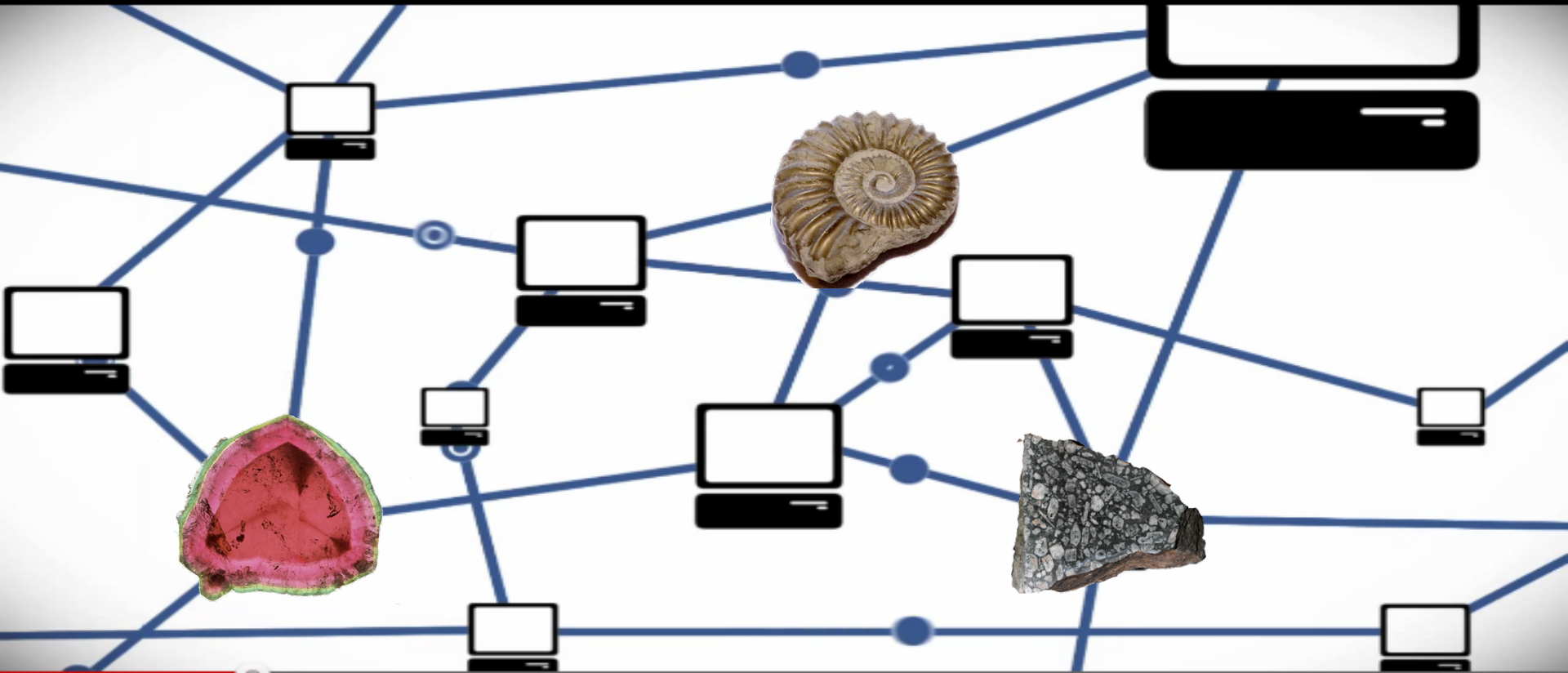


DESC

Digital Environment for Sample Curation

Building a Community Cyberinfrastructure for Earth Science
Sample Collections



Welcome to the Webinar!

Presenters:



Kerstin Lehnert (LDEO):
DESC Overview



Anthony Koppers (OSU):
Repository Needs



Lee Allison (AZGS):
*Geological Surveys
Capabilities & Needs*



Mary Whitton (RENCI):
Technology & Policy Considerations

Physical Samples in the Digital Era

Physical Specimens are NOT the dinosaurs of modern earth science research...



© Can Stock Photo - csp7212866

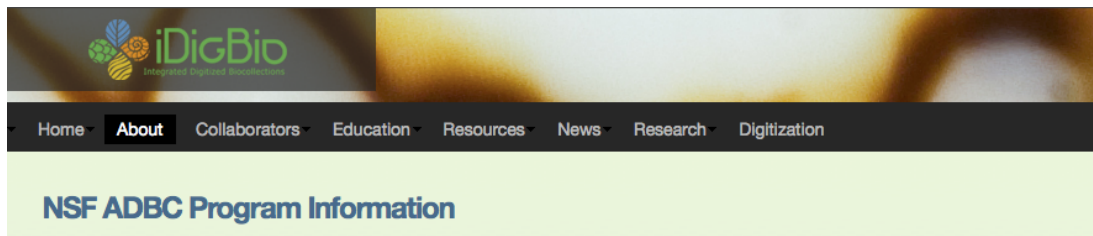
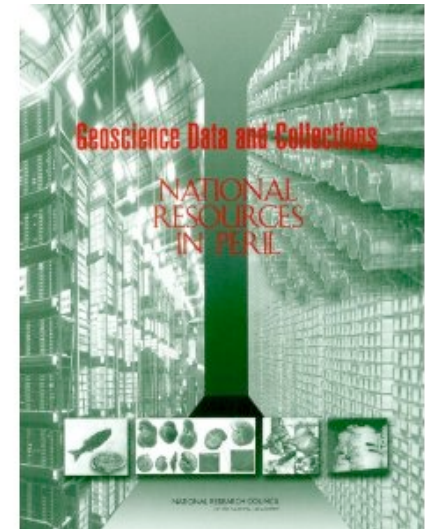
**THEY ARE
FUNDAMENTAL IN
THE DIGITAL AGE**

courtesy of:

Lesley Wyborn, Geoscience Australia
(IGSN workshop at IGC 2012)

Sample Curation in the Digital Era

“Access to the data and collections themselves, however, is the second step in achieving full access. Access to information about the data and collections (e.g. metadata and catalogs) is the first step in any full-access process.”



Advancing Digitization of Biological Collections: *“... seeks to create a national resource of digital data documenting existing vouchered biological and paleontological collections, and to advance scientific knowledge by improving access to digitized information (including images) residing in vouchered scientific collections across the United States.”*

DESC

- A multi-institutional initiative to build a “Digital Environment for Sample Curation”
 - to advance access and re-use of physical samples
 - to support and simplify the work of curators
 - to advance best practices, standards, & policies for sample curation, distribution, attribution, and citation

DESC: Motivation

- Urgent need of repositories to efficiently manage and improve access to their collections.
 - Many collections still operate with non-digital procedures (spreadsheets, analog records) of samples and loans.
 - Smaller repositories and collections often lack the resources (staff, funding) and infrastructure (hardware, software, IT support) for digital collection management and web presence
 - A shared, jointly governed system is efficient and will help to standardize practices

DESC: Motivation

- Addresses the need to better integrate samples into digital information infrastructures (Internet of Samples)
 - Persistent access to sample metadata profiles
 - Registration IGSN registration
 - Link data, samples, and publications
 - Link all data acquired on a single sample & subsamples

DESC: Users

- Sample repositories (academic, federal/state, institutional, commercial)
- Sample collections
 - Academic departments
 - Schools
 - Private
- Museums



DESC: Features

- Community-driven
- shared & jointly governed
- Open source
- Standards-based
- Scalable
- Sustainable

History

- Past years: Preliminary discussions by a group of sample curators and SESAR
- Dec 2011: Informal meeting at AGU FM
- Aug 2012: Funding from NSF OCI for a 1 year planning effort

Leveraging Existing Efforts

- System for Earth Sample Registration SESAR
- International Geo Sample Number
- Index to Marine & Lacustrine Geological Samples (IMLGS)
- USGS ScienceBase
- US Geoscience Information Network

DESC: Components

- Build & maintain a digital collection catalog.
- Administer the physical collection.
 - tracking, labeling, IGSN registration, etc.
- Process & track requests for samples and/or loans.
- Manage users.
- Build & operate customized user interface for public online access to the collection.
- Technical support.

DESC User Interfaces



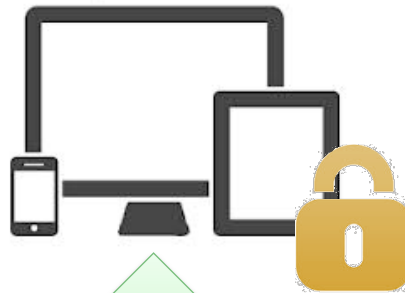
Curators (Admin GUI)



Samplers (User GUI)



Public (Admin GUI)



DESC data & tools

DESC: Interoperability

Earth and Planetary Science Letters
Volume 233, Issues 3–4, 15 May 2005, Pages 391–409

Grand Comore Island: A well-constrained "low $^3\text{He}/^4\text{He}$ " mantle plume

Cornelia Classen^a, Steven L. Goldstein^b, Martin Stute^c, Mark D. Kurz^d, Peter Schlosser^e

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Received 9 September 2004. Revised 28 January 2005. Accepted 16 February 2005. Available online 8 April 2005.

<http://dx.doi.org/10.1016/j.epsl.2005.02.029>. How to Cite or Link Using DOI
Permissions & Reports

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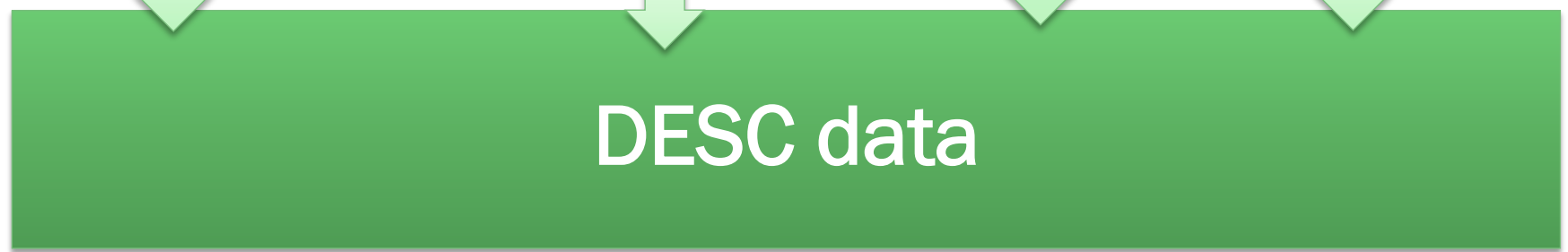
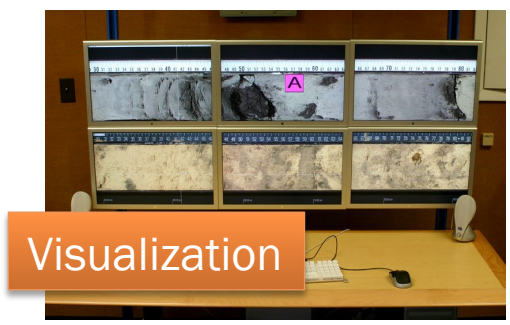
Data Systems

NOAA NATIONAL GEOPHYSICAL DATA CENTER
Index to Marine & Lacustrine Geological Samples
Access to rock and sediment cores, dredges, and grabs from the sea floor and lakebeds

EarthChem
mindat.org
USGIN United States Geoscience Information Network

IGSN: GEE000012
IGSN Registry

IGSN: GEE000012
Sample Name: hp038a
Other Name(s):
Sample Type: Oriented Core
Parent IGSN: Not Provided



DESC: Broader Impact

- create and maintain software tools that support collection management and online presence in an efficient manner,
- encourage and further the development of common data and collection management standards and procedures,
- establish joint practices for the recognition of and respect for intellectual property,
- create sustainable business models for continuing maintenance and evolution of managing sample resources,
- integrate the sample management life-cycle into professional and cultural practice of science.

DESC: Next Steps

- DESC Survey
- More webinars
 - Presentations from parallel efforts, e.g., iDigBio/ADBC, USGS
- Workshop (fall 2013)
- Establish requirements
- Develop implementation plan
- Town Hall meetings at GSA & AGU 2013
- Proposal