Report from PPGP(T)

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Particle Physics Grants Panel (Theory)

- Mike Seymour (Manchester) (theory chair)
- Silvia Pascoli (IPPP Durham) (theory core)
- Luigi Del Debbio (Edinburgh)
- Simon Hands (Swansea) (incoming chair)
- Mark Hindmarsh (Sussex)
- Neil Lambert (Kings College and CERN)
- David Tong (DAMTP Cambridge)
- Joel Goldstein (Bristol) (experiment chair)
- Gavin Davies (Imperial) (experiment core)

Introduction

- The main thing that has happened since last year's town meeting is the first Consolidated Grant round
- EPSRC policy on Mathematical Physics

EPSRC Policy on Mathematical Physics

(status in July 2011)

- EPSRC has traditionally funded mathematical physics, including some string theory and QFT
- Several fellowships "office rejected" this year
- When questioned on this, response was to remove mathematical physics from EPSRC web page defining its remit
- Has now reappeared with caveat: ~ "Past funding cannot be used as indication of future funding"
- EPSRC will no longer fund in "STFC areas"
- and only projects aimed at developing new maths

EPSRC Policy on Mathematical Physics

(status in July 2011)

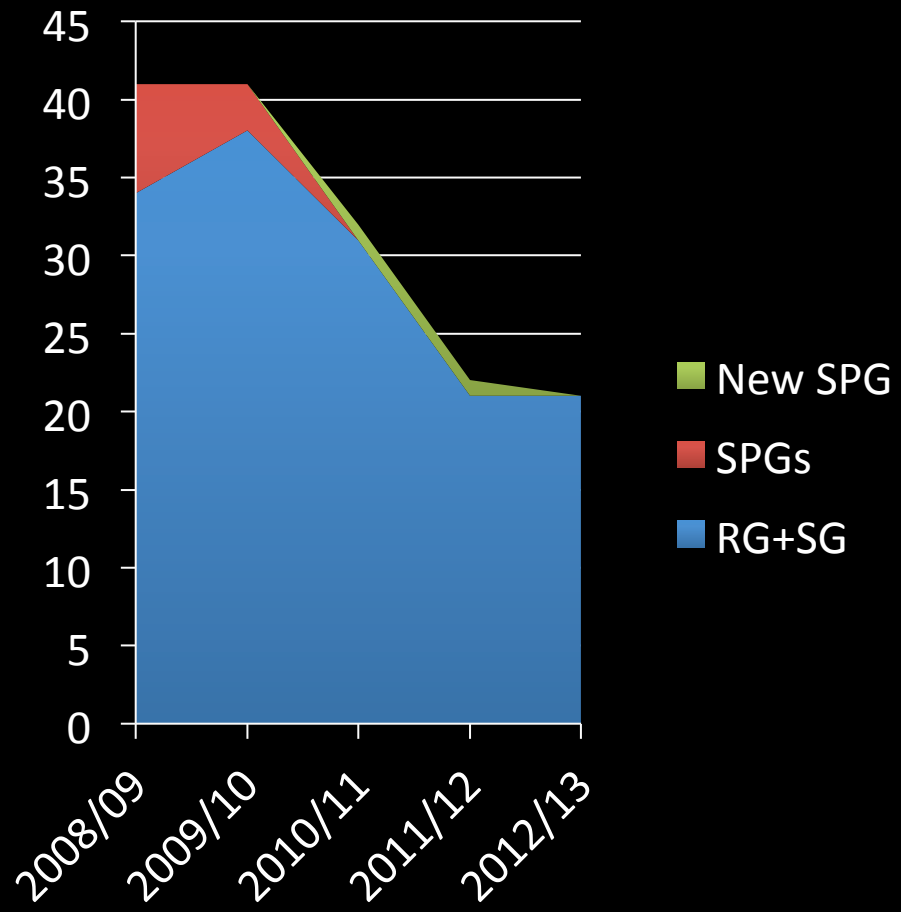
- But there has been no transfer of funds from EPSRC to STFC to cover this change of remit, and no change in remit of PPGP(T)
- We followed previous grants rounds in funding mathematical physics only where it has a direct application to particle physics theory

Grant Round – Introduction

- First round under new Consolidated Grants scheme
- Community has high international profile in
  - Phenomenology
  - String theory
  - Lattice gauge theory
  - Particle astrophysics and cosmology
- and has grown considerably

History

- 2005: 34 RAs + 7 SPGs
- 2008: average of 34.3 RA positions
- 2010: 1 SPG
- 2011–: legacy of 21 RA positions



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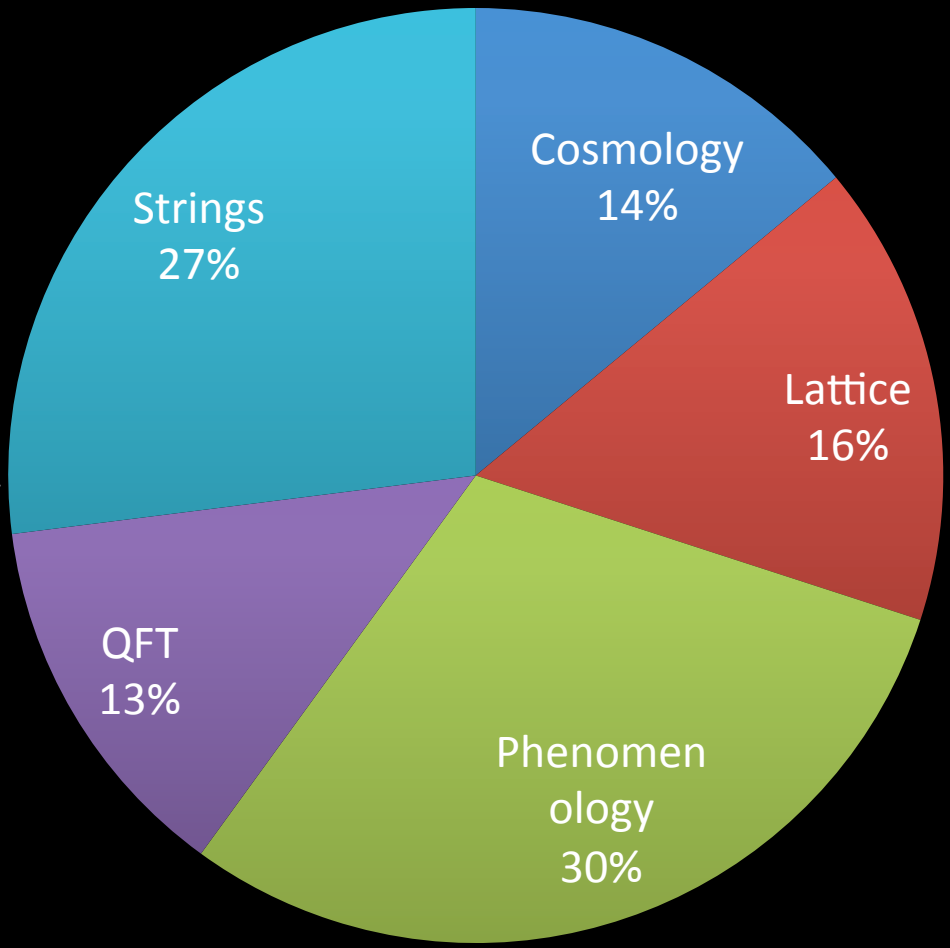


The Bid

- 18 proposals from 23 groups (4 consortia)
- 173 academics (163 requesting fEC)
  - vs 122 in 2005, 155 in 2008
  - 2 new groups (RHUL + City) and several expansions (e.g. KCL physics)
- 51 scientific areas (“projects”)
  - 54 RA positions (between 0 and 3 per project)
- £52.4M requested over 4 years
  - vs £14.5M available over 3 years

Justification of resources

- Panel scrutinized every project for justification of resources: academic fEC, RAs, support, etc.
- Normalized against hypothetical harsh funding scenario
  - many groups had been realistic about size of bid in current financial climate
  - others had not

➔'normalized' bid: fully justified in harsh funding

  - 41.5 RA positions
  - 2 project studentships
  - 77.3 academic FTEs over 160 academics

Strategic issues

- RA positions: top priority
  - protect from budget cuts as far as possible
- Academic fEC: high priority
  - minimum of 20% fEC for internationally-leading projects
- Diversity of community: important priority
  - invest a small fraction of budget on internationally competitive projects with potential for future growth or internationally important status
- Studentships: only where strong justification

Strategic issues

- Tensions
  - Academic time vs RA time
  - Top academics' time vs breadth of community

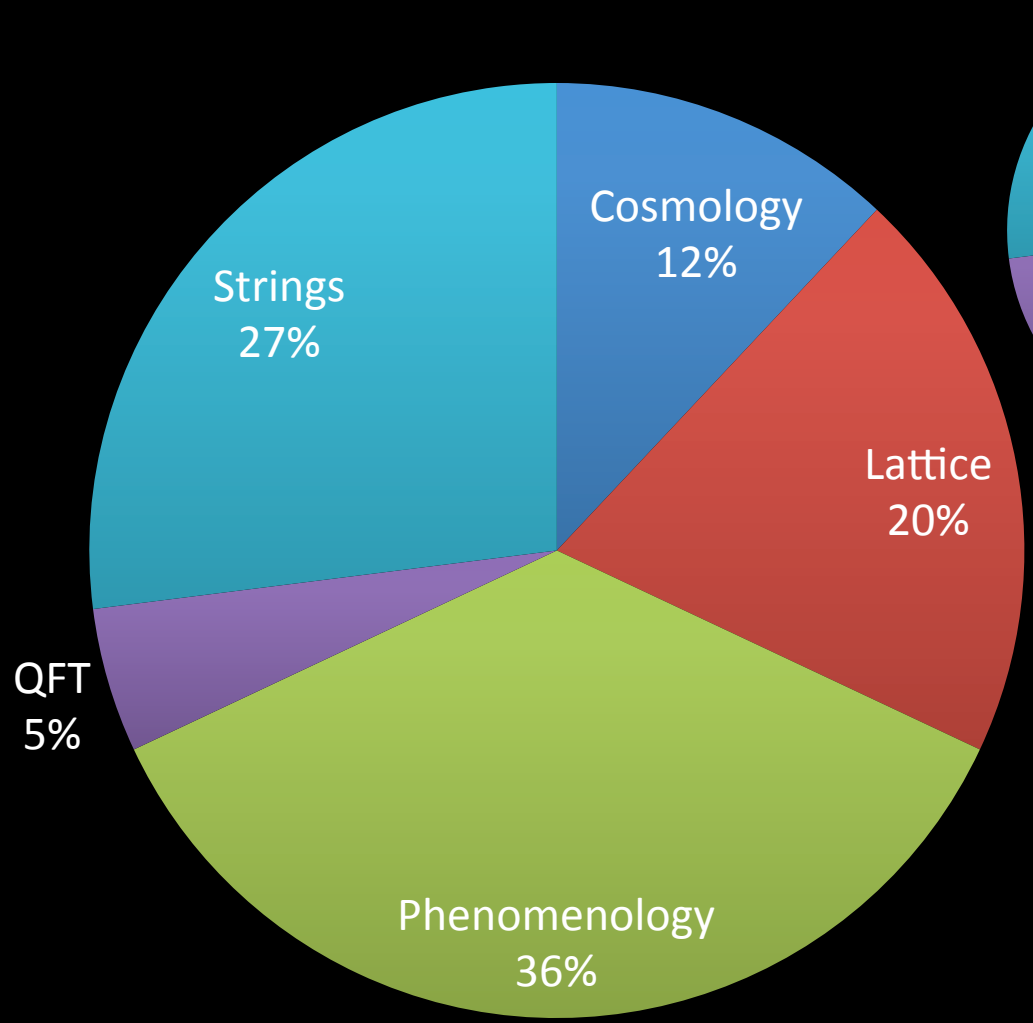
Tapered approach

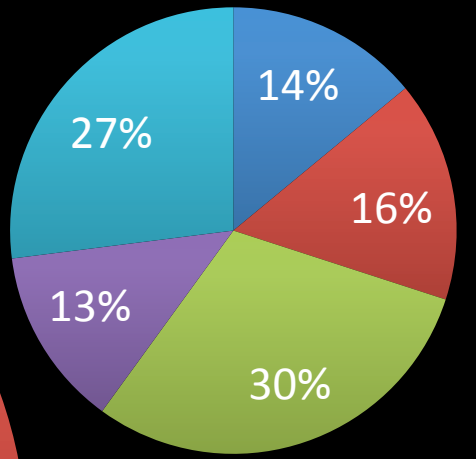
- Fund internationally-leading projects at fully justified RA level and 1/3 of ideal-world fEC
- Fund internationally-important projects at reduced RA level and 1/4 of ideal-world fEC
- Fund internationally-competitive projects with future potential at minimal fEC (1/6) only
- Although all projects “fundable” cannot fund below this level
    - (ideal-world maximum fEC = 60%)

Recommendation

- Top ~20 projects awarded 20% fEC
- Top ~35 projects awarded average of 29.3 RAs
- Top ~45 projects awarded academic fEC, travel, computing and support
- 2 projects studentships

Analysis of recommendation



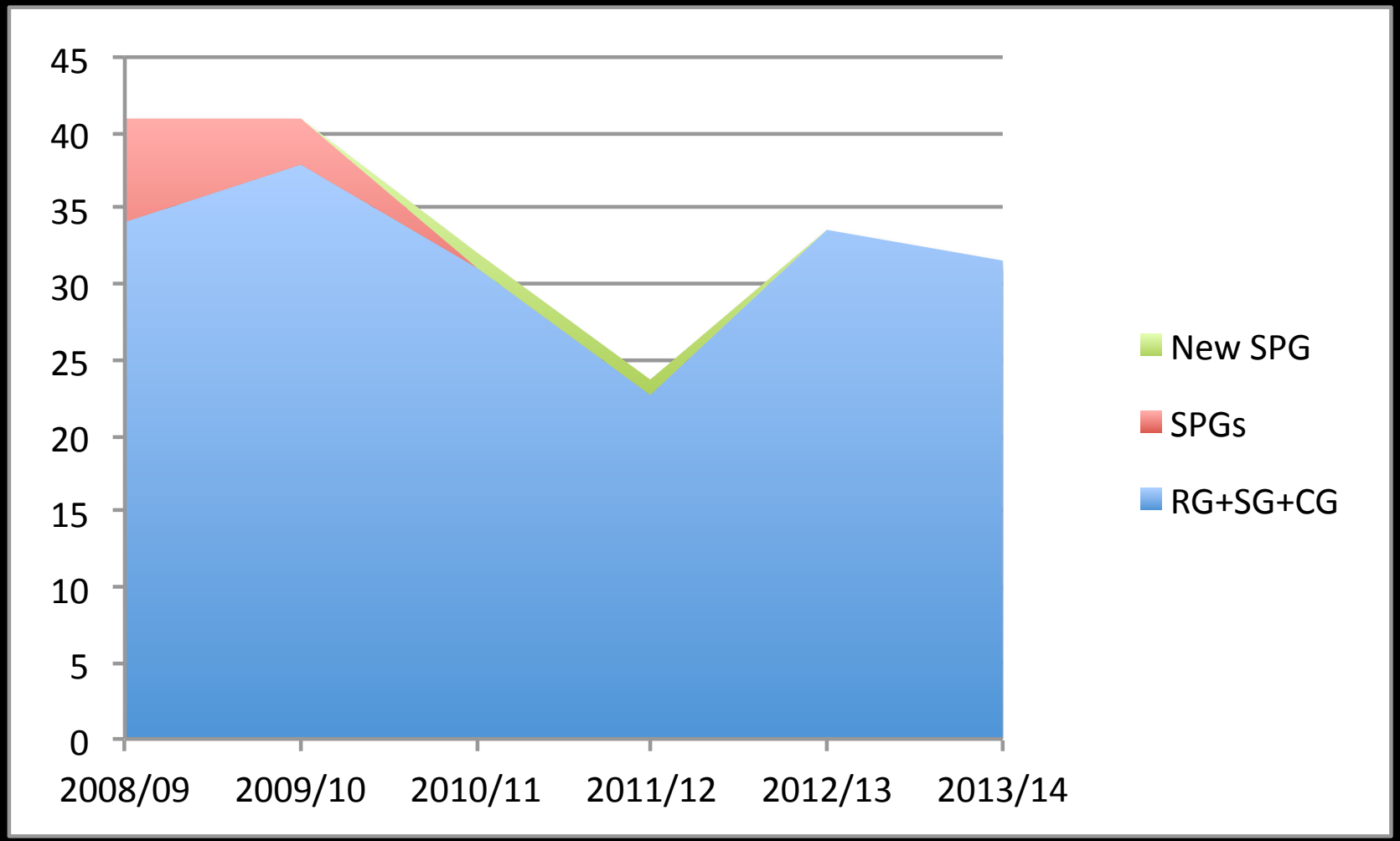


2008

Summary

- PPGP(T) considered a high-quality bid from an enlarged world-leading community in a time of financial constraints and rising costs
- Recommended a tapered approach, balancing funding best projects at highest possible level with maintaining breadth of community
- While understanding financial constraints, noted the quality of the science that could have been funded

Summary


45
40
35
30
25
20
15
10
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0
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
New SPG
SPGs
RG+SG+CG

FAQ: Grant length

- Many grants contain 3 RA-years and started October 2011
- Announced August 2011
- Panel's intention (supported by WJS's Grant Mechanism Review Panel report):
  - 3 years money, with flexibility to spend over 4 years
- Implementation:
  - 3-year grants but Office will allow 1-year no-cost ext.

Theorists on experiments

- Several theorists are *associate members* of experiments
  - we encourage this, it is considered normal work for a phenomenologist and funded by PPGP(T)
- Some theorists are *full members* of experiments, i.e. running shifts, performing service work, etc.
  - we encourage this, but the fraction of time earning membership credit should be funded by PPGP(E)
  - if small fraction, by agreement of experimental members of PPGP(T), if large, by applying to PPGP(E)
- This has been published in PPGP(E) guidelines

Consolidated Grant System

- Not a major change for particle theory
- Consortia were judged well: all four were judged to be stronger than sum of their parts
- No cases for core posts accepted
- Flexibility for grant panels to set their own timing will help with international postdoc hiring cycle: next round in two years' time (to give one year's notice of award)

Next Grant Round

- To accommodate extra year's lead time, next grant round will be a year earlier:
  - Grants will run Oct 2014–Sept 2017
  - Announcement should come by Oct 2013
  - Therefore closing date will be ~ Feb 2013
  - You will be writing proposals this time next year!

High Performance Computing

- STFC/BIS invested £7.3M in UKQCD + £0.9M COSMOS hardware + start-up costs
- No running costs from November 2012
- Groups bid in Consolidated Grant request
  - Swansea: electricity and maintenance
  - Edinburgh: electricity
  - others: running costs+COSMOS membership fees
  - Support: 1.2FTE
- Total: £497kpa (80% fEC)

High Performance Computing

- PPAN asked PPGP(T) to judge how much of these facilities are needed to support the level of research we propose to fund and tension this against the scientific programme costs
- Final outcome:
  - some cut to lattice exploitation
  - some cut to general programme
  - some persuasion of universities to fund running
  - some descoping of running, including BlueGene/P early switch off

Summary

- Grant round was performed in a very difficult financial climate
- Panel achieved what it considered best compromise of competing pressures:
  - 15% cut in postdoc numbers
  - c.f. 13% cut in budget, 10% increase in postdoc/ academic costs, >10% increase in uni. costs
- HPC running costs need to be better thought through in future

Backup:

GRANT RANKING PROCESS

Timetable

- 16 November 2010 – Guidelines published
- 2 December 2010 – Additional guidelines published
- 2 February 2011 – Closing date for proposals
- February – March 2011 – Assessors and referees assigned
- March – May 2011 – Refereeing process
- April – May 2011 – Panel scoring of proposals
- 17 – 18 May 2011 – Panel meeting

Initial Ranking

- All non-conflicted panel members graded each project
  - (judging their expertise/confidence high or low)
- Category 1:
  - Scientific excellence (weight 5)
  - International competitiveness (weight 5)
  - Strategic value (weight 5)
- Category 2:
  - Productivity (weight 2)
  - Quality of leadership/management (weight 2)
  - Suitability of institution (weight 1)

→Initial ranking

Refereeing

- Assessors nominated referees: 4–6 per proposal
  - 1–2 per proposal international
  - very high return rate from UK referees
- Reports extremely useful in pointing out factual issues with proposals/justification for resources, etc
  - generally confirmed panel's ranking

Reranking

- After discussion of every proposal, justification of resources and referees report,
  panel re-ranked projects
- Identified natural breakpoints in ranking
  - compared projects above/below
  - several pairwise swaps and small jumps
  - one project significantly re-ranked
- Significant implications for resources allocated