

# 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

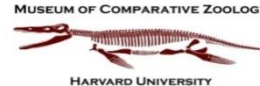


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## Four –Year Project: Six institutions, 10 collections



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

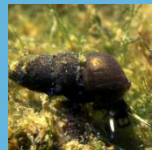
- Terrestrial and aquatic mollusks: 2014 first inclusion of mollusks in ADBC
- Terrestrial and aquatic insects, arachnids, myriapods
- Digitize, mobilize, georeference up to 3Mill specimen data
- Three museums will serve data first time online (DMNH, AUMNH, CMNH)
- **Year 2:**
- **Arthropod data served on**



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



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## Digitization Progress Year 1 and Year 2:

- Total digitized in 5 of the 6 collaborating Institutions: 520,000 specimen records
- Frost Entomological Museum: completed 40,000 specimen/label images
- 4 year-period expected: 2,3mill
- Mobilization: DMNH completed transfer of all digitized DMNH specimens records to *Specify*, ingestion to InvertEBase Portal and iDigBio in progress, about 300,000 records

### Development of taxonomic authority files:

- MolluscaBase/WoRMs file uploads (5,000+ name combinations) PI Bieler
- Collaboration with SCAN: North American Arthropod names in progress



- MilliBase/WoRMs: global millipedes species database currently transferred to publicly accessible platform, PI Sierwald



### **Data Management:**

- Collections maintaining their own databases
- Optimizing batch uploading: less efficient than anticipated for some databases
- Database conversions in progress at participating collections, DMNH completed

### **Open Access of Data:**

- Data posted on existing institutional web interfaces
- Data posting on joint Symbiota portal: in progress at all TCN collections
- MolluscaBase+ MilliBase/WoRMs file uploads (5,000+ name combinations to date)

### **Publishing via iDigBio: progress required in year 3**

- Connecting TaxonWorks to Symbiota (e.g., lacking IPT instance)
- New PEN: data migration from Arctos to Symbiota and iDigBio



### **Research use of data: efforts initiated**

- FMNH: 2-year postdoctoral fellow Dr. Joan Damerow investigates existing tools to extract and employ online specimen and associated traits data,  
In collaboration with Sierwald and Bieler

### **Management of the network including oversight and processes**

- Virtual group meeting via AdobeConnect
- Annual PI meetings at the summit
- Individual site visits (limited, financial constraints)

## Looking at Year 3:

Two PEN proposals submitted from collections in

- Virginia
- Arizona

### More Collections on InvertEBase Portal

- California Academy of Sciences
- Colorado Plateau Biodiversity Center
- Denver Museum of Nature & Science
- Florida Museum of Natural History
- North Carolina Museum of Natural Sciences
- Sam Noble Oklahoma Museum
- University of Alaska Museum
- Yale University Peabody Museum

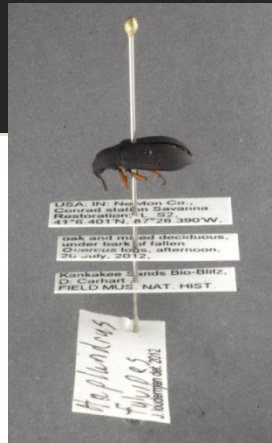
### Data enhancement:

- Georeferencing

### Sustainability

### Additional Digitization projects

- FMNH: inhouse funded
- UMZ Michigan: Insects



### Outreach:

- Exhibit development





| <i>De novo</i>   | Mobilized        | 4-year totals    | 2-year progress | mobilized           | imaged  | Total records to be served; notes                                  |   |
|------------------|------------------|------------------|-----------------|---------------------|---|--|---|
| 405,000          | 50,000           | 455,000          | 140,000         |                     |   | mobilizing mollusks and aquatic insects                            | all in Specify, w<br>server, Verteb<br>iDigBio          |
| 637,500          | 71,300           | 708,800          | 49,645          |                     |   | images of type specimens and identified Chironomidae larval slides | Ohio State Univer<br>Online server, SC<br>IPT available |
| 5,700            | 59,766           | 65,466           |                 | 8,000               |   | type specimen images, label images                                 | transferred to s<br>upload in year                      |
| 745,967          | 278,168          | 1,024,135        | 48,502+166,246  | 244,637+48,168      |   | imaging underway in several FMNH projects                          | iDigBio SCAN a  |
| 260,000          | 924,000          | 1,184,000        | 5,000           |                     | 40,000<br>Odonata,<br>Lepidoptera,<br>Diptera,<br>Hymenoptera | pinned drawer and type specimen images                             | in Taxonworks<br>iDigBio                                |
| 326,000          | 118,000          | 444,000          | 40,138+75,800   | 128,110<br>mollusks |   | will involve both mollusk and insect collections                   | in Specify data<br>Symbiota port                        |
| <b>2,380,167</b> | <b>1,501,234</b> | <b>3,881,401</b> |                 |                     |   |  |   |





1. Progress in digitization efforts (this needs to be backed up by statistics/numbers; progress against what was planned)
2. Data management of & open access to data via iDigBio (data publication, How much of their data does iDigBio have to date?)
3. Research uses of data
4. Management & oversight of the network (What about network sustainability?)
5. What have you learned that can be shared with other TCNs? (This should address both issues around digitization and broader impact activities.)