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UKRI's Approach to supporting Digital Research Infrastructure (DRI) skills

Dr Michael Ball, Head of Research Infrastructure, BBSRC and UKRI Digital Research Infrastructure Committee

Digital Research Infrastructure

- Long term planning
- Driven by community requirements
- Environmental sustainability
- Partnership with government and industry
- Five cross-cutting themes

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Turning data into knowledge

Catalysing breakthroughs and accelerating innovation and productivity

A foundation to enable UK researchers and innovators to harness the full power of modern digital platforms, tools, techniques and skills:

- A breadth and depth of capabilities and skills
- Seamless connection of communities to data, tools and techniques
- Accelerating productivity by enabling secure and easy access
- A step change in computational power
- Fostering collaboration across disciplines
- New capabilities and new communities of practice
- Environmentally sustainable

UKRI National Digital Research Infrastructure

Data services	Large-scale computing	Securing Trust in Data-intensive Research	Building Skills and Career Pathways	Foundational Tools and Techniques
■ Data infrastructure ■ High throughput computing ■ Sustainable platforms and technologies	■ Super computing ■ Cloud services	■ Trusted Research Environments	■ Skilled DRI professionals ■ Training ■ Career paths	■ Networks ■ AAAI ■ Best practice ■ Knowledge Transfer ■ Policy ■ Software

The inter-dependent themes of the digital ecosystem

Guiding principles

UKRI will:

- Be driven by the ambition of our diverse communities; we will provide a federated system of DRI that provides both a breadth and depth of capabilities and skills
- Build a DRI to catalyse breakthroughs and accelerate innovation
- Accelerate productivity by enabling consistent, appropriate, and secure access through common access procedures and authorisation technologies
- Understand the environmental impacts of our investments and make changes to improve our sustainability that contribute to the UK’s commitment to Net Zero
- Work with partners to maximise the value from our investments
- Think and plan on a long-term horizon to evolve the UKRI’s DRI in the context of other government investments and strategies in this space

Placing a premium on people

- People run our services
- People write our software
- People work with our university, institutes, cultural sector, and industrial base
- People help make sense of the data and create knowledge

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Theme 4: Skills and Career Pathways

- To fully exploit the opportunities presented by DRI, the breadth and depth of skills support needs to be increased.
- This requires a new approach to engaging, developing and retaining expertise, as well as supporting rewarding, sustainable and flexible career pathways

‘DRI Professionals’

- An umbrella term that encompasses a wide range of roles and careers
- Although these roles are in demand across the whole of research and innovation, within some communities there are particularly urgent needs

- Some DRI professional roles:
  - Systems architects
  - System administrators
  - Programmers
  - Developers
  - Research Software Engineers (RSEs)
  - Information security professionals
  - Research operations engineers (ResOps)

…and many others!

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Objective: Grow the numbers of DRI professionals

- **Training:** Ensure that professionals have access to, and funding for, training and professional development
- **Community Building:** Ensuring effective mechanisms for networking and community building for the benefit of all UK R&D.
- **Career paths and professional development:** Build recognised, attractive career paths, across all career stages.

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Objective: Increase retention of DRI skills within the research and innovation ecosystem

- **Influence:** UKRI occupies a unique position in the landscape - work with Universities, Industry, Policy makers and the Learned Societies to ensure that appropriate training mechanisms, career pathways etc are created.
- **Recognition**: Ensuring these careers are recognised through the creation of local and national recognised hubs or centres of excellence.
- **Incentivise best practice:** Building on our Influence and recognition to reward best practice where it is happening to help further and broaden this support for DRI professionals, and ensure it becomes the norm and not the exception.

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UKRI's Role

- As a funder……support training and recognise the contributions of DRI professionals
- As an employer…..support career pathways within our own centres/institutes/units
- As a partner…..develop and implement best practices
- As a convenor....support communities and help development of networks
- As a champion….continue to advocate for recognition of DRI professional roles, and for reward and recognition for research outputs such as data and software

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A phased approach

- Phase 1 (2021/22) – **We have embarked on the first phase of developing a national DRI**, with £17 million invested in:
  - A portfolio of interventions to enhance our existing digital infrastructures
  - Initial investments in priority areas including Net Zero and Trusted Research Environments
  - Scoping activities to assess the communities' data and computing requirements in more detail
- Phase 2 and 3 (2022+) – Subject to funding, longer term allocations will allow us to expand capacity and capability appropriately and efficiently to meet community requirements, to **catalyse breakthroughs, and accelerate innovation and productivity**

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Thank you

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https://www.ukri.org/our-work/creating-world-class-research-and-innovation-infrastructure/digital-research-infrastructure/