



# RDM THROUGHOUT A ROCK'S LIFE (WITH HUMANS)

[adamsk3@miamioh.edu](mailto:adamsk3@miamioh.edu)

Kristen Adams | Science & Engineering Librarian

# The Field

- The field holds information that can reveal earth's history
- Knowledge comes from data, data comes from observing rock, the rock is in the field



Photo: Gordon Adams

Plan

Collect

Assure

Describe

Preserve

Discover

Integrate

Analyze

# Planning

- Logistics
- Literature review
  - ▣ Previous work in the area
  - ▣ Previous work of a similar nature
- DMP
  - ▣ Usually required for funded work



Photos: Gordon Adams & Kristen Adams

Plan

Collect

Assure

Describe

Preserve

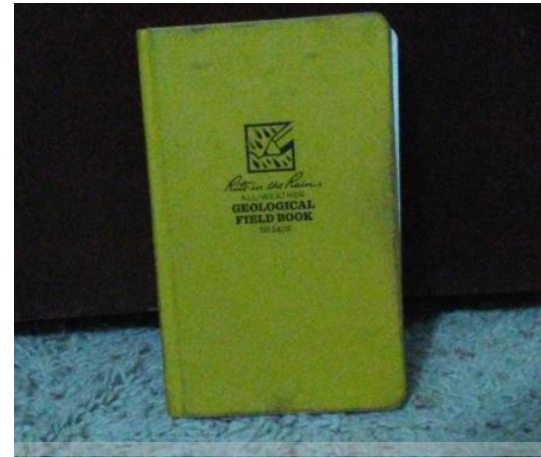
Discover

Integrate

Analyze

# Data Collection

- Rock / sediment samples
  - System for Earth Sample Registration (SESAR)
  - International Geo Sample Number (IGSN)
- Photos
- GPS data is important but not enough
  - Environmental and stratigraphic context (provenance to LIS) must be recorded
- Field notebooks
  - Record observations
  - Software, eg. StraboSpot



Photos: Kristen Adams

Plan

Collect

Assure

Describe

Preserve

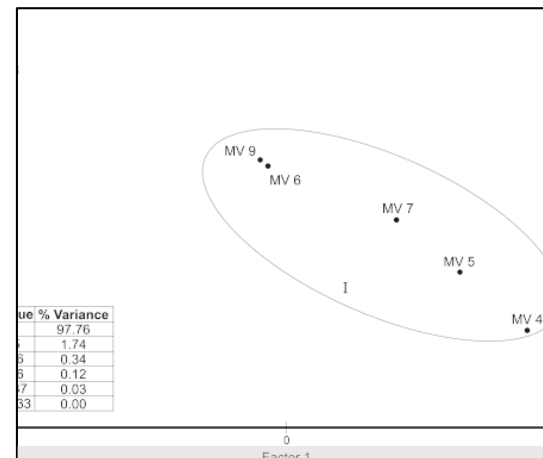
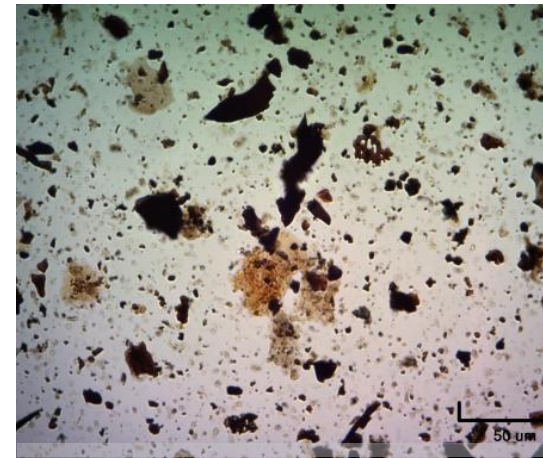
Discover

Integrate

Analyze

# Lab Work

- Synthesis of all collected data, and derivatives
  - ▣ Rock collected in field made into thin sections
- Computer analysis
  - ▣ Digital files



Adams, G., et al. 2017

Plan

Collect

Assure

Describe

Preserve

Discover

Integrate

Analyze

# Repositories

- Digital materials
  - Data sets, photos and articles
  - Institutional or disciplinary repository
  - FAIR data, and metadata
  - Storage space limitations
- Physical materials
  - Rocks, slides, field notebooks
  - Personal storage, museums, state geology survey, national repositories
  - Cataloging systems, mainly local standards
  - Storage space limitations



<http://snr.unl.edu/data/geologysoil/cores/index.aspx>

Plan

Collect

Assure

Describe

Preserve

Discover

Integrate

Analyze

# Risk of loss or degradation

- Digital
  - Bit rot
  - Format obsolescence
  - General loss
- Physical
  - Specimen decay
  - Loss of metadata (paper labels)
  - Lack of space, no preservation



The Conservation Centre, NHM, London

Plan

Collect

Assure

Describe

Preserve

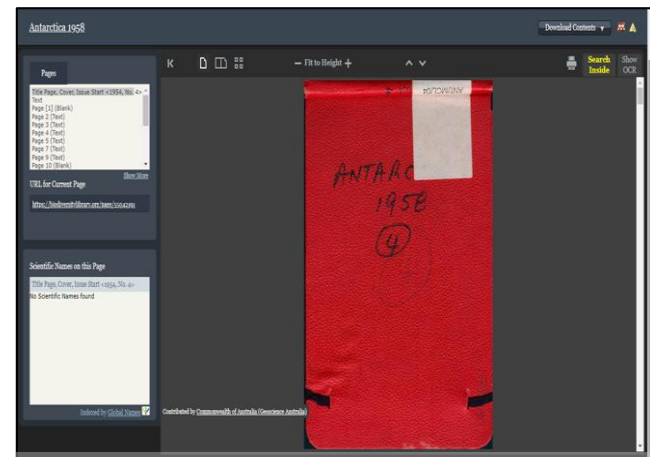
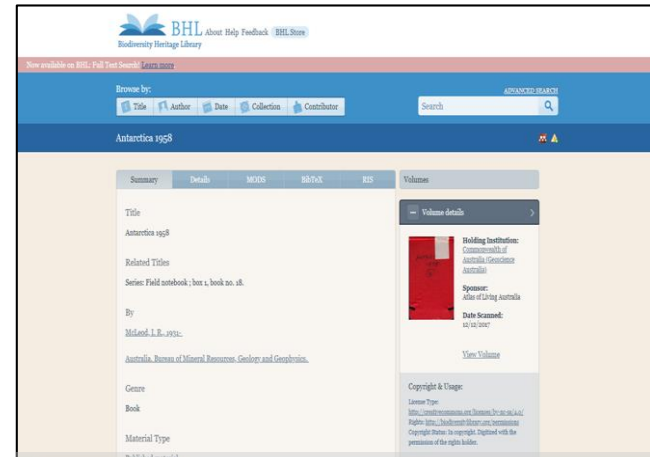
Discover

Integrate

Analyze

# Example of data rescue project

- Digital Library of Antarctic Geological Field Notebooks from Australia ([link](#))
  - Biodiversity Heritage Library
- Scientific and historical value



<https://www.biodiversitylibrary.org/collection/GeoscienceAustraliaNotebooks>





Photo: Kristen Adams

## Thanks

Adams, G., Fielding, C.R. and Oboh-lkuenobe, F.E., 2017. Stratigraphy and depositional environments of the Mesaverde Group in the northern Bighorn Basin of Wyoming. *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 485, p. 486-503; doi.org/10.1016/j.palaeo.2017.07.005.

Geological Curators' Group. (1984). Guidelines for the curation of geological materials. Geological Society. Misc. Paper 17.

Devaraju, A., Klump, J., Cox, S. J. D., and Golodoniuc, P. (2016). Representing and publishing physical sample descriptions. *Computers & Geosciences*, 96, 1-10.

National Research Council. (2002). *Geoscience data and collections: National resources in peril*. Washington, D.C.: National Academies Press.

Ramdeen, S. (2015). Preservation challenges for geological data at a state geological survey. *GeoResJ*, 6, 213-220.

Tapanila, L. (2014). New federal law will improve collections data. *PALAIOS*, 29, 392.



MIAMI  
UNIVERSITY

OXFORD, OH • EST. 1809