

Update from Science Board

- **Our role**
- **Current issues (+ opportunities)**
- **Activities**

Professor Tara Shears, University of Liverpool, for Science Board.

Science Board terms of reference:

“...to provide the STFC with a strategic scientific overview and assessment of, and science advice on, **all** of the programmes STFC supports.”

Reliant on:

- Advisory panels
- Peer review panels
- Other (expert) review committees
- You, the community.

Current environment and issues:

Challenges:

Flat cash eroding and squeezing core programme (everywhere)

Brexit

UKRI (still settling in)

Forthcoming CSR

- Government target to increase R&D funding to 2.4% of GDP by 2027
 - Shapes input to CSR
- STFC have submitted evidence of the pressure on core funding to UKRI

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Opportunities:

Additional funding streams:

Industrial Strategy Challenge Fund (ISCF – industrial requirements)

Newton and Global challenges research fund (GCRF – ODA requirements)

Strategic priorities fund (multi/inter-disciplinary research in call areas)

Fund for international collaboration (FIC)

Priority project scheme launched to allow STFC to target any scheme quickly

New UKRI CDT and fellowship schemes

Activities:

Discussion/advice across all STFC activities; astronomy, space science, nuclear and particle and particle astro- physics, computing, accelerator science, infrastructures, neutron facilities, light sources...

Strategic reports:

- Detectors and Instrumentation review
 - <https://stfc.ukri.org/about-us/our-purpose-and-priorities/planning-and-strategy/stfc-reviews/2018-detectors-and-instrumentation-strategic-review/>
- UKRI research infrastructure roadmap
 - <https://www.ukri.org/research/infrastructure/>
- European Strategy for Particle Physics
- **Programme evaluations**

Projects and exploitation:

- **Priority projects exercise**
- **Funding requests, exploitation grants**

Advisory panel interactions

- **PA, CAP**

Priority projects:

51 projects submitted by the community across all STFC areas, including **PPAP** and **PAAP**:

- **UK technology centre, Hyper-K, Precision Physics UK, Software institute**
- **Einstein Telescope, UK AION, HAWC and SGSO, TERAS, IceCube-Gen2**

Form part of STFC's portfolio to respond to funding opportunities outside the core programme.

Discussed by Science Board at extraordinary meeting in October

- **(comments, not evaluation)**
- **Really excellent to see innovative, ambitious ideas from the community**
- Projects have also been considered by Council

Update process: full review every 3 years (next 2021), refresh funded projects annually, opportunity for AP to add urgent projects (if another removed).

Programme evaluations:

Three year rolling programme to “define a balanced programme of excellent science within a realistic financial planning envelope” in each PPAN area, followed by a balance of programmes exercise:

- Computing, NP evaluations presented to Science Board in October
- Astronomy, **PP**, **PA** and Accelerator Science ongoing
- Intention for all evaluations to finish by June 2019 and reports to be made public
- Balance of Programmes 2 will then start.

PP evaluation progress:

Ofer Lahav (chair)
Chris Allton (Swansea)
Henrique Araujo (Imperial)
Gary Barker (Warwick)
Monica D'Onofrio (Liverpool)
Lars Eklund (Glasgow)
Nick Evans (Southampton)
Julie Kirk (RAL PPD)
Jocelyn Monroe (RHUL)
Dave Newbold (STFC)

- The panel have met 3 times and are on course to conclude in June
- Current and future balance of the programme has been discussed
- Funding scenarios of +10%, flat cash and -10% have been discussed.
- The report is being drafted
- **Emerging messages** (preliminary, not complete):
 - The evaluation emphasises **the need to support the core programme**

PA evaluation progress:

Tara Shears (chair)
Richard Batty (Manchester)
Garret Cotter (Oxford)
Giles Hammond (Glasgow)
Alex Murphy (Edinburgh)
Morgan Wascko (Imperial)

- The panel have met 5 times and are on course to conclude by June.
- Current and future balance of the programme, and funding scenarios and mechanisms have been discussed
- The report is currently being finalised.
- **Emerging messages** (preliminary, not complete):
 - PA should retain its distinct identity within STFC programmes
 - **New, exciting opportunities are accessible** in all (world-leading) areas
 - **Funding is critical.** The area needs an uplift to maintain current leadership and activity
 - Flat cash, or a reduction, would result in one or more of the three areas supported being damaged or lost
 - The evaluation emphasises **the need to support the core programme**

Funding requests:

Proceeding through project review:

- DUNE
- DIRAC 2019-2022 (note: needs extra funding)

Funded:

- CMS Upgrade
- eEDM (joint funding with 20% EPSRC contributions)
- A+ (FIC funding)
- Watchman (FIC funding)

Exploitation:

- PPGP(T) round ongoing and will report to SB in July
- PPGP(E) round finished (Jocelyn)
 - SB thank PPGP for the really demanding, challenging task
 - **SB deeply concerned about funding level**
 - Major and unexpected increase in indirect/estate costs squeezes everything
 - FEC reduced even more to try to cover commitments (knock-on problems?)
 - **Concerns raised at Council**

Advisory panel reports:

CAP:

Issues raised by CAP:

- Computing requirements should be peer reviewed at the appropriate time, by experts, in projects
- Continued investment needed in DIRAC
- Essential to invest in people and develop career paths in the area
 - CAP provided this input to the computing programme evaluation, which has followed up these concerns.

PAAP: (Cham)

Issues raised by PAAP:

- Recommended funding increase for the area
- Discussion on boundaries and funding mechanisms for the area
 - These points have been picked up by the PA programme evaluation (which PAAP also provided input to)

Final words:

We know that PP and PA (like all PPAN science) is world-class

- Excellent impact, leadership, science.
- These underlie our ability to argue for increased investment (DUNE, A+)

We know the extreme, unsustainable stress that the core programme is under (everywhere) with flat cash

- eg. see latest CG round, and FEC level decrease

Brexit, UKRI reorganisation are not helpful

But there are opportunities:

- Be ambitious, be creative at exploiting funding calls (and thank you for ideas so far)
- **Keep up excellent science.** This is the key to strengthening all arguments to UKRI, government etc to give us more funding.

Science Board Membership:

Jayne Lawrence (Manchester) (Chair)
Tara Shears (Liverpool) (Deputy Chair)
Stewart Boogert (Royal Holloway)
Bill Chaplin (Birmingham)
Bill David (STFC RAL, Oxford)
Gavin Davies (Imperial)
Karen Edler (Bath)
Chris Hawes (Oxford Brookes)
David Ireland (Glasgow)
Ofer Lahav (UCL)
Paul McKenna (Strathclyde)
Andy Parker (Cambridge)
Robin Perutz (York)
Don Pollacco (Warwick)
+1 vacancy (to be filled)

(new / changed)

+ 14 **non-core** members, including:
Henrique Araujo (Imperial)
Richard Battye (Manchester)
Ed Copeland (Nottingham)
Antonella de Santo (Sussex)
David Newbold (RAL/Bristol)
Apostolis Pilaftsis (Manchester)

STFC Office: Trish Mullins