



# Towards a National PID Strategy

Christopher Brown – Product Manager / UK ORCID Consortium Lead, Jisc  
Oxford Festival of Open Scholarship – 9<sup>th</sup> March 2023



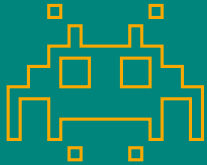
# Jisc

**Our vision is for the UK to be a world leader in technology for education, research and innovation**

- Jisc is the UK digital, data and technology agency focused on tertiary education, research and innovation
- We are a not-for-profit organisation and believe education and research improves lives and that technology improves education and research
- We provide managed and brokered products and services, enhanced with expertise and intelligence to provide sector leadership and enable digital transformation

## We provide the Janet Network - the UK's National research and education network (NREN)

It is used by **18 million** people



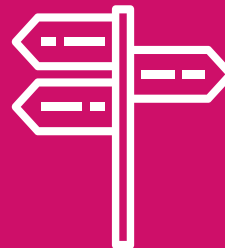
It has built in, world class cyber security protection, utilising sector specific intelligence

## Help the sector save time and money

Through our sector wide deals and shared services alone we save the sector around:

**£220.2m** (2020-2021)

## We provide trusted expert advice and practical assistance



- Providing insight, guidance and thought leadership
- Delivering training and events
- Building communities

**Cloud**

**Connectivity and  
cyber security**

**Content and  
discovery**

**Data analytics**



**We pro**



**Licensing**

### **Open research**

Extends beyond the boundaries of open access articles and engages with all research outputs, including metadata, data, algorithms, code and software, and research processes

Jisc supports the sector throughout the research lifecycle by enabling change, reducing and removing barriers and promoting best practice

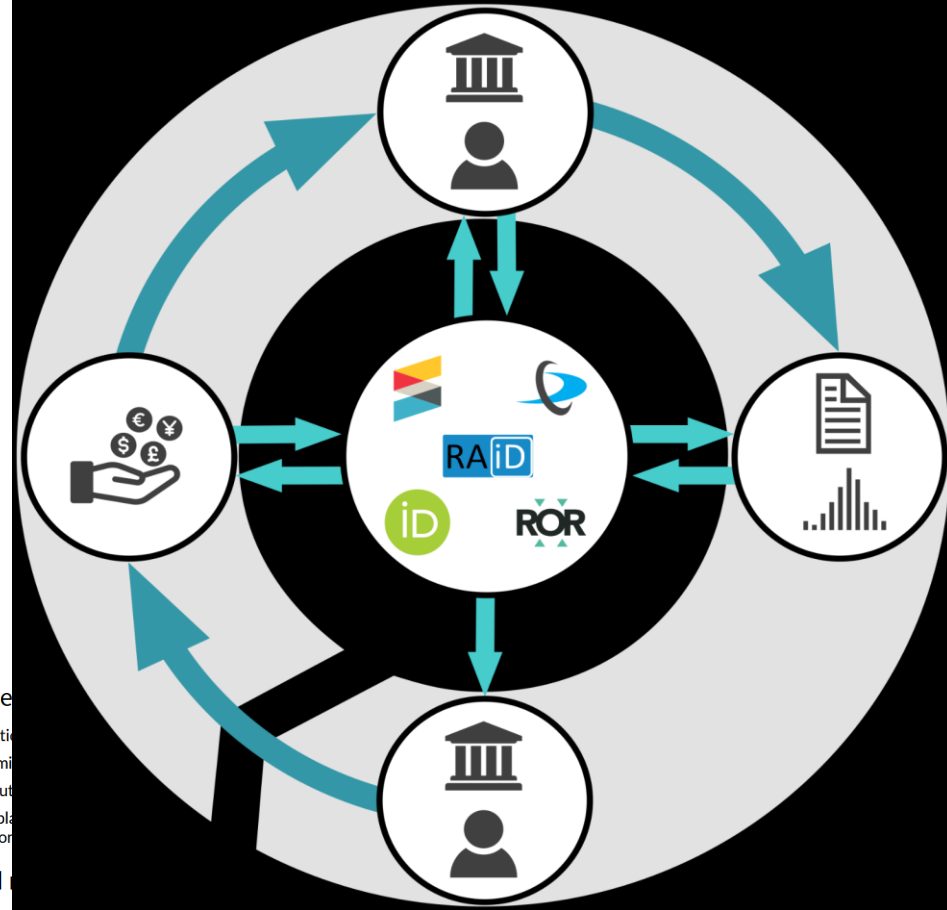
**Open  
research**

**Student  
experience**

**Verification  
services**

# Persistent identifiers (PIDs)

- A long-lasting reference to a digital resource
- An essential element of global research data infrastructures, central to building and maintaining reliable and robust links between people, communities and infrastructures



Actors and entities

- = Funding organisation
- = Research-performing organisation
- = Research contributor
- = Research output platform (articles, data, algorithms)

Priority PIDs and

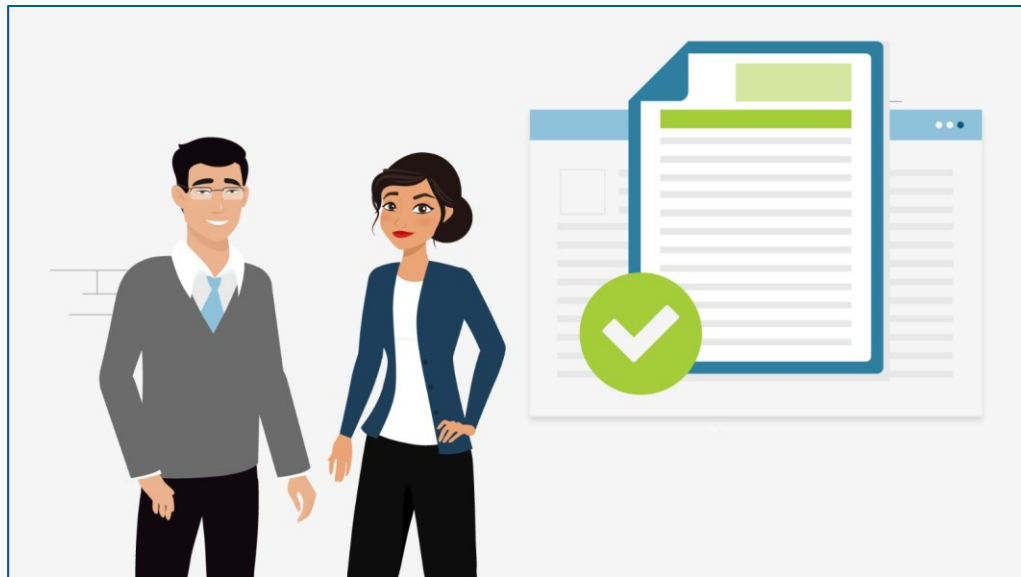
- = Crossref
- = Datacite
- = ORCID
- = Digital Object Identifier (DOI)
- = Research Activity Identifier (RAiD)
- = Research Organisation Registry (ROR)

<https://morebrains.coop/pidcycle/>

MORE+BRAINS

Jisc

# All your research information accessible via your own unique profile, to be used wherever you need it.



	<b>Uniquely yours.</b> Distinguish yourself and claim credit for your work while controlling access to your data, no matter how many people have your same (or similar) name.
	<b>Name flexibility.</b> ORCID helps reduce the negative consequences of name changes so you will no longer be limited to the name you used when you began your career.
	<b>More time for research.</b> By allowing trusted organizations to add your research information to your ORCID record, you can spend more time conducting your research and less time managing it!
	<b>Control your visibility and discovery.</b> ORCID links all your research together, while you control the visibility of each piece of data. Easily see links to your research activities in one place—affiliations, funding, publications, and other contributions.
	<b>Reduced administrative burden.</b> Experience greater ease as an increasing number of manuscript submission and grant application forms can be auto-populated when you log into their systems with your ORCID. Spend less time re-entering your data!
	<b>Portable profile data.</b> Easily share the data in your record with an increasing number of funding, publications, data repositories, and other research workflows.

# The hidden costs of rekeying

*"There is only so much goodwill and it's embarrassing to have to keep asking people to rekey the same information over and over again...they start to give up."*

-Anonymous research administrator

Estimates of time spent on admin range from 10-42%

**nature**

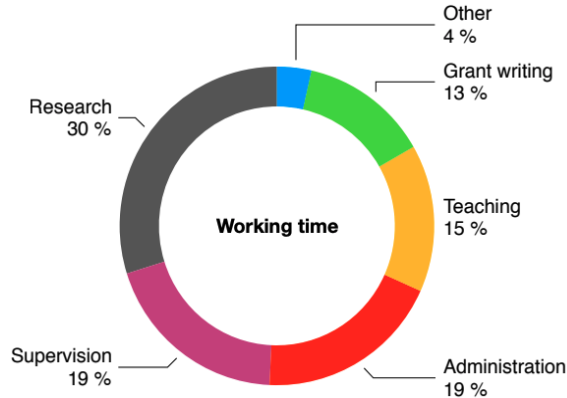
CAREER COLUMN | 17 June 2019

## 'I'll work on it over the weekend': high workload and other pressures faced by early-career researchers

Stress and long working hours are regrettably common among early-career researchers, reveals a survey by the Young Academy of Europe.

Toma Susi, Shaul Shalvi & Mangala Srinivas

<https://www.nature.com/article/s/d41586-019-01914-z>



<https://www.timeshighereducation.com/blog/if-you-love-research-academia-may-not-be-you>



Photo by [Alexander Dummer](#) from [Pexels](#)

# Problems and solutions

Information is imported at multiple points by multiple people throughout the research lifecycle

- Better integrations in research management systems
- Funder adoption of PIDs and metadata workflows
- Coordination of workflows across funders, institutions, repositories, and publishers



Photo by [Laura Ockel](#) on [Unsplash](#)

Lack of shared understanding due to insufficient leadership and community governance

- Leadership required at the national level (Jisc and UKRI need to implement PIDs where possible)
- Inclusive community governance and outreach to solidify understanding of best practices
- Coordination with global stakeholders

# Open Access to Research

*Jisc to lead on selecting and promoting a range of unique identifiers, including ORCID, in collaboration with sector leaders with relevant partner organisations.*

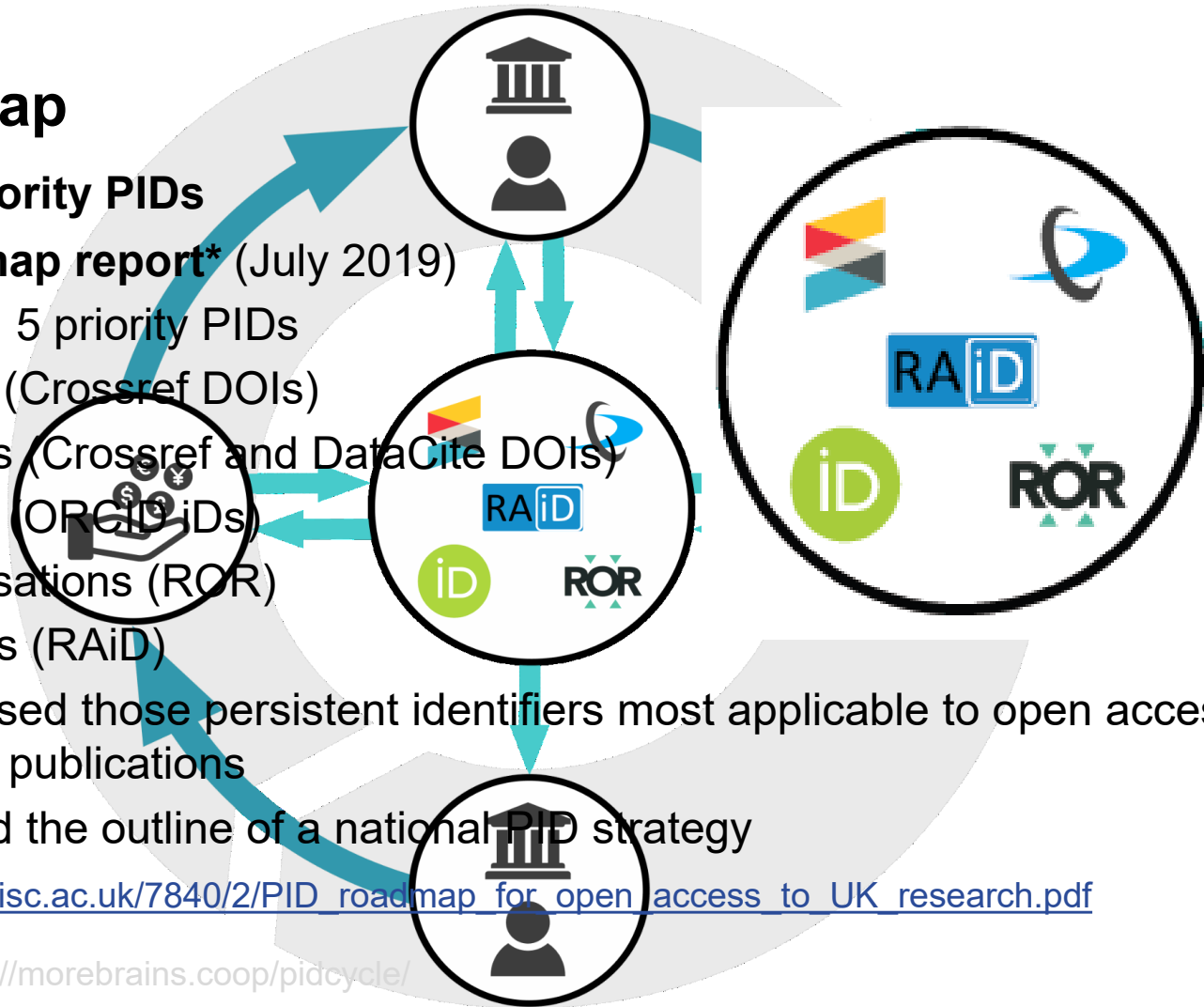
*Funders of research to consider mandating the use of an agreed range of unique identifiers as a condition of grant. (Recommendation 8)*

Open access to research publications – 2018 Independent advice to the UK government, Prof. Adam Tickell <https://www.gov.uk/government/publications/open-access-to-research-independent-advice-2018>

# PID roadmap

## Identifying priority PIDs

- **PID Roadmap report\*** (July 2019)
  - Identified 5 priority PIDs
    - Grants (Crossref DOIs)
    - Outputs (Crossref and DataCite DOIs)
    - People (ORCID iDs)
    - Organisations (ROR)
    - Projects (RAiD)
  - Emphasised those persistent identifiers most applicable to open access to research publications
  - Proposed the outline of a national PID strategy



\* [https://repository.jisc.ac.uk/7840/2/PID\\_roadmap\\_for\\_open\\_access\\_to\\_UK\\_research.pdf](https://repository.jisc.ac.uk/7840/2/PID_roadmap_for_open_access_to_UK_research.pdf)

# PID strategy

## UK PIDs for Open Access project (Dec 2019 – Mar 2021)

- Creating a roadmap to implement the strategy
- Exploring barriers and opportunities for PID adoption in the UK
- Building a community around the strategy
- **Focus groups** for each priority PID involving stakeholders
- Exploring major sector requirements around education and support
- Emphasising need for leadership and strong governance



# PID strategy - governance

## Research Identifier National Coordinating Committee (RINCC)

- Includes stakeholders from across the sector to focus on governance and community accountability
- Provide strategic insights to shape the priorities and focus of PID-related activities and policies in the UK
- Liaise with international PID providers and governance structures
- Align PID integrations and developments across sectors to optimise interoperability
- Ensure that all individuals and organisations in the UK research community have equitable access to the PIDs they need
- Focus on high-level engagement; guide and evaluate progress in implementing the national PID strategy

# PID strategy - output

## Benefits of adopting the priority PIDs

- **Revised Cost-benefit Analysis** for a PID Support Network (Nov 2022) – <https://doi.org/10.5281/zenodo.7356219>
- Original CBA (June 2021) - looked at the costs of the current DataCite and ORCID consortia, and previous work on benefits analysis, to look at cost savings in establishing a PID Support Network (PSN)
- Assumed that publication, grant, and project metadata are only rekeyed into university systems once, but Australia CBA indicated metadata about publications rekeyed at least 3.1 times on average, 3.25 for funded grants
- Improved methodology shows **55,000 person days**, at a cost of **£19 million**, are wasted every year at UK institutions through the rekeying of metadata
- Estimate a net saving to the UK HE sector of over **£45 million** over 5 years (considering the cost of implementing the 5 priority PIDs with support from the PSN, the cost of the PSN itself, and accounting for benefits building over time as adoption increases)

# PID strategy - output

## High level support

- **Building a business case for investment in a UK PID strategy** (Nov 2021)

<https://zenodo.org/record/6012367>

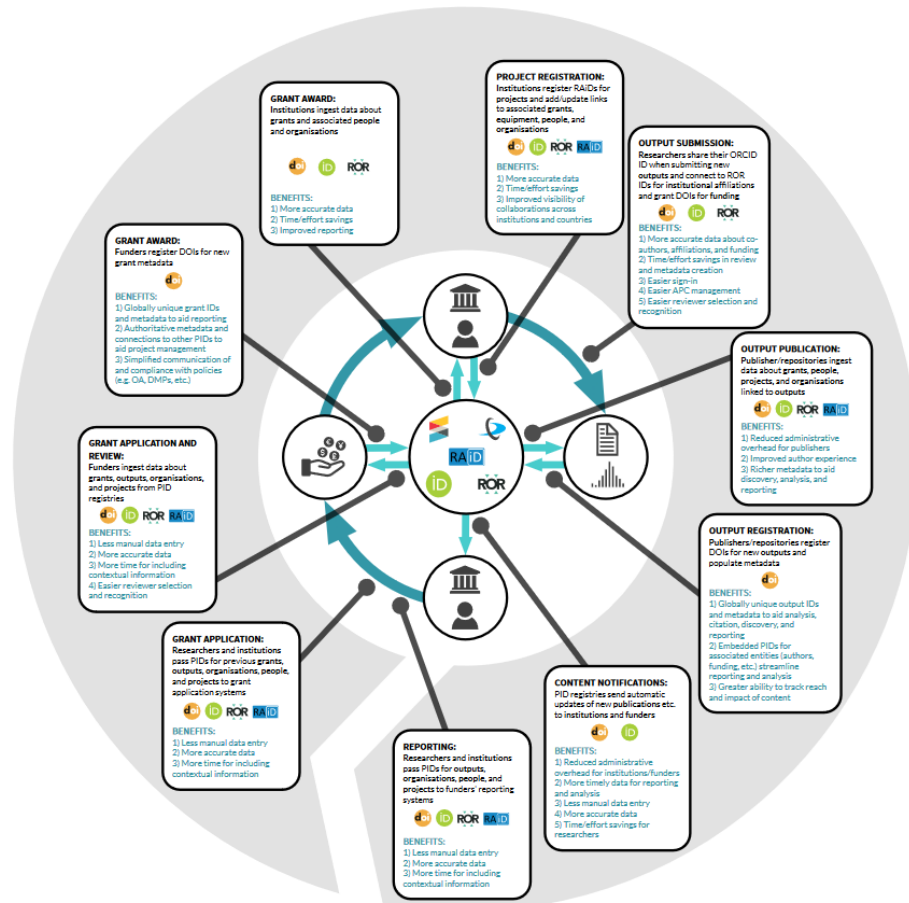
- **Recommendation 19: For the higher education sector, Jisc should lead on the creation of sector-wide groups responsible for overseeing the development and further integration of the research information ecosystem, including research management data.**

The Review endorses the proposal for a PID consortium made by MoreBrains in their report : 'The case for investment in a UK persistent identifier strategy: Resilience, insight, and leadership in global research and innovation'<sup>xi</sup> and would recommend extending this model to other facets of digital research platforms as appropriate. As the designated umbrella body for digital services and solutions, Jisc should take a leading role in co-ordinating this activity for the higher education sector.

Independent Review of Research Bureaucracy – July 2022. Independent advice to the UK government,

# Explaining the benefits

- Our research highlights the interdependency of stakeholder groups across the research lifecycle
- For example, publishers depend on funders and institutions to use PIDs effectively, and to share metadata as early as possible
- An interactive version of this infographic is available at: <https://morebrains.coop/pidcycle/>



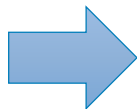
## 1. Grant Application

Researchers and institutions pass PIDs for previous **grants, outputs, organisations, people,** and **projects** to grant application systems



### BENEFITS:

1. Less manual data entry
2. More accurate data
3. More time for including contextual information



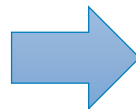
## 2. Grant application and review

Funders ingest data about **grants, outputs, organisations,** and **projects** from PID registries



### BENEFITS:

1. Less manual data entry
2. More accurate data
3. More time for including contextual information
4. Easier reviewer selection and recognition



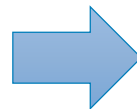
## 3. Grant award (1)

Funders register DOIs for new **grants** and associated metadata



### BENEFITS:

1. Globally unique grant IDs and metadata to aid reporting
2. Authoritative metadata and connections to other PIDs to aid project management
3. Simplified communication of and compliance with policies (e.g. Open Access (OA), Data Management Plans (DMPs), etc.)



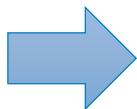
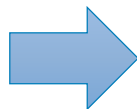
## 4. Grant award (2)

Institutions ingest data about **grants** and associated **people** and **organisations**



### BENEFITS:

1. More accurate data
2. Time/effort savings
3. Improved reporting



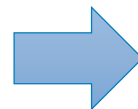
## 5. Project registration

Institutions register RAiDs for **projects** and add/update links to associated **grants, equipment, people,** and **organisations**



### BENEFITS:

1. More accurate data
2. Time/effort savings
3. Improved visibility of collaborations across institutions and countries



# PID Lifecycle (1)

## 6. Output submission

Researchers share their ORCID ID when submitting new **outputs** and connect to ROR IDs for **institutional** affiliations and grant DOIs for **funding**



### BENEFITS:

1. More accurate data about co-authors, affiliations, and funding
2. Time/effort savings in review and metadata creation
3. Easier sign-in
4. Easier article processing charge (APC) management
5. Easier reviewer selection and recognition

## 7. Output publication

Publisher/repository ingests data about **grants, people, projects, and organisations** linked to **outputs**



### BENEFITS:

1. Reduced administrative overhead for publishers
2. Improved author experience
3. Richer metadata to aid discovery, analysis, and reporting

## 8. Output registration

Publisher/repository registers DOIs for new **outputs** and populate metadata



### BENEFITS:

1. Globally unique output IDs and metadata to aid analysis, citation, discovery, and reporting
2. Embedded PIDs for associated entities (authors, funding, etc.) streamline reporting and analysis
3. Greater ability to track reach and impact of content

## 9. Reporting

PID registries send automatic updates of new **publications** etc. to **institutions**



### BENEFITS:

1. Reduced administrative overhead for institutions
2. More timely data for reporting and analysis
3. Less manual data entry improves accuracy
4. Time/effort savings for researchers

## 10. Reporting

Researchers and institutions pass PIDs for **outputs, organisations, people, and projects** to funders' reporting systems



### BENEFITS:

1. Less manual data entry
2. More accurate data
3. More time for including contextual information

# PID Lifecycle (2)

# PID Strategy - output

## PID-optimised workflows

- The four workflows cover each stage in the research lifecycle, from developing a hypothesis to project impacts.
- Interactive versions:  
<https://www.morebrains.coop/jisc-pid-workflows/>



Institutional research management workflow



Funding workflow



Data workflow



Content publication workflow

A vision of a more efficient future

Citable version:

Brown, Josh, Jones, Phill, Meadows, Alice, & Murphy, Fiona. (2022, September 16). PID-optimised workflows: A vision of a more efficient future. Zenodo. DOI: 10.5281/zenodo.7085489

# PID optimized workflows report recommendations

## Funders

1. Register DOIs for all awards, including PIDs for associated entities (people, projects, organisations, and so on), and commit to updating this information throughout the lifetime of the grant and up to the end of any reporting period.
2. Gather data about applicants, projects, and past activities (including outputs and grants) by ingesting PIDs and associated metadata wherever these are available and encouraging investigators and institutions to register and share such PIDs.
3. Invest in the collection of PIDs in reporting and evaluation platforms, and work with PID organisations to improve the citation and tracking of PIDs throughout the ecosystem.

### Benefits of these actions:

- Less manual data entry, resulting in better data quality and more time for contextual information to be provided
- Measurable reductions in bureaucratic burden on researchers and administrators
- More timely, more complete information about the outputs and outcomes resulting from funded research and a better basis for tracking future impacts

# PID optimized workflows report recommendations

## Repositories and publishers

1. Collect and authenticate ORCID IDs for authors and reviewers during article submission and pull in affiliation data etc. from the ORCID records of authors.
2. Integrate grant DOI search and lookup tools and pull funding acknowledgements and other data from the grant record into publication metadata.
3. Embed PIDs for projects, grants, organisations, contributors, and other entities into both outputs and metadata in human-readable and machine-actionable forms.
4. Register DOIs (or equivalent) PIDs for outputs, provide the most complete metadata possible for them at the time of registration and commit to updating metadata records into the future.

### Benefits of these actions:

- More accurate connections between the output and any associated entities, with consequent time and effort savings in review and metadata creation
- Maximised discoverability and citability of outputs, boosting the reach and impact of content, with easier tracking of references and other interactions
- Lower administrative overheads (review, handling of any charges, progress through different systems to publication, and so on) and an improved author experience

# PID optimized workflows report recommendations

## Research Managers

1. Support and incentivise researchers to get an ORCID ID and to keep their ORCID records complete and up-to-date.
2. Register RAIDs for projects, provide the most complete metadata possible for them at the time of registration, and commit to updating metadata records into the future.
3. Leverage PID registries and update notifications (e.g. Crossref/DataCite 'auto update' functionality, ORCID record notifications) to automate metadata re-use and reporting processes wherever possible.

### Benefits of these actions:

- Streamlined administrative processes for project management and internal or external reporting, and improved research integrity/reproducibility
- Enhanced abilities to analyse research portfolios and better strategic decision-making
- Easier compliance with and monitoring of policy requirements

# PID optimized workflows report recommendations

## Research data specialists

1. Register PIDs for datasets early in the research lifecycle, provide the most complete metadata possible for them at the time of registration, and commit to updating metadata records into the future.
2. Embed PIDs for associated entities (projects, people, organisations, facilities, instruments, physical samples, textual resources, etc.) into dataset metadata and make metadata as open as possible.
3. Use PIDs to track versioning and disposal/publication/access decisions.

### Benefits of these actions:

- Enhanced reproducibility and integrity of research
- Clear pathways to tracking investments, impacts and outcomes of data-producing systems/processes
- Reduced project and data management overhead and better reporting to institutions and funders
- Improved strategic management of data assets

# Here's to a PID-optimised future!

- Comprehensive and consistent PID adoption creates efficiencies and enables analysis and insights that have so far proved impossible
- We hope that these workflows can help us to realise this goal
- See the report here:  
<https://doi.org/10.5281/zenodo.7192156>



# Sector readiness survey

## Summary

- Ran for six weeks in the summer 2022 - 82 responses, mainly universities
- Common core of stakeholders (researchers and students)
- Common core of systems - CRIS, RDM, repository, HR
- Most familiar PIDs are DOIs for Outputs and ORCIDiDs
- The free text fields provided the richest information for the project



Photo by [Anna Nekrashevich](#) from [Pexels](#)

# Sector readiness survey

## Findings

- Confusion over different types of persistent identifiers
- Fuller implementation is hampered by a lack of leadership and user buy-in, costs, and technical difficulties
- Inertia and a lack of clear value propositions to incentivise action is systemic
- Collective action is required as this is too big to be solved by individual institutions
- Respondents were willing to engage with the project



Photo by [Jonny Gios](#) on [Unsplash](#)

# PID strategy

## Phase 3 (June – Nov 2022)

- **PID Support Network** - Business planning and roadmap to establish a dedicated team of technical, educational, and communications specialists hosted at a trusted UK institution to drive forward the PID agenda
- **UK RAiD Registration Agency** - Business planning and roadmap to establish a registration agency in the UK
- **RAiD pathfinder projects** to pilot RAiD in HEIs



Photo by [Shan Patel](#) on [Pexels](#)

# PID Support Network

## Better support for PIDs

- Drive forward the PID agenda
- Establish a baseline for support
- Increase understanding and usage of PIDs
- Overcome barriers to adoption
- Governance and engagement models for medium term support project
- Identify potential funding streams and models to resource the project



@chriscb

# RAiD Registration Agency and Pathfinder

## PID for projects

- Projects are a critical entity, and are the 'ground truth' for many of the connections and relationships between other PIDs
- Automatic re-use of basic project metadata alone could save the sector £1.5M each year
- Laying the foundations for a UK registration agency with a business model and service/product roadmaps
- Identifying and documenting key use cases
- Engaging with disciplinary communities to prepare pilot integrations
- 28 Mapping key project metadata workflows



### Pathfinder projects:

- UKRI-STFC (Science and Technology Facilities Council)
- EMBL-EBI (European Molecular Biology Laboratory - European Bioinformatics Institute)
- Practice Research – Repository (University of Westminster)
- UKDS (UK Data Service)


# National PID strategy page

<https://www.jisc.ac.uk/rd/projects/a-national-persistent-identifier-research-strategy>

R & D project

## A national persistent identifier research strategy

Delivering sector-wide cost savings through improved automation and technical integration.



Started 1 Jul 2019

Expected outcome:  
Advice


Infrastructure

Open access

Research and research data

Visit the project blog

Join the Twitter discussion  
@ukpids



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# Developing an international approach

How can we coordinate and align different national PID strategies and bring together international PID experts?



Who can join the Research Data Alliance?

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

Openness

Consensus

Inclusive

Harmonization

Community-driven

Non-profit and technology-neutral



## Vision

Researchers and innovators openly share and **re-use** 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 and **re-use** of data

## THE RESEARCH DATA ALLIANCE

[www.rd-alliance.org](http://www.rd-alliance.org)

*building the social and technical bridges that enable open sharing and re-use of data*

59 FLAGSHIP OUTPUTS

including 8 ICT Technical Specifications

200+ ADOPTION CASES

across multiple disciplines, organisations & countries

88 GROUPS WORKING ON GLOBAL DATA INTEROPERABILITY CHALLENGES

33 Working Groups  
54 Interest Groups  
1 Community of Practice

12,934 INDIVIDUAL MEMBERS FROM 148 COUNTRIES

UK Members – 1052  
Second largest after USA

61 ORGANISATIONAL MEMBERS  
12 AFFILIATE MEMBERS



# National PID Strategies WG



**WG page:** <https://www.rd-alliance.org/groups/national-pid-strategies-wg>

Status: Recognised & Endorsed

Members: 50+

Co-chairs:

- Christopher Brown, Jisc, UK
- Daniel Bangert, DRI/Royal Irish Academy
- Natasha Simons, ARDC, Australia
- Shawna Sadler, ORCID, Canada

Start date – 10 December 2021

End date – 10 June 2023



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# National PID Strategies WG



## Milestones and Deliverables

### 0-6 months

- Case studies: UK (Jisc), AUS (ARDC), CAN (Digital Alliance), NL (SURF), Finland (CSC), KOR (KISTI)
- Draft guide v1 - common elements of national PID strategies (includes case studies)

### 6-12 months

- Case Studies: NZ, USA, Colombia, Japan, Brazil, Germany, and others
- Draft guide v2 - adding common metadata and standards plus minimal set of PIDs to support international interoperability, plus examples of governance and workflows

### June 2023

- Final report

# Developing a ‘how-to’ guide



## Key messages

- National PID Strategies are in the early stages. Most countries do not have a “strategy”, they have an emerging initiative or approach
- The environment is in flux, so the case studies and guide are snapshots in time
- The scope of a strategy/approach varies between countries but there are common elements, drivers and PIDs between the case studies



Photo by [Alex Andrews](#) on [Pexels](#)

# And finally...

## Summary of key deliverables

- **National PID Strategy WG**
  - Guide and UK case study
- **RINCC established**
  - Third meeting 3<sup>rd</sup> November 2022
- **Cost-benefit Analysis report (revised)**
  - <https://doi.org/10.5281/zenodo.7356219>
- **The case for investment in a UK PID strategy**
  - <https://zenodo.org/record/6012367>
- **PID Support Network**
  - Business plan and roadmap
- **UK RAiD Registration Agency**
  - Business plan and roadmap

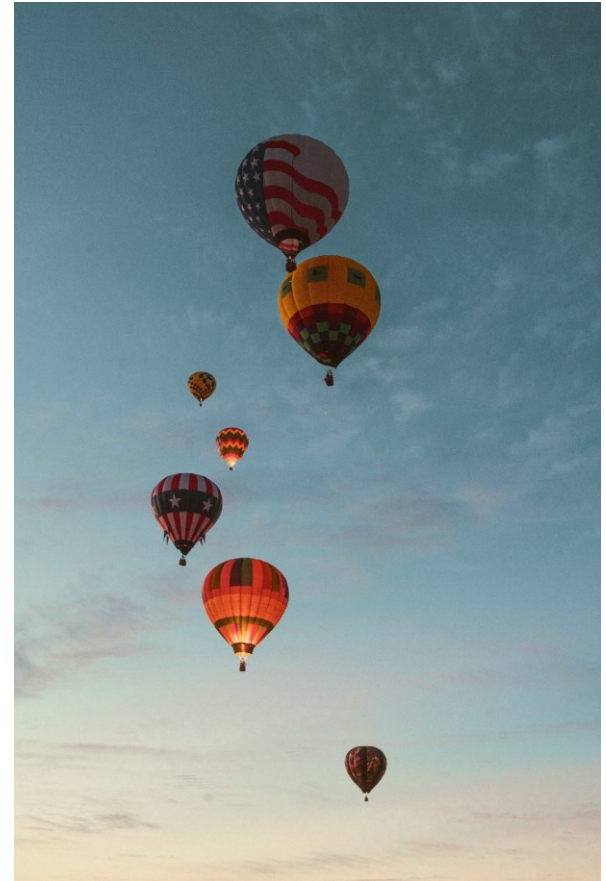


Photo by [Michael Villanueva](#) on [Pexels](#)

# Thank you

**Christopher Brown**

@chriscb

@chriscb@mas.to

christopher.brown@jisc.ac.uk