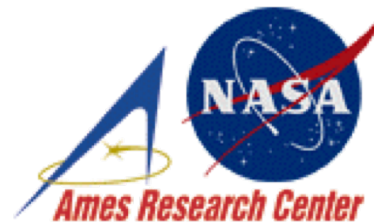


ARMS

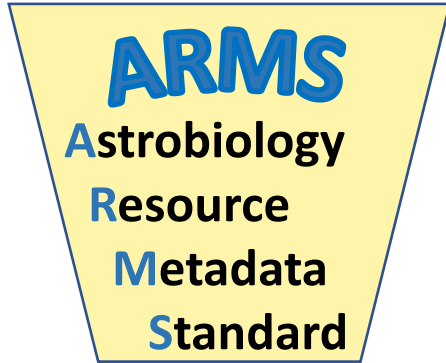
A Developing Metadata Standard for Describing Astrobiology Research Products

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Funded by the NASA Astrobiology Program

Astrobiology Resource Metadata Standard



A standardized set of metadata for describing any ***astrobiology resource***

An **astrobiology resource** is any product of astrobiology research:

- Datasets
- Images
- Video
- Physical Samples
- Presentations
- Research papers
- Software
 - scientific models
 - data analysis scripts
- Websites

Why an astrobiology metadata standard??

- 1. To enable search within the AHED data repository**
 - A community data repository under development at NASA
- 2. To enable Internet-wide search and discovery of astrobiology resources**
 - A web crawler could discover astrobiology resources published on researcher web sites:
 - papers, datasets, samples, software, etc.
 - Would allow researchers to locate resources of interest using an astrobiology search engine

ARMS Standard (version Alpha)

- Developed over past 2 years at NASA Ames
- Deliberations over: Which fields? Permissible values?
- Developed several 'controlled vocabularies'
- Defined using XML Schema

***ARMS must be fully vetted by
astrobiology community prior to release***

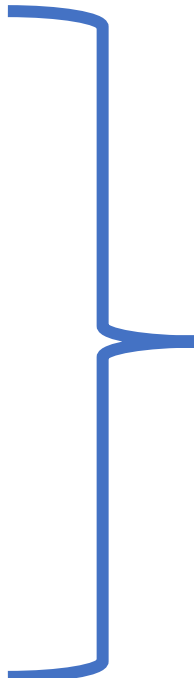
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ARMS Metadata Field	Metadata Field Value
Resource Name	Pavilion Lake Research Project Dataset
Description	Data from 2005-14 field excursions to Pavilion Lake, BC
Resource Type*	dataset
Locator	http://ahed.nasa.gov/plrp
Release/Revision Date	2019-06-16
Team Members	Darlene Lim (PI, PoC); Rich Keller (PoC) ...
Supplementary Material	DOI 10.1127/1863-9135/2009/0173-0329
Funding Sources*	ASTEP, CSA, Nat'l Geog. Society, NSERC
Missions / Projects*	Pavilion Lake Research Project
Field Collection Site*	Pavilion Lake BC
Research Theme*	Environments for Habitability & Biosignatures
Astrobiology Keywords*	stromatolite, paleoclimate
Astrobiology Disciplines*	limnology

**controlled vocabulary*

ARMS Metadata Controlled Vocabularies

- Astrobiology Resource Types
- Funding Sources
- Missions / Projects
- Field Collection Sites
- Astrobiology Keywords
- Astrobiology Disciplines



**Developed by
consensus within
a panel of
astrobiologists**

Keywords

> astronomical> biologicalv chemical> aerosols> catalysisv chirality chiral amplification chiral asymmetry chiroselection circular polarization enantiomer enantiomeric excess enantioselective separation homochirality polarization racemic

Astrobiology Keywords Controlled Vocabulary

- Use publication-style keywords to describe the content of datasets
- Allow data searchers to search-by-keyword
- Started w/10 years of journal article keywords from Web of Science, then added/deleted/grouped

The result:

- A taxonomy of astrobiology keywords:
 - ~ 900 keywords
 - ~ 90 categories
 - 11 super-categories

ARMS Next Steps

