Open Access to Science Content: A View from the “Hole”

Ann Devenish, WHOAS Project Manager
NETSL Annual Conference
College of the Holy Cross
6 April 2006
A view from the “Hole”

Background

- Woods Hole science and the MBLWHOI Library

Pilot project to build an institutional repository (IR)

Wood Hole Open Access Server (WHOAS):

- DSpace “out of the box”
- Metadata
- Digital Object Identifier

Content growth and recruitment
41°31.2’N, 70°40.0’W
Woods Hole science

Marine Biological Laboratory (1888): an international center for research, education, and training in biology, biomedicine, and ecology.

National Marine Fisheries Service/Northeast Fisheries Science Center (1871): conducts research in support of commercial fisheries in U.S. waters off the northeastern United States.

Sea Education Association (1975): college students study on shore and then go to sea in a 12-week, deep-water research and education program.
Woods Hole science


Woods Hole Oceanographic Institution (1930): dedicated to research and higher education at the frontiers of ocean science.

Woods Hole Research Center (1975): address the great issues of environment through scientific research and education and through applications of science in public affairs.
SEA
USGS
WHRC
WHOI

NMFS
MBL
WHOI
MBLWHOI Library

Joint library serving the Woods Hole science institutions.

Staffed by MBL and WHOI library employees.

Physical service points:

- Main ~ Lillie Laboratory (MBL)
- Data Library & Archives ~ McLean Laboratory (WHOI, Quissett campus)
- Library Service Center @ 25 Falmouth Technology Park (compact shelving)
MBLWHOI Library

Virtual service points on every computer in the IP range (128.128. ...)

- Databases (98+)
  - i.e., ASFA, GeoRef, Science Direct, Web of Science
- E-journals (1300+)
- Desktop (PDF) delivery for locally held print articles
- Boston Library Consortium (BLC) Virtual Catalog
- ILLiad
September 2002

we’re going to build an e-print server ….

*Cathy Norton, director MBLWHOI Library*

… a what?

*Ann Devenish*
Questions → Pilot Project

- Can we do this?
- What don’t we know?
- What can we learn?

Project team: Chris Dematos, Ann Devenish, Pam Fournier, Marisa Hudspeth, Robin Hurst, Colleen Hurter, Ellen Levy, Cathy Norton, Lisa Raymond, Maggie Rioux, Amy Stout, Eleanor Uhlinger.
Pilot Project
December 2003-July 2004

Identify an appropriate software platform to host an IR.
Identify an appropriate metadata scheme to describe the digital objects within an IR.
Determine appropriate format(s) for delivery of the digital objects to end users.
Design an appropriate workflow for acquisition and intake of the digital objects.
Subject of the project

WHOI Technical Reports ("blue covers"):


Portions of which existed digitally.

Ease of access ~ produced and held locally.

Author buy-in not required; WHOI "owned" items.
Software platform

DSpace:

*Designed to handle “all manner of digital formats.”*

*Focused on long-term preservation, using the CNRI Handle System.*

*Full administrative capabilities; policy decisions can be made at the departmental (institutional) level.*

*Supports qualified Dublin Core Metadata.*

*OAI PMH.*
Metadata scheme

Dublin Core:

Simple, interoperable and open standard, expressible in MARC, HTML or XML.

Easy to understand, flexible and widely used.

Sample records for technical reports and data sets indicated it provided all the access points needed for resource description.
Format delivery

PDF:
Specifications have been formally published, making it suitable for a long-term preservation format.
Renders each page exactly as the creator intended.
Viewers are free and easily downloadable.
Dublin Core Metadata can be programmatically embedded inside of the PDF file.
Supports electronic signatures, watermarks, password protection, and encryption as security features to protect a record against unauthorized alteration or viewing.
Object acquisition

- Author’s doc†
- DTIC form*
- Dept. sig*
- Lib. dist*
- Cover*

† Word
* FileMaker

Tech Rpt #

PDF

printed Tech Rpt

IR

# Adobe
InDesign
Lessons learned

*Involve library and IT colleagues, early and often*
*Be flexible*
*Be patient*
*Be persistent*
*Be prepared to un-do and re-do*
*Expect the unexpected*
*Know your limitations*
*Look forward*
Pilot project → WHOAS

*Institutional repository of Woods Hole scientific content.*

*Hosted by the MBLWHOI Library.*

[https://darchive.mblwhoilibrary.org/index.jsp](https://darchive.mblwhoilibrary.org/index.jsp)

*Content is web accessible, easily searched, and open access.*

*Content metadata is routinely harvested by OAI PMH search engines, such as OAIster.*
WHOAS: a collaborative effort

Institutional (Community) responsibilities

- Determine content guidelines.
  - see the suggested guidelines
    http://www.mblwhoilibrary.org/services/policies/whoas_guidelines.html

Author responsibilities

- Retain/extend appropriate Author rights.
  - see the Amendment to Publication Agreement
    http://www.mblwhoilibrary.org/services/copyright/pdf/amendment.pdf
- Contribute content.
WHOAS: a collaborative effort

MBLWHOI Library responsibilities

- Host IR service, including system administration, and provide user training and support.
- Provide open access to content.
- Retain and maintain content submitted in perpetuity.
- Migrate content if format is in danger of obsolescence.
- Report generation.
WHOAS organization
WHOAS: anonymous visitor
Welcome to the Open Access Server of the Woods Hole Scientific Community.

If you are a member of the Woods Hole scientific community and are interested in contributing content, please contact the WHOAS project manager whoas@whoi.edu

Learn more about WHOAS.

Search

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Tao-Chang

Communities in WHOAS

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Marine Biological Laboratory [66]
MBLWHOI Library [23]
Woods Hole Oceanographic Institution [502]
<table>
<thead>
<tr>
<th>Date of Issue</th>
<th>Title</th>
<th>Authors</th>
</tr>
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<tbody>
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<td>4-Oct-2004</td>
<td>Inhibition of phosphatase activity facilitates the formation and maintenance of NMDA-induced calcium/calmodulin-dependent protein kinase II clusters in hippocampal neurons</td>
<td>Tao-Cheng, J.-H.; Vinade, L.; Winters, C. A.; Reese, T. S.; Dosemeci, A.</td>
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</table>
Title: Inhibition of phosphatase activity facilitates the formation and maintenance of NMDA-induced calcium/calmodulin-dependent protein kinase II clusters in hippocampal neurons

Authors: Tao-Cheng, J.-H.
        Vinade, L.
        Winters, C. A.
        Reese, T. S.
        Dosemeci, A.

Keywords: Immunogold electron microscopy
          Calyculin A
          Okadaic acid
          Calcium/calmodulin-dependent protein kinase II
          Autophosphorylation

Issue Date: 4-Oct-2004

Abstract: The majority of hippocampal neurons in dissociated cultures and in intact brain exhibit clustering of CaMKII into spherical structures with an average diameter of 110 nm when subjected to conditions that mimic ischemia and excitotoxicity (Tao-Cheng et al., 2001). Because clustering of CaMKII would reduce its effective concentration within the neuron, it may represent a cellular strategy to prevent...
It is sometimes desirable to employ a relatively mild excitatory stimulus to promote sub-maximal clustering for the purpose of studying the conditions for the formation and disappearance of CaMKII clusters. Treatment with 30 μM NMDA for 2 min produced CaMKII clustering in ~15% percent of dissociated hippocampal neurons in culture, as observed by pre-embedding immunogold electron microscopy. These CaMKII clusters could be labeled with antibodies specific to the phospho form (Thr286) of CaMKII, suggesting that at least some of the CaMKII ...


URI: http://hdl.handle.net/1912/607

Appears in Collections: Program in Molecular Physiology
INHIBITION OF PHOSPHATASE ACTIVITY FACILITATES THE FORMATION AND MAINTENANCE OF NMDA-INDUCED CAMKII CLUSTERS IN HIPPOCAMPAL NEURONS

J.-H. Tao-Cheng\textsuperscript{a}, L. Vinade\textsuperscript{b}, C. A. Winters\textsuperscript{b}, T. S. Reese\textsuperscript{b} and A. Dosemeci\textsuperscript{b,c}

\textsuperscript{a} NIINDS Electron Microscopy Facility,
\textsuperscript{b} Laboratory of Neurobiology, NIINDS, NIH, Bethesda, MD 20892, USA,
\textsuperscript{c} Program in Molecular Physiology, Marine Biological Laboratory, Woods Hole, MA
DSpace: content intake process

Community defines appropriate content and community members provide the digital objects.

Descriptive metadata created using the intake form via the user interface (i.e., author, title, keywords, abstract.)

Library staff edits metadata and “approves” content.

Administrative metadata created by DSpace (i.e., date accessioned, format extent & type.)

Handle (unique and persistent URL) is assigned by DSpace.
Content contributor: user interface
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Woods Hole Oceanographic Institution [570]
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Collection: Program in Molecular Physiology

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<th>Last name e.g. Smith</th>
<th>First name(s) + &quot;Jr&quot; e.g. Donald Jr</th>
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<tr>
<td>Tuo-Cheng</td>
<td>J.H.</td>
</tr>
<tr>
<td>Vinade</td>
<td>L.</td>
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<tr>
<td>Wimers</td>
<td>C. A.</td>
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<td>Reese</td>
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<td>Dosemeici</td>
<td>A.</td>
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</table>

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Add More

Enter the main title of the item.

Title: Inhibition of phosphatase activity facilitates the formation

Please give the date of previous publication or public distribution below. You can leave out the day and/or month if they aren’t applicable.

Date of Issue: Month: October, Day: 4, Year: 2004

Enter the name of the publisher of the previously issued instance of this item.
Publisher

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Language  

English (United States)
Enter appropriate subject keywords or phrases below.

**Subject Keywords**
- Immunogold electric
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- Oleic acid
- Calcium/calcium
- Autophosphorylation

Enter the abstract of the item below.

**Abstract**
The majority of hippocampal neurons in dissociated cultures and in intact brain exhibit clustering of CaMKII into spherical structures with an average diameter of 110 nm when subjected to conditions that mimic

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Authors  Tao-Cheng, J.-H.
          Vinade, L.
          Winters, C. A.
          Reese, T. S.
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Title  Inhibition of phosphatase activity facilitates the formation and maintenance of NMDA-induced calcium/calmodulin-dependent protein kinase II clusters in hippocampal neurons
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CaMKII clusters, the phosphatase inhibitors calyculin A (5 nM) or okadaic acid (1 μM) were included in the incubation medium. With inhibitors more neurons exhibited CaMKII clusters in response to 2 min NMDA treatment. Furthermore, 5 min after the removal of NMDA and Ca2+, CaMKII clusters remained and could still be labeled with the phospho-specific antibody. In contrast, in the absence of phosphatase inhibitors, no clusters were detected 5 min after the removal of NMDA and Ca2+ from the medium. These results suggest that phosphatases type 1 and/or 2A regulate the formation and disappearance of CaMKII clusters.

**Sponsors**
Supported by NINDS intramural funds and National Science Foundation grant 9817317 to A. D.

**Description**
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http://dx.doi.org/10.1016/j.neuroscience.2004.10.008

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Metadata: registry
### Dublin Core Type Registry

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Note: Adding a new element to the DC Registry does not add a corresponding input field to the submit forms!
Metadata: item record
**PLEASE NOTE:** These changes are not validated in any way. You are responsible for entering the data in the correct format. If you are not sure what the format is, please do NOT make changes.

**Item internal ID:** 644

**Handle:** 1912/607

**Last modified:** 27-Feb-2005 11:21:30

**In Collections:** Program in Molecular Physiology

**Item page:** https://darchive.mblwhcilibrary.org/handle/1912/607

**Item's Authorization:** [Edit...]

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Bitstreams

Note: Changes to the bitstreams will not be automatically reflected in the Dublin Core metadata above (e.g. format.mimetype). You will need to update this by hand.

Also note that if the "user format description" field isn't empty, the format will always be set to "Unknown", so clear the user format description before changing the format field.

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DOI deposit

DOI registration agency is CrossRef

- Decision to investigate DOI deposit predated selection of DSpace as the IR platform.
- Membership, October 2004; first IR member.
- Active role in the organization to help encourage a role for and services to IRs.
  
  • Representation on an ad hoc IR committee that is reviewing potential impacts and obligations of IRs as members.
DOI deposit

Objectives of DOI deposit:
Help expose content to its widest potential audience.
- DOI added to 024 ‡a in MARC record in our local system, Mariner.
- 856 field added.
- holding record added.
- tbd: update OCLC records?

Broad acceptance of DOI in the STM community.
Facilitates linkage to our objects by STM publishers.
DOI deposit


- Deposit of DOI via xml file upload for each metadata record.
  - Authors, title, publication date, publisher, place of publication, DOI (handle prefix & item number).

Ongoing, DOIs deposited for:

- WHOI Technical Reports and Technical Memoranda.
- WHOI and MIT/WHOI theses.
- Digital books “owned” by WH science community members, out of copyright, and/or where we have been granted permission.
- 256 DOIs as of 04/05/06.
DOI deposit

DOIs are not deposited for:

- articles ~ preprints (author’s draft)
- articles ~ published version

Under investigation:

DOI deposits for 6 million records in uBio, Universal Biological Indexer and Organizer (taxonomic name server) database.
Content growth

![Bar chart showing content growth over time](chart.png)
Content analysis

Snapshot [759 metadata records ~ 04/05/06]:
Woods Hole content
  WHOI Technical Reports, Working Papers, and Theses: 235
  Articles (published version): 183
  Articles ("preprint"): 107
  Books: 19
  Presentations/Other: 2
IAMSLIC content
  Conference proceedings: 159
  Newsletters: 48
  Other: 6
Content recruitment

WHOI Technical Reports
3500+ published since 1941
initial focus: 1990-

WHOI and MIT/WHOI Joint Program theses
approximately 1150 published since 1968
initial focus: 1990-

“Author hereby grants to MIT and WHOI permission to reproduce …”

“On demand”
- Belukha Whale
- Indian Ocean Bubble
- Papers on Physical Oceanography and Meteorology
Content recruitment

Since January 2004, Woods Hole authors have published:

- more than 1350* articles,
- in approximately 370 science, technology, and medical journals.

*85% by MBL and/or WHOI authors, many in publications that permit self-archiving in IRs of pre-print/post-print (e.g., AGU, Blackwell, Elsevier, Springer).
Content recruitment

Push vs. Pull

Push (voluntary contributions):
<3% of total WH content

<4% of the total number of articles estimated to be eligible have been added to PMC

Pull (solicit and/or harvest):
Solicit: 28% response rate; 35% of WH total articles
Harvest: 65% of WH total articles
Content recruitment

Authors’ Rights and Publishing
“create a selection of resources that can be used by BLC members in their efforts to promote healthy scholarly communication” BLC Task Force on Scholarly Communication
http://www.blc.org/authorsrights.html

BLC Community of Interest (COI)
“a forum for exchanging ideas, discuss issues, or solve problems”
blcir-l@blc.umb.edu
Useful URLs

CrossRef:  http://www.crossref.org/index.html
DSpace:  http://dspace.org/index.html
Eprints Self-Archiving Policy by Journal:  http://romeo.eprints.org/
OAIster:  http://oaister.umdl.umich.edu/o/oaister/
WHOAS:  https://darchive.mblwhoilibrary.org/index.jsp
Questions?

Ann Devenish
Publishing Services
WHOAS Project Manager
MBLWHOI Library
Woods Hole, MA, USA
adevenish@whoi.edu
508.289.2865