Paleontology Digitization Workflows Working Group (DROID)

Gil Nelson
Institute for Digital Information and Scientific Communication
Integrated Digitized Biocollections
Florida State University

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Yale Peabody Museum

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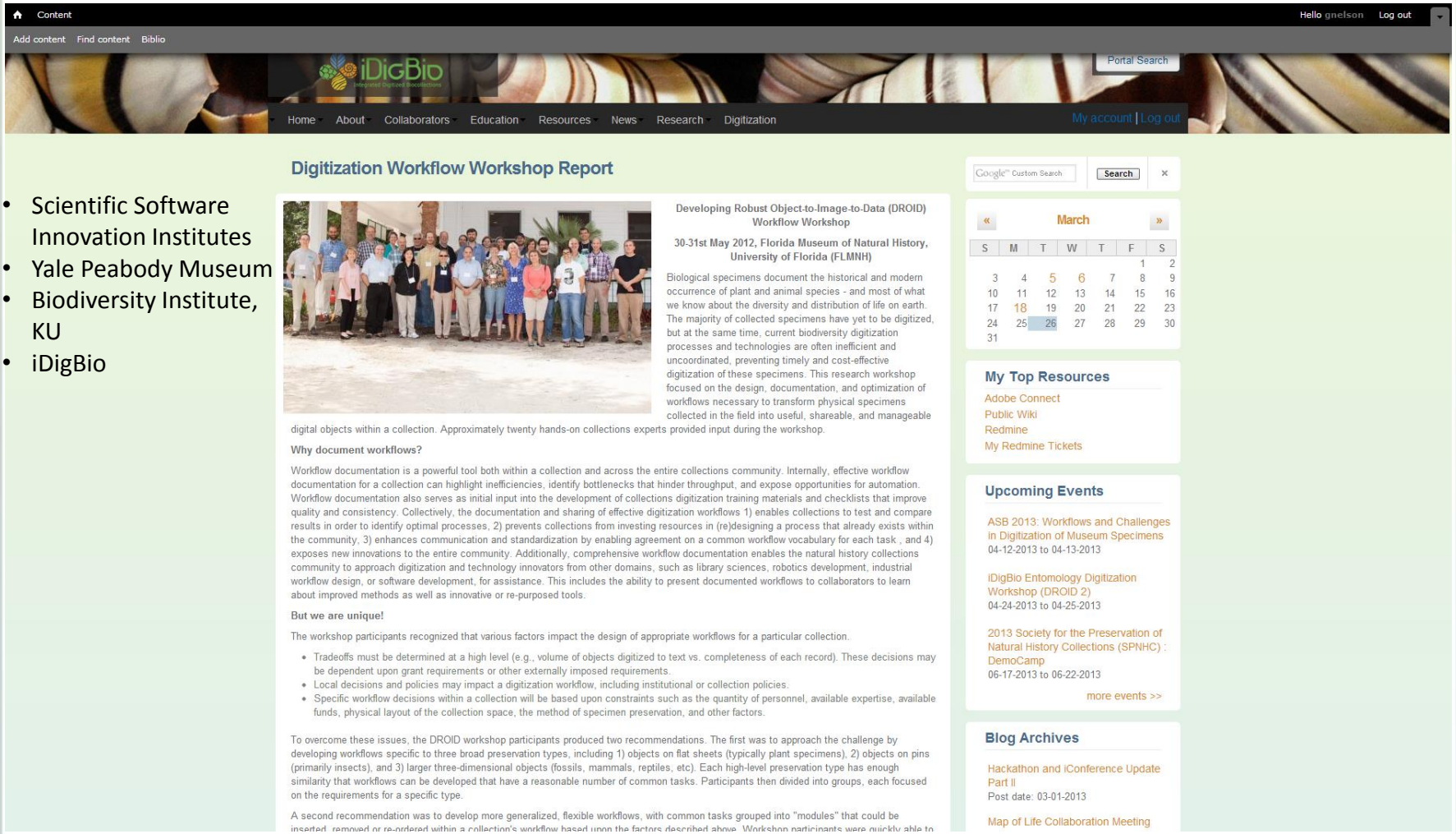
Developing Robust Object to Image to Data Workflows (DROID)

- Scientific Software Innovation Institutes
- Yale Peabody Museum
- Biodiversity Institute, KU
- iDigBio



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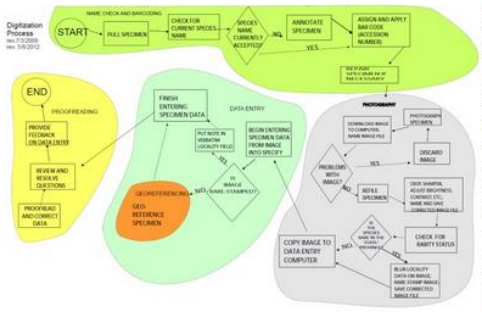
Digitization Workflows

Presenter: Dorothy Allard



Digitization Workflows

Efficient and effective workflows are at the heart of successful biological and paleontological collections digitization. Much work has been done with developing workflows and protocols at the museum and collections level, but few of these workflows have been documented or made available to the larger collections community. iDigBio, through its Documentation pages, is establishing an online repository for sharing existing customized workflows from as many collection types and institutions as possible, an idea that stems largely from the Developing Robust Object-to-Image-to-Data (DROID) workshop held May 30-31, 2012. We have assembled an initial set of workflows, including selected examples from the DROID workshop, as well as those developed by iDigBio staff. Here we offer the beginnings of the repository and encourage those in the community to both discuss the workflows via the forum links, and to contribute to this resource by adding new workflows and updating existing workflows. If you would like to submit a workflow for inclusion on this page, please contact iDigBio for instructions. We are also assembling detailed modules of tasks to be performed at each stage of the workflow, accessible on our Workflow Modules and Tasks page.

Global Plants Initiative, U. of Vermont

Workflow	Contributor	Workflow Documentation	Link to Public Comments (Forums)
Domininant Digitization Workflows	iDigBio	Dominant Digitization Workflows Documentation	Domininant Digitization Workflows Forum
Field Notes-to-Data-to-Image	iDigBio	Field Notes-to-Data-to-Image Documentation	Field Notes-to-Data-to-Image Forum
Specimen-to-Data-to-Exemplar Image	iDigBio	Specimen-to-Data-to-Exemplar Image Documentation	Specimen-to-Data-to-Exemplar Image Forum
Object-to-Image-to-Data (1)	iDigBio	Object-to-Image-to-Data (1) Documentation	Object-to-Image-to-Data (1) Forum
Object-to-Image-to-Data (2)	iDigBio	Object-to-Image-to-Data (2) Documentation	Object-to-Image-to-Data (2) Forum
University of Vermont Herbarium	Dorothy Allard	University of Vermont Herbarium Documentation	University of Vermont Herbarium Forum
Southwest Collections of Arthropods Network	Paul Heinrich	Southwest Collections of Arthropods Network Documentation	Southwest Collections of Arthropods Network Forum

Posted To Collaborative Workflows Page Linked to the Digitization Resources Wiki

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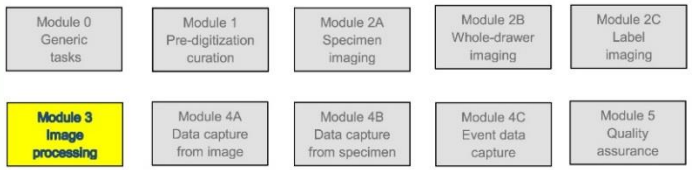
Workflow Detail: Specimen Image Processing (Pinned Things)



Module 3: Specimen Image Processing

Task ID	Task Name	Explanations and Comments	Resources
T1	Transfer images from camera to immediate image processing storage.	This task varies by institution. Some institutions record images to a card within the camera, others download directly to the imaging computer or an external or network drive as images are recorded. Transfer to the image processing storage should be periodic, at least daily.	Ample storage space with backup procedures (also see T8-T9).
T2	Adjust orientation and crop images, as necessary.	Images should be framed and recorded as precisely as possible to prevent the need for cropping. In cases where cropping is required, batch crop routines for processing multiple images to identical parameters are preferable. Where batch cropping is not possible due to random variation of exemplar image files, individual cropping may	Image management or processing software (e.g., Photoshop, Lightroom, ImageMagick, Gimp, or similar).

University of Florida • Florida Museum of Natural History • Dickinson Hall (Museum Rd. & Newell Dr.) • Gainesville, FL 32611 • 352-273-1906
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Workflow Modules and Task Lists

One outgrowth of the DROID (Developing Robust Object-to-Image-to-Data) workflow workshop held in May 2012 was the establishment of a series of working groups, each focused on workflow modules and tasks for various preparation types. The first of these groups, informally called the Flat Sheets and Packets Working Group, was charged with fleshing out task lists for digitizing vascular and non-vascular plant collections. The second working group, Pinned Specimens in Trays and Drawers, invested its time developing modules to support effective entomological digitization workflows. Other preservation types will follow, including fluid collections and other 3-dimensional objects, concluding with the development of an overall project management module designed to provide guidance for developing and managing digitization projects across disciplines and preservation types.

We have chosen a modular approach for presenting our results in order to accommodate the broad range of workflow implementations within the collections community. We recognize that there is no consensus workflow that fits all situations, even within a single preservation type. In light of this, we have attempted to assemble orderly, comprehensive task lists to serve as foundations from which institutionally specific workflows can be created. Not all institutions will use every task, but we hope that the lists we have developed encompass all relevant digitization tasks. We also hope that those in the collections digitization community will provide feedback on these lists, either through forum posts or e-mails to Gil Nelson, alerting us to deficiencies and oversights.

Links to published modules as they are completed are provided below:

Flat Sheets and Packets Working Group - Vascular and Non-vascular Plants

- Module 1 Pre-digitization Curation Tasks
- Module 2 Imaging Station Setup Camera
- Module 3 Imaging Station Setup Scanner
- Module 4 Imaging Tasks
- Module 5 Image Processing Tasks (Rev 2012-11-07)
- Module 6 Data Capture Tasks

Pinned Things in Trays and Drawers Working Group - Dried Insects

- Module 0 Generic Tasks Applicable to Two or More Modules
- Module 1 Pre-digitization Curation Tasks
- Module 2A Specimen Imaging Tasks
- Module 2B Whole-drawer Imaging Tasks
- Module 2C Label Imaging Tasks
- Module 3 Image Processing Tasks
- Module 4A Data Capture From Image Tasks
- Module 4B Data Capture From Specimen Tasks
- Module 4C Event Data Capture Tasks
- Module 5 Quality Assurance Tasks

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Collections Digitization Workflows

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- 1 This Wiki includes links to preparation-specific workflows and protocols for digitizing biodiversity and paleontology collections. The page serves as a community collaboration. Contributions of existing workflows and protocols are encouraged, whether such workflows were developed by the contributor or discovered while searching the internet. Create a free iDigBio account to upload and link your own contributions, or e-mail contributions (links or documents) to Gil Nelson (gnelson@bio.fsu.edu) for uploading and linking. An initial set of stubs is provided. Please expand as needed.
- 2 Digitization Resources Home
- 3 iDigBio's Collaborative Workflows Page
- 4 Herbarium Digitization Workflows and Protocols
- 5 Invertebrate Digitization Workflows and Protocols
- 6 Vertebrate Digitization Workflows and Protocols
- 7 Paleontology Digitization Workflows and Protocols
- 8 Fluid-preserved Specimen Digitization Workflows and Protocols

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Digitization Resources Home [edit]

iDigBio's Collaborative Workflows Page [edit]

Herbarium Digitization Workflows and Protocols [edit]

- Florida State University Herbarium Imaging Protocol
- Valdosta State University Herbarium (VSC) Vascular Plant Imaging Protocol
- Valdosta State Herbarium (VSC) Bryophyte Packet Imaging Protocol
- Valdosta Herbarium image processing with Nikon Dust Off process included
- Consortium of Pacific Northwest Herbaria imaging wokflows
- Imaging Plants, E-Type Initiative, Harvard
- Bryophyte/Lichen Data and Image Capture Workflows (LBCC Thematic Collections Network)

Invertebrate Digitization Workflows and Protocols [edit]

- A Guide to Digitizing Insect Collections (MCZ Entomology Type Image Project)
- South Australian Museum Procedures Manual Supplement: Macrophotography
- South Australian Museum Procedures Manual Supplement: Microphotography
- Preparing Insect Specimens, E-type Initiative at Harvard
- Imaging Insect Specimens, E-Type Initiative at Harvard

Vertebrate Digitization Workflows and Protocols [edit]

Paleontology Digitization Workflows and Protocols [edit]

Community-based Workflow Wiki for sharing workflows across prep types and institutions.

DROID 4 Working Group: 3D objects in boxes and drawers

- Roger Burkhalter (U. Oklahoma)
- Susan Butts (Peabody Museum, Yale)
- Una Farrell (U. Kansas)
- Talia Karim (Museum of Natural History, U. Colorado)
- Ann Molineux (U. Texas)
- Gil Nelson (iDigBio)
- Jessica Utrup (Peabody Museum, Yale)

Link Available on the Wiki

https://www.idigbio.org/wiki/images/a/a4/Droid4_Workflow.pdf

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