

**Fluid-preserved Invertebrate and Microscopic Slide Imaging Workshop
September 16-18, 2013
Museum of Natural History
University of Michigan
Ann Arbor, MI**

This workshop focuses on imaging techniques for fluid-preserved invertebrates and microscopic slides. The primary goal is to prepare participants for imaging these difficult-to-record collection objects. Workshop topics include but are not restricted to: 1) image file types and standards; 2) equipment specifically tailored for recording images of microscopic slides; 3) equipment specifically tailored for recording specimens of small, fluid-preserved invertebrates; 4) imaging software and tools, 5) open source imaging software and image processing software; 6) open source tools for data management; 7) open source operating system; 8) microphotography with and without a microscope; 9) lighting for imaging; 10) methods for specimen rehydration; and 11) workflows and strategies for recording images of fluid-preserved insects, arachnids, myriapods, and crustaceans. Sample workflows, hardware specifications, and comparison software features are available during and following the workshop through a workshop wiki. As much as practicable, workshop sessions will focus on practical application and demonstration.

Workshop facilitators include: Rebekah Baquiran (Field Museum), Sandy Brantley (University of New Mexico), Gil Nelson (iDigBio), Mark O'Brien (University of Michigan).

The workshop resources Wiki can be found via:

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

The workshop's collaborative workshop notes pages (one for each day), which can be edited by all workshop participants, can be found at a link on the Wiki page.

Agenda

Day 1 – September 16, 2013 (Monday)

Time	Activity/Venue	Responsible
Various		
6:00–7:30 p.m.	Reception UMMZ Ruthven Museum Building Participant mixer Introductions	Diarmaid O'Foighill, Director, UMMZ Mark O'Brien (UMMZ) Gil Nelson (iDigBio)
7:30–9:00 p.m.	Dinner (on your own)	

Day 2 – September 17, 2013 (Tuesday)

Time	Activity/Venue	Responsible
7:30–8:00 a.m.	Continental Breakfast (Michigan League-Catered) Kalamazoo Room	
8:15–8:30 a.m.	Workshop Overview and Goals	Gil Nelson Mark O'Brien
8:30–8:45 a.m.	Introduction to iDigBio	Gil Nelson
8:45–9:30 a.m.	Challenges, Issues with imaging fluid-preserved arthropods -what to image? -purpose of image? -small size -manipulability -limitations of optical systems -dealing with fluids -novel approaches	Mark O'Brien Sandy Brantley (U. New Mexico)
9:30–9:45 a.m.	Q&A Moderated discussion	Mark O'Brien Sandy Brantley Gil Nelson

9:45–10:15 a.m.	DIY Techniques: Tools and materials to achieve better results in photographing wet arthropod collections	Mark O'Brien
10:15–10:30 a.m.	Coffee Break	
10:30–10:45 a.m.	Imaging in hand sanitizer	Sam Droege (USGS)
10:45–11:00 a.m.	Imaging spiders for the South Dakota Spider Survey: challenges and frustrations	Brian Patrick (Dakota Wesleyan University)
11:00–11:15 a.m.	Q&A	
11:15–11:30 a.m.	Slide imaging at Naturalis Biodiversity Center	Joost van Leusen (Naturalis Biodiversity Center, Leiden)
11:30–11:45 a.m.	Slide Scanning at the Essig Museum	Pete Oboyski (Essig Museum, U. California, Berkeley)
11:45–12:00 p.m.	Slide Imaging at UMMZ	Pavel Klimov (U. Michigan)
12:00–12:15 p.m.	SPOT Imaging Solutions	Dana Holcomb, SPOT Imaging
12:15–1:15 p.m.	Lunch (catered)	
1:15–4:00 p.m.	Demonstrations: UMMZ SPOT Imaging Solutions Carl Zeiss Microscopy Hand Sanitizer Imaging Lightroom/Photoshop Visionary Digital	Mark O'Brien Dana Holcomb Vincent Cavaliere Sam Droege Sally Bjork/Rich Rabeler Roy Larimer/Ben Dumont
4:00–5:00 p.m.	Q&A Moderated Discussion	Gil Nelson
	Dinner (on your own)	

Day 3 – September 18, 2013 (Wednesday)

Time	Activity/Venue	Responsible
7:30–8:00 a.m.	Continental Breakfast (Michigan League-Catered) Kalamazoo Room	
8:15–8:45 a.m.	Slide imaging at the Field Museum	Stephanie Ware (Field Museum)
8:45–9:15 a.m.	Conceptualizing & Implementing Large-Scale Collection Digitization	Gracen Brilmyer (Field Museum)
9:15–9:30 a.m.	Imaging alcohol-preserved arachnids using a Visionary Digital System	Marshal Hedin (San Diego State University)
9:30–9:45 a.m.	Fluid-preserved imaging at Cal Academy	Vic Smith (California Academy of Sciences)
9:45–10:15 a.m.	Imaging at University of Oslo	Eirik Rindal (U. Oslo, Norway)
10:15–10:30 a.m.	Coffee Break	
10:30–10:45 a.m.	Imaging techniques	Paul Selden (U. Kansas)
10:45–11:00 a.m.	Q&A Moderated Discussion	Gil Nelson
11:00–11:30 a.m.	Imaging workflow and processing tools: Lightroom Photoshop Tools Actions	Rich Rabeler (U. Mich.) Sally Bjork (U. Mich.)
11:30–12:00 p.m.	Visionary Digital	Roy Larimer (Visionary Digital)
12:00–1:00 p.m.	Lunch	
1:30–3:45 p.m.	Demonstrations repeated	See Day 2
3:45–4:00 p.m.	Coffee Break	



4:00–4:30 p.m.	Q&A Discussion & Wrap Up	
	Dinner (on your own)	