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

Presentation by Janet Copsey
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New Zealand
To CNI Spring 2010 Meeting
NZ’s largest and highest ranked research university
The University of Auckland

- 31,500 FTE students
- 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, UoA Library staff member, was international release manager for latest version of DSpace – 1.6
The oxidation reactions of heterogeneous carbon cathodes used in the electrolytic production of aluminium

Author(s): Bryony Jeanne James
Description: [xvi], 200 leaves : ill. ; 30 cm.
Subjects: Cathodes -- Aluminum -- Electrometallurgy -- Carbon -- Oxidation
Source: UOA-VOYAGER

Available (Get it)

Location:
ENGINEERING LIBRARY Documents Room (Thesis 1997-123)
* e-Resource (Thesis 1997-123)
Welcome to our new interface. We’re looking for feedback and any suggestions you have for improvements.
ResearchSpace is a digital repository or online archive for University of Auckland Digital Theses and Research Materials.
ResearchSpace is pushed to all the major search engines, including the Kivi Research Information Service KRIS, a web gateway to the open-access research documents produced at universities, polytechnics, and other research institutions throughout New Zealand.
All University of Auckland members can deposit items to ResearchSpace, each collection has details on how to do this.
Completing PhD students deposit your thesis online http://researchspace.auckland.ac.nz/handle/2292/2

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Select a community to browse its collections:

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- A3 - Dataset Archive [3]
- B1 - Academic Staff - Research Online [706]
- F1 - Auckland Bioengineering Institute [35]
- F2 - Business School [92]
- F3 - Faculty of Arts [43]
- F4 - Faculty of Engineering [29]
- F5 - Faculty of Law [11]
- F9 - Faculty of Medical and Health Sciences [1]
- F7 - Faculty of Science [259]
- F8 - School of Theology [4]
- G1 - University of Auckland Library [102]
- G2 - University of Auckland Information Technology Services [3]
- X1 - Deposit Library [34]
Kiwi Research Information Service

Welcome to the Kiwi Research Information Service

This website is a gateway to the open-access research documents produced at universities, polytechnics, and other research institutions throughout New Zealand.

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.

If you're a researcher at a New Zealand institution, we encourage you to contribute your research outputs to your institution's research repository. nzresearch.org.nz will harvest them and distribute them to your peers - both in New Zealand and worldwide.

Participating Institutions

Universities

- Auckland University of Technology (709 Records)
- Lincoln University (1463 Records)
- Massey University (773 Records)
- The University of Auckland (4310 Records)
- University of Canterbury (3541 Records)
- University of Otago (875 Records)
- University of Waikato (2913 Records)
- Victoria University of Wellington (1097 Records)

Recent Records

- Improved seismic hazard model with application to probabilistic seismic demand analysis
  Bradley, B.; Dhakal, R.P.; Cubrinovski, M.; Mander, J.B.; MacRae, G.A.
  University of Canterbury

- Intensity measures for the seismic response of pile foundations
  Bradley, B.; Cubrinovski, M.; Dhakal, R.; MacRae, G.
  University of Canterbury

- Ground-Motion Prediction Equation for S1 Based on Spectral Acceleration Equations
  Bradley, B.A.; MacRae, G.A.; Dhakal, R.P.; Cubrinovski, M.
  University of Canterbury
Welcome to Australian Research Online, where you can search 412,645 Australian research outputs, including theses, preprints, postprints, journal articles, book chapters, music recordings and pictures.

Australian Research Online searches simultaneously across the contents of Australian university and government research repositories in addition to several other collections of Australian research. The list of currently participating universities and government departments, with the number of outputs currently in each repository, is listed at the left.

For more information about the service, visit the About page. To view the most frequently accessed research items, and most popular creators, visit the Statistics page. Or to view the contents of an institution’s repository listed as a tag cloud, visit the Tag cloud page.

Got some feedback? We'd love to hear from you. Contact us and tell us what we do well, and/or what we could do better.

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- analysis
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- elsewhere
- energy
- environment
- epidemiology
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- nutrition
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- philosophy
- plant
- political
- population
- program
- risk
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- support
- treatment
- visual
- women
- work
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?

Similar Goals
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?

Research Outputs

Library based Research Repositories
- Sharing and standards for interchange
- Archive the collective outputs of University staff

Research Management Systems
- Funding & Grant Tracking
- Proposal Tracking
- Resources and compliance
- Reporting & Research Evaluation
“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.”

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 (e.g., 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.
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

Citation databases WOS, Scopus, PubMed

Research Outputs Module Symplectic Elements

Management reporting

API services and direct exports populated with data from RO Module

Web Visibility Researcher Web Pages

ResearchSpace DSpace Repository

2 way flow Deposit entry point in the RO Module, uses SWORD protocol for deposit
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

- WOS
- PubMed
- Scopus
- ArchiveX
- DBLP
Automatic duplication check with options

WOS

PubMed

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:**

- Reference Manager/EndNote
- BibTeX

**Records to import**

**Key**

- **X** Records that have not been matched to any existing publication and will be imported as new publications.
- **X** 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.
- **X** 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. **OTHER** The application of 3D laser scanning technology to the assessment of ordinal and mechanical cortex quantification in lithic analysis

[Upload button]
Easy export

Easy upload of Full text
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.
References/Sources

- *Casting_Net.jpg (JPEG Image, 464x335 pixels) - Scaled (0%).* (n.d.). Retrieved from [http://sites.yellow.co.nz/site/actionfish/images/Casting_Net.jpg](http://sites.yellow.co.nz/site/actionfish/images/Casting_Net.jpg)