

**Topic:** Digital Assets - 3D




**Date:** 2023 April 20

**Time:** 12 PM Eastern

### In Attendance

Lindsay Walker, Symbiota	Erica Krimmel	Jessie Nakano, NMNH
Holly Little, NMNH	Roger Burkhalter (Retired OMNH)	Shyla Davison, iDigBio
Jessica Utrup, YPM	Nicole Neu-Yagle (DMNS)	Sierra Swenson (DMNS)
Amanda Millhouse, NMNH	Carrie Eaton, UWGM	Talia Karim, CUMNH
Alyson Wilkins, UMNH	Vicky Wang, PRI	Nicole Volden, NMMNH
Jorrit Poelen, GloBI, <a href="https://jhpoelen.nl">https://jhpoelen.nl</a>	Jacob Van Veldhuizen, CUMH	Ben Norton, NCMNS
Janaki Krishna, UMNH	Natalia López Carranza, KUMIP	Carrie Levitt-Bussian, UMNH
Garth Holman, UMich	Greg Liggett, BLM	Lindsay Dougan, DMNS
Matthew Cruz, UMich		

### Resources

- Paleo Data Working Group [Google Folder](#)
- Paleo Data Working Group [website](#) schedule of upcoming Happy Hours and recordings/notes from past Happy Hours
- Morphosource HH
  -  20230209\_paleo-happy-hour\_notes
  -  20230209-paleo-happy-hour\_recording.mp4
-  20230420\_paleo-happy-hour\_slides

### Agenda

- Announcements/Updates
  - a. CoL meeting—they're excited (and have been waiting!) to work with paleo collaborators. Talia presented some of our TDWG slides at their annual meeting earlier in April.
  - b. Status of Stratigraphy List - posting reminder and setting-up second meeting outside regular HH. Proposed meeting 12pm EST on April 27th?

- c. Updated on Material vocabulary
- Digital Assets - managing 3D data
  - a. What is 3D data?
    - 2D slices that make up a model are managed as a whole and treated as 3D data.
    - Types of 3D surrogates (exhibit, in-situ)
  - b. How is it created? Who creates it?
  - c. How is it managed?
  - d. How is it shared?
  - e. Right and agreements

## Notes

Questions for discussion: [Add your responses/thoughts under these prompts!]

### What types of 3D data do you manage?

- University of Colorado (verts) - CT Scans, XRM scans, photogrammetry
- DMNS -Structured light scans, CT scans, photogrammetry
- Natural History Museum of Utah(UMNH) - Structured light scans, CT scans, photogrammetry

### How are you managing 3D data?

- NMNH references all transactions with the loan # and they won't close the loan until the data are shared in an accessible way. They've started encouraging MorphoSource as a repository for 3D data as they don't have a good internal option yet.
- Internal media asset management system
- University of Colorado (verts) - data is stored on external hard drives and/or a data repository, use is then tracked via an eloan (which is just our loan form with a different name)

### Do you have facilities, equipment, or capacity/capabilities to generate 3D data on site?

- University of Colorado (verts) - Yes, camera for photogrammetry and XRD machine in the engineering department
- DMNS - 2 Artec scanners, CT scanning is done offsite
- Paleontological Research Institution - photogrammetry (for SciComm/outreach, not research-quality)
- UWGM - in-house collaboration with medical imaging group on campus, but also we get scan data from the synchrotron
- NMNH - MicroCT, Artec scanners (we borrow from another unit), Faro arm, photogrammetry.
- UMNH- Arctec Scanner, NextEngine, Photogrammetry, On-campus CT

### Do you receive requests for use of existing data? Or to scan collections objects from external parties (e.g. visiting researchers, loans)?

- University of Colorado (verts) - Yes on both questions. Use of existing data is tracked via our eLoan form. Requests for scans are granted and if done offsite are tracked via our loan form.
- NMNH - Yes, to both requests for and sharing of data is managed through request tracking and media use/access agreements

### **How do you share 3D data of your collections?**

- University of Colorado (verts) - MorphoSource, Morphobank, Sketchfab, CU Libraries 3D data website
- (in-house) Online Collections Portal
- DMNH - MorphoSource, Sketchfab, dropbox sharing
- Paleontological Research Institution - Sketchfab
- NMNH - 3D.si.edu, Dropbox, MorphoSource (other upload data of our specimens to Phenome10k, Sketchfab)
- NMNH - In house archiving/sharing, MorphoSource, Dropbox sharing

### **Do you have agreements/forms that you use to manage scanning or data sharing requests?**

- Drop example agreements in this Google folder: [Data Request/Sharing Agreement Examples](#) (can add any relevant screenshots from your CMS, etc.)
- NMNH can share agreements they're working on if you want a copy
  - Catalog number, element, what methods and equipment were used to do the scan

### **Do you manage 3D data that exists as a proxy for a specimen? (e.g. specimen was not collected, specimen cannot be prepped out of a block or will not be prepped from a field jacket for an extended period of time)**

- NMNH- Yes, we maintain models for cotypes, in-situ specimens, Models of natural casts, virtually prepped from jackets, specimens altered/destroyed via destructive analysis

### **Do you have scenarios or use-cases that you'd like to talk through?**

- *Add your thoughts/questions here*
- Are people keeping associated files to document methods?
  - MorphoSource captures this info when you upload the media
- Making data web accessible for educational outlets
  - SketchFab, Voyager
- Are there concerns about commercial reproductions of your specimens using 3D data?
  - Yes
  - Smithsonian Open Access Policy (CC0) at NMNH- some complications with ensuring there is credit for any use when publicly accessible.
  - Could put watermark on 3D model (challenging)
- Federal perspectives

- Greg: Main concern is acknowledgement that a scanned specimen is a “public fossil”. Second, commercial use is a concern. Derivative products considered different from the original scan.
- Giving/getting credit has been the biggest challenge with CC0 +1
  - What creative commons/copyright licenses do collections use? What are the pros and cons of each?
  - Is 3D data really copyrightable? If so, who holds the copyright? The creator of the data? Or the institution the specimen is from?
- Blockchain has the potential to eliminate piracy and licensing infringements issues (Jorrit: how? note that I understand, or think I do ;), how blockchain works and am using it to package digital assets and their provenance - like [https://jhpoelen.nl/LACMIP\\_9951-3\\_Helicancylus\\_pilsbryi/](https://jhpoelen.nl/LACMIP_9951-3_Helicancylus_pilsbryi/) ) ~ Search *blockchain media protection* on google scholar. I know that’s somewhat of a lame answer, but the explanation could be a book. <https://letmegooglethat.com/?q=+blockchain+media+protection> ? (Jorrit: I do think it is important to cite your sources. . . . and thank you for the key word references. I am still unclear how blockchain would help protect digital assets. I can see how it could help identify and keep track of the provenance of digital assets. Is that what you mean?)

**2d questions (for next Happy Hour):** How do you track requests when someone else has asked for the same thing? File naming conventions? How to deal with photos of unknown specimens? Do you have institutional policies for these requests?

- Paleontological Research Institution: No restrictions on photo requests of the same specimen (although I can’t think of any examples of this happening); we don’t share info about data/image/loan requests with other users.

## Chat Copy

09:02:57 From Lindsay Walker to Everyone:

Today’s notes:

<https://docs.google.com/document/d/1V-cDof9R2n4laawjxOKXNTGVpV0q-ecdb-NTTPd9Wgo/edit?usp=sharing>

09:06:25 From Erica Krimmel (she/her) to Everyone:

A nice warm welcome for Ben haha

09:06:31 From Erica Krimmel (she/her) to Everyone:

Today’s notes:

<https://docs.google.com/document/d/1V-cDof9R2n4laawjxOKXNTGVpV0q-ecdb-NTTPd9Wgo/edit?usp=sharing>

09:08:58 From Lindsay Walker to Everyone:

Welcome, Sierra and Shyla! :)

09:09:07 From Erica Krimmel (she/her) to Everyone:

Welcome! For the rest of us, maybe we could change our Zoom names to reflect our institutions for the newer folks?

09:09:08 From Talia S. Karim (She/Her) to Everyone:

Welcome!

09:09:15 From Jorrit Poelen (GloBI) to Everyone:

IODE?

09:09:34 From Jorrit Poelen (GloBI) to Everyone:

Interested Object Discovery Educator?

09:09:52 From Erica Krimmel (she/her) to Everyone:

Reacted to "Interested Object Di..." with 😊

09:10:41 From Jorrit Poelen (GloBI) to Everyone:

But seriously, does anyone know what the acronym IODE means?

09:18:15 From ALYSON WILKINS to Everyone:

How do you handle sites that were scanned but never collected?

09:19:47 From Jessie Nakano- NMNH (she/her) to Everyone:

We handled those as an agreement between the land managers of the site and our institution who would manage the data

09:20:24 From Jorrit Poelen (GloBI) to Everyone:

Does anyone use SketchFab to store 3d models?

09:21:46 From Greg Liggett (he/him), BLM to Everyone:

BLM and partners have used SketchFab

09:21:56 From Jessica Utrup, YPM to Everyone:

For the EMu folks, what module/field to do you store Morphosource URLs in?

09:22:00 From Holly Little (NMNH) to Everyone:

we have external people that have added data in SketchFab

09:23:28 From Greg Liggett (he/him), BLM to Everyone:

Can SI share their terms?

09:23:49 From Holly Little (NMNH) to Everyone:

yes!

09:23:51 From Jorrit Poelen (GloBI) to Everyone:

How do you publish and archive your 3D models? Is Morphosource an archive?

09:25:10 From Nicole Neu-Yagle (Denver Museum of Nature & Science) to Everyone:

EMu folk: we don't have a written procedure yet but I've been storing MorphoSource Media Numbers or Identifiers in "Other Numbers" with the number source, in the catalog record. URLs in notes...

09:25:38 From Carrie A. Eaton to Everyone:

Reacted to "EMu folk: we don't h..." with 👍

09:25:57 From Carrie A. Eaton to Everyone:

How much "in-house" data do you all find yourself storing for research in progress that is not yet published?

09:26:29 From Janaki Krishna to Everyone:

@Natalia- do you have any feedback against using morphosource?

09:26:41 From Greg Liggett (he/him), BLM to Everyone:

How many of you encounter the creation of digital data for commercial use?

09:27:48 From Jessica Utrup, YPM to Everyone:

@Greg - any commercial uses have to go through our Registrar, so we often don't have to deal with that directly.

09:28:23 From Lindsay Walker - Symbiota to Everyone:

Drop examples of agreements here:

[https://drive.google.com/drive/folders/1jehTSPCXuCnVPJTp8iFqSJJsRHJxV87O?usp=share\\_link](https://drive.google.com/drive/folders/1jehTSPCXuCnVPJTp8iFqSJJsRHJxV87O?usp=share_link)

09:28:32 From Erica Krimmel (she/her) to Everyone:

Reacted to "Drop examples of agr..." with 👍

09:29:14 From Erica Krimmel (she/her) to Everyone:

For anyone who came in a little late, today's notes:  
<https://docs.google.com/document/d/1V-cDof9R2n4laawjxOKXNTGVpV0q-ecdb-NTTPd9Wgo/e/dit?usp=sharing>

09:29:56 From Jessie Nakano- NMNH (she/her) to Everyone:

@Greg- we have received inquiries for using data for commercial use and that is reviewed and assessed for the usage rights applied. I think we had one inquiry to create a digital asset for commercial use, but educational intent. That is still being reviewed

09:31:42 From ALYSON WILKINS to Everyone:

Love it PackRat

09:31:47 From Natalia Lopez Carranza, KUMIP to Everyone:

Replying to "@Natalia- do you hav..."

No really against using morphosource. We prefer it over other repositories like Sketchfab because it links media to physical objects (in our case specimens) and also connects with aggregators like idigbio.

09:32:01 From Lindsay Dougan to Everyone:

Reacted to "No really against us..." with 👍

09:32:03 From ALYSON WILKINS to Everyone:

Can you share the title of the book

09:32:08 From Natalia Lopez Carranza, KUMIP to Everyone:

Reacted to "Drop examples of agr..." with 👍

09:32:14 From Jorrit Poelen (GloBI) to Everyone:

Here's an example of a 3d data package  
[https://jhpoelen.nl/LACMIP\\_9951-3\\_Helicancylus\\_pilsbryi/](https://jhpoelen.nl/LACMIP_9951-3_Helicancylus_pilsbryi/) that is stored across four different locations [https://jhpoelen.nl/LACMIP\\_9951-3\\_Helicancylus\\_pilsbryi/](https://jhpoelen.nl/LACMIP_9951-3_Helicancylus_pilsbryi/).

09:33:00 From Carrie A. Eaton to Everyone:

Reacted to "Here's an example of..." with 👍

09:33:33 From Natalia Lopez Carranza, KUMIP to Everyone:

Replying to "@Natalia- do you hav..."

Also when external researchers upload and make KUMIP media public, we get access and control of our specimen data

09:33:36 From ALYSON WILKINS to Everyone:

Reacted to "Here's an example of..." with 👍

09:35:04 From Ben Norton to Everyone:

Our 3D Model Gallery: <https://collections.naturalsciences.org/paleo-models> pulls in specimen data via an API on page load

09:35:09 From Jorrit Poelen (GloBI) to Everyone:

btw - thanks for Lindsey Walker for helping to work on the example.  
<https://github.com/bio-guoda/preston/issues/215> .

09:35:18 From Lindsay Walker - Symbiota to Everyone:

Reacted to "btw - thanks for Lin..." with 🙏

09:39:14 From Jorrit Poelen (GloBI) to Everyone:

Maybe a digital watermark in the 3d model?

09:40:13 From ALYSON WILKINS to Everyone:

I've found putting a watermark in a 3d model a little complex

09:40:35 From Ben Norton to Everyone:

Very

09:40:51 From Holly Little (NMNH) to Everyone:

Book about 3D data preservation standards = "3D Data Creation to Curation: Community Standards for 3D Data Preservation"

(and the project the created the book <https://cs3dp.org/> )

09:41:23 From Roger Burkhalter to Everyone:

Reacted to "Book about 3D data p..." with 👍

09:48:59 From Jorrit Poelen (GloBI) to Everyone:

@Ayson - I can see a digital tattoo on a complex object can be tricky to place.

09:49:40 From Holly Little (NMNH) to Everyone:

I was going to ask you to answer Amanda!

09:49:47 From Jessie Nakano- NMNH (she/her) to Everyone:

Reacted to "I was going to ask y..." with ❤️



09:49:53 From ALYSON WILKINS to Everyone:

Reacted to "I was going to ask y..." with ❤️

09:50:05 From Talia S. Karim (She/Her) to Everyone:

#vertpaleoproblems

09:50:07 From Jessie Nakano- NMNH (she/her) to Everyone:

Replying to "I was going to ask y..."

09:50:10 From Holly Little (NMNH) to Everyone:

Reacted to "#vertpaleoproblems" with 😏

09:50:14 From Natalia Lopez Carranza, KUMIP to Everyone:

Reacted to "#vertpaleoproblems" with 😂

09:50:21 From Jessie Nakano- NMNH (she/her) to Everyone:

Reacted to "#vertpaleoproblems" with 😂

09:50:33 From ALYSON WILKINS to Everyone:

Do we just record and store all these vaguely identical scans?

09:50:39 From Roger Burkhalter to Everyone:

Reacted to "#vertpaleoproblems" with 😏

09:50:43 From ALYSON WILKINS to Everyone:

Reacted to "#vertpaleoproblems" with 😏

09:50:53 From ALYSON WILKINS to Everyone:

Replying to "#vertpaleoproblems"

#museumlife

09:50:54 From Holly Little (NMNH) to Everyone:

so far yes... but eventually I hope not 😏

09:52:00 From Jessie Nakano- NMNH (she/her) to Everyone:

We are also trying to figure out how to best to track in EMu when a specimen is scanned and where data is stored

09:52:10 From Lindsay Walker - Symbiota to Everyone:

If you haven't yet, take a few minutes to jot down your thoughts under the discussion prompts in the shared notes:

<https://docs.google.com/document/d/1V-cDof9R2n4laawjxOKXNTGVpV0q-ecdb-NTTPd9Wgo/e/dit#bookmark=id.b4nfhx8xf8t>

09:52:40 From Erica Krimmel (she/her) to Everyone:

Reacted to "If you haven't yet, ..." with 🙌

09:52:55 From Lindsay Walker - Symbiota to Everyone:

Replying to "If you haven't yet, ..."

Could help to include your institution

09:52:59 From Amanda Millhouse (NMNH) to Everyone:

Reacted to "#vertpaleoproblems" with 😊

09:53:03 From Amanda Millhouse (NMNH) to Everyone:

Reacted to "#vertpaleoproblems" with 😊

09:55:02 From ALYSON WILKINS to Everyone:

@JessicaUtrup I'm trying to talk our art museum and libraries into working with me on that

09:55:11 From Jessica Utrup, YPM to Everyone:

@Jorrit - we can retrieve things very easily, but actually deleting them from our DAM is much harder.

09:55:49 From Talia S. Karim (She/Her) to Everyone:

We have both at CU

09:56:07 From Lindsay Dougan to Everyone:

DMNS does both, but CT scanning is done externally

09:56:08 From Carrie A. Eaton to Everyone:

We have both, but most are internal/in-house!

09:56:31 From Lindsay Walker - Symbiota to Everyone:

Google doc:

<https://docs.google.com/document/d/1V-cDof9R2n4laawjxOKXNTGVpV0q-ecdb-NTTPd9Wgo/e/dit#bookmark=id.b4nfhx8xf8t>

09:56:51 From ALYSON WILKINS to Everyone:

2d is so chaotic

10:00:01 From Erica Krimmel (she/her) to Everyone:

I've gotta run... thanks everyone, especially Holly & Jessie!

10:00:35 From Jessie Nakano- NMNH (she/her) to Everyone:

Reacted to "I've gotta run... than..." with ❤️

10:00:37 From Jorrit Poelen (GloBI) to Everyone:

URLs are not persistent. [1]

10:00:41 From ALYSON WILKINS to Everyone:

Reacted to "I've gotta run... than..." with ❤️

10:01:01 From ALYSON WILKINS to Everyone:

Which is why want to transition to the DAMS

[1] PS from Jorrit: Sorry to be brief here. What I was trying to say that is there's little evidence to support that URLs, and the content they produce, remain accessible and consistent over time (I am assuming these are qualities of "persistent" urls). For examples see (disclaimer: I am a co-author):

MJ Elliott, JH Poelen, JAB Fortes (2020). Toward Reliable Biodiversity Dataset References. Ecological Informatics. <https://doi.org/10.1016/j.ecoinf.2020.101132>

Accepted with minor revisions: Elliott, M. J., Poelen, J. H., & Fortes, J. (2022, August 29). Signed Citations: Making Persistent and Verifiable Citations of Digital Scientific Content. <https://doi.org/10.31222/osf.io/wycjn>