

# **Empowering the Collections Community**

## **Digitization**

### **Information dissemination**

### **Collaboration**

## **Broadening the diversity of our workforce**

Gil Nelson  
Integrated Digitized Biocollections  
Florida State University



This material is based upon work supported by the National Science Foundation under Cooperative Agreement EF-1115210. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



Estimates suggest that there may be 3 billion biological and paleobiological specimens currently deposited in the world's biodiversity collections, maybe 2 billion in U. S. museums and academic institutions. No one really knows!



# **Digitizing biodiversity collections**

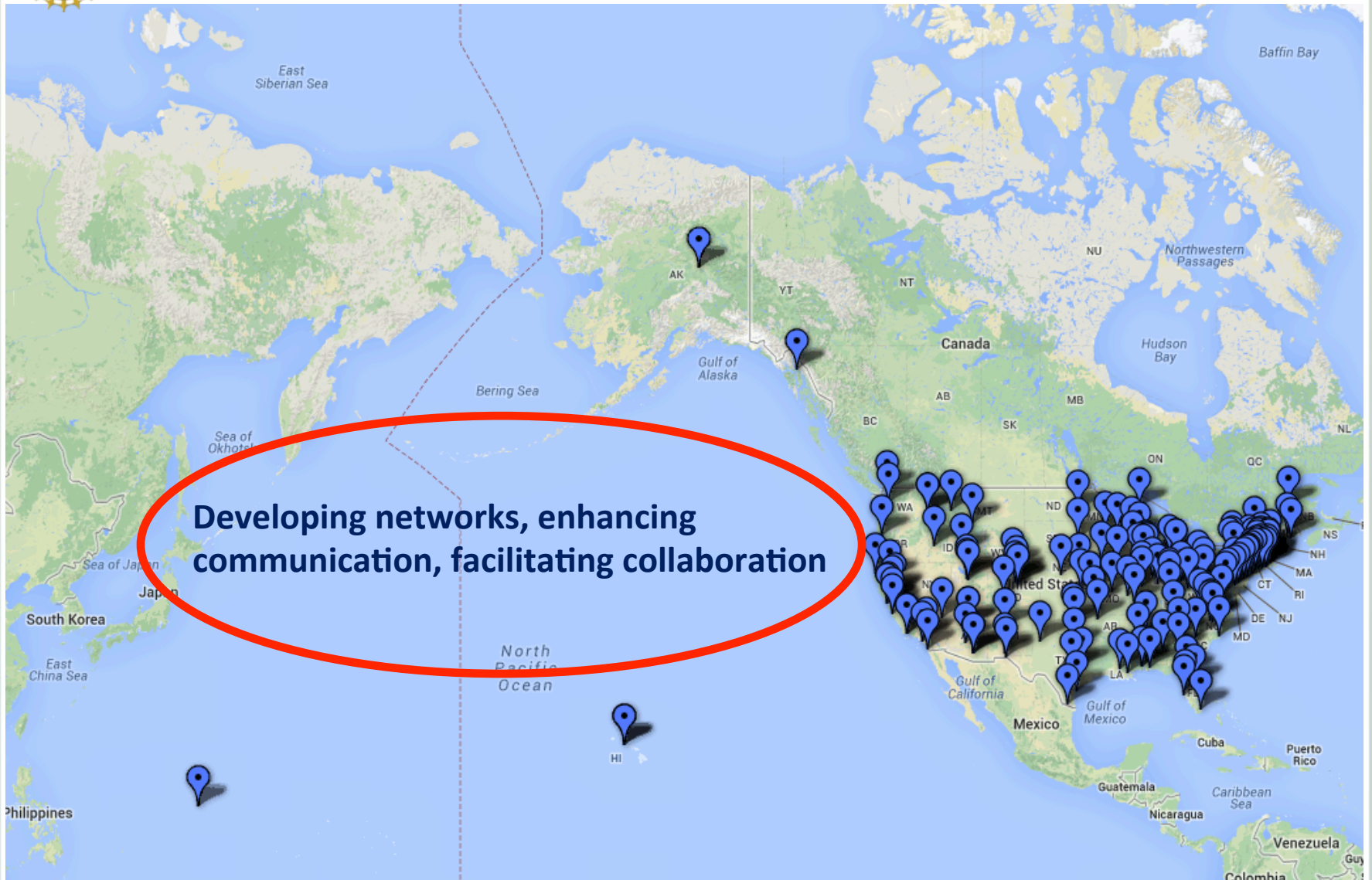
**Serves science by making data accessible**

**Enhances enthusiasm for natural science**

**Builds constituencies for our collections**



# Advancing Digitization of Biodiversity Collections (ADBC)





# Definition and benefits of digitization

- Converting text and specimens to digital format
- Facilitating collaborative research (professionals and non-professionals)
- Reinforcing the link between professionals and non-professionals
- Broadening data accessibility to underscore the importance of collections
- Encouraging innovation and creativity in digital data creation, discovery, and use
- Bringing small collections out of the “dark”





# Empowering the collections community means being inclusive

Large Collections

+



Medium Collections



THE FLORIDA STATE UNIVERSITY  
*Biology Department*  
Robert K. Godfrey Herbarium

+

Small Collections



(Including biological research and field stations)

# Defining Small Collections

**Collections that ARE small  
Collections that FEEL small**



**Number of specimens**

**Number of staff**

**Budget**

**Integral to one's appointment**

**Teaching load**

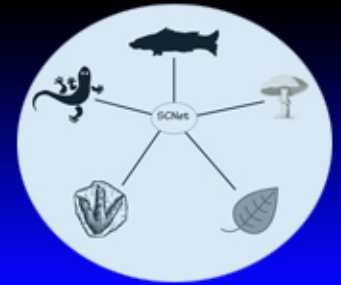
**Committee assignments**

**Professional focus**



# Small Collections Network

Serving, Supporting, Connecting Natural History Collections



## *North American Network of Small Herbaria*

Empowering and including small collections means:

- Reaching out and incorporating small collections into the collections community
- Incorporating small collections data into data repositories
- Encouraging large collections to ensure small collections' sustainability
- Providing formal and informal networks that provide forums for small collections issues
- Resurrecting or otherwise saving orphaned collections from being lost to science

**It is not about how many specimens!**



**The successes and sustainability of the smallest among us is indicative of our success as a collections community.**

**Ensuring that we all succeed is our professional responsibility.**

**Altruism and selfishness!**

# Information Dissemination

In March 2012, the iDigBio Steering Committee established a series of preparation-specific digitization training workshops focused on helping collections managers get started with and/or enhance local digitization programs, all to be held at host institutions.



- DROID (Developing Robust Object->Image->Data, May 2012)
- Herbarium digitization (Valdosta State, September 2012)
- Fluid-preserved collections digitization (U. Kansas, March 2013)
- Dried insect collections digitization (Field Museum, April 2013)
- Collections Digitization (West Virginia, ASB, April 2013)
- Imaging fluid-preserved invertebrates (U. Michigan, September 2013)
- Georeferencing Train-the-Trainers (iDigBio, Gainesville, August 2103)
- Paleontology digitization (Yale Peabody Museum, September 2013)
- Small Herbarium Digitization (Florida State University, December 2013)
- Digitization in the South Pacific (Honolulu, March 2014)
- Paleoimaging (Austin, TX, April 2014)
- Small Herbarium Digitization (Boise, Botany 2014, July 2014)
- Leveraging Digitization Knowledge Across Multiple Domains (Santa Barbara, October 2014)

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- Dried insect collections digitization (University of California, Berkeley)
- Collections Digitization (West Virginia University)
- Imaging fluid-preserved invertebrates (University of California, Berkeley)
- Paleontology digitization (Yale Peabody Museum)
- **Small Herbarium** Digitization (Florida State University)
- Digitization in the South Pacific (Horticulture, University of Queensland)
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- Collections Digitization (West Virginia, ASB, April 2013)
- **Imaging fluid-preserved arthropods** (U. Michigan, May 2013)
- Paleontology digitization (Yale Peabody Museum, June 2013)
- Small Herbarium Digitization (Florida State University, July 2013)
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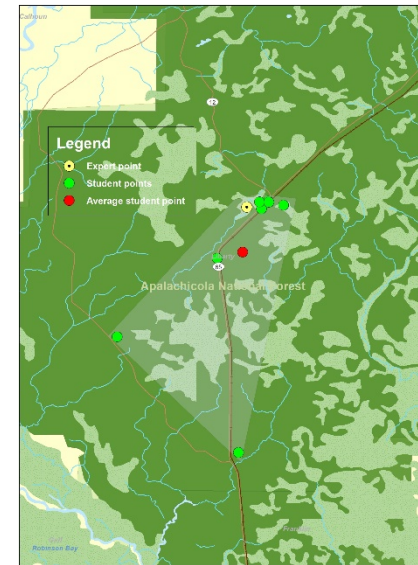


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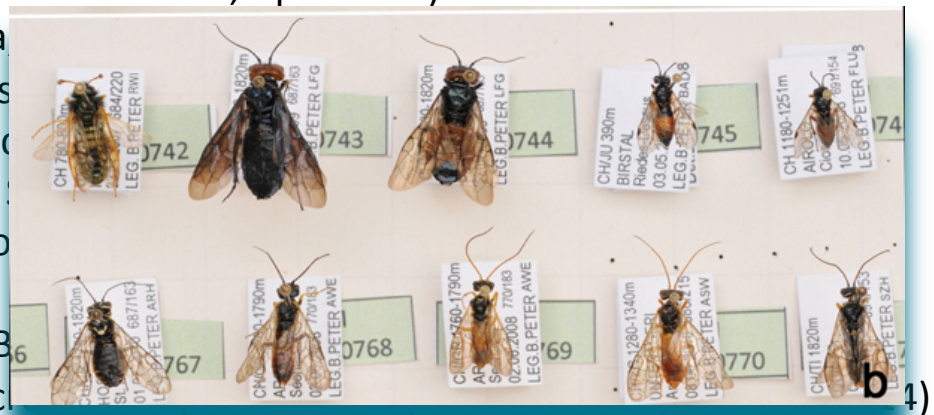


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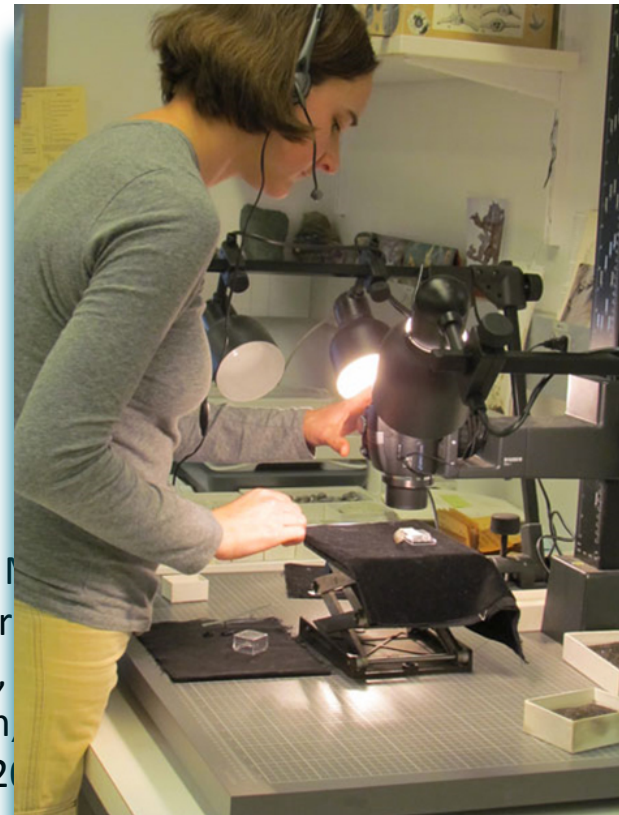




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## Collaborating on Best Practices



- Augmenting OCR Hackathon (Ft. Worth, February 2103)
- Original Source Materials Digitization (Yale Peabody Museum, March 2014)
- Recruiting and Retaining Small Collections in Digitization (Mt. Pleasant, MI, April 2014)
- CitScribe Hackathon (iDigBio, Gainesville, December 2013)
- Education and Outreach (iDigBio, Gainesville, January 2014)



[Wiki Home](#)  
[Workshop Summaries](#)  
[Working Group List](#)

▼ [iDigBio Data Ingestion](#)  
[Queue Dashboard](#)  
[Published data](#)  
[Ingestion Guidance](#)  
[Digitization Resources](#)

▶ [iDigBio Working Groups](#)

▼ [Navigation Tools](#)  
[All iDigBio Wiki Content](#)  
[Content by category](#)  
[Recent changes](#)  
[Random page](#)  
[Help](#)

▼ [Tools](#)  
[What links here](#)  
[Related changes](#)  
[Upload file](#)  
[Special pages](#)  
[Printable version](#)  
[Permanent link](#)  
[Page information](#)

Page [Discussion](#)

## Digitization Resources

This page provides resources and information for the series of digitization training workshops being conducted by iDigBio as well as websites, videos, presentations, and other important information related to biological collection digitization.

[Contents \[show\]](#)

### [iDigBio Intro\[edit\]](#)

- [Introduction to iDigBio Slide Set](#) 
- [Intro to iDigBio pdf file](#) 

### [Interest/Working Groups\[edit\]](#)

- [International Whole-Drawer Digitization Interest Group](#)
- [NANSH Working Group \(North American Network of Small Herbaria\)](#)
- [Fluid-preserved Arthropod and Microscopic Slide Imaging Interest Group](#)
- [Paleontology Digitization Working Group](#)
- [Small Collections Network Working Group](#)

### [Digitization Workshop Wikis\[edit\]](#)

- [Object To Image To Data Workshop Wiki, Gainesville \(May 2012\)](#)
- [Herbarium Workshop Wiki, VSU, Valdosta, GA \(Sept 2012\)](#)
- [Wet Collections Workshop Wiki \(4-6 March 2013\)](#)
- [Dried Insect Digitization Workshop Wiki \(23-26 April 2013\)](#)
- [ASB Digitization Workshop and Symposium \(13 April 2013\)](#)
- [CSIRO Digitization Workshop, Canberra, Australia \(July 2013\)](#)
- [Specify Workshop Wiki \(12-16 August 2013\)](#)
- [Fluid-preserved Invertebrate and Microscopic Slide Imaging \(16-19 Sept 2013\)](#)
- [Paleo Collections Digitization Workshop Wiki \(22-25 Sept 2013, Yale Peabody Museum\)](#)

Wikis  
 Interest groups  
 Working groups  
 Listservs

## iDigBio Working Groups

- 1 Overview
- 2 Active Working Groups
  - 2.1 Augmenting OCR (aOCR)
  - 2.2 Biodiversity Informatics Management (BIM) Working Group
  - 2.3 Cyberinfrastructure (CYWG)
  - 2.4 Developing Robust Object to Image to Data (DROID1)
  - 2.5 Developing Robust Object to Image to Data (DROID2)
  - 2.6 Developing Robust Object to Image to Data (DROID3): 3D Objects and Things in Spirits
  - 2.7 Education & Outreach (E&O)
  - 2.8 Georeferencing Working Group (GWG)
  - 2.9 International Whole-Drawer Digitization Interest Group (WDD)
  - 2.10 Minimum Information Standards, Authority Files, & Semantics (MISC)
  - 2.11 NANSH Working Group (NANSH)
  - 2.12 Paleo Digitization Working Group (PaleoDigi)
  - 2.13 Paleontology (Paleo)
  - 2.14 Public Participation in Digitization (CITSO)
  - 2.15 Strategic Communication Interest Group
  - 2.16 Website Content Providers Editorial Board and Interest Group
- 3 Inactive Working Groups
  - 3.1 Authority Files
  - 3.2 Intellectual Property Policy

### [Overview\[edit\]](#)

iDigBio supports a number of Working Groups and Interest Groups. Several working groups are focused on the development, and improvement activities. This page provides an overview of both current (active) and disbande. The section "Overlap with Other Working Groups" should be used to list subject areas that may duplicate or then collaboration between working groups is warranted for those tasks.

# Value of networking, sharing, and collaboration



*Networking scientists and collections is how science makes profound advances. (David Grimaldi, AMNH)*

# Broadening the diversity of our workforce

Gil Nelson  
Integrated Digitized Biocollections  
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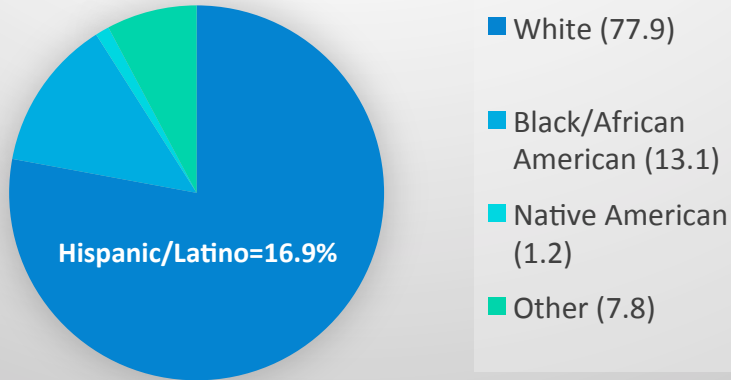


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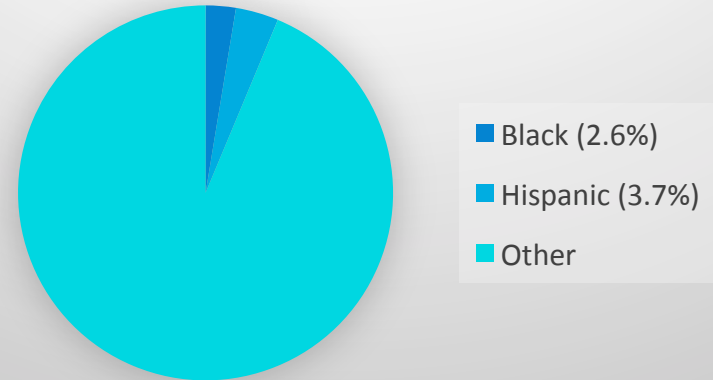
# A Few Numbers

## Population 2012 (%)



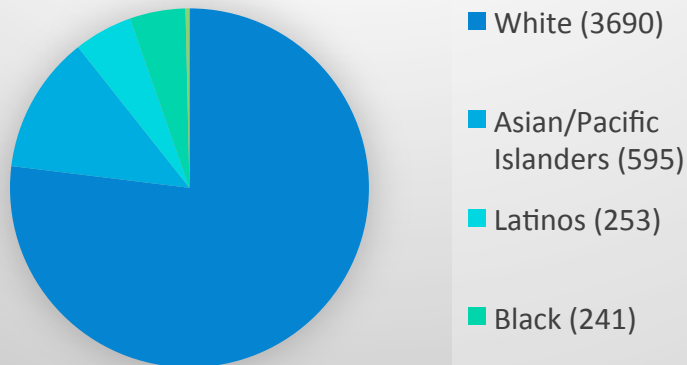
US Census Bureau: Quick Facts (<http://quickfacts.census.gov/qfd/states/00000.html>)

## New PHDs 1993-2002



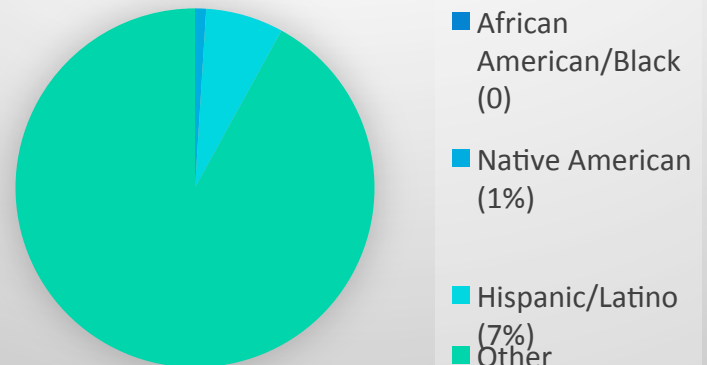
National Center for Education Statistics (<http://ccv.med.harvard.edu/diversity.htm>)

## PHDs 2008



National Center for Education Statistics (<http://ccv.med.harvard.edu/diversity.htm>)

## 528 iDigBio Attendees



## Broadening Minority Participation in the Biological Sciences: A Workshop Focused on Careers and Graduate Study Opportunities in Biology

Space for this workshop is limited. To register, complete the [online registration form](#). Please visit the [workshop agenda](#) for more information on the day's activities. See the [workshop flyer/announcement](#).

The [University of Central Florida](#), [University of Florida](#), [Florida Museum of Natural History](#), and [iDigBio](#) are pleased to announce a free 1-day workshop for undergraduate students focusing on opportunities for careers and



graduate study in field and environmental biology, biodiversity, ecology, and evolution. The workshop is open to anyone. A primary goal is increasing minority participation in the biological sciences within such groups as African and

Black Americans, Native Americans, and individuals of Hispanic ethnicity. Registration is open to freshmen, sophomores, juniors, seniors, and recent graduates. [Click here for the agenda](#).

The workshop will be held at the University of Central Florida's [Live Oak Center](#) Saturday, February 1, 2014. Activities will begin at 10:00 a.m. with a keynote address by [Dr. Scott Edwards](#), professor of organismic and evolutionary biology at Harvard University and division director at the National Science Foundation.



Lunch will be provided and will include a special opportunity to interact with undergraduate and graduate students, post-doctoral fellows, workshop speakers, and biology faculty from several universities. Following lunch, attendees will have the chance to explore several hands-on stations featuring a variety of scientific specimens.



The end of the day will feature a reception and mixer with heavy hors d'oeuvres and the opportunity to win one of ten \$25.00 Amazon gift cards as well as allow further opportunities for individualized conversation, personal attention, and networking.

### Researchers

Browse our specimen portal



### Collections Staff

Learn how your collection can benefit from our work



### Teachers & Students

Learning resources & opportunities to engage











## **Sobering lesson learned:**

**Students majoring in biology have little knowledge or recognition that collections even exist, much less the opportunities they offer for research.**

**As one young woman put it:**

*You mean to tell me that I can make a living studying butterfly collections?*



**What:** Free career shadowing opportunity.

**Who:** Undergraduate students interested in a career in the biological sciences.

**Where:** Florida Museum of Natural History, University of Florida, Gainesville.

**When:** April 17-19, 2014.

## Benefits

- Shadow biologists and museum scientists in their daily work.
- Learn about biological collections and their importance to biodiversity science.
- Spend time behind the scenes of a major museum.
- Get hands-on experience in the biological sciences.
- Experience first hand an array of career opportunities in the biological sciences.
- Meet and interact with working scientists.
- Begin establishing your professional network.

**Scholarship includes 2 nights' lodging, meals, assistance with transportation.  
Competitive. Limited to 10 students.**

**Apply by March 1: <http://tinyurl.com/flmnhshadowing>**

To learn more, e-mail Dr. Gil Nelson ([gnelson.idigbio@gmail.com](mailto:gnelson.idigbio@gmail.com))



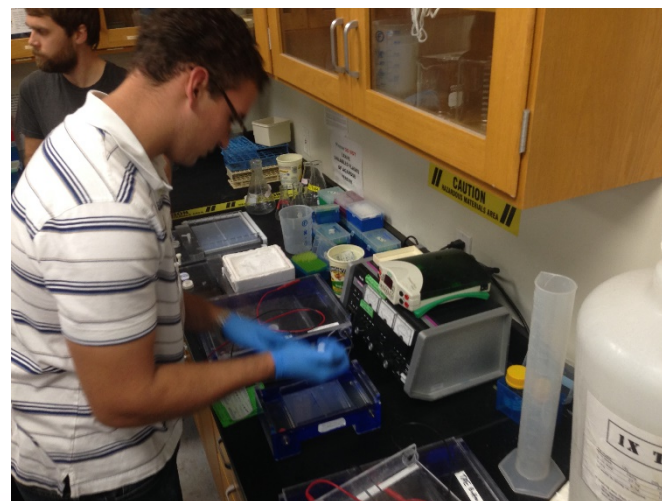
**Fifteen students participated in this opportunity.**



# Florida Undergraduate Research Conference (FURC)



# Shadowing Days at the Florida Museum of Natural History





# Shadowing Days at the Florida Museum of Natural History



**Next up:**

## **Field Museum**



**Goal: 150 students!**



