Science and Technology Facilities Council

NUPECC – 10 October 2014

Grahame Blair
Executive Director
STFC Programmes

Our vision is to maximise the impact of our science and technology for the benefit of the UK and its people.
What does STFC do?

STFC is a UK research council, funding excellent science in particle physics, nuclear physics and astronomy. We run state-of-the-art science facilities in the UK, and organise UK access to international facilities such as CERN, FAIR ...

We also run an extensive Public Engagement and science communication programme to inspire and attract people to consider STEM subjects.
Research Councils

HM Treasury

BIS | Department for Business Innovation & Skills

RESEARCH COUNCILS UK

Science & Technology Facilities Council
EPSRC | Pioneering research and skills
BBSRC | bioscience for the future
NATURAL ENVIRONMENT RESEARCH COUNCIL
MRC | Medical Research Council
Arts & Humanities Research Council
ESRC | Economic & Social Research Council

Science & Technology Facilities Council
STFC’s Annual Budget

STFC’s annual budget is approximately:

£563 Million

The budget is split between the following directorates:

- Programmes: 66%
- National Laboratories: 18%
- Corporate Services: 7%
- Finance: 1%
- Business and Innovation: 7%
- Strategy, Performance and Comms: 1%

Information correct as of May 2014. All figures are approximates.
Academic Partners

STFC fund university research projects and postgraduate training awards in astronomy, particle physics, space science and nuclear physics.

- We fund over 1,700 academics, technicians, research associates, engineers and technicians in UK universities
- We currently fund 808 grants in 59 UK universities
- STFC also provide universities with the opportunity to apply for contracts with major international science facilities
Strategy for Nuclear Physics

STFC Council

Science Board

Nuclear Physics Grants Panel

Project Peer Review Committee

Nuclear Physics Advisory Panel
Community Interaction

- Nuclear Physics Advisory Panel (NPAP)
  - Developed NP community Roadmap in 2012
  - Fed into the STFC 2012/13 Programmatic Review
- Annual Town Meeting
- Institute of Physics
- IOP Review – support the NP community “to play a full role in applications”
STFC Science Questions for Nuclear Physics

• What is the nature of nuclear matter?
• What are the origins of the elements?
• What is the nature of hadronic matter?
• How do the properties of hadrons and the quark-gluon plasma emerge from fundamental interactions?
STFC Support for NP

• STFC provides support for experimental and theoretical nuclear physics. Including:
  – Experimental work carried out at facilities
  – Design, research and development for and construction of instruments and detector systems
  – Analysis and interpretation of data
  – Development and study of theoretical frameworks

• Total STFC NP programme funding in:
  2013/14 = £6M
Exploitation Grants

- STFC funds NP Exploitation Grants:
  - £4.2M pa
  - Ten groups
  - Prioritised science themes to arrive at a balanced programme
  - Includes core research capability
Research Support

- UK groups win time on a range of international facilities (ISOLDE, Jyvaskyla, JLab, GANIL, GSI etc).
- AGATA deployment at GSI
- International Subscriptions - NuPECC, ECT*, experiments (e.g. ISOLDE@CERN, MINIBALL, EXOGAM, AGATA)
- STFC fellows - 6 (of ~60) – 25% success rate in 2012.
- Studentships - ~13 starts p.a.
Cross-Community Support

- Core group of scientists and engineers who support the whole of the nuclear physics programme including exploitation, R&D, construction.
- Located at Daresbury, Liverpool and Manchester
- Substantial experience of developing and running detectors, instrumentation and spectrometers at international laboratories.
- Enables the UK to collaborate internationally.
STFC Nuclear Physics Group at Daresbury

- Support and contribute to the UK's Nuclear Physics research programme funded by the STFC
- Expertise and co-ordination:
  - Electronic engineering
  - Software engineering
  - Project and Mechanical engineering
  - Target preparation
  - Detector simulations, design and production
- Research programmes
- Contact: Professor John Simpson, Head of Technology at Daresbury
FAIR and NuSTAR

- May 2013 – UK became Associate Member of the Facility for Antiproton and Ion Research (FAIR)
- STFC funding for NuSTAR £8.1M construction project over 5 years
Boosting NP Theory

- 2012 Institute of Physics Report identified a strategic need for theory and modelling support to the UK’s national experimental programme.
- September 2014 – STFC announced support for new NP theory group at the University of York
- Award will support startup of a NP theory chair and PhD studentship with York funding a lectureship.
Future NP Programme

“We recommend that maintaining a balanced nuclear physics programme [across Nuclear Structure and Astrophysics, and Hadronic Physics] be a priority for the UK, enabling participation in new projects as well as exploitation of existing facilities.”

- STFC 2013 Programmatic Review
Future Projects

• Three new projects invited to submit proposals based on priorities in Programmatic Review
• Currently progressing through peer review.
  - future UK contributions to the Jefferson Lab upgrade in US,
  - future ISOL facilities (ISOL-SRS), and
  - upgrades for the ALICE detector
• Review to complete by December 2014. Funding anticipated from January 2015.
Future Exploitation

• Continue to support funding for exploitation grants (next grants round 2017).
• Continue to support funding international subscriptions based on the advice of the NPGP.
• Increasing emphasis on FAIR.
• Support the NPAP to update their Nuclear Physics Roadmap for the UK.
Thank you

Any questions?