Impact and funding opportunities at EPSRC

2nd November 2017

Nick Cooper
Portfolio Manager – Water /Coastal & Waterway Engineering
What we do

£800m
ANNUAL BUDGET

OVER
6,000
NEW STUDENTS SUPPORTED

56%
OF EPSRC’S RESEARCH PORTFOLIO IS COLLABORATIVE

OVER
3,800
ORGANISATIONS INVOLVED IN COLLABORATIVE EPSRC GRANTS

£1.2bn
OF LEVERAGE FROM INDUSTRY, PUBLIC SECTOR ORGANISATIONS, CHARITIES

£4.6bn
EPSRC’S TOTAL RESEARCH & TRAINING PORTFOLIO

55%
OF OUR PORTFOLIO IS MULTIDISCIPLINARY

£3.4bn
OF OUR PORTFOLIO IS RELEVANT TO THE INDUSTRIAL SECTORS
What we do
One Vision

For the UK to be the best place in the world to research, discover and innovate

Two Goals

Research and Discover
Research and Innovate

Three Strategies

Balancing Capability
Building Leadership
Accelerating Impact
EPSRC’s role in Accelerating Impact

EPSRC is seeking to maximise the economic and social benefits arising from our research and training portfolio - to make it more likely that impact will arise more quickly and will bring benefit to the UK.

Our aim is to enable and accelerate the pace of impact from the research portfolio supported by EPSRC **by enabling the partnerships and linkages** that can support research outcomes having an impact in business, society and policy.
The UK research base is highly productive and of high quality

1. 1% of global population
2. 3% of global funding for research
3. 8% of papers published (productivity)
4. 16% of world’s most highly cited paper (quality)

Source: International Comparative Performance of the UK Research Base – 2013
A report prepared by Elsevier
What do we mean by Impact?

**Academic Impact**
- The demonstrable contribution that excellent research makes to academic advances, across and within disciplines, including significant advances in understanding, methods, theory and application.

**Economic and Societal Impact**
- The demonstrable contribution that excellent research makes to society and the economy.
Embedding impact in our portfolio

In the last two years, EPSRC’s aim has been to:

- Continue to embed impact in our research right from the start through **Pathways to Impact**
- Refresh the portfolio of **Impact Acceleration Accounts**
Since 1st April 2015, the following principle applies to all RCUK research proposals:

“A clearly thought through and acceptable Pathways to Impact is an essential component of a research proposal and a condition of funding. Grants will not be allowed to start until a clearly thought through and acceptable Pathways to Impact statement is received.”

Further guidance to applicants on what a carefully considered PtI statement should include is available on our website.
How do I include a request on my grant?

- The Pathways to Impact is an attachment on Je-S of a **maximum of two A4 sides**
- Describe **potential beneficiaries and how your research may impact them and how you will facilitate this**.

What can I ask for?

- Any eligible project-specific resources **but not general activities funded centrally**
- Eligible costs include **secondments, investigator time** allocated to impact project activities, **training** (including for research assistants) and **employment of specialist staff**.
Pathways to Impact

**Do**
- Identify **realistic** and **achievable** impacts
- Make sure the activities and resources are as **effective** as possible
- Incorporate beneficiaries that are **relevant** and **appropriate**
- Include **clear** and **convincing** plans for impact activity

**Don’t**
- Include **unproductive** or futile activities just to ‘tick boxes’
- Be **impractical** or **over-optimistic** about what can be achieved
- Give **vague** summaries – we expect thorough thought to have been applied and understand that plans can change
- Choose **inappropriate** or **unrelated** beneficiaries
Considering impact in research proposals

**Academic Beneficiaries:**
- How will the research contribute to the academic knowledge both within the UK and internationally?
- How will it benefit others in your field and in other disciplines?

**Impact Summary:**
- Potential economic and social impact: Who might benefit from the research and how?
- May appear in the public domain so should be written in accessible language.

**National Importance**
- Why is it important for your research to be supported by the UK taxpayer?
- Why the research might benefit the UK economy, why it may lead to advances in a different academic discipline or why it’s important that an internationally leading group continues to be supported.
National Importance or Impact?

National importance

• Encourages applicants to articulate why it's important for their research to be supported by the UK taxpayer so that the UK remains internationally competitive.
• Why the research might benefit the UK economy
• Why it may lead to advances in a different academic discipline
• Why it's important that an internationally leading group continues to be supported

Impact

• Focuses on how you might accelerate the route to making it happen
• What activities are you proposing to ensure that the potential beneficiaries have the opportunity to benefit?
• Impact is about who the beneficiaries of the research might be and how you are going to work with them to shorten the time between discovery and use of knowledge.
Impact Acceleration Accounts

- Account based funding given to universities
- Allows institutions the **flexibility** to operate tailored schemes
- Used for any activities classified as:
  - Early stage commercialisation
  - Business/user engagement
  - Secondments and placements
  - Driving culture change

- £90m investment
- 4 1/3 years
- 33 universities
Please remember...

- **to think about impact right from the start** – consider what you might need (resources) before you write your proposal
- **to request resources** for pathways to impact
- **to keep us informed of success stories**. We like to know what made it work!
Delivery Plan Framework

UK PROSPERITY

- Productive Nation
- Connected Nation
- Resilient Nation
- Healthy Nation

RESEARCH INSPIRED BY CHALLENGE/STRATEGIC INTERVENTION

40%

RESEARCH ORIGINATED BY RESEARCHER/COMMUNITY DRIVEN

Scientific capability

Strategic priorities
Delivery Plan Framework

UK PROSPERITY

Productive Nation
Connected Nation
Resilient Nation
Healthy Nation

RESEARCH INSPIRED BY CHALLENGE/STRATEGIC INTERVENTION

Scientific capability
Strategic priorities

OUR PORTFOLIO

60%

RESEARCH ORIGINATED BY RESEARCHER/COMMUNITY DRIVEN
**Productive Nation**
Creative, innovative, competitive economy
- Introduce disruptive technologies
- Drive innovation through digital transformation
- Focus on circular economy

**Connected Nation**
Surviving and thriving in a digital world
- Enable a data driven economy
- Deliver intelligent technologies and systems
- Ensure safe cyber society

**Resilient Nation**
Adaptive, prepared, sustainable
- Achieve energy security and efficiency
- Ensure a reliable infrastructure
- Develop solutions to acute threats

**Healthy Nation**
Improved quality of life through better mental & physical health
- Transform community health & care
- Improve prevention and public health
Which grant is for me?

Purpose of my grant

Research Focused

- New Academic?
  - Standard Grant
  - New Investigator Award

- Have applied to EPSRC before
  - Standard Grant

Develop as a future leader

Fellowship

- Postdoctoral
- Early
- Established

Other grants are available; Workshop grants, Network Grants and Overseas travel grants.
(Apply via Standard Grant mode)
Research Grants (Standard Mode/New Investigator Award)

- Mechanism to support a PI (and, where appropriate, Co-I[s] and their team) to perform proposed research programme – alongside other duties in department

- **PI normally holds permanent academic position** (only certain fixed-term employees are eligible - check the funding guide)

Further details at [https://www.epsrc.ac.uk/funding/applicationprocess/routes/](https://www.epsrc.ac.uk/funding/applicationprocess/routes/)

Fellowship

- Personal award: support to establish or develop future research leader; build your group

- Devote most of your time to your research programme and deliver your research vision

- Advocate EPS disciplines inside and outside of academia

Full details at [https://www.epsrc.ac.uk/skills/fellows/](https://www.epsrc.ac.uk/skills/fellows/)
EPSRC Fellowships – career stages

- EPSRC Fellowship is a single scheme that supports three career stages (postdoctoral, early and established).
- EPSRC Themes have gone through an exercise of prioritising and then updating the areas and career stages in which fellowships will be offered. The Priority Area Refresh is an ongoing process.
### Fellowship Priority Areas

See website for other themes

**http://www.epsrc.ac.uk/skills/fellows/areas/** *(Correct as of 1 November 2017)*

<table>
<thead>
<tr>
<th>THEMATIC</th>
<th>POSTDOCTORAL</th>
<th>EARLY CAREER</th>
<th>ESTABLISHED CAREER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following priority areas will be closing on 10 April 2018:</td>
<td>Complex Fluids and Rheology</td>
<td>Complex Fluids and Rheology</td>
</tr>
<tr>
<td></td>
<td>Synthetic biology</td>
<td>Software development for novel Engineering research</td>
<td>Assistive Technology, Rehabilitation and Musculoskeletal Biomechanics <em>(to close on 10 April 2018)</em></td>
</tr>
<tr>
<td></td>
<td>Engineering for Sustainability and Resilience</td>
<td>Assistive technology, rehabilitation and musculoskeletal biomechanics</td>
<td>Particle Technology</td>
</tr>
<tr>
<td></td>
<td>Microsystems</td>
<td>Particle Technology</td>
<td>Synthetic biology</td>
</tr>
<tr>
<td></td>
<td>Control Engineering</td>
<td>Synthetic biology</td>
<td>Engineering for Sustainability and Resilience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engineering for Sustainability and Resilience</td>
<td>Microsystems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microsystems</td>
<td>Advanced Materials Engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advanced Materials Engineering</td>
<td>Robotics and Autonomous Systems (with ICT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control Engineering</td>
<td>Control Engineering</td>
</tr>
</tbody>
</table>
Fellowship Priority Areas -
http://www.epsrc.ac.uk/skills/fellows/areas/
(Correct as of 1 November 2017)

<table>
<thead>
<tr>
<th>THEMATIC</th>
<th>POSTDOCTORAL</th>
<th>EARLY CAREER</th>
<th>ESTABLISHED CAREER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>Bioenergy</td>
<td>Bioenergy</td>
<td>Carbon Capture and Storage</td>
</tr>
<tr>
<td></td>
<td>End-use Energy Demand</td>
<td>End-use Energy Demand</td>
<td>Energy Storage</td>
</tr>
<tr>
<td></td>
<td>Energy Networks</td>
<td>Energy Networks</td>
<td>End-use energy demand (EUED)</td>
</tr>
<tr>
<td></td>
<td>Energy Storage</td>
<td>Energy Storage</td>
<td>Energy Systems Integration</td>
</tr>
<tr>
<td></td>
<td>Nuclear Fission</td>
<td>Nuclear Fission</td>
<td>Offshore renewable energy</td>
</tr>
<tr>
<td></td>
<td>Energy Systems Integration</td>
<td>Energy Systems Integration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Offshore renewable energy</td>
<td>Offshore renewable energy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydrogen and Alternative Energy Vectors</td>
<td>Hydrogen and Alternative Energy Vectors</td>
<td></td>
</tr>
</tbody>
</table>

See website for other themes
Eligibility

- Applicants are expected to hold a PhD or have equivalent research experience.
- There are no eligibility rules based on years of post-doctoral experience or whether they hold a permanent academic position, as this doesn’t allow for variations of career paths across the EPS disciplines.
- A person specification is used to describe the desired attributes for each career stage.
- Applicants should evaluate their track record (with their host organisation) and assess which career stage they should apply against (if open to applications) and ensure they are able to demonstrate how they fulfil each of the expected attributes.
The type of resources available is determined by the career stage under which you are applying.

<table>
<thead>
<tr>
<th>Resource Package</th>
<th>Postdoctoral</th>
<th>Early Career</th>
<th>Established Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>Up to 3 years</td>
<td>Up to 5 years</td>
<td>Up to 5 years</td>
</tr>
<tr>
<td>Salary</td>
<td>Up to 100% fte</td>
<td>Up to 100% fte</td>
<td>Up to 100% fte</td>
</tr>
<tr>
<td>Travel &amp; Subsistence</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Staff</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Visiting Researchers</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Equipment</td>
<td>Small equipment items</td>
<td>Yes – in line with current EPSRC guidelines for equipment</td>
<td>Yes – in line with current EPSRC guidelines for equipment</td>
</tr>
<tr>
<td>Consumables</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Public Communication Training</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Submission of full fellowship application

Postal peer review
- Does it fall within Priority Area Remit?
  - Yes: Theme Prioritisation panel
    - Ranked against other fellowships
    - Tensioned against other lists
    - Supportive reviews
  - No: Office reject

- Yes: Interview panel
  - Ranked against other fellows
  - Panel Rank and recommends a quality cut off
  - Candidate meets person specification
    - Panel ranks and recommends a quality cut off
    - Fund
    - Not Fund

- No: Review reject

This step can take up to four months

In partnership with host Institution – e.g. pre-selection, career stage, additional support
New Investigator Award

- Funding aimed to kick start an academic career.

- Eligibility: researchers who have recently acquired their first academic lectureship position, have not previously led an academic research group or been the recipient of a significant grant (usually grants including PDRA time or capital equipment, or in excess of £100,000 FEC).

- First application to EPSRC as a PI

- For a self-contained project with a single research vision (and a suitable duration to match)

- Appropriate PI time to manage project, alongside PDRA (e.g. 1-3 years)

- Focus on career development, and commensurate university support (e.g. PhD student) – required university letter

- Full details on our website
Standard Research Funding

- Flexible funding route which supports a wide range of research programmes.

- Key Features:
  - No fixed length
  - No fixed value
  - No closing dates – Applications can be submitted all year round
  - No constraint on field of research, permitted it is within EPSRC remit!

- Things to consider:
  - High Risk/High Return proposals are encouraged.
  - Embracing new concepts or techniques.

- Relevant activities funded via this route:
  - Long term proposals aimed at developing critical mass.
  - Feasibility studies.
  - Overseas Travel Grants.
  - Workshops.
Reviewer Criteria

Assessment criteria vary by scheme. For Standard Grants:

- **Quality is the primary criterion** – *novelty, timeliness, context, ambition, adventure, methodology*

- **Importance** – *underpin or contribute to other research areas, societal challenges, UK economy, emerging industry*

- **Pathways to Impact** – *effectiveness of planned activities for dissemination, relevance, knowledge exchange*

- **Ability to Deliver** – *track record, balance of skills*

- **Resources and Management** – *effectiveness of planning, resources are justified*

Fellowship assessment criteria are slightly different (e.g. greater focus on the candidate) and can be found [here](#); please note they vary based on career stage.
PRODUCTIVE NATION – creative, innovative, competitive economy

P1: Introduce the next generation of innovative and disruptive technologies
P2: Ensure affordable solutions for National needs
P3: Establish a new place for industry that is built upon a ‘make it local, make it bespoke’ approach
P4: Drive business innovation through digital transformation
P5: Transform to a sustainable society, with a focus on the circular economy

For example:

- Creativity within the science base to stimulate innovative solutions
- Manufacturing technologies to challenge current methods and resource sustainability
- Design, modelling, computation and simulation to develop new tools and methods
- Advanced materials research to drive new processes, products and sustainable solutions
- Product-service-system approaches to improve performance and reliability over the whole lifecycle
## Connected nation

### CONNECTED NATION – Surviving and Thriving in a Digital World

<table>
<thead>
<tr>
<th>C1: Enable a competitive, data-driven economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2: Achieve Transformational development and use of the Internet of Things</td>
</tr>
<tr>
<td>C3: Deliver intelligent technologies and systems</td>
</tr>
<tr>
<td>C4: Ensure a safe and trusted cyber society</td>
</tr>
<tr>
<td>C5: Design for an inclusive, innovative and confident digital society</td>
</tr>
</tbody>
</table>

**For example:**

- **RESEARCH CAPABILITIES**
  - Algorithms, Mathematical Modelling and Statistics to provide insights into complex data and systems
  - Communications Technologies and Systems to gather, process and transmit data
  - Autonomous Systems and Control, Informatics and Computation to design, build and optimise smart intelligent solutions
  - User-centric Interactivity, Design and Decision Making to create an intelligent and inclusive digital environment for people
  - Data and Computational Infrastructures to enable an agile digital economy

**SKILLS & LEADERSHIP**
RESILIENT NATION – Adaptive, prepared, protected, secure, safe, sustainable

R1: Achieve energy security and efficiency
R2: Ensure a reliable infrastructure which underpins the UK economy
R3: Develop better solutions to acute threats: cyber, defence, financial and health
R4: Manage resources efficiently and sustainably
R5: Build new tools to adapt to and mitigate climate change

For example:

- Systems engineering, complexity science and uncertainty quantification to understand interdependencies for better decision making
- Materials research and resource efficiency to enable sustainable use of assets
- Infrastructure engineering to design, build and test across length-scales
- Data science and analytics to anticipate, understand and model threats and optimise solutions
- Generation, storage and transmission technologies for future energy options and reducing energy consumption and demand

RESEARCH CAPABILITIES

SKILLS & LEADERSHIP
HEALTHY NATION – Improved quality of life through better mental and physical health

H1: Transform community health and care
H2: Improve prevention and public health
H3: Optimise diagnosis and treatment
H4: Develop future therapeutic technologies
H5: Advance non-medicinal interventions

For example:

- Developing, characterising and processing advanced materials with novel chemical, physical or mechanical properties, for health-related applications
- Innovative sensing systems or analytical technologies that could transform prediction, diagnosis and monitoring for health
- Technologies that will enable health-related manufacturing processes, products and systems to function with high precision, efficiency, reliability and repeatability
- Design, development, evaluation and production of cost-effective, reliable and effective medical devices
- Novel computational and mathematical techniques for prediction, analysis and modelling in healthcare
- Novel imaging technologies for diagnostic, monitoring and therapeutic applications