STFC Funding

Chris Gosden
Grants Policy Group
Consolidated Grants

• One application per department per call for each research programme with awards made for three years duration.
• Expectation of continued support following review of existing grant – but not guaranteed.
• Consortium grants: essentially joint consolidated grants and potentially of more interest to smaller departments. Must have a common research programme between the departments.
• New Applicant scheme: Newly appointed academic members of staff who have joined a department between grant reviews may exceptionally apply separately for support.
Major Projects and PRD

- **Large Projects**: major new projects such as participation in new experiments or missions, the development of new instruments or upgrades to existing detectors. Process starts with Statement of Interest to Science Board.

- **PRD**: intended to develop capabilities needed to underpin UK science and technology leadership in future STFC projects.
Innovation and 21st Century Challenge Grant Support

• **Follow-On Funding** - To establish commercial proof of concept
• **Innovation Partnership Schemes (IPS)** Transfer technology and expertise to the marketplace in partnership with industry
• **Challenge Led Applied Systems Programme (CLASP)** - Applies STFC research to global research challenges defined by Users
• **IPS Fellowships** - Support a Knowledge Exchange / Business Development professional to support a university to translate STFC-funded technologies /expertise
• **21st Century Challenge Networks** - funding to create new multidisciplinary research communities at the STFC 21st Century Challenge interface focused on addressing user needs, including those of Government departments, Government agencies, industry and other academic communities.
• **21st Century Challenge Concepts** – support for small scale proof of concept projects to demonstrate the application of innovative science, technology and expertise developed from STFC’s core science programme to 21st Century Challenges in readiness to access external funding sources.
• **21st Century Challenge Exploration** - exploration of challenge-led priorities and identification of where STFC-funded capabilities can be applied to help provide solutions to these. The 21st Century Challenge Exploration Award scheme provides funding for early stage networking, scoping and review activities.
Public Engagement Funding

- **Public Engagement Spark Awards (non-FEC)**
  - high quality programmes of novel public engagement that inspire and involve target audiences with stories of STFC science and technology
  - Wide range of eligibility,
  - Award maximum is £15,000

- **Public Engagement Nucleus Awards**
  - Provides funds for projects which are expected to have a significant regional or national impact.
  - Awards from £15,000 up to £100,000.
  - Encourage partnerships that may positively impact on the success of the project e.g. universities with science centres.

- **STFC leadership Fellows in Public Engagement**
  - Aimed at those with significant research experience who have demonstrated a track record in outreach or communications work.
  - Act as champions or ambassadors for STFC's science, technology, engineering and mathematics (‘STEM’) work to schools, the media or public audiences.
  - Both STFC grant-funded researchers and users of STFC facilities are eligible to apply.

- **Public Engagement Legacy Awards**
Cross Council Initiatives

• GCRF
  Supports cutting-edge research that addresses the challenges faced by developing countries

• Newton:
  Intended to strengthen research and innovation partnerships between the UK and emerging knowledge economies.

• Both Form part of the UK’s Official Development Assistance (ODA) commitment which focuses on outcomes that promote the long-term sustainable growth of countries on the OECD Development Assistance Committee list. Newton Fund countries represent a sub-set of this list.
Open Access and Outcome Reporting

• ResearchFish: system for capturing outputs from RCUK awards to demonstrate case for investment in science.
Useful Links

- JeS: https://jes.rcuk.ac.uk/JeS2WebLoginSite/Login.aspx
- Research Grant Handbook: http://www.stfc.ac.uk/research-grants-handbook/
- Peer review pages: http://www.stfc.ac.uk/funding/research-grants/peer-review-and-assessment/
Useful Links continued

• Call closing dates page: http://www.stfc.ac.uk/funding/research-grants/funding-opportunities/funding-calls/

• Success Rates: http://www.stfc.ac.uk/funding/funded-grants/grant-success-rates/

• Ranking Lists: http://www.stfc.ac.uk/funding/research-grants/grant-ranking-lists/

• Gateway to Research: http://gtr.rcuk.ac.uk/
Support for Innovation

Katharine Hollinshead
katharine.hollinshead@stfc.ac.uk
Our vision

“To maximise the impact of our knowledge, skills, facilities and resources for the benefit of the United Kingdom and its people.”
Innovations and 21st Century Challenges Programme

Why and how?
- Maximise benefits to UK economy/society from STFC
- Support/funding for innovation, commercialisation & Official Development Assistance activities
- Build relationships between STFC community and other disciplines and sectors (industry, government departments and agencies etc)

Who can apply?
- STFC University community, STFC labs, international facilities (e.g. CERN, ESO)
- Other disciplines or partners (e.g. industry) in collaboration with partner from STFC community
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Official Development Assistance Programmes

- An initiative intended to strengthen research and innovation partnerships between the UK and emerging knowledge economies.
- Forms part of the UK’s Official Development Assistance (ODA) commitment
- ~16 partner countries
- Projects must:
  - address poverty and development issues;
  - address the issue identified effectively and efficiently;
  - use the strengths of the UK to address the issue;
  - demonstrate that the research component is of an internationally excellent standard.
Global Challenges Research Fund

£1.5 billion fund announced by the UK Government to support cutting-edge research that addresses the challenges faced by developing countries through:

- challenge-led disciplinary & interdisciplinary research
- strengthening capacity for research & innovation within both the UK & developing countries
- providing an agile response to emergencies where there is an urgent research need.

Leave no one behind

- Secure & resilient food systems supported by sustainable marine resources and agriculture
- Sustainable health & well being
- Inclusive & equitable quality education
- Clean air, water & sanitation
- Affordable, reliable, sustainable energy

Support peace and justice

- Understand & effectively respond to forced displacement and multiple refugee crises
- Reduce conflict & promote peace, justice & humanitarian action
- Reduce poverty & inequality, including gender inequalities

Sustainable societies & economies

- Sustainable livelihoods supported by strong foundations for inclusive economic growth & innovation
- Resilience & action on short-term environmental shocks & long-term environmental change
- Sustainable cities & communities
- Sustainable production & consumption, e.g. materials & other resources
## Industrial Strategy Challenge Fund

- A £4.7bn fund to invest in science and innovation challenges, to meet the demand and opportunities of UK industry
- Part of the National Productivity Investment Fund

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<td><strong>Bioscience &amp; Biotechnology</strong></td>
<td>Increase UK self-reliance in food, energy and materials production.</td>
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<td><strong>Leading Edge Healthcare &amp; Medicine</strong></td>
<td>Improve patient outcomes through cutting-edge, personalised therapies and new antimicrobials and establish the UK as a world leader in the development and commercialisation of cell and gene therapies.</td>
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<td><strong>Manufacturing &amp; Materials of the Future</strong></td>
<td>Ensure that the UK leads the world in the sustainable manufacturing and delivery of the next generation of products and components.</td>
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<tr>
<td><strong>New Energy Technologies</strong></td>
<td>Become the global lead in solving the energy challenge of supplying clean, affordable energy securely to ever more-demanding societies around the world.</td>
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<tr>
<td><strong>Quantum Technologies</strong></td>
<td>To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using next generation quantum technologies in areas such as sub-surface imaging, GPS-free navigation, advanced sensing and communications.</td>
</tr>
<tr>
<td><strong>Robotics and Artificial Intelligence (RAI)</strong></td>
<td>To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using RAI technologies in areas such as hazardous environments, autonomous transport, health &amp; social care and advanced decision making with AI.</td>
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<tr>
<td><strong>Space and Satellite Technologies</strong></td>
<td>To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using satellite-based technologies in areas such communications, navigation and earth observation.</td>
</tr>
<tr>
<td><strong>Transformative Digital Technologies</strong></td>
<td>To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using digital technologies such as data, AI/ML, cyber security, immersive, HPC, modelling and 5G.</td>
</tr>
<tr>
<td><strong>Integrated &amp; Sustainable Cities</strong></td>
<td>Establish the world’s best smart city demonstrator, introducing 5G technologies and applications, attracting global mobile companies to the UK.</td>
</tr>
<tr>
<td><strong>Technologies for the Creative Industries</strong></td>
<td>To create UK economic wealth, and an economy that works for everyone, by overcoming challenges to anchor and grow the UK creative sector and its contribution to wealth generation and society.</td>
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Follow on Funding

Killing microbes not the taste

– A new plasma device that improves food safety, extends shelf life and reduce food waste
– Uses electrodes to generate a cold plasma inside the food’s packaging without having to open it
– The ozone circulates, destroying microorganisms on the food surface
– Remaining ozone rapidly decays back to normal oxygen, no residues are left on the food and the flavour unchanged

“The funding underpinned critical prototype technology development for the fledgling Anacail, and was a fantastic boost to our progress and investment prospects.”

Declan Diver
Director of Anacail
Finding the gravity of the situation

- Development of a new MEMS system that is less than 2cm in size and is sensitive enough to detect the orbit of the Moon around the Earth, and the Earth around the Sun
- MEMSs are cheaper to produce than other gravity sensors which means they could be used for security to detect illicit tunnel digging
- A network of small and sensitive gravity sensors could also provide early warning of volcanic eruptions, allowing quicker evacuation and saving lives.

“There are a lot of potential industrial, and humanitarian applications for gravimeters, but their cost and bulkiness have made them impractical in many situations.”

Richard Middlemiss
University of Glasgow
Mini hybrid camera improves tumour diagnosis

- Developed a compact, high resolution hybrid cameras to offer versatility to surgical procedures
- Combines optical and gamma imaging
- mobile, point-of-care technology advance which allows imaging procedures at the bedside, in operating theatres and in intensive care units
- Will ensure quick and improved diagnosis of cancer as well as allowing a less traumatic surgical investigation once a patient has been diagnosed
- can also be used to gain a visualisation of drug delivery inside the patient’s body during cancer therapy.

“CLASP helped us to develop a plan for the commercialisation of our product as well as perform vital research”

John Lees, Technical Director and Project Manager, GTL
STFC Innovations Club

- **Set up to promote the opportunities for Knowledge Exchange**
  between STFC funded researchers, academics and industry
- **Organise workshops and events** (free to attend) to learn about recent developments and encourage networking and collaboration
- **Newsletter (monthly)** - provides organisations with information about funding calls and the opportunity to search for potential collaborative partners
- **Established business network** includes many sectors including defence, medical, security, aerospace, space sector…~ 1500 members
- **Membership is free**
- [www.stfc.ac.uk/innovationsclub](http://www.stfc.ac.uk/innovationsclub)
Thank you

www.stfc.ac.uk/funding/research-grants/funding-opportunities/
Innovation Partnership Scheme

Laser keep greenhouse gases on the radar

- University of Edinburgh Scientists developed a laser based radar (LiDAR) system to measure the amount and location of Green House Gases in the atmosphere using STFC telescope technology and innovations Partnership Scheme (IPS) funding.
- The LiDAR system measures the quantity of Green House Gases given off at sources (factories, power stations, etc.) and taken up at sinks (forests, grassland etc.)

“With help from the IPS Scheme, our Carbon Telescope promises to be a game-changer in studying climate change’s driving forces.”

Professor John Moncrieff
University of Edinburgh
Follow-On Funding
To establish commercial feasibility on scientific and technical merit

• Undertaking further scientific and technical development
• Improving an IP position
• Market assessment for new products or process
• Identifying potential licensees or opportunities for joint ventures.
• Up to 12 months, projects up to £88k (80% FeC)
• Three closing dates a year

• Not in partnership with industry

• Separate Proof of Concept fund for STFC Labs

www.stfc.ac.uk/followonfunding
Innovation Partnership Scheme (IPS)

Responsive mechanism: transfer technology and expertise to the marketplace in partnership with industry

Collaboration
- With industry/not for profit (cash or contribution in kind)
- Project supported by industry

Range of activity
- Feasibility studies to prototyping
- Route to market must be clear

- Mini IPS (up to 1 year) or IPS (up to 3 years)
- Funds up to £120k pa (80%FeC)
- Three closing dates per year

www.stfc.ac.uk/ips
IPS Fellowships

Support a Knowledge Exchange role to support STFC-funded technologies

Not a research fellowship
• Promoting commercial applications and transferring technologies developed from STFC funding
• Developing capacity for knowledge exchange
• Facilitating culture change
• STFC contribute 50% of costs
• Host institution must be eligible for STFC grant funding

www.stfc.ac.uk/ipsfellowships

Currently IPS fellows in the following universities:
  o Manchester – Alick Deacon, Alick.Deacon@manchester.ac.uk
  o Oxford – Phil Tait, phillip.tait@physics.ox.ac.uk
  o Portsmouth – Gill Prosser, gill.prosser@port.ac.uk
  o Sheffield – Aldous Everard, a.everard@sussex.ac.uk
  o Sussex – Colin Hayhurst, C.J.Hayhurst@sussex.ac.uk
  o Liverpool - vacant
STFC Impact Acceleration Account

Support commercialisation of STFC science

• 22 Universities – based on STFC income
• £50k for 12 months
• Must support STFC-funded research outputs
• Activities could include:
  • Technology showcase to industry events
  • Proof of Concept projects
  • Technology audits / market surveys

www.stfc.ac.uk/IAA
Challenge Led Applied Systems Programme (CLASP)

Applies STFC research to global research challenges
• Support de-risking of R&D in call themes
• Technology demonstrators and industry-ready prototypes
• Draw on technology and expertise from the STFC research community
• Demonstrable potential market

• Two stage application process
• Mentoring available for developing full application
• Up to £1.5M funding available per call (annual call)

• Industry offer in-kind support or as subcontractor for key tasks

• 2017 call topic tbc.

www.stfc.ac.uk/clasp
Other support

**STFC CASE PhD Studentships**
- Collaborative training projects delivering relevant research to a company
- Develop key research skills needed by UK industry
- Enhanced student training experience - different research environments
- At least three months spent in company

**Knowledge Transfer Partnerships (KTP)**
- Collaborative project between business and knowledge base

**RSE Enterprise Fellowships**
- A year’s salary to develop your commercial proposition
- Business training to prepare a viable business plan
- Access to mentors, business experts
- Must have link to STFC funded science
- Next closing date May 2017
Industrial CASE Studentships

- Competition opens each year (early May, closing July).
- Joint supervision of student with RO and non-academic partner
- Minimum time at industrial setting 9mths over duration of PhD period
- Examples of industrial partners: MoD/AWE/e2v/Quantemol/NHS/Rapiscan Systems Ltd.
- SME contributions to host & student’s stipend are covered by the STFC
- [http://www.stfc.ac.uk/funding/studentships/industrial-case-studentships/](http://www.stfc.ac.uk/funding/studentships/industrial-case-studentships/)
Some examples of recent CASE studentships:

- Investigating the potential to generate low intensity neutrons from nuclear reactions, for use in security screening. Lancaster University and the Cockcroft Institute in collaboration with Siemens.
- Building on work on guided vision systems for planetary exploration to develop and test a design concept for a terrestrial guided vision system, combining stereo cameras and an imaging lidar, for application in robotic systems. UCL (MSSL) in collaboration with Innovative Small Instruments Ltd.
- Developing CCD and CMOS detector technology for X-ray spectroscopy aimed at future X-ray astronomy space missions, with potential applications in other areas such as synchrotron research and fusion. Open University with E2V Technologies Ltd.
- Designing and developing a signal processing system for the Square Kilometre Array low-band aperture array. Oxford University in collaboration with Selex-Galileo.
- Evaluating and demonstrating the feasibility of using higher-level programming languages in trigger algorithms in the CMS experiment. Imperial College in collaboration with Maxeler Technologies Ltd.
- Improving image clarity and dosimetry accuracy for radiotherapy treatment using yttrium-90. Manchester University in collaboration with the Christie Hospital NHS Foundation Trust.
- Development of low gain silicon pixel sensors for use in particle physics experiments and in synchrotron facilities such as Diamond. Glasgow University in collaboration with Micron Semiconductor Ltd.
Networking & Featured Fellow

STFC created a Linked-In site as a mechanism for ERF holders to network & for STFC to issue notifications. The site currently has 19 followers, we would like to encourage further usage.

https://www.linkedin.com/company/ernest-rutherford-fellowships

We provide a feature on our website of our funded fellows, you may be approached at a later date to provide a summary

http://www.stfc.ac.uk/funding/fellowships/ernest-rutherford-fellowship/advanced-and-ernest-rutherford-fellows/
Transfers

- Not normally allowed in first year of the fellowship
- For scientific or domestic reasons
- Agreement from both institutions
- Approval by STFC
Childcare Costs for Conference Attendance or Collaborative Visits

• Contribution to childcare expenses if substantial childcare costs as a result of an activity associated with the fellowship
• Funds are for family support for the cost of childcare during a conference or collaborative visit
• Maximum of £500 per claim
• Up to three claims can be made during the fellowship
• Forms available from fellowships@stfc.ac.uk
STFC Summer Schools

- 7th NExT PhD Workshop, Cosener’s House, Abingdon
- British Universities Summer School in Theoretical Elementary Particle Physics (BUSSTEPP), UCL
- Introductory Summer School in Astronomy, Jodrell Bank Observatory
- Advanced Summer School in Solar Physics, University of Central Lancashire
- Introductory Course in Solar System Plasma Physics, Northumbria University, Newcastle
- Monte Carlo Radiation Transfer Summer School, University of St Andrew’s
- Scottish Universities Summer School in Physics (SUSSP), University of St Andrew’s
- High Energy Physics Summer School, Lancaster University
- 19th STFC Nuclear Physics Summer School, Queen’s University Belfast
- STFC Careers Event, Manchester
Researchfish

- PIs (including fellows) with an award from one or more of the Research Councils will be required to submit outputs from their work via the online portal Researchfish.

- Researchfish is open all year round for users to add outputs, however these can only be submitted during a submission period (usually Feb-Mar).

- The Research Councils will ask PIs to submit outputs for at least five years after the end of the award, this is to allow us to capture the full impact of your work.

- There are 16 common output types that PIs can report to us, these include publications, collaborations, intellectual property, new research tools and methods, spin outs, awards and recognitions amongst others.

- Researchfish is pivotal in demonstrating the case for investment in science. STFC has a responsibility to demonstrate the value and impact of research supported through public funding. By using Researchfish we have a central means for researchers to log the outputs, outcomes and impacts that have been realised through STFC’s research funding.

- Outputs are then made available through the Research Councils’ ‘Gateway to Research’ portal.

- STFC use outputs submitted via Researchfish to analyse how our awards portfolio is contributing to us achieving our strategic goals of World-Class Research, World-Class Innovation and World-Class Skills.
Useful links

RCUK Statement of expectations for Research Fellowships and Future Research Leaders
http://www.rcuk.ac.uk/skills/frameworks/

Fellowships team
fellowships@stfc.ac.uk

Education, Training and Careers Committee
http://www.stfc.ac.uk/about-us/how-we-are-governed/advisory-boards-panels-committees/education-training-and-careers-committee/
Fellowship Questionnaire

- Guidance, training advice & support from your research organisation
- Mentoring received
- Current employment status
- Extent your fellowship helped towards current job
- Influences in accepting your job
Key findings:

- All fellows were employed and all had permanent positions;
- All fellows had remained in the UK after their fellowship had ended and had remained at the research organisation where they held their fellowship. Five of these fellows had moved their fellowship from their original host institution: three had been offered proleptic positions; one wanted to move to a research base that was expanding; one moved to strengthen their research and also because of family reasons;
- All positions held, fell within the remit of STFC science;
- All fellows were employed in either academic research or lecturing or both;
- All fellows found that their fellowship had been either essential (56%) or very helpful (44%) in order to obtain their current position;
- The main factor influencing fellows into accepting their position was the opportunity to pursue original research in the same field. The factor that least influenced fellows into accepting their position was the attractive working environment and conditions.
Extracts from explanations on the extent to which their fellowship helped them get their job:

- Without the fellowship and the freedom it gives I would probably not have made the risky choices I made to start a new project. The leadership and track record I built during that period has been key to secure my lectureship;

- It demonstrated that I was already a proactive leader in my specific field of research and able to lead a complementary research program in a new institute;

- The attainment of such a fellowship is known to indicate that the candidate is able to conduct research at an international level, and also has a good vision of how to further develop his/her research and potentially build a research group. Also, 5 year fellowship holders typically have accumulated a good amount of teaching experience;

- The prestige and grant income associated with the Fellowship, along with the demonstration of success in attracting funds were essential in subsequent applications for a lectureship;
A fellowship gives you the opportunity to work in the place that is best for you;

I have little doubt that my Fellowship played a crucial role in me obtaining a permanent position in this field. Shortly after being awarded the fellowship I received three separate permanent position offers!

Strong research outputs together with the direct involvement in Department activities gave me a competitive profile internally, which was key in the transition from the Fellowship into a Lectureship role at my institution;

The Fellowship also raised my profile elsewhere;

I have transferred my Fellowship to obtain a “proleptic” Senior Lecturer position, which allowed me to pursue the aims of my Fellowship with the peace of mind to be in a permanent position;

Long-term fellowships such as the STFC Fellowship are generally considered to be tenure-track-like positions. They do not guarantee one a permanent position but they are extremely helpful in negotiating a follow-on permanent position.

Data from the analysis can be found: http://www.stfc.ac.uk/funding/fellowships/ernest-rutherford-fellowship/