



Science and  
Technology  
Facilities Council

# Impact in GridPP6

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**GridPP**

UK Computing for Particle Physics

# Who Am I?

Ian Collier, STFC – Scientific Computing Department (SCD)

Not the GridPP Impact Officer

- Much of this is “borrowed” from Greg Corbett’s talk at GridPP 45 in October 2020.

Other hats

- Lead group (developing and) running Tier 1, EGI and IRIS services
- STFC Scientific Computing Public Engagement Committee Chair



Young Scientist of the Year Award

# What I'm going to talk about

- 1 What is Impact?
- 2 We are already creating Impact.
- 3 Highlighting and Improving our Impact.
- 4 What can you do?
  - Is this impact?



# What is Impact (for GridPP)?

Isn't just about delivering computing commitments to the LHC.

That's almost a given. That's what STFC gives GridPP money to do.

About the positive contributions beyond effective computing for particle physics.

Now a core consideration throughout STFC/UKRI's grant application process.

Helps demonstrate that we are the best people to be doing the work.

If we don't show our Impact, we may start to look less attractive.



# What is Impact to UKRI

What does UKRI consider to be its Impact:

- Improving understanding of ourselves and the world around us
- Improving lives and increasing prosperity
- Addressing industrial and societal challenges
- Relationships with their communities and partners

# We are already creating Impact

Improving understanding of ourselves and the world around us

- Facilitating non LHC work across STFC science and user base

Improving lives and increasing prosperity

- Outreach talks to schools
- Tours of facilities
- Work experience, Summer students, Year in Industry, etc
- Training workshops

Addressing industrial and societal challenges

- Engagement with industry, i.e. computing vendors
- Engagement with open source projects
- Staff to industry
- COVID-19 work

Relationships with their communities and partners

- Engagement with the broader research community
- IPv6 awards to Imperial College and QMUL

# Already creating Impact - IRIS

GridPP a key part of delivering:

- Resources
- Experience
  - Collaboration
  - Working in a federation – security, data management
- Technology
  - Many of the capabilities delivered in IRIS Digital Assets have their roots in WLCG
    - APEL, GOCDB, DIRAC, Rucio, CVMFS
    - Security policy and operations – GridPP/IRIS security team is an evolution of the GridPP team
  - INDIGO IAM from the team who develop STORM, ARGUS & other tools

# Already creating Impact - PE

- Vibrant program at STFC with Tier 1 staff playing key roles
  - Coding
    - Monty platform developed running Jupyter notebooks on SCD cloud for Work Experience python course
      - Now also at heart of Particle Physics department activities.
  - Tours – virtual and in person
  - Remote<sup>3</sup> – collaboration with SCD, Boulby, Edinburgh University and remote schools in Scotland
- WOMAD World of Physics has been a phenomenal success
  - Bringing physics workshops and labs to a world music festival in the Wiltshire countryside
  - Returning after a pandemic induced hiatus
  - Supported by CERN, STFC and organised in the UK by Roger Jones



# Already creating Impact – Security at STFC

Subject of intense attention and scrutiny over the last year

- Existing technical developments (Security Operations Centre developed by WLCG WG) came at exactly the right time to help solve an acute problem for STFC
- Experience of collaborative risk-based approach to cybersecurity management is proving invaluable in helping STFC and UKRI improve their stance in this area without sacrificing the ability to enable science.
- Long drawn upon SVG assessments and announcements.
- Tier 1 staff are centrally involved in both technical and organisational responses.
- (This is also a benefit for GridPP.)
- Talk to David if you'd like to know more.

# Highlighting and Improving our Impact

Need to gather case studies showcasing our impact

Feeding stories to SCD's Impact Team

- Sharing on social media

Telling stories elsewhere?

Seek new opportunities

- More of a link between GridPP and existing STFC public engagement activities?



Image credit: Oleg Gernulinskiy from Pixabay

## UK reaps significant rewards from CERN membership

In 1954, the UK was one of 12 founding members of CERN, the world's largest particle physics laboratory. CERN now hosts more than 13,000 researchers (including around 1,000 from the UK) from over 75 countries, working in pursuit of answers to fundamental questions about the nature of the Universe. UK membership of this world-famous science facility is managed by STFC.

A recent independent evaluation, which was able to monetise some of the benefits to the UK of membership of CERN, concludes that in the past decade the UK participation in CERN science has delivered a financial return close to investment and brought additional exceptional benefits in terms of science, society, and innovation. According to the authors of the independent evaluation, consultants Technopolis, membership of CERN is a prime example of the positive impacts that international collaboration can have on UK achievements and the development of the social, economic and diplomatic benefits. Highlights include:

### World-class research:

UK scientists and technologists continue to play major roles in breakthroughs made at CERN, where research spans more than 100 scientific fields including particle physics, nuclear physics, astrophysics, accelerator physics, computing, engineering and more. UK scientists were involved in three of the eight Nobel Prizes awarded for work at CERN, including the Nobel Prize in Physics for work on the Higgs boson in 2013. Between 2009 and 2018, some 20,275 UK papers cited CERN; of these, 25% were in the top 10% most-cited papers in their field globally. The Higgs boson publication, with over 8,000 citations, is one of the most highly cited papers not solely in particle physics, but in any subject.

### World-class innovation:

Life-changing breakthroughs in medical, environmental, technological and social spheres have been enabled through the major advancement in technology required for CERN experiments, all of which contribute to the UK's economy. They include the World Wide Web, detectors for PET scanners, touchscreens, fibre-optic sensors and supercomputing.

"Looking beyond the scientific, educational and economic benefits of the UK's membership of CERN, participating in some of the most well-known science experiments in the world enhances the UK public's appreciation of science; there is genuine public interest and excitement in CERN and the science that it supports." - STFC's Executive Chair, Professor Mark Thomson.



Image credit: CERN

# Future

Rose Cooper, who works in my group at RAL, will be coordinating

- Regular – monthly, quarterly? - meeting
  - to gather stories
  - organise telling them
  - Input to grant applications
- Report to PMB
- Let me or Rose know if you're interested in helping

# Is this impact? - Mt Impact

Did you do something or make something that didn't exist before?

- Then yes!

Did they have a positive interaction?

How many people interact with it?

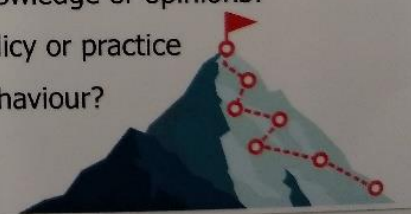
What has changed?

- Knowledge?
- Policy?
- Behaviour?

## Climbing Mount Impact

As you conquer your impact journey be sure to stop at the basecamps along the way to record your journey. Remember you don't need to reach the peak to have a great view.

1. How did the opportunity presented itself?
2. What did you make or do that didn't exist before?
3. How many people interacted with you/it and for how long?
4. Did they have a positive experience?
5. Has there been a change in knowledge or opinions?
6. Has there been a change in policy or practice?
7. Has there been a change in behaviour?





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# Questions?

To help with developing or telling GridPP  
Impact stories please contact:

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