

Integration of Research Repositories and Research Management Systems: Cutting through with a SWORD

**Presentation by Janet Copsey
University Librarian, The University of Auckland
New Zealand
To CNI Spring 2010 Meeting**



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The University of Auckland



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- 4,600 FTE staff including 100 professional librarians

UoA Library – core systems

- Ex Libris – Primo, Voyager, MetaLib, SFX and DigiTool
- Partner in Primo Central/MetaLib development
- OCLC VDX interlibrary loan system with end-user requesting and direct interfaces to a number of national and international systems
- DSpace – Stuart Lewis, UofA Library staff member, was international release manager for latest version of DSpace – 1.6

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The oxidation reactions of heterogeneous carbon cathodes used in the electrolytic production of aluminium

Author(s): [Bryony Joanne James](#)

Published: Thesis (PhD--Chemical and Materials Engineering)--University of Auckland, 1997. 1997.

Description: xxi, 208 leaves : ill. ; 30 cm..

Subjects: [Cathodes](#) ; [Aluminum -- Electrometallurgy](#) ; [Carbon -- Oxidation](#)

Source: UOA-VOYAGER

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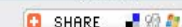
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- [F3 - Faculty of Arts](#) [43]
- [F4 - Faculty of Engineering](#) [29]
- [F5 - Faculty of Law](#) [1]
- [F6 - Faculty of Medical and Health Sciences](#) [1]
- [F7 - Faculty of Science](#) [859]
- [F8 - School of Theology](#) [4]
- [G1 - University of Auckland Library](#) [102]
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We have harvested research document metadata from around New Zealand and collected it in one place. You can use this website to [search](#) for research, look up specific [subjects](#) or [authors](#), [browse](#) the research in various ways, and [keep abreast](#) of emerging research activity.

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[Ground-Motion Prediction Equation for SI Based on Spectral Acceleration Equations](#)
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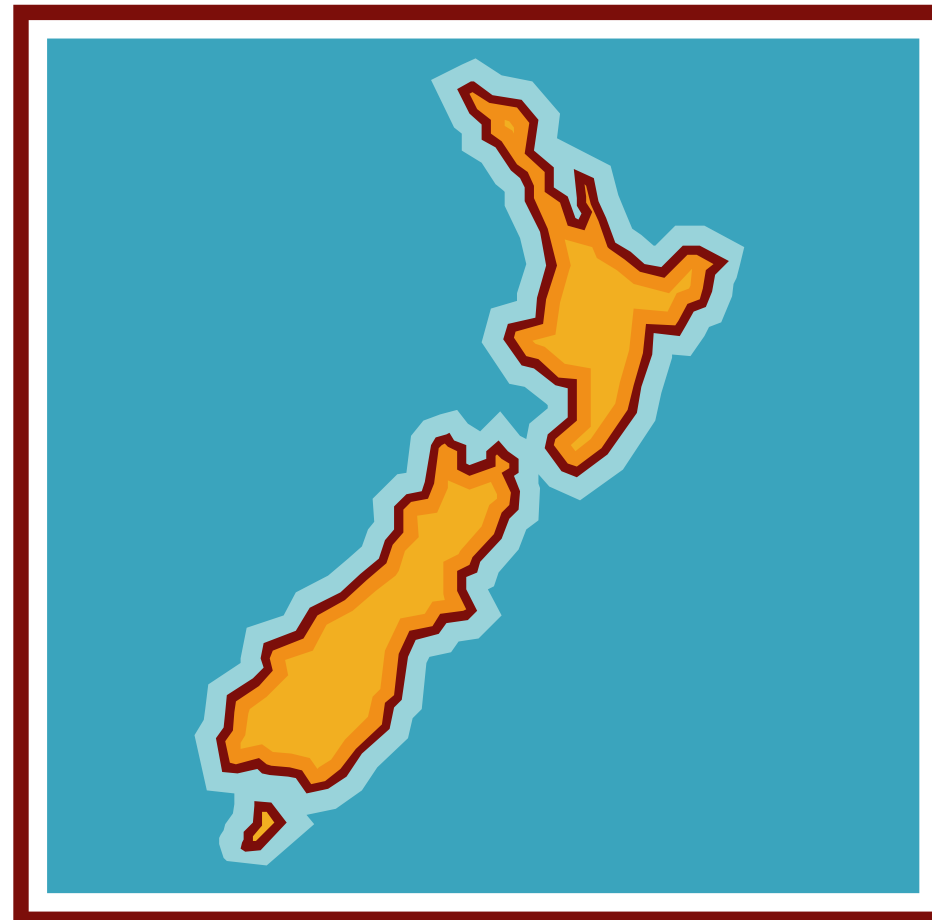
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Understanding the New Zealand environment



Research Funding – Core Research

New Zealand, and now Australia, has similar funding model to the UK which bases a percentage of core research funding on research outputs assessment.

- UK = RAE & now REF
- NZ = PBRF
- AUST = RQF & now ERA

Funding environment creates a driver for research management systems including management of research outputs

- Government and other funding bodies requirement for improved performance
- Government wanting to see higher profile internationally for NZ research
- Higher profile of institutional research on the web also required because of ranking system developments



What are some of the drivers for Research Repositories?

- Improved access to unpublished research such as Doctoral theses
- Open Access Movement – improved access to research
- Responsibility of the Library to their institution to enhance the collective memory by archiving research outputs created by academics



What do Research Management Systems and Research Repositories have in common?



Library-based Research
Repositories – primarily “Open
Access” with some “Dark
Archive”

Sharing and standards for
interchange built into systems

Archive the collective outputs
of University staff and make
them harvestable where
appropriate

Research Management
Systems – primarily internally
focused with reports for external
requirements

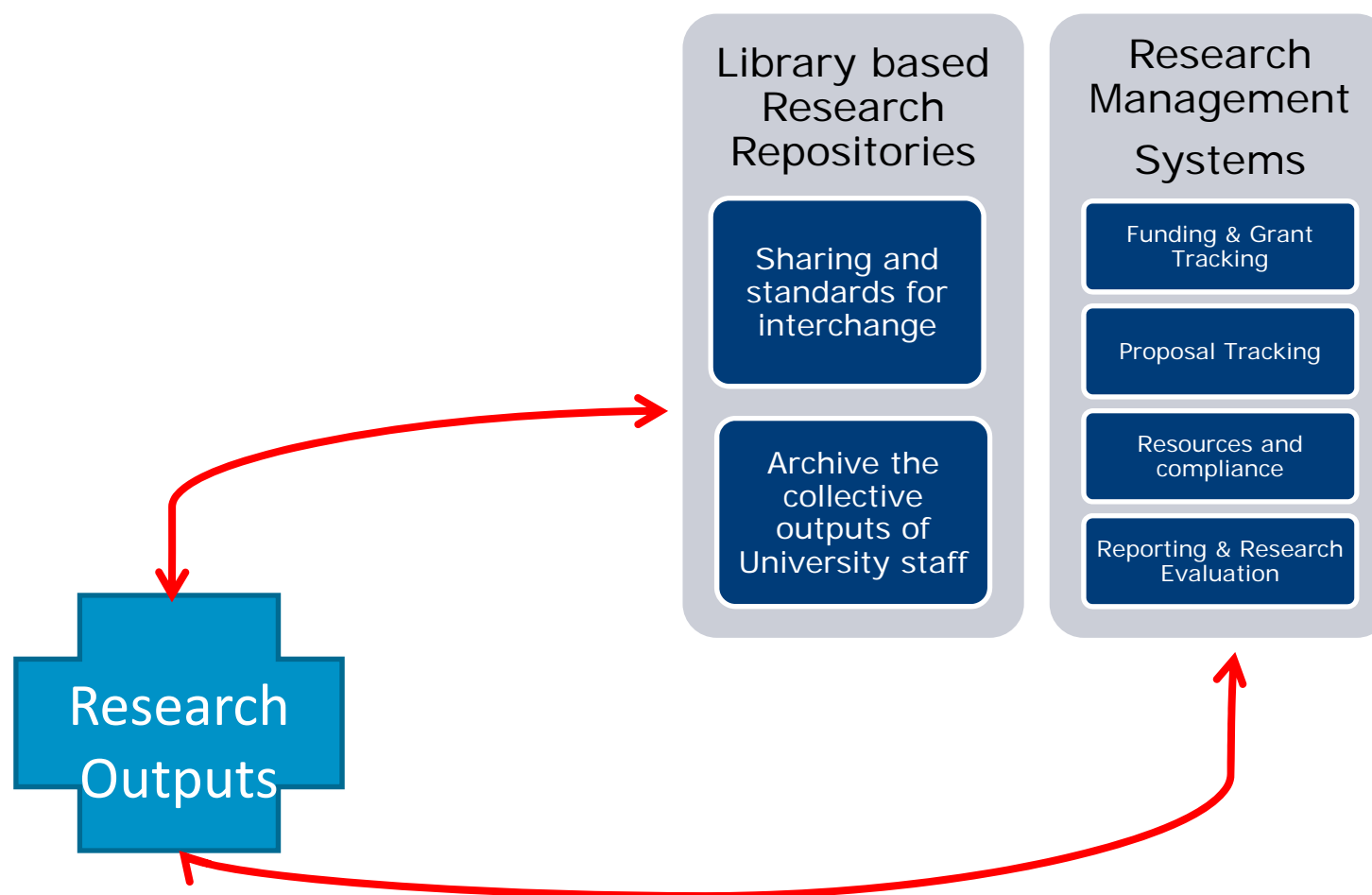
Funding & Grant
Tracking

Proposal Tracking

Resources and
compliance

Reporting & Research
Evaluation

Which piece of the puzzle is common?



"Modern information systems can only truly thrive when they interoperate with other systems. Institutional repositories are no exception to this rule. Repository software can typically interoperate with other systems in three ways:

- *to get things into the repository;*
- *to get things out of the repository;*
- *to assist the repository with tasks such as preservation, storage, or authentication."*

Lewis, S., Hayes, L., Newton-Wade, V., Corfield, A., Davis, R., Donohue, T., et al. (2009). If SWORD Is the Answer, What Is the Question?: Use of the Simple Web-Service Offering Repository Deposit Protocol. Program: Electronic Library & Information Systems. 43 (4), 407-418. <http://hdl.handle.net/2292/5315>

What are the barriers to integration?

- Few examples of successful models
- Technology mis-match between older Research Management Systems and newer repositories
- Most Research Management Systems have under-developed research publications management modules
- Standards minimal in this area although emerging



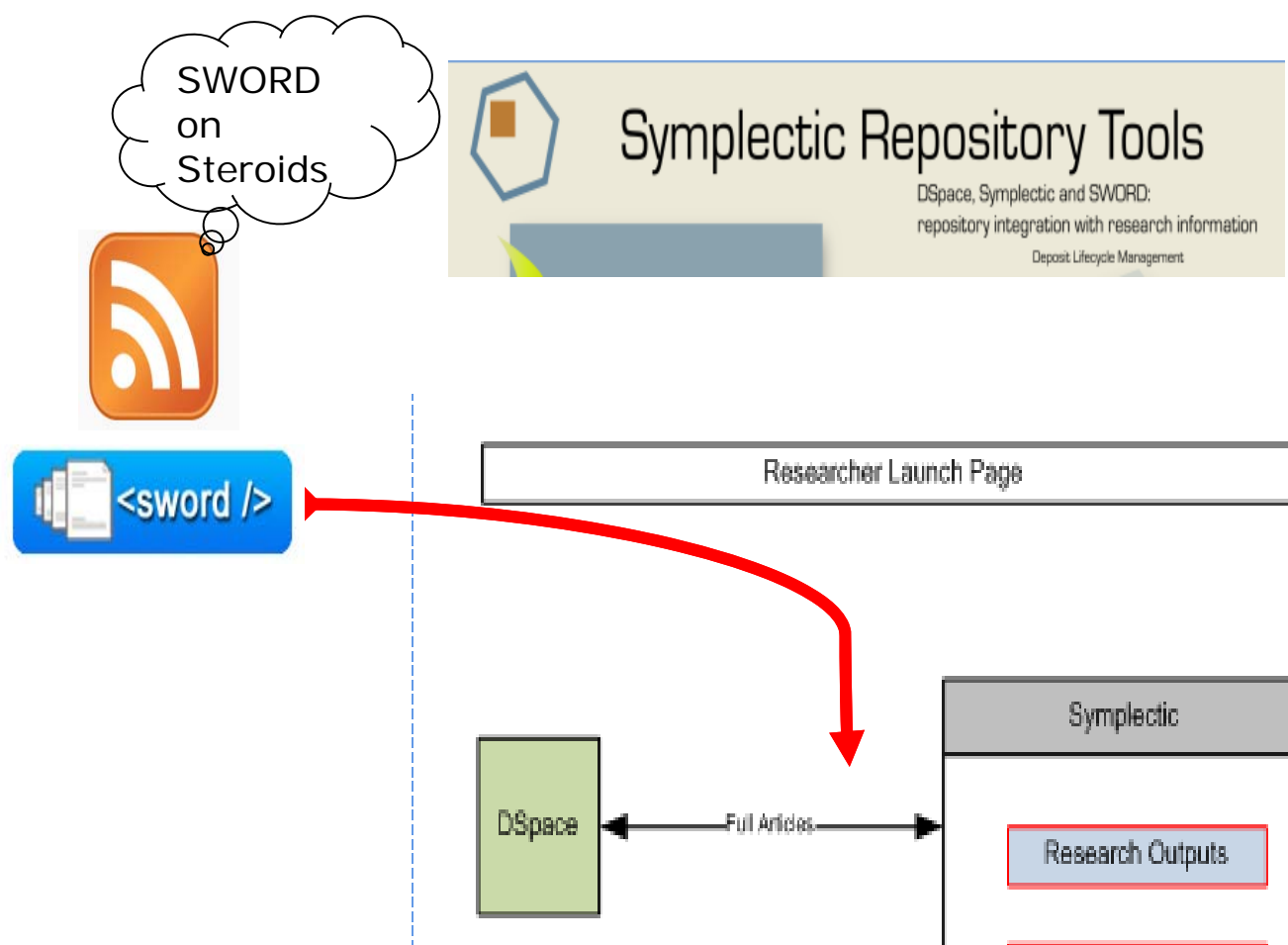
Background on the Research+ Project at UoA

- During 2009 the University of Auckland began a process to implement a new Research Management System using InfoEd (US)
- In 2010 decision made to use Symplectic Elements (UK) for research publications module of the overall system
- Symplectic will become the integration layer as data entered into this system can be offered up for re-use in other systems (eg InfoEd grants module) and it comes with an “out of the box” (SWORD) upload facility so full text can be uploaded to the existing University of Auckland DSpace repository – ResearchSpace

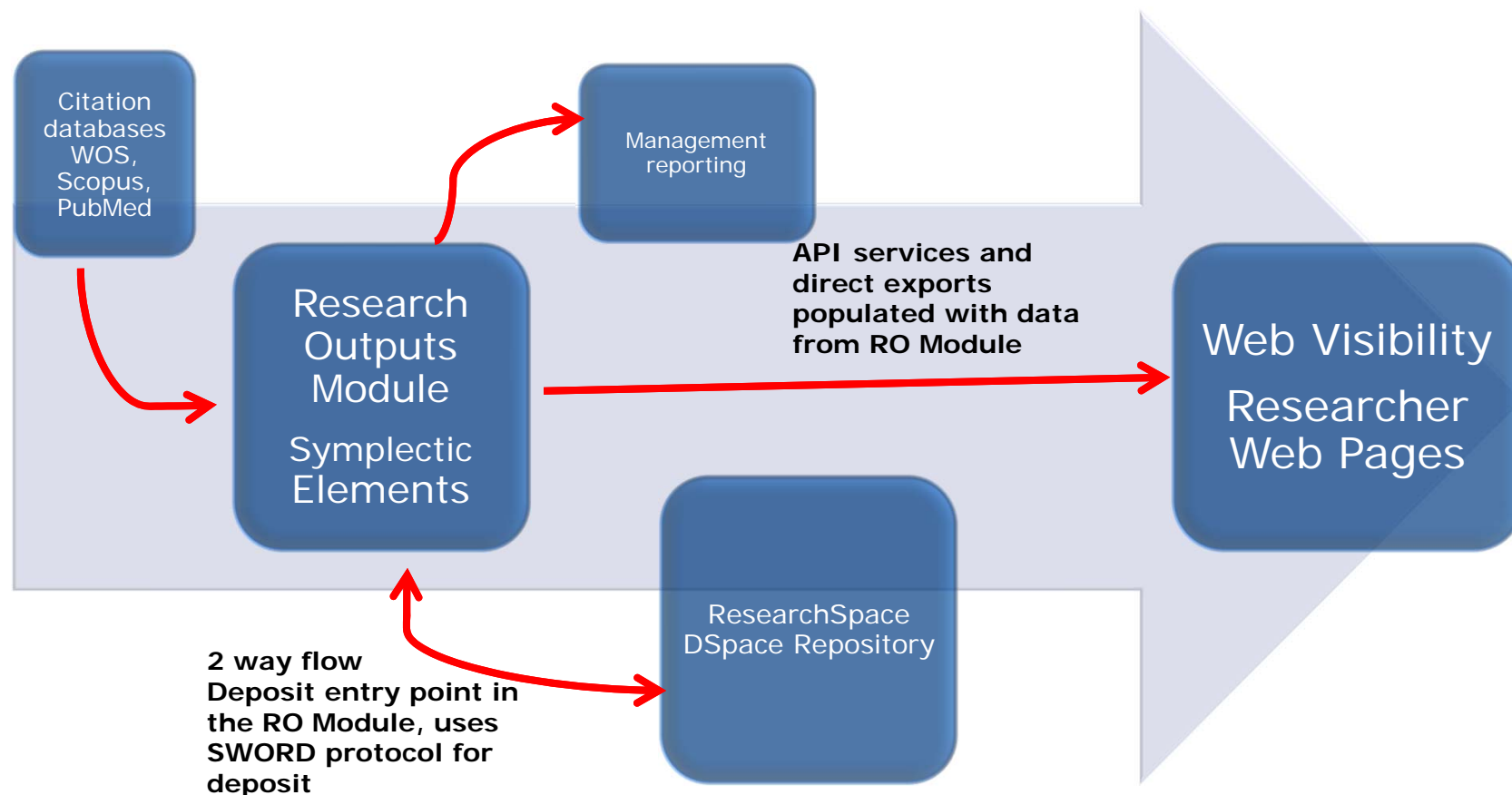
SWORD – an explanation

This part of the system uses an upload facility that is seamless to the user

Buried behind the scenes is a customised SWORD Deposit mechanism: an Atom Publishing Standard that uploads a file and the associated packet of metadata and maintains the 2 way connection



How the model is going to work



Problems solved using integrated model

- Metadata is entered once only and flows into other systems
- Accurate well formed data is sourced from indexing services/publishers/suppliers wherever possible
- Full text can be uploaded at anytime and the repository acts as a file store for the system
- Two way connection between the Research Publications system (Symplectic) and the Research Repository (Dspace) so Permanent URL can be exchanged, & if records are deleted the change flows back to the other system

Benefits: Metadata accuracy

Automated trawling of citation databases



Automatic duplication check with options

WOS

PubMed

Data Sources x 2

The screenshot shows a software interface for managing journal articles. At the top, there is a header bar with a blue icon, a checkbox, and the text "Journal article". To the right of this bar are several icons: a green plus sign, a magnifying glass, a gear, a heart, a camera, and a red X. Below the header bar is a row of tabs: "Summary", "Organisation users (1)", "History (1)", "Data sources (2)", "Full text" (with a green checkmark), and "Relationships (1)". The "Data sources (2)" tab is currently selected. Below the tabs, there is a yellow background area containing the title "Visualization of transverse diffusion paths across fiber cells of the ocular lens by small animal MRI." and two entries. Each entry consists of a blue double-headed arrow, a yellow star, and a circular icon with a blue and orange gradient, followed by the text "Visualization of transverse diffusion paths across fiber cells of the ocular lens by small animal MRI." A red arrow points from the text "Data Sources x 2" to the "Data sources (2)" tab.

☐ Journal article

Summary Organisation users (1) History (1) Data sources (2) Full text ☒ Relationships (1)

Visualization of transverse diffusion paths across fiber cells of the ocular lens by small animal MRI.

Visualization of transverse diffusion paths across fiber cells of the ocular lens by small animal MRI.

Visualization of transverse diffusion paths across fiber cells of the ocular lens by small animal MRI

Easy manual import

Import

Upload

Select a file and click on the upload button to begin the import process. You will be guided through steps which allow you to import the contents of the file into your publications record. Any entries in the file which match existing entries in your publications record within the system will be flagged to you during the import process and you will be asked to specify an action in each case.

File:

File type: ☒ Reference Manager/EndNote
☐ BibTeX

Records to import

Key

- ☒ Records that have not been matched to any existing publication and will be imported as new publications.
- ☒ Records that have been matched to an existing publication *without* a manual entry. Select **Import** if this record is the same as the one shown to exist in the database and which you'd like to supplement with the manual data from your imported file. Select **Skip** to remove this record from the import.
- ☒ Records that have been matched to an existing publication *with* a manual entry. Select **Import as new** to create a new publication based on the data in this record, **Overwrite existing** to replace the manual data in your existing publication with this data or **Skip** to remove this record from the import.

☒ New records [7]

1.	<input type="text" value="OTHER"/>	The application of 3D laser scanning technology to the assessment of ordinal and mechanical cortex quantification in lithic analysis	<input checked="" type="radio"/> Import
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Easy export

Export
Ref Man/EndNote CSV/Excel BibTex
Ref Man/EndNote CSV/Excel BibTex

Easy upload of Full text

File management	
Upload a file	
Choose file:	<input type="text"/> <input type="button" value="Browse..."/>
<input type="button" value="upload"/>	
Choose the file to upload by pressing "Browse" and upload the file to DSpace by clicking the upload button.	

Unresolved issue: Researcher Identifiers

- Institutions generally have their own identifiers for researchers
- Governments have assigned identifiers if research funding is tied to the research outputs
- International initiatives underway to assist verification and identification include:
 - ORCID project – Name Identifier Summit 2009
 - ISNI – International Standard Name Identifier
 - OCLC – VIAF
 - JISC - Names Project

Conclusions

- Be wary of systems that don't allow data exchange
- Create metadata only once – don't reinvent the wheel
- Rely on machines to do the work not people as to grow the content in these systems the effort has to be low and the benefits immediate
- Opportunity to enter publications and associated metadata once and use many times – eg researcher web pages or academic profiles, research reporting, grant proposals, CVs, bibliographies, etc.

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