

# UK Particle Theory: Programme Overview

Simon Hands (chair STFC PPGP(T))

**PPT Town Meeting**  
**IPPP, 22<sup>nd</sup> December 2015**

Most PPT activity in UK supported via funding from  
Science & Technology Facilities Council

Unique opportunity to bid every 3 years for  
*Consolidated Grant* support for theory groups in  
institutions

CG support covers a fraction of salary costs (FEC),  
PDRAs, project PGRs, travel, consumables and  
technical support

PGR studentships and Fellowships awarded in a  
separate exercise (Tara...)

# STFC's view of PPT mission...



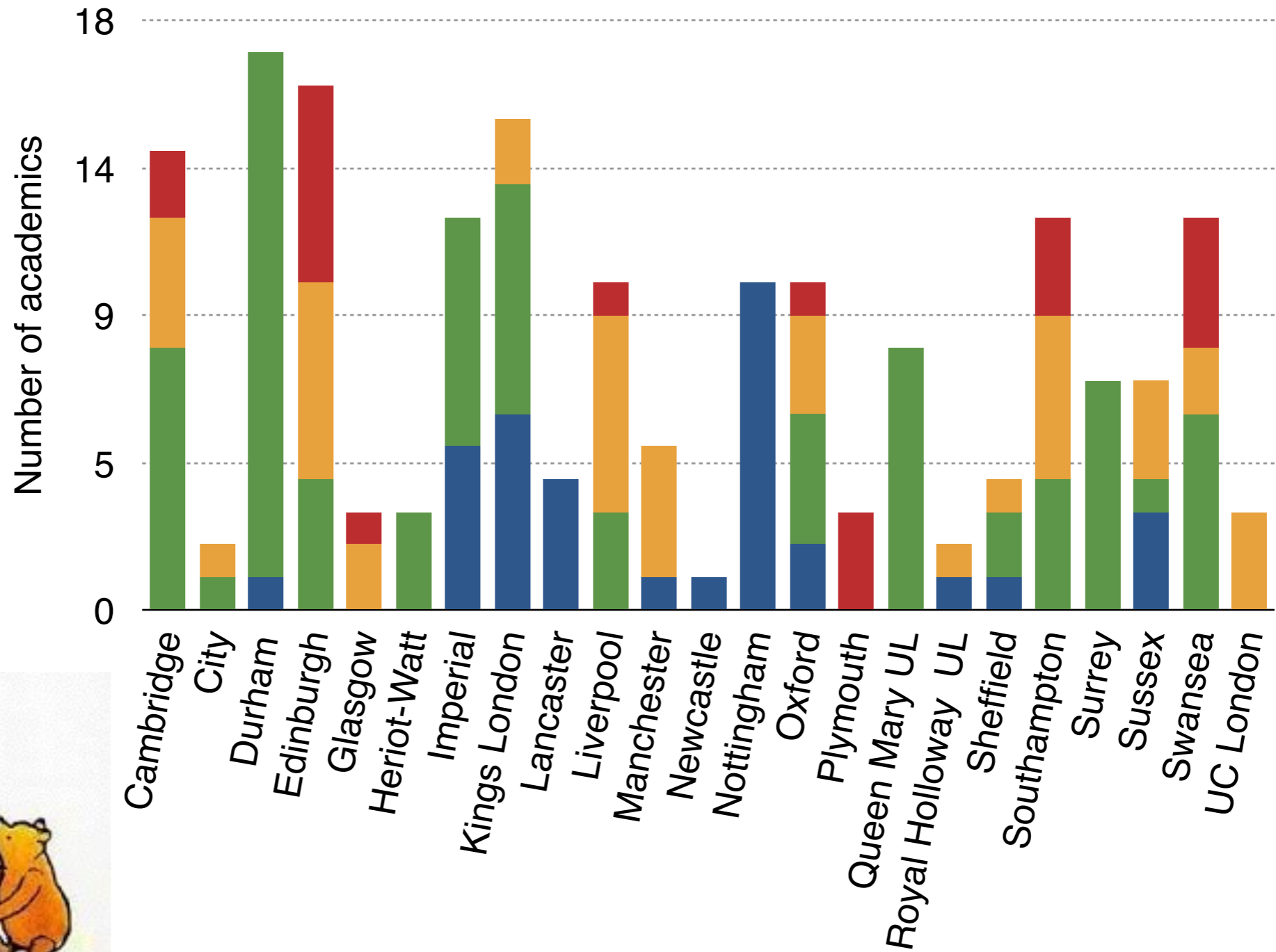
Science & Technology  
Facilities Council

**STFC supports theoretical research in particle physics, particle cosmology, theoretical astronomy and cosmology, and areas related or relevant to these. Its theoretical activity includes:**

- **theoretical insight into physical phenomena;**
- **development and study of theoretical frameworks;**
- **development of models and theories with the aim of further enhancing or unifying our understanding of the physical world;**
- **development of models and theories with the aim of further enhancing or unifying our understanding of the origin and development of the Universe;**
- **analysis and interpretation of data from experiments and observations; guidance for further experiments and observations;**
- **development of calculational and computational techniques enabling more precise comparison of theory with experiment.**

# What size/shape is the UK PPT Community?

■ Cosmo (19%)   
 ■ Strings/QFT (45%)   
 ■ Pheno (24%)  
■ Lattice (12%)



~ 180 academics bid for support in CGI3

# Consolidated Grants 2013

17 applications from 23 institutions  
(5 from consortia)

supporting 185 academics covering 48 “scientific areas”

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Budget (GBP)	14/15	15/16	16/17	17/18
PPGP(T) post PR/SR	5030	5030	5030	5030
Committed	2426	20	-	-
Conferences/New Applicants	23	25	25	25
Isaac Newton Institute	100	100	100	100
Available	2481	4885	4905	4905
Requested	8036	16242	15817	8097
$\Delta$	-5555	-11357	-10912	-3192

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Hope to maintain “constant volume” programme going forward

# Conduct of Consolidated Grant Review

Peer review by a standing panel with range of subject expertise and geographical spread

## PPGP membership for CGI 6

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  
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Referees comment on particular scientific areas, not whole bid.

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All bids read and graded by all panellists  
(when non-conflicted)

# Timetable for CGI6 Review

<b>Closing date for consolidated grant proposals and Form X</b>	<b>4 February 2016</b>
Reviewing process	February –April 2016
Applicants to receive and respond to reviewer comments	May 2016
Peer Review meetings	1 day end of May 2016 <b>18/5/16</b> 2 days mid June 2016 <b>7-8/6/16</b>
Outcome announced	October 2016
Grants commence	01 October 2017

**CGI6 Grants will run 1/10/17 - 30/9/20**

**Extensions of up to 1 year of CGI3 grants are possible**

# Assessment Criteria

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

Other aspects will also be assessed by the Panel

Pathways to Impact: forward look (unlike REF)

Knowledge Exchange:

Public Engagement: evidence of excellent activity in CGI3 -

3 outstanding PE requests awards totalling £21k

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PTI statements which do not adequately address criteria will need to be improved before award of a grant

## Ground Rules for bids

- Only one CG bid per institution
- Investigators may be on at most one bid, either institutional or consortium
- “Quantum of Assessment” is Scientific Area. Investigators can subdivide effort between different Scientific Areas within a single bid
- Can bid for “core” and “non-core” staff  
PPT PDRAs typically “non-core”  
Currently no core staff in PPT programme
- Applicants not requesting FEC support (eg. Fellows) are eligible to be named co-Is
- DiRAC recurrent costs are *not* to be requested

# CGI3 Outcome

Initial scan of bids yielded *optimal funding scenario*

	PDRAs	students	core FTE	academic FTE
Fundable	51.7	3	1.4	88.6
Funded	28	1	1 → 0 (DiRAC)	23.7

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Projects recommended funding in three bands:

	# projects	PDRAs	academic FTE	max FEC
leading	20	23	11.7	20%
important	15	5	9.3	15%
competitive	12	-	2.7	10%
not funded	1	-	-	-



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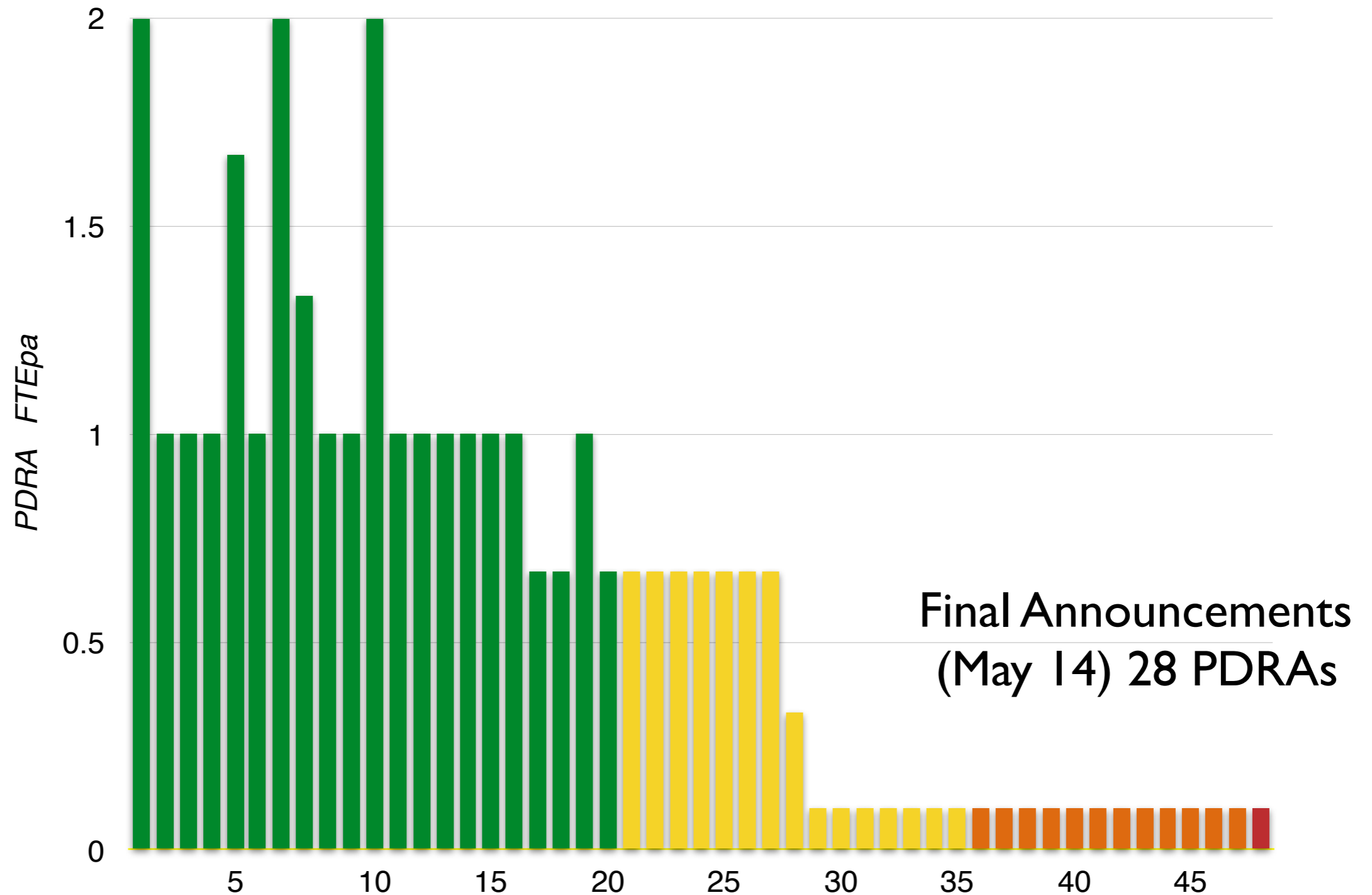
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In the same CGI3 snapshot PPT activity also supported by 7 ERC Grants (3 Advanced, 4 Starter) spread across 4 institutions

# PDRA distribution by band...



# Five consortium bids in CGI 3

- Manchester - Lancaster - Sheffield
- Sussex - RHUL
- Edinburgh - Heriot Watt
- Durham - Newcastle
- Plymouth - Swansea

PPGP judged consortium bid added strength in all cases, and considered it still too soon following CGI 1 to make judgements based on shared publications

In CGI 6 established consortia may be examined more critically...

Consortia not the only way to go: two Green-Banded Scientific Areas have just a single academic

- **New Applicants**

£10k pa set aside for new appointments

typically funds travel and consumables

2014 CG Review recommends continuation

- **Conferences/Short Courses**

£15k pa (small increase in CGI3)

enquiries to Jane Long

[Jane.Long@stfc.ac.uk](mailto:Jane.Long@stfc.ac.uk)

# How do we compare with the rest of the STFC family?

Grants Round	# Acs FEC > 0	average FEC	Max FEC	unfunded Ac/ total Ac	# PDRAs	# PDRA/ # Ac
NPGP 2011	44	15%	20%	15%	19	0.42
PPGP(T) 2011	146	14%	20%	10%	29	0.20
PPGP(T) 2013	162	16%	20%	12%	28	0.17
PPGP(E) 2012	167	17%	23%	8%	116	0.69
AGP 2011-2013	404	17%	30%	37%	216	0.53

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# Trends over time



	2005	2008	2011	2013
# bidding academics	122	155	163	185
Budget (inc FEC)	-	£16.4M	£14.5M	£14.5M
maximum FEC	-	28.5%	20%	20%
average FEC	-	20%	14%	16%
PDRAs	34 (+7 SPG)	34.3 (+1 SPG)	29.3	28



# Institute for Particle Physics Phenomenology

16 academics, 20 PDRAs

coordinates pheno activity (theo/exp) in the UK via

- Senior Fellowships
- Associateships
- Workshops

[www.ippp.dur.ac.uk](http://www.ippp.dur.ac.uk)

STFC support for PPT: CG : IPPP ~ 3 : 1 over last decade

2015 Review of Phenomenology (chair Chris Sachrajda)  
recommended support for the national pheno centre be brought  
within the CG review to be tensioned against the rest of PPT  
programme once the current IPPP grant finishes in 2018

IPPP bid to CGI6 is expected,  
but details still to be ironed out...



# Isaac Newton Institute for Mathematical Sciences

Visitor research programmes  
on selected themes in mathematics  
and mathematical sciences

£100k pa from  
STFC PPT funding line

Two PPT-facing  
programmes in 2016:

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

Jun 2016: *Gravity, Twistors & Amplitudes*



Call for Proposals  
Deadline 31 January 2016

The Isaac Newton Institute is a national facility based in Cambridge, UK, and attracts scientists from all over the world to research programmes in all areas of the mathematical sciences, broadly understood. At any one time there are two visitor programmes at the Institute, each with about twenty participants. For more information see [www.newton.ac.uk](http://www.newton.ac.uk).

120 programmes have been completed to date and details are listed at [www.newton.ac.uk/science/programmes](http://www.newton.ac.uk/science/programmes). Administrative support is provided for housing, library, computing etc., and around £40,000 per month is available to each programme towards travel and subsistence support for participants and organisers.



The Institute now invites proposals for 1-, 4- and 6-month research programmes in any branch of the mathematical sciences. Please note a special case should be made for shorter proposals and there is no guarantee these will be held in the summer. The deadline for submission is 31 January 2016, for consideration at the meeting of the Scientific Steering Committee in May 2016. Details on submitting proposals are at [www.newton.ac.uk/science/proposals](http://www.newton.ac.uk/science/proposals).

Anyone interested in making a proposal is encouraged to contact the Director, by telephone or email, for advice and informal feedback.

The Director will be pleased to help nurture, without prejudicing the final outcome, proposals in the fundamental mathematical sciences as traditionally understood and in cross-disciplinary projects, for example in the mathematics related to biology, ecology, the environment, the economy, the physical sciences, medicine, indeed any area where innovative mathematics plays a significant role.

Contact John Toland, Director  
email: [jft26@newton.ac.uk](mailto:jft26@newton.ac.uk) tel: +44 (0) 1223 335 980 secretary: +44 (0) 1223 335 982

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*Surely room for more?....*



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# Summary

UK PPT continues to deliver world class science in an unfriendly funding environment



In difficult times, PPGP has prioritised **leading** science over **important** and **competitive** ...

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## Questions?

