

Enhancing Herbarium Digitization Workflows

This workshop is co-hosted by iDigBio and SERNEC. The goal is to develop a composite set of digitization workflow documents that capture the best of what has been learned in our community in the years since and leading up to the launching of NSF's ADBC program.

Participants include 26 experts drawn from existing and new TCNs, RCNs, CSBR collaboratives, and related working groups. Products of the workshop will include:

- collaboratively developed and broadly applicable workflow documents that reflect the combined good work of digitization leaders, and
- a written framework to guide the completion of a publishable paper to ensure the broader distribution of workshop output.

We anticipate that the workflows developed through this workshop will include components for:

- pre-digitization curation and staging,
- data extraction,
- imaging,
- image processing,
- public participation,
- georeferencing,
- proactive digitization,
- and data aggregation.

Other workflow components may be added during the workshop.

A tentative agenda follows. We anticipate that the precise order of activities, especially beginning the 2nd half of Day 1, will be refined/revised by participants as we get organized as well as during the workshop. We will also be using a workshop wiki (https://www.idigbio.org/wiki/index.php?title=Workflows_Herbarium_Digitization) as well as several collaborative Google Docs to record our work and to capture workshop outcomes. The wiki contains contributed written workflows and protocols from workshop participants.

In general, we will devote the first part of Day 1 to overviews of existing workflow implementations. The second half of Day 1, all of Day 2, and part of Day 3 will be devoted to workflow development with the goal of nearly completed workflow documents by noon of Day 3. The afternoon of Day 3 will be devoted to building a written framework for a publishable paper to support the workflows developed.

For most of the workshop, we will be working in small groups, each focused on a single or closely related set of workflow task clusters. We anticipate the composition of these groups to be somewhat fluid, allowing and encouraging participation in more than one group.

Workshop Agenda

Day 1, 27 January 2014

	Getting started	
8:30-8:45 a.m.	Welcome Workshop overview, organization, and potential outcomes	Gil Nelson
8:45-8:55 a.m.	Introduction to iDigBio Using digital images and data in botanical research	Pam Soltis
8:55-9:10 a.m.	Introduction to SERNEC	Zack Murrell
	Overviews of existing workflows Zack Murrell: Moderator	
9:15-9:25 a.m.	iDigBio's flat sheets and packets working group workflows	Gil Nelson
9:25-9:35 a.m.	New York Botanical Garden workflows, including Tritrophic and Macrofungi TCNs	Kim Watson
9:35-9:45 a.m.	Pacific Northwest herbarium consortium workflows	Ben Legler
9:45-9:55 a.m.	California Consortium of Herbaria workflows	Mare Nazaire
9:55-10:05 a.m.	Mississippi grandiFLORA CSBR workflows	Lisa Wallace
10:05-10:15 a.m.	Deep South Plant Specimen Imaging Project workflows	Austin Mast
10:15-10:30 a.m.	Coffee Break	
10:30-10:40 a.m.	New England Vascular Plants TCN workflows	Patrick Sweeney
10:40-10:50 a.m.	Macroalgae TCN workflows	Chris Neefus
10:50-11:00 a.m.	Great Lakes Consortium workflows	Rich Rabeler

11:00-11:10 a.m.	Bryophytes and lichens TCN workflows	Julianne Smith
11:10-11:20 a.m.	Valdosta State workflows	Richard Carter
11:20-11:30 a.m.	Workflows at University of North Carolina	Alan Weakley Carol Ann McCormick
11:30-11:40 a.m.	Louisiana Cyberflora workflows	Tom Sasek
11:40-11:50 a.m.	Symbiota workflows for SERNEC	Ed Gilbert
11:50-12:00 p.m.	Georeferencing workflows	Blaine Marchant
12:00-12:10 p.m.	Workflow goals for new Keys to the Cabinet TCN	Zack Murrell
12:10-12:20 p.m.	Crowd-sourcing, volunteers, and blitzes for SERNEC implementation	Austin Mast
12:20-12:30 p.m.	Maximizing student labor and sources of student labor	Emily Gillespie
12:30-1:40 p.m.	Lunch	
1:40-2:40 p.m.	<p>Group decisions:</p> <ul style="list-style-type: none"> • Discuss and determine the organizational structure for the remainder of the workshop. • Agree to common workflow document template. • Determine the modules to include within the workflows. • Segregate into work teams by modules or groups of related modules and designate team leads. • Make initial assignments to teams. <p>Following are potential working groups. We expect others to be added as part of workshop deliberations. Like colors</p>	Group deliberation Gil Nelson, Moderator

	<p>represent those groups that might be combined.</p> <ul style="list-style-type: none"> ● Proactive digitization ● Pre-digitization curation/staging ● Selecting an imaging station ● Imaging station setup: camera and lightbox ● Imaging station setup: scanner ● Imaging station setup: copy stand ● Imaging station setup: conveyer ● Image capture via herbarium personnel ● Image capture via blitzes and public participation ● Image processing and management ● Organizing and implementing a public participation imaging blitz ● Data capture ● Data capture via herbarium personnel ● Data capture via public participation ● Organizing and implementing a public participation data capture blitz ● Georeferencing ● Aggregating data to iDigBio 	
2:40-3:00 p.m.	Coffee Break	
3:00-4:30 p.m.	Begin working group deliberations. Participants are encouraged to contribute to more than a single working group over the course of the workshop and should feel free to move about as	

	<p>needed to make contributions as desired.</p> <p>It is anticipated that workflow documents will be completed as the workshop progresses. Appropriately formatted documents will be provided via Google Drive.</p> <p>All participants are encouraged to make comments/edits/additions to any active workflow document and during any part of the workshop via the Google Drive interface.</p>	
4:30-5:00	Group reports Plans for 2nd day	Zack Murrell, Moderator

Day 2, 28 January 2014

8:30-11:30 a.m.	Working group workflow development	
11:30-Noon	Group reports	
12:00- 1:00 p.m.	Lunch	
1:00-4:00 p.m.	Working group workflow development	
4:00-5:00 p.m.	Group reports Plan for Day 3	

Day 3, 29 January 2014

8:30-11:00 p.m.	Workflow document development Incorporate online comments Complete draft workflows	
11:00-Noon	Group reports	
12:00-1:00 p.m.	Lunch	
1:00-4:00 p.m.	Discuss/select journal to target.	

	<p>Determine parts of the paper and make writing assignments:</p> <ul style="list-style-type: none">● Introduction● ADBC/TCN/iDigBio● History of herbarium workflows● Methods● Workflow modules and assumptions● Proactive digitization● Georeferencing● Workforce management● Results● Discussion	
4:00-5:00 p.m.	<p>Determine plans, strategies, and assignments for completing workflow documents and paper.</p>	