IAMSLIC (2017)
Using Linked Open Data to Search Across Geoscience Repositories
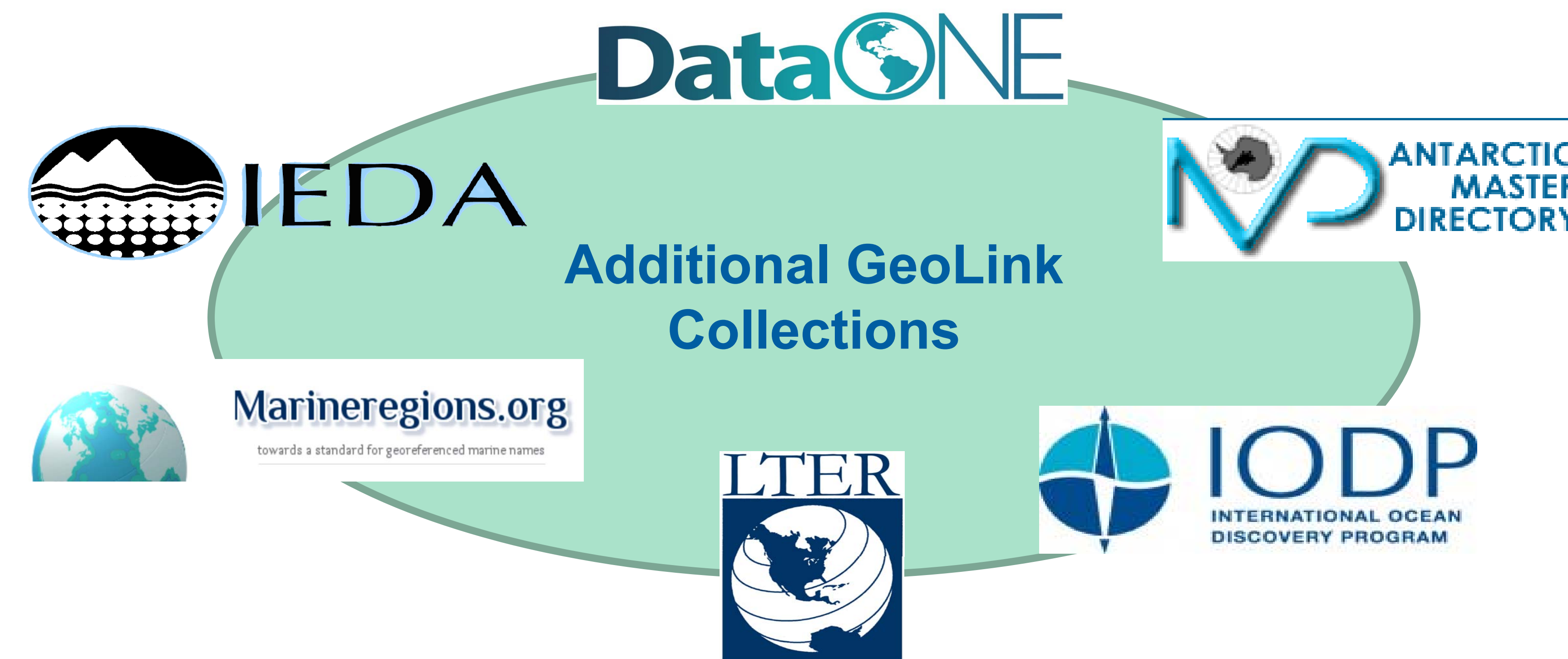### Lisa Raymond and Audrey Mickle, MBLWHOI Library, Woods Hole Oceanographic Institution

The MBLWHOI Library collaborated in multi-year NSF EarthCube funded projects, applying semantic technologies to enable knowledge discovery, sharing, and integration

1 Phase one was **OceanLink**, an EarthCube Building Block where we tested ontology design patterns that linked together: two data repositories, Rolling Deck to Repository (R2R), Biological and Chemical Oceanography Data Management Office (BCO-DMO); the MBLWHOI Library Institutional Repository Woods Hole Open Access Server (WHOAS); National Science Foundation (NSF) funded awards; and American Geophysical Union (AGU) conference presentations.

The Library collaborated with scientific users, data managers, DSpace engineers, experts in ontology design patterns, and user interface developers to make WHOAS, a DSpace repository, linked open data enabled.

The code is available on GitHub **https://github.com/dspace-oceanlink/DSpace/tree/oceanlink-5_x**.

2 Phase two was **GeoLink**, extending the project to disciplinary areas beyond the ocean sciences to develop a set of reusable ontology design patterns that describe concepts and tools to facilitate discovery of content.

During this phase the Library implemented Editable Authority Control and a method to configure SPARQL queries against known endpoints such as R2R and BCO-DMO, allowing retrieval of specific resources to be associated with the metadata fields of DSpace records.

The Library also developed a component (widget) that provides a link in WHOAS to related information in other GeoLink repositories.

Code for the widget is available on GitHub
https://github.com/atmickle/dspace_geolink_comonent_mblwhoilib

Additional GeoLink Collections

Editable Authority Record with URI and metadata values
https://darchive.mblwhoilibrary.org/concept/uuid:63e5a992-1310-41c6-a1ff-a9a43dcae1f9

Melville

Scheme
- vessel(a35e9463)

Attributes

Identifier	63e5a992-1310-41c6-a1ff-a9a43dcae1f9
Creation Date	2016-04-21
Status	ACCEPTED
Source	sparql

Metadata Values

Field Name	Value
dcterms.identifier	318M
r2r.Operator	http://linked.rvdata.us/resource/organization/edu.ucsd.sio
r2r.Owner	http://linked.rvdata.us/resource/organization/gov.nsf
rdf.type	http://linked.rvdata.us/vocab/resource/class/Vessel
rdf.type	http://vocab.nerc.ac.uk/collection/L06/current/31/
skos.exactMatch	http://vocab.nerc.ac.uk/collection/C17/current/318M/
rdfs.label	Melville

How the Widget Works

The widget uses javascript to search for Dublin Core subject tags that match our cruise format→ **Atlantis (Ship : 1996-) Cruise AT18-16**. The widget checks whether R2R has any information about this cruise.

If there is information, the GeoLink info box gets inserted into the page. The user can see more information about the cruise and go to the official cruise data entry. If there isn't an entry, the user doesn't see the GeoLink info box