Tools and Community Building Around Specimen Data

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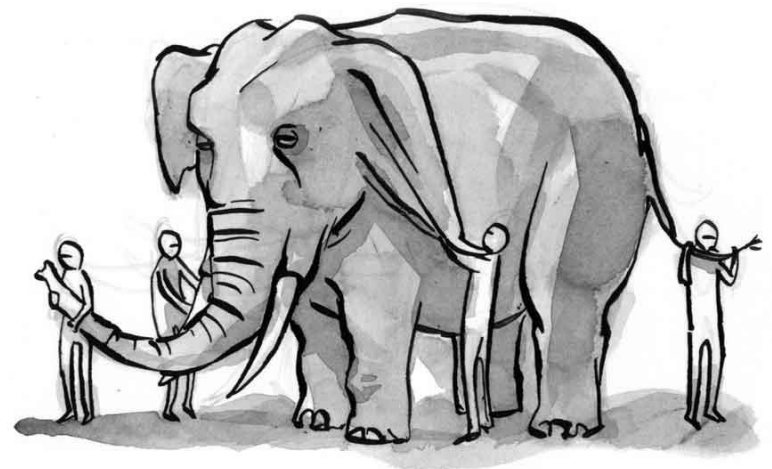
Topics in this presentation

- 3 Areas of emphasis
  - Enabling Digitization
  - Biodiversity Informatics Training
  - Public Participation
- Past year and immediate future
- How to participate

Enabling Digitization Accomplishments

Stepped up engagement of the vertebrate collections community through:
- Working groups
  - Established and grew the vertebrate digitization interest group
- Workshops
  - Cornell Laboratory of Ornithology, May 2015
  - American Society of Mammalogists, June 2015
- Collaborations
  - ASM Mammals Collections Committee
  - ASIH Collections Committee
- Webinars
  - Value of Imaging mammal collections
  - Value of Imaging fish collections
  - Value of imaging herpetological collections
  - Value of imaging bird collections

Conducted 16 workshops since Summit IV

Workflow development and publication
- Flat Sheets and Packets working group updated and published herbarium digitization workflows with participation of 15 NSF-funded TCN, CSBR, and other projects. Paper was released in September issue of Applications in Plant Sciences
- 3D Object Arrays and Drawers working group completed a set of paleontology digitization workflows, paper now under revision for publication

Paleontology working group:
- Conducted a series of webinars for the paleo collections community
- Collaborated on and was funded for the ePANDDA project

Expanded access to iDigBio digitization services and data mobilization for small collections through Small Collections Network webinar series and symposia, and with the Organization for Biological Field Stations

Organized and Run By the Community

Immediate Future Directions

Using Digitized Data in Research
- GSA 2015, Symposium on using digitized paleo data
- ECN 2015, Symposium on using entomological data in research
- Phenological coding for digitized plant data, March 2015

Continuing to engage the entire community through:
- Working group activities
- Webinar series beginning January 2016
- Overcoming obstacles to imaging fluid-preserved collections, workshop, March 2016
- Imaging Vertebrate collections (vertebrate digitization 2), Berkeley, April 2016

Expand the paleo digitization working group by continuing the enhanced series of paleo digitization webinars

Workflows
- Update and publish new entomological digitization workflows
- Update and publish new fluid-preserved vertebrate digitization workflows

Enhance international collaboration through hosting a digitization symposium at the 23rd Pacific Science Congress, Taipei, June 2016

Small Collections
- Enhance the SCNet monthly webinar series to begin January 2016
- Continue the Organization for Biological Field Station working group activities
- Complete a paper focused the relative importance of small herbarium in contributions to state floras
- Host a small collections symposium at SPNHC 2016

Planned by the Community

iDigBio
Integrated Digitized Biocollections
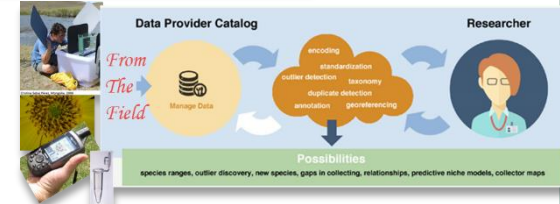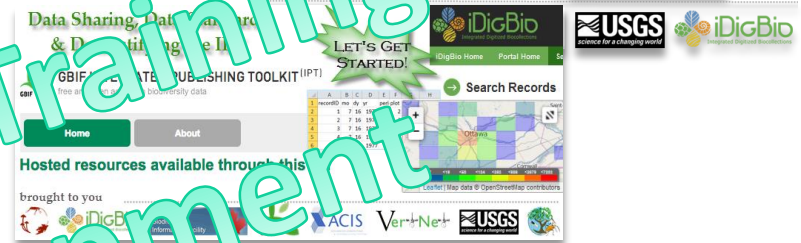
Biodiversity Informatics Workshop Series 1 - 5

o Data Carpentry (31)

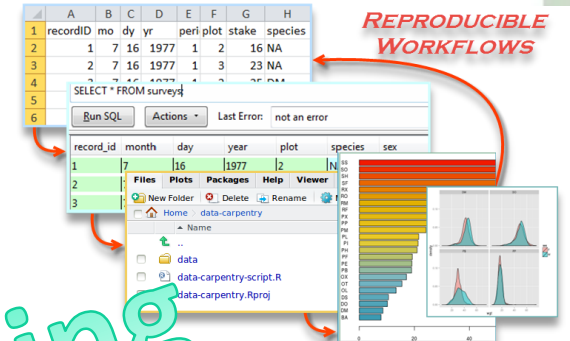o Demystifying the IPT (74)*

o Field to DB (22) > New Courses at ASU, KU, UIUC

o Managing NHC Data (32)

o Reproducible Science Curriculum (21)

Focus: People in the NHC Data Pipeline

o researcher, curator

o graduate student

o collection manager

o data manager, and

o capacity-building with the same folks in developing countries (Africa)

Materials and Teaching

o A community collaborative effort

Focus on literacy and skills in the #NHC Research Data Pipeline

- Publish our experiences from our
  - 1st Biodiversity Informatics Workshop Series.
- A series of hands-on workshops and webinars for researchers, collection managers, data managers, graduate students, using iDigBio data
- More Data Carpentry and Reproducible Research
- Collaboration with other capacity-building initiatives
  - GBIF, UIUC, NHM, FMS, FDA, PRAGMA, JRS Foundation, IPB, FSU iSchool …
- Your iDigbio Summit V
  - Ad hoc break out #NHCbiodiversityinformatics for the research data pipeline
    - focus on sustainability
    - ideas for scaling up reach

NHC Data Skills
For Globally Discoverable Data

Community Technology Skills

DATA CARPENTRY
MAKING DATA SCIENCE MORE EFFICIENT

Public Participation in Digitization (iDigBio Leads: Austin Mast and Libby Ellwood)

BioScience Advance Access published February 25, 2015

Overview Articles

Accelerating the Digitization of Biodiversity Research Specimens through Online Public Participation

ELIZABETH R. ELLWOOD, BETTY A. DUNCKEL, PAUL FLEMONS, ROBERT GURALNICK, GIL NELSON, GREG NEWMAN, SARAH NEWMAN, DEBORAH PAUL, GREG RICCARDI, NELSON RIOS, KATJA C. SELTMANN, AND AUSTIN R. MAST

A goal of the biodiversity research community to digitize ... ... the biological specimens in US c... ... by 2020. Meeting this ambitious goal requires increased collaboration and tech... ... in ... ...ation on ... ...od ... ...ent bey... the walls of universities and museums. Engaging the public in digitization promises to both se... ... digiti... ... ...tu...s and furth... ...ubl... ...tanding ... ...c participants that a... ... ...resea... ... progress ...bel... ...y ... ...nnotation from images. We illustrate ... ...ctivit... ...ompl... ... ...wledge and areas for improvement. The field of publi... ...part... ...at... ...an ...many emerging opportunities for scientists, educators, and the... ...olic ...areas (e.g., the digital humanities).

Public Engagement

- Ellwood et al.'s *Bioscience* review article (left) published in Feb, 2015, issue as cover story.
- Nelson et al.'s *Applications in Plant Sciences* article published in Sept, 2015, includes two modules on how to run onsite public participation events for digitization.
- Matsunaga et al.'s in press *Future Generation Computer Systems* article establishes new efficiencies for public participation in transcription.
- Ellwood et al.'s in press *Citizen Science: Theory and Practice* article establishes a baseline for public participation in georeferencing and will appear in the new journal's inaugural issue.

Public Participation in Digitization (iDigBio Leads: Austin Mast and Libby Ellwood)
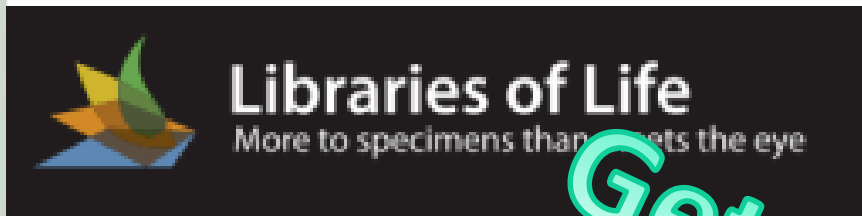

- CITStitch Hackathon (co-organized with Rob Guralnick) held December 3–5, 2014, to advance interoperability among relevant actors in domain of public participation in digitization.
- Plan for Worldwide Engagement for Digitizing Biocollections (WeDigBio) Event initially fleshed out at CITStitch.
- Biospex Beta released Fall 2014.
- Biospex is a platform for managing public participation in digitization projects. It makes onboarding of new projects at, e.g., Notes from Nature easier and opens it broadly to citizen science groups (e.g., friends of a local national park), letting them contribute in ways important to them and ensuring data returns to collections with provenance.
- Biospex v1 release expected in late 2015.

Public Participation in Digitization (iDigBio Leads: Austin Mast and Libby Ellwood)

- Inaugural Worldwide Engagement for Digitizing Biocollections (WeDigBio) Event held October 22–25, 2015.
- Planning involved broad collaboration between iDigBio and other institutions and projects (e.g., Smithsonian, Notes from Nature).
- Hundreds of participants at >20 onsite events and distributed individually throughout world transcribed >30,000 specimen labels in the four days.
- Foundation laid for this to be annual event, including checklists, education materials, even dashboard.
- To learn more and pick up WeDigBio stickers and tattoos, visit WeDigBio poster and attend Citizen Science discussion on Friday and visit wedigbio.org.

Libraries of Life E&O Project (Leads: Anne Basham and Austin Mast)

Get Your Own Copy

- Libraries of Life project produced an augmented reality card for each of the TCNs and iDigBio, as well as a mobile app and a website.
- Project involved collaboration across the ADBC community on an E&O product.
- User can view 3D models that launch in the app and are manipulated by the positioning of the card.
- iDigBio Summit V is the official release date of the cards and mobile app.
- The mobile app is available through the Apple App Store for iOS devices. An Android version of the app is being discussed.
- To learn more and receive a complete set of LoL cards, attend the iDigSteam discussion on Thursday and/or visit the LoL poster on Friday and visit libraries-of-life.org.

Get Involved in creating a path to success