



PPAN
Presentation to PP town meeting



Jordan Nash

What is PPAN?

- ▶ Particle Physics, Astronomy, Nuclear Physics Science Committee
- ▶ The committee provides advice to Science Board and the executive on all aspects of STFC's particle physics, astronomy, space and planetary science and nuclear physics programmes
- ▶ We meet about 6-8 times a year
- ▶ Our business includes
 - ▶ Recommendations on Statements of Interest, Project Proposals, Strategic Issues, Grants, programmatic review
- ▶ Interact with
 - ▶ Five PPAN Area Advisory Panels
 - ▶ Grants Panels
 - ▶ Science Board



PPAN Membership

▶ **Chairs**

- ▶ **Professor Jordan Nash (Chair) – Imperial College**
- ▶ **Professor Sheila Rowan (Deputy Chair) - University of Glasgow**

▶ **Members**

- ▶ **Professor Dave Barnes - University of Wales, Aberystwyth**
- ▶ **Dr Iain Bertram - University of Lancaster**
- ▶ **Professor Jon Butterworth - University College London**
- ▶ **Professor Yvonne Elsworth - University of Birmingham**
- ▶ **Professor Brian Fulton - University of York**
- ▶ **Professor Ruth Gregory - University of Durham**
- ▶ **Professor George Lafferty – University of Manchester**
- ▶ **Professor Tom Millar - QUB**
- ▶ **Professor Bob Warwick – University of Leicester**



Advisory Panels

- ▶ **5 panels reporting to PPAN**
 - ▶ Particle Physics
 - ▶ Nuclear Physics
 - ▶ Near Universe
 - ▶ Far Universe
 - ▶ Particle Astrophysics
- ▶ **The PP panel is chaired by Phil Burrows**
 - ▶ Provide Horizon scanning input for long term strategy planning
 - ▶ Provide input on CSR/Programmatic review priorities
 - ▶ Contact point for communication with the community



Programmatic Reviews

- ▶ The programmatic review looks at all projects in the PPAN and PALS areas and produces a prioritized ranking
- ▶ This was a major piece of business two years ago
 - ▶ In reaction to the last CSR (Comprehensive Spending Review)
- ▶ It makes sense to have the outputs of a programmatic review in order to react to the outcome of a CSR
 - ▶ Expected to have another review around now
- ▶ An additional review took place last year in order to make a plan for the next five years which fit within an expected funding envelope for STFC
 - ▶ Including aspirations for new projects across all the science areas which PPAN looks at as well as the aspirations for facilities use which PALS looks at
- ▶ Involved our advisory panels from an early stage

Advisory Panel Reports

Panels identified major scientific challenges, the facilities which could attack these, and some idea of timescales - roadmaps

Bob Nichol (ICG Portsmouth)

FUAP: FAR UNIVERSE ADVISORY PANEL

Report from the PAAP

Particle Astrophysics Advisory Panel

Philip Maukopf, Cardiff University

Giles Hammond, University of Glasgow

Alex Murphy: University of Edinburgh

Philip Harris: University of Sussex

Jim Hinton: University of Leeds

Silvia Pascoli: Durham University

Deborah Miller, Dave Godfrey: STFC

<https://paap.astro.cf.ac.uk/doku.php>

- Five over-arching questions:
 - What controls the properties and evolution of stars including the Sun?
 - How do the Sun and other stars affect their environments?
 - How are stars born and how do planetary systems, including our own Solar System, form and evolve?
 - What is the extent of habitable environments and life in the Universe?
 - What fundamental processes operate in astrophysical sources, including the Solar System?

Particle Physics Advisory Panel

Roadmap recommendations for PAPAN

Philip Burrows

John Adams Institute for Accelerator Science
Oxford University

Ground-Based Facilities Review 2009

Michael Rowan-Robinson, Chair

Panel members:

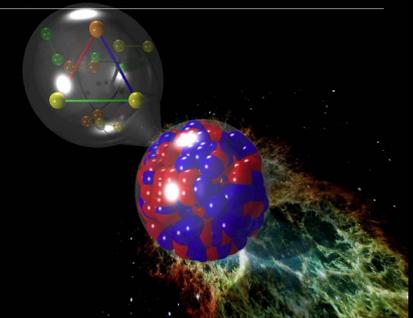
Rob Fender
Melvin Hoare
Rob Ivison
Richard McMahon
Don Pollacco
Robert Kennicutt



Sept 28th 2009

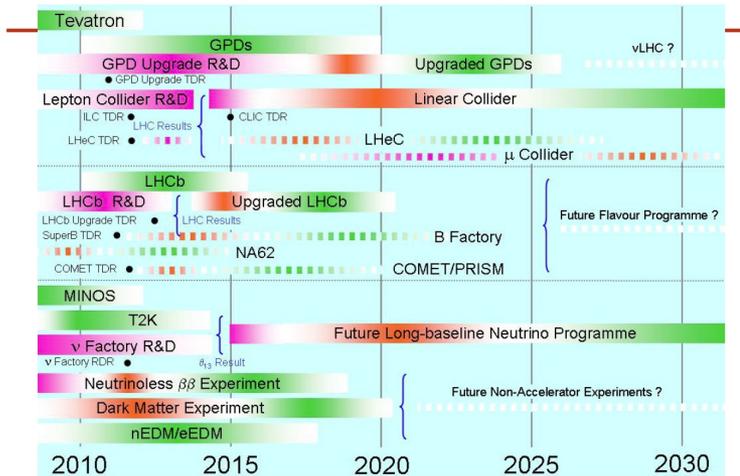
The Physics of Nuclei, Nuclear Matter and Nucleosynthesis

Report of the Nuclear Physics Advisory Panel



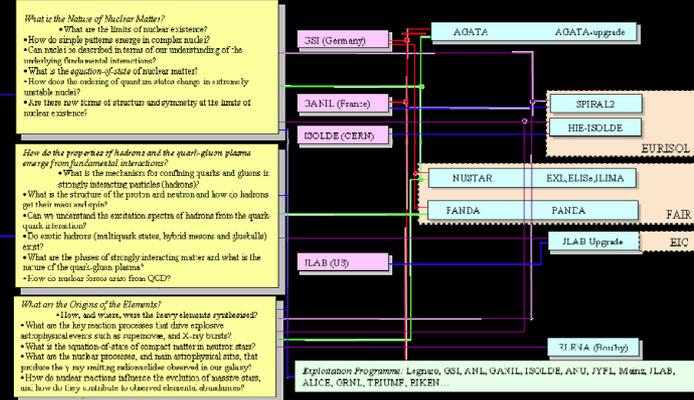
Advisory Panel reports – Roadmaps

The Roadmap



Future Programme

Theory Physics Questions Facilities Current Projects Future Projects



| Area | Breadth | Risk level | Impact level | UK strength | Cost |
|--------------------|-------------|------------|--------------|-------------|--------|
| Gamma rays | Medium | Low | Medium/High | Medium | Low |
| Cosmic Rays | Low/Medium | Low | Medium | Medium/High | Low |
| CMB-Pol | Low | High | High | High | Medium |
| Dark Matter | Low | High | High | High | Medium |
| Gravity Waves | Medium/High | Medium | High | High | High |
| Neutrino detectors | Medium/High | Medium | Medium/High | Medium/High | Medium |

First steps in the prioritization

- ▶ With the budget PPAN was given and using the existing planning lines, it was only possible to fund the Alpha 5 projects

Creating some room for breadth in the programme

- ▶ PPAN recommended some cuts to the programme in order to fund more than just the alpha-5 projects
- ▶ Reduce ALL grants by 10%
- ▶ Reduce the funding to the studentship line by 25%
 - ▶ This is broadly in line with the reduction in the grants lines which happened over the last three years (even slightly less)
- ▶ Reduce planned funding for alpha-5 project lines by 15%
- ▶ Reduce planned funding for alpha-4 project lines by 20%
- ▶ Reduce planned funding for alpha-3 project lines by 25%
- ▶ Re-profile the planning lines for future projects
- ▶ Assume international subscription costs flat after 2012



Additional programme

With the reductions above it was just possible to fund the alpha-4 projects
This still did not balance the budget in all years, but was accepted as a basis for planning



What was left remained unfunded

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Without these – many areas of PPAN science
are left very narrow



General issues in feedback

- ▶ The final prioritization has delivered a Science Programme which is very narrow, and in some areas lacks sufficient breadth to allow for future direction.
- ▶ We made it clear in our feedback that we felt additional funds were essential to have sensible breadth in the programme.
 - ▶ This was tensioned against operating the facilities
 - ▶ In the end, the process was robust, there was just not enough funding available to construct a programme with sufficient breadth.
- ▶ The cuts that are being implemented in grants and alpha4/5 were there just to have any breadth at all.



Going forward – A PPAN Roadmap

- ▶ We would like to produce an overall roadmap of PPAN science
- ▶ Use this as a document to put in front of policy makers
 - ▶ highlight opportunities
 - ▶ There will be future spending reviews
 - ▶ Outline our scientific strategy
- ▶ Much of the work for this has already been done
 - ▶ Advisory Panels produced excellent documents in consultation with the communities
 - ▶ We want to use these as the starting point



Key elements of the roadmap

- ▶ The key science questions/themes
- ▶ The facilities/experiments/activities for answering these questions
 - ▶ A timeline over the next 20 years of how these could be/will be available
- ▶ The enabling technologies
- ▶ Any key decision points
 - ▶ Science driven
 - ▶ Funding driven (perhaps external partners)
 - ▶ Technology driven



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- Advisory Panels to distil reports to 1 page formatted summary
 - by end of May
 - PPAN to produce draft PPAN science roadmap
 - by end July
 - STFC to produce draft overall science roadmap
 - by September
 - Consultation with community (via APs) on draft science roadmap
 - end September – end November



From HOC SC report

- ▶ "52. We are not satisfied with the outcome of the STFC's reprioritisation exercise, and consider that any withdrawals from programmes should be suspended at least until such time as the next CSR allocations are known. Otherwise, the budgetary fall-out from the unsatisfactory merger of CCLRC and PPARC will be set in stone."
- ▶ PPAN Welcomes this statement
 - ▶ The recognition that there was not sufficient funding for a successful merger
- ▶ Moving forward we need to present a well thought out and compelling case for investing in our science

