

# Report on Particle Physics Theory Consolidated Grants Review 2016

Simon Hands (chair PPGP)

PPT Town Meeting, Durham  
21<sup>st</sup> December 2016

# PPGP membership

Simon Hands (Swansea, chair) lattice  
Robert Thorne (UCL, core) pheno  
Matt Wingate (Cambridge) lattice  
Anne Green (Nottingham) cosmo  
Nick Evans (Southampton) strings  
Apostolos Pilaftsis (Manchester) pheno/cosmo  
Radu Tatar (Liverpool) strings  
Frank Krauss (IPPP Durham) pheno  
Jocelyn Monroe (RHUL, exp chair)  
Justin Evans (Manchester, exp core)

supplemented by Gavin Davies (Imperial) for discussion of  
Emilian Dudas (Ecole Polytechnique/Saclay) IPPP core function

**Each bid assigned lead assessor + 1- 2 co-assessors**

- interface with PIs for clarifications
- lead Panel discussions
- provide feedback

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**Strength of process:** *all bids read and graded by all panellists*  
(when non-conflicted)

# Consolidated Grants 2016

17 applications from 23 institutions + IPPP  
(6 from consortia)

supporting 186 academics in 45 scientific areas

51 areas in CGI1, 48 in CGI3

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PPGP(T) grants line	5030	5030	5030	2515	17605
IPPP grant line	-	841	1682	841	3364
Committed	2543	119	-	-	2662
Conferences/New App	26	25	25	13	89
Isaac Newton Institute	100	-	-	-	100
Available	2361	5727	6687	3343	18118
Requested (inc INI)	9200	19932	21376	10707	61216
$\Delta$	-6839	-14205	-14689	-7364	-43098

# Timetable

- 6/11/15 Guidelines published
- 4/2/16 Deadline for proposals
- 3 - 5 /16 Referee assessment
- 18/5/16 Panel meeting 1
- 25/5/16 Panel scoring deadline
- 7-8/6/16 Panel meeting 2
- 5/7/16 Report to Science Board
- 11/16 Announcements to PIs
- 10/17 Grants commence

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In CGI6 104 referees (29 UK 75 international) used  
average of 9.4 reports / bid.

Referees asked to comment on particular scientific areas, not whole bid.

Comments sent to PIs, responses considered by PPGP

# Assessment Criteria

Category 1	Category 2
Scientific Excellence	Productivity
International Competitiveness	Quality of Leadership
Strategic Value	Suitability of Institution

Scores based on Category 1 used to perform initial ranking.  
Subsequent reranking at Panel meeting following detailed discussion led by bid assessors

No panellist scores or comments on bid from own institution or where otherwise conflicted



# First Meeting:

PTI/DM statements were assessed by Panel

- **Knowledge Exchange:**  
looked for evidence of activity looking forward  
engagement with University specialists  
3 PTI statements returned to PIs to be redrafted
- **Public Engagement:** evidence of excellent activity.  
⇒ 3 outstanding PE requests  
recommended awards totalling £18.5k
- **Data Management:** evidence of increased use of  
university publication repositories  
consistent with REF Open Access compliance

# IPPP Durham

## Bidding for CG from 2018 onwards following 2015 Review of UK PP Phenomenology

Bid deadline 12/4/16 due to need for specific guidelines to be prepared

### Bid covers

- **Core Function** community service activities unique to a national centre
- **Research Programme** to be tensioned against rest of PPT

Core Function bid assessed independently at First Meeting,  
which heard a presentation from IPPP,  
with help from two members of UK Pheno Review Panel

# Second Meeting:

## (a) scan of bids to identify optimal funding scenario

Poorly made RA cases & academics with low productivity and/or perceived marginal contribution not included in optimal scenario

*Panel expects that unfunded academics working in supportive groups will have opportunity to redeem situation in future CG rounds*

Academics perceived as stronger or weaker than average across scientific area identified and awarded fEC of +/- band accordingly

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In flat cash funding landscape Panel unable to recommend funding for Red band (with some exceptions)

# Outcome

*requested* vs. *optimal funding scenario*  
vs. *final recommendation*

	PDR	students	core FTE	academic FTE
<i>PPT + IPPP Research</i>	79	11	0	112.7
<i>PPT + IPPP Research</i>	64	2	0	91.59
<i>PPT + IPPP Research</i>	35.33	2	0	19.39
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<b>int. leading</b>	11	15.67	8.69	20%
<b>int. important</b>	9	12.33	6.4	15%
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<b>other int. competitive / nat. important</b>	14	-	-	-

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**35.33 RAs = 32 in PPT programme + 5 IPPP for 2018-20**

# Six consortium bids in CGI6

- Manchester - Lancaster - Sheffield
- Sussex - RHUL - UCL (SEPTA)
- Edinburgh - Heriot Watt
- Durham - Newcastle
- Plymouth - Swansea
- Oxford - RHUL (new)

PPGP judged consortium bid added strength in all cases, with some evidence of collaborative activities/publications, and new appointments in “junior” partners

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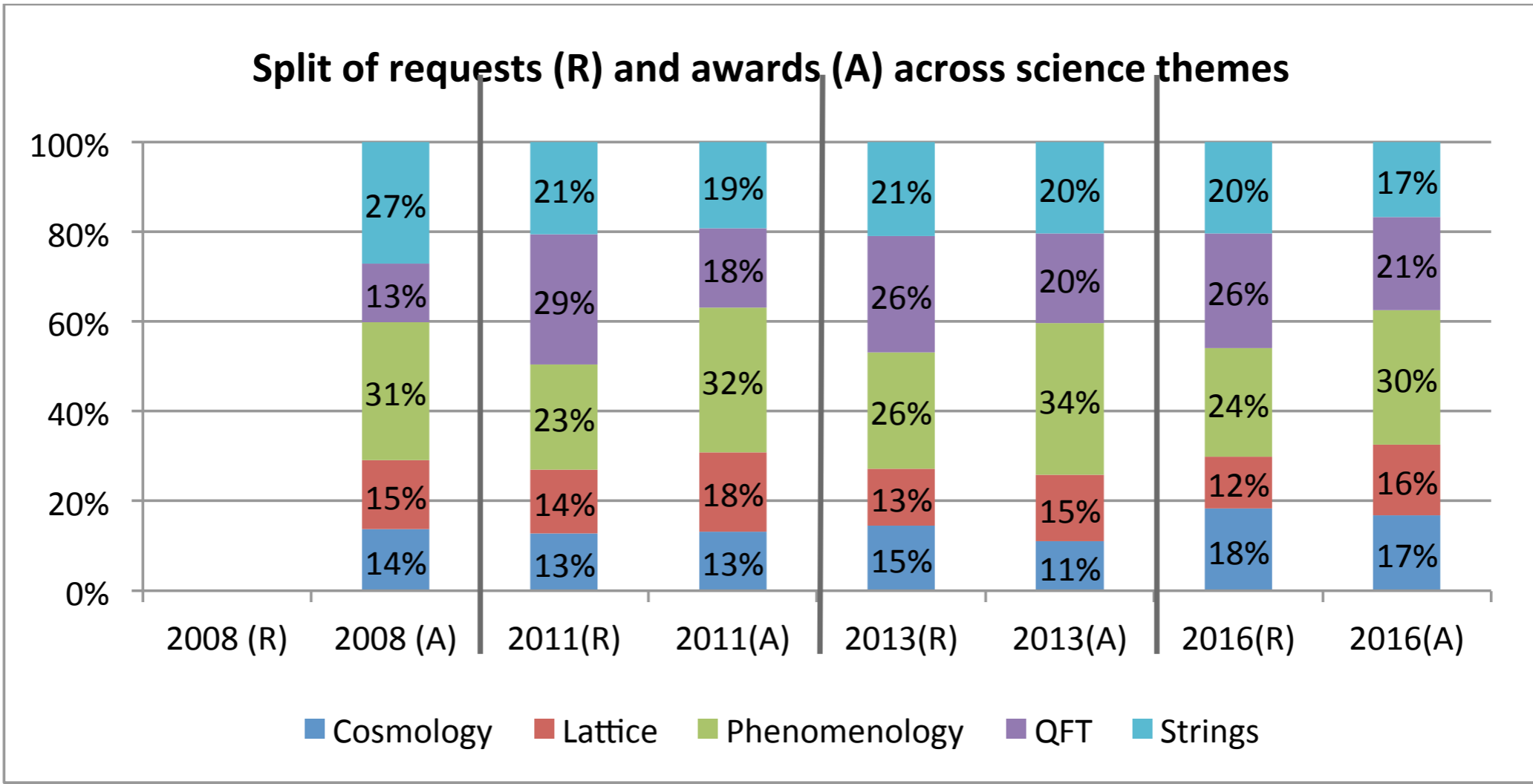
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Some consortium partners have fared poorly in the current harsh funding environment

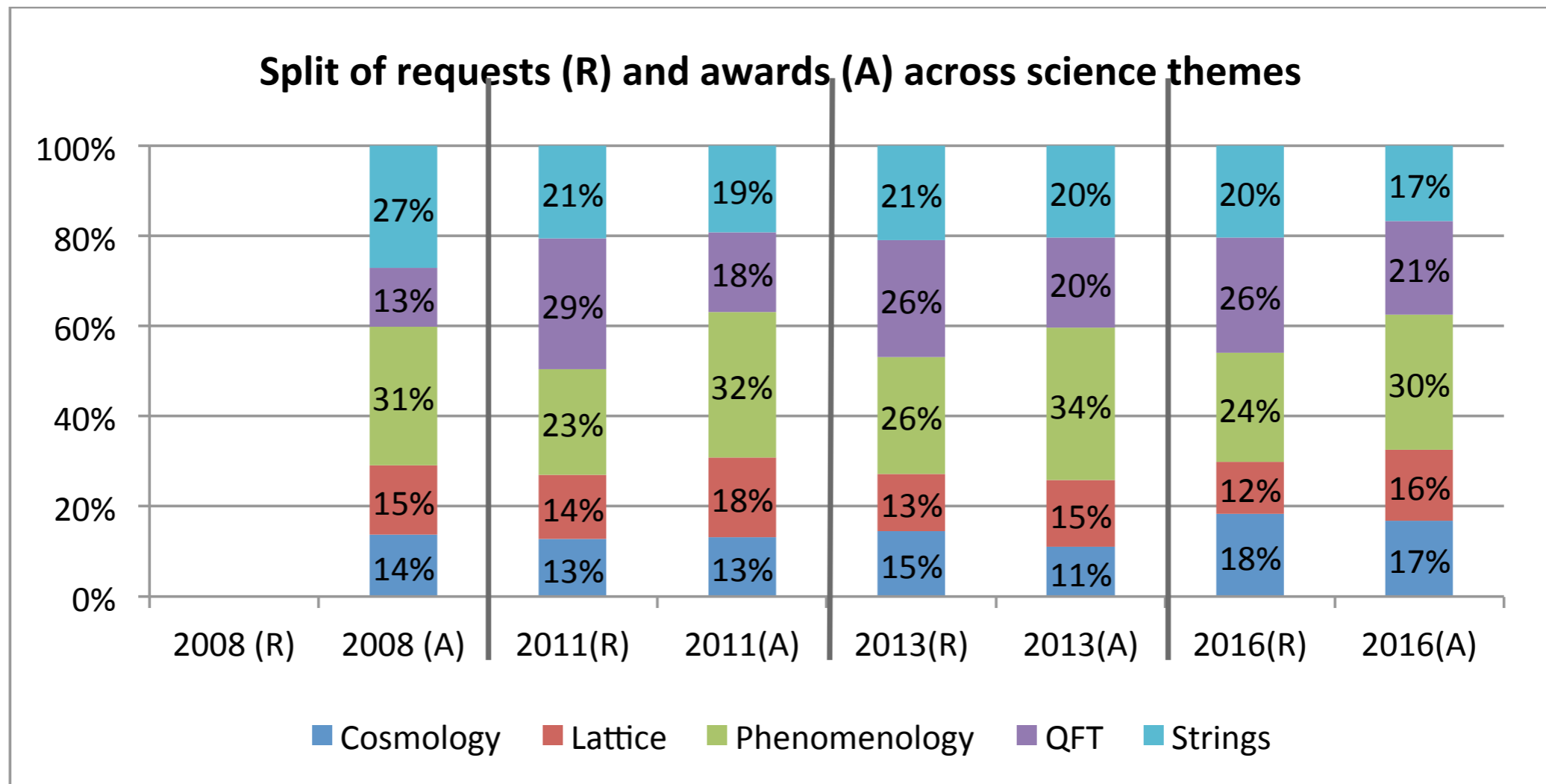
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Chart 3: Number of PDRAs per year (and percentage share of total) in each theme requested and awarded/recommended *not including RA awards to IPPP*



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- Significant increase for cosmology (3.1 → 5.4)
- pheno has maintained absolute numbers but share has fallen (9.4 → 9.6)
- Slight increase for lattice (4.2 → 5.0)
- Strings/QFT share more stable than thought previously (11.3 → 12)  
but shift from Strings towards QFT

- Travel: £1500 pa per active researcher
- Consumables/computers: £600 pa par

Total recommended cost £892k over 3 years

- New Applicants: £10k pa
- Conferences: £15k pa

All amounts unchanged from CGI3

No bids for DiRAC recurrent costs in CGI6

# IPPP Core Function: support £700kpa

## The Core Function includes

- RAs + PPs supporting MC event generators + QCD tools
- admin support staff
- computing support staff
- teaching buyout for key academic staff
- Associateships
- Senior Experimentalist Fellowships
- Senior Visiting Scientists (UK wide)
- workshop programme
- IPPP Steering Committee support



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# STFC-funded core RAs = 3

# Isaac Newton Institute

Visitor research programmes  
on selected themes in mathematics  
and mathematical sciences

Currently receives  
£100k pa from  
STFC PPT funding line

**BUT:** just 3 PPT-facing one-month programmes in 2013-16:

Sept. 2013: *Mathematics and Physics of the Holographic Principle*

Jan 2016: *Quantum Integrable Models in and out of Equilibrium*

Jun 2016: *Gravity, Twistors & Amplitudes*

+1 workshop

Mar. 2014: *Supersymmetry Breaking in String Theory*

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Panel is disappointed with this return on PPT investment,  
and proposes that future STFC contributions to INI  
be shared across all PPAN areas.

An INI proposal for further support expected in 2017

# And Brexit?

Flat cash STFC PPT grants line: £6.7Mpa

STFC estimate for value of PPT-related grants  
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Please consider writing to your MP  
alerting them to the dangers of  
an ill-considered Brexit

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IPPP award	-	742	1491	748	2982
Conferences/New App	26	25	25	13	89
Isaac Newton Institute	100	-	-	-	100
Total Spend	5179	6041	6561	3162	20943
$\Delta$	-149	-170	151	194	26



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Total Spend	5179	6041	6561	3162	20943
$\Delta$	-149	-170	151	194	26

*Within the available budget, it was not possible for the Panel to maintain a constant volume of research. The panel was very far from being able to fund all of the projects it considered would produce work of a high international calibre.*

# Trends over time for PPT (excluding IPPP)

	2005	2008	2011	2013	2016
bidding academics	122	155	163	176	186
funded academics	-	-	-	161	134
Budget	-	£16.9M	£14.6M	£15.2M	£15M
maximum FEC award	-	28.5%	20%	20%	20%
average FEC award	-	20%	14%	16%	13%
# PDRAs	34 (+7 SPG)	34.3 (+1 SPG)	29.3	28	32
PDRAs/ bidding academic	-	0.23	0.18	0.16	0.17
PDRAs/ funded academic	-	-	-	0.17	0.23

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# PDRAs has increased for first time since 2008