

Herbarium Digitization Workshop
September 16–18, 2012
Host Institution: Valdosta State University

This workshop is the first in a series of preparation-specific workshops focusing on organizing, launching, and maintaining a biological collections digitization program. The primary goal is to prepare participants with the necessary skills and knowledge to launch or maintain a digitization program individually, through collaboration with an existing Thematic Collections Network (TCN), or through collaboration with iDigBio. The target audience includes herbarium collections managers, curators, and directors.

Workshop content includes: 1) an overview of iDigBio, ADBC, and nationwide digitization activities, 2) how to organize and launch a digitization program, 3) a detailed overview of digitization tasks, 4) hands on use and configuration of camera systems and lighting, 5) an introduction to and overview of several database management systems and related tools, 6) hands-on use/demonstration of several imaging software packages, 7) a consideration of barcodes and file-naming strategies, 8) how to develop effective workflows and protocols, 9) strategies for evaluating hardware and software, 10) a detailed overview of procedures for image and data capture, including a detailed overview of image types, image manipulation, and image conversion, 11) strategies and considerations for georeferencing, including use of online collaborative tools, and 12) methods for moving digitized data to the internet via data aggregators, harvesters, and portals.

Workshop facilitators include:

- Richard Carter, professor of Botany, director of the herbarium at Valdosta State University, and co-PI on a collaborative digitization project with the University of Georgia
- Mike Bevans, imaging expert, digital photographer, and Information Manager for Digitization at the New York Botanical Garden
- Herrick Brown, specimen database specialist, Assistant Botanist with the South Carolina Heritage Program, and Assistant Curator at the University of South Carolina's A. C. Moore Herbarium
- Kevin Love, iDigBio's IT Expert
- Joanna McCaffrey, iDigBio's Biodiversity Informatics Manager
- Gil Nelson, iDigBio's digitization specialist, former coordinator of the Deep South Plant Specimen Imaging Project, and co-PI on an NSF-funded digitization project at Tall Timbers Research Station
- Deb Paul, iDigBio's user services specialist, MorphBank expert, and specialist in data migration and harvesting.

The workshop resources Wiki can be found at:

https://www.idigbio.org/wiki/index.php/Digitization_Training_Workshops

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The workshop's collaborative workshop notes page, which can be edited by all workshop participants, can be found at the following link and via Wiki page, above:

<http://tinyurl.com/HerbariumWorkshopNotes>

Agenda
Day 1 – September 16, 2012

Time	Activity	Responsible
Various	Holiday Inn van picks up at airport	
6:15 p.m.	Vans depart Holiday Inn for VSU	
6:30–7:30 p.m.	Reception VSU Bailey Atrium Participant introductions Introduction to iDigBio Workshop logistics	Connie Richards (Dean, VSU Arts and Sciences) Bob Gannon (Head, VSU Biology Department) Richard Carter (Professor of Biology, VSU) Gil Nelson (iDigBio) Pam Soltis (PI, iDigBio)
7:30–9:00 p.m.	Dinner Bailey Science Center Atrium	
~9:00 p.m.	Vans depart VSU for Holiday Inn	

Day 2 – September 17, 2012

Time	Activity/Venue	Responsible
6:00–8:00 a.m.	Breakfast Azalea Restaurant	Holiday Inn
8:00 a.m.	Vans depart Holiday Inn for VSU	Richard Carter Gil Nelson
8:30–9:15 a.m.	VSU – Rose Room Overview of Digitization Tasks and Components Global decisions Digitization task clusters Object to image to data Image and data identifiers	Gil Nelson
9:15 a.m.–10:15 p.m.	Imaging Strategies and Tools Software tools (Digital Photo Pro, Camera Control Pro, Nikon Capture NX2, Nikon View NX2, Lightroom, Photoshop, Aperture, Picasa Viewer, etc.) Image storage formats (camera raw, jpg, tif, dng, etc.) Available capture devices Lighting Image naming strategies Image capture standards and common practices Image processing dos and	Mike Bevans

	<p>don'ts (color balance, cropping, saturation, contrast adjustment, etc.)</p> <p>Ethics of image enhancement</p> <p>Stacking: Helicon Focus, AutoMontage, free software</p> <p>Camera setup and use</p> <p>Archiving images (best formats)</p> <p>Hardware</p> <p>Overview of what's available</p> <p>Cameras & lenses</p> <p>Scanners</p> <p>Copy stands, light boxes, and related equipment</p> <p>Lighting</p> <p>Computer equipment</p>	
10:15–10:30 a.m.	Coffee break	
10:30–Noon	Imaging, cont'd	Mike Bevans
Noon–1:00 p.m.	(Rose Room) Lunch	
1:15–2:00 p.m.	<p>VSC Herbarium Bailey Science Center Getting started with digitization:</p> <ul style="list-style-type: none"> • Reason for beginning, • Startup costs and funding, • Institutional and administrative support, • IT support, • Brief overview of equipment and software used, • Anticipated and unanticipated benefits, • Anticipated and unanticipated obstacles, • Personnel recruitment, • Extent of additions to professional workload, • Leveraging the library 	Richard Carter
2:00–3:15 p.m.	Imaging station hands-on demonstrations	Mike Bevans Richard Carter Gil Nelson Herrick Brown
3:15–3:30 p.m.	Coffee break	
3:30–4:30 p.m.	More hands-on, including a workflow demonstration	Mike Bevans Richard Carter Joanna McCaffrey Gil Nelson
4:30–5:45 p.m.	<p>Workflows and Protocols</p> <ul style="list-style-type: none"> • Importance of written protocols • How to develop, write, and manage protocols and workflows • Strategies for getting feedback on improvements from technicians • Sample and suggested 	Gil Nelson

	<ul style="list-style-type: none"> workflows • Image to data vs data from specimens (FSU example) • Workflow and data entry efficiencies • Barcodes: what & where, 	
6:00–8:00 p.m.	Dinner Giulio’s Restaurant	
~8:00 p.m.	Vans depart Giulio’s for Holiday Inn	

Day 3 – September 18, 2012

Time	Activity/Venue	Responsible
6:00–8:00 a.m.	Breakfast, Azalea Restaurant	Holiday Inn
8:00 a.m.	Vans depart Holiday Inn for VSU	Richard Carter Gil Nelson
8:30–9:00 a.m.	VSU – Rose Room Considerations When Choosing Collections Management Software	Joanna McCaffrey
9:00–10:30 a.m.	Database Overviews Specify & Symbiota	Herrick Brown
10:30–10:45 a.m.	Coffee	
10:45–noon	<p>Other databases/tools</p> <ul style="list-style-type: none"> • Why spreadsheets do not provide an adequate solution • KE EMu • BRAHMS • “build your own” (OpenHerbarium at FSU) • Arctos • Access • Silver Biology <p>Database and data capture tools</p> <ul style="list-style-type: none"> • Keystroke • From labels or label/specimen images • Salix/BCR • Apiary/Atrium • OCR software • Voice Recognition • Electronic barcode capture 	Joanna McCaffrey Gil Nelson
Noon–1:00 p.m.	Lunch	
1:00–2:30 p.m.	Database tools/capture cont’d	
2:30–3:15 p.m.	<p>Georeferencing</p> <ul style="list-style-type: none"> • Geolocate • Biogeomancer • ArcGis • Google Maps 	Gil Nelson Richard Carter

3:15–3:30 p.m.	Coffee	
3:30–4:00	Moving digitized objects to the web via aggregators and harvesters <ul style="list-style-type: none"> • iDigBio • Morphbank • GBIF • TCNs 	Deb Paul
4:00–4:30	Pre/Post-digitization curation	Deb Paul
4:30–5:00 p.m.	Wrap up	
	Dinner (on your own)	
5:15 p.m./various	Vans depart for Holiday Inn	