



Science & Technology  
Facilities Council

# View from the United Kingdom

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# Science Priorities

- Aim to pursue projects that address key science questions and where we can have significant impact
1. Large Hadron Collider
    - ATLAS, CMS, LHCb and ALICE
    - Upgrades
  2. neutrino masses and mixing
    - T2K
    - R&D for neutrinoless double beta decay (superNEMO)



# Science Priorities

3. Astroparticle and non-accelerator physics
  - Gravitational waves – advanced LIGO
  - Dark matter – ZEPLIN 3 (and LUX-ZEPLIN?)
  - Neutron EDM experiment at ILL
  - CTA?
  - ...
- Underlying technological capabilities
  - Accelerator R&D – including MICE and ALICE (ERL)
  - Detector R&D



# Questions and Answers

Question:



Answer:





# Questions and Answers

Question:



Answer:

- There is clear UK community interest – but cannot assume any additional resources
  - Would the UK flavour physics community support – hypothetically at least – some redirection of effort from LHCb?



## UK funding situation

- The overall science budget has been protected in 2009-10, but we are still under significant internal financial pressures
  - We need to delay/reprofile some spending
  - Not in any position to make major new investments
  - Need to obtain maximum leverage from existing investments and modest new initiatives

Already clear that 2010-11 will be even more challenging

Also a national election in 2010

- Talk is now of spending cuts and tax increases
  - Goodbye Mr. Keynes, hello Mrs. Thatcher



- So why does a world in financial crisis need particle physicists or astronomers, or big expensive science projects or facilities?
- Weathering a global recession demands an innovative and scientifically trained workforce; our young people must be **inspired** to become part of that workforce.
- The interlinked challenges of the 21st century – energy, global climate, health and security concerns – demand scientific and technical **innovation**.



“In these tough economic times for our world we look to science to provide new solutions, new technologies, new opportunities to further our common goals”

– Rt Hon Gordon Brown, Prime Minister



# A new vision for new times

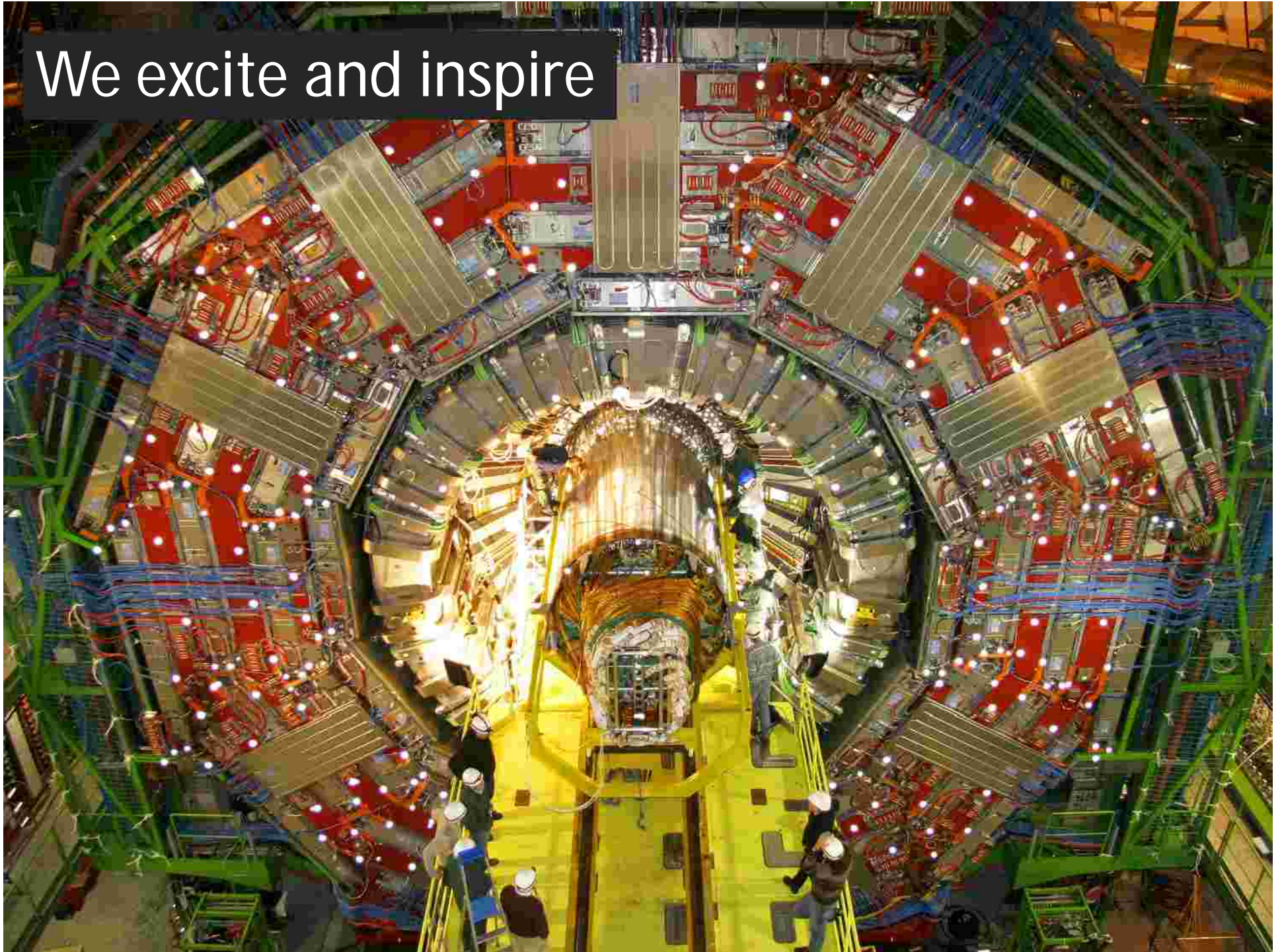
Impact through inspiration and innovation

John Womersley



**Science & Technology**  
Facilities Council

We excite and inspire





- The US Census Bureau has estimated that each science PhD is worth an additional **\$2.2M** to the economy; STFC supports over **250** PhD students every year.
- A survey of first year UK physics students in 2007 asked what subject areas had attracted them to study physics. **72%** responded with particle and quantum physics – this was the **single most influential** area.

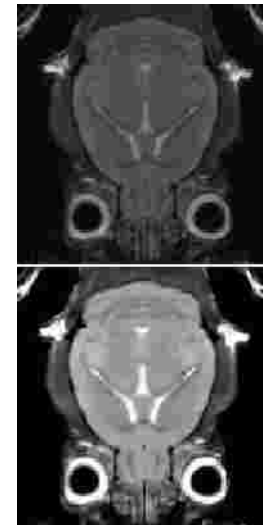
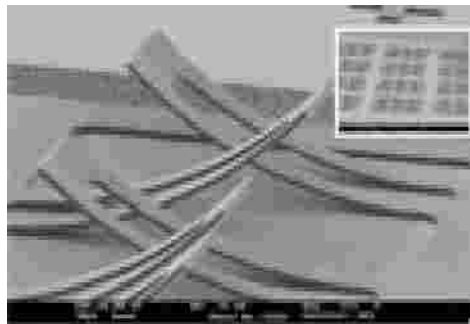


# Technology

The ambition of our projects does not just attract and inspire

- It also drives technological innovation

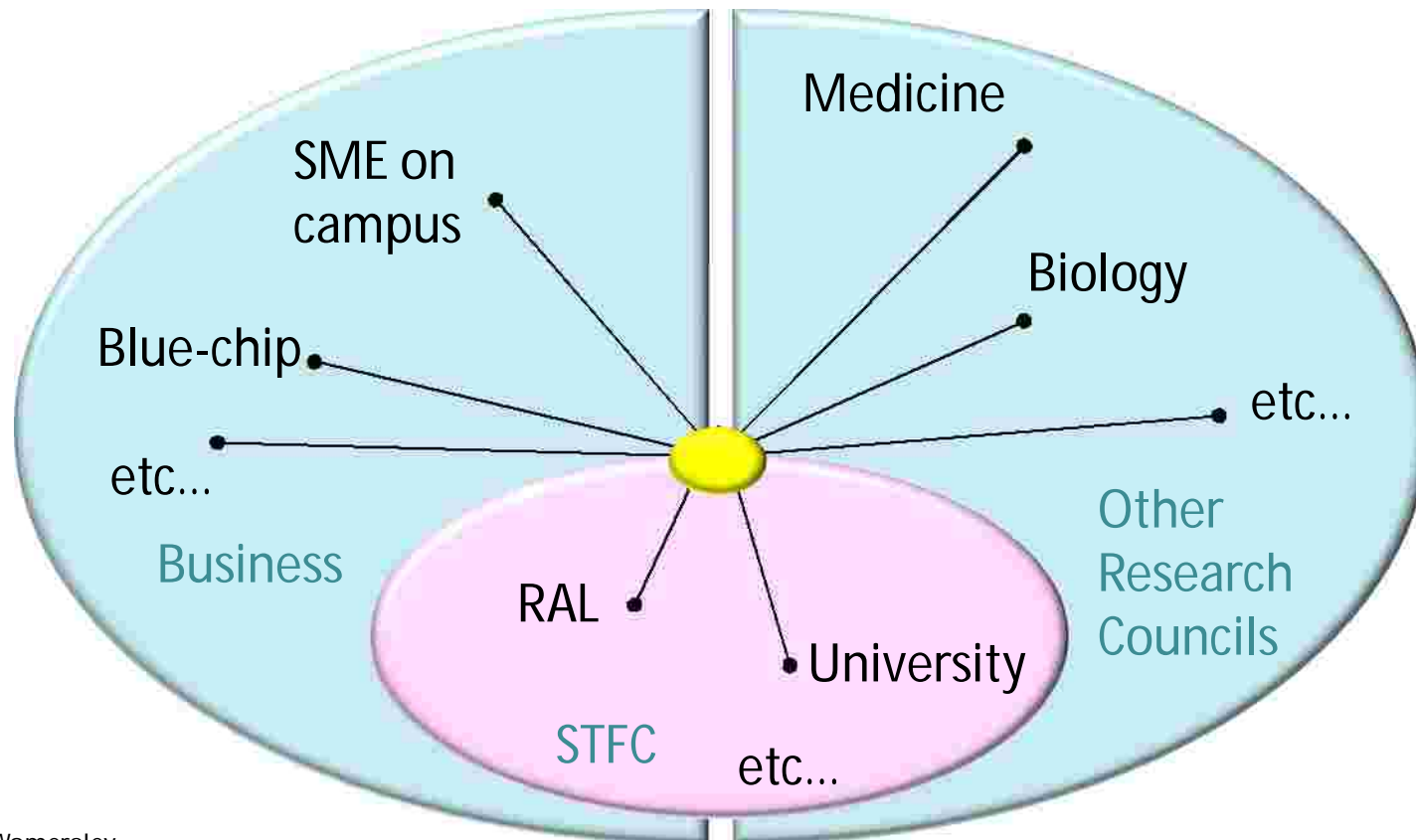
How do we make that technological innovation available to industry and society?





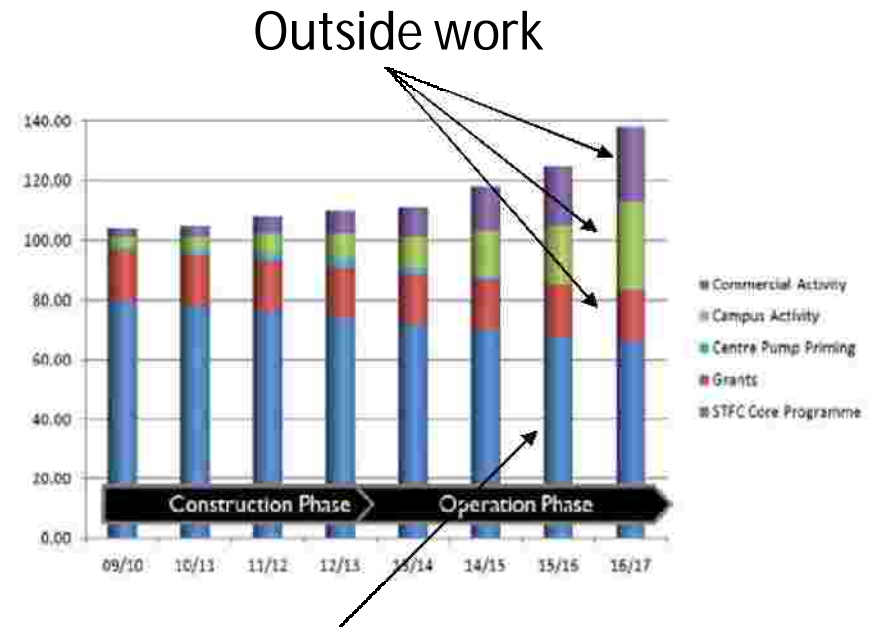
# STFC Gateway Centres

Focus our technology competencies more on an  
**outward facing collaborative role**





# Detector Systems Gateway Centre



Core programme

Capital funding earmarked by government

Now developing strategic plan and business case



## Conclusions

- Finances will be tough for the next few years
- Understanding this, Particle physics must –
  - Show we can set clear priorities
  - Present ourselves as being part of the solution to hard economic times
- “Impact through inspiration and innovation”
  - Attract and train young people
  - Outward facing role for technology