



STFC Science Board 85th meeting

12 and 13 October 2021, via videoconference

Meeting Summary

Professor Tara Shears chaired the 85th meeting.

Advisory Panel Update

Science Board were provided with an update from the Chair of the Nuclear Physics Advisory Panel (NPAP, Professor Robert Page). Science Board heard from the panel on their recent activities, scheduled work the panel will be undertaking over the coming year, including updating the community roadmap and strategy document and an update on current, completed, and future projects. The panel also had the opportunity to discuss any concerns from the panel or community with Science Board. Links to the scientific highlights presented can be found in [Annex 1](#).

Funding Advice and Recommendations

Science Board considered the following Statements of Interest (SOI) and Grants Panel reports:

- SOI: DiRAC HPC Facility Operations 2023–2026
- SOI: Generating ultradense pair beams using 400 GeV/c protons
- SOI: e-MERLIN/VLBI Operations 2023-2028
- SOI: e-MERLIN Technical Refresh
- SOI: Facility for Rare Isotope Beams (FRIB) Accelerated beams for studying the Universe, Science and Technology (FAUST)
- The Particle Physics (Experiment) Grants Panel (PPGP) report
- The Astronomy Grants Panel (AGP) report

Particle Astro and Nuclear Physics Programme Update

Science Board received an update on the landscape of the Nuclear Physics and Particle Astrophysics programme which included updates on the Cherenkov Telescope Array (CTA), Dark Matter research, the Nuclear Physics feasibility funding

call, and the Electron Ion Collider. Science Board also received an update on a feasibility study for a Dark Matter low background experiment at Boulby.

Particle Physics Technology Advisory Panel (PPTAP) Update

The panel chair, Professor Paula Chadwick, gave an update on PPTAP activities and highlighted some common themes emerging from the PPTAP report, which is near to completion.

Standing items

The minutes and actions from the July 2021 meeting were reviewed and the Chair and Deputy Chair provided the Board with an update on matters arising from the last Council meeting and an update on the outcomes of the membership call.

Science Board received an update and additional commentary on the STFC update report from Professor Mark Thomson, Executive Chair of STFC, which included an update on the Spending Review, noting that further outcomes would be announced by the Chancellor on 27 October; an overview of STFC's Spending Review priorities; and an overview of the 5-year draft UKRI strategy.

Information papers included: an update report from the Technology and Accelerator Advisory Board (TAAB); final draft of A Strategic Vision for the UK's Large-Scale Light Source User Facilities; and an International Linear Collider update, which were noted by Science Board.

Date of Next Meeting

The next Science Board meeting will be held on 7 and 8 December (86th meeting) 2021 by videoconference.

A list of acronyms for this summary can be found in [Annex 2](#).

Annexes

Annex 1: Links to scientific highlights presented by Advisory Panels

NPAP:

1. "LS2 Report: An upgraded Inner Tracking System joins the ALICE detector", <https://home.cern/news/news/experiments/ls2-report-upgraded-inner-tracking-system-joins-alice-detector>
2. "The commissioning and installation of the new ALICE ITS", <https://ep-news.web.cern.ch/content/commissioning-and-installation-new-alice-its>
3. "Spectroscopy of proton-rich ^{79}Zr : Mirror energy differences in the highly-deformed *fpg* shell", <https://doi.org/10.1016/j.physletb.2020.135873>
4. "Track it to the limit", <https://www.nature.com/articles/nphys2962.pdf>
5. "Evidence of a sudden increase in the nuclear size of proton-rich silver-96", <https://www.nature.com/articles/s41467-021-24888-x>
6. "Competition between Allowed and First-Forbidden β Decay: The Case of $^{208}\text{Hg} \rightarrow ^{208}\text{Tl}$ ", <https://journals.aps.org/prl/pdf/10.1103/PhysRevLett.125.192501>
7. "Laser Spectroscopy of Neutron-Rich $^{207,208}\text{Hg}$ Isotopes: Illuminating the Kink and Odd-Even Staggering in Charge Radii across the $N = 126$ Shell Closure", <https://journals.aps.org/prl/pdf/10.1103/PhysRevLett.126.032502>
8. "Precision Mass Measurements of Neutron-Rich Scandium Isotopes Refine the Evolution of $N = 32$ and $N = 34$ Shell Closures", <https://journals.aps.org/prl/pdf/10.1103/PhysRevLett.126.042501>
9. "Mass Measurements of Neutron-Deficient Yb Isotopes and Nuclear Structure at the Extreme Proton-Rich Side of the $N = 82$ Shell", <https://journals.aps.org/prl/pdf/10.1103/PhysRevLett.127.112501>
10. "Spectroscopy of short-lived radioactive molecules", <https://www.nature.com/articles/s41586-020-2299-4>

Annex 2: Acronyms

AGP: Astronomy Grants Panel

CTA: Cherenkov Telescope Array

DIRAC: Distributed Research utilising Advanced Computing

FAUST: Facility for Rare Isotope Beams Accelerated beams for studying the Universe, Science and Technology

FRIB: Facility for Rare Isotope Beams

NPAP: Nuclear Physics Advisory Panel

PPGP: Particle Physics Grants Panel

PPTAP: Particle Physics Technology Advisory Panel

SOI: Statement of Interest

TAAB: Technology and Accelerator Advisory Board

UKRI: UK Research and Innovation