



Specimen Imaging for Paleontology

[iDigBio](#), the [Jackson School of Geosciences](#) at the University of Texas, and the [High-Resolution X-ray CT Facility](#) at the University of Texas are pleased to co-sponsor this workshop focused on imaging solutions for paleontological specimens and research. Content will include techniques, strategies, technology, services, and data uses for:

- two-dimensional imaging,
- three-dimensional imaging,
- X-ray computed tomography (CT),
- scanning Electron Microscopy (SEM),
- surface scanning,
- three-dimensional printing, and
- creating educational content for classroom instruction and museum interpretation.

One full day will be devoted to a hands-on session for generating, processing, and using CT datasets for paleontological research, with datasets generated from participant-contributed material and instruction provided by staff at the High-Resolution X-ray CT Facility.

The target audience includes collections managers, curators, and researchers in vertebrate and non-vertebrate paleontology and paleobotany.

Day 1: 29 April 2014

Time	Topic	Responsible
8:00-8:15 a.m.	Welcome Workshop goals. Workshop logistics. Introduction to iDigBio.	Ann Molineux (U. Texas) Gil Nelson (iDigBio)
8:15-8:45 a.m.	CT scanning for paleo collections.	Tim Rowe (U. Texas) http://digimorph.org
8:45-9:00 a.m.	DROID workflows for paleo digitization	Talia Karim (U. Colorado) Una Farrell (U. Kansas)
9:00-9:20 a.m.	What's available for 3D surface scanning?	Suzanne Strait (Marshall)
9:20-9:40 a.m.	3D surface scanning for paleo collection objects	Aaron Wood (U. Florida)

9:40-10:00 a.m.	3D scanning in the field: Portable imaging as a method for moving digitization forward in the workflow	John Kappelman (U. Texas) http://eskeletons.org http://efossils.org
10:00-10:20 a.m.	Coffee break	
10:20-10:40 a.m.	2D imaging for paleo collection objects	Roger Burkhalter (Sam Noble, U. Oklahoma)
10:40-11:00 a.m.	Selecting equipment for 2D imaging	Christina Byrd (Virginia Museum of Natural History)
11:00-11:20 a.m.	The advantages in using textural and polarized lighting for imaging fossils	Paul Mayer (Field Museum)
11:20-11:40 a.m.	3D imaging of fossils using close-range photogrammetry	Daniel Miller (U. Michigan Museum of Paleontology)
11:40 a.m.-Noon	In-situ close-range photogrammetry of The Mammoth Site of Hot Springs, SD	Maribeth Price (SD School of Mines and Technology)
Noon-12:20 p.m.	Reflectance Transformation Imaging (RTI)	Chelsea Graham (Yale Digital Collections Center (YDC2))
12:20-1:30 p.m.	Lunch (Catered)	
1:30-2:00 p.m.	Cetaceans in silico: 3D digitizing a fossil whale graveyard in the Atacama of Chile	Nick Pyenson (Smithsonian)
2:00-2:20 p.m.	Technology for 3D printing	Richard Urban (Florida State)
2:20-2:50 p.m.	3D geologic printing in teaching and research	Franek Hasiuk (Iowa State) http://m.livescience.com/40994-3d-printing-fossils-geology.html
2:50-3:10 p.m.	3D printing at U. Alabama	Dana Ehret (U. Alabama)
3:10-3:30 p.m.	Coffee break	
3:30-3:50 p.m.	Education and outreach using	Bruce MacFadden (Florida)

	3D printed fossils in teaching	Museum of Natural History)
3:50-4:15 p.m.	GeoScienceWorld's OpenGeoSci: Open platform for geographic data discovery	Alix Vance (GeoScienceWorld)
4:15-4:30 p.m.	Attaching images to database records	Ann Molineux (U. Texas)
4:30-4:45 p.m.	Daily wrap up and Q&A	Ann Molineux Gil Nelson
4:45 p.m.	Shuttles depart for Aloft	
5:00-6:00 p.m.	On your own	
6:00 p.m.	Shuttles depart for Jackson School and evening reception	
6:30-9:30 p.m.	Evening Mixer/Reception Jackson School	Sharon Mosher, Dean