

PPTAP: Research Technical Professionals

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What is an RTP?

- ❖ Research Technical Professionals (RTP) is a broader category, that includes:
 - Research Software Engineers and Research Infrastructure Engineers
 - Data Engineers and Data Scientists
 - Data Stewards
 - DevOps / ResOps Specialists and SysAdmins
 - And many other roles: research technicians, statisticians, A/V technologists, imaging technicians, archivists...
- ❖ A particular role doesn't have to be based in a particular location:
 - In a research group
 - At a central facility / laboratory
 - In University central IT or library
 - Contractors
- ❖ Consensus that they are a vital part of what's needed to do HEP research
 - But different opinions on where they should be located and what they should work on

A College of RSEs

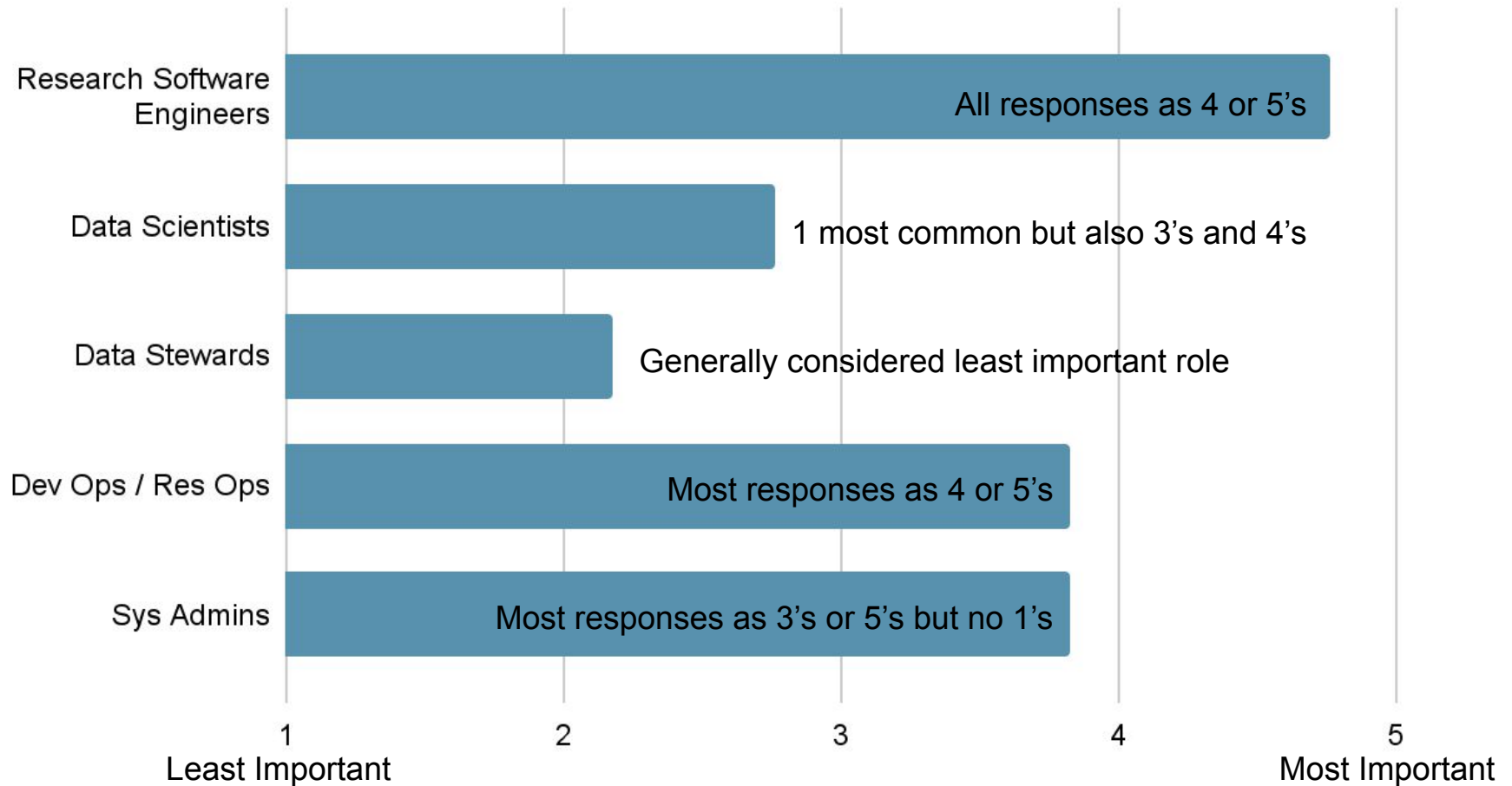
- ❖ The need for RSEs pervades all of STFC and they support
 - Underpinning computing infrastructure (GridPP, DiRAC, IRIS and SCD)
 - Projects in construction (SKA, LSST, EUCLID, DUNE, LHC upgrades)
 - Exploitation of facilities (DLS, ISIS, CLF)
 - Archives (WFAU and CASU) and Centres (Hartree)
 - Providing more robust, portable, sustainable and efficient code (Everywhere!)

- ❖ The skills RSEs embody are essential to:
 - Properly engineer code so that it can be maintained, extended and re-used
 - Make code as efficient as possible to maximise throughput and minimise physical infrastructure costs
 - Adapt code to run on modern architectures to take advantage of increasingly parallel architectures, which have become much harder to fully exploit
 - Facilitate the transfer of knowledge, code, and best-practice across different user groups

- ❖ Outline paper identified a chronic and acute problem, and a potential solution
 - Cohort of RSEs to be seconded to projects
 - Secondments could range from short duration support for small pieces of work to long term leadership positions
 - STFC RSE Fellowships to lead development of specific R&D and provide leadership in the RSE field
 - Improve career prospects, and improve code quality

PPTAP Survey: RTP Roles

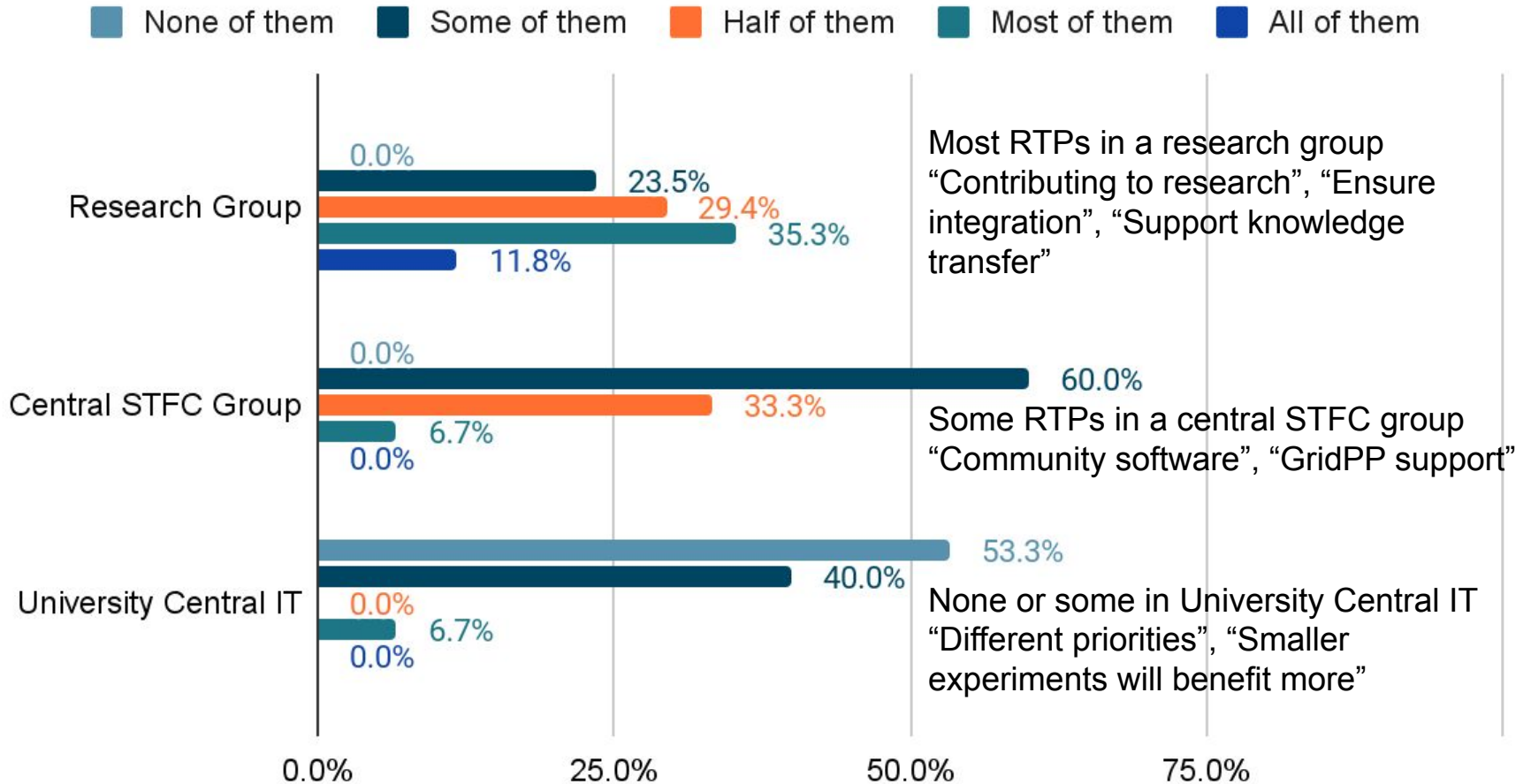
Importance of RTP roles in HEP



Difficult to estimate number of RTPs required, but consensus is more are needed than present number

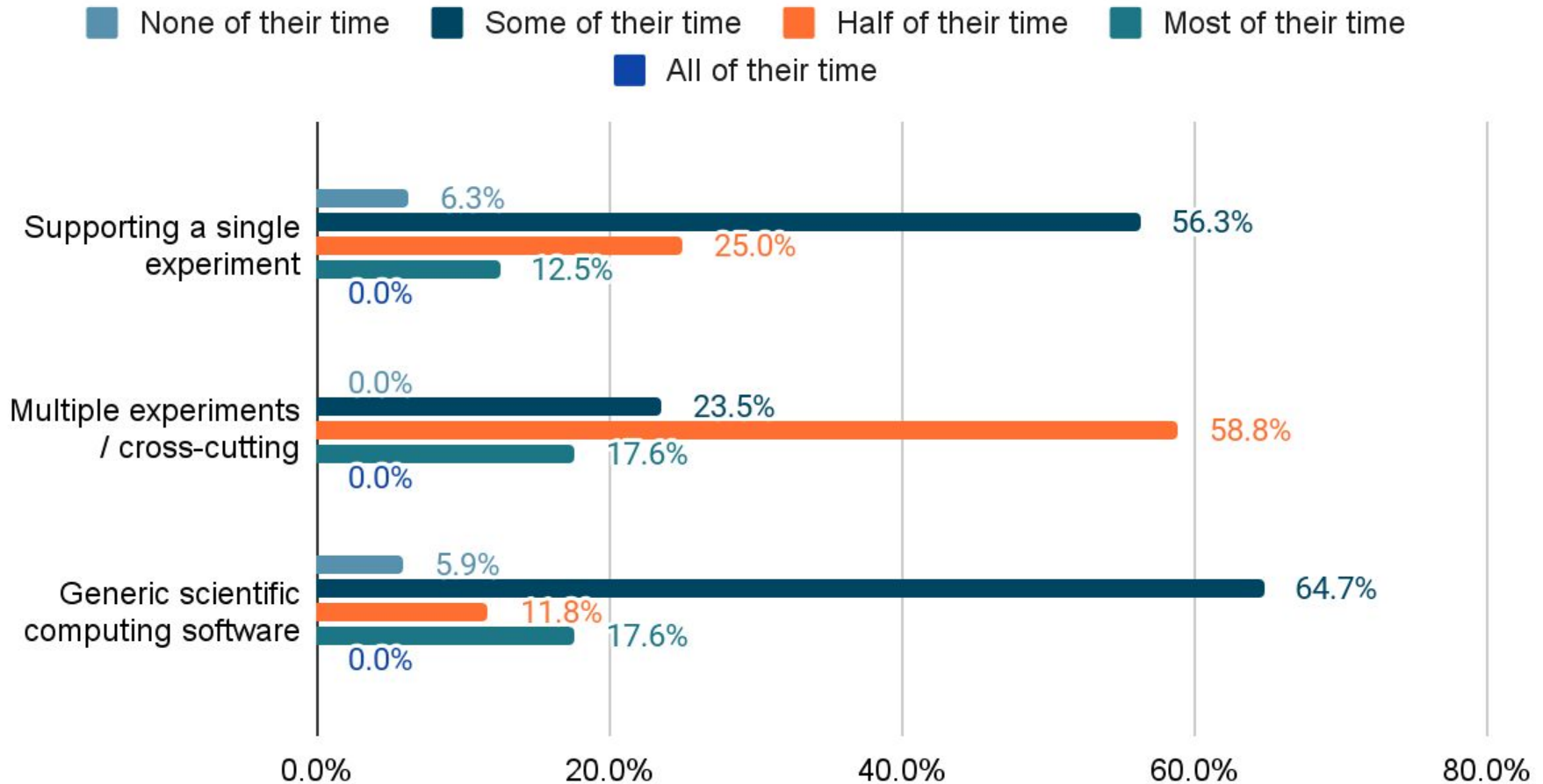
PPTAP Survey: RTP Location

RTP Location Preference



PPTAP Survey: RTP Activities

How should RTPs time be spread?



RTP's should spend about half their time supporting multiple experiments / cross-cutting work, with the other half split between supporting a particular experiment or working on generic scientific software. Dedicated time preferred.

RTPs

❖ Statement:

- Research Technical Professionals, including Research Software Engineers, play a vital role in HEP research, building, maintaining and improving the S&C e/s-infrastructure used in the field. They are essential to ensure S&C activities are carried out in a robust/professional manner, that s-infrastructure is sustainable/efficient/portable/robust, identify/exploit technological advances and facilitate the transfer of knowledge and best practice.
- The work they do to enable the field to reach its physics goal is essential, but there are not enough RTPs available to the field, their importance is not always officially recognised, their work is often not strategically planned and their effort is not always costed transparently.
- There needs to be a coordinated strategy for funding a sufficient number and diversity of RTPs across the field. There should a mixed approach in terms of where RTPs are based, the diversity of projects they work on and length of commitment to those projects.
- As well as enabling our physics goals to be met, investment in a sufficient number of RTPs will ultimately save money due to savings in compute cycles, storage and equipment costs, as a result of their work on improving efficiency.

RTPs

❖ Discussion points:

- What is the required number of RTPs to support an area?
 - Are any types of RTPs in particular in short supply?
- What is the correct balance for where RTPs should be based?
 - Research group / central STFC group / University central IT
- What is the correct balance for how their work should be allocated?
 - Supporting: a single experiment / multiple experiments or cross-cutting software / generic scientific computing and software?
 - What characterises the optimum length of assignment?
 - How should RTPs be assigned to projects/roles?
- How much mobility should there be between
 - Scientific and Technical Roles?
 - Institutions and Experiments?
- How often should RTPs move to optimise knowledge exchange?
- Are particular skill sets more valuable in particular locations / for particular deployments?

Backup