



Cathrine Harboe-Ree
University Librarian, Monash University

Addressing the data management challenge: an institutional view

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Monash context

- **Monash environment**
 - High level interest
 - Cross-sectoral collaboration
- **Information Management Strategy**
- **ARROW**
- **DART**
- **ARCHER**
- **ANDS**

Information Management Strategy

- **2 year initiative to develop an overarching strategy for the whole university**
- **Took holistic view of information**
- **Informed by views of range of information management professionals and stakeholders**
- **Report available at:**
<http://www.monash.edu.au/staff/information-management/>

ARROW

Australian Research Repositories Online to the World

- <http://arrow.edu.au/>

Four year project to develop and use institutional repository software to support information management for conventional research outputs

Consortium of Monash, UNSW, Swinburne, NLA
Software development outsourced

- mix of open and closed source development

15 of 40 Australian universities adopting solution

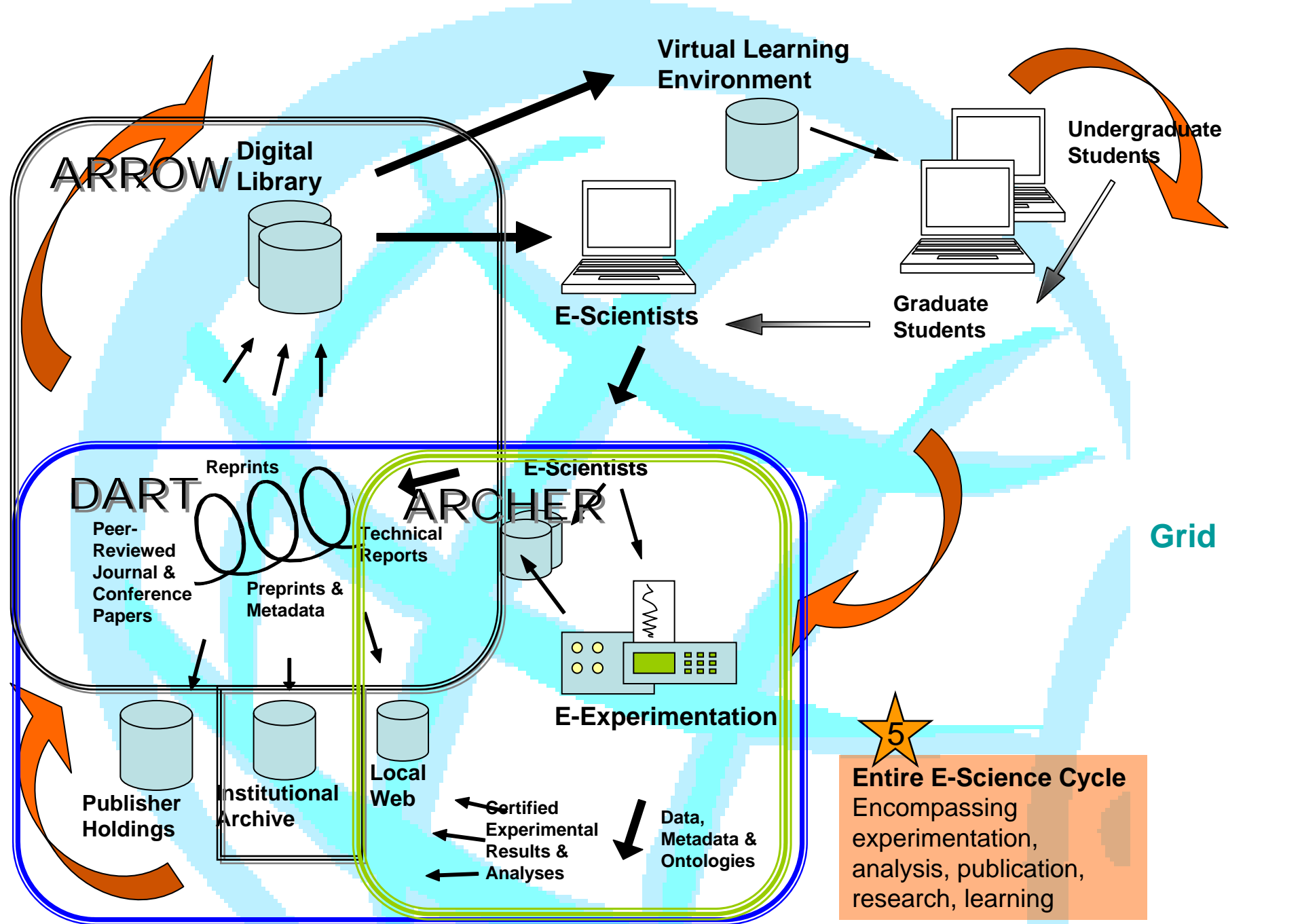
Completing at end of 2009

DART

- DART is a proof-of-concept project funded (2006 – June 2007) by the Department of Education, Science and Training (DEST) to support collaborative research in Australia
 - <http://dart.edu.au/>
- DART stands for Dataset Acquisition, Accessibility, and Annotation e-Research Technologies
 - Researcher workflow and data management
- Outputs now available on website

ARCHER

- Australian ResearCH Enabling enviRonment
- ARCHER is a DEST funded project for 2007 that will take the **proof-of-concept** outcomes of DART, turn them into **production-ready** ARCHER software tools, and package them for deployment
- These tools will be developed into generic modular middleware web services, designed to suit the needs of a number of designated National Collaborative Research Infrastructure Scheme (NCRIS) priority research capabilities
- Working with bioinformatics, geochemistry, x-ray crystallography



Source: Adapted from Liz Lyons, eBank UK Presentation

Sector perspectives

Sector perspective: researchers

- **Wanting to publish research data**
- **Wanting to collaborate more effectively**
- **Needing enduring access to data**
- **Needing to be able to re-use data**
- **Not understanding the data management environment, and ...**
- **... sometimes wanting to be left alone**

Sector perspective: ITS

- **Needing to provide storage solutions**
- **Needing to find archiving solutions**
- **Worried about how to pay for storage**
- **Needing resolution of access and authorisation issues**
- **Being expected to help the University meet its regulatory obligations**

Sector perspective: Library

- **Aware of data management issues but short on solutions**
- **Interested in whole of data life cycle (research to publication)**
- **Experimenting with / establishing repositories**
- **Building expertise in metadata, persistent identifiers, standards, copyright, IP, version control, etc**

Sector perspective: Records and Archives

- **Concerned with the maintenance of the corporate record**
- **Expertise in retention guidelines and disposal authorities**
- **Already engaged with the information management strategy**
- **Expanding their concerns outside a narrow RMO focus**

Monash response: working group

- **Reports to eResearch Steering Committee**
- **Comprised**
 - ITS
 - Library
 - E-Research Centre
 - Records and Archives
 - Researchers (through consultative processes)
- **Extended to include Research Office**

Actions

- **Developed a proposal for storing large volumes of data (*Roger Clarke and ITS*)**
 - LaRDS (Large Research Data Store)
- **Developed a data management policy**
- **Drafted a data management plan template**
- **Organised this seminar**

Current Monash state of play

- **LaRDS established**
- **Data Management Plan accepted in draft form**
- **Retention and disposal guidelines completed**
- **Testing underway of Data Management Plan with selected researchers**
- **ITS establishing e-Research support group**
- **Library has staff committed to the project**
- **ARCHER and ARROW investigating tools, requirements and management of data and datasets related to published material**

R: Resulting publication in *Science*

Originally published in *Science Express* on 23 August 2007
Science 14 September 2007:
Vol. 317, no. 5844, pp. 1548 – 1551
DOI: 10.1126/science.1144706

< Prev | Table of Contents | Next >

REPORTS

A Common Fold Mediates Vertebrate Defense and Bacterial Attack

Carlos J. Rosado,^{1,2*} Ashley M. Buckle,^{1,2} Ruby H. P. Law,^{1,2} Rebecca E. Butcher,^{1,3} Wan-Ting Kan,^{1,2}
Catherina H. Bird,¹ Kheng Ung,¹ Kylie A. Browne,⁴ Katherine Baran,⁴
Tanya A. Bashtannyk-Puhlovich,¹ Noel G. Faux,¹ Wilson Wong,^{1,2} Corrine J. Porter,^{1,2}
Robert N. Pike,¹ Andrew M. Ellisdon,¹ Mary C. Pearce,¹ Stephen P. Bottomley,¹ Jonas Emsley,⁵
A. Ian Smith,^{1,2} Jamie Rossjohn,^{1,2} Elizabeth L. Hartland,⁶ Ilia Voskoboinik,^{4,7} Joseph A. Trapani,^{4,8}
Phillip I. Bird,¹ Michelle A. Dunstone,^{1,6†} James C. Whisstock^{1,2†}

Proteins containing membrane attack complex/perforin (MACPF) domains play important roles in vertebrate immunity, embryonic development, and neural-cell migration. In vertebrates, the ninth component of complement and perforin form oligomeric pores that lyse bacteria and kill virus-infected cells, respectively. However, the mechanism of MACPF function is unknown. We determined the crystal structure of a bacterial MACPF protein, Plu-MACPF from *Photorhabdus luminescens*, to 2.0 angstrom resolution. The MACPF domain reveals structural similarity with pore-forming cholesterol-dependent cytolysins (CDCs)

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collection facilities and for technical support. Coordinates and structure factors have been deposited in the Protein Data Bank with accession number 2QP2. Raw diffraction data are available at <http://arrow.monash.edu.au/hdl/1959.1/5863> [the Web site for the Monash University institutional repository, using the ARROW (Australian Research Repositories Online to the World) software solution].



MACPF images generated from machine data

