



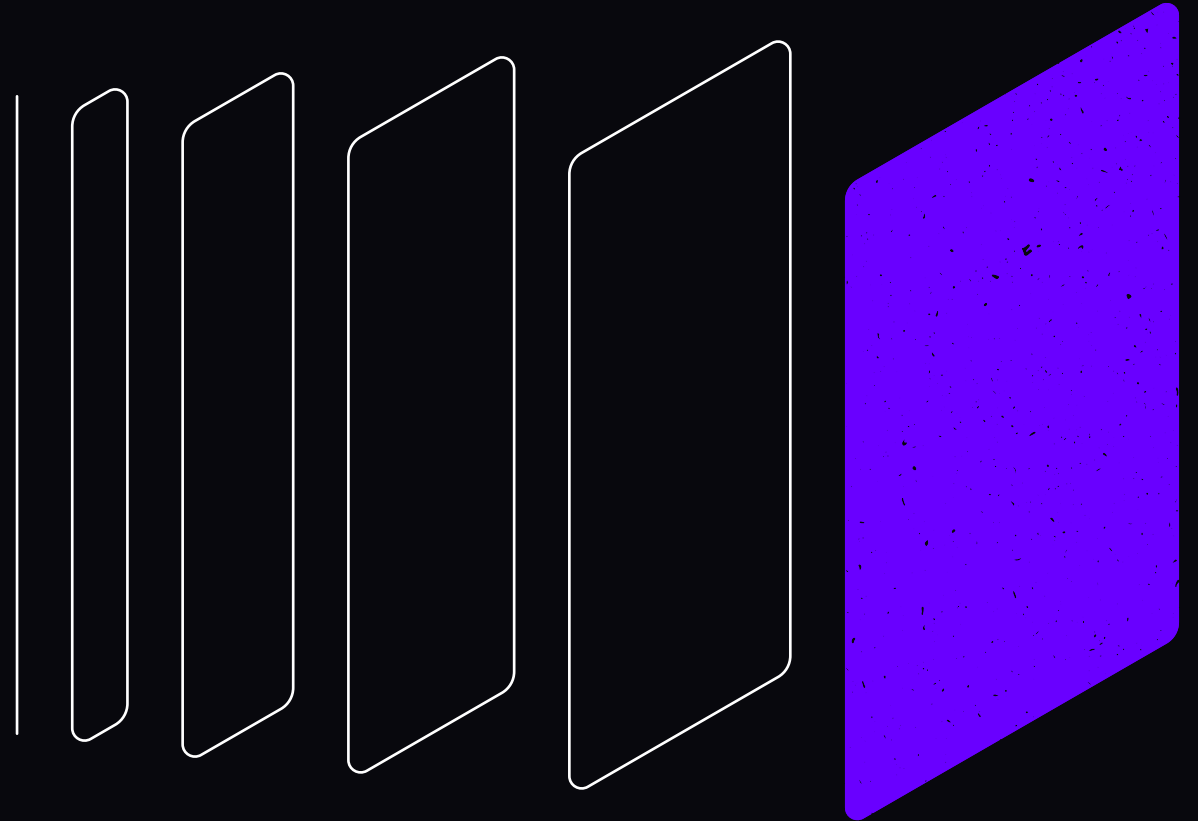
THE UNIVERSITY *of* EDINBURGH
Library

Looking Back, Looking Forward: Research Data Service at University of Edinburgh

RDM Forum

Viseu, Portugal

21.11.2024



Robin Rice

Data Librarian and Head of Research Data Support
Library & University Collections

Contextual background, Research Data Service



University of Edinburgh as research institution

- Founded 1583
- 49,740 students (40% are Postgrads)
- 50% students international
- 9,102 academic staff (17,752 total staff)
- Research income: £332 million (2021-22 year)
- Mission: the creation, dissemination and curation of knowledge
- 21 schools in 3 colleges:
 - Arts, Humanities & Social Sciences
 - Medicine & Veterinary Medicine
 - Science & Engineering

Figures from July, 2023



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Data Driven Innovation (2018-2028)

About the Data-Driven Innovation initiative



From food production and climate change, to exploring Space and genetically-tailored healthcare, the Data-Driven Innovation (DDI) initiative is a cluster of innovation hubs that bring academic disciplines together to delve into some of the world's most pressing challenges – using data to innovate.

- **City Region Deal** aim is to work with partners to establish the region as the **data capital of Europe**, attracting investment, fuelling entrepreneurship and delivering inclusive growth.
- The University of Edinburgh has exceeded a key government objective to **drive innovation by supporting businesses** secure more than £200 million of investments – four times the initial target.
- **Hubs** include Bayes Institute, Edinburgh Futures Institute, Usher Institute, Easter Bush, National Robotarium and **Edinburgh International Data Facility**.

Library Research Support Section: Led by Head, LRS, Dominic Tate

- Scholarly Communications Team, Theo Andrew, Manager
- Research Information Systems Team, Damon Querry, Manager
- Research Data Support Team / Research Data Service (Robin, Head/Service Owner)
- Open Research Team led by Kerry Miller, Open Research Coordinator

Times Higher Education Awards,
Shortlisted for Best Library Team:
Prizewinners to be revealed 28 November, 2024



Research Data Service is delivered by IT and Library together

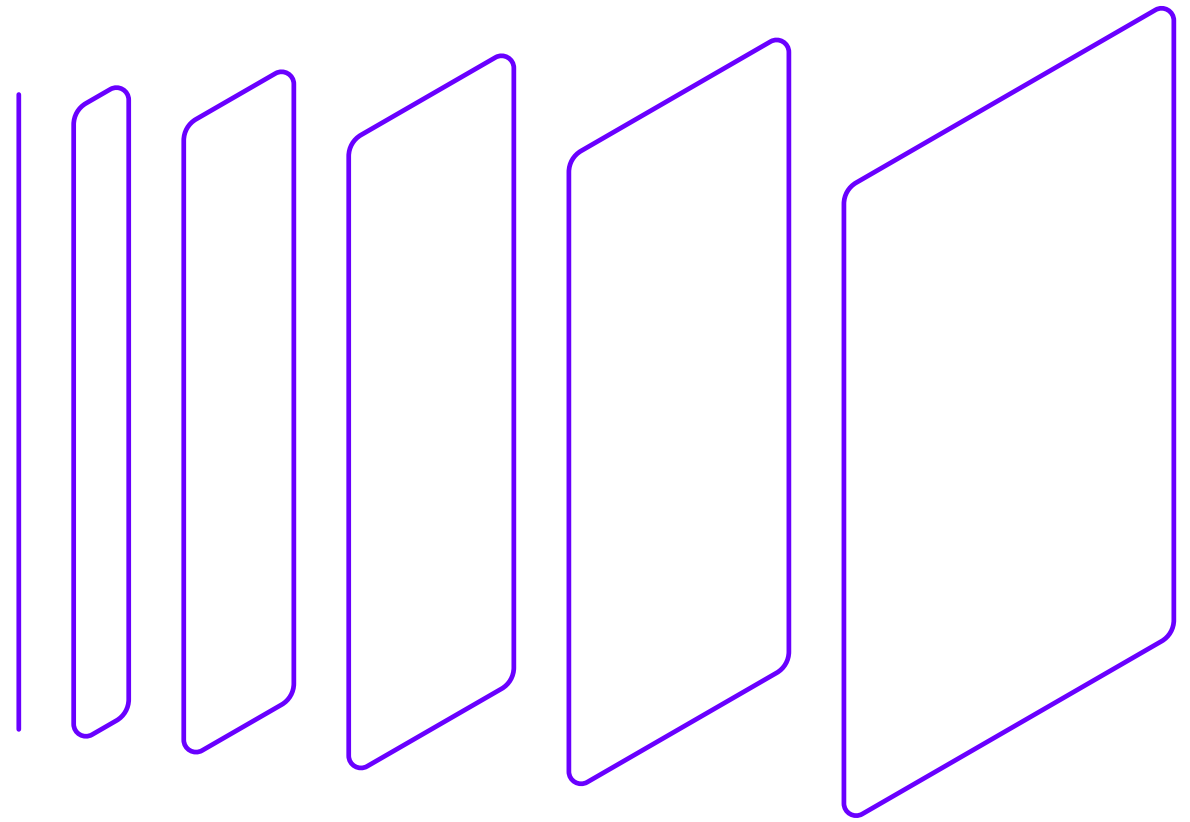
Teams involved with delivery of service:

- **Research Data Support** (my team)
 - Front face of the service – 2nd line support team
 - Outreach and training
 - Digital curation and data archiving
- **Research Services** (in IT Infrastructure)
 - Operate data centre hardware & systems
 - Provide HPC consultation to users
 - Two people also do outreach
- **Digital Library** (software developers)
 - Develop software, maintain platform, fix bugs (DataShare & DataVault)
 - Interpret user requirements in cooperation with our team (fortnightly meetings)



Argyle House © CoStar

Teamwork, team play



Factors in the successful development of the Research Data Service (2008-2018)



(1) Gather together experts with a desire to make change. In 2008, the “RDM Action Group” began brainstorming.

- Changemakers from four different units from across Information Services (IT + Library) were involved.
- **Myself** and a colleague from the Data Library (now Research Data Support), **Stuart Macdonald**, brought understanding of researcher behaviour and knowledge of data handling.
- **Tony Weir**, Computing Officer from the Unix Group of the Computing Service (now Director, IT Infrastructure) brought an understanding of creating bespoke research environments for principal investigators (PIs).
- **Stuart Lewis**, then Head of Digital Library, brought knowledge of building repositories and inventing software apps.



Stock image: colleagues collaborating.

(2) Get a high level champion to set up governance structures (for academic buy-in)

Professor Jeff Haywood, CIO, Vice Principal Knowledge Management and Librarian to the University (formerly a PI in the School of Education) was our champion. He set up two task forces in 2010:

- A [Research Data Policy group](#) led by the Library Director, Sheila Cannell, tasked with devising the first university RDM Policy. This was eventually written by Chris Rusbridge (2011).
- A [Research Data Storage group](#) led by Professor Peter Clarke, School of Physics. The outcome was DataStore, a massive storage array purchased and designed to meet current and future needs of all university researchers, rolled out in 2012.
- The latter evolved into a permanent [Research Data Service Steering Group](#) from 2012 onwards, with Professor Andrew Millar (School of BioSciences) the most recent Chair and RDM champion.



(3) Leverage the current drivers to make your business case & key messages to users

- National, European and international funders' policies
- Publishers' mandates
- Legislation, such as GDPR
- Publicity around research misconduct
- Research culture (REF in UK)
- Evidence of impact for open science behaviours
- Evidence of local pain points (such as storage space)



(4) Ensure your policy informs your service and your service supports your policy.

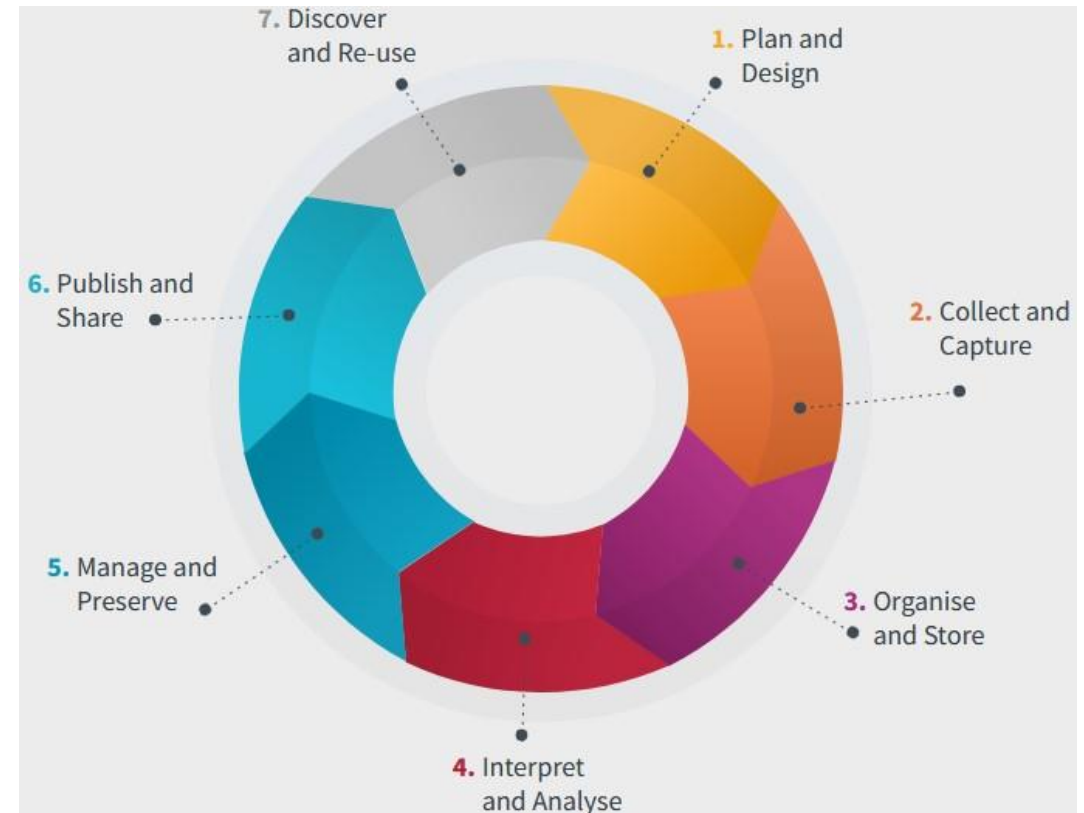
- The first UoE RDM Policy (2011) was labelled “**aspirational**” because they knew the services and support did not fully exist to enforce implementation. But the existence of the policy shored up **resources to develop the services** (in a certain direction). Services were named in the second version, though academics can choose for themselves.
- Be careful what you **mandate** vs recommended actions when writing the policy. It could be ignored if it overreaches current realities.
- The **revised policy** (2021-22) was able to mandate more, and also give more pointers to proven university services. It also stipulates the policy must be reviewed at least every 5 years.
- An element of **choice** helps to lend **credibility** to the policy. We want researchers to practice good RDM, not to be forced to use our services in particular.



(5) Add functions, scale the service up (as you are able, and can demonstrate demand for investment)

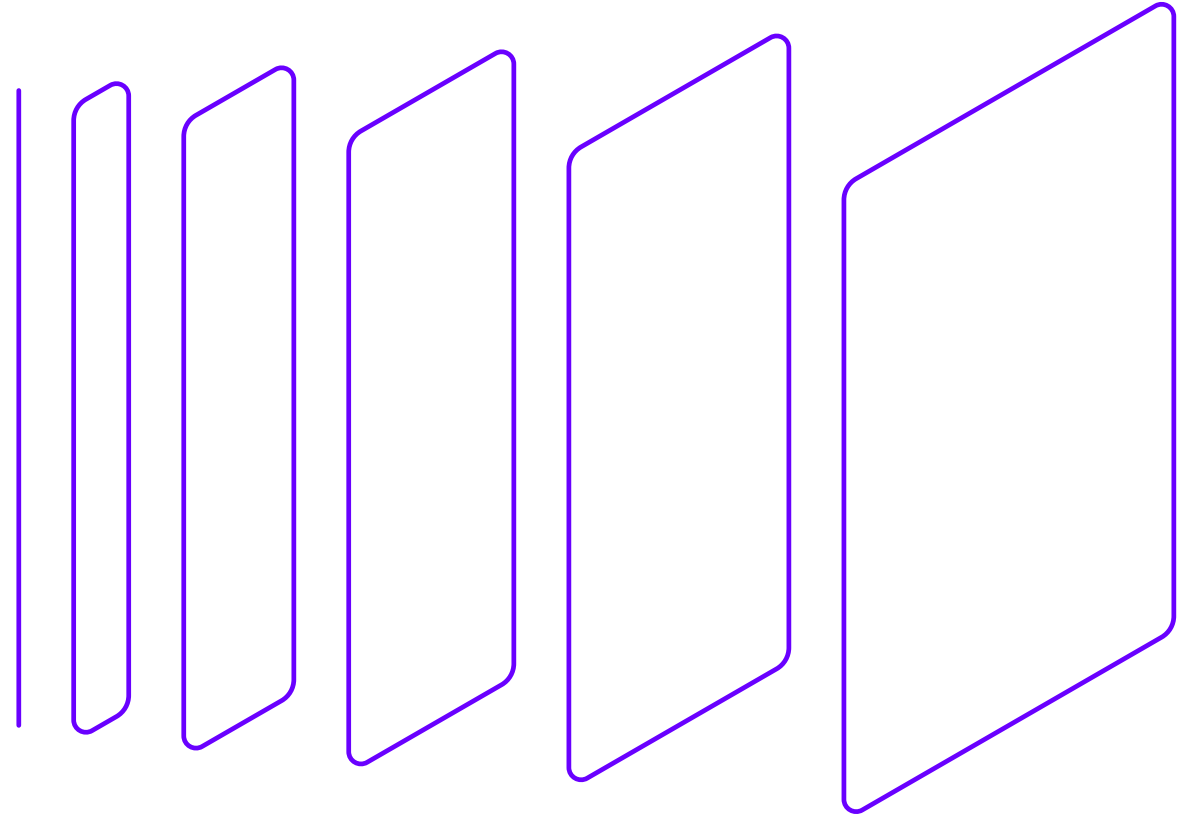
- From the basis of the original 3 services ([DataStore](#), [DataShare](#) and [DataVault](#)), more were added between 2012-2016.
- It is useful to [map services](#) onto researcher functions by using a research or data [lifecycle](#). This can also help identify service [gaps](#) from a user-centred view.
- In 2016, the RDM ‘umbrella programme’ was declared by the CIO to be a [major service](#) of Information Services, the Research Data Service. A service owner was appointed.
- Since then we have focused largely on [increasing service uptake](#), and making [systems more robust](#) (and securing adequate funding for resource to [staff](#) the service).
- We have also added third party [Open Science tools](#) to the portfolio.

UoE Digital Research Services Lifecycle Model



6) Make the services interoperable

- Digital Research Services (from 2018)
- Library Research Support
- Systems interoperability:
DataStore, DataSync, DataShare,
DataVault, Pure (data asset register)



Current implementation of the Research Data Service

- RDM Policy highlights
- Service portfolio



University's RDM Policy (January, 2022)



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Policy

- Enforces commitment to research integrity, data protection and information security
- Requires DMPs for all research projects
- Mandates FAIR data sharing in repositories
- Articulates clear responsibilities of the researcher and of the institution

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Sustainable Economies Law Centre, flickr

What is the Research Data Service?

We deliver and advise upon a **range of tools and support** to help you before, during and after your research project.



BEFORE

create a data
management
plan

DURING

working with
data

AFTER

share and
archive your
data

TRAINING
&
SUPPORT

From our home page -

Before you begin



Create a data management plan to ensure that your research proposal is as strong as it can be.

Research in progress



Tools to help store, manage, protect and collaborate on research data during your project.

Approaching completion



Archive, preserve and share your data towards the end of a project, and link datasets to your publications with a DOI.

Before you start -

Planning for sharing

- Data / software management plan (DMP)
- Data Protection Impact Assessment (DPIA)



BEFORE
create a data
management
plan



During your project

Tools and support to help store, manage, protect and collaborate on research data during your project



DURING

working with
data

- Find and reuse data (Google Dataset Search, DataCite Commons, local subscription databases)
- Active data storage – [DataStore](#)
- Advice on working with sensitive data
- Code version control service – [Gitlab](#)
- Collaboration tools – [DataSync](#), others
- Open research tools – [RSpace](#) Electronic Lab Notebook, Open Science Framework ([OSF](#))...

Approaching completion: Archiving and sharing



- Open Access Data Repository
- Multidisciplinary
- Based on Dspace
- Up to 100 GB deposits



- Long-term Retention Solution
- 3 copies: on tape and cloud
- Up to 10 TB deposits
- Restricted access
- Suitable for highly sensitive data
- Bespoke open source software



Research Data Management Training



TRAINING
&
SUPPORT

Scheduled Workshops (in person or remote)

- Data Management for your Research
- Writing a Data Management Plan for your Research
- Working with Personal and Sensitive Data
- Archiving your Research Data

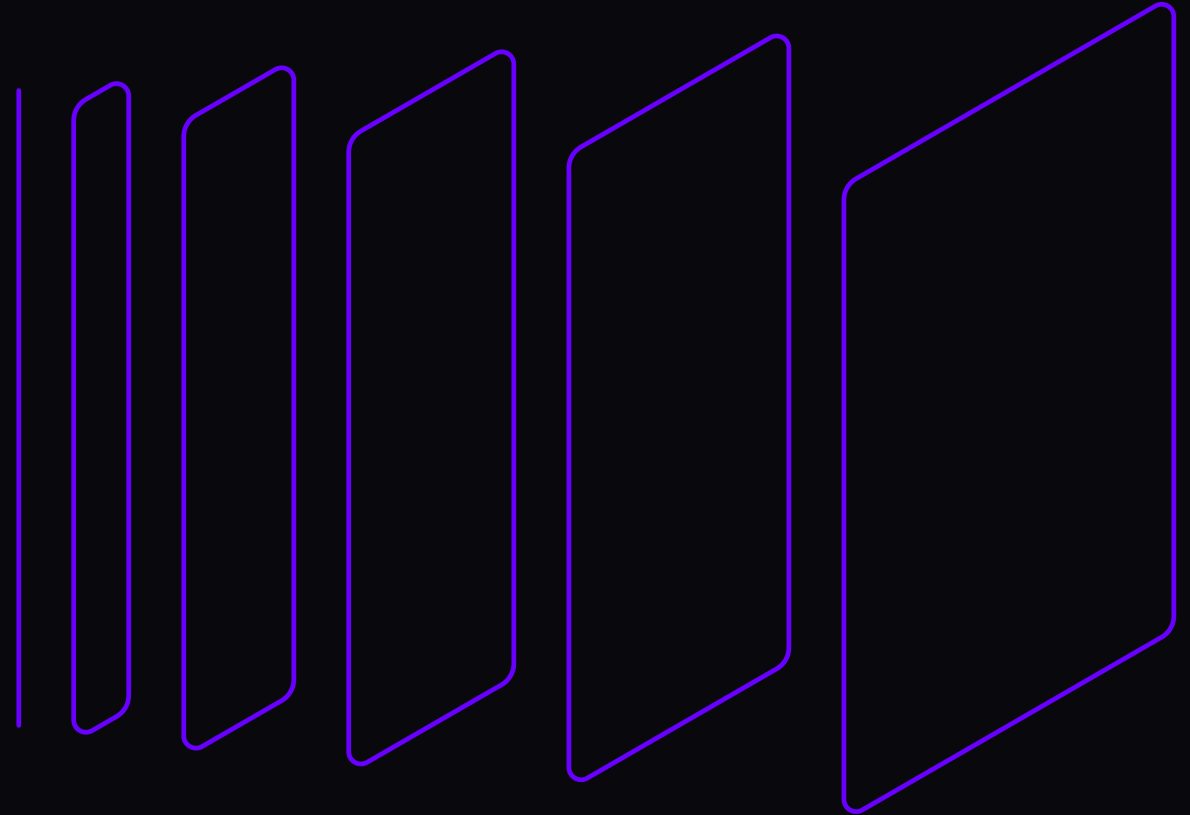
MANTRA Online Training



Research Data Management & Sharing MOOC

Known challenges going forward

- LERU Open Science Roadmap
- Digital Research Services Review
- Embedding data stewardship and data governance



The Nine Pillars of Open Research (LERU Roadmap reporting status)

	Culture Change	Future of Scholarly Publishing	FAIR Data	EOSC	Education & Skills	Recognition & Rewards	Next-generation Metrics	Research Integrity	Citizen Science & Participatory Research
RAG Status	Yellow	Green	Green	Yellow	Yellow	Yellow	Green	Green	Green

Digital Research Services Review, 2022

As part of the development of its Digital Strategy in 2022-23, the University of Edinburgh reviewed its approach to **digital research**, building on a desire to enhance services and support provided to the academic community, focussing particularly on areas of support, digital tools and infrastructure, and how these are perceived by users and non-users. The core of the services examined were the Research Data Service and Research Computing Service provided by the University's Information Service.

As a starting point, a **qualitative study** was commissioned to examine:

- how digital research services are perceived by the academic community;
- what additional support may be beneficial in relation to digital research; and
- what areas the University should focus on (invest in) in the future to enhance support for digital research.



Digital Services Review, 2022 (Quant & Qual)

Interview and focus group findings

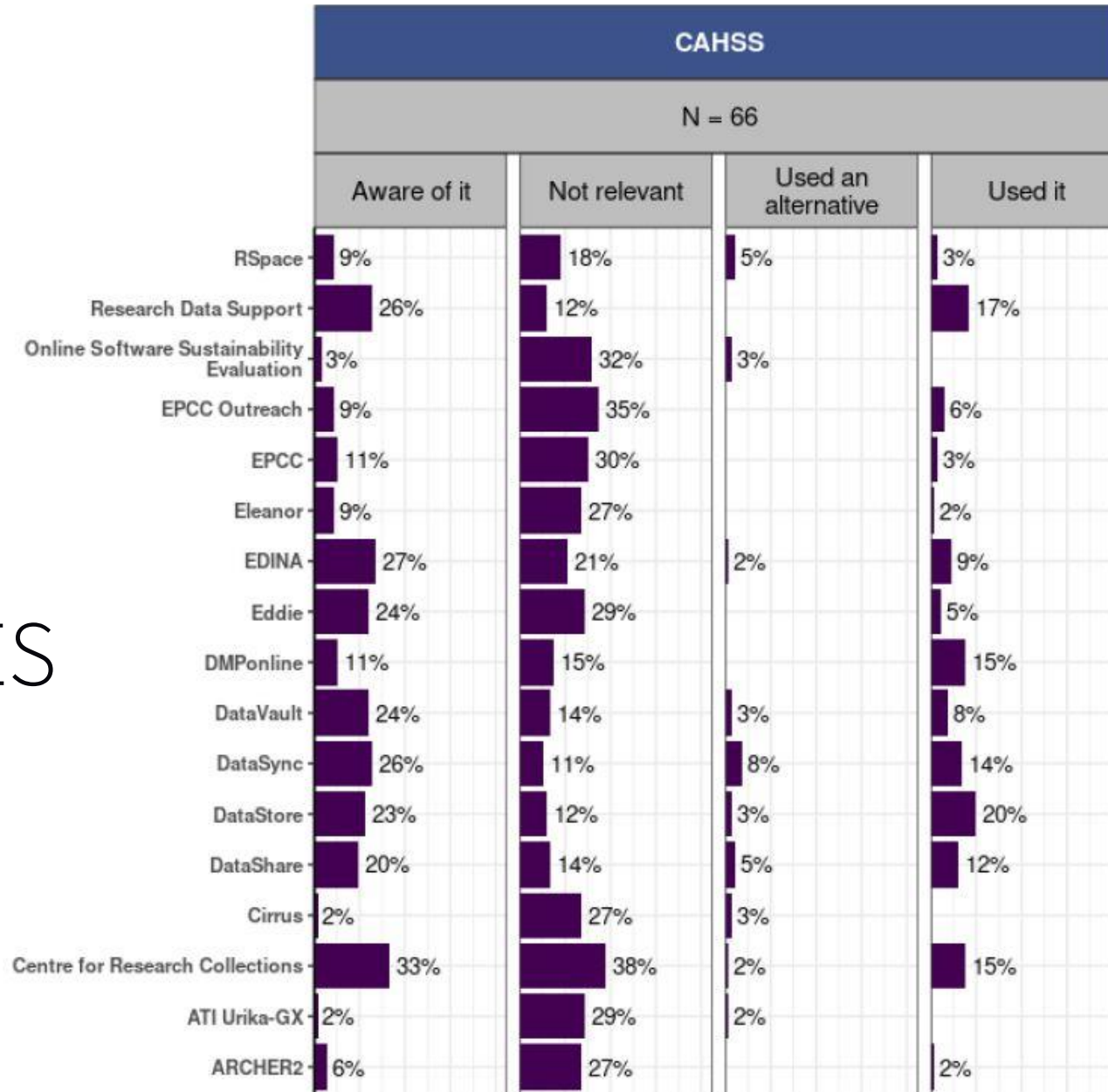
(by Research Consulting, Nottingham UK)

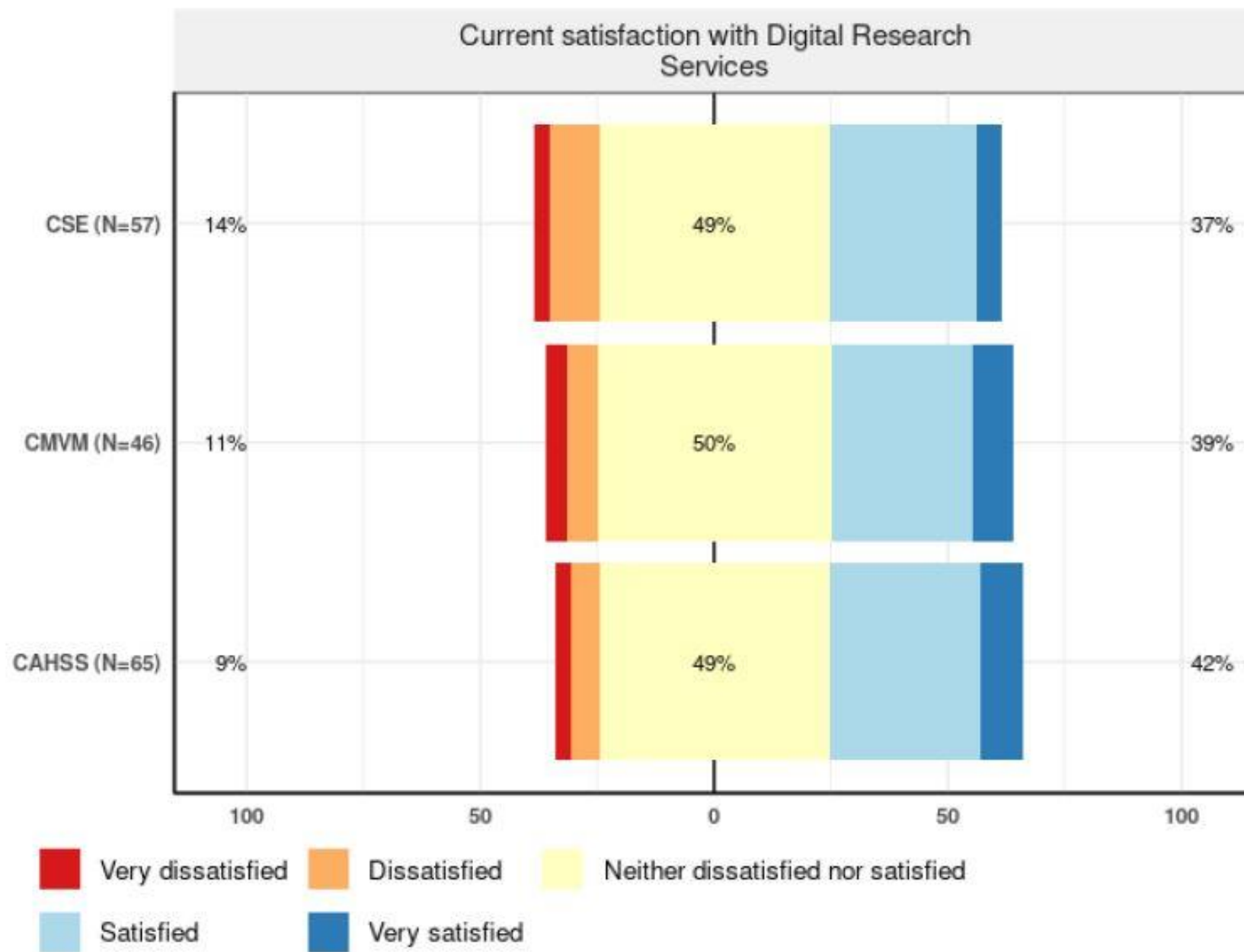
- 21 interviews and 3 focus groups, for a total of 38 contributors from all three colleges, at different levels of seniority.
- Qualitative data from these interviews and focus groups were analysed through thematic coding, using the NVivo software.
- Authors found overall that:
 - “Edinburgh is seen as having the right infrastructure and research culture to be a leading institution in the digital space, and there was widespread appreciation for the current state of play.
 - Disciplines with an established digital research culture appear comfortable with the status quo...
 - Disciplines where digital research is emerging or relatively new have a much stronger wish for flexibility...”



Please indicate which of these resources, provided by Digital Research Services, you are aware of and which you use in your research:

Survey findings by local research group: CAMARADES





Why wasn't I told this service existed?

Selected free text comments:

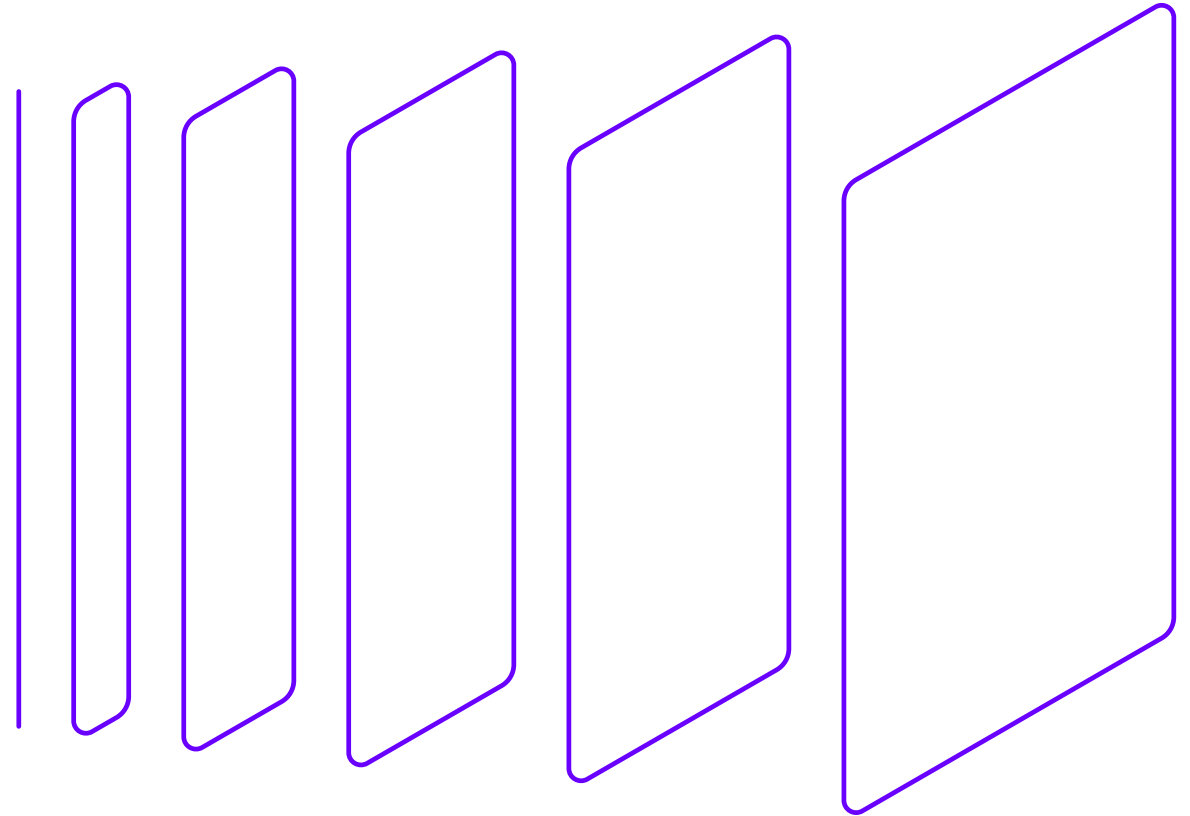
“Inform students about these services when they start. **I am halfway through and only just hearing about any of these.** It should not be mine or my lab's responsibility to find out what digital services the university offers. These are all things that sound like they would improve data collection, storage, and manipulation and yet it's taken 18 months for me to even hear about these.”

“In the first instance, practically all the digital services listed on the previous page are alien to me! **I only selected one that I think I use. I think it is a shame that the university offers so much and this knowledge is just coming via this survey. Just wow!** ... Digital services can improve by bridging the immense communication gap that makes their work invisible to all staff.

“It is difficult to get access to them. It would be **helpful to have somebody to speak to** at proposal grant stage and post award.”

Next steps: Embedding data stewardship and data governance

- DRS Facilitators are doing outreach sessions, roadshows to raise awareness about our services
- College of Medicine, Veterinary Medicine have hired 4 data managers
- Edinburgh Research Office is in process of hiring team for research data governance
- Contracts team streamlining data sharing agreements





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<https://www.ed.ac.uk/is/research-data-service>
<https://www.ed.ac.uk/is/research-data-policy>
<https://digitalresearchservices.ed.ac.uk/>