

# RDA in a nutshell

June 2017



## THE RESEARCH DATA ALLIANCE

www.rd-alliance.org

building the social and technical bridges that enable open sharing of data

## 18 FLAGSHIP OUTPUTS

of which 4 ICT Technical Specifications

### 75 ADOPTION CASES

across multiple disciplines, organisations & countries

# 82 GROUPS WORKING ON GLOBAL DATA INTEROPERABILITY CHALLENGES

of which 29 WORKING GROUPS

& 53 INTEREST GROUPS

### 5,629 INDIVIDUAL MEMBERS FROM 126 COUNTRIES

66% Academia & Research
15% Public Administration
11% Enterprise & Industry



#### Vision

Researchers and <u>innovators</u> openly share data across technologies, disciplines, and countries to address the grand challenges of society.

#### Mission

RDA builds the social and technical bridges that enable open sharing of data.

43 ORGANISATIONAL MEMBERS & 8 AFFILIATE MEMBERS





## What is RDA?

RDA is an international **member based organization** focused on the development of infrastructure and community activities that reduce barriers to data sharing and exchange, and the acceleration of data driven innovation worldwide.

With more than 5,600 members globally representing 126 countries, RDA includes **researchers**, **scientists** and data science professionals working in multiple disciplines, domains and thematic fields and from different types of organisations across the globe.

RDA is building the social and technical bridges that enable open sharing of data to achieve its vision of researchers and innovators openly sharing data across technologies, disciplines, and countries to address the grand challenges of society.





## What does RDA do?

Members come together through self-formed, volunteer, focussed Working Groups, exploratory Interest Groups to exchange knowledge, share discoveries, discuss barriers and potential solutions, explore and define policies and test as well as harmonise standards to enhance and facilitate global data sharing & re-use.

RDA members collaborate together across the globe to tackle numerous infrastructure & data sharing challenges related to:

- Reproducibility
- Data preservation
- Best practices for domain repositories
- Legal interoperability

- Data citation
- Data type registries
- Metadata
- \*and so many more!



DATA SHARING





## Who Can Join RDA?

Any individual or organization, regardless of profession or discipline, with an interest in reducing the barriers to data sharing and re-use and who agrees to RDA's guiding principles of:

- Openness
- Consensus
- Balance
- Harmonization
- Community-driven
- Non-profit and technology-neutral

Individual Membership is free @ https://www.rd-alliance.org/user/register







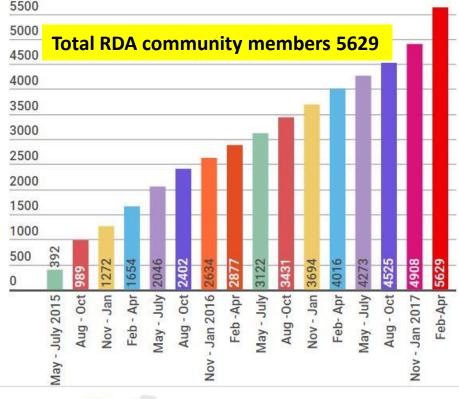
# Why Join RDA as an Individual Member?

#### **Individual Member Benefits**

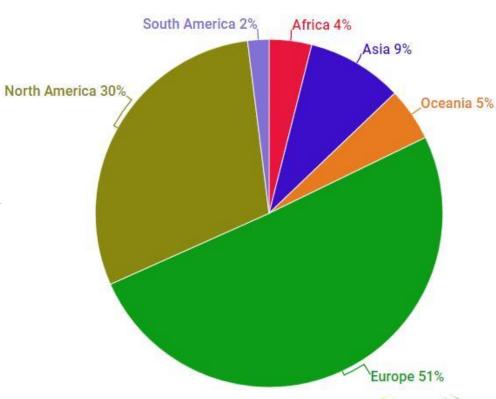
- **Contribute** to acceleration of data infrastructure development
- Work and share experiences with collaborators throughout the world
- Access to extraordinary network of colleagues with various levels of experience, perspectives and practices
- Gain greater expertise in data science regardless of whether one is a student, early or seasoned career professional
- Enhance the quality and effectiveness of personal work and activities
- Improve one's competitive advantage professionally and positioning oneself for leadership within the broader research community

**Individual RDA Members 5629** 





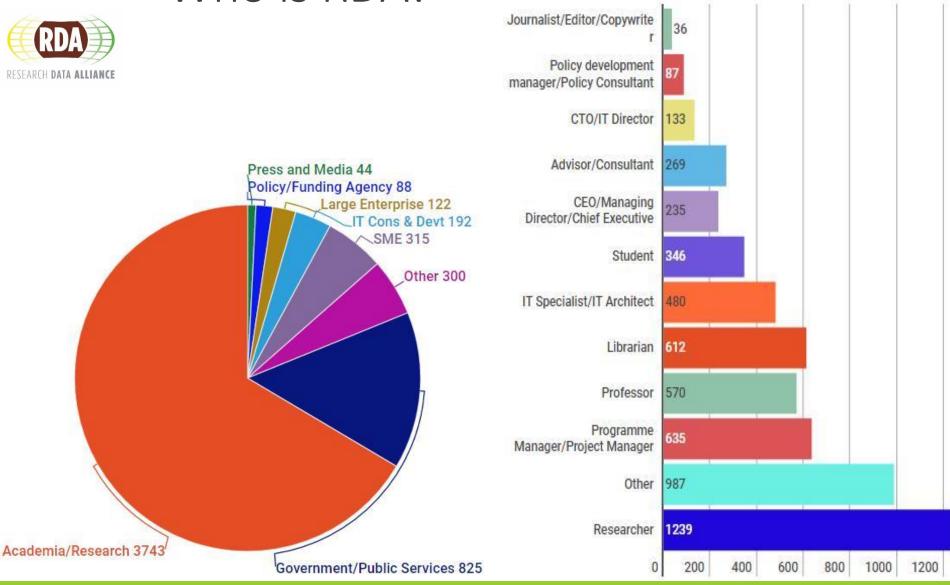
## RDA worldwide growth





RESEARCH DATA ALLIANCE

### Who is RDA?





# Why Join RDA as an Organisational Member?

### **Organisational Member Benefits**

- Provide an organizational perspective on the work of RDA and ability to influence RDA's direction
- Assist in implementation & adoption of RDA Recommendations & Outputs
- Participate in all RDA Organizational Forums
- Receive regular updates on the work of the RDA
- Attend Organizational Assembly meetings and vote on proposed policies for consideration by the RDA Council and for members of the Organizational Advisory Board
- Provide advice to RDA Council through the Organizational Advisory Board
- Be recognized on the RDA Website and at RDA Meetings as a supporter of data interoperability
   43 Organisational & 8 Affiliate Members





## Organisational & Affiliate Members

#### 43 Organisational **Members**











### **Caltech**





























Corporation for National Research Initiatives®





























































University of Pittsburgh















## RDA Interest (IG) & Working Groups (WG) by Focus (1)

### Total 82 groups: 29 Working Groups & 53 Interest Groups

#### Geospatial IG **Domain Science - focused** Global Water Information IG Agrisemantics WG Health Data IG **BioSharing Registry WG** Linguistics Data Interest Group Fisheries Data Interoperability WG Mapping the Landscape IG **On-Farm Data Sharing (OFDS) WG** Marine Data Harmonization IG Rice Data Interoperability WG Quality of Urban Life IG Wheat Data Interoperability WG □ RDA/CODATA Materials Data, Infrastructure & Interoperability IG Agricultural Data IG (IGAD) Research data needs of the Photon and Neutron Science Biodiversity Data Integration IG community IG Chemistry Research Data IG Small Unmanned Aircraft Systems' Data IG Digital Practices in History and Ethnography IG □Structural Biology IG ■Weather, Climate and air quality IG Data for Development IG **Community Needs - focused** Development of Cloud Computing Capacity and Education in Certification and Accreditation for Data Science Training Developing World Research IG and Education WG Early Career and Engagement IG RDA/CODATA Summer Schools in Data Science and Cloud **Computing in the Developing World WG** Education and Training on handling of research data IG Teaching TDM on Education and Skill Development WG Ethics and Social Aspects of Data IG Archives & Records Professionals for Research Data IG International Indigenous Data Sovereignty IG





# RDA Interest (IG) & Working Groups (WG) by Focus (2)

Total 82 groups: 29 Working Groups & 53 Interest Groups

#### □ RDA / WDS Publishing Data Bibliometrics WG **Reference and Sharing - focused** Repository Core Description WG Data Citation WG Research Data Collections WG ■ Data Description Registry Interoperability WG ■ Research Data Repository Interoperability WG Data Security and Trust WG Data Discovery Paradigms IG Empirical Humanities Metadata WG National Data Services IG ■ International Materials Resource Registries WG □ RDA/CODATA Legal Interoperability IG Provenance Patterns WG Reproducibility IG QoS-DataLC Definitions WG

#### **Partnership Groups**

- RDA / TDWG Metadata Standards for attribution of physical and digital collections stewardship WG
  - RDA/WDS Scholarly Link Exchange Working Group
- ELIXIR Bridging Force IG
- RDA/NISO Privacy Implications of Research Data Sets IG
- RDA/WDS Publishing Data IG





## RDA Interest (IG) & Working Groups (WG) by

Focus (3)

## Total 82 groups: 29 Working Groups & 53 Interest Groups

#### **Data Stewardship and Services – focused**

- Brokering Framework WG
- WDS/RDA Assessment of Data Fitness for Use WG
- RDA / WDS Publishing Data Workflows WG
- Active Data Management Plans IG
- Data in Context IG
- Data Rescue IG
- Data Versioning IG
- Domain Repositories IG
- Libraries for Research Data IG

- Long tail of research data IG
- Preservation e-Infrastructure IG
- Preservation Tools, Techniques, and Policies IG
- RDA/WDS Certification of Digital Repositories IG
- RDA/WDS Publishing Data Cost Recovery for Data Centres IG
- Repository Platforms for Research Data IG
- Research Data Provenance IG
- ☐ Virtual Research Environments IG

#### Base Infrastructure - focused

- Array Database Assessment WG
- Data Type Registries WG
- Metadata Standards Catalog WG
- PID Kernel Information WG
- Data Fabric IG
- Data Foundations and Terminology IG
- Big Data IG
- Brokering IG

- Federated Identity Management IG
- Metadata IG
- PID IG
- Vocabulary Services IG





# RDA Recommendations that make data work

#### "Create - Adopt - Use"

- ✓ Adopted code, policy, specifications, standards, or practices that enable data sharing
- ✓ "Harvestable" efforts for which 12-18 months of work can eliminate a roadblock
- ✓ Efforts that have substantive applicability to groups within the data community but may not apply to all
- ✓ Efforts that can start today

18 flagship recommendations & outputs with over 75 cases of adoption in different domains, organisations and countries







#### THE RDA OUTCOMES LEGEND

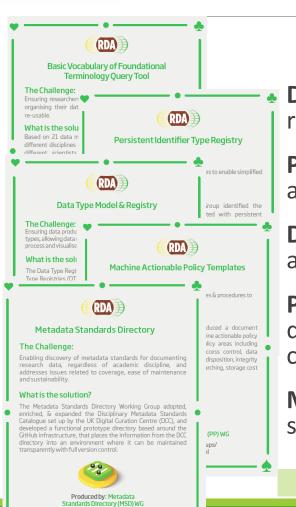
**Recommendations:** are the flagship outputs of RDA. They are RDA's equivalent of the "specifications" or "standards" that other organisations create and endorse. The process for creating and endorsing these is already defined.

**Supporting Outputs:** are the outputs of RDA WGs and IGs that are fruit of RDA work, but are not necessarily adoptable bridges. "Upon request", these sort of outputs go through a community comment period and if no major objections or gaps are identified they get the RDA Brand.

**Other Outputs:** include workshop reports, published articles, survey results, etc. Anything a WG or IG wants to register and report. Upon request, these are published and discoverable on the RDA website but have no level of endorsement.







https://rd-alliance.org/groups/metadata

-standards-directory-working-group.html

**Data Foundation & Terminology**: a model for data in the registered domain.

**PID Information Types**: a common protocol for providers and users of persistent ID services worldwide.

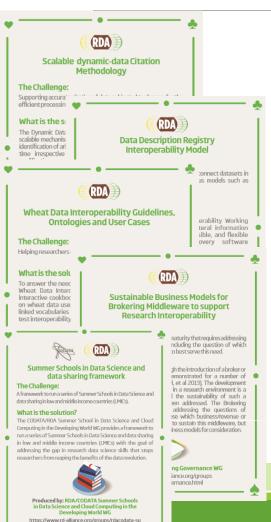
**Data Type Registries**: allowing humans and machines to act on unknown, but registered, data types.

**Practical Policy**: defining best practices of how to deal with data automatically and in a documented way with computer actionable policy.

**Metadata standards directory**: Community curated standards catalogue for metadata interoperability







mer-schools-data-science-and-cloud-computing-

developing-world.html

**Data Citation**: defining mechanisms to reliably cite dynamic data

**Data Description Registry Interoperability** solutions enabling cross platform discovery based on existing open protocols and standards

Wheat Data Interoperability impacting the discoverability, reusability and interoperability of wheat data by building a common framework for describing, representing linking and publishing wheat data

**Brokering Governance WG:** Sustainable Business Models for Brokering Middleware to support Research Interoperability

RDA/CODATA Summer Schools in Data Science and Cloud Computing in the Developing World WG: A framework to run a series of Summer Schools in Data Science and data sharing in low and middle income countries (LMICs)







**Repository Audit and Certification DSA–WDS:** A convergent DSA-WDS certification standard to help eliminate duplication of effort, increase certification procedure coherence and compatibility thus benefitting researchers, data managers, librarians and scientific communities.

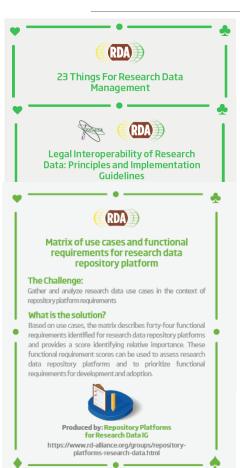
**RDA/WDS Publishing Data Bibliometrics:** improved research data metrics and corresponding services, with the final goal of increasing the overall availability and quality of citations and research data itself.

**RDA/WDS Publishing Data Workflows:** enhance the possibilities for greater discoverability and a more efficient and reliable reuse of research data benefitting other stakeholders like publishers, libraries and data centres.

RDA/WDS Publishing Data Services: A universal interlinking service between data and the scientific literature. The Scholix initiative a high level interoperability framework for exchanging information about the links between scholarly literature and data. It aims to build an open information ecosystem to understand systematically what data underpins literature and what literature references data.







**23 Things: Libraries For Research Data** An overview of practical, free, online resources and tools that users can immediately take advantage of to incorporate research data management into the practice of librarianship.

Legal Interoperability of Research Data Principles and Implementation Guidelines: a set of principles and practical implementation guidelines offered as high-level guidance to all members of the research community —the funders, managers of data centers, librarians, archivists, publishers, policymakers, university administrators, individual researchers, and their legal counsel.

Matrix of use cases and functional requirements for research data repository platform Based on use cases, the matrix describes fortyfour functional requirements identified for research data repository platforms and provides a score identifying relative importance.

**BioSharing Recommendations** Data repositories, standards and policies in the life, biomedical and environmental sciences





## Adoption & Implementation

"Solving the problem must include adopters in the process, to ensure that real problems are addressed. Open problem solving is the key."

RDA Recommendations and Outputs take the form of technical specifications, code, policies or practices, harmonized standards or reference models. In the widest sense these aim for:

- ☐ Greater data sharing, exchange, interoperability, usability and re-usability;
- Greater discoverability of research data sets;
- Better management, stewardship, and preservation of research data;
- □ New data standards or harmonization of existing standards.

RECOMMENDATIONS & OUTPUTS

All Recommendations & Outputs

**Adoption Use Cases** 

Become an RDA Adopter

### Addressing data challenges

https://www.rd-alliance.org/recommendations-andoutputs/all-recommendations-and-outputs



#### **75 Adoption Cases**

https://www.rd-alliance.org/recommendationsoutputs/adoption-recommendations

#### Find out how you can become an Adopter

https://www.rd-alliance.org/recommendations-and-outcomes/become-rda-adopter





rd-alliance.org/recommendations-and-outputs/allrecommendations-and-outputs

WWW.RD-ALLIANCE.ORG @RESDATALL

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# Call for Supporting and Other RDA Outputs



If your group has produced something that you would like to share with the broader community, please send it to <a href="mailto:enquiries@rd-alliance.org">enquiries@rd-alliance.org</a> and indicate whether you would like it to be considered as a 'Supporting' or 'Other' output.



https://rd-alliance.org/call-supporting-and-other-rda-outputs





## What are Plenary Meetings?



- Organised around the world every 6 months
- > exciting & productive events bringing together a unique community of data science professionals, from multiple disciplines and domains;
- help move the community forward in creating tangible deliverables that improve data sharing across disciplines, technologies, and countries;
- heart of the plenaries are working meetings of RDA Working & Interest groups and new potential groups through Birds of a Feather meetings
- > presentation of new Outputs and Adoption cases





## RDA Plenary Meetings: benefits of attending



Exchange knowledge, share discoveries, discuss barriers and potential solutions



Learn about new trends, strategies, research developments, directions and policies



Expand your network and meet new committed and passionate data science professionals, working in multiple disciplines



Contribute to acceleration of data infrastructure development





DENVER, COLORADO, US 11-17 SEPTEMBER 2016

Organized by:







#### ■RDA deliverables presented:

- ■RDA/CODATA Summer Schools in Data Science and Cloud Computing in the Developing World WG
- ■Brokering Governance WG
- Metadata Standards Catalog WG Recommendations
- Biosharing Registry WG Recommendations
- ■Scholix Franmework
  - + 6 Adoption cases

#### ■69 Breakout session meetings:

- ■12 BoF Meetings
- ■31 Interest group meetings
- ■10 Working group meetings
- ■16 Joint group meetings
- ■69 Breakout sessions



#### RESEARCH DATA ALLIANCE 8th Plenary Meeting

15-17 September 2016 Denver, Colorado, US

549 participants from 33 countries

- Newcomers Session, 2 RDA organisational members meeting, TAB and Chairs session
- ■RDA/EU sponsored 8 European Early Career Researchers and Scientists & RDA/US sponsored 8 Fellowship
- ■42 posters on display





#### **RDA 9th Plenary Meeting**

**Data Infrastructures for Open Science** 

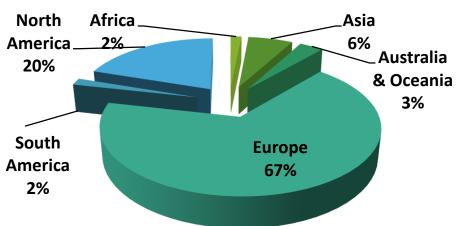
**5-7 April 2017**, Barcelo Sants Hotel, Barcelona, Spain

Organised by Barcelona Supercomputing Center (BSC) with the support of RDA Europe









#### 73 Breakout meetings

of which 15 Working Groups of which 32 Interest Groups

of which 13 Joint Working & Interest Groups

of which 13 Birds of a Feather

3 Outputs presented

54 Posters

**620** participants from 45 countries













# RDA Plenary 11

BERLIN, GERMANY MARCH 2018

#### RDA in a Nutshell

WWW.RD-ALLIANCE.ORG/ @RESDATALL



#### **RDA Global**

**Email - enquiries@rd-alliance.org** 

Web - www.rd-alliance.org

Twitter - @resdatall

LinkedIn -

www.linkedin.com/in/ResearchDataAlliance

Slideshare -

http://www.slideshare.net/ResearchDataAlliance

#### **RDA Europe**

Email - info@europe.rd-alliance.org

Twitter - @RDA\_Europe

#### **RDA US**

Twitter - @RDA\_US

# RDA Europe





# General Support

- Giving advice and support (incl. sending an expert to location)
- Early Career Programme (travel support to plenaries)
- Chairs Programme (supporting travel of chairs)
- Co-Organising community-based meetings
- Co-Organising regional/national meetings

RDA Europe is funded by the European Union.



# Training & Webinars

Training webinars, face-to-face workshops, hackathons/datathons partly organized as "summer schools" and special meetings on request.

Delivered in different formats by International Experts:

- RDA recommendations and outputs e.g. *Data Description Registry Interoperability*
- General topics e.g. Data Management Plans, State of EU Copyright discussion
- Interviews e.g. Open Science/Open Data/Innovation
- Information sessions e.g. What happened at the Barcelona Plenary?



## Outreach and politics

- How to contribute to European Open Science Cloud
- In contact with Policy makers, e.g. RDA meets Heads of EC-DGs

# RDA Europe Atlas of Knowledge Pilot



Moderated wiki focusing on issues raised by RDA Working and Interest Groups but will also incorporate topics with a much broader focus

Advice about research data issues and to also carry out analysis work to clarify open questions.

Executed in collaboration with research communities & experts from different fields & initiatives with deep experience & knowledge to give the most comprehensive answers

#### RDAEU3 Atlas of Knowledge Home

The RDA Europe Atlas of Knowledge is a pilot maintained and moderated by RDA Europe. It aims to provide resources which contribute to the improvement of data sharing and re-use and to enable uptake of the results of the RDA activities. The Atlas is closely related to RDA Interest Group and Working Group activities, but will also contextualise RDA activities by including information on related initiatives.

As a resource, the Atlas is aimed at all types of data professionals including data scientists, data managers and policy maker

To make it an even more useful source of information we would like to encourage interested experts to contribute by submitting contributions, comments and questions. The pilot Atlas of Knowledge will be moderated by RDA Europe's support team to ensure relevant and concise information. Please note that the support team will provide quality control for the format of these contributions but in general not comment on content.

The Atlas of Knowledge currently contains 6 sections

- a (short) list of abbreviations and acronyms which will be extended over time
- a list of questions and answers, to which experts can contribute
   information about adoption cases of RDA Working Group outputs
- a list of documents related to RDA activities
- a list of services that emerged in the realm of RDA activities and
- . most important information about the outputs of RDA Working Groups

The support team will implement further optimisation with respect to navigation and other aspects dependent on its uptake and use

#### RDA Working Groups

- Publishing Data Bibliometrics Working Group
- Practical Policy
- Brokering Governance WG
- Publishing Data Workflows WG
- Publishing Data Services WG
- DSA/WDS Certification of Repositories

#### Question & Answer

- Your information sounds very useful, but I don't quite understand how to apply it in my usual research practice. Is there a way to learn that?
- Where can I find a list of "data policy" documents ?
- How does my organisation become an Organisationa
- Why become an RDA Organisational Member
- an I join RDA if my institution is not a member of RDA?

Recommended external resources

- RDA: Time to deliver
- Principles for Data Sharing and Re-use: are they all the same?
- Data Management Trends, Principles and Components -What Needs to be Done Next?
- European Scientists view on Research Data and corresponding challenges
- Digital Agenda to unlock the full value of scientific data

https://confluence.csc.fi/display/RDAEUKB/RDAEU3+Atlas+of+Knowledge+Home

## RDA Europe Adoption Projects

Objective: to support communities that want to test/adopt RDA outputs.





Dynamic Data Citation & the Argo data set *Adopting*: Dynamic Data Citation



Creation of a Query interface for phenotyping data Adopting: Wheat Data Interoperability (WDI)



Integration of the RDA Metadata Standards Directory into DMPonline

\*Adopting: Metadata Standards Directory\*\*



Analysis of the OpenPhilology/Perseus and the CLARIN data repositories

\*\*Adopting: Data Foundation and Terminology\*\*



Implementation of a Query Store for the VAMDC infrastructure

Adopting: Data Citation



Integration of the DLI Service into the OpenAire infrastructure *Adopting:* Publishing Data services



Introduction of PIDs to the Armenian Life Sciences

\*Adopting: PID Information Types

# RDA DEeutschland





## Spread the word of RDA

- Bring together all German research data practitioners
- Promote RDA and RDA outputs
- How?
  - Since 2014: RDA DE Meetings in November
  - Since 2016: RDA DE Trainings

http://www.forschungsdaten.org/index.php/RDA-DE



## RDA DE Communication

Mailinglist Forschungsdaten:

https://www.listserv.dfn.de/sympa/subscribe/forschungsdaten

Wiki:

www.forschungsdaten.org



## RDA DE e.V.

- Currently no organization in Germany
- Some people just "do" RDA DE
  - Many individuals
  - Help of the Helmholtz Open Science Koordinationsbüro and RDA Europe people in Germany
- "RDA DE e.V."
  - "Verein" for individual persons
  - Central contact for RDA in Germany
  - To be founded in fall 2017



## RDA DE e.V. - Goals

- Consultant to science organizations, funding agencies and companies
- Support for the professionalization of research data management
- Support the dialogue between scientists and research data managers
- Public outreach on the importance of safeguarding and facilitating the re-use of research data