake world-class science?
4. How should science be governed to maximise benefits to society while acknowledging public questions, uncertainties and concerns?
5. How should we assess the long-term social and cultural impacts of scientific research?

Investing in tomorrow's talent in schools, universities and in the FE sector

6. How much progress has there been in the past decade in the delivery, content and assessment of education in STEM (Science, Technology, Engineering and Maths) subjects?
7. What are the future challenges for STEM education at primary, secondary and tertiary levels? How should these challenges be addressed?
8. How do we ensure that adequately qualified science and mathematics specialists are attracted into the teaching profession at all levels of education (primary through to tertiary)?

Building and sustaining research careers

9. How can we make research careers – within academia or industry – a more attractive option for young people, both within the UK system and from abroad?
10. What sorts of incentives can we develop to keep talented students and postgraduates in science?

11. Does the standard career-track model need to be re-evaluated? Should we take more account of the movement of skilled individuals between academia, industry and business?

Science, innovation and wealth creation

12. How can we strengthen science and innovation in all parts of the private sector in the UK, and further improve the exchange of knowledge and expertise between the public and private sectors?
13. How can we improve the scale and contribution of private sector R&D?
14. What initiatives (e.g. tax credits) have been successful or not with regards to supporting innovative businesses in the UK? How can the UK better support business?

The ecology of research funding

15. How do we maintain an appropriate funding balance between curiosity-led, response-mode research, and more targeted or programmatic funding?
16. What would an ideal research funding landscape look like in 20 years time? How would funding be allocated? What would the funding bodies look like? How would they relate to one another?
17. What role should public sector R&D outside the ring-fenced science budget (e.g. departmental spending, government procurement and national laboratories) play in supporting the UK science base?

Submissions

We would be happy to receive submissions as electronic copies (preferred format), links to electronic copies, or hard copies.

The deadline for submissions is **Friday 11th September 2009**, either by email to: fruitsofcuriosity@royalsociety.org or by post to: **Dr James Wilsdon, Director, Science Policy Centre, The Royal Society, 6-9 Carlton House Terrace, London SW1Y 5AG, UK**

Confidentiality

A list of organisations and individuals who have submitted views will be listed on our website and the submissions may be published. Please inform us if you **do not** want your name or your submission to be made public. If you are submitting information on behalf of an organisation, please include details of the relevant person to contact should we wish to discuss issues raised in your submission.

If you would like to submit your views but are unable to meet the deadline, or if you have any questions, please contact us on the details above.

About us

The Royal Society is the independent scientific academy of the UK and the Commonwealth, dedicated to promoting excellence in science. As well as providing an authoritative voice and leadership for UK science, it aims to ensure that policies on key issues are influenced by the best independent science and it provides advice for policymakers on science and its relationship with society. For more information on our policy work, visit royalsociety.org/policy

As we prepare for our 350th anniversary in 2010, we are working to achieve five strategic priorities:

- Invest in future scientific leaders and in innovation
- Influence policymaking with the best scientific advice
- Invigorate science and mathematics education
- Increase access to the best science internationally
- Inspire an interest in the joy, wonder and fulfilment of scientific discovery

Please circulate this document to other interested parties.

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