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PIDs in 2025: New Opportunities to Explore Researcher Activity



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ORCID Canada



 <https://orcid.org/0009-0009-1891-2837>

Nikolas Lamarre, MSc
CRKN-RCDR

Canadian Persistent Identifier Community Officer
Agent de la communauté canadienne des identifiants
pérennes

nlamarre@crkn.ca



Agenda

1. Intro to PIDs

a) PIDs Primer

b) PIDs in Canada

2. ORCID Data Visualization Tool

a) Intro & Technical overview

b) Demo

c) What's next

3. National PID Strategy - Canadian PIDs Dashboard

PIDs primer

“A persistent identifier (PID) is a globally unique digital string of characters that is associated with a single thing, or entity.”
– MoreBrains Cooperative, 2022

“PIDs are the anchors that facilitate links between related pieces of information... IDs are labels that refer to a specific entity in the information landscape, such as an object, organization, person, or dataset...”
– Leggott et al, 2022

- ORCID iD: <https://orcid.org/0000-0001-7055-4357>
- DOI (publications): <https://doi.org/10.26522/ssj.v16i2.2702>
- ROR (organisations): <https://ror.org/03yrm5c26>



PIDs

- Persistent
 - Global
 - Unique
 - String of characters
 - Digital
 - Machine-readable
 - **Interoperable**
-
- Persistence is not *inherent* – PIDs must be supported through PID registration agencies (e.g., ORCID) – and through your support!

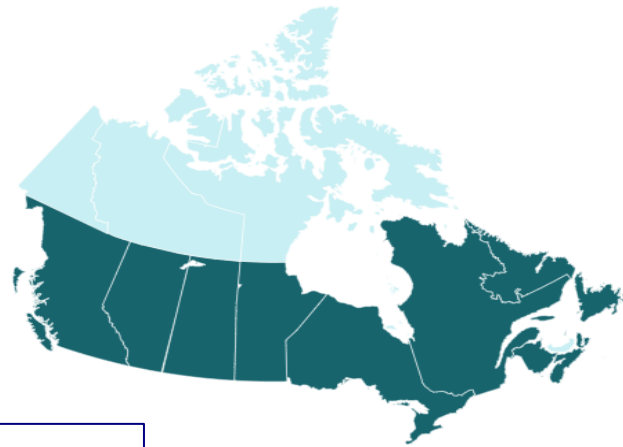


PIDs in Canada



ORCID-CA Metrics

- 54 members, 9 provinces
- 79 member integrations
- 249,170 ORCID iDs (.ca)
 - 162,000 active iDs (.ca)
 - 9.2M active iDs (global)



DataCite Canada Metrics

- 85 members
- 107 repositories
 - ↑ DSpace
 - 34,202 DOIs (2024)
 - 748,688 DOIs total

ORCID-CA Members

- 38 Universities (70%) – all U15
- 8 Government Entities
 - **Funders**, Libraries
- 8 Others
 - Infrastructure, Networks, Health

DCAN Members

- 36 Institutes, Foundations, Networks, Health Orgs, etc.
- 37 Universities (44%)
- 10 Government Entities
- 2 Journals

PID Governance



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**ORCID Canada
Governing
Committee**



**DataCite Canada
Governing
Committee**

CPIDAC

- *Canadian Persistent Identifier Advisory Committee*
- Governing Committees made up of/elected by the membership
- Shared advisory committee, advising both bilingual PID consortia
- PID Strategy Development and Implementation
- Committee composed of
 - Funders
 - Library Consortia
 - Digital Research Infrastructure
 - Others (e.g., CIOs, Research Administrators)
- Funding from Digital Research Alliance of Canada



**Digital Research
Alliance** of Canada

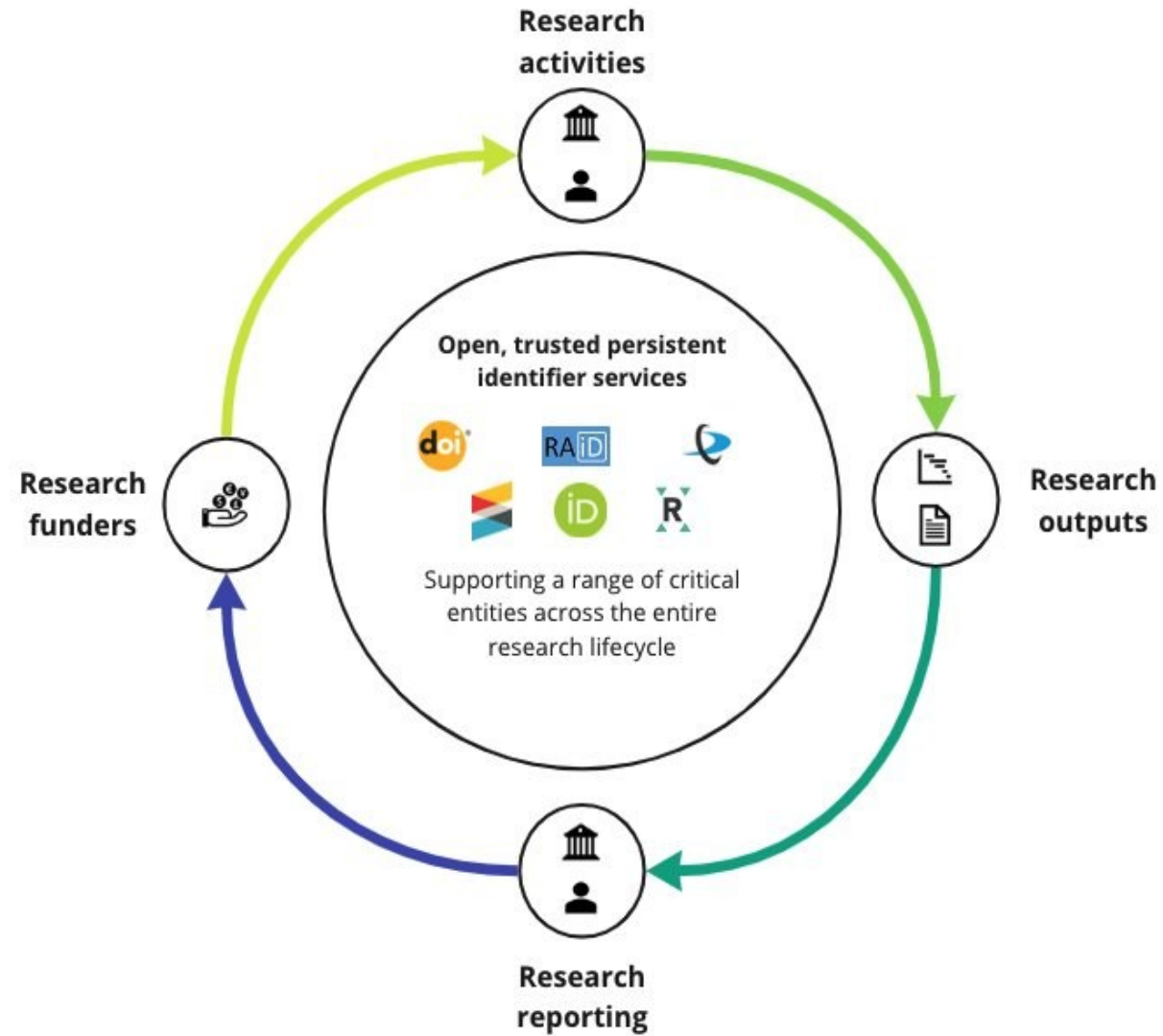
**Alliance de recherche
numérique** du Canada

ORCID Data Visualization Tool



Interoperability

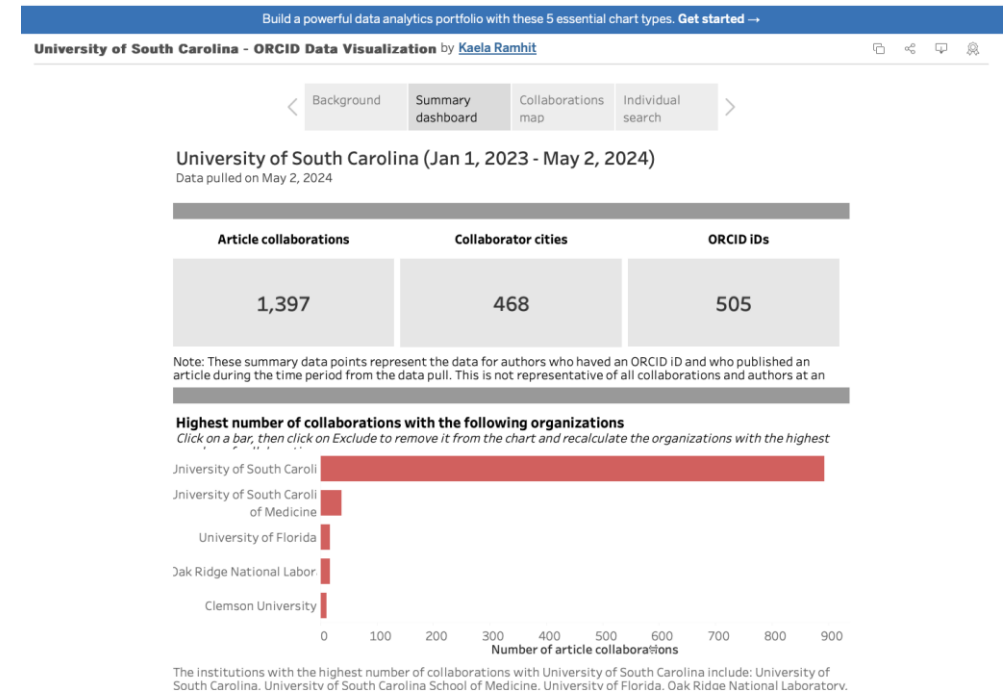
Identifiers across the research lifecycle



ORCID Data Visualization Tool - Overview

- Tool developed and maintained by LYRISIS:
 - Open-source code: <https://github.com/lyrasis/ORCID-Data-Visualization>
- Visualizes publication collaboration activity by institution and individual
- Draws on ORCID and Crossref DOIs
- Visualizes content using Tableau Public (R code)
- Demo—University of South Carolina: <https://tinyurl.com/2hdfnpu2>

The screenshot shows the GitHub repository page for 'ORCID-Data-Visualization'. It includes the repository name, a search bar, and a list of files and folders. The 'README' file is expanded, showing the project's purpose: 'Exploring Publication Collaborations using ORCID and DOI data'. The project summary explains that the tool uses public data from researchers' ORCID records and Crossref DOI publication metadata to create a visualization of publication collaboration activity. It mentions that the R script in the repository can be used to retrieve information about publishing collaborations between researchers at a home organization and other organizations across the globe. The project was made possible by a 2022 partnership between the ORCID US Community (administered by Lyris) and the Drexel University LEADING program.



ORCID Data Visualization Tool - Overview

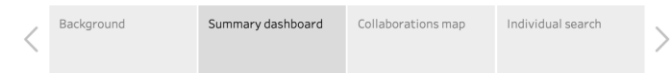
<https://bit.ly/3RhpNne>

(Tableau Public demo)



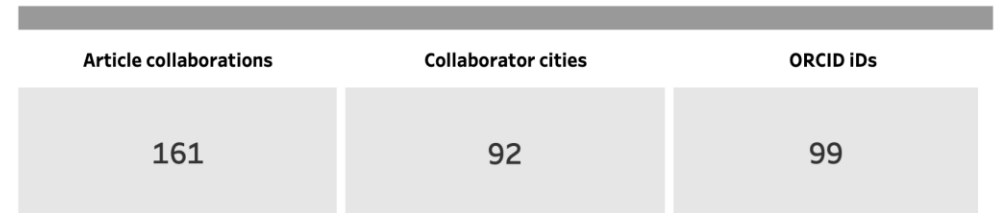
<https://bit.ly/43TcJvZ>

(CRKN code)



University of New Brunswick (Jan 1, 2024 - August 20, 2024)

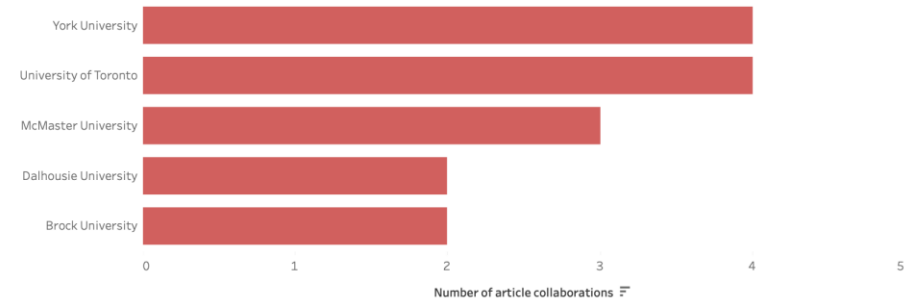
Data pulled on August 20, 2024



Note: These summary data points represent the data for authors who had an ORCID ID and who published an article during the time period from the data pull. This is not representative of all collaborations and authors at an organization.

Highest number of collaborations with the following organizations

Click on a bar, then click on Exclude to remove it from the chart and recalculate the organizations with the highest number of collaborations.



The institutions with the highest number of collaborations with Temple University include: Thomas Jefferson University, Loma Linda University, Broad Institute, Centre de la Recherche Scientifique, Centre de Recherche en Cancerologie de Marseille.

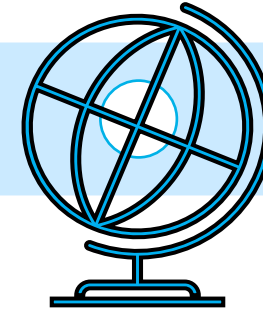
Extending the Tool

Integrate
DataCite DOIs

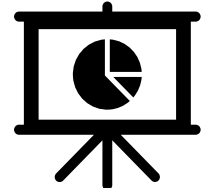
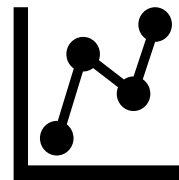
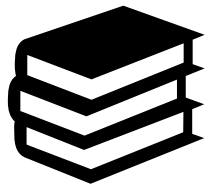
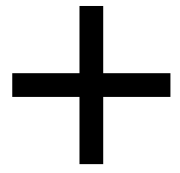


Move to
Shiny

Move to
GeoNames



Getting work data (DOIs)

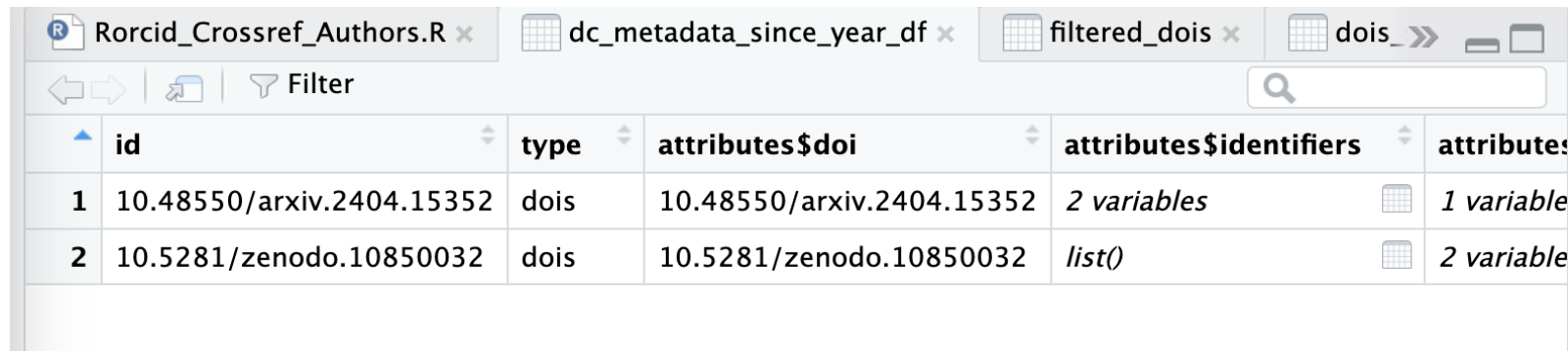


Integrating DataCite

```
> metadata_since_year <- map(dois_since_year$doi, function(z) {  
+   print(z)  
+   o <- cr_works(dois = z)  
+   return(o)  
+ })  
[1] "10.54113/j.sust.2024.000034"  
[1] "10.1080/09687599.2022.2077174"
```

Warning messages:

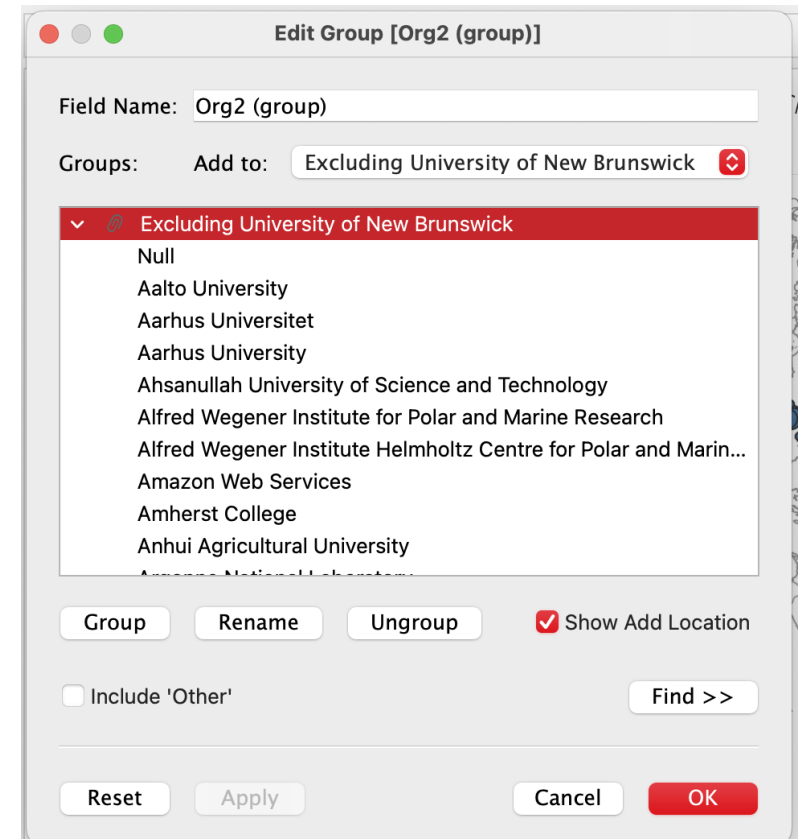
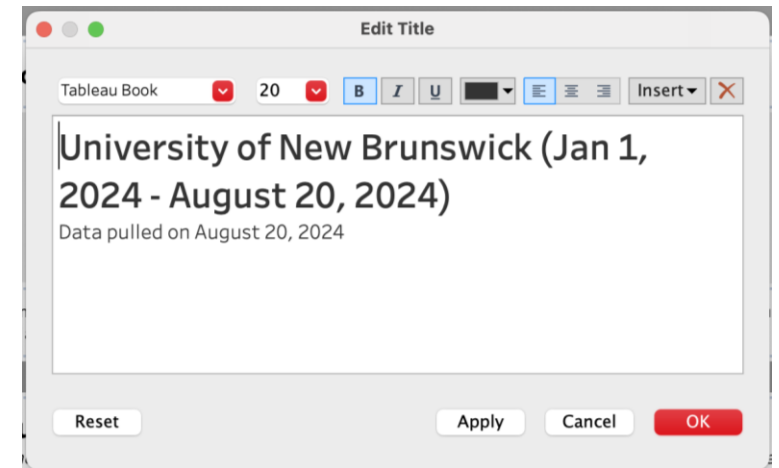
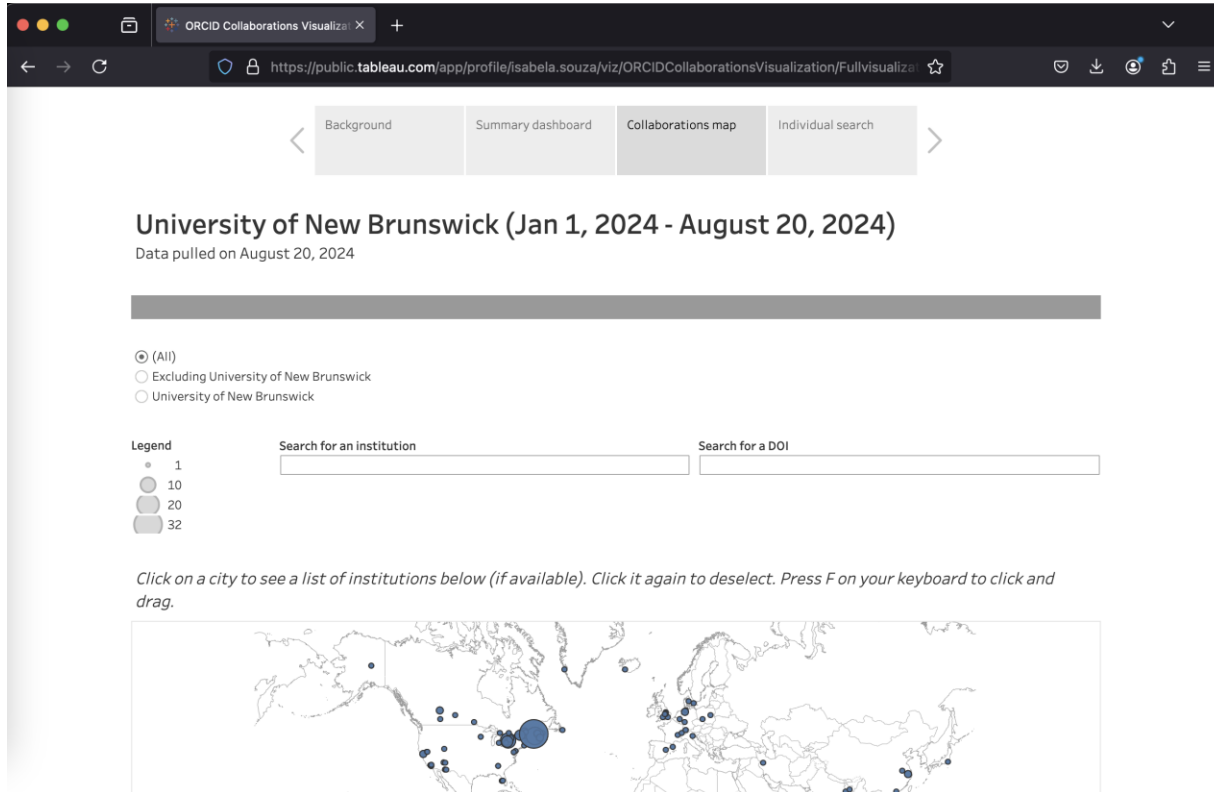
```
1: 404 (client error): /works/10.48550/arxiv.2404.15352 - Resource not found.  
2: 404 (client error): /works/10.5281/zenodo.10850032 - Resource not found.  
> |
```



The screenshot shows the RStudio interface with a data frame named 'dc_metadata_since_year_df' displayed in the Environment pane. The data frame has 2 rows and 5 columns. The columns are: 'id', 'type', 'attributes\$doi', 'attributes\$identifiers', and 'attributes'. The first row has values: 1, dois, 10.48550/arxiv.2404.15352, 2 variables, and 1 variable. The second row has values: 2, dois, 10.5281/zenodo.10850032, list(), and 2 variable.

	id	type	attributes\$doi	attributes\$identifiers	attributes
1	10.48550/arxiv.2404.15352	dois	10.48550/arxiv.2404.15352	2 variables	1 variable
2	10.5281/zenodo.10850032	dois	10.5281/zenodo.10850032	list()	2 variable

Tableau Public dashboard - Customization



Moving to Shiny

- Open source and more customizable
- Data privacy and security
- Sustainability
- Dashboard can be updated by itself!
 - Reflects changes to source file in real-time
- Automated Filtering

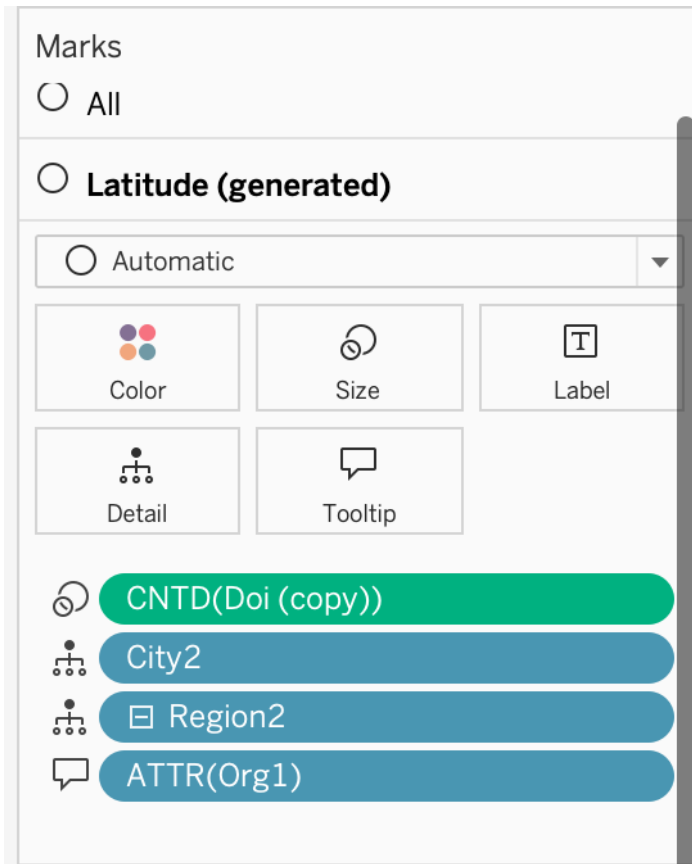
```
card(min_height = 500,  
  # Dropdown to select the filtering option  
  selectInput("institution_filter", "Filter Institutions:",  
    choices = c("Show All",  
                "University of New Brunswick",  
                "Excluding University of New Brunswick"),  
    selected = "Show All"),
```

```
output$institutionTable ← renderDataTable({  
  # Apply the filtering logic based on the user's selection  
  filtered_data ← institutions # Replace with your actual institutions data frame  
  
  if (input$institution_filter = "University of New Brunswick") {  
    filtered_data ← filtered_data %>%  
      filter(Institution = "University of New Brunswick")  
  } else if (input$institution_filter = "Excluding University of New Brunswick") {  
    filtered_data ← filtered_data %>%  
      filter(Institution ≠ "University of New Brunswick")  
  }  
  # "Show All" case doesn't require any filtering
```



Moving to GeoNames for latitude/longitude

Tableau generates geocoordinates based on city and region



GeoNames

- Higher accuracy
- Comprehensive Geographical Database
- Added support for Canadian provinces



The GeoNames geographical database covers all countries and contains over eleven million placenames that are available for download free of charge.

Demo – UNB

ORCID Collaboration Dashboard Summary Dashboard Collaborations map Individual search

University of New Brunswick (Jan 1, 2024 - August 20, 2024)

Data pulled on August 20, 2024



Article Collaborations

161



Collaborations Cities

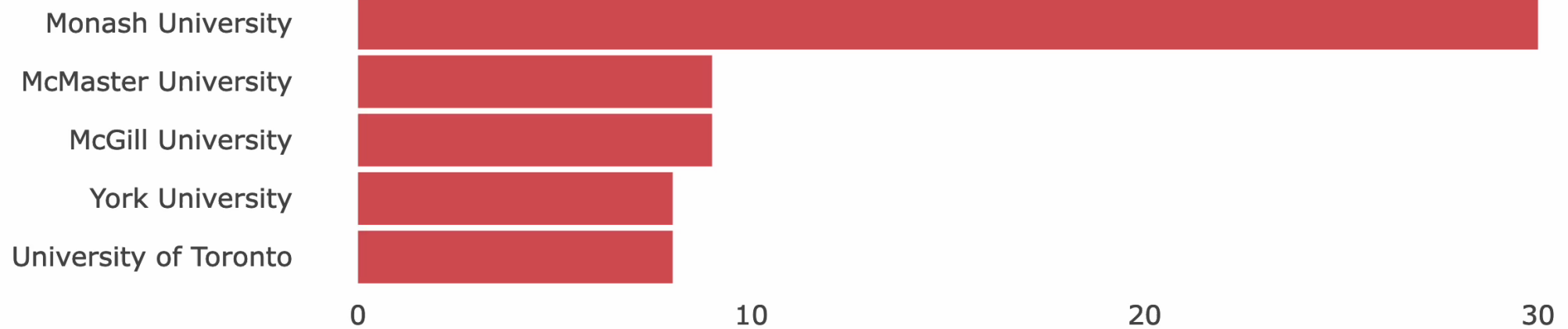
93



ORCID IDs

99

Highest number of collaborations with the following organizations



Issues and Challenges - Individual Search

<https://orcid.org/0000-0003-0681-9685>

Works (15) Sort

Authenticated Range Querying of Historical Blockchain Healthcare Data Using Authenticated Multi-Version Index

Distributed Ledger Technologies: Research and Practice
2024-06-30 | Journal article Show more detail
DOI: [10.1145/3624575](https://doi.org/10.1145/3624575)
CONTRIBUTORS: Shlomi Linoy; Suprio Ray; Natalia Stakhanova; Erik Scheme

Source:  Crossref

Learned Index Acceleration with FPGAs: A SMART Approach

2024-06-19 | Conference paper Show more detail
DOI: [10.1145/3665283.3665287](https://doi.org/10.1145/3665283.3665287)
CONTRIBUTORS: Geetesh More; Suprio Ray; Kenneth B. Kent

Source:  Crossref




FunDa: Towards Serverless Data Analytics and In Situ Query Processing

2024-06-09 | Conference paper Show more detail
DOI: [10.1145/3663741.3664788](https://doi.org/10.1145/3663741.3664788)
CONTRIBUTORS: Suvam Kumar Das; Ronnit Peter; Xiaozheng Zhang; Suprio Ray

Source:  Crossref

 Help

Suprio Ray

 <https://orcid.org/0000-0003-0681-9685>  

[Show record summary](#)

Personal information

Websites & social links

[Homepage](#)

Activities

[Collapse all](#)

Employment (1) Sort

University of New Brunswick Fredericton: Fredericton, NB, CA

2015-07-01 to present | Associate Professor (Faculty of Computer Science)
Employment Show more detail

Source:  Suprio Ray

Things to consider:



Dataset date range



ORCID visibility settings



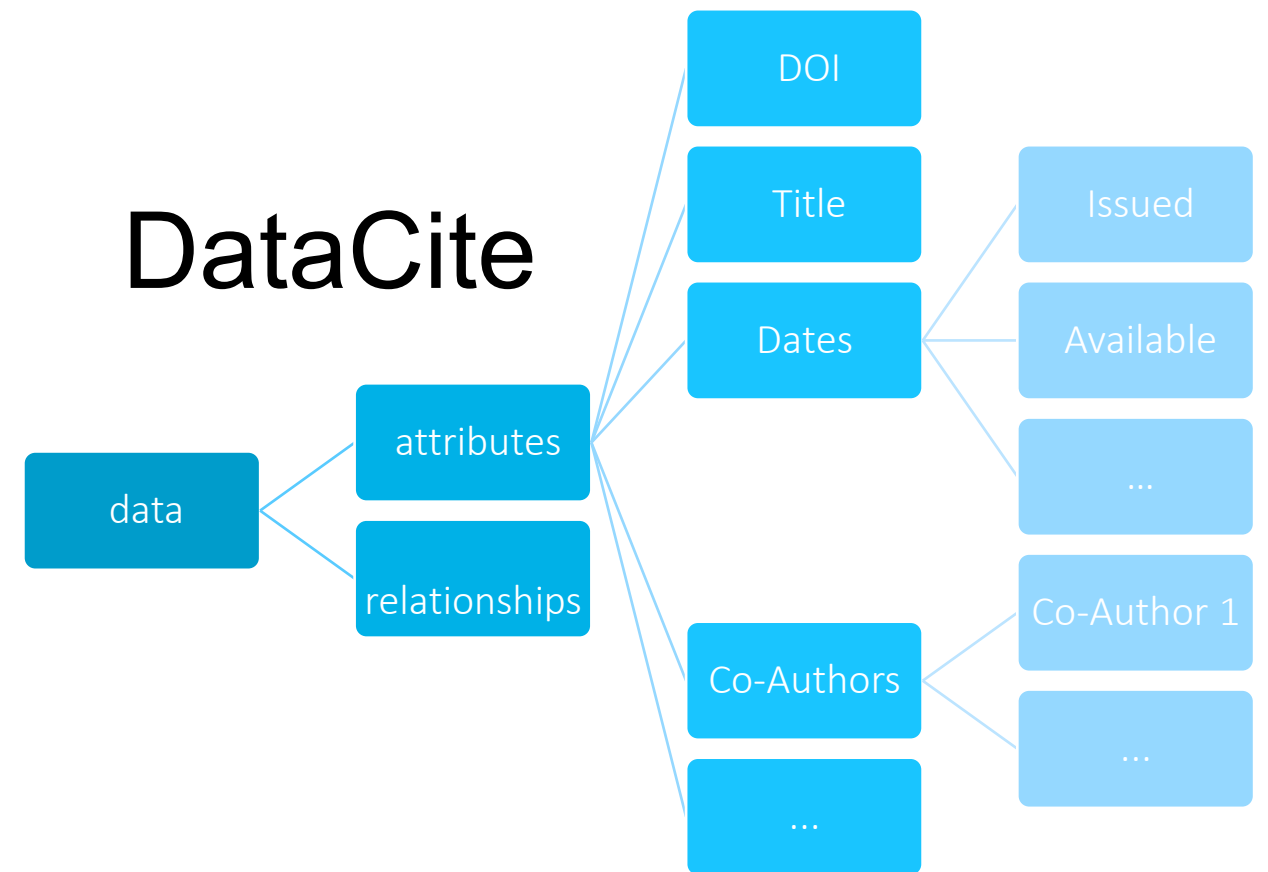
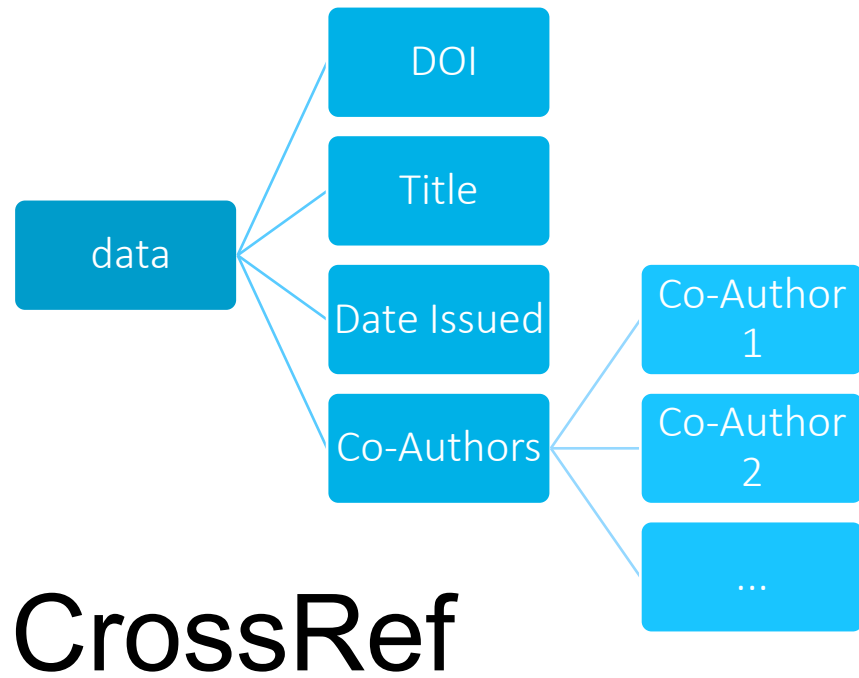
Issues and Challenges – Institution naming

The screenshot shows an RStudio window with several tabs: 'Rorcid_Crossref_Authors.R', 'my_organizations_filtered', 'filtered', 'app.R', and 'co'. The 'my_organizations_filtered' tab is active, displaying a data table with two columns: 'organization_name' and 'n'. The table contains 10 rows of data, showing various university names and their corresponding counts. The interface includes a search bar and navigation icons at the top of the table view.

	organization_name	n
1	Universityt of New Brunswick	1
2	University of New Brunswick/Forintek	1
3	University of New Brunswick:,	1
4	University of New Brunswick, Faculty of Nursing	1
5	University of New Brunswick Saint John Faculty of Busi...	1
6	University of New Brunswick Saint John Faculty of Arts	2
7	University of New Brunswick Saint John Department of...	1
8	University of New Brunswick Saint John Department of...	1
9	University of New Brunswick Saint John Department of...	2
10	University of New Brunswick Saint John – The Centre f...	1

Showing 1 to 10 of 75 entries, 2 total columns

Issues and Challenges – APIs



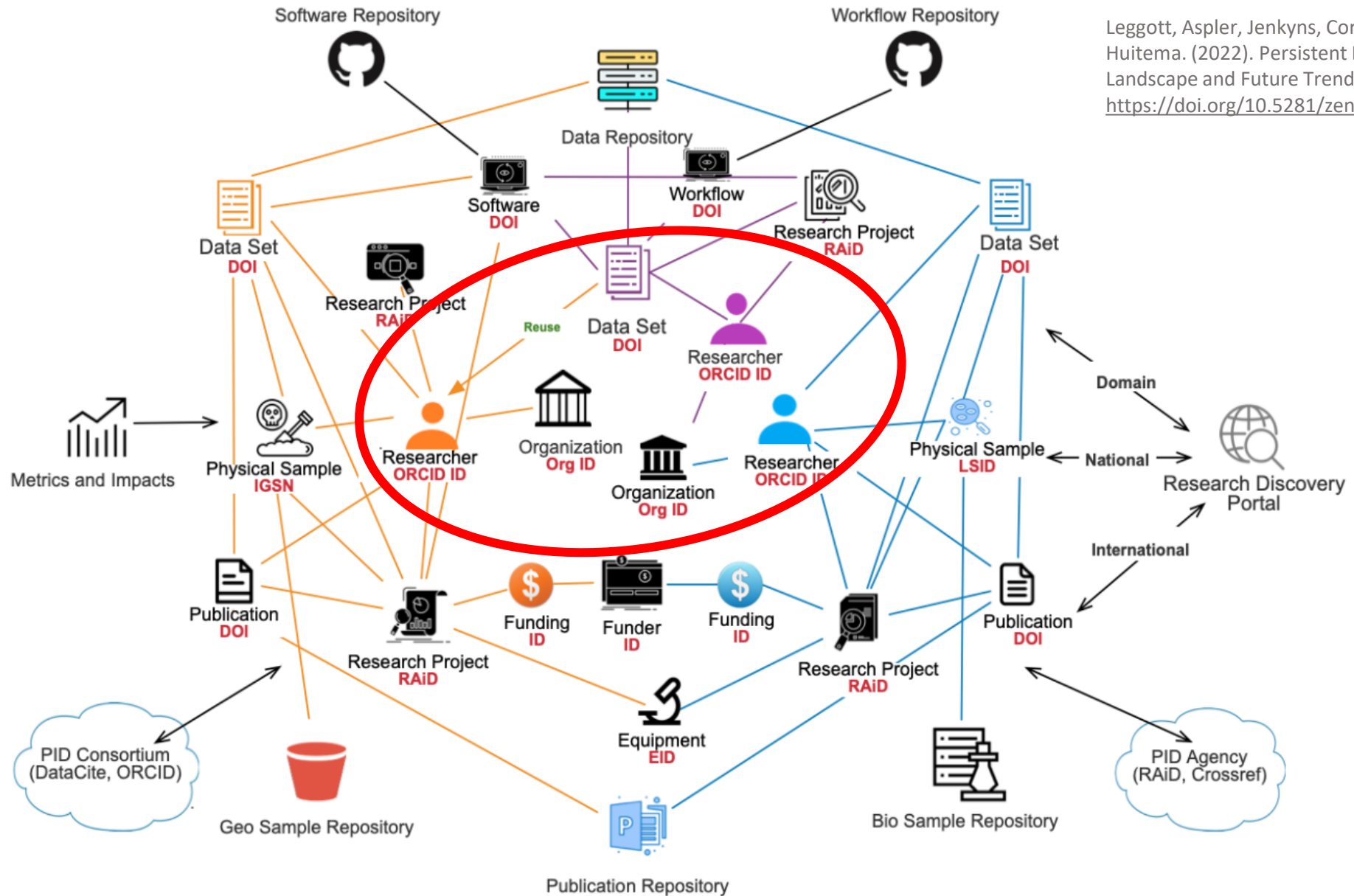
Next steps

- Complete migration to Shiny
- Completing the individual ORCID search function
- Include DOIs/links to the collaboration resources (papers and datasets)
- Make institutional reconciliation more robust (eg. Track all UNB org names as one)
- Community minded approach
 - Contribute the updated code back to LYRASIS
 - Set up tests for interested ORCID-CA members to review
 - Communicate these developments and contributions
- Establish value of tool, and possible next steps in development



National PID Strategy: Canadian PIDs Dashboard

Problem statement



Leggott, Aspler, Jenkyns, Corrie, Nicholson, Liu, & Huitema. (2022). Persistent Identifiers: Current Landscape and Future Trends (2.0). Zenodo. <https://doi.org/10.5281/zenodo.7065515>

National PID Strategy

Why a national strategy?

- Community-driven approach
- Collaborative work across sectors
- National funding to support centralized initiatives
- National policies (Open Science)

Phase III

- Annual In-Person CPIDAC Meeting
- A Checklist for Success
- [Vision, Mission, Principles](#)
- Gap Analysis
- [PID Selection Matrix](#)
- [Final Report/Recommendations](#)

Phases I & II

- CRKN, Alliance, CPIDAC
- Community Consultations
- [MoreBrains Report](#) (Phase I)
- [Comms Toolkit](#) (Phase II)
- Priority PID Entities (Phase II)

Next Steps

- Strategic Workplan
- Entity-by-Entity Action Plan
- Technical Capacity
- Engagement Strategy

Final Report: Priority PIDs for Priority Entities

Priority Entities	Candidate PIDs	Maturity	Next Steps: PIDs Recommended in Report
People	ORCID ISNI	Established Established	Recommend the use of ORCID IDs for current scholars – we do this already. ISNI might be a helpful use case for historical or cultural figures – to study. Scopus does not respond to the PID Matrix Selection Criteria/Principles.
Outputs	Crossref DOIs DataCite DOIs ARKs	Established Established Established*	Metadata schema should guide the choice of DataCite vs Crossref . *ARKs depend on resolver context. Evaluate ARKs with DOIs to see when needed.
Organizations	ROR ISNI	Emerging Established	ROR is an emerging PID, but likely the candidate of choice. ISNI requires study. Ringgold does not respond to the PID Matrix Selection Criteria/Principles.
DMPs	DataCite DOIs	Established	Recommend the use of DataCite DOIs .
Grants	Crossref DOIs DataCite DOIs	Established Emerging	Careful comparison of use cases; Crossref used by some CA funders.
Projects	RAiD	In Development	RAiD is the only candidate, but still in early stages of development. To watch.
Software	SWIHDS	Emerging	SWIHDS show promise, but low maturity and adoption. To watch and study.
Facilities, Instruments, Equipment, Resources	ROR DataCite DOIs RRIDs	N/A	Too much complexity in this space – some options exist (RRIDs for biological resources, ROR for some facilities, DOIs for some instruments), so it is recommended to watch and study.

ORCID-CA and Member Reports

(Available to consortia leads and member institutions only)

Impact

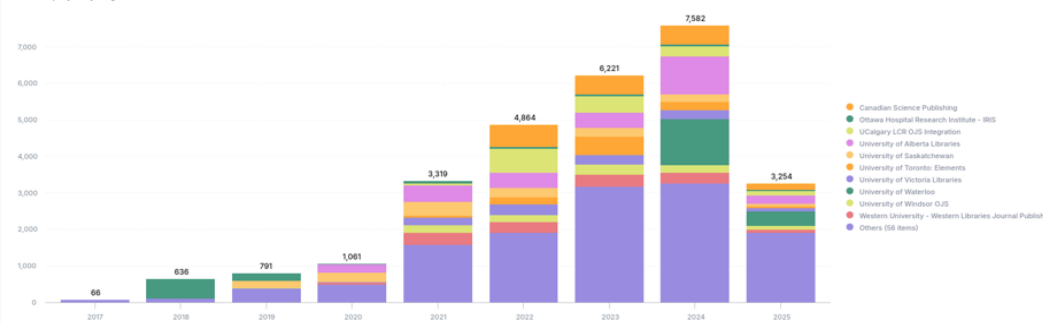
The number of researchers interacting with your integrations

Consortia members	Integrations	Active integrations	Consortia members												
54	83	51	<table border="1"> <thead> <tr> <th>Member Name</th> </tr> </thead> <tbody> <tr><td>1 Athabasca University</td></tr> <tr><td>2 Bank of Canada</td></tr> <tr><td>3 Brock University</td></tr> <tr><td>4 Canadian Science Publishing</td></tr> <tr><td>5 Cape Breton University</td></tr> <tr><td>6 Carleton University</td></tr> <tr><td>7 CIFAR</td></tr> <tr><td>8 Concordia University</td></tr> <tr><td>9 CRRES PÉRISCOPE</td></tr> <tr><td>10 Dalhousie University</td></tr> <tr><td>11 Digital Research Alliance of Canada</td></tr> </tbody> </table>	Member Name	1 Athabasca University	2 Bank of Canada	3 Brock University	4 Canadian Science Publishing	5 Cape Breton University	6 Carleton University	7 CIFAR	8 Concordia University	9 CRRES PÉRISCOPE	10 Dalhousie University	11 Digital Research Alliance of Canada
Member Name															
1 Athabasca University															
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3 Brock University															
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5 Cape Breton University															
6 Carleton University															
7 CIFAR															
8 Concordia University															
9 CRRES PÉRISCOPE															
10 Dalhousie University															
11 Digital Research Alliance of Canada															
Connected IDs	Records updated														
26.56K	10.22K														

Consortia member integrations

Display Name	Member Name	Client Details Id	Connected Users	Records Updated	Granted update	SP Name	Uses n
1 Ivey Business School - Elements	Western University	APP-2YL9RY7X0KDF8M08	42	13	42	Symplectic Elements	
2 KULAK Knowledge Creation, Dissemination, and Preservation	University of Victoria	APP-ZAMSREP2WV99QFV	184	1	24	Open Journal Systems (OJS)	
3 UBC Open Journal Systems Publishing Services	University of British Columbia	APP-UPHYKYVOEOKS0QYV	706	338	706	Open Journal Systems (OJS)	
4 Vancouver Island University	Vancouver Island University	APP-VNRYMZY730KTLAK	16	16	16		True
5 Symplectic @ York University	York University	APP-2SSDIUN3WZSUBIWE	376	113	375	Symplectic Elements	
6 Bank of Canada: Symplectic Elements Dev	Bank of Canada	APP-0PX0XBU70MTTF05M	0	0	0		
7 University of Victoria Libraries	University of Victoria	APP-AUV7XH0QF5VJ7LLG	1,118	495	1,118	Open Journal Systems (OJS)	
8 Social Sciences and Engineering Research Council (SSHR)	Social Sciences and Humanities Research Council / Cons...	APP-JV0BK9Z4RY6L5K3C	0	0	0		
9 University of Guelph - The Atrium Institutional Repository	University of Guelph	APP-BIAGZY6SRLZJUS0J	18	4	18	DSpace	
10 Open Journals @ Waterloo	University of Waterloo	APP-RQ2APMAXEHL5LQWF	161	0	23	Open Journal Systems (OJS)	
11 Federated Research Data Repository (FRDR) - Dépôt fédé...	Digital Research Alliance of Canada	APP-KNH4B92HY7KJ55	91	14	62		
12 Open Journal Systems (OJS) Bibliothèque de l'Université	Université Laval	APP-VEZWL2F5BK9I8E04	164	24	164	Open Journal Systems (OJS)	
13 Student Journals @McMaster	McMaster University	APP-3XOSR8D06QUY1LK	0	0	0		

New users per year by integration



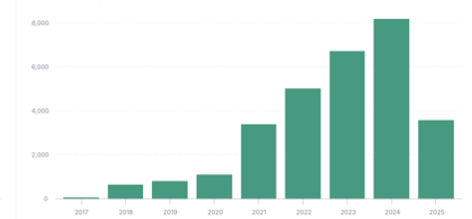
Records updated

The number of records your integrations have updated

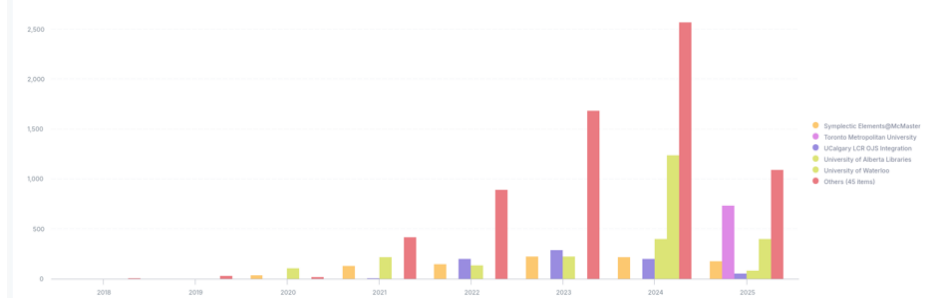
Unique records updated per year



Unique IDs connected per year



Records updated per year by integration



Affiliations

The affiliations your integrations have added to the ORCID registry

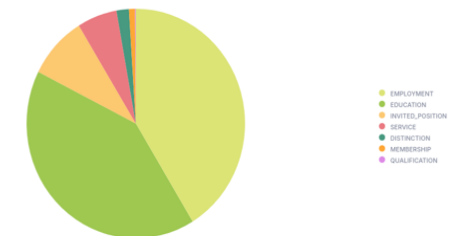
Records updated with affiliations

3.58K

Total affiliations added

4.19K

Types of affiliation added



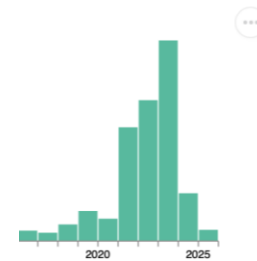
DataCite Commons Reports

<https://bit.ly/3DX3v7j> (Borealis)

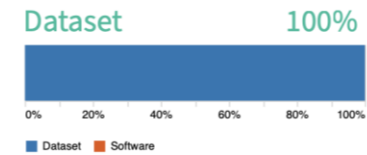


4 Works

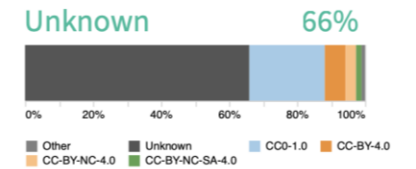
Publication Year



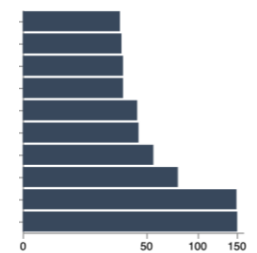
Work Types



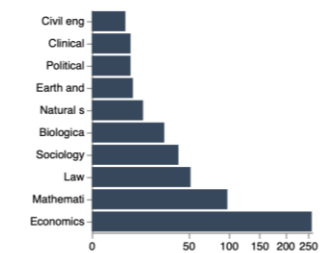
Licenses



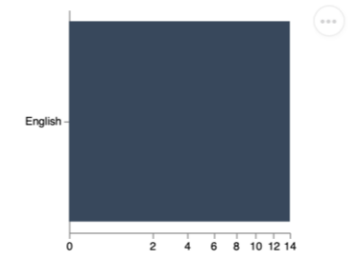
Creators and Contributors



Fields of Science



Work Languages



If you want to deposit your research data in this repository, go to [/borealisdata.ca](https://borealisdata.ca).

National PID Strategy Data-driven decision-making

What kind of data/visualization would **your** organization find helpful?

- What types of PID-related data are most valuable for institutional reporting or research analytics?
- Which stakeholder groups would benefit most from real-time PID analytics?
- Are there ways PID data could inform policy or funding decisions?

What kind of data/visualizations would be useful to further promote & track PIDs adoption across Canada?

- Could PID-derived metrics replace or enhance traditional performance indicators?
- Beyond the ORCID Data Visualization Tool, how can we measure the impact of PID adoption on research visibility and collaboration?

Ideally, what would a Canadian PIDs dashboard look like?

- What features would make a PID dashboard indispensable for your institution's reporting needs?

Questions/Discussion

Please feel free to reach out if you have any questions!

Orcid-ca@crkn.ca

Datacite@crkn.ca



Canadian Research
Knowledge Network

Réseau canadien
de documentation
pour la recherche

Thank you!

Merci!

crkn-rcdr.ca