

Developing Career Pathways for RSEs and dRTPs: A UK Perspective

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Where are we now?

- Background: A short history of RSE in the UK
- RSE roles established at many institutions
- Widening recognition – digital Research Technical Professionals (dRTPs)

What challenges do we face?

- Ensuring effective career pathways across institutions
- Providing sustainable routes for technical skill development
- Building recognition of technical roles in research as a career choice

Where do we want to be?

- What does a flexible, sustainable structure for RSEs/dRTPs look like?
- How can we continue to develop the landscape to support this?



A short history of RSE in the UK

An unrecognised role

- Late 90s / early 2000s: Increasing number of researchers focus on software development / use of High Performance Computing to support research
- Still classed as Research Assistants / PDRAs
- Often not developing traditional research outputs to support academic career
- Skills in high demand – but roles often fixed-term and no career path!

The Research Software Engineer (RSE)

- The term was coined in a discussion group at the Software Sustainability Institute Collaborations Workshop in 2012
- This led to the emergence of RSE teams, and institutions creating RSE roles

* For further details, take a look at Simon Hettrick's article "A not-so-brief history of Research Software Engineers", SSI blog, August 2016. <https://www.software.ac.uk/blog/not-so-brief-history-research-software-engineers-0>

A short history of RSE in the UK

The growth of RSE teams

- First RSE team set up at UCL in London in 2012
- Further teams followed at other institutions over the coming years
- Now 40+ RSE teams in the UK and many internationally¹
- The largest RSE teams in UK universities now host 50+ RSEs
- Many teams continue to grow rapidly

The RSE Community

- Community underpins RSE and its growth (now >7,500 members on RSE Slack!)
- Annual conferences and workshops helping to share knowledge and build recognition

¹ <https://society-rse.org/community/rse-groups/>

Types and locations of RSE roles

RSE roles and structures

- Many institutions with RSE teams now have standardised job specs/structures, e.g.
 - RSE
 - Senior RSE
 - Principal RSE
 - Team Lead

Where are RSEs and RSE teams based?

- Central IT (institution level)
- Faculty or department level
- In individual research groups (embedded RSEs)



...but it's not just about software...

- Research across almost all domains is now increasingly digital
- Researchers don't just need support with software

Support is also needed with:

- Effective capture, analysis, management, archiving and security of **research data**
- Efficient and sustainable use of **research computing infrastructure / High-Performance Computing (HPC)**
- RSEs can often help, but they can't be experts across all areas
- Need an effective way to recognise people in all these roles



...introducing...

digital Research Technical Professionals (dRTPs)

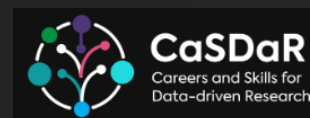
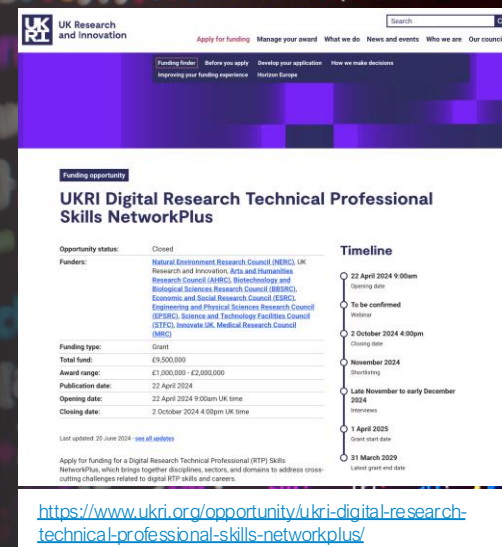
People who work with one or more of research software, research data and research computing infrastructure

- dRTP is a specialisation of “Research Technical Professional” (RTP), a term in use in the UK research community for a few years
- RTP represents a much wider group of people but has largely been used to recognise technicians, lab managers, etc.



Growing the UK dRTP landscape

- **UK Research and Innovation (EPSRC) funded a set of Strategic Technical Platforms starting early 2024**
 - £16m invested across 11 projects
 - STEP-UP is a London regional platform building community, skills and careers to support the growing demand for dRTPs
 - Placement scheme, champions, mentoring, training, events...
- **Several dRTP NetworkPlus projects started in 2025**
Each includes a “flexible fund” up to ~€1.1m to support dRTP activities



STEP UP A Strategic TEchnical Platform for University technical Professionals

- Builds on the Research Software London regional RSE community
- Funded under UKRI-EPSRC's Strategic Technical Platforms call 4 years: Jan 2024 – Dec 2027 – ~£2m (100% FEC)
- A regional consortium – partner institutions:
 - Imperial (lead)
 - UCL
 - King's College London
 - University of Westminster
- Pioneered “digital Research Technical Professionals” (dRTP) concept
- **Building the Community**
- **Training and Skills**
- **Career Pathways, Secondments and Mentoring**
- **Policy, Strategy, Awareness and Recognition**

[STEP-UP](#) is one of 11 Strategic Technical Platform projects [announced by EPSRC](#) in March 2024

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Career Pathways and Skills for RSEs/dRTPs

Finding a space for technical roles

Challenge: Traditional institutional structures

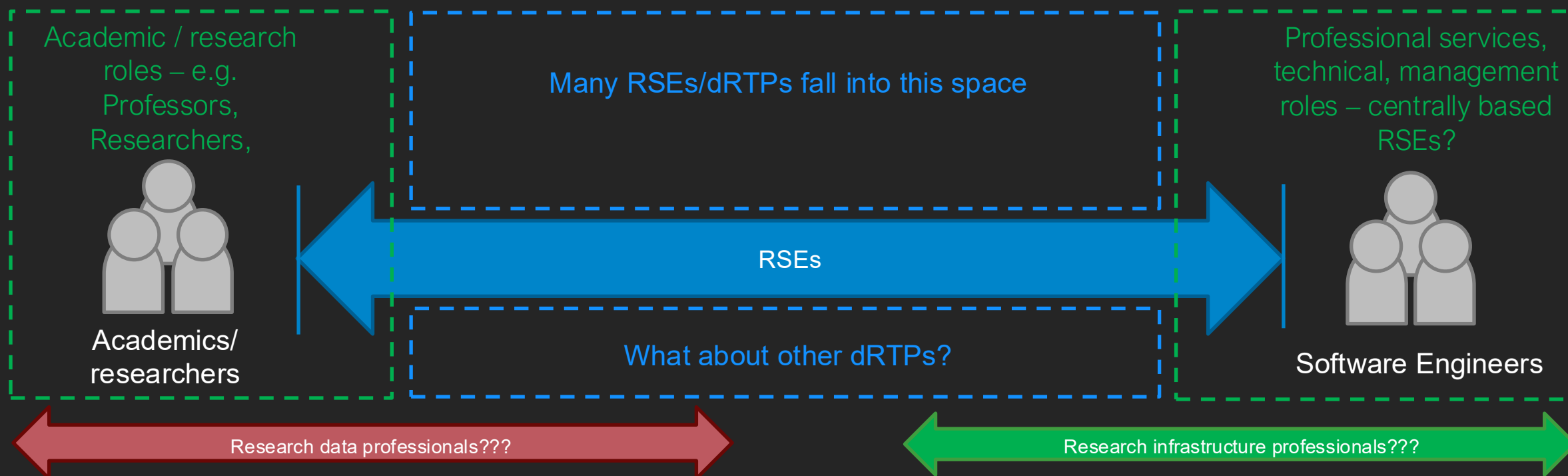
Academic vs. non-academic

- Institutions have traditionally had two classes of role
 - Academic / research roles
 - Non-academic / non-research service roles
- Increasing recognition for teaching-focused roles
- RSE roles often class as non-academic / service roles
- Is central IT the right place for RSE roles?
- Need connection to research and recognition

Where do RSE and other dRTP roles fit?

Where do dRTP roles fit into institutional structures?

- RSE roles traditionally quite close to research, but roles can differ significantly
- What about research data and HPC roles?



Challenge: Developing dRTP skills

Sustainable, effective career pathways need to be underpinned by a robust skills development infrastructure

- Significant free and open training material available
- Provision not uniform across dRTP areas
- Materials can be difficult to discover
- Difficult to know what to learn, in what order

Research Software Engineering	Research Data	Research Computing Infrastructure / HPC
Advanced level	Advanced level	Advanced level
Intermediate level	Intermediate level	Intermediate level
Foundation level	Foundation level	Foundation level

A skills matrix for dRTP training

Challenge: Developing dRTP skills



→ STEP-UP has undertaken a training landscape mapping exercise

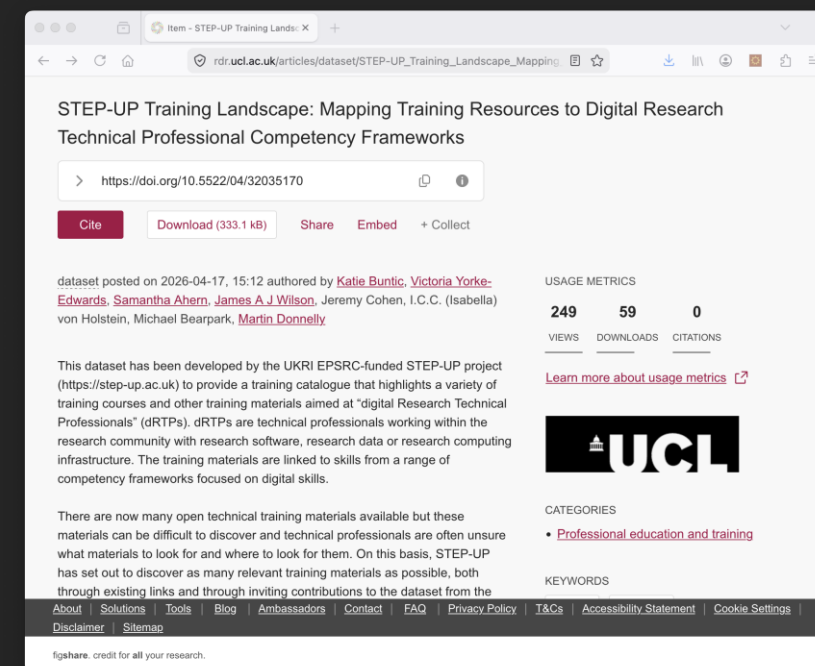
→ Look for existing training material

→ Look at competency frameworks

→ Map available training to these frameworks

→ Undertake a gap analysis to see what we're missing!

New RSE/dRTP competency frameworks such as DIRECT are key to helping to understand training needs - <https://directframework.com/>



<https://doi.org/10.5522/04/32035170>



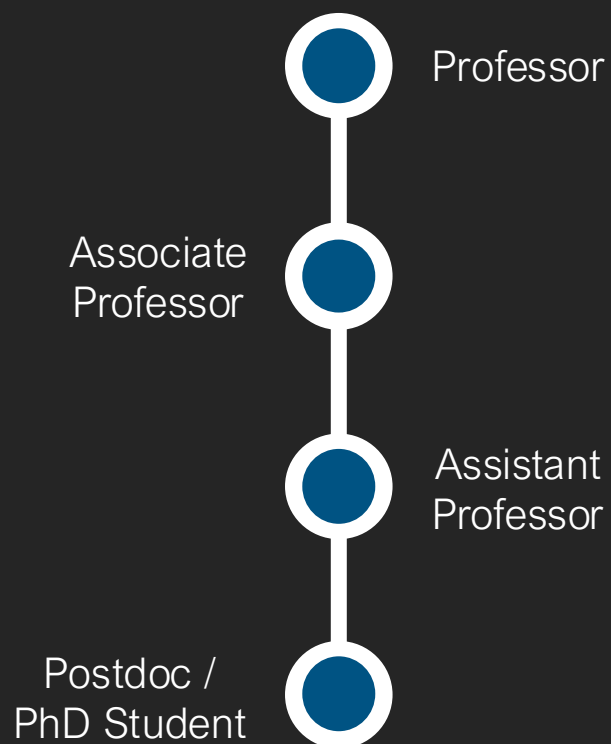
Current Activities and Future Aims

Building effective long-term support for dRTPs

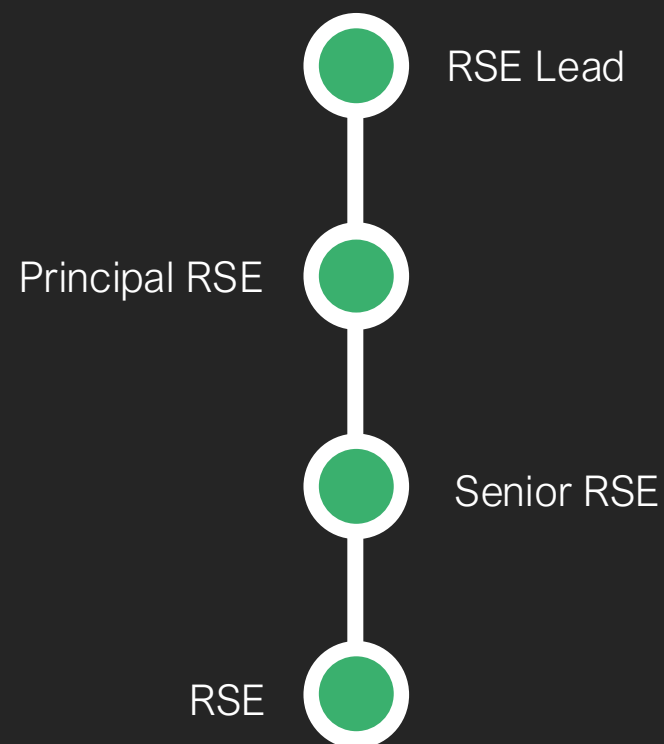
Sustainable career paths – parity of roles/recognition

→ Does a structure like this work universally? Is it implementable/sustainable?

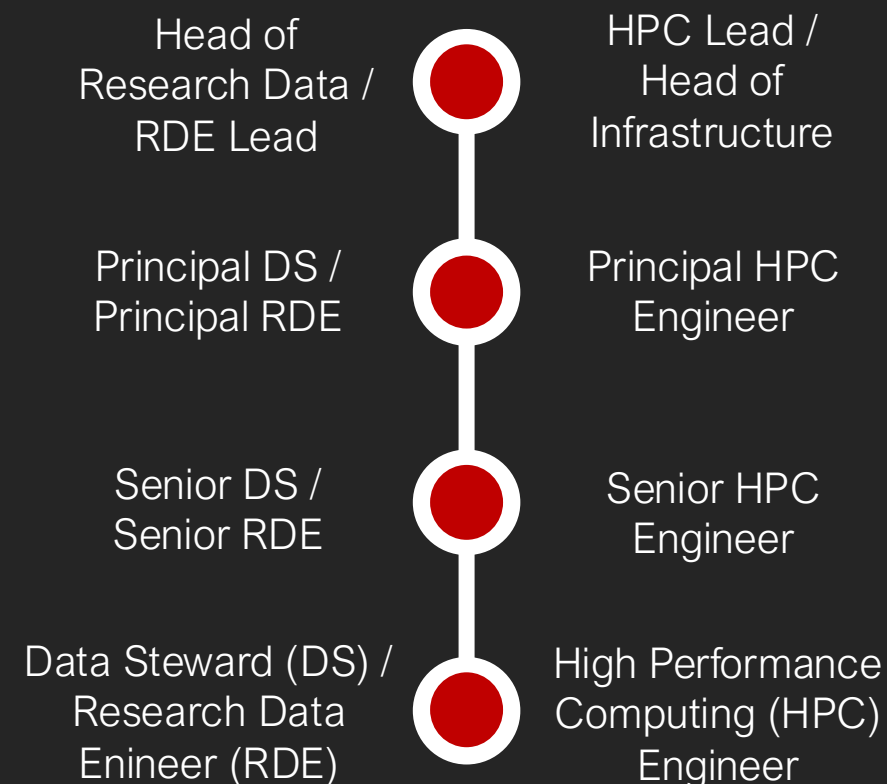
Academic Roles



RSE Roles



Other dRTP Roles



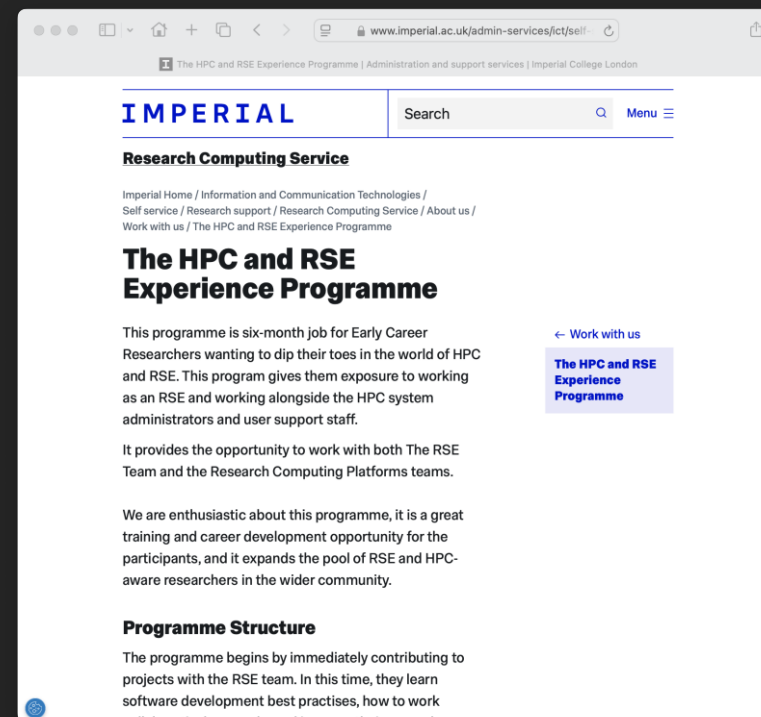
Supporting new routes into technical roles

Providing the opportunities

- **Apprenticeships** – providing career development routes directly from school
- **Internships / experience programmes** – Undergrad / postgrad
- **Digital Research Technical Champions** – PhD students
- Open, findable and accessible **training**

Example: Imperial HPC and RSE Experience Programme

- **A 6-month position within Imperial's Research Computing Service** (teams covering RSE, HPC infrastructure, research applications and more)
- A paid role within the team
- A chance to gain hands-on experience across different dRTP areas
- A great opportunity to explore the potential of a dRTP career



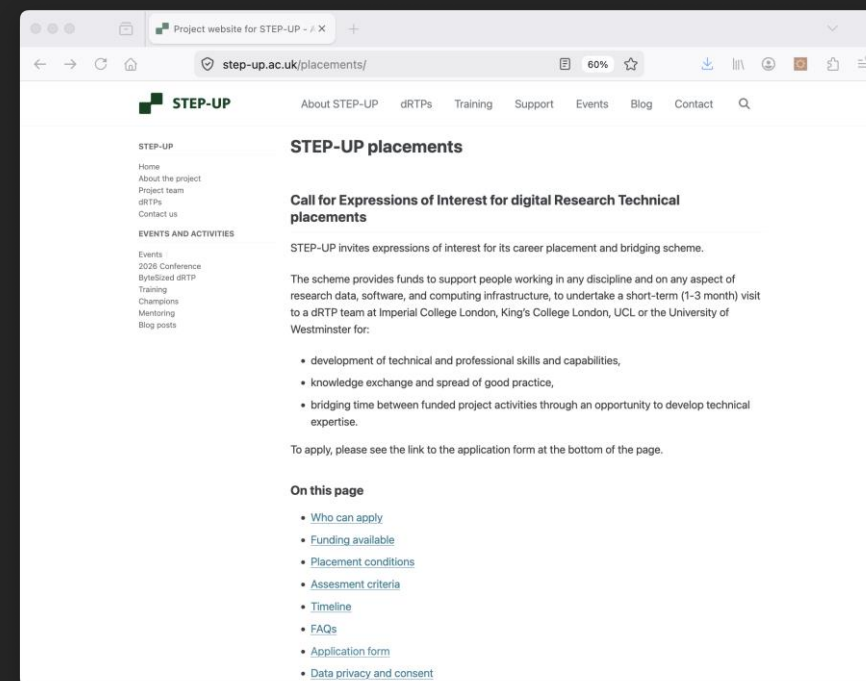
Find out more at:

https://www.imperial.ac.uk/admin-services/ict/self-service/research-support/rcs/about/jobs/hpc_rse_experience_programme/



Example: STEP-UP Placement and Bridging Scheme

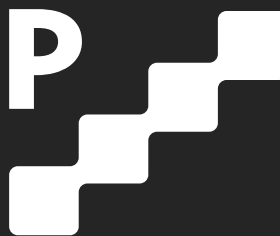
- **Funding for short-term (generally 1-3 month) placements or bridging of fixed-term staff**
- Placements hosted within a team at a STEP-UP project partner
- Opportunity to move within an institution or between partner institutions
- New option to apply from outside of a STEP-UP institution for a placement in one of the partner institution's dRTP teams
- 1 placement completed, 3 more being set up with additional opportunities later in 2026/27



Example: Digital Research Technical Champions

- **Champions are PhD students who work within their department to raise awareness of good digital research practices**
- Run events, training courses, clinic sessions, etc.
- Champions are paid - given a pool of hours to use flexibly across the duration of the programme
- Two pilot cohorts at Imperial in 2023 / 2024 – Research Software Champions
- Widened the scheme from software to also include data and HPC under STEP-UP
 - Cohort 1 25/26: 25 Champions across 4 London universities
 - Cohort 2 26/27: Recruitment in progress

STEP UP



Find out more at:

<https://step-up.ac.uk/champions-scheme/>



STEP-UP Champions cohort 1 kick-off meeting, Imperial College, October 2025

Summary

- The emergence of the digital Research Technical Professional (dRTP) term is helping to build recognition beyond RSE
- People in these roles are vital to the future of research
- Career pathways and skills infrastructures need to develop
- Community activities and career/skills development initiatives are helping to underpin the future of dRTP roles
- Institutional support still behind in many cases, things are improving but we still have lots to do!...



Thank you

Questions?

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