

2010-2020: Advancing Digitization of Biodiversity Collections

Built over the past 200 years there exists a sizable national investment in curation of the physical objects in scientific collections and the associated data residing in them. These data provide the baseline from which to further biodiversity research and provide critical information about gaps in our knowledge of life on earth.



NSF's ADBC program seeks to

- enhance and expand the national resource of digital data

Label data capture, specimen imaging

- improve access to digitized information (including images) residing in the scientific collections across the US

Online service, Web portals, GBIF, etc

- to advance scientific knowledge

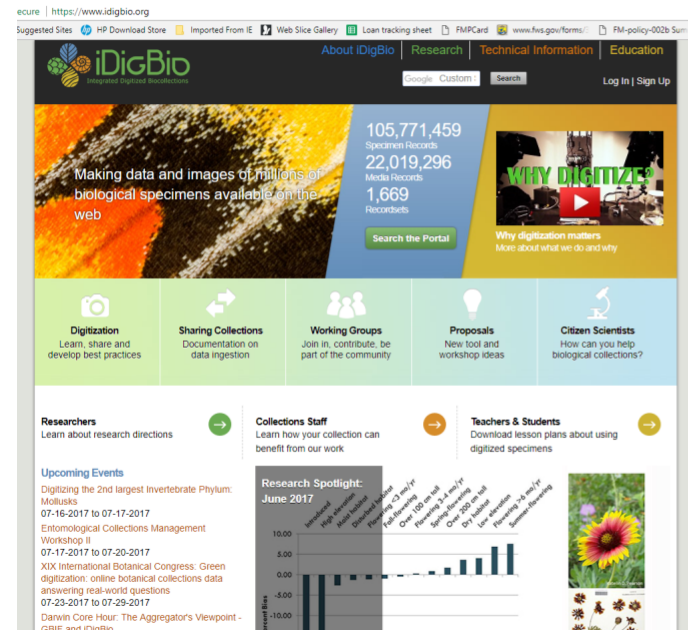
The national resource is structured at three levels

- vouchered scientific collections across the United States
- a central coordinating organization: iDigBio
- a series of thematic networks based on an important research theme = TCN and PEN grants

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Florida Museum of
Natural History, Gainesville
University of Florida
Visit the iDigBio web portal



The screenshot shows the iDigBio web portal homepage. At the top, there is a navigation bar with links for 'About iDigBio', 'Research', 'Technical Information', and 'Education'. Below this is a search bar and a 'Log In | Sign Up' link. The main content area features a large banner with the text 'Making data and images of millions of biological specimens available on the web'. To the right of the banner, there are statistics: 105,771,459 Specimen Records, 22,019,296 Media Records, and 1,669 Records. A 'Search the Portal' button is located below these statistics. To the right of the banner is a video thumbnail titled 'WHY DIGITIZE?' with the subtitle 'Why digitization matters. More about what we do, and why.' Below the banner is a row of five navigation buttons: 'Digitization' (Learn, share and develop best practices), 'Sharing Collections' (Documentation on data ingestion), 'Working Groups' (Join in, contribute, be part of the community), 'Proposals' (New tool and workshop ideas), and 'Citizen Scientists' (How can you help biological collections?). Below this row are three sections: 'Researchers' (Learn about research directions), 'Collections Staff' (Learn how your collection can benefit from our work), and 'Teachers & Students' (Download lesson plans about using digitized specimens). At the bottom, there is an 'Upcoming Events' section listing several events, a 'Research Spotlight: June 2017' section with a bar chart showing 'Number of Records' for various categories, and a 'Featured Image' of a flower.

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2011-2016: 18 TCN grants

2012-2016: 17 PEN grants

2017: 2 TCN + ? PEN

InvertEBase

Reaching Back to See the Future:

**Species-rich Invertebrate Faunas Document
Causes and Consequences of Biodiversity Shifts in
North America**

Petra Sierwald, PI

Rudiger Bieler, Co-PI

Field Museum of Natural History, Chicago

The **Field**
Museum

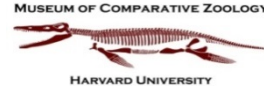


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Four –Year Project: Six institutions, 10 collections



EF 14-02667, Petra Sierwald,
Rudiger Bieler



FilteredPush
EF 14-01450, James Hanken

The Frost
Entomological
Museum

EF 14-00993, Andy Deans



EF 14-02697, Elizabeth Shea

PEN 2016: Chicago Academy of Sciences



EF 14-01176, Jason Bond



EF 16-01700, Dawn Roberts



EF 14-04964, Diarmaid
O’Foighil, Taehwan Lee



EF 14-02785, Gavin Svenson

InvertEBase Portal:
Additional collections posting their data



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Symbiota Web Portal



North American Invertebrates

- Terrestrial and aquatic mollusks: 2014 first inclusion of mollusks in ADBC
- Terrestrial and aquatic insects, arachnids, myriapods
- Digitize, mobilize, georeference up to 3Mill specimen data
- Three museums will serve data first time online (DMNH, AUMNH, CMNH)
- **Arthropod data served on**



- **Mollusk Data served on InvertEBase Portal**
- **Posting data from eight additional Collections**



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Thematic Collections Networks

Each Thematic Collections Network (TCN) is a network of institutions with a strategy for digitizing information that addresses a particular research theme, such as impacts of climate change or biota of a region. Once digitized, data are easily accessed and available for other research and educational use. Other institutions and collections may join an existing TCN as a Partner to Existing Network (PEN). The following are the TCNs, and any associated PENs, currently funded by the Advancing Digitization of Biodiversity Collections [1] (ADBC) project:

Award Year 2016:

(TCN) The Cretaceous World: Digitizing Fossils to Reconstruct Evolving Ecosystems in the Western Interior Seaway [2] (Cretaceous World)

(TCN) Lepidoptera of North America Network: Documenting Diversity in the Largest Clade of Herbivores [3] (LepNet)

(TCN) The Mid-Atlantic Megalopolis: Achieving a greater scientific understanding of our urban world [4] (MAM)

Award Year 2015 [5]:

(TCN) The Microfungi Collections Consortium: A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems [6] (MiCC)

(TCN) Documenting Fossil Marine Invertebrate Communities of the Eastern Pacific - Faunal Responses to Environmental Change over the last 66 million years[7] (EPICC)

Award Year 2014 [8]:

(TCN) Documenting the Occurrence through Space and Time of Aquatic Non-indigenous Fish, Mollusks, Algae, and Plants Threatening North America's Great Lakes[9] (GLI)

(TCN) InvertERace: Reaching Back to See the Future: Species-rich Invertebrate Faunas