Science Board
19th and 20th December 2013

Minutes of the Forty First Meeting
Polaris House, Swindon

Present:  Professor Matt Griffin (Chair) – Cardiff University
Dr Alison Davenport (Deputy Chair) – University of Birmingham
Dr Olwyn Byron – University of Glasgow
Professor Sean Freeman – University of Manchester
Professor Jon Goff – Royal Holloway, University of London
Professor Alan Heavens – Imperial College London
Professor Anthony Lasenby – University of Cambridge
Professor Ken Long – Imperial College London and STFC, RAL
Professor Bob Nichol – University of Portsmouth, ICG
Professor Dan Tovey – University of Sheffield
Professor Justin Wark – University of Oxford
Professor Alfons Weber – University of Oxford and STFC, RAL (day 1 only)
Professor Chick Wilson – University of Bath

Apologies:  Professor Malcolm McMahon – University of Edinburgh
Professor Simon Redfern – University of Cambridge
Professor Pam Thomas – University of Warwick

In Attendance:  Professor Martin Freer – Review Panel member, Nuclear Physics (item 8)
Dr Joel Goldstein – nEDM Review Panel Chair (item 9)
Professor Mark Thomson – Chair, PPRP (items 5 – 6)

STFC:  Professor Grahame Blair – Executive Director, Programmes
Dr Simon Berry – Astronomy Programme Manager (items 15 – 17)
Dr Peter Fletcher – Head of International Relations, STFC (item 10)
Ms Jenny Hiscock – Programme Manager, Nuclear Physics (items 6 & 8)
Ms Lisa Kehoe – Secretary, Science Board
Ms Trish Mullins - Science Strategy (items 12 & 14)
Dr Neil Pratt – Head, Lightsources and neutrons (item 11)
Dr Janet Seed – Associate Director, Programmes
Ms Sarah Verth – Programme Manager, Particle Physics (items 7 & 9)
Dr Colin Vincent – Head, Astronomy (items 15 – 17)
Dr Victoria Wright – Head, Science Strategy (items 6 – 13)
Professor John Womersley – (item 11A, 17, 18)
1. **Item 1 – Welcome and Introductions**

1.1. The Chair welcomed everyone to the meeting. All members introduced themselves for the benefit of the new member, Professor John Goff.

1.2. Apologies were noted for Professor Pam Thomas, Professor Malcolm McMahon and Professor Simon Redfern.

2. **Item 2 – Minutes and actions (SB.13.40 minutes and SB.13.40 Action list)**

SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

2.1. The minutes of the October 2013 meeting were approved subject to some minor amendments.

2.2. Actions from previous Science Board meetings were reviewed.

3. **Item 3 - Update from Council**

SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

3.1. The Chair gave an overview of the 24th September meeting of Council.

3.2. Professor Sir Mark Walport, Chief Scientific Advisor had attended the Council meeting. He noted the importance of raising the profile of Science ahead of the next general election. Professor Sir Mark also noted the imbalance between capital and resource but stated that the community shouldn’t be afraid to propose big projects or to be ambitious despite funding levels.

3.3. Professor Sir John O'Reilly was looking at future facilities for the UK. The ‘batteries not included syndrome’ where capital funding is provided in the absence of resource, highlighted by the recent House of Lords report on Scientific Infrastructure had been discussed.

3.4. Council had received an update on the Triennial Review and Spending Reviews.

3.5. Professor Griffin had been reassured by Graeme Reid that the core STFC programme would receive the same settlement as the other Research Councils.

3.6. Science Board’s structure had been discussed and Council had noted its concern that Science Board’s strategic work might be being hampered by routine PPAN business.

4. **Item 4 - Director’s Report (SB.13.41.01)**

SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

4.1. The Executive Director, Programmes, presented the Director’s report.

4.2. There would be a consultation on Capital during January focussing on the balance between funding smaller investments in universities and large
international facility investments. The consultation would be expected to complete in March.

4.3. The Spending review outcome was now expected in January.

4.4. EPSRC had convened an equipment review for the proposal for an X-FEL beamline. Additional reviews from international experts would be sought the next review round in March. The progress was considered to be broadly positive although the availability of funding from STFC would be dependent on capital announcements in the New Year.

4.5. The number of applications for the Ernest Rutherford fellowships had reduced relative to last year, and was below the quotas which had been set. Science Board noted that there had been a delay in the announcement of the successful candidates for associated research grants due to negotiation on start dates but that the list of successful candidates would be published in Hi-Phi in the near future.

4.6. It was clarified that the Impact Acceleration Account call was a pilot programme to award £50k to each of the top 16 funded University groups to undertake impact activities relevant to their host Institute and report by the end of December 2014.

4.7. The new Diversity policy stated that priority diversity audiences for STFC were girls in engineering and physics; schools in multi-deprived areas; and people geographically remote from STEM and STFC science/labs. Science Board noted the lack of a specific targeted action to address the lack of ethnic minorities. This was thought to be addressed to some extent by the overall RCUK policy on diversity.

4.8. Science Board noted that the large awards scheme had been very oversubscribed, it was thought that this was due to the length of time since the previous call.

4.9. The section concerning MICE was discussed, Professor Long agreed to provide a factual correction.

4.10. Science Board discussed the update on the Emerging Powers fund. £75M p.a. resource funding had been allocated to be spent in conjunction with specific countries across the remits of all the Research Councils. STFC had provided suggestions for projects which might fit the requirements including the facilities and SKA. It was possible that there would be an opportunity for Science Board to be involved in project selection but the rules were not sufficiently clear at present.

4.11. Science Board noted that the Global collaborative Space Programme was a separate initiative to the Emerging Powers Fund. There was a question of whether this could be used to underpin fundamental science or whether it was for economic activities. Science Board noted its interest in working with UKSA on priorities.
5. Item 5 - PPRP Report – SoLiD (SB.13.41.02) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

5.1. The Chair, PPRP presented the PPRP report for Search for Oscillation at very short distance with Lithium-6 Detectors (SoLiD). Science Board noted that the standard PPRP process had been followed.

5.2. The Panel considered the concept behind SOLiD as fundable, but recommend that the proposal was considered unfundable in its current form.

5.3. Science Board endorsed the conclusions of the PPRP and recommend that STFC did not provide support for the project in its current form.

5.4. The STFC Project Research and Development (PRD) scheme was suggested as an alternative route for funding. This recommendation that the technology be supported was consistent with the Programmatic Review PPAN-Sub-Group report.

6. Item 6 – PPRP Report – SNO+ (SB.13.41.03) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

6.1. Science Board had previously recommended funding for telerium loading at the level of 0.3%, the collaboration had subsequently submitted the request to increase telerium loading to 0.5%.

6.2. Science Board endorsed the recommendation of the PPRP that the proposal not be funded.

7. Item 7 – Tensioning of the LHC Upgrade Projects (SB.13.41.04) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

7.1. The Associate Director, Programmes, introduced the discussion on tensioning the LHC upgrades funding. Science Board endorsed the proposal that a Sub-Group be set up to tension the upgrades and report to Science Board’s April meeting. It was agreed that where necessary bridging funding for the projects would be put in place until September 2014.

7.2. Science Board noted that the new CERN schedule had been published and included a one year delay to the original plan. There were ongoing discussions with the other funding agencies who recognised the constrained funding and were working on a package of support in line with the timelines. It was unlikely that there would be any information on the available capital at the time of the review.

7.3. Science Board reviewed and endorsed the Terms of Reference for the Sub-Group subject to the inclusion of the LHCb upgrade within item 4. Science Board did not recommend any further specific items to be addressed.

8. Item 8 – Nuclear Physics Review Panel report (SB.13.41.05) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE
8.1. Professor Alfons Weber, Chair of the Nuclear Physics Review Panel introduced the Panel’s report.

8.2. Science Board noted that a robust process had been followed and that the Programmatic Review PPAN Sub-Group and the Advisory Panel reports had been considered within the review.

8.3. Each proposal was introduced in turn. The Work packages had been prioritised by the Sub-Group and were detailed within the report.

8.4. Science Board endorsed the recommendation of the Sub-Group that the following projects go forward to PPRP assessment: ALICE Upgrade, JLab Upgrade and ISOL-SRS. The AGATA project was considered fundable by the Sub-Group, however, the science case was not ranked as strongly as the others and so, even in the most optimistic financial scenario, it was not recommend that it go forward for PPRP assessment.

9. Item 9 – nEDM Review Report (SB.13.41.06) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

9.1. The Chair of the nEDM Review Panel introduced the panel’s report.

9.2. Science Board noted that the scale of the programme required to generate the physics result and maintain competitiveness was greater than that which could be managed with the current resource.

9.3. Science Board recommended a managed withdrawal from the project.

10. Item 10 – Horizon 2020 (SB.13.41.07) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

10.1. Dr Peter Fletcher presented an update on the Horizon 2020 programme.

10.2. Science Board noted that there was no capital within H2020.

10.3. The engagement of the laboratories with H2020 was discussed, Dr Fletcher was planning to meet with Professor Andrew Harrison and Dr Andrew Taylor to ensure that there was a harmonized approach.

10.4. The potential to use the money to fund fellowships was discussed, it had not been used previously as the funding did not cover all costs and the rules meant that some places would have to be reserved for European candidates. This could prevent the best candidates being selected.

11. Item 11 - Science Board Input to the Fusion Strategy Update (SB.13.41.08) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

11.1. Science Board discussed the proposed input to the Fusion Advisory Board (FAB) Review. Science Board noted that the Inertial Fusion Energy (IFE) community was providing its own input to the review, independent of the Central Laser Facility (CLF) and had also made contact with David Willetts.
11.2. Science Board endorsed the paper subject to removal of references to the Programmatic Review.

12. Item 11A - Update from the STFC Chief Executive SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

12.1. Science Board received an update from the STFC Chief Executive.

12.2. Professor Womersley provided Science Board with an update regarding progress on the European Spallation Source (ESS).

12.3. The UK was seeking a way to engage constructively in the plans for the facility, the total UK contribution was expected to be approximately 10%. Professor Womersley stated that technical instrumentation was seen as an area of UK strength and potential contribution to the facility.

12.4. A capital consultation was planned and a review of the ESFRI priorities would be performed by ESFRI. It was anticipated that ESS would take over from the ILL around 2026. Science Board noted that ESS and ISIS were viewed as complementary facilities by David Willetts.

12.5. Science Board noted the timescale for the ESS and those for the potential future closure of the ILL. There was a danger that the community would be dispersed between the closure of the ILL and the opening and full operation of ESS.

13. Item 12 - Healthcare and Environment Action Plans (SB.13.41.09) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE


13.2. Science Board reviewed the actions in turn and noted its disappointment that the reviews had not been used as actively as they should have been. Whilst the reports were getting older, the original messages remained valid and Science Board encouraged STFC to continue to implement the recommendations of the reports.

13.3. Science Board recommended that the proposed Energy Review include a consultation with the other Research Councils to ensure that ongoing activities were accurately captured.

13.4. Science Board noted that some actions related to the development of new areas of use for e.g. Diamond at a time of limited resources. The executive stated that there was ongoing activity to capture the existing work of the facilities in these areas. Science Board recommended that the existing good practice be better publicised via the Public Engagement team.

13.5. Science Board noted that data analysis at the facilities was a key issue for the facility users. Biosciences researchers typically needed more support for their analysis as they were likely to be relatively infrequent experimenters, although
this was more likely to apply to ISIS and CLF than to Diamond. Some informal
discussion had been had regarding the setup of such a data analysis group.
Science Board recommended that this issue be raised at the LFSG.

13.6. Science Board also noted the potential advantages of standardising software
across facilities. ISIS was thought to have been pursuing this.

13.7. The potential opportunities for software development and application in
supporting the facility users were discussed. Science Board recommended
that the facilities exploit all possible opportunities to make the cycle as trouble
free as possible for the users.

13.8. Horizon2020 was a possible source of funding for these developments and
Science Board noted that the PANdata project had been funded through FP7.

14. Item 13 - Science Board Future Work Programme (SB.13.41.10) SOME
REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-
SENSITIVE

14.1. The Head, Science Strategy introduced the agenda item on the Science
Board Work Programme.

14.2. Science Board discussed the proposed work programme and the priority of
the reviews.

14.3. Science Board noted that the Photon and Neutron reviews were high priority
and would be a large undertaking. In order to facilitate the initiation of the
reviews it was agreed that input required on a short timescale would be
agreed by representative Science Board members. Formal input would be
agreed at Science Board meetings.

14.4. Science Board noted that the neutrons review should include a list of
technologies which the UK could contribute to ESS.

14.5. The following reviews were scheduled for 2014/15:

- Accelerators (2014)
- Consolidated Grants (2014)
- Detectors and Instrumentation (2015)
- e-Infrastructure (2014)
- Energy (2014)
- Exoplanets (2014)
- Forward look for the Space Programme (2015)
- Future neutrino experiments project review (2014)
- Neutrons input for ESFRI (2014)
- Particle Astrophysics project review (2014)
- Photons (2014)
- Phenomenology (2014)

14.6. Two further areas were also recommended:
14.7. Science Board noted its disappointment that there was insufficient capacity within the office to conduct the essential reviews and the business as usual project reviews.

15. Item 14 – Science Board Peer Review Process (SB.13.41.11) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE


15.2. Twenty per cent of Science Board’s meeting time over the last 3 years had been spent on Peer Review items (SOIs, PPRP and Grants Panels). Science Board wanted to ensure that the balance of the agenda reflected the programme and that there was sufficient time for consideration of strategic issues.

15.3. Science Board had requested that the office give consideration to the formation of a panel similar to the historic PPAN Committee. Science Board discussed this proposal in detail and noted that there was a risk that Science Board would become separated from the programme.

15.4. The executive stated that if the PPAN committee was to be re-formed it would be important that Science Board did not repeat the Peer Review or re-visit the decisions which had been made as that would result in an increase in the length of the Peer Review process for applicants and duplicate work.

15.5. Science Board agreed that the process could be streamlined by improving the quality of the briefings and accompanying each proposal with a review history. There was no need for the PPRP presenter to present material already available within the report.

16. Item 15 - Statement of Interest - UK Participation in the Large Synoptic Survey Telescope (SB.13.41.12) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

16.1. Professor Lasenby introduced the SOI for the Large Synoptic Survey Telescope (LSST).

16.2. Science Board noted that there might be an opportunity to apply for ‘Big Data’ funding for the project.

16.3. Science Board noted that the objectives of the LSST were a strong fit with STFC science priorities covering several of the science challenges identified in the STFC science roadmap.

16.4. Science Board invited submission of a full proposal for consideration by the Projects Peer Review Panel (PPRP).
17. Item 16 - Statement of Interest for the support of Pre-Launch Euclid Science Activities by STFC (SB.13.41.13) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

17.1. Professor Matt Griffin introduced the SOI for the Pre-Launch Euclid Science Activities.

17.2. Science Board noted that, in its 2012 report, the Astronomy Advisory Panel had highlighted the significant UK leadership in Euclid and the importance of the science in a number of priority areas and considered that it would be very important to secure a strong position within the international working groups ahead of the launch.

17.3. Science Board recommended that the Euclid team be allowed to submit a grant proposal for pre-launch Euclid science activities, to be reviewed by the Astronomy Grants Panel (AGP), in order to request bridging funding until the activities could be incorporated into each institution’s consolidated grant.

18. Item 17 - Statement of Interest for capitalising on UK Investment in JCMT by taking a minor partner role in on-going operations post September 2014 (SB.13.41.14) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

18.1. Dr Alison Davenport chaired the discussion on the SOI for the JCMT.

18.2. Professor Bob Nichol introduced the SOI.

18.3. Science Board noted that sub-mm astronomy was an area of strength for the UK and that completion of the JCMT/SCUBA-2 surveys had been highlighted as a priority by the Astronomy Advisory Panel in its 2012 report, provided that a low-cost operational model could be developed.

18.4. Science Board noted the potential advantage of UK membership of a new international consortium to operate the telescope, over merely buying time on an ad-hoc basis, in particular that it would potentially allow the UK community to influence the science programme via membership of the oversight board.

18.5. Science Board invited submission of a full proposal for consideration by the Projects Peer Review Panel (PPRP) subject to some limitations.

18.6. Science Board noted that the University of Hawaii would be responsible for the negotiations with the new operators, STFC would have no further involvement in contractual matters subsequent to the handover of ownership.

19. Item 18 – AOB (SB.13.41.15 and SB.13.41.16) SOME REFERENCES IN THIS SECTION HAVE BEEN REDACTED AS OFFICIAL-SENSITIVE

19.1. Two papers, SB.13.41.15 – Update from the UKSA and SB.13.41.16 – PRD Report were provided for information.

19.2. Science Board noted that the cross membership of the PRD and CfI panels was awaiting agreement by Executive Board and was expected to be in place.
in time for the next round. Science Board requested that the abstracts for the projects be included in future reports.

19.3. Science Board noted the report from the UKSA. A Science Board Sub-Group was being convened to provide scientific advice to UKSA on the proposed M3 missions. The report would be sent to the February Science Board meeting for information.