



STFC Town Meeting

**IOP Annual Nuclear Physics Conference
31 March 2016**

**Susan Smith (On behalf of John
Womersley)**

STFC



Science & Technology
Facilities Council

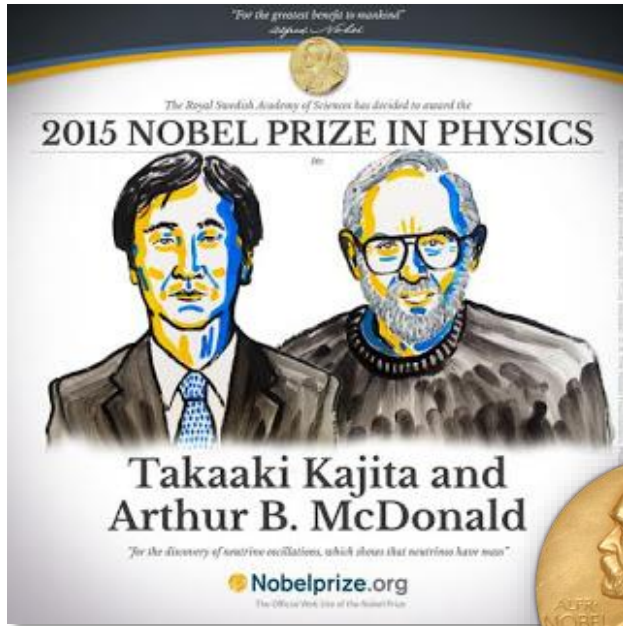
Welcome!



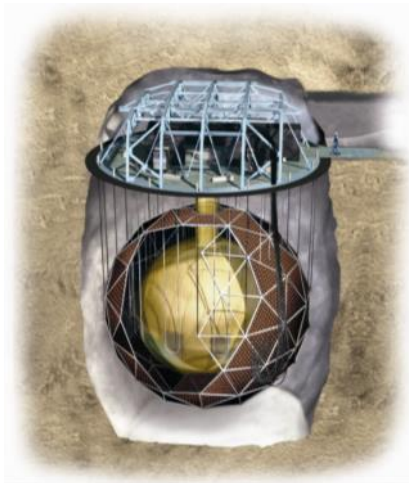
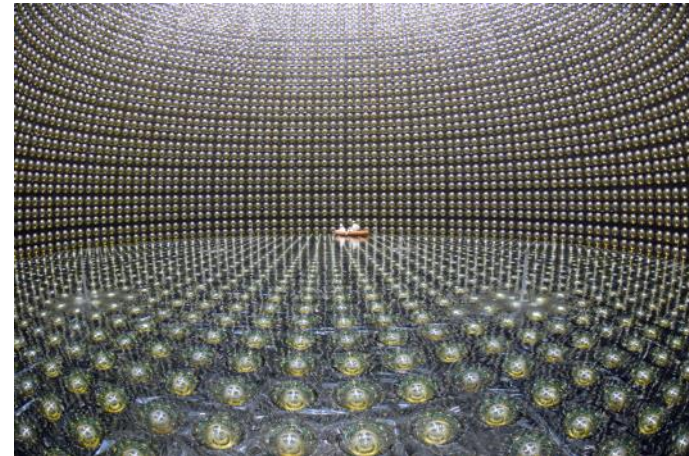
Welcome!

STFC science continues to
deliver outstanding successes

Nobel Prize for neutrino oscillations



- Neutrino oscillations demonstrate that neutrinos have mass – physics beyond the Standard Model!
- Leads onto the future programme with Hyper-K and DUNE



- UK was a major player in Sudbury Neutrino Observatory, contributing water systems, concentrators, offline software, and key algorithms used to separate signals from backgrounds



Discovery of Gravitational Waves

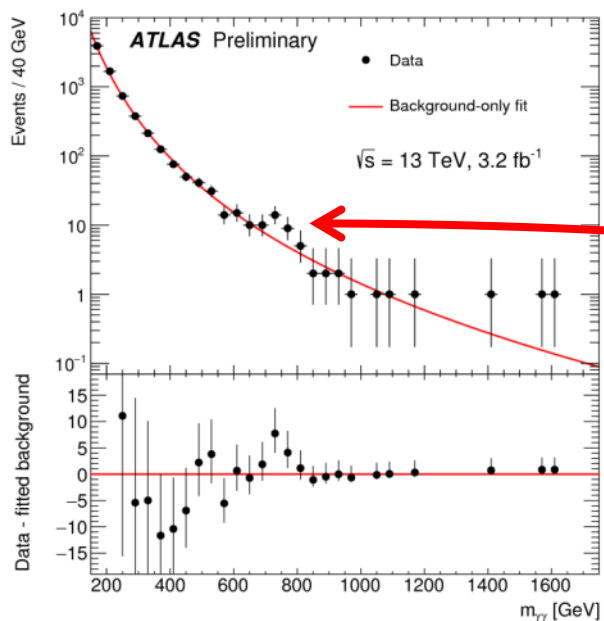


NSF Press Conference
Washington, February 11th

Who knows...

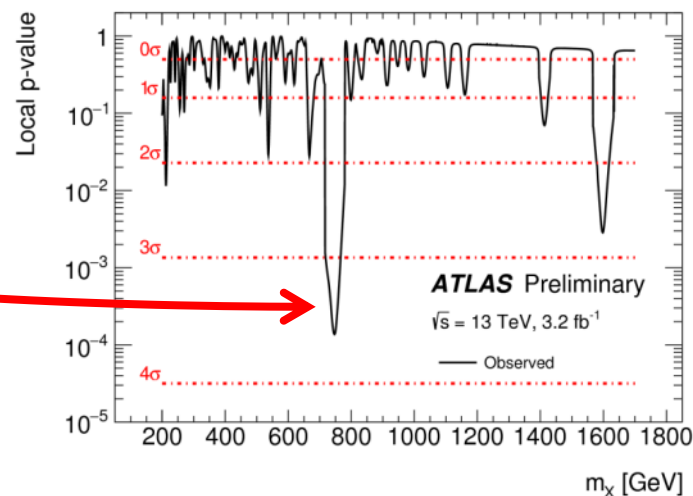
ATLAS

- $\gamma\gamma$ resonance at 750 GeV ?
- Allowing for 'look-elsewhere effect', significance $\sim 2\sigma$



CMS

- hints at the same mass



Observation may possibly be explained by known backgrounds

Invariant mass of two photons



Welcome

- STFC science continues to deliver incredible success
 - Gravitational waves and Nobel Prize for Neutrino Oscillations
 - ‘Exceptional intrinsic value’ – Select Committee visit to CERN
 - And the promise of future excitement . . .
- ... and great impact too
 - New cancer treatments
 - Environmental breakthroughs
 - Inspiring hundreds of thousands of young people
- We should celebrate that success, but time is short, so I will focus today on two issues:
 - The implications of the Comprehensive Spending Review implications and what we need to do together as a result
 - Nurse Review and what you as a community can do

Comprehensive Spending Review

May 2015

- Research Councils asked to describe the impact of potential scenarios
 - +20% / flat + inflation / flat / -25%
 - RCs also asked to highlight untapped demand and strategic priorities

July - September 2015

- Asked to describe the impact of a refined range of scenarios
 - -25% / -10% / -5% / flat / flat + inflation
 - External revenue sources, ODA, security and defence alignment etc



25 November 2015

Chancellor announced headline numbers

- Pledged to protect science in real terms
- Science budget included Research Councils, HEFCE, Innovate UK, UK Space Agency, academies
- New £1.5 billion science ODA fund



Comprehensive Spending Review

November 2015 – February 2016

- Intensive negotiation with BIS by all Research Councils
 - Not easy for BIS team – “on our side” but tough to balance the books
- STFC submitted extensive financial information and narratives
 - Asked for revised versions of the -10% and flat cash scenarios
 - STFC also submitted minimum viable scenarios
 - Provided a lot of detail against all funding lines e.g. international subscriptions, facilities, postgraduate training, research funding
 - STFC’s narratives were clear on implications of each scenario



4 March 2016

Jo Johnson announced high level numbers for each Research Council, UKSA, HEFCE and National Academies

- Met Chancellor's promise: total science budget protected against inflation
- £2,082 million in resource and capital allocation over four years 2016-20
- 2016-17 and 2017-18 are firm allocations – the rest are indicative pending the implementation of the Nurse Review
- Means a SR in 2017 to establish budgets for 2018 onwards



Allocation of science funding

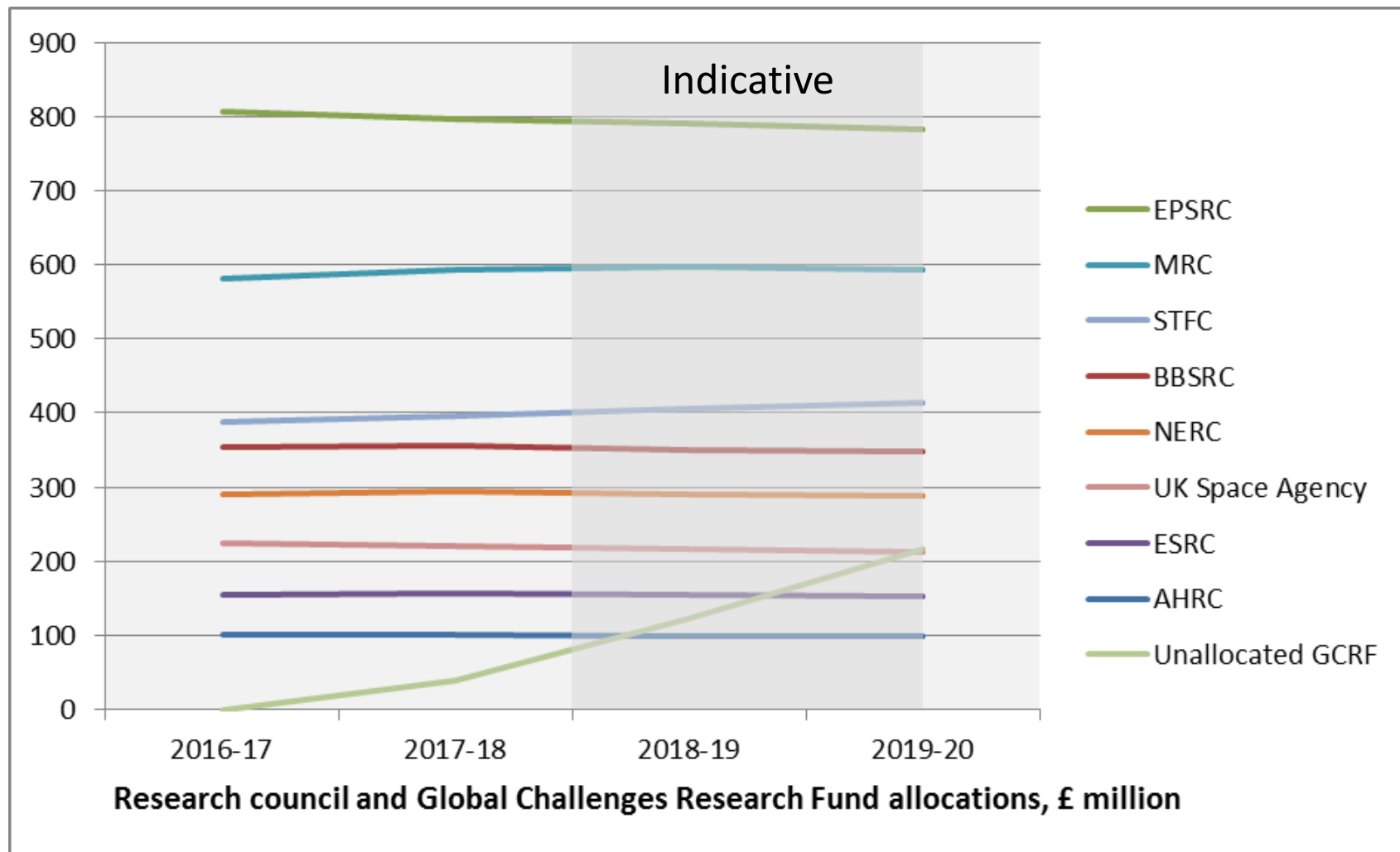
- Allocation booklet not entirely clear
 - STFC's funding was not announced by funding partition – can confirm the partitions still remain
- Capital listed under two headings
 - “World Class Labs” which roughly covers existing capital
 - “Grand Challenges” not itemised but covers new capital projects
- Research Councils have secured a lot of money but we do have challenges
 - Pressures mean that Research Councils received roughly flat cash for their core programmes through combination of resource funding and Global Challenges
- £700m of Global Challenges Research Fund (GCRF) remains unallocated between 17/18 and 20/21
 - Must be ODA compliant so some clever thinking will be required

RCUK strategic priorities booklet

- RCUK published its strategic priorities on 18th March
 - Included revised financial tables with partitions
- Each Research Council set out its own high-level spending plans in a two-page appendix
- STFC's include pledges to deliver, amongst others:
 - An excellent programme in particle physics, nuclear physics and astronomy
 - CERN, ESO, ESRF, ILL and FAIR, plus CERN technical upgrades, E-ELT and LSST
 - New commitments: ESS, XFEL and SKA
 - Operate and upgrade Diamond, ISIS and CLF
 - Increase innovation output from our funded activities
 - Skills programme to link traditional STEM with software engineering, technology development, and data science
 - Strong programme of public engagement



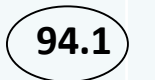
Research Council allocations



GCRF = funding for research into global challenges
Has to meet ODA rules

STFC allocation in detail

£M	2015-16	2016-17	2017-18	2018-19	2019-20	
		Allocated		Indicative		
Resource						
International Subscriptions	127.5	114.3	118.2	127.0	133.9	
UK National Facilities	107.4	107.7	108.2	109.1	110.1	
Core Programme	165.1	166.1	166.1	166.1	166.1	
GCRF			3.5	3.5	3.5	
Capital						
International Subscriptions	27.3	81.6	99.3	103.6	95.9	
UK National Facilities	48.5	45.4	38.8	45.2	46.1	
Core Programme	69.3	94.1	62.8	64.8	41.8	



Hartree
start-up

What it means for STFC

- Overall position
 - Partitions have been retained
 - Another 4 years of flat cash will obviously impact the volume of the programme
 - BIS worked with us behind the scenes to address specific issues
- Core
 - Resource: flat from 2016-17 onward
 - Capital: flat for first three years, reduced in final year
- International subscriptions
 - Resource: sufficient for existing and new commitments - SKA, ESS and XFEL
 - Capital: sufficient for existing and new commitments
- Facilities
 - Resource: inflation indexed but need for efficiencies and/or generate additional revenue in later years
 - Capital: inflation indexed



Science Board input

- Already planned a balance of programme exercise this year for the PPAN programme
- Exact form of this review to be discussed at April Science Board meeting
- Likely a sub-group of Science Board including appropriate non core members to get the correct expertise
- Will include consultation with community
 - [Probably via Advisory Panels](#)
- Not same process as in the previous programmatic reviews, we may well wish to ask more targeted questions



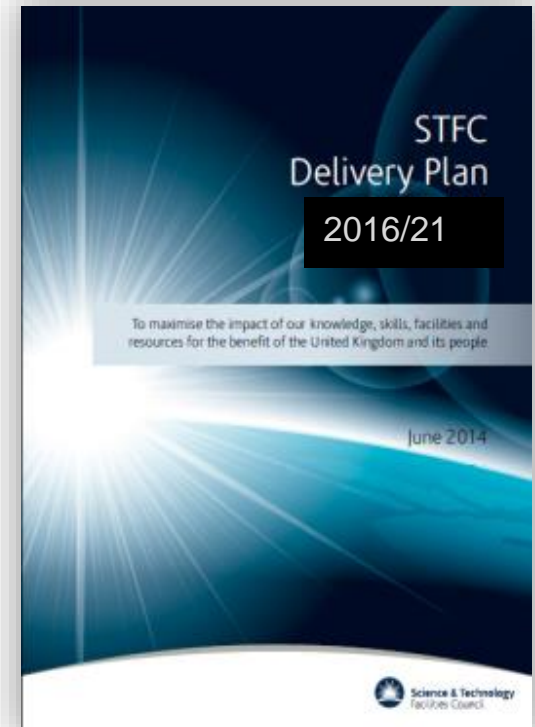
Grand Challenge Research Fund

- £3.5m p.a. allocated to STFC - will be managed by our Programmes Directorate
 - Needs to fund ODA compliant activities
- £700m of GCRF yet to be allocated until 2021 with £38m for 2017/18 alone
 - Also (separately) there will be an extension and significant uplift in the Newton Fund
- Programme still being designed
- Seems likely to be a single central pot held in RCUK with funding flowing direct to researchers rather than via STFC
- Call(s) likely later in 2016 for spend to start in 2017/18



What next?

- Engagement with BIS and RCs on Large Facilities
- Community meetings from end of March
 - Particle Physics IOP meeting 23/3
 - Nuclear Physics IOP meeting 31/3
 - RAS Astronomy forum 7/4
 - Particle Beams IOP meeting 8/4
- STFC Staff Forums from 11 April
- Starting to work up our Delivery Plan – publication was initially suggested for mid-April
 - Impossible to describe programme details on this timescale so considering longer
- Finalise our Corporate Strategy – publication in July



Nurse Review

Key recommendation

- New NDPB provisionally called Research UK
 - To contain all 7 research councils plus the QR part of HEFCE and probably Innovate UK
 - RUK would have one CEO who would be accounting officer for the whole science budget
- Nurse himself now has no special role in the process
- “Policy Reform” now moved to the top of the agenda in BIS but lots of competing agendas coming into play
- High-level legislation likely to be initiated this year
 - Will appear in the Queen’s Speech with White Paper following soon after
 - RUK “organisational design” will take until 2018



How you can help

- Looking for members of our panels and advisory committees
- Still a lot of ODA money on the table
 - Newton Fund is doubling in size – separate money
 - Need to convince BIS (and/or RCUK) how HEPP/APP can contribute to ODA
 - Need to be cleverer in identifying ways to access this and other external income
- Engage on Research UK/Nurse:
 - Not likely any further formal consultation
 - Hopefully a lively debate
 - **Ideally stress need to properly support scientific infrastructure, international facilities and long term strategic research programmes**



...and just one more thing

Brexit



- CERN, ESRF, ILL, ESO, SKA and XFEL are all intergovernmental agreements, not part of the EU
 - ESS is an ERIC (an EU legal structure)
- STFC itself does not receive much EU H2020 funding (few €m/yr)
 - But of course many universities more dependent on e.g. ERC
- Biggest short term exposure to STFC is impact of £/€ on international subscriptions
- Biggest long term impact probably on ability to recruit

Discussion



Researchfish Submissions 2015/16

- A big thank you to all those who provided a submission
- Big improvement in submission rates & therefore confidence in data
 - STFC as a research organisation - 100% compliance
 - STFC as a funder - 97% compliance
 - Studentships (new for 2015/16) – 76% compliance with submissions non-mandatory
- Next Steps
 - Continuing to make system improvements – thanks for feedback
 - Full analytical report of the data, in depth case studies, interactive snapshots on the STFC website
 - Analysis of student achievements
 - Data will also be sent back to individual departments