Bi-Monthly Progress Reports To iDigBio Submitted By Active Thematic Collections Networks (TCNs)

November 2018

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- Reports from the following **active** TCNs:

☒ CAP
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☒ LepNet/SCAN
☒ MAM
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☒ SERNEC
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Reports from the following **retired** TCNs are no longer included:

~~GLI~~
~~InvertNet~~
~~LBCC~~
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~~NEVP~~
~~Paleoniches~~
~~TTD~~
~~VACS~~

iDigBio is funded by a grant from the National Science Foundation's Advancing Digitization of Biodiversity Collections Program (Cooperative Agreement EF-1115210). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

	April 28 to OCT 30 , 2018 (186 days)						Date GA established
Website	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**		**Notes**	
iDigBio Portal	8,848	14,715	62,983	55%		running GA	
iDigBio Website	28,180	41,241	79,587	65%		running GA	
Digital Atlas of Ancient Life	12,736	15,265	24,123	78%			
Digital Atlas of Ancient Life (Ordovician)	3,218	4,249	15,305	64%		running GA but these are only partial numbers, need full numbers	21-Jan-18
Pennsylvanian of Ancient Life	1,826	2,205	6,629	64%		running GA but these are only partial numbers, need full numbers	25-Jan-18
Neogene Atlas of Ancient Life	1,306	2,295	13,390	56%		running GA but these are only partial numbers, need full numbers	1-Feb-18
Cretaceous Atlas of Ancient Life	1,075	1,268	4,482	60%		running GA but these are only partial numbers, need full numbers	24-Mar-18
Fossil Marine Invertebrate Communities (EPICC)	1,076	1,330	2,146	68%		running GA but these are only partial numbers, need full numbers	2-Feb-18
Fossil Insect Collaborative	NA	NA	NA	NA		Talia will get	
Aquatic Invasives	739	937	2,178	63%		running GA	
SCAN (Arthropods)	9,535	21,272	73,633	47%		running GA	
LepNet Portal	1,626	2,259	4,908	62%		running GA	
LepNet WordPress	1,647	2,075	3,937	73%		running GA	
InvertEBase	2,982	3,892	7,248	70%		running GA	
Mycoportal	21,158	37,851	104,901	60%		running GA	
LBCC Lichen	19,595	42,519	121,100	59%		running GA	
LBCC Frullania	1,800	2,214	3,349	75%		running GA	
LBCC Arctic	687	778	1,580	74%		running GA	
LBCC Bryophyte Portal	3,658	7,416	28,128	44%		running GA	
Macroalgae	5,401	9,017	27,236	54%		running GA	
Herbarios del Noroeste de Mexico	13,190	21,798	98,253	61%		running GA	
SERNEC	9,077	25,905	110,217	41%		running GA	
SEINet vPlants	6,628	8,804	29,786	61%		running GA	
SEINet Intermountain	10,228	20,062	95,492	40%		running GA	
SEINet Arizona-New Mexico	78,027	162,460	806,558	53%		running GA	
SEINet Midwest Herbaria	3,981	10,448	50,856	36%		running GA	
Mid-Atlantic Herbaria	2,569	7,482	27,557	46%		running GA	15-Sep-16
NANSH	1,703	5,333	16,354	47%		running GA	
Northern Great Plains	3,208	6,179	13,983	68%		running GA	
OregonFlora Portal	6,437	15,933	44,477	44%		running GA	2-Jun-11
Mobilizing New England Vascular Plant Specimen Data (NEVP)	2,495	6,471	30,350	0		running GA	
Southern Rockies Plant Niches (SoRo)	281	445	1,026	60%		running GA	
Vertebrates (i.e., VertNet)	9,486	18,786	NA	74%		based on GA data from Oct 26 to Nov 1, 2018	
Symbiota WordPress	1,998	3,237	6,614	64%			
Tri-Trophic Databasing (TTD)	NA	NA	NA	NA		Will be set up website at AMNH, arthro data also served through SCAN and plant data through SEINet	
A Centralized Digital Archive of Vouchered Animal Communication Signals	NA	NA	NA	NA		https://www.macaulaylibrary.org	
Open Exploration of Vertebrate Diversity in 3D (oVert)	NA	NA	NA	NA		working with Morphosource	
InvertNet	NA	NA	NA	NA		No response	

	April 28 to OCT 30 , 2018 (186 days)			
	Users	**Sessions**	**Pageviews**	**Bounce Rate**
iDigBio	**37,028**	**55,956**	**142,570**	
TCN and related portals	**239,373**	**470,185**	**1,775,796**	
Symbiota Portals	**218,136**	**443,573**	**1,709,721**	
TOTAL	**276,401**	**526,141**	**1,918,366**	
Portals by Taxa	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**
Vascular Plants	137,824	291,320	1,324,909	
Lichen & Bryophytes	25,740	52,927	154,157	
Algae	5,401	9,017	27,236	
Fungi	21,158	37,851	104,901	
Invertebrates	15,790	29,498	89,726	
Multiphyla (Aquatic Invasives & Symbiota portal)	2,737	4,174	8,792	
Vertebrates (i.e., VertNet)	9,282	18,382	NA	
Paleo	21,237	26,612	66,075	
Total	**239,169**	**469,781**	**1,775,796**	
	Per Day			
	Users	**Sessions**	**Pageviews**	% of total (users)
iDigBio	199	301	767	**13%**
TCN and related portals	1,287	2,528	9,547	**87%**
TOTAL	**1,486**	**2,829**	**10,314**	**100%**
Non-iDigBio by taxa				
Vascular Plants	741	1,566	7,123	**58%**
Lichen, Bryophytes & Algae	167	333	975	**13%**
Fungi	114	204	564	**9%**
Invertebrates	85	159	482	**7%**
Multiphyla	15	22	47	**1%**
Paleo	114	143	355	**9%**
Vertebrates (i.e., VertNet)	51	101	NA	**4%**
Total	**1,287**	**2,528**	**9,547**	

	January 1, 2011 to March 5, 2018 (7 years)				February 4 to March 5, 2018 (29 days)				March 6 to April 27, 2018 (53 days)				April 28 to OCT 30 , 2018 (186 days)					Date GA established
Website	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Notes**	
iDigBio Portal	102,572	154,088	462,295	64%	1,594	2,717	10,357	52%	2,845	4,710	16,069	53%	8,848	14,715	62,983	55%	running GA	
iDigBio Website	187,747	292,014	629,602	62%	8,887	10,901	18,681	70%	12,191	16,029	28,304	67%	28,180	41,241	79,587	65%	running GA	
Digital Atlas of Ancient Life													12,736	15,265	24,123	78%		
Digital Atlas of Ancient Life (Ordovician)	981	1,208	2,837	67%	740	894	1,675	68%	2,059	2,383	4,283	76%	3,218	4,249	15,305	64%	running GA but these are only partial numbers, need full numbers	21-Jan-18
Pennsylvanian of Ancient Life	NA	NA	NA	NA	253	327	1,582	64%	476	597	2,044	63%	1,826	2,205	6,629	64%	running GA but these are only partial numbers, need full numbers	25-Jan-18
Neogene Atlas of Ancient Life	NA	NA	NA	NA	134	315	3,466	44%	314	559	3,179	54%	1,306	2,295	13,390	56%	running GA but these are only partial numbers, need full numbers	1-Feb-18
Cretaceous Atlas of Ancient Life	NA	NA	NA	NA	0	0	0	NA	260	301	1,138	57%	1,075	1,268	4,482	60%	running GA but these are only partial numbers, need full numbers	24-Mar-18
Fossil Marine Invertebrate Communities (EPICC)	NA	NA	NA	NA	161	173	165	0	110	141	309	60%	1,076	1,330	2,146	68%	running GA but these are only partial numbers, need full numbers	2-Feb-18
Fossil Insect Collaborative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Talia will get	
Aquatic Invasives	8,339	10,783	22,526	71%	42	59	179	36%	72%	101%	503%	50%	739	937	2,178	63%	running GA	
SCAN (Arthropods)	58,738	129,598	463,040	58%	2,348	4,501	14,739	52%	3,438	6,699	20,199	53%	9,535	21,272	73,633	47%	running GA	
LepNet Portal	2,446	4,125	10,413	55%	194	300	854	52%	294	451	780	71%	1,626	2,259	4,908	62%	running GA	
LepNet WordPress	5,874	7,807	15,288	72%	169	240	603	65%	362	550	1,371	55%	1,647	2,075	3,937	73%	running GA	
InvertEBase	10,708	13,683	29,098	71%	381	504	1,134	62%	726	929	2,048	64%	2,982	3,892	7,248	70%	running GA	
Mycoportal	84,853	186,109	568,425	54%	2,987	5,840	17,802	51%	4,916	10,066	32,076	53%	21,158	37,851	104,901	60%	running GA	
LBCC Lichen	124,170	294,874	944,962	56%	4,459	8,889	31,196	58%	7,502	15,459	48,052	57%	19,595	42,519	121,100	59%	running GA	
LBCC Frullania	15,867	21,333	41,432	74%	277	346	615	67%	581	722	1,303	71%	1,800	2,214	3,349	75%	running GA	
LBCC Arctic	7,498	9,496	21,367	74%	93	115	306	69%	165	188	564	69%	687	778	1,580	74%	running GA	
LBCC Bryophyte Portal	31,702	76,943	265,861	45%	755	1,441	5,487	40%	1,312	2,667	11,806	47%	3,658	7,416	28,128	44%	running GA	
Macroalgae	36,228	66,237	21,843	52%	1,381	1,941	5,559	64%	1,950	3,086	10,175	53%	5,401	9,017	27,236	54%	running GA	
Herbarios del Noroeste de Mexico	16,429	27,148	161,083	58%	1,393	2,315	16,751	56%	2,726	4,380	21,947	59%	13,190	21,798	98,253	61%	running GA	
SERNEC	42,238	110,790	403,697	45%	1,735	4,808	23,459	34%	2943	8,806	44,535	34%	9,077	25,905	110,217	41%	running GA	
SEINet vPlants	3,464	4,877	13,789	65%	1,165	1,515	4,361	65%	1,935	2,699	7,220	65%	6,628	8,804	29,786	61%	running GA	
SEINet Intermountain	72,096	132,186	591,181	46%	1,484	2,895	14,602	34%	2,820	5,576	30,085	30%	10,228	20,062	95,492	40%	running GA	
SEINet Arizona-New Mexico	358,820	782,069	4,276,561	51%	12,794	23,731	113,353	53%	25,810	49,251	227,303	46%	78,027	162,460	806,558	53%	running GA	
SEINet Midwest Herbaria	17,366	36,587	131,620	48%	571	1,631	10,604	33%	1003	2534	12,671	32%	3,981	10,448	50,856	36%	running GA	
Mid-Atlantic Herbaria	3,419	9,275	33,803	46%	318	1,171	3,647	43%	419	1,822	6,223	42%	2,569	7,482	27,557	46%	running GA	15-Sep-16
NANSH	20,978	29,537	69,112	66%	266	525	1,747	40%	517	1,017	3,339	42%	1,703	5,333	16,354	47%	running GA	
Northern Great Plains	25,882	37,695	91,374	68%	375	562	1,439	61%	634	1,148	2,638	63%	3,208	6,179	13,983	68%	running GA	
OregonFlora Portal	71,303	192,204	496,751	44%	1,047	2,210	5,948	43%	2,108	4,674	13,698	41%	6,437	15,933	44,477	44%	running GA	2-Jun-11
Mobilizing New England Vascular Plant Specimen Data (NEVP)	18,425	35,883	144,452	49%	446	1,033	6,538	38%	711	1,844	8,648	38%	2,495	6,471	30,350	0	running GA	
Southern Rockies Plant Niches (SoRo)	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	281	445	1,026	60%	Ryan will get	
Vertebrates (i.e., VertNet)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9,486	18,786	NA	74%	No response	
Symbiota WordPress													1,998	3,237	6,614	64%		
Tri-Trophic Databasing (TTD)	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA					Will be set up website at AMNH, arthro data also served through SCAN and plant data through SEINet	
A Centralized Digital Archive of Vouchered Animal Communication Signals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					https://www.macaulaylibrary.org	
Open Exploration of Vertebrate Diversity in 3D (oVert)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					working with Morphosource	
InvertNet	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					No response	

	January 1, 2011 to March 5, 2018 (2620 days)				February 4 to March 5, 2018 (30 days)				March 6 to April 27, 2018 (53 days)				April 28 to OCT 30 , 2018 (186 days)			
	Users	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**
iDigBio	**290,319**	**446,102**	**1,091,897**	**63%**	**10,481**	**13,618**	**29,038**	**61%**	**15,036**	**20,739**	**44,373**	**60%**	**37,028**	**55,956**	**142,570**	
TCN and related portals	**########**	**########**	**8,820,515**	**54%**	**35,968**	**68,281**	**287,811**	**48%**	**66,092**	**128,550**	**517,639**	**47%**	**239,373**	**470,185**	**1,775,796**	
Symbiota Portals	**########**	**########**	**8,817,678**										**218,136**	**443,573**	**1,709,721**	
TOTAL	**########**	**########**	**9,912,412**	**58%**	**46,449**	**81,899**	**316,849**	**NA**	**81,128**	**149,289**	**562,012**	**NA**	**276,401**	**526,141**	**1,918,366**	
	January 1, 2011 to March 5, 2018 (2620 days)															
Portals by Taxa	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**									**Users**	**Sessions**	**Pageviews**	**Bounce Rate**
Vascular Plants	650,420	########	7,708,888	**55%**	28,559	55,128	245,612	**50%**	53,136	105,873	450,207	**49%**	137,824	291,320	1,324,909	
Lichen & Bryophytes	179,237	402,646	1,273,622	**62%**									25,740	52,927	154,157	
Algae	36,228	66,237	21,843	**52%**									5,401	9,017	27,236	
Fungi	84,853	186,109	568,425	**54%**	2,987	5,840	17,802	**51%**	4,916	10,066	32,076	**53%**	21,158	37,851	104,901	
Invertebrates	77,766	155,213	517,839	**64%**	3,092	5,545	17,330	**58%**	4,820	8,629	24,398	**61%**	15,790	29,498	89,726	
Multiphyla (Aquatic Invasives & Symbiota portal)	8,339	10,783	22,526	**71%**	42	59	179	**36%**	1	1	5	**50%**	2,737	4,174	8,792	
Vertebrates (i.e., VertNet)	0	0	0	**NA**	0	0	0	NA	0	0	0	NA	9,282	18,382	NA	
Paleo	NA	NA	NA	NA	1,288	1,709	6,888	**53%**	3,219	3,981	10,953	**62%**	21,237	26,612	66,075	
Total	########												**239,169**	**469,781**	**1,775,796**	
	Per Day				Per Day				Per Day				Per Day			
	Users	**Sessions**	**Pageviews**	% of total (users)	**Users**	**Sessions**	**Pageviews**	% of total (users)	**Users**	**Sessions**	**Pageviews**	% of total (users)	**Users**	**Sessions**	**Pageviews**	% of total (users)
iDigBio	111	170	417	**22%**	361	470	1,001	**23%**	284	391	837	**19%**	199	301	767	**13%**
TCN and related portals	396	847	3,367	**78%**	1,240	2,355	9,925	**77%**	1,247	2,425	9,767	**81%**	1,287	2,528	9,547	**87%**
TOTAL	507	1,018	3,783	**100%**	1,602	2,824	10,926	**100%**	1,531	2,817	10,604	**100%**	**1,486**	**2,829**	**10,314**	**100%**
					0											
Non-iDigBio by taxa					0											
Vascular Plants	248	713	2,942	**79%**	985	1,901	8,469	**79%**	1,003	1,998	8,494	**80%**	741	1,566	7,123	**58%**
Lichen, Bryophytes & Algae													167	333	975	**13%**
Fungi	32	71	217	**10%**	103	201	614	**8%**	93	190	605	**7%**	114	204	564	**9%**
Invertebrates	30	59	198	**9%**	107	191	598	**9%**	91	163	460	**7%**	85	159	482	**7%**
Multiphyla	3	4	9	**1%**	1	2	6	**0%**	0	0	0	**0%**	15	22	47	**1%**
Paleo				**0%**	44	59	238	**4%**	61	75	207	**5%**	114	143	355	**9%**
Vertebrates (i.e., VertNet)	0	0	0	**0%**	0	0	0	**0%**	0	0	0	**0%**	51	101	NA	**4%**
Total	314	847	3,366		1,240	2,355	9,925		**1,247**	**2,425**	**9,767**		**1,287**	**2,528**	**9,547**	

Published on *iDigBio* (https://www.idigbio.org)

Submission #1490

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by EPICC
Wednesday, September 19, 2018 - 19:52
128.32.154.17

TCN Name:
Documenting Fossil Marine Invertebrate Communities of the Eastern Pacific - Faunal Responses to Environmental Change over the last 66 million years

Person completing the report:
eclites@berkeley.edu

Progress in Digitization Efforts:
As of 9/19/2018, the TCN has fully curated and computer cataloged 1,529,083 specimens (95% of goal) and made 235,081 of these specimens (15% of goal) available in the iDigBio portal. The TCN has photographed 114,042 specimens (140% of goal thanks to a large-scale digitization project at the Smithsonian) and georeferenced 21,766 localities (67% of goal). At NMNH, they are continuing to reconcile locality records generated during the digitization project with legacy data. LACM has begun scanning old taxonomic description card catalog. They plan to make it available in the future. UCMP continues to update a lot of formation names and ages in the UCMP database as well physically rearranging the collections to match these changes, currently mostly in the Paleogene collections of Alaska and California.

Share and Identify Best Practices and Standards (including Lessons Learned):
LACM suggests to keep inventorying to know where your cataloging efforts are best spent! Make sure to back-up all video footage. Some video footage taken for this project was lost when a student's personal camera was stolen.

Identify Gaps in Digitization Areas and Technology:
At the Burke, they have one volunteer who works for a few hours each week working on photography, so their photographic progress is very slow. LACMIP is running into data storage/security concerns as the dataset grows and with imaging taking place simultaneously in two parallel workstations. VertNet, PRI's IPT provider, can be slow to upload their data. PRI has sent 233,289 EPICC specimens to VertNet but currently only 44,757 are live online. "Normalization" and cleaning of data by data aggregators is also problematic. The process of uploading photos at UCMP remains very slow. At UO, IT issues/reconfiguration continues to delay their ability to serve data to GBIF. They are expecting the data to be served any day now.

Share and Identify Opportunities to Enhance Training Efforts:
We held our EPICC TCN annual meeting in Berkeley, CA. 18 people attended in person with several additional attending remotely. We discussed updating formation names for historic collections, proposing best practices for the use of DarwinCore terms for paleontological collections, and making sure we have data available to meet various research needs, among other topics.

At PRI, summer intern Taylor Buckley was trained in specimen photography, data entry and pre-digitization curation.

At UCMP, two graduate students were trained in georeferencing. One graduate student was trained in geological referencing (checking and updating formation names based on recent maps in USGS MapView). One graduate student was trained in how to write text for California formations publication.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Continue to work with other Paleo TCNs and iDigBio/VertNet staff to figure out where to put TCN name/funding info and attach it to TCN records. Collaborations with other fossil TCNs on image tagging and best practices for using DarwinCore terms for paleontology. Emails from colleagues related to using the World Register of Marine Species (WORMS) taxonomy in Specify and other TCN-related matters. LACMIP is working with the San Diego Natural History Museum (SDNHM) and the American Museum of Natural History on a research project involving LACMIP & SDNHM collections.

Share and Identify Opportunities and Strategies for Sustainability:
LACM suggests recruiting from student pools that are likely to yield you greatest enthusiasm, education benefits, and retention; these may not always be on your own campus! A volunteer photographer continues to take high quality photos for EPICC at UCMP. Cooper Center data has been made available via iDigBio.

Share and Identify Education and Outreach (E&O) Activities:
TCN institutions continue to train new undergraduates, graduate students and volunteers on the project.

A. Hendy participated in SPNHC, with two talks that touched on EPICC activities; one on rollout of EPANDDA and the other on citizen science initiatives.

Viewed draft of Purisima Formation VFE modules during TCN annual meeting--the modules will be sent to advisory board members for comments soon. Several popular articles were written about our recent Biology Letters paper.

Google Analytics

Other Progress (that doesn't fit into the above categories):
CAS is in the process of updating their taxon tree and cleaning our specimen data to conform to updated nomenclature. They are also in the process of determining the coverage of our taxon occurrences and measuring those against expected occurrence for EPICC relevant taxa.

CAS has also filled two open positions: 1) Geology Collections Manager (Chrissy Garcia) and 2) EPICC technician (30 hrs/week). They are in the process of revamping their volunteer base which waned after the loss of our former collections manager.

Attachment 1

Attachment 2

Submission #1496

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by psierwald
Friday, October 26, 2018 - 20:29
73.73.46.42

TCN Name:
InvertEBase: Reaching Back to See the Future: Species-rich Invertebrate Faunas Document Causes and Consequences of Biodiversity Shifts

Person completing the report:
psierwald@fieldmuseum.org

Progress in Digitization Efforts:
FMNH Invertebrates: Total records entered into database as of 20 July 2018: 45,650. Ca. 600 lots have been labeled by volunteers and museum staff member KGJ.
Georeferencing: 5,509 Illinois sites were georeferenced by intern Anna Ralston. Georeferencing of mollusk localities is ongoing.
FMNH Insects: Digitization: At present, over 190,000 North American insect specimens and lots have been entered into our KE EMu database (representing over 735,000 total specimens data-based and barcoded). Data entry of the North American Histeridae pinned collection continues with over 30,000 lots entered representing 31,565 specimens. Summer/Fall intern completed re-curation of North American Catocala collection (Lepidoptera: Noctuidae) and continues data en-try of individual specimens with over 3,500 specimens entered to date.
Georeferencing: 34,295 US insect records cleaned (correct misspellings, name changes, syntax problems, etc.) and standardized. 22,453 US records georeferenced with an average percentage georeferenced by state equaling 96%.

UMMZ, Michigan, Invertebrates: Four undergraduate students continued mollusk data-entry during the summer, and 14 students were added as the fall semester began. This mollusk data-entry team includes a local high school volunteer, an Eastern Michigan University master student, 14 UM undergraduates and two UM masters. Data entry was mainly focused on the land snail families, especially Polygyridae and Helicidae. 9,855 new records were added to UMMZ Specify database during 7/20/2018 - 10/25/2018 resulting in a total of 68,503 records added since the beginning of this project.

DMNH: We continue to update the taxonomy, locality data, and georeferencing of the land snails. There are now 55,000 records in our local Specify database, 55,906 records in Symbiota, and 27,699 records in iDigBio. 46% of the Symbiota records are georeferenced.

CMNH: OSU's database xBioD was restored in September and has been periodically down for resolution of minor issues. The workflow has been modified so that volunteers and returning work study students are processing their previously imaged/ transcribed material that represents ~175 data files. The most time-consuming step being georeferencing of the new unique collection localities. Since the return of DEA ~2500 specimens have had their data entered into xBioD. A further ~5200 specimens from our global holdings of Lepidoptera were assigned barcodes with label data transcribed in the quarter July-September. Currently the total backlog of specimens needing to be processed is 22,000 specimens. Since the xBioD returned we have averaged data entry of 660 specimens per week; the slow progress is based on the number of new collection localities needing to be geocoded (especially for the world-wide Lepidoptera collection) and once more of these

are entered processing speed will increase. Furthermore, the taxonomy tree for non- North American Lepidoptera is incomplete so the taxonomy tree needs to be updated for many specimens.

Auburn: We have digitized ~1,000 pinned specimens this quarter, bringing our total to ~204,500. Additionally, a graduate student has been curating and digitizing our slide collection of mites and has completed ~500.

Frost: We now have 48,719 images on TaxonWorks, where they're being transcribed (20% complete) and georeferenced (5% complete). We have another 3,000+ images queued for uploading into TaxonWorks. For dry specimens, which are transcribed directly from specimens, we've add-ed an additional 10,000+ to SCAN since our last report. These specimens are being georeferenced by a new intern, Justin Nolan, for a future update.

PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: Malacology specimen and lot records in Arctos continue to be verified with physical specimens in the collection to ensure data was migrated properly and captured fully. This verification process has helped to catch errors in transcription, both recent and historic, from taxonomic updates or from the data migration. New labels with more complete information are being added to specimens. Additional historic labels for malacology specimens are being transcribed for comparison to specimen data in Arctos to potentially match with specimens.
Our staff are identifying select specimens that would benefit from additional examination by experts for identification.
Of the 9,454 North American specimen records (representing 73,793 specimens) with detailed locality information, 2,121 records have been georeferenced to date. A total of 2,698 unique localities have been identified, 2,107 of which are unique localities in North America. Of these, we estimate 1,537 are georeferenceable, with 880 remaining to be georeferenced. See attachment of the geographic and temporal breadth of the malacology collection (CHAS Inv Summary.pdf).
CAS/PNN Insects: Non-Lepidopteran specimen localities have been georeferenced in Arctos and are being reviewed for quality assurance. A total of 1,044 unique localities were identified, 850 of which are North American. See attachment of the geographic and temporal breadth of the entomology collection (CHAS Ento Summary.pdf).

PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: MNA continued digitization and georeferencing Colorado Plateau invertebrate specimens and conducting quality control. MNA added or updated 1850 specimen records. At the beginning of the quarter, we had 5,380 collection locations, 1422 of which (26% were georeferenced. We now have 5,581 locations, 1,956 of which (35%) are georeferenced. This represents 49, 470 georeferenced specimens.

Share and Identify Best Practices and Standards (including Lessons Learned):
FMNH Invertebrates: nothing to report
FMNH Insects: Digitization: nothing to report
Georeferencing: We have gathered statistical data for our US georeferencing project tracking success rates, time/record, methods used, percentage of incorrect coordinates from previous georeferencing initiatives, number of counties needing to be supplied, etc. Using these statistics, we have learned how to determine the approximate time it will take to georeference datasets of a certain size. This will help immensely in future georeferencing projects. We have also identified common difficulties in georeferencing and a suite of solutions for those problems.
UMMZ, Michigan, Invertebrates: Nothing to report
DMNH: Nothing to report
CMNH: Nothing to report
Auburn: Nothing to report
Frost: We continue to update our workflows, which are available as now as PDFs at our Penn State ScholarSphere repository (links here: https://sites.psu.edu/frost/policies/). Additionally, we have published several posts on our blog about lessons we've learned, from alcohol vial best practices to georeferencing. These posts are available at: http://sites.psu.edu/frost/category/curation/ and/or http://sites.psu.edu/frost/tag/digitization/ We've been testing this workflow: image specimen+labels => transcribe labels => georeference. For some types of specimens (e.g., Odonata, which are almost 2 dimensional and very well protected as specimens) this flow was rapid. We've found that for pinned material and vials a straight transcription into spreadsheet (DwCA) is faster. Since our last report the georeferencing SOP has been updated to incorporate new workflows with OpenRefine.

PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: The re-verification process of malacology specimens is facilitating greater accuracy in

the data presented in Arctos. Our initial inventory of the malacology collection included staff and numerous volunteers, and although set protocols were in place and training was provided, not all members successfully captured label data as desired or mistranscribed information. The verification process, on the other hand, is being done by two staff members, ensuring consistency throughout the process. This process enabled our team to catch a few errors from the initial inventory and correct the data. Future projects will benefit from longer training periods and more verification during the project to ensure that team members are carrying out protocols completely.
Georeferencing protocols have been improved. Previously, georeferencing guidelines from The Mammal Networked Information System (MaNIS) were incorporated into our training process for georeferencers; now we will be using the guidelines as standard protocol, allowing us to systematize georeferencing efforts and ensuring the process is replicable. Additionally, we are requiring georeferencers to document their process for each locality, including those they have attempted but were not able to georeference. This documentation process expands the time taken for georeferencing but ensures that the reasoning behind why particular coordinates were assigned is transparent internally as well as for external researchers, and therefore is deemed a critical asset to georeferencing quality control.
CAS/PNN Insects: We continue to make curatorial improvements to the non-Lepidopteran en-tomology collection so that specimens are organized taxonomically.
Georeferencing historic collecting localities has proven to be only moderately successful. Historical localities often did not provide sufficient detail for georeferencing. For instance, 5,200 of the entomological records had no specific locality information recorded, only giving localities to the county level. In other circumstances, geographic place names have changed over the course of 100 years and available records are not able to help pinpoint locations. For instance, “Smith’s Spring” in California is listed on a group of insect specimens; research has determined that it was a location in northern California in the early 1900s, but a precise map location has not been able to be identified.

PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: MNA Stevens and Ledbetter attended the IDigBio conference in Gainesville, FL in October to learn best practices being applied to other NSF PEN grant recipients. Georeferencing and QAQC practices were of particular interest.

Identify Gaps in Digitization Areas and Technology:
FMNH Insects: Digitization: We have improved several workflow and pre-curation steps (including even the process of cutting the bar code labels) for pinned insect digitization. Digitization of pinned insects continues to be slow for several reason. One reason is frequently the delay caused by the time required to save a record. The other fundamental reason: so far the process resist automation. PIs Bieler and Sierwald continue to collaborate with scientists at Argonne National Laboratory on a moving belt-way system that moves pinned specimens into the capture field of 12 camera units, taking 12 images of the insect pin and its labels simultaneously from various angles. Several hour-long stress tests have been conducted, continuously reducing the amount of time required for each set of 12 images and the handling of the images by the soft-ware. We are now planning for the next steps of analyzing the images and stitching images of labels together for transcription, possibly partly through OCR.
Georeferencing: Currently, there are tools available through KE Emu that allow the user to search GEOLocate by the precise location or by city/county, however, there is no tool to search a location by latitudinal and longitudinal coordinates. This would greatly increase the efficiency of evaluating the accuracy of previously georeferenced data. We are in communication about the development of this tool in GeoLocate

UMMZ, Michigan, Invertebrates: Nothing to report
DMNH: Nothing to report
CMNH: Standardization of taxonomy for worldwide Lepidoptera. We reached out to Neil Cobb who earlier in the project kindly provided us an up-to-date taxonomy tree of North American Lepidoptera. There is currently no updated taxonomy tree for world-wide species so our taxon tree must be manually entered on a per specimen basis. The overriding taxonomy tree is XBioD will be updated when/if a worldwide taxonomy tree is released.
Auburn: Nothing to report
Frost: Nothing to report
PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: We are working with the Arctos community to incorporate taxonomic nomenclature from WoRMS database for the entire collaborative system. Not having this connected to Arctos' taxonomic trees creates challenges for updating historic names and connecting to higher taxonomy.
CAS/PNN Insects: Nothing to report
PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: MNA digitization requires georeferencing localities and specimen identification QAQC, which are common

problems reported and discussed at the IDigBio conference in October 2018. MNA is using a Microsoft Access relational database that J.D. Ledbet-ter developed to manage specimen data more than 15 years ago. MNA is primarily using our in-house web mapping tool developed by J.D. Ledbetter that she published from a geodatabase on our SDE server. The geodatabase is linked to an Access database by a common location identifier. The mapping application includes a 30-meter Digital Elevation Model (DEM) used to verify elevations. Users can switch between several basemaps, including aerial imagery, USA Topo Maps, and USGS National Map. This application has search capabilities for locations or coordinates and can also be used with ArcGIS Collector with disconnected editing. For some locations we occasionally use Geo-Locate.org, which has better search capabilities for road junctions and sstream confluences. We are developing vba code to calculate county, state, elevation, and land ownership for georeferenced locations. We will use this to backcheck data entered in the data-base to identify errors. L.E. Stevens and J.D. Ledbetter, who are both very familiar with the Colorado Plateau, are georeferencing the more obscure locations. However, specimens collected in pre-1974 expeditions in the MNA collections often cannot be associated with a precise locality (e.g., the locality is listed as “N AZ” or “Grand Canyon”). To account for this challenge, we are applying a low, medium, or high level of precision to locality points.
Two other issues discussed at IDigBio conference were taxonomic spelling accuracy and the abil-ity to correct taxonomic or location mistakes in SCAN or other IDigBio databases. MNA is achieving the former by matching the ITIS taxonomic list with our database list, and correcting any errors. MNA addresses the latter issue by conducting rigorous QAQC on its digitized specimen list prior to uploading to InvertEBase or SCAN. Taxonomic identification rates also are an issue and are partly being addressed by posting images on Bug Guide for review by the entomological community.

Share and Identify Opportunities to Enhance Training Efforts:
FMNH Invertebrates/Insects: Nothing to report
DMNH: We have been working with Widener University to move the Natural History Collections undergraduate class from an experimental class to a permanent offering. The class will be held again in the Spring semester starting in January 2019
UMMZ, Michigan, Invertebrates: Nothing to report
CMNH: Nothing to report
Auburn: Nothing to report
Frost: We further refined our specimen digitization and data sharing exercise, initially described in past bimonthly and annual reports. We are now using GBIF’s spreadsheet instead of the DwC-A tool, which is not being maintained. The spreadsheet can be ingested through an IPT instance, which we will do at the end of the fall 2018 semester. The data collection is discussed in multiple lectures aimed at increasing our students’ understanding of collection data and basic biodiversity informatics. The discussion includes issues of collecting ethics (the legality of collecting, treating animals humanely, being honest about data, etc.) and urgency (e.g., see recent reports of dramatic insect declines). The refined exercise and discussion will be availed again through our course GitHub repo.

PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: In support of on-going georeferencing, CHAS has developed a quick reference guide to georeferencing best practices, a document of concrete georeferencing examples that outlines the thought process behind using the MaNIS Georeferencing Guidelines, and a georeferencing Frequently Asked Questions. CHAS has also updated its existing georeferencing handbook to reflect current georeferencing practices used in on-going projects.
CAS/PNN Insects: Nothing to report
PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: MNA trained 3 students, 2 interns, and 1 volunteer engaged in digitization and specimen identification this past quarter and plans to continue and expand that training.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
FMNH Insects: Digitization: We will be meeting with staff members from the Museum of Northern Arizona in November to discuss and share our digitization process as well as the structure and set-up of our EMu database.
Georeferencing workshop for WeDigBio
FMNH PI Bieler attended the iDigBio Summit VII and presented the InvertEBase TCN results.
UMMZ, Michigan, Invertebrates::
DMNH: Widener University
CMNH: maintained contact with OSU regarding status of xBioD
Auburn: Nothing to report
Frost: We continue to collaborate with Matt Yoder and the Speciesfile group in their development of TaxonWorks. Their system can now export data to Symbiota, and they've been working to customize or otherwise adapt their

interface to meet our needs. For example they customized the template for wet collection digitization, the workflow of which is now in review at Biodiversity Data Journal. They also increased our capacity to transcribe labels efficiently (batch loading authority files, e.g.)
PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: Because CHAS' previous means of tracking georeferencing was not in full agreement with Arctos' shared data model, CHAS begun to revise its procedures to track georeferencing progress and to assess georeferencing quality. This spurred broader discussion in the Arctos community surrounding Arctos' overall locality data model. The Arctos Working Group came to an agreement that determiners of specimen spatiotemporal data should, at least to some degree, be recorded at the locality-level, rather than solely at the specimen-level as is currently accepted practice. Arctos will readopt Darwin Core terms "georeferencedBy" and "georeferencedDate" to give participating institutions the capacity to capture and evaluate georeferencing data quality at the locality-level. This change will give operators greater confidence in both georeferencing done as part of historic georeferencing projects (often done as a batch, without regard for individual specimen data), as well as georeferencing shared between institutions.
CAS/PNN Insects: Two entomologists from the Illinois Natural History Survey provided identifications to Hemiptera and Orthoptera specimens that had insufficient identifications.
PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: MNA collaborates through ongoing networking connections and Bug Guide with a wide array of researchers across the USA. During the past quarter this has included collaborative specimen identification with the Smithsonian Institution, the University of Arizona, Arizona State University, Northern Arizona University, Ohio State University, Brigham Young University, Colorado State University, Southern Colorado University, the U.S. Geological Survey, and several private, retired entomologists (R.Bailowitz, D. Danforth, A. Menke, P. Price, and D. Ruiter).

Share and Identify Opportunities and Strategies for Sustainability:
FMNH Insects/Invertebrates: Digitization: PIs Sierwald and Bieler are pursuing further the collaboration with Argonne National Laboratory to develop some form of automation of data capture for pinned insects.
Georeferencing: With the georeferencing manual complete, we feel very confident that volunteers and interns can continue georeferencing our data successfully. We have found that this is a popular task among volunteers.
UMMZ, Michigan, Invertebrates: Nothing to report
DMNH: Nothing to report
CMNH: Nothing to report
Auburn: Nothing to report
Frost: Nothing to report
PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: Nothing to report
CAS/PNN Insects: Nothing to report
PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: MNA staff discussed database sustainability with many colleagues at the IDigBio conference; however, no solutions have yet been found to ensuring the sustainability of MNA data.

Share and Identify Education and Outreach (E&O) Activities:
FMNH Invertebrates: Nothing to report
FMNH Insects: Digitization: Participated in our 4th annual WeDigBio event, Oct 18-21, 2018. Over 320 community scientists from the Chicago region and greater, attended the 4-day transcription event. Insect collection participants spent the first two days of the event working in the pinned collection-- scanning, organizing and renaming over 3,800 bulk sample catalog cards, which will be imported as multimedia files in EMu, and georeferenced over 120 site records. They also had the opportunity to meet Field Museum scientists, and joined in-depth, behind-the-scenes tours of the insect alcohol collection and lab. We are currently planning our on-going Collections Club with our next scheduled meeting to take place in January, 2019.
Georeferencing: Developed a comprehensive georeferencing manual. Tested manual on several groups of interns, volunteers and WeDigBio conference attendees with much success. Paper in progress outlining georeferencing strategies for large institutions.
Zoological Museum, Michigan, Invertebrates: Nothing to report.
DMNH: PI Shea continues to participate in the K-12 E&O working group. Our main focus is writing a paper based on the December 2016 meeting at Q?erius, National Museum of Natural History, Smithsonian Institution. The current title is: Digitized Biodiversity Collections - Engaging K-12 Audiences. We expect to submit to the Journal of Museum Education (JME). The first draft is due to be completed by December 15th.

CMNH: Three new work study students from Case Western Reserve University were trained, and two work study students returned. A new volunteer was also recruited.

Auburn: In addition to our monthly public tours, we had our annual museum open house event and talked about our digitization effort and its' importance.
Frost: As described above we have an ongoing training effort through the insect biodiversity class (ENT 432) we offer at Penn State. Other opportunities present themselves in the form of new hires and volunteers, each of whom is trained in how to digitize and, at least as important, why we digitize specimens. We also have ongoing outreach efforts in the form of museum tours and group engagement. Examples include Sandall co-leading a K-12 Teacher training workshop in insect biodiversity with Penn State's Center for Science and the Schools. Sandall also coordinated an expo event with multiple stations with insect diversity activities for K-5th grade students at a local elementary school through the Community Education Extended Learning Program. Additionally, the Frost Entomological Museum had a booth at the Great Insect Fair at Penn State in September, which had approximately 3000 visitors in attendance.

PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: Our staff engaged visitors at our open-house with the Ravenswood ArtWalk in September at the collection's facility, and discussed goals and progress on the NSF PEN grant, and showcased specimens.
A new intern was brought on through Loyola University's IES Program for georeferencing malacology localities. Two undergraduate students from DePaul University contributed time through an experiential learning opportunity and assisted our staff with relabeling malacology specimens. In addition, a volunteer is identifying and selecting specimens for possible educational use for our broader impact goals.
CAS/PNN Insects: Nothing to report
PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: MNA has several draft manuscripts on the invertebrates of the southern Colorado Plateau, including the distribution of Annelida, land Gastropoda, Trichoptera, Ephemeroptera, Odonata, Silphidae, and the butterflies of the region. Each of those manuscripts will incorporate SCAN data along with MNA collections data. Those papers are planned for submission during the autumn of 2018 and early winter of 2019. IDigBio and SCAN data sources will be cited and fully acknowledged in each manuscript. MNA's Springs Stewardship Institute also posts information and images of springs-dependent species on our website, (e.g., http://springstewardshipinstitute.org/tiger-beetle/).

Google Analytics

Other Progress (that doesn't fit into the above categories):
FMNH: One year no-cost extension granted
Zoological Museum, Michigan, Invertebrates: One year no-cost extension granted
DMNH: One year no-cost extension granted
CMNH: One year no-cost extension granted
Auburn: One year no-cost extension granted
Frost: One year no-cost extension granted
PEN grant 16-01700: Chicago Academy of Sciences
CAS/PNNM Invertebrates: The annual report for year 2 of the PEN grant was submitted to NSF. The grant period has been extended one year, to end August 31, 2019.
Improvements to the Collections Department server is being implemented to provide a more streamlined connection with the department's server, located offsite, and the main museum servers.
Our grant funded collections technician position ends October 31.
CAS/PNN Insects: Nothing to report
PEN grant 17-01842: Museum of Northern Arizona: Biodiversity of the Colorado Plateau, start date: 15 April 2018: Nothing to report

Attachment 1
QR_Oct 2018_CHAS Ento Summary.pdf

Attachment 2
QR_Oct 2018_CHAS Inv Summary.pdf

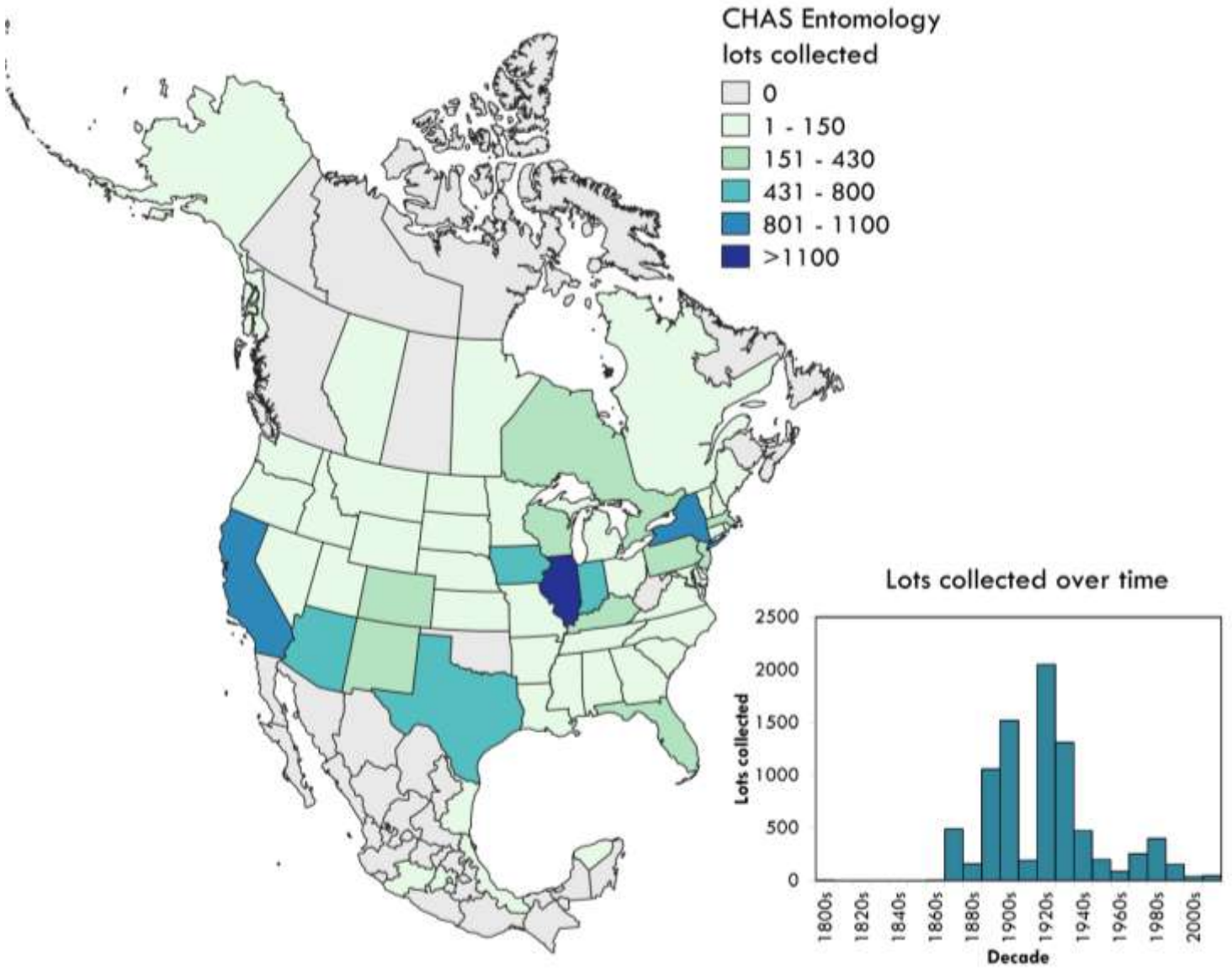
Source URL: https://www.idigbio.org/node/564/submission/1496

NSF CAS/PNNM InvertEBase PEN

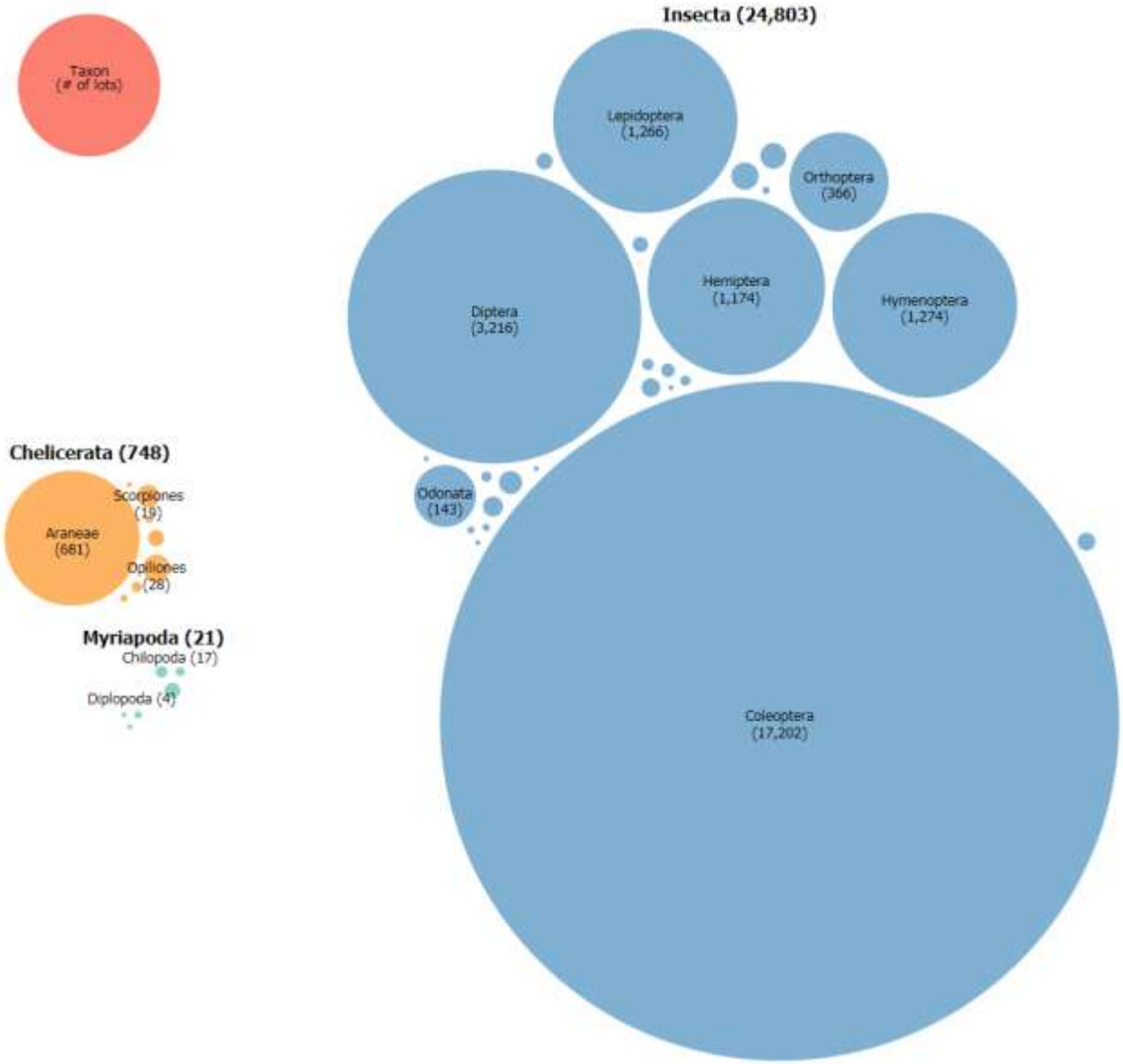
Chicago Academy of Sciences' Entomology Collection (CHAS:Ento): Summary of Geographic and Temporal Breadth

Entomology (CHAS:Ento)
26,130 lots with 33,833 specimens

Number of lots collected in:
Illinois: 8,087
Midwest: 10,299
USA: 17,417



Chicago Academy of Sciences' Entomology Collection (CHAS:Ento): Summary of Taxonomic Breadth



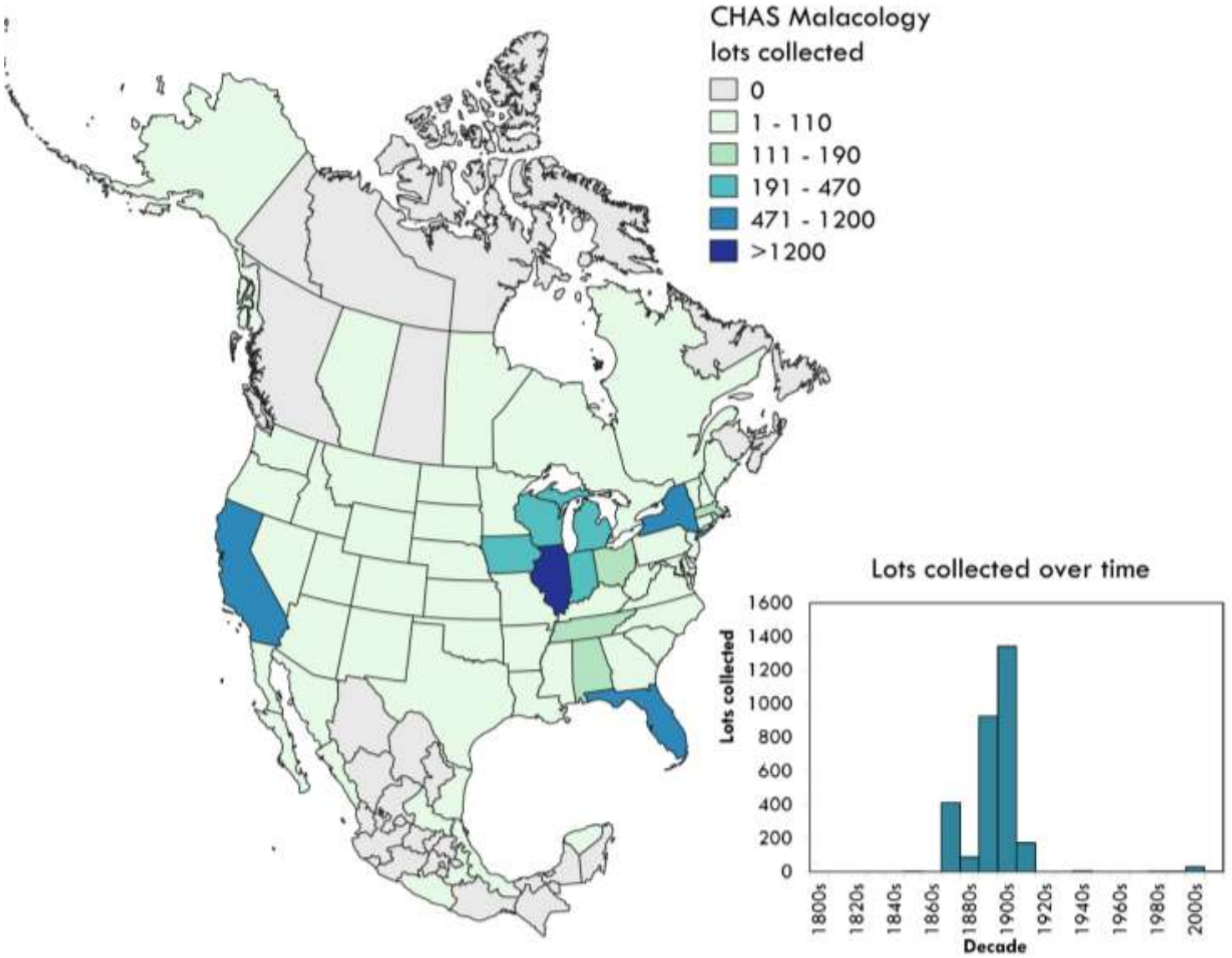
NSF CAS/PNNM InvertEBase PEN

Chicago Academy of Sciences' Malacology Collection (CHAS:Inv): Summary of Geographic and Temporal Breadth

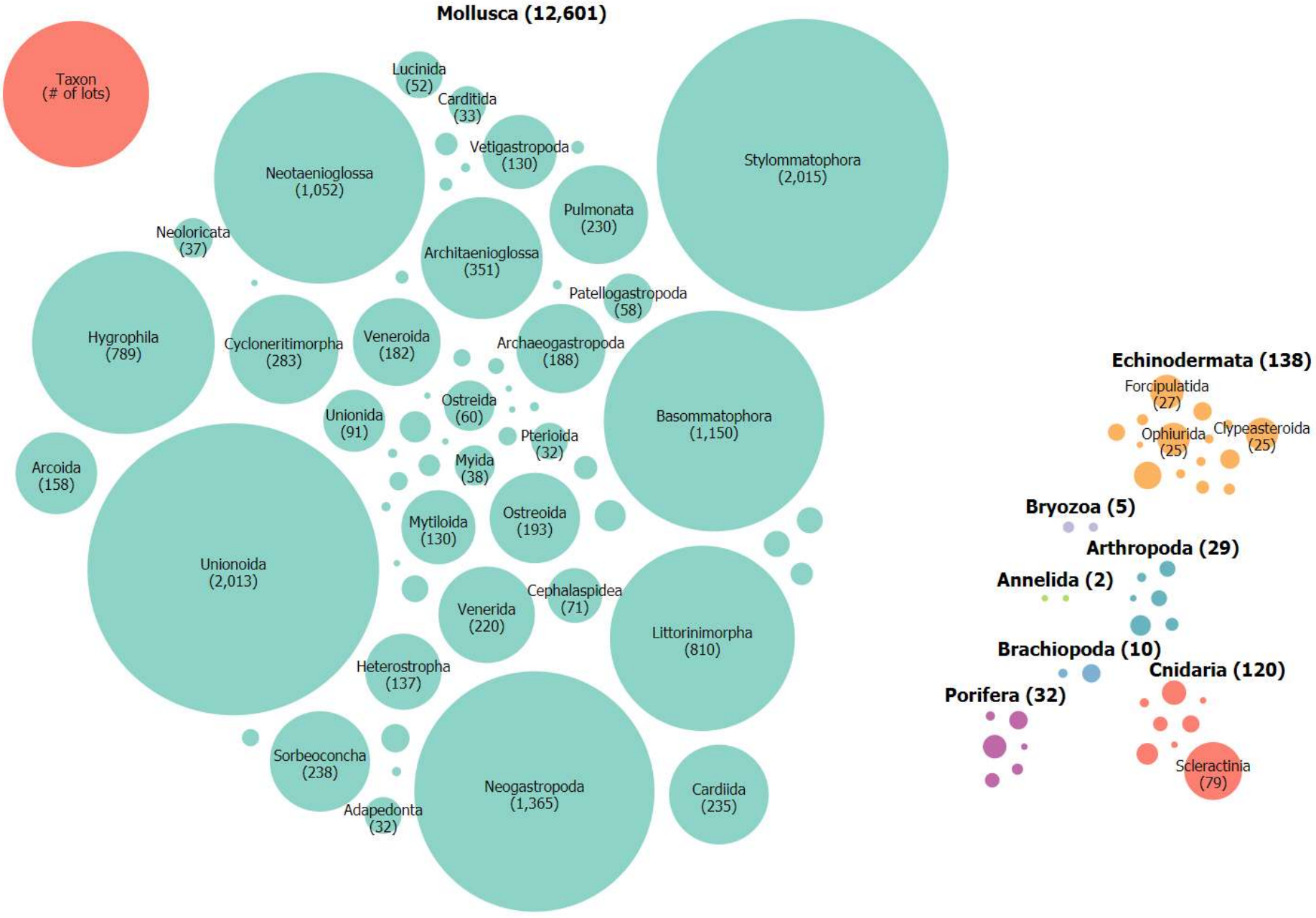
Malacology (CHAS:Inv)

15,321 lots with 117,026 specimens

Number of lots collected in:
Illinois: 2,520
Midwest: 4,411
USA: 8,989



Chicago Academy of Sciences' Malacology Collection (CHAS:Inv): Summary of Taxonomic Breadth



Submission #1497

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by mpace
Thursday, November 1, 2018 - 10:03
69.74.186.251

TCN Name:
Digitizing "Endless Forms": Facilitating Research on Imperiled Plants with Extreme Morphologies

Person completing the report:
mpace@nybg.org

Progress in Digitization Efforts:
The "Endless Forms" [EF] TCN just began this past mid-August. This quarter has been marked by institutions beginning the digitization process and getting subaward contracts up and running. Staff and interns are being hired. The majority of participating institutions met at the 2018 iDigBio conference.

149,040 specimens have been digitized (taxon name and barcode)
105,541 specimens have been imaged
171,063 specimens have been fully transcribed
7,439 specimens have been georeferanced

Share and Identify Best Practices and Standards (including Lessons Learned):
none yet

Identify Gaps in Digitization Areas and Technology:
none yet

Share and Identify Opportunities to Enhance Training Efforts:
none yet

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
none yet

Share and Identify Opportunities and Strategies for Sustainability:
none yet

Share and Identify Education and Outreach (E&O) Activities:
none yet

Google Analytics

Other Progress (that doesn't fit into the above categories):

Attachment 1

Attachment 2

Published on *iDigBio* (https://www.idigbio.org)

Submission #1498

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by BruceL
Monday, November 5, 2018 - 17:36
24.225.98.220

TCN Name:
The Cretaceous World: Digitizing Fossils to Reconstruct Evolving Ecosystems in the Western Interior Seaway

Person completing the report:
blieber@ku.edu

Progress in Digitization Efforts:
Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman (BSL) and with major involvement from collections manager Julien Kimmig (JK), we have databased 30,100 fossil specimens total, with 301 specimens databased since the last reporting period. All of these specimen records are also georeferenced. In addition, we have georeferenced 263 localities since the last reporting period and have now georeferenced a total of 5,420 localities associated with this project. We also generated 200 new images.

Regarding the Yale University portion of the project, led by PI Susan Butts, during this period:

They have databased 80,388 Cretaceous specimens total, with 8,325 databased since the last reporting period. 74,804 of these specimen records are also georeferenced. In addition, they have georeferenced 13 localities since the last reporting period and now georeferenced a total of 2,291 Cretaceous localities associated with this project. They also generated 3,096 new composite (multiple view) images.

Regarding the Fort Hays State University portion of the project, led by PI Laura Wilson:

They have databased 3,758 Cretaceous specimens (2,437 Vertebrate and 1,321 Invertebrate). 2,437 of these specimen records are also georeferenced. In addition, they have now georeferenced a total of 533 Cretaceous localities associated with this project. They also generated 164 new images during this reporting period and now have a total of 5,563 images of WIS specimens.

Regarding the University of New Mexico (UNM) portion of the project, led by PI Cori Myers (CM):

They have databased 956 Cretaceous specimens total, with 126 databased since the last reporting period. In addition, they have georeferenced 38 localities since the last reporting period and now georeferenced a total of 158 Cretaceous localities associated with this project. They now have a total of 416 of our specimen records uploaded and 96 georeferenced localities. They have produced a total of 19 images thus far.

Regarding the American Museum of Natural History (AMNH) portion of the project, led by PI Neil Landman and co-PI Ruth O'Leary:

They have databased 4,942 Cretaceous specimens total, with 2,316 databased since the last reporting period (all of these specimens are georeferenced). In addition, they have georeferenced 7 localities since the last

reporting period and now georeferenced a total of 626 Cretaceous localities associated with this project.

Regarding the University of Texas portion of the project, led by Rowan Martindale and Lisa Boucher with major participation from Liath Appleton

they have 23804 Cretaceous cataloged records, representing ~80,000 specimens total, with 14 new records databased since the last reporting period Aug 1, 2018. Of the total number of specimen records, 21,304 have been georeferenced. In addition, they have now georeferenced a total of 4,751 Cretaceous localities (out of 5,682 total) associated with this project (187 localities georeferenced since their last report). The total number of images attached to their Specify database is 2,191.

Regarding the South Dakota School of Mines & Technology portion of the project, led by co-PI Laurie Anderson:

They have databased 26,499 Cretaceous specimens total (1,978 lots), with 895 specimens databased (132 lots) since the last reporting period. 26,186 of these specimen records (1,920 lots) are also georeferenced (the remaining 226 specimen records [49 lots] that are not georeferenced lack sufficient geographic information for effective georeferencing). In addition, they have georeferenced 5localities since the last reporting period and now georeferenced a total of 563 Cretaceous localities associated with this project (376 of these georeferenced localities are associated with collection objects, the remaining 187 georeferenced localities are in the database but are not yet used by one or more collection objects).

Regarding the portion of the project involving our PEN partner at the University of Oklahoma, led by Stephen Westrop and Roger Burkhalter:

They have databased 9,318 Cretaceous specimens total, with 287 databased since the last reporting period. 7,566 of these specimen records are also georeferenced. In addition, they have georeferenced 56 localities since the last reporting period and now georeferenced a total of 517 Cretaceous localities associated with this project. They also generated 249 new images.

Share and Identify Best Practices and Standards (including Lessons Learned):
Nothing new to report this time.

Identify Gaps in Digitization Areas and Technology:
Nothing new to report this time.

Share and Identify Opportunities to Enhance Training Efforts:
Regarding the Fort Hays State University portion of the project, led by PI Laura Wilson:

They have a new undergraduate working in collection who has just finished with digitization training, so productivity should pick up. Their graduate student is finishing writing a 3d digitization guide for our hand-held scanner. They plan to start 3d scanning holotypes soon.

Regarding the University of New Mexico (UNM) portion of the project, led by PI Cori Myers (CM):

they have successfully trained 8 students to participate in collection digitization: these consist of 4 volunteers (3 undergraduate and 1 high school students), 3 graduate students, and 1 undergraduate student. Of the currently trained students, 6 are from groups underrepresented in STEM.

Regarding the South Dakota School of Mines & Technology portion of the project, led by co-PI Laurie Anderson:

they have recruited a new student to work on the project.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Nothing new to report this time.

Share and Identify Opportunities and Strategies for Sustainability:
Nothing new to report this time.

Share and Identify Education and Outreach (E&O) Activities:
Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman (BSL) and with major involvement from collections manager Julien Kimmig (JK),
staff at the KU Natural History Museum are in the process of creating artwork and QR codes associated with our many Cretaceous fossil exhibits (a mock up of the artwork is attached with this submission) that will allow museum visitors to use their phones/mobile devices to directly access the Digital Atlas of Ancient Life website, or download the Digital Atlas of Ancient Life App, so they can learn more about these organisms and life during the Cretaceous period.

Regarding the Paleontological Research Institution portion of the project, led by PI Jonathan Hendricks

Since the last report, efforts at the Paleontological Research Institution (PRI; PI Hendricks) have continued to focus on development of outreach products related to the Digital Atlas of Ancient Life project.

The most significant achievement is that an undergraduate student from SUNY-Geneseo created nearly 240 interactive 3D photogrammetry models of fossils from PRI's collections. These may all be freely accessed at: https://sketchfab.com/DigitalAtlasOfAncientLife. Nearly all major groups of fossil macroinvertebrates are now represented in this collection. These models are also beginning to be integrated into the Digital Encyclopedia of Ancient Life (DEAL) open access paleontology textbook (www.digitalatlasofancientlife.org/learn/). We are also in the process of organizing the models into "Virtual Teaching Collections" (VTCs) akin to drawers of fossils that an instructor might bring out for students to examine in a paleontology lab. While not better than real specimens in hand, these virtual specimens will allow students to study virtual specimens--in many cases with important features annotated--outside of the classroom. Three VTCs are now available online, with two added since the time of the last report (on Fossil Preservation and Cephalopod fossils): http://www.digitalatlasofancientlife.org/vtc/.

An additional area of current activity is focused on finishing the next chapter of the DEAL textbook, which is about Class Cephalopoda; it should be finished by the time of the next report. Additionally, paleobotanist Dr. Elizabeth Hermsen--who recently joined the staff of the PRI--has begun writing a DEAL chapter on plant lifecycles. Her contribution to the DEAL is one of the planned broader impacts of her NSF-supported research project.

In terms of social media: The Digital Atlas Twitter account (@PaleoDigAtlas) currently has 1,078 followers and has produced 806 tweets.

Finally, the google analytics data provided by Neil Cobb (attached with this submission, with our websites highlighted in green) shows that the Digital Atlas of Ancient life has among the highest usage among all TCN associated project web sites.

Regarding the University of New Mexico (UNM) portion of the project, led by PI Cori Myers (CM):

RA Dustin Perriguey has given several paleontology outreach presentations at A. Montoya Elementary School inTijeras, NM. PI Myers is faculty mentor for the UNM Advancing Women in Science student group. Through this group they have organized two women in science lunches with invited female colloquium speakers in the Earth and Planetary Sciences Dept. PI Myers also participated in the UNM ADVANCE program by both being the focus of a faculty “shout out” and a faculty interview about UNM’s participation in digitization efforts (https://www.youtube.com/watch?v=dUeothlgQkM).

Google Analytics
ADBC_Googl_Analytics_October_2018Highlight .xlsx

Other Progress (that doesn’t fit into the above categories):

Regarding the University of Kansas, our paper that was recently published in “Proceedings of the Royal Society” and that focused on the relationship between organismal physiology and long term species survival in the fossil record received worldwide media coverage. This resulted in a large number of articles describing our research, along with some commentary pieces and radio interviews. This attests, we believe, to the broad public interest in research questions that can be addressed by the study and analysis of digital collections records, including those housed at iDigBio.

Regarding the American Museum of Natural History (AMNH) portion of the project, led by PI Neil Landman and co-PI Ruth O’Leary:

Neil Landman is presenting a poster at the Geological Society of America annual meeting in Indianapolis describing some of the work associated with their project.

Attachment 1
QR_Code_DigitalAtlas3.pdf

Attachment 2

	January 1, 2011	
Website	**Users**	**Sessions**
iDigBio Portal	102,572	154,088
iDigBio Website	187,747	292,014

Digital Atlas of Ancient Life		
Digital Atlas of Ancient Life (Ordovician)	981	1,208
Pennsylvanian of Ancient Life	NA	NA
Neogene Atlas of Ancient Life	NA	NA
Cretaceous Atlas of Ancient Life	NA	NA
Fossil Marine Invertebrate Communities (EPICC)	NA	NA
Fossil Insect Collaborative	NA	NA
Aquatic Invasives	8,339	10,783
SCAN (Arthropods)	58,738	129,598
LepNet Portal	2,446	4,125
LepNet WordPress	5,874	7,807
InvertEBase	10,708	13,683
Mycoportal	84,853	186,109
LBCC Lichen	124,170	294,874
LBCC Frullania	15,867	21,333
LBCC Arctic	7,498	9,496
LBCC Bryophyte Portal	31,702	76,943
LBCC Bryophyte Website[1]	28,095	68,612
Macroalgae	36,228	66,237
Herbarios del Noroeste de Mexico	16,429	27,148
SERNEC	42,238	110,790
SEINet vPlants	3,464	4,877
SEINet Intermountain	72,096	132,186
SEINet Arizona-New Mexico	358,820	782,069
SEINet Midwest Herbaria	17,366	36,587
Mid-Atlantic Herbaria	3,419	9,275
NANSH	20,978	29,537
Northern Great Plains	25,882	37,695
OregonFlora Portal	71,303	192,204
Mobilizing New England Vascular Plant Specimen Data (NEVP)	18,425	35,883
Southern Rockies Plant Niches (SoRo)	NA	NA
Symbiota WordPress		
Tri-Trophic Databasing (TTD)	NA	NA
A Centralized Digital Archive of Vouchered Animal Communication Signals	NA	NA
Open Exploration of Vertebrate Diversity in 3D (oVert)	NA	NA
InvertNet	NA	NA
VertNet	NA	NA

[1] **The 30 day stats suggest both portals are the same, but different over their lifetimes**

	January 1, 2011 t	
	Users	**Sessions**
iDigBio	**290,319**	**446,102**
TCN and related portals	**1,065,919**	**2,289,059**
Symbiota Portals	**1,064,938**	**2,287,851**
Paleo		
TOTAL	**1,356,238**	**2,735,161**
	January 1, 2011 t	
Symbiota Portals by Taxa	**Users**	**Sessions**
Vascular Plants	650,420	1,935,746
Lichen & Bryophytes	207,332	471,258
Algae	36,228	66,237
Fungi	84,853	186,109
Invertebrates	77,766	155,213
Multiphyla	8,339	10,783
Symbiota Total	**1,064,938**	**2,825,346**
iDigBio	290,319	446,102
Vertebrates	0	0
Paleo	NA	NA
Total	2,420,195	
		Per Day
	Users	**Sessions**
iDigBio	111	170
TCN and related portals	407	874
TOTAL	518	1,044
Non-iDigBio by taxa		
Plant-Lichen	248	739
Invertebrates	30	59
Fungi	32	71
Paleo		
Multiphyla	3	4
Vertebrates	0	0
Total	314	873

to March 5, 2018 (7 years)			February 4 to March 5, 2018 (29 days)				
Pageviews	**Bounce Rate**		**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**
462,295	64%		1,594	2,717	10,357	52%	2,845
629,602	62%		8,887	10,901	18,681	70%	12,191
2,837	67%		740	894	1,675	68%	2,059
NA	NA		253	327	1,582	64%	476
NA	NA		134	315	3,466	44%	314
NA	NA		0	0	0	NA	260
NA	NA		161	173	165	0	110
NA	NA		NA	NA	NA	NA	NA
22,526	71%		42	59	179	36%	72%
463,040	58%		2,348	4,501	14,739	52%	3,438
10,413	55%		194	300	854	52%	294
15,288	72%		169	240	603	65%	362
29,098	71%		381	504	1,134	62%	726
568,425	54%		2,987	5,840	17,802	51%	4,916
944,962	56%		4,459	8,889	31,196	58%	7,502
41,432	74%		277	346	615	67%	581
21,367	74%		93	115	306	69%	165
265,861	45%		755	1,441	5,487	40%	na[1]
233,754	46%		755	1,441	5,487	40%	1,312
21,843	52%		1,381	1,941	5,559	64%	1,950
161,083	58%		1,393	2,315	16,751	56%	2,726
403,697	45%		1,735	4,808	23,459	34%	2943
13,789	65%		1,165	1,515	4,361	65%	1,935
591,181	46%		1,484	2,895	14,602	34%	2,820
4,276,561	51%		12,794	23,731	113,353	53%	25,810
131,620	48%		571	1,631	10,604	33%	1003
33,803	46%		318	1,171	3,647	43%	419
69,112	66%		266	525	1,747	40%	517
91,374	68%		375	562	1,439	61%	634
496,751	44%		1,047	2,210	5,948	43%	2,108
144,452	49%		446	1,033	6,538	38%	711
NA	NA			NA	NA	NA	NA
NA	NA			NA	NA	NA	NA
NA	NA		NA	NA	NA	NA	NA
NA	NA		NA	NA	NA	NA	NA
NA	NA		NA	NA	NA	NA	NA
NA	NA		NA	NA	NA	NA	NA

o March 5, 2018 (2620 days)			February 4 to March 5, 2018 (30 days)				
Pageviews	**Bounce Rate**	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**	**Users**
1,091,897	**63%**	**10,481**	**13,618**	**29,038**	**61%**	**15,036**
9,054,269	**53%**	**36,723**	**69,722**	**293,298**	**47%**	**66,092**
9,051,432						
10,146,166	**58%**	**47,204**	**83,340**	**322,336**	**NA**	**81,128**
o March 5, 2018 (2620 days)						
Pageviews	**Bounce Rate**					
7,942,642	**55%**	29,314	56,569	251,099	**49%**	53,136
1,507,376	**59%**					
21,843	**52%**					
568,425	**54%**	2,987	5,840	17,802	**51%**	4,916
517,839	**64%**	3,092	5,545	17,330	**58%**	4,820
22,526	**71%**	42	59	179	**36%**	1
10,580,651						
1,091,897	**55%**					
0	**NA**	0	0	0	NA	0
NA	NA	1,288	1,709	6,888	**53%**	3,219
		Per Day				
Pageviews	% of total (users)	**Users**	**Sessions**	**Pageviews**	% of total (users)	**Users**
417	**21%**	361	470	1,001	**22%**	284
3,456	**79%**	1,266	2,404	10,114	**78%**	1,247
3,873	**100%**	1,628	2,874	11,115	**100%**	1,531
		0	0	0		0
		0	0	0		0
3,032	**79%**	1,011	1,951	8,659	**80%**	1,003
198	**9%**	107	191	598	**8%**	91
217	**10%**	103	201	614	**8%**	93
	0%	44	59	238	**4%**	61
9	**1%**	1	2	6	**0%**	0
0	**0%**	0	0	0	**0%**	0
3,455		1,266	2,404	10,114		1,247

March 6 to April 27, 2018 (53 days)				April 28 to OCT 30 , 2018		
Sessions	**Pageviews**	**Bounce Rate**		**Users**	**Sessions**	**Pageviews**
4,710	16,069	53%		8,848	14,715	62,983
16,029	28,304	67%		28,180	41,241	79,587
				12,736	15,265	24,123
2,383	4,283	76%		3,218	4,249	15,305
597	2,044	63%		1,826	2,205	6,629
559	3,179	54%		1,306	2,295	13,390
301	1,138	57%		1,075	1,268	4,482
141	309	60%		1,076	1,330	2,146
NA	NA	NA		NA	NA	NA
101%	503%	50%		739	937	2,178
6,699	20,199	53%		9,535	21,272	73,633
451	780	71%		1,626	2,259	4,908
550	1,371	55%		1,647	2,075	3,937
929	2,048	64%		2,982	3,892	7,248
10,066	32,076	53%		21,158	37,851	104,901
15,459	48,052	57%		19,595	42,519	121,100
722	1,303	71%		1,800	2,214	3,349
188	564	69%		687	778	1,580
na	na	na		3,658	7,416	28,128
2,667	11,806	47%				
3,086	10,175	53%		5,401	9,017	27,236
4,380	21,947	59%		13,190	21,798	98,253
8,806	44,535	34%		9,077	25,905	110,217
2,699	7,220	65%		6,628	8,804	29,786
5,576	30,085	30%		10,228	20,062	95,492
49,251	227,303	46%		78,027	162,460	806,558
2534	12,671	32%		3,981	10,448	50,856
1,822	6,223	42%		2,569	7,482	27,557
1,017	3,339	42%		1,703	5,333	16,354
1,148	2,638	63%		3,208	6,179	13,983
4,674	13,698	41%		6,437	15,933	44,477
1,844	8,648	38%				
NA	NA	NA				
				1,998	3,237	6,614
NA	NA	NA				
NA	NA	NA				
NA	NA	NA				
NA	NA	NA				
NA	NA	NA				

March 6 to April 27, 2018 (53 days)				April 29 to Oct 29, 2018 (182 d		
Sessions	**Pageviews**	**Bounce Rate**		**Users**	**Sessions**	**Pageviews**
20,739	**44,373**	**60%**		**37,028**	**55,956**	**142,570**
128,550	**517,639**	**47%**		**227,111**	**444,483**	**1,744,420**
				205,874	**417,871**	**1,678,345**
				21,237		
149,289	**562,012**	**NA**		**264,139**	**500,439**	**1,886,990**
				April 29 to Oct 29, 2018 (182 d		
				Users	**Sessions**	**Pageviews**
105,873	450,207	**49%**		135,048	346,348	1,474,926
				25,740	52,927	154,157
				5,401	9,017	27,236
10,066	32,076	**53%**		21,158	37,851	104,901
8,629	24,398	**61%**		15,790	29,498	89,726
1	5	**50%**		739	937	2,178
				203,876	**476,578**	**1,853,124**
				37,028	55,956	142,570
0	0	NA		0	0	0
3,981	10,953	**62%**		21,237	26,612	66,075
				444,780	**1,009,112**	**3,848,818**
Per Day				Per Day		
Sessions	**Pageviews**	% of total (users)		**Users**	**Sessions**	**Pageviews**
391	837	**19%**		203	307	783
2,425	9,767	**81%**		1,248	2,442	9,585
2,817	10,604	**100%**		1,451	2,750	10,368
0	0					
0	0					
1,998	8,494	**80%**		742	1,903	8,104
163	460	**7%**		87	162	493
190	605	**7%**		116	208	576
75	207	**5%**				
0	0	**0%**		4	5	12
0	0	**0%**		0	0	0
2,425	9,767			949	2,278	9,185

Bounce Rate				
55%				
65%				

78%				
64%				
64%				
56%				
60%				
68%				
NA				
63%				
47%				
62%				
73%				
70%				
60%				
59%				
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lays)
Bounce Rate

lays)	
Bounce Rate	

% of total (users)		
14%		
86%		
100%		
78%		
9%		
12%		
0%		
0%		
0%		

		Date GA established
	Notes	
	running GA	
	running GA	

	running GA but these are only partial numbers, need full numbers	21-Jan-18
	running GA but these are only partial numbers, need full numbers	25-Jan-18
	running GA but these are only partial numbers, need full numbers	1-Feb-18
	running GA but these are only partial numbers, need full numbers	24-Mar-18
	running GA but these are only partial numbers, need full numbers	2-Feb-18
	Talia will get	
	running GA	
	running GA	
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	running GA	
	running GA	15-Sep-16
	running GA	
	running GA	
	running GA	2-Jun-11
	running GA	
	Ryan will get	

	Will be set up website at AMNH, arthro data also served through SCAN and plant data through SEINet	
	https://www.macaulaylibrary.org	
	working with Morphosource	
	No response	
	No response	

t

Digital Atlas of Ancient Life

Use your mobile device to learn more about fossils in our exhibits.

---

iOS

1. Turn on camera
2. Place over QR code
3. Click link

Android

1. Download a QR Code reader
2. Open QR Code reader and place over QR code
3. Click link

Or download the iOS app.

The Univeristy of Kansas

Use your mobile device to learn more about fossils in our exhibits

Pennsylvanian

Use your mobile device to learn more about fossils in our exhibits

Cretaceous

Use your mobile device to learn more about fossils in our exhibits

Ordovician

Use your mobile device to learn more about fossils in our exhibits

Neogene

Use your mobile device to learn more about fossils in our exhibits

Atlas homepage

Download the iOS app. to learn more about fossils in our exhibits

Published on *iDigBio* (https://www.idigbio.org)

Submission #1500

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by akasameyer
Tuesday, November 6, 2018 - 16:08
136.152.143.27

TCN Name:
The Pteridological Collections Consortium: An integrative Approach to Pteridophyte Diversity Over the Last 420 Million Years

Person completing the report:
akasameyer@berkeley.edu

Progress in Digitization Efforts:
During this reporting period, Pteridophyte Collections Consortium members have created skeletal records for 43,921 extant specimens, fully transcribed 14,152 extant specimens, imaged 35,648 extant specimens, and georeferenced 534 extant specimen records. The total pteridophyte extant specimen progress including work done prior to the start of the grant is 190,200 skeletal records, 188,353 fully transcribed records, 248,261 imaged specimens, and 46,613 georeferenced records. 173,675 of these extant specimen records are available in the IDigBio portal.

For fossil progress during this reporting period, Pteridophyte Collections Consortium members have databased 80 fossil specimens and imaged 2000 fossil specimens. The total pteridophyte fossil specimen progress including work done prior to the start of the grant is 13,852 fossil specimens databased, 8,770 fossil specimens imaged, and 4000 fossil specimen records georeferenced. 4,574 of these fossil specimen records are available in the IDigBio portal.

For more detail see the attached table. Additionally, organizations are preparing for digitization by organizing their collections to facilitate digitization, setting up their imaging stations, barcoding specimens, and running OCR on specimen images.

Share and Identify Best Practices and Standards (including Lessons Learned):
We are compiling a list of digitization resources on our webpage: https://pteridophytes.berkeley.edu/project-resources/

Identify Gaps in Digitization Areas and Technology:
Lightboxes for imaging herbarium specimens are in short supply. At the IDigBio summit, participants discussed available solutions and modifications with other TCN participants.

Some participants had delays in receiving project funds.

The Scatter-Gather-Reconcile feature was removed from Specify before the advent of TCN projects. This limits collaborative data completion for institutions with Specify as their in-house database.

Share and Identify Opportunities to Enhance Training Efforts:
Nothing to report.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

Participants are collaborating with the following TCNs: Bryophytes, Lichens, Algae, Fungi, Invasives, Tritrophic, NEVP, Macroalgae, Southern Rockies, MAM, Endless Forms, and CAP. Collaborations include identifying project overlap to increase efficiency. Additionally participants are collaborating with Notes/from Nature/Zooniverse and GoFlag.

Share and Identify Opportunities and Strategies for Sustainability:
Nothing to report.

Share and Identify Education and Outreach (E&O) Activities:
We have established the following social media accounts and website to promote the project:

Twitter account: https://twitter.com/pteridо_TCN
Facebook page: https://www.facebook.com/pteridophyteTCN/
Project website: https://pteridophytes.berkeley.edu/

Three institutional members of the TCN participated in the annual WeDigBio event in October 2018, with over 225 in person attendees participating in record transcription. The Field Museum's WeDigBio event was featured on the news: https://www.nbcchicago.com/news/local/field-museum-volunteers-plant-specimens-catalog-497861591.html https://abc7chicago.com/science/hundreds-of-volunteers-help-field-museum-digitize-archives-unlock-history/4512539/

The University of Minnesota included digitized fern fossils in the Minnesota Journeys permanent exhibit of the new Bell Museum.

Tours of the University and Jepson Herbaria imaging lab were given to undergraduate students in the Natural History Museums and Biodiversity Science course.

Google Analytics
google_analytics_screenshot_Nov_6_2018.jpg

Other Progress (that doesn't fit into the above categories):
We hired a portal manager and a project manager for the project. Work has focused on getting our Symbiota Pteridophyte portal up and running. We are currently working on aspects of the Symbiota Paleo module, which includes pulling together a fossil plant taxonomic thesaurus of acceptable names and synonyms. This is a major undertaking since there is no centralized list to pull from (the Catalog of Life e.g., lacks fossil plant taxa). We are using GBIF, the International Fossil Plant Names Index, and the Index Nominum Genericorum (ING) and combing the published literature.

Institutions have trained at least 9 new students, staff, and volunteers for the project. 23 TCN participants attended the iDigBio Summit (Kim, Lena, Shusheng, Margaret, Alejandra, Michael, Rich, George) in Florida in October 2018, which included the kickoff meeting for this project. At the kickoff meeting Kimberly Watson of NYBG meeting presented a brief overview of NYBG image capture and processing workflows to PCC TCN collaborators and members of the Endless Forms TCN.

Attachment 1
PCC_TCNDigitizationProgress.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1500

Pteridophyte Collection Consortium TCN Digitzation Progress, IDigBio Quarterly Report, November 7, 2018

Extant Specimen Digitization Progress

	Prior to start of Project	During the Reporting Period	Total
Pteridophyte extant specimen skeletal records created	146,279	43,921	190,200
Pteridophyte extant specimen records fully transcribed	174,201	14,152	188,353
Pteridophyte extant specimens imaged	212,613	35,648	248,261
Pteridophyte extant specimens georeferenced	46,079	534	46,613
Pteridophyte extant specimens available in the IDigBio Portal			173,675

Fossil Specimen Digitization Progress

	Prior to start of Project	During the Reporting Period	Total
Pteridophyte fossil specimen records databased	1,3772	80	13,852
Pteridophyte fossil specimens imaged	6,770	2,000	8,770
Pteridophyte fossil specimens georeferenced	4,000	0	4,000
Pteridophyte fossil specimens available in the IDigBio Portal			4,574

Introducing Google signals BETA
Unlock new cross-device capabilities and more.

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×

Analytics | All accounts > Fern Portal
All Web Site Data

Search reports and help

- Home
- Customization

REPORTS

- Real-Time
- Audience
- Acquisition
  - Overview
  - All Traffic
  - Google Ads
  - Search Console
  - Social
  - Campaigns
- Behavior
- Conversions
- Discover
- Admin

Acquisition Overview

SAVE | EXPORT | SHARE | INSIGHTS

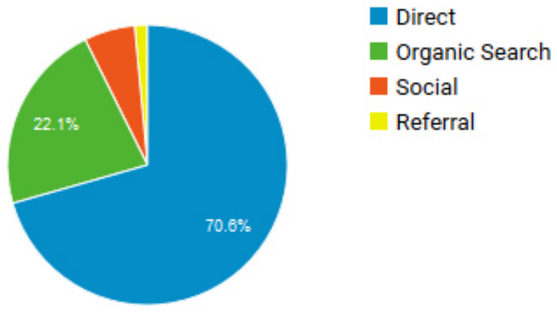
All Users
100.00% Users

+ Add Segment

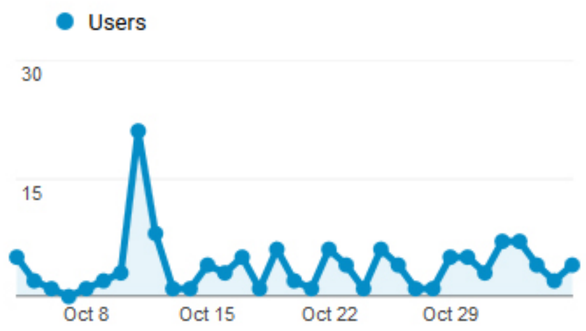
Oct 4, 2018 - Nov 5, 2018

Primary Dimension: Top Channels | Conversion: All Goals | Edit Channel Grouping

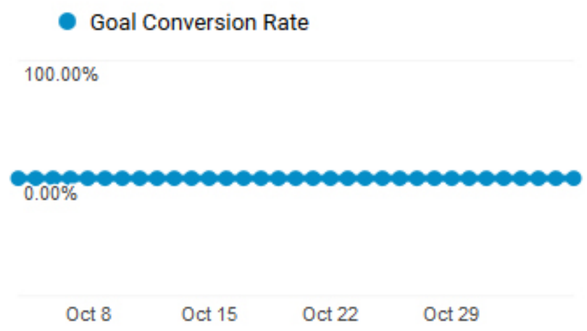
Top Channels



Users



Conversions



	Acquisition			Behavior		
	Users ↓	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
	66	66	171	41.52%	3.23	00:03:34
1 Direct	48			40.32%		
2 Organic Search	15			41.46%		
3 Social	4			75.00%		
4 Referral	1			50.00%		

To see all 4 Channels click here.

Conversions

Set up a goal.

To see outcome metrics, define one or more goals.

GET STARTED

This report was generated on 11/6/18 at 12:06:28 PM - Refresh Report

Published on *iDigBio* (https://www.idigbio.org)

Submission #1501

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by djbarroso
Tuesday, November 6, 2018 - 18:04
192.17.34.169

TCN Name:
The Microfungi Collections Consortium: A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems

Person completing the report:
diego.barroso@yahoo.com

Progress in Digitization Efforts:
• CHSC collection has been completed (100% georeferenced), August 2018
• BPI – 787,000 records have been batch-georeferenced by GeoLocate, with the help of Nelson Rios (October-November 2018). Returned georeferences are being sorted/cleaned to be added to MyCoPortal.
• ISC imaging and databasing is ongoing (1,135 specimens newly imaged and skeletally-databased)

Share and Identify Best Practices and Standards (including Lessons Learned):
• Nothing new to report.

Identify Gaps in Digitization Areas and Technology:
• Nothing new to report.

Share and Identify Opportunities to Enhance Training Efforts:
• Nothing new to report.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
• ICMP Collection data (New Zealand) was added to MyCoPortal, July 2018 (18,240 records)

• PDD Collection data snapshot was updated, July 2018 (100,000 records).

• Atlas of Living Australia was added August 2018 (110,000 specimen-based records and 200,000 observations; some are pending)

• Royal Botanic Garden Edinburgh (E) collection was newly added to MyCoPortal (Sept.2018), including 1621 records

• Added a presence for University of New Mexico Herbarium (UNM), Sept. 2018

• CalState at Chico (CHSC) collection was upgraded from “snapshot” to “live”, and published to iDigBio on Sept. 4, 2018.

• BMSC (Bamfield Marine Science Center, BC, Canada) became a specimen-based collection (was previously observation-based).

• QCAM (FungiWebEcuador) collection was added to MyCoPortal, September 27, 2018 (7,477 records).

• Swedish Museum of Natural History (S) collection was added, October 2018 (327,284 records).

• NYS Museum data snapshot updated, October 2018 (added 3,500 new records)

• Yugra State University data snapshot added, October 2018 (5,300 new records)

• Reached a landmark of 100 total collections contributing to MyCoPortal.

• MyCoPortal personnel have taken on an advisory role for the Western Pennsylvania Conservancy digitization effort, as part of the MAM TCN (Rachel Goad, August 2018).
• Andy Miller, Scott Bates, and Diego Barroso attended iDigBio Summit 2018 in Gainesville, FL

Share and Identify Opportunities and Strategies for Sustainability:
• Nothing new to report

Share and Identify Education and Outreach (E&O) Activities:
• Teacher's workshop led by Marc Cubeta was held in July at North Carolina State University; write-up published on iDigBio website (https://www.idigbio.org/content/drawers-jars-and-databases-workshop-north-carolina-educators) and Microfungi.org (http://www.microfungi.org/index.php/news/).

• BMSC Graduate Field Mycology Course 2018 collection was added August 2018 (Anna Bazzicalupo, British Columbia, Canada).

• MSC graduate level mycology course collection (observation-based, taught by Greg Bonito) was added.

• A WeDigBio transcriptothon was held at INHS on Oct. 19th – 20th, with the participation of MiCC personnel.

• Dr. Jeanne Lodge and student Aidan Moore at GAM were trained via Skype (October 29th, 2018)

• Dr. Andy Miller, was featured on a recent Fungi Town podcast (link: https://www.fungitown.org/e/episode-14-halloween-2018/), a very special Halloween episode, where Dr. Miller talked about eerie glows, a mushroom that looks like a pumpkin, and fairy rings.

Google Analytics
MyCoPortal_Google_analytics-2018-11-06.pdf

Other Progress (that doesn't fit into the above categories):
• 4 million records (specimen-based and observation-based) mark was surpassed in August 2018, and is now up to ~ 4.5 million records (November 6th, 2018).

• 1 million records mark for Microfungi TCN has been surpassed.

Summary of MyCoPortal Statistics (November 6th, 2018):

I. Specimen-based records
4,038,273 occurrence records
1,525,788 (38%) georeferenced
1,675,423 (41%) imaged
2,976,102 (74%) identified to species
1,689 families
8,143 genera
110,547 species
116,614 total taxa (including subsp. and var.)

II. Observation-based records
480,429 occurrence records

413,848 (86%) georeferenced
238,617 (50%) imaged
421,243 (88%) identified to species
427 families
2,714 genera
18,534 species
19,361 total taxa (including subsp. and var.)

MyCoPortal Citations for 2018 (Peer-reviewed papers in which the MyCoPortal data were actually used in the paper, not just a mention of the MyCoPortal):

Alvarado, P., Healy, R., Moreno, G., Cabero, J., Scholler, M., Schneider, A., Vizzini, A., Kaounas, V., Vidal, J.M., Hensel, G., Rubio, E., Mujic, A., and Smith, M.E. 2018. Phylogenetic studies in Genabea, Myrmecocystis and related genera. Mycologia 110(2): 401–418. https://doi.org/10.1080/00275514.2018.1451140

Consiglio, G., Setti, L., and Thorn, R. G. 2018. New species of Hohenbuehelia, with comments on the Hohenbuehelia atrocoerulea–Nematoctonus robustus species complex. Persoonia 41: 202-212. https://doi.org/10.3767/persoonia.2018.41.10

Haelewaters, D., A.C. Dirks, L.A. Kappler, J.K. Mitchell, L. Quijada, R. Vandegrift, B. Buyck, and D.H. Pfister. 2018. A Preliminary Checklist of Fungi at the Boston Harbor Islands. Northeastern Naturalist 25(sp9): 45-76. https://doi.org/10.1656/045.025.s904

Huang, Y. L., Bowman, E. A., Massimo, N. C., Garber, N. P., U'Ren, J. M., Sandberg, D. C., and Arnold, A. E. 2018. Using collections data to infer biogeographic, environmental, and host structure in communities of endophytic fungi. Mycologia 110(1): 47–62. https://doi.org/10.1080/00275514.2018.1442078

May, T. W., Cooper, J. A., Dahlberg, A., Furci, G., Minter, D. W., Mueller, G. M., Pouliot, A. and Yang, Z. 2018. Recognition of the discipline of conservation mycology. Conservation Biology ##: ###–###. https://doi.org/10.1111/cobi.13228

Pietras, M., Litkowiec, M. and Gołębiewska, J. 2018. Current and potential distribution of the ectomycorrhizal fungus Suillus lakei (Murrill) A.H. Sm. & Thiers) in its invasion range. Mycorrhiza 28: 467–475. https://doi.org/10.1007/s00572-018-0836-x

Sarma, V.V. 2018. Need for a Web Portal to maintain information on morphological descriptions of all type specimens of fungi. IMA Fungus 9(1): 38.

Soltis, P. S., Nelson, G., and James, S. A. 2018. Green digitization: Online botanical collections data answering real-world questions. Applications in Plant Sciences 6(2): e1028. https://doi.org/10.1002/aps3.1028

Thiers, B.M., and R.E. Halling. 2018. The Macrofungi Collection Consortium. Applications in Plant Sciences 6(2): e1021

Attachment 1

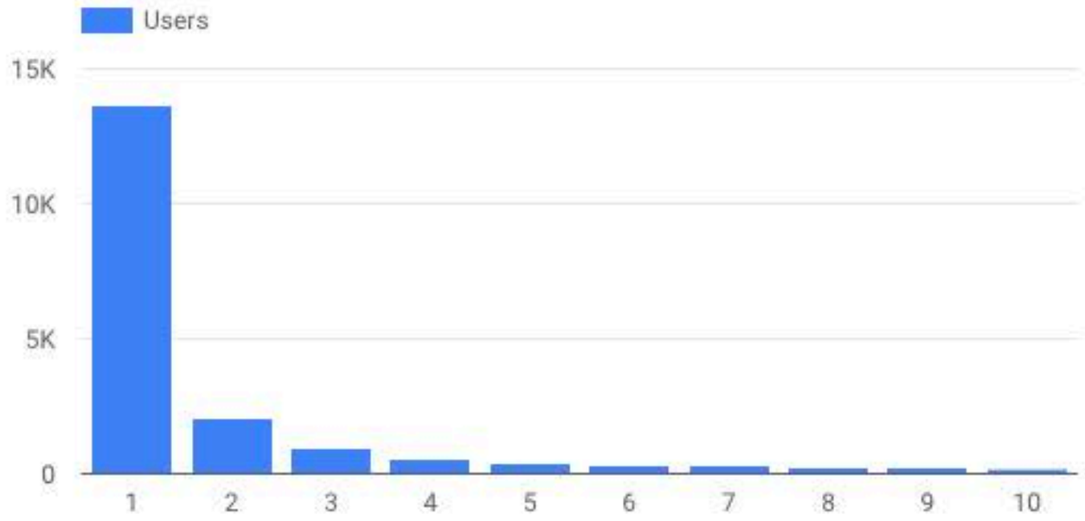
Attachment 2

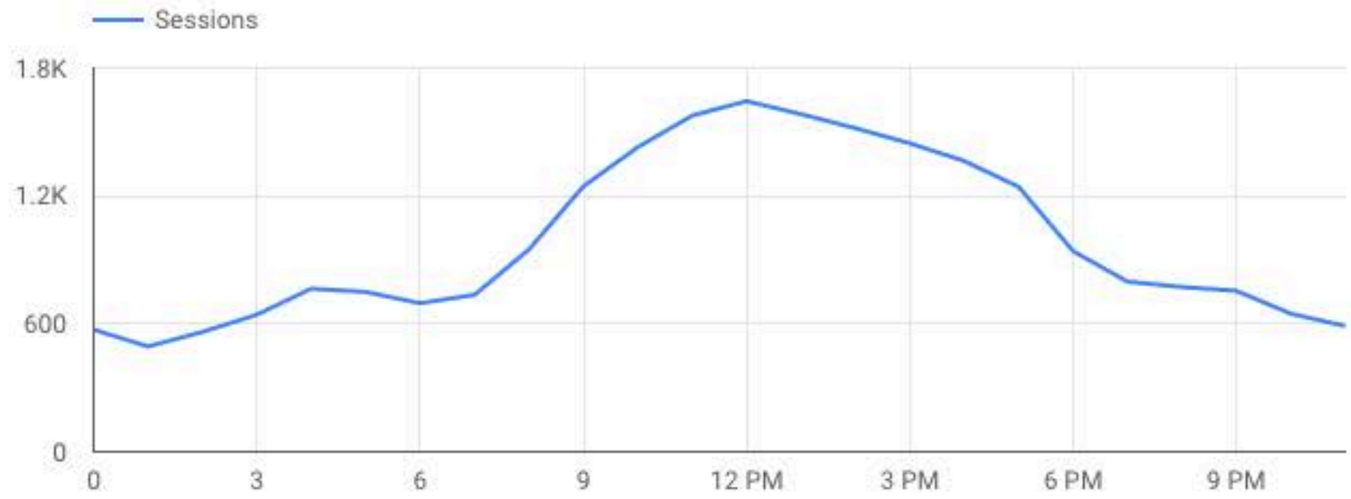
Source URL: https://www.idigbio.org/node/564/submission/1501

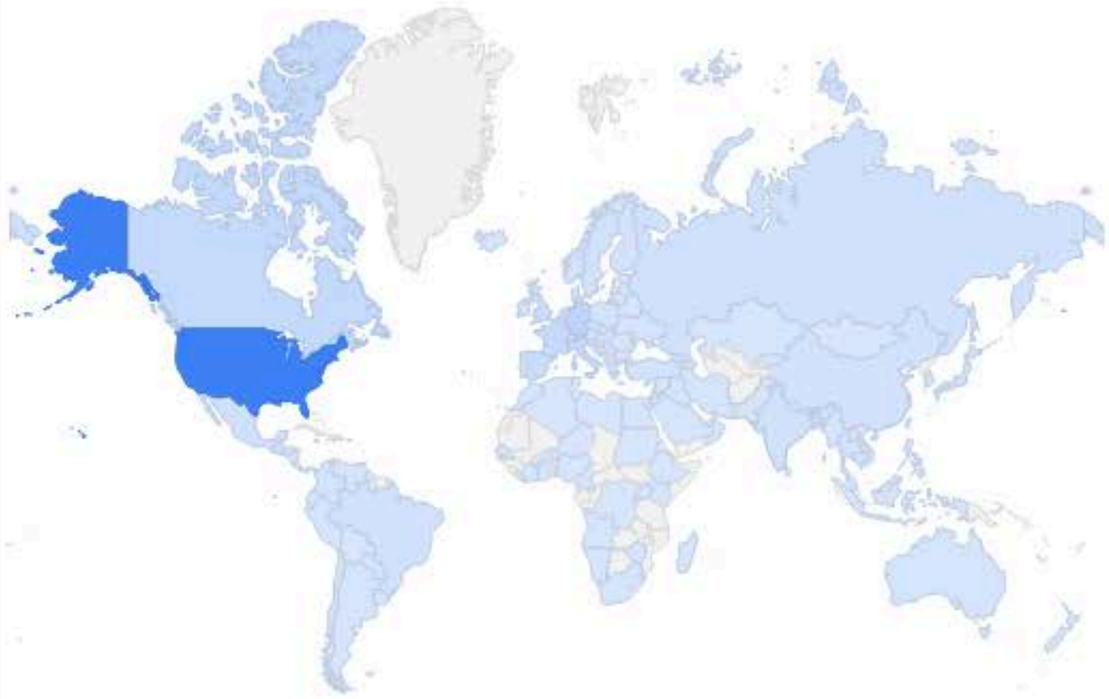
MyCoPortal Data Portal Statistics

www.mycoportal.org **Data from Google Analytics**

Users	New Users	Sessions	Number of Sessions per User	Pageviews	Pages / Session	Avg. Session Duration	Bounce Rate
14,766	13,691	23,726	1.61	61,787	2.6	00:02:30	61.26%







	Country	Sessions
1.	United States	9,845
2.	Germany	1,547
3.	Canada	1,150
4.	Italy	1,061
5.	France	985
6.	Spain	849
7.	United Kingdom	509
8.	Mexico	413
9.	Russia	395
10.	Brazil	375
11.	Czechia	343

1 - 100 / 137

Aug 1, 2018 - Nov 6, 2018

Submission #1503

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by kds15e
Tuesday, November 6, 2018 - 21:46
71.84.24.115

TCN Name:
Capturing California's Flowers: Using Digital Images to Investigate Phenological Change in a Biodiversity Hotspot

Person completing the report:
kdpearso@calpoly.edu

Progress in Digitization Efforts:
Cal Poly (OBI; lead institution) hired Katie Pearson as the Project Manager (PM).
Jason Alexander at UC Berkeley is the data manager.
OBI is spearheading protocol development and imaging equipment testing, influenced heavily by lessons learned at the ADBC Summit and input from other herbarium digitization networks. Barcode and imaging equipment recommendations have been developed and disseminated (https://www.capturingcaliforniasflowers.org/equipment-recommendations.html). All institutions that budgeted to purchase imaging equipment are now ordering or have already ordered their equipment.
Draft barcoding, imaging, and image processing protocols have been developed and beta tested at OBI.
Katie, Jason, Jenn Yost (lead PI) and Ed Gilbert (Symbiota developer) have weekly video conferences related to portal development and data migration.
We have developed a new stand-alone Symbiota data portal, CCH2 (http://www.portal.capturingcaliforniasflowers.org/) installed on the UF servers.
We have migrated 11 collections into live data management on the portal, reflecting:
• 477,752 specimen records
• 64% are georeferenced
• 0.3% imaged

Share and Identify Best Practices and Standards (including Lessons Learned):
A reference guide for using the CCH2 portal was developed (https://www.capturingcaliforniasflowers.org/symbiota-tutorials.html) with guidance from other TCN manuals.
Images created using the Ortery Photosimile 50 lightbox were compared to those created using a copy stand and LED panels. Lightbox images were superior to LED images in evenness of lighting; therefore, the lightbox is being strongly recommended for use at participating institutions.
From previous experience, we recognized that image capture and renaming steps—particularly the computer program(s) used to complete these steps—can significantly slow the imaging process. For this reason, we investigated multiple camera tethering programs: Ortery software, Adobe Lightroom, Nikon Camera Control 2, digiCamControl, and Smart Shooter 3. Smart Shooter 3 provided the most options, including the capability to automatically rename images according to the barcode in the image. This will facilitate more efficient imaging workflows and enable parallel data entry and imaging with the single barcode scanner budgeted in the project.
Image processing steps can also be a bottleneck for imaging workflows. For this reason and with careful consideration of other herbarium protocols, we chose to restrict the number of processing steps to a select few: sharpness adjustment and conversion to DNG and JPEG formats.
The workflows developed and piloted at OBI will be disseminated to all member institutions, and the PM will work with each institutional representative to customize the protocol for their institution.

Identify Gaps in Digitization Areas and Technology:
The Ortery lightboxes need a better camera mount to remain securely in place and to fit the entire herbarium sheet in the image. We have been looking at the Consortium of Pacific Northwest Herbaria documentation but are still in need of a solution.
The lack of long term image storage is another obstacle. Each institution on this project is required to store their own images, and the external hard drives we budgeted will not suffice. Potential solutions to this problem, such as investing in cloud storage or institutional servers, are being investigated.

Share and Identify Opportunities to Enhance Training Efforts:
All PIs and many lead personnel have received orientation either via the ADBC Summit in early October or through phone calls or video conferencing with the lead PI, PM, or both.
We had a very successful kickoff and orientation meeting at the ADBC Summit with 18 of our 22 participating institutions represented. Each institution that could not send a representative followed up via phone meetings with the PM.
The first virtual training was conducted as a webinar via Adobe Connect on October 26th. There were 12 participants, and a recording of the webinar was posted on the project website. Future webinars will address the topics of administrator tools, collection management tools, and georeferencing. All members of the TCN are encouraged to request additional training as necessary.
Site visits to each institution are scheduled for late November, early December, and late January. In these visits, the PM will work with PIs to optimize institutional protocols, as well as train staff, volunteers, and student workers as necessary.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Many digitization standards and workflows from other TCNs, iDigBio, and herbarium consortia have been instrumental to the development of the CAP TCN equipment recommendations and protocols. For example, following conversations at the ADBC Summit with leadership of the Mid-Atlantic Megalopolis digitization project, we changed our equipment recommendations from a Canon to a Nikon camera. Furthermore, documentation from the Pacific Northwest Consortium of Herbaria has been useful in the design of our own camera mount.
California herbaria other than those listed in the grant, such as the Klamath National Forest Herbarium and Sacramento State University, are being solicited for data to host in the CCH2 portal.

Share and Identify Opportunities and Strategies for Sustainability:
Project leadership is training administrators and technicians in using the CCH2 data portal to enable active collections management in perpetuity.
Image uploading workflows have been developed such that they can be used beyond the duration of the 4-year grant. For example, rather than processing and uploading images in a central server at OBI, each institution will be trained and able to perform these steps from their imaging computer or other machine.
As referenced in “Identify Gaps in Digitization Areas and Technology” above, we are seeking sustainable data management strategies such as institutional servers or cloud storage solutions to replace the previous, unsustainable strategy of solely hard drive-based storage.

Share and Identify Education and Outreach (E&O) Activities:
The PM shares updates on the project and phenology-related news via the network Twitter account (@CalPhenologyTCN).
The PM presented a poster at the Southern California Botanists Symposium on November 3rd and is currently drafting a scholarly article to publish in a peer-reviewed journal by 2020.
The CAP TCN was featured in the August issue of The Vasculum, the biannual newsletter of the Society of Herbarium Curators. The project was also described in a San Diego public news report featuring phenology research at San Diego State University (https://www.kpbs.org/news/2018/aug/14/cholla-cactus-didnt-bloom-year-california-scientis/) and in an article for UCSB news publication The Current (http://www.news.ucsb.edu/2018/019244/golden-state-splendor).

Google Analytics

Other Progress (that doesn’t fit into the above categories):

Attachment 1
October2018QuarterlyReport.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1503

CALIFORNIA PHENOLOGY TCN – QUARTERLY REPORT – OCTOBER 2018

Assembled by Katie Pearson and Jenn Yost, October 29, 2018

Progress in Digitization Efforts:

Cal Poly (OBI; lead institution) hired Katie Pearson as the Project Manager (PM).

Jason Alexander at UC Berkeley is the data manager.

OBI is spearheading protocol development and imaging equipment testing, influenced heavily by lessons learned at the ADBC Summit and input from other herbarium digitization networks. Barcode and imaging equipment recommendations have been developed and disseminated (https://www.capturingcaliforniasflowers.org/equipment-recommendations.html). All institutions that budgeted to purchase imaging equipment are now ordering or have already ordered their equipment.

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- 477,752 specimen records
- 64% are georeferenced
- 0.3% imaged

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Images created using the Ortery Photosimile 50 lightbox were compared to those created using a copy stand and LED panels. Lightbox images were superior to LED images in evenness of lighting; therefore, the lightbox is being strongly recommended for use at participating institutions.

From previous experience, we recognized that image capture and renaming steps—particularly the computer program(s) used to complete these steps—can significantly slow the imaging process. For this reason, we investigated multiple camera tethering programs: Ortery software, Adobe Lightroom, Nikon Camera Control 2, digiCamControl, and Smart Shooter 3. Smart Shooter 3 provided the most options, including the capability to automatically rename images according to the barcode in the image. This will

facilitate more efficient imaging workflows and enable parallel data entry and imaging with the single barcode scanner budgeted in the project.

Image processing steps can also be a bottleneck for imaging workflows. For this reason and with careful consideration of other herbarium protocols, we chose to restrict the number of processing steps to a select few: sharpness adjustment and conversion to DNG and JPEG formats.

The workflows developed and piloted at OBI will be disseminated to all member institutions, and the PM will work with each institutional representative to customize the protocol for their institution.

Identify Gaps in Digitization Areas and Technology:

The Ortery lightboxes need a better camera mount to remain securely in place and to fit the entire herbarium sheet in the image. We have been looking at the Consortium of Pacific Northwest Herbaria documentation but are still in need of a solution.

The lack of long term image storage is another obstacle. Each institution on this project is required to store their own images, and the external hard drives we budgeted will not suffice. Potential solutions to this problem, such as investing in cloud storage or institutional servers, are being investigated.

Share and Identify Opportunities to Enhance Training Efforts:

All PIs and many lead personnel have received orientation either via the ADBC Summit in early October or through phone calls or video conferencing with the lead PI, PM, or both.

We had a very successful kickoff and orientation meeting at the ADBC Summit with 18 of our 22 participating institutions represented. Each institution that could not send a representative followed up via phone meetings with the PM.

The first virtual training was conducted as a webinar via Adobe Connect on October 26th. There were 12 participants, and a recording of the webinar was posted on the project website. Future webinars will address the topics of administrator tools, collection management tools, and georeferencing. All members of the TCN are encouraged to request additional training as necessary.

Site visits to each institution are scheduled for late November, early December, and late January. In these visits, the PM will work with PIs to optimize institutional protocols, as well as train staff, volunteers, and student workers as necessary.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

Many digitization standards and workflows from other TCNs, iDigBio, and herbarium consortia have been instrumental to the development of the CAP TCN equipment recommendations and protocols. For example, following conversations at the ADBC Summit with leadership of the Mid-Atlantic Megalopolis digitization project, we changed our equipment recommendations from a Canon to a Nikon camera. Furthermore, documentation from the Pacific Northwest Consortium of Herbaria has been useful in the design of our own camera mount.

California herbaria other than those listed in the grant, such as the Klamath National Forest Herbarium and Sacramento State University, are being solicited for data to host in the CCH2 portal.

Share and Identify Opportunities and Strategies for Sustainability:

Project leadership is training administrators and technicians in using the CCH2 data portal to enable active collections management in perpetuity.

Image uploading workflows have been developed such that they can be used beyond the duration of the 4-year grant. For example, rather than processing and uploading images in a central server at OBI, each institution will be trained and able to perform these steps from their imaging computer or other machine.

As referenced in "Identify Gaps in Digitization Areas and Technology" above, we are seeking sustainable data management strategies such as institutional servers or cloud storage solutions to replace the previous, unsustainable strategy of solely hard drive-based storage.

Share and Identify Education and Outreach (E&O) Activities:

The PM shares updates on the project and phenology-related news via the network Twitter account (@CalPhenologyTCN).

The PM presented a poster at the Southern California Botanists Symposium on November 3rd and is currently drafting a scholarly article to publish in a peer-reviewed journal by 2020.

The CAP TCN was featured in the August issue of *The Vasculum*, the biannual newsletter of the Society of Herbarium Curators. The project was also described in a San Diego public news report featuring phenology research at San Diego State University (https://www.kpbs.org/news/2018/aug/14/cholla-cactus-didnt-bloom-year-california-scientis/) and in an article for UCSB news publication The Current (http://www.news.ucsb.edu/2018/019244/golden-state-splendor).

Submission #1504

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by cskema
Wednesday, November 7, 2018 - 09:09
165.123.74.113

TCN Name:
The Mid-Atlantic Megalopolis: Achieving a greater scientific understanding of our urban world

Person completing the report:
cskema@upenn.edu

Progress in Digitization Efforts:
Please see attached pdf.

Share and Identify Best Practices and Standards (including Lessons Learned):
Please see attached pdf.

Identify Gaps in Digitization Areas and Technology:
Please see attached pdf.

Share and Identify Opportunities to Enhance Training Efforts:
Please see attached pdf.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Please see attached pdf.

Share and Identify Opportunities and Strategies for Sustainability:
Please see attached pdf.

Share and Identify Education and Outreach (E&O) Activities:
Please see attached pdf.

Google Analytics

Other Progress (that doesn't fit into the above categories):
Please see attached pdf.

Attachment 1
2018_11_MAM_Quarterly_Progress_Summary.pdf

Attachment 2

Mid-Atlantic Megalopolis TCN
Quarterly Progress Report[1]
August – October 2018

Progress in Digitization Efforts: The current numbers for progress of digitization efforts by specimen category are shown in Table 1 and Figure 1. MOAR is in the process of reviewing all the images and transcriptions for SIM to improve the quality, hence the big swing in counts per processing status category from the last report for this institution.

Share and Identify Best Practices and Standards: Nothing to report.

Identify Gaps in Digitization Areas and Technology: Nothing to report.

Share and Identify Opportunities to Enhance Training Efforts: Nothing to report.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations: HUDC is continuing to work with Montgomery County Parks and Planning Commission to create a digital flora of Wheaton Regional Park in Wheaton, MD.

Share and Identify Opportunities and Strategies for Sustainability: Nothing to report.

Share and Identify Education and Outreach Activities: PH showcased the MAM Project during their Annual Members' Night on 12 October 2018. PI Burke incorporated a specimen digitization module into the Introduction to Biology sequence at Howard University. HUDC also held a transcription event as part of WeDigBio on 19 October 2018, transcribing about 400 specimens at a very high quality. PIs Skema and Block incorporated making observation records in the MAM Portal into the long-standing plant collecting project in their Field Botany course at University of Pennsylvania. This new aspect to the students' projects added roughly 900 new observational records of woodies from southeastern PA to the MAM portal.

Other Progress: Nothing to report.

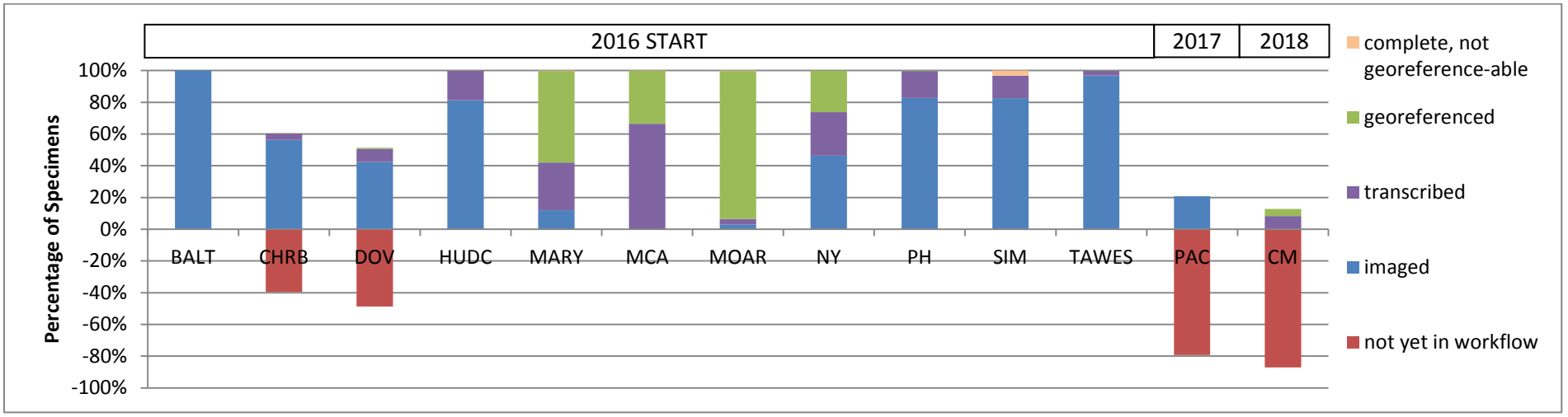
[1] Throughout this report, herbaria are referred to by their Index Herbariorum acronyms, which correspond to institutional names as follows: BALT = Towson University, CHRB = Rutgers University, CM = Carnegie Museum, DOV = Delaware State University, HUDC = Howard University, MARY = University of Maryland, MCA = Muhlenberg College, MOAR = Morris Arboretum of the University of Pennsylvania, NY = New York Botanical Garden, PAC = Pennsylvania State University, PH = The Academy of Natural Sciences of Drexel University, SIM = Staten Island Museum, TAWES = Maryland Department of Natural Resources

Table 1. Digitization of specimens by stage of completion and herbarium for MAM TCN.

	Herbarium													
Specimen Stage	BALT	CHRB	CM	DOV	HUDC	MARY	MCA	MOAR	NY*	PAC	PH	SIM	TAWES	**Totals**
# specimens imaged[1]	7,000	12,234	542	2,273	0	0	0	0	118,800	0	1,810	0	0	**142,659**
# specimens as above and uploaded to Symbiota along with skeletal data; transcription/review may be in progress[2]	3,000	16,549	0	18,889	5,953	5,296	0	0	0	13,264	278,060	16,039	4,210	**361,260**
# specimens as above + completely transcribed and transcription reviewed[3]	0	1,999	15,010	4,175	1,379	13,595	33,924	734	70,152	0	57,196	3,024	135	**201,323**
# specimens as above + georeferenced[4]	0	80	8,761	312	2	26,031	17,107	19,703	67,190	0	1,145	3	2	**140,336**
# specimens that need special attention, e.g. go back to sheet[5]	0	0	0	0	51	72	12	618	0	0	0	1,556	33	**2,342**
# specimens imaged, uploaded, transcribed BUT not able to be georeferenced[6]	0	0	0	0	0	98	19	40	0	0	0	672	0	**829**
Totals	**10,000**	**30,862**	**24,313**	**25,649**	**7,385**	**45,092**	**51,062**	**21,095**	**256,142**	**13,264**	**338,211**	**21,294**	**4,380**	**848,749**

*NY only uploads to the MAM Portal periodically, after georeferencing is complete.
Processing Status in the MAM Portal: [1] No stage, not in Symbiota yet; [2] Unprocessed + Expert Required + Pending Review; [3] Stage 1; [4] Stage 2; [5] Stage 3; [6] Closed

Figure 1. Percentage of specimens by stage of completion and herbarium for MAM TCN. With this presentation of digitization progress, the final goal for each institution is to have a mostly green column above the X axis (could potentially have orange up to roughly 10%). Specimens not yet in workflow are set as negative numbers.



Submission #1505

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by tkarim
Wednesday, November 7, 2018 - 10:56
128.138.167.244

TCN Name:
Fossil Insect Collaborative: A Deep-Time Approach to Studying Diversification and Response to Environmental Change

Person completing the report:
talia.karim@colorado.edu

Progress in Digitization Efforts:
Digitization efforts continue at the University of Colorado and Natural History Museum of Los Angles County.

Since the last report, the Natural History Museum of Los Angeles County's Invertebrate Paleontology department (LACMIP) has made major progress in the digitization of the Georg Statz Collection, the focal point of this PEN's contribution to the FIC-TCN. Identification of all non-type specimens from this collection is now complete, and, in total, 4,068 specimen records have been generated and 3,408 images (2,237 specimens) have been captured. Presently, LACMIP has contributed 1,001 specimen records and 1,304 media records to iDigBio as part of the FIC-TCN; we anticipate this number will increase to 3,881 specimen records and 3,408 media records once a new dataset of 2,880 specimen records and 1,902 images is ingested by the end of the month. Cataloging and imaging of this collection continues; cataloging is nearly complete. They are continuing to digitally annotate LACMIP's catalog numbers in corresponding Georg Statz publications to increase the research utility of this newly digitized collection. In preparation for the next phase of this PEN project, LACMIP is developing new protocols for digitizing its fossil insects from the Barstow Formation. In doing so, the taxonomy necessary for cataloging these specimens has been compiled and entered in EMu, as has the taxonomy for the McKittrick asphaltic insect collection. We have also coordinated with the Rancho La Brea tar pits to begin preparing their 15,684 fossil insect records (previously cataloged) for ingestion by iDigBio.

CUMNH has started imaging their collection of fossil insects preserved in copal. Imaging and databasing of material from the Green River Formation continues.

Share and Identify Best Practices and Standards (including Lessons Learned):
Nothing to report.

Identify Gaps in Digitization Areas and Technology:
Nothing to report.

Share and Identify Opportunities to Enhance Training Efforts:
Nothing to report.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Karim and Zelagin (CUMNH) visited the NMNH collections in September of 2018 to discuss fossil insect data mobilization with the NMNH staff (K. Hollis and H. Little). Much of their fossil insect collection has been imaged and a plan was devised to translate these images and associated data into a format more in line with the rest of the TCN and then make the data available to iDigBio.

Karim and Little (NMNH) along with G. Nelson (iDigBio) discussed plans to reboot the iDigBio Paleo Digi working group to tackle issues associated with taxonomy in the iDigBio portal and another paleo data issues related to Darwin Core. This group has already met once in October and plans to meet twice more before the end of 2018.

Karim and Butts (YPM) met with G. Motz (Indiana) and S. Kaufman (Whirl-i-gig) to discuss iDigPaleo development for his PEN on the PaleoNiches TCN.

Share and Identify Opportunities and Strategies for Sustainability:
Nothing to report.

Share and Identify Education and Outreach (E&O) Activities:
Karim and Butts (YPM) met with the developers at Whirl-i-gig to discuss final improvements to iDigPaleo (EnO portal and paleo data aggregator for the TCN).

Google Analytics

Other Progress (that doesn't fit into the above categories):
LACMIP has made three presentations on the results of this project, including two at the annual meeting of the Society for the Preservation of Natural History Collections and one at the 5th International Paleontological Congress in Paris.

Attachment 1

Attachment 2

Submission #1506

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by mwdenslow
Wednesday, November 7, 2018 - 15:35
76.120.67.210

TCN Name:
SERNEC: The Key to the Cabinets: Building and Sustaining a Research Database for a Global Biodiversity Hotspot

Person completing the report:
michael.denslow@gmail.com

Progress in Digitization Efforts:
All SERNEC:
There are 113 collections serving data through the SERNEC portal. There are currently 4,426,254 specimens records and 379,178 (9%) of those records are georeferenced. There are currently 3,855,000 imaged specimen images available. There are currently 47 collections publishing to iDigBio.

Arkansas:
ANHC imaged 9,920 additional specimens. The entire collection (12,245 specimens, except ~200 on loan) has been imaged since May. The images and complete database will be uploaded to the portal in December 2018.

STAR imaged 6,237 specimens.

An imaging station was transferred to HEND, which is the last collection in the state to be imaged, and the curator and a newly hired student-worker were trained on imaging. Imaging with concurrent skeletal data entry will start soon.

A new curator was hired at UAM. 2,502 skeletal records were entered but not yet uploaded to the portal. UAM has been working with Herrick Brown to resolve image name formatting problems.

An undergraduate student in STAR is using the Symbiota platform to georeference Cyperaceae specimens in the Mississippi Alluvial Plain. Since June, he has georeferenced a total of 687 specimens from the following herbaria: APCS (1), ASU (4), BRY (3), CLEMS (4), CM (6), DES (4), DUKE (3), F (8), GSW (1), HXC (11), IBE (49), IND (12), KNK (1), LSU (16), MICH (264), MIN (6), MISS (4), MISSA (3), MMNS (10), MO (119), MUHW (1), NCSC (2), NCU (15), NO (10), NY (35), OS (4), RSA (1), TROY (3), UARK (30), UCAC (1), UNM (1), USMS (2), USU (1), UT (4), VSC (4), WILLI (10), WIS (33).

Georgia:
GA imaged 2,385 specimens during this time period (192,525 to date via this grant). Skeletal data (species name, state, county) for 15,739 non-Georgia specimens were entered into the GA Specify database (97,804 to date).

The first set of 2,500 COLG images posted to Notes from Nature has been fully transcribed. A second set of 2,500 specimens to will be posted to NfN very soon.

GAS did not image any specimens during this time period (23,249 imaged to date; end of the previously accessioned material). They associated 772 images with their existing Specify record (17,365 to date). They uploaded 3,989 images the SERNEC portal and linked to records (9,900 to date).

AASU has imaged and databased all 5,058 specimens. They will be uploaded to the SERNEC portal after some proofing.

Kentucky:
EKY imaged 936 specimens.

Mississippi:
Several of our collaborating herbaria continue digitization efforts. We occasionally run into problems with file structures, as our “in-house” central repository has recently upgraded server security systems. We are working on resolving those issues, then can resume uploads of images. We currently have imaged and uploaded approximately 98% of the MISSA specimens.

South Carolina:
Imaging in South Carolina has been completed at FUGR, USCS, CONV, WINU, FMUH and SALK and is continuing sporadically at USCH, CLEMS, SBAC and NBYC. Funding remains in place only for NBYC and it is hoped that the remaining 5,000 or so specimens there can be imaged by July 2019. CLEMS employed one student during this period and added approximately 1,500 images. In addition, the CLEMS curator also added approximately 750 images to the Silver Bluff Audubon Center Herbarium (SBAC). Using funds from its own endowment, USCH employed three undergraduate students during this period. One additional undergraduate student volunteer and three retired volunteers also contributed to specimen image capture during this period. A total of 6,898 new images from USCH were uploaded during this quarter. South Carolina efforts have now moved to energizing public participation in Notes from Nature expeditions related to state collections. The CLEMS curator will be away for all of Spring 2019 (on leave in Sri Lanka) but returning in mid-June.

Tennessee:
There are 13 herbaria in Tennessee. Ten were part of this award and three were not. GSMNP, with ~15,000 specimens, MEM with ~10,000 specimens, and LNCN with 400 specimens were not because GSMNP is a federal collection, the MEM herbarium consists nearly entirely of duplicates of specimens at TENN, and LNCN did not exist during proposal writing. At the beginning of this award, only about 30,000 of Tennessee’s specimens were digitized. To date, Tennessee has 676,669 specimens on the SERNEC portal and ~70,000 specimens remaining to digitize. Of the remaining specimens, 15,000 are at PI Shaw’s home institution, about 5,000 remain at Tennessee Technological University and 10,000 remain at East Tennessee State University. Additionally, last year we began organizing volunteers at the Annual Spring Wildflower Pilgrimage to digitize specimens at GSMNP and they completed about 1,500/15,000 specimens. We will make this event larger in April 2019 and hope to get nearly half of GSMNP digitized. As of November, 2018, we are on track to have all of the specimens covered under the original award digitized and on the SERNEC portal by February. This will result in a contribution from Tennessee of ~761,700 specimens complete with images and skeletal data. All of the 676,669 specimens that are currently on SERNEC have been imaged and 458,390 have been skeletally databased. We are awaiting BRIT to fulfill their obligation and generate skeletal data on their 218,279 imaged specimens and we are hopeful this will be complete by December 2018. Furthermore, we have completed six Notes from Nature expeditions and we have three more in progress. This has resulted in about 50,000 transcriptions. We have created our first two Geolocate expeditions and we are driving volunteers to complete these, hopefully by December 2018.

Share and Identify Best Practices and Standards (including Lessons Learned):
All SERNEC:
The SERNEC – TCN protocols continue to be updated as needed and are posted on the SERNEC resources site (http://sernec.appstate.edu/resources).

Identify Gaps in Digitization Areas and Technology:
All SERNEC:
Nothing to report

Mississippi:
We still have a large number of specimens in need of georeferencing. This will be a priority area for a graduate assistant during 2019.

Tennessee:
GeoLocate is terribly slow, clunky, and it is very difficult to train people to volunteer to do this work. We need a better solution. My collaborator and I (Dr. Hong Qin at UTC) received funding internally as well as from NSF-SPOKES and we hope to work to at least train an AI to identify specimen labels already containing GPS coordinates.

Share and Identify Opportunities to Enhance Training Efforts:
All SERNEC:
Nothing to report

Arkansas:
We revised our imaging protocol for our Nikon camera imaging set-up to reflect the newest DigiCam remote capture imaging software for training at HEND.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
All SERNEC:
Nothing to report

Arkansas:
Through an honors undergraduate student's georeferencing project at STAR, he has reached out through the Symbiota network to many herbaria that hold specimens of sedges (family Cyperaceae) from the Mississippi Alluvial Plain of Arkansas. The curators / collection managers at these institutions have opened their collections for him to georeference specimens from the Symbiota data and images. These collaborative collections include: APCS, ASU, BRY, CLEMS, CM, DES, DUKE, F, GSW, HXC, IBE, IND, KNK, LSU, MICH, MIN, MISS, MISSA, MMNS, MO, MUHW, NCSC, NCU, NO, NY, OS, RSA, TROY, UARK, UCAC, UNM, USMS, USU, UT, VSC, WILLI, WIS.

Share and Identify Opportunities and Strategies for Sustainability:
All SERNEC:
Nothing to report

Share and Identify Education and Outreach (E&O) Activities:
All SERNEC:
SERNEC participated in WeDigBio with several events this year. Notes from Nature received over 16,500 transcriptions during the event. Daily summaries can be found on the Notes from Nature blog (https://blog.notesfromnature.org/).

Arkansas:
STAR participated in a WeDigBio transcription Blitz on Friday, October 19, 2018. At this event we had more than 60 participants, and we transcribed 1460 records on Notes from Nature. The event showcased the importance of and need for having access to data on specimen labels. Twenty-nine individuals went home with prizes associated with transcription games. Most participants were freshmen-level undergraduate students with some graduate students. Students genuinely learned about an aspect of science for which they previously were not aware. It was a tremendously successful event.

Kentucky:
Berea: Student participation in BioBlitz event transcribing Berea's Notes from Nature expedition.

Google Analytics

Other Progress (that doesn't fit into the above categories):
All SERNEC:
Nothing to report

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1506

Submission #1507

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by neilscobb
Wednesday, November 7, 2018 - 17:40
47.215.133.118

TCN Name:
Lepidoptera of North America Network: Documenting Diversity in the Largest Clade of Herbivores

Person completing the report:
neilscobb@gmail.com

Progress in Digitization Efforts:
See attached file

Share and Identify Best Practices and Standards (including Lessons Learned):
See attached file

Identify Gaps in Digitization Areas and Technology:
See attached file

Share and Identify Opportunities to Enhance Training Efforts:
See attached file

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
See attached file

Share and Identify Opportunities and Strategies for Sustainability:
See attached file

Share and Identify Education and Outreach (E&O) Activities:
See attached file

Google Analytics
ADBC_Googl_Analytics_Nov_2018_a .xlsx

Other Progress (that doesn't fit into the above categories):
I have uploaded the latest version of GA fo all the TCNs from April to October

Attachment 1
LepNet_SCAN_November_2018.docx

Attachment 2

Lepidoptera of North America Network &
Symbiota Collections of Arthropods Network (SCAN)
Quarterly Report

November 6, 2018
Neil Cobb

Progress in Digitization Efforts:

This is a joint report for the two networks SCAN and LepNet. Many museums are involved in both SCAN and LepNet, including collections that have received funding from both TCNs, collections that are unfunded for one TCN and funded by the other, and some collections that are providing data to both and are unfunded by the ADBC program. Both TCNs share the same database http://symbiota4.acis.ufl.edu/scan/portal/index.php , which depending on the context we refer to as the SCAN-LepNet database or the LepNet-SCAN database. All data presented here were accessed on November 5, 2018. **Table 1** shows the key statistics of Lepidoptera (LepNet) and non-Lepidoptera (SCAN) records to date. These consist of all records and images, including records and images from data providers who have allowed us to post their data on the SCAN/LepNet portal. Providing data from these additional providers increases our ability to georeference, add to taxonomic tables, and more accurately assess the total digitization effort for any given taxon.

Table 1. Records in SCAN/LepNet database, "all data" reflects all arthropod taxa, "Non-Lep" includes all non-Lepidoptera arthropod data, and Lepidoptera includes only Lepidoptera taxa.

	All data	Non-Lep SCAN	Lepidoptera
Specimen Records	17,591,029	14,812,598	2,778,431
# Georeferenced	14,277,473	12,071,465	2,206,008
# Imaged	1,886,152	1,335,887	550,265
# Identified to species	9,991,034	7,331,694	2,659,340

The SCAN network started in 2012 and the TCN funding has ended, but SCAN continues to support PEN projects. The LepNet grant was initiated on July 1, 2016 and there are currently 26 ADBC funded museums and one non-funded museum (Oklahoma State University). Twenty-six museums comprise the NSF-ADBC LepNet and all have established a collection on the LepNet Portal and are serving data directly to iDgiBio via IPT or through DwC archives on the LepNet-SCAN portal. Twenty museums are serving DwC archives to iDigBio and six museums are serving data snapshots with the LepNet portal.

LepNet - The LepNet ADBC-funded museums are still on target to meet goals for records and images. An additional 32 collaborators (non-ADBC funded museums that use our data portal to serve their data) have also provided additional records for Lepidoptera. There are 26 collections (referred to as added-

value) that have allowed us to harvest their data via IPT to serve lepidopteran records. **Table 2** shows the top 10 families of Lepidoptera in terms of total occurrences digitized.

Table 2. The number of occurrence records for the top 10 families of Lepidoptera that have been digitized.

Taxa	# Specimen Records	# Georeferenced	# Specimen Identified to species	# Georeferenced & Ided to species
Nymphalidae	577,188	501,607	566,828	495,528
Noctuidae	337,198	256,157	322,093	247,288
Pieridae	275,003	215,642	272,089	213,693
Hesperiidae	246,545	198,585	240,192	193,380
Erebidae	241,893	184,737	225,251	174,388
Geometridae	213,343	170,572	202,233	161,761
Lycaenidae	200,080	166,328	195,600	163,130
Papilionidae	117,092	86,134	115,981	85,499

What is most encouraging about the lepidopteran records is that 96% of the records are identified to species, which is higher than any of the other major orders. Thus, the primary factor limiting the production of "research-ready" data is due to georeferencing. For Lepidoptera 77% of the records are research-ready (i.e., identified to species and georeferenced) and by georeferencing existing records we should increase that percentage to 90% over the next three years. We realize that many records represent misidentified specimens and we also need to seek additional non-ADBC funding to review as many specimen identifications as possible.

Symbiota Collections of Arthropods Network (SCAN) - We have surpassed our overall TCN/PEN goals for the network and have been very successful in supporting data mobilization for unfunded museums and cooperation by larger collections that have allowed there data to be used to help mobilize data from other museums. We sponsored one successful Partners to Existing Networks project through the University of Texas- El Paso that will start digitizing ants from the McKay ant collection. We will initiate a new PEN with The Field Museum, focusing on several ground-dwelling coleopteran families. **Table 3** shows data for the five major taxa we targeted in SCAN. All five groups have enough data to produce scores of papers.

Share and Identify Opportunities to Enhance Training Efforts: We are developing resources on the WordPress site http://www.lep-net.org/ . We will expand this to incorporate material from the SCAN drupal project website.

Share and Identify Best Practices and Standards (including Lessons Learned):

Table 3 Number of records for the five focal SCAN taxa groups.

Taxa	# Specimen Records	# Georeferenced	# Specimen Identified to species	# Georeference & Ided to species
Formicidae	1,048,401	868,201	546,201	436,446
Carabidae	591,483	470,052	407,716	326,135
Araneae	237,710	188,168	206,522	149,757
Acrididae	216,656	166,699	201,367	155,056

We are identifying best practices on a weekly basis and sharing those with respective people within LepNet http://www.lep-net.org/ . Most of these are also relevant to SCAN.

Standardization of Images for Research - We developed a consensus for criteria that would make images the most useful for research. We defined criteria that would make images good for computer vision identification (LepSnap) and for ImageJ, a software program designed to quantify pixel qualities http://www.lep-net.org/?p=383 .

Symbiota Programming - Ben Brandt developed six new API endpoints within Symbiota primarily for the facilitation of interactions with LepSnap, but the developments can also be used in several future apps. Two of these endpoints provide taxonomic and vernacular name resolution from a user-inputted string and allows for the auto-completion of scientific and vernacular names from the taxonomic thesaurus within LepSnap as users are typing the names of specimens. In order to facilitate the user login process and permission retrieval within LepSnap, two other endpoints were developed, one to generate user access tokens that can then be stored in the LepSnap app on the user's mobile device and used to automate future login requests in LepNet. The other feature provides the user's permissions and accessibility options within LepNet to the LepSnap app. Additionally, in the development of the token endpoint. We made significant modifications to the Symbiota login methods. Another endpoint delivers occurrence data from a given record identifier from either database primary key or catalog number. This endpoint allows LepSnap to retrieve pre-existing occurrence record data for processing images within the app and populate data fields within LepSnap with these data points.

The final endpoint developed facilitates the actual delivery of the processed image and associated data, including computer vision identifications, from the LepSnap app to the LepNet data portal. This allows for the quick delivery of images and new computer vision identifications from users' mobile devices directly to the data portal facilitating rapid generation of high-quality specimen images. In the development of these API endpoints several improvements were made to the login and batch taxonomic name upload processes within Symbiota to further support the work being done in LepNet and SCAN.

Identify Gaps in Digitization Areas and Technology: We need to produce exponentially more occurrence data to understand the biogeography of the focal SCAN taxa and Lepidoptera. For most groups there is not enough data to talk about gaps. We are meeting this need by incorporating additional collections into the SCAN-LepNet database, and harvesting observational records from iNaturalist, Pollardbase, Buguide, LepSoc inventories, and smaller observation sets provided by individual lepidopterists.

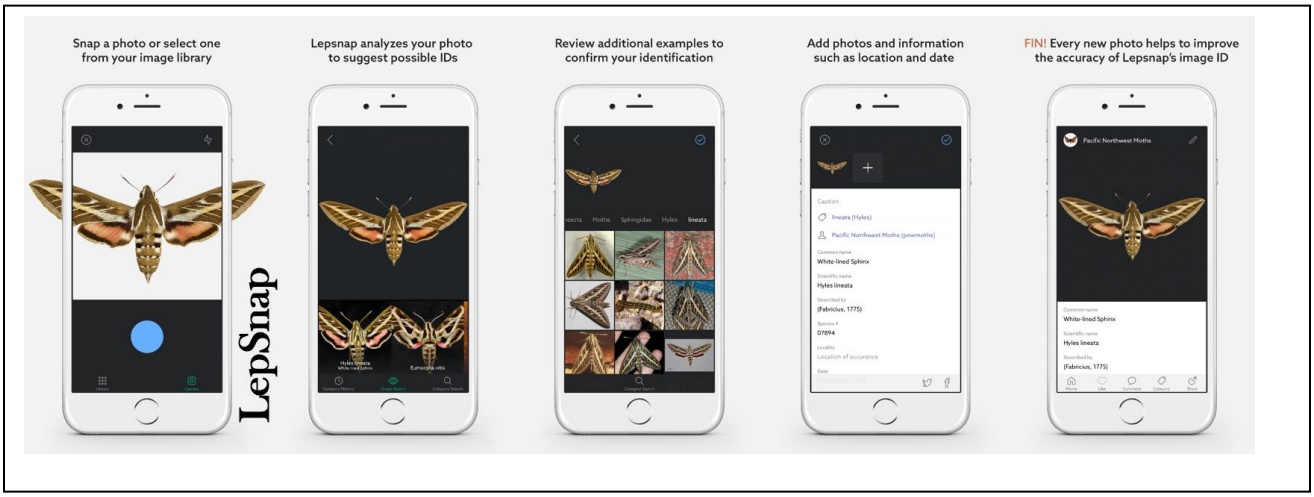
Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
We are primarily working with other Symbiota TCNs and other Symbiota portals. We are also generally collaborating with a variety of individuals, projects and organizations to extend the ability to mobilize biodiversity data and promote the use of data in research. We are serving data from 183 collections, we continue to add one collection per month.

Share and Identify Opportunities and Strategies for Sustainability: Two museums in SCAN have sustainability plans (CSU and UC-Boulder).

Other Progress (that doesn't fit into the above categories):

Focus on North American Arthropods We continue to provide North American data obtained from any credible sources to increase the quantity of data available to SCAN and LepNet users. We have added five new collections since the last update.

Computer Vision - We are making significant progress in developing the LepSnap app. Our collaborator (FieldGuide) has created both an iOS and an android version of LepSnap. This is initially targeting Lepidoptera but we fully expect it to extend to other arthropod groups within the next two years.



We have collaborated with Andre Poremski (Fieldguide [Fg]) to develop the LepSnap smartphone app and computer vision capacity that will be built into LepNet. We initiated collaborations between Visipedia and Fieldguide and also shared information with iNaturalist and the Cornell Lab of Ornithology, both of whom are also working with Visipedia to incorporate their computer vision algorithms. Fieldguide works with Visipedia directly to develop computer vision integration into LepNet projects. Thus, Fieldguide is taking the lead on three fronts, developing both iOS and Android apps

(**LepSnap**), and **Fg-Batch** (an API service for batch-processing images). LepSnap will allow museum personnel to use their iPhone and Android smartphones to upload images of specimens and apply computer vision to obtain probability identifications. The Fg-Batch workflow will be built into Symbiota (software that runs LepNet database) to process all images with the computer vision workflow, regardless of whether images are from IPT providers or have "live" collections that are managed directly on the LepNet portal. The most important broader impact of this will be to reduce the load on taxonomists for identification requests. We hope to automate the categorization process enough so that individuals can focus on specific groups of interest and not have to spend time sorting through unclassified galleries of images.

Taxonomy Tables - We added the complete taxon table provided by Pohl, Patterson, and Pelham (2016) into the LepNet taxonomy tables and shared a csv version with LepNet collaborators using other databases (Specify, Emu, Arctos).

LepNet Research Advisory Board - We have created a LepNet research advisory board (RAB), which is a subgroup of the LepNet TCN's CoPIs charged with developing guidelines for research projects and grant proposals that are requesting digitized specimen data ahead of online publication. LepNet is receiving requests for Lepidoptera on a regular basis, including requests for student research projects and conservation projects that include sensitive data. Thus, the goal of the RAB is to establish a process that maximizes efficiency of digitization for LepNet, opportunity for collaboration, and publications for those involved (as appropriate). We are tracking LepNet's collaborative research projects online and engaging in regular discussions with PIs and at RAB monthly meetings. While project tracking will help our TCN become more organized, we also hope this new pipeline will generate even more energy and excitement for research that uses digitized collections data. The initial project that precipitated the creation of a research advisory board was the Poweshiek Skipperling project, which was so successful in terms of soliciting participation by museums, we wanted to expand the projects program. We hope that we can ensure that participants are provided attribution (e.g. authorship in checklist publications) and project leads let participants know exactly what they need.

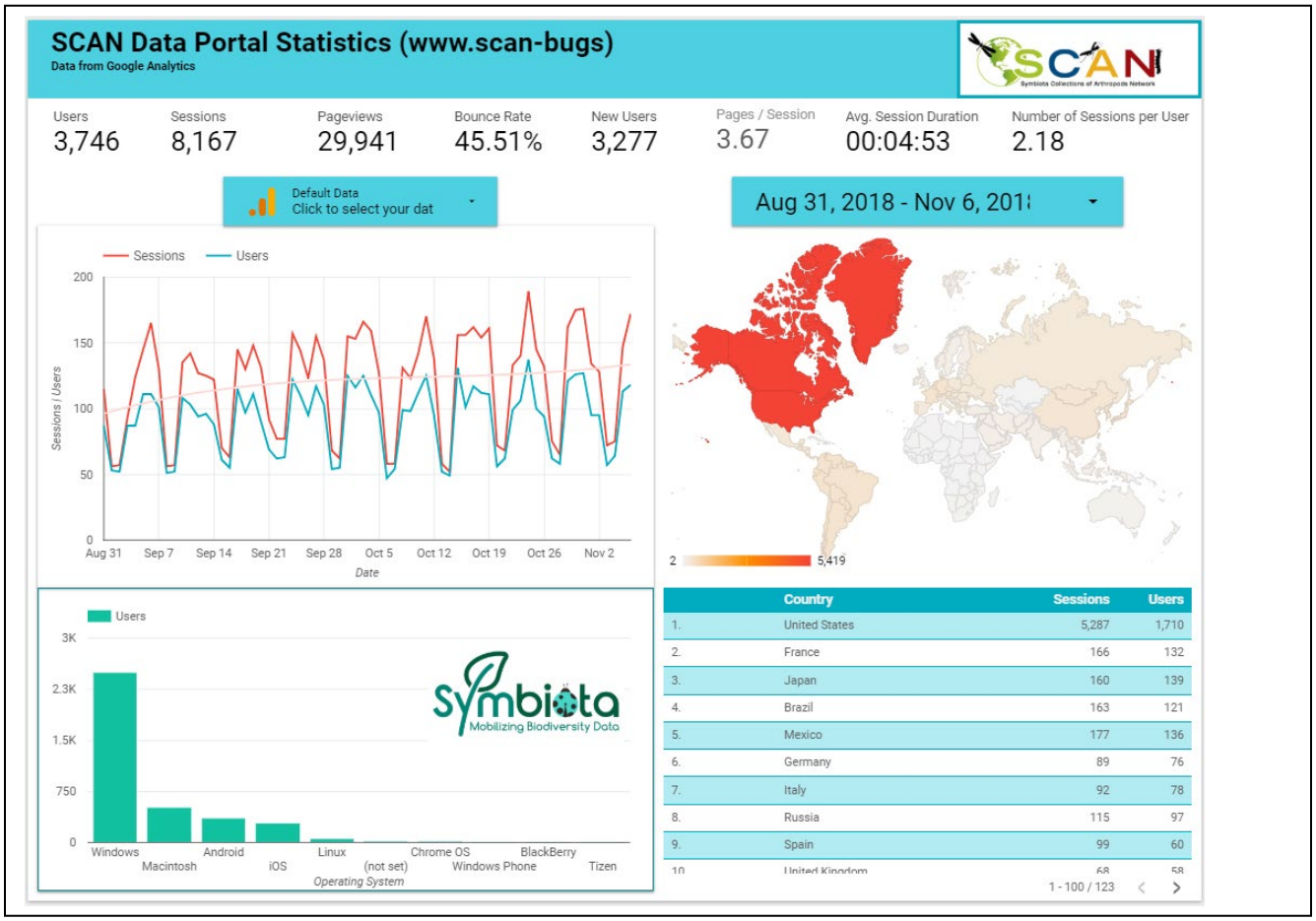
We have identified nine projects to date, each one is described below.

Project Name	**Name, Affiliation (contacts)**
Puerto Rico Hurricane Project	Catherine Hulshof
Woolly bear tymbal morphology Project	Nick Dowdy
Colias eurytheme Project	Matt Nielsen,
Agriculturally significant Lepidoptera Project	Jen Zaspel, Bledsoe, Neil Cobb, Klem
Pieris biocontrol Project	JJ Weis
Mimallonid biogeography	Ryan St Laurent
Collection patterns of North American Lepidoptera	Erica Fisher & Anthony Cognato
Catocala	Akito Kawahara, Larry Gall
Poweshiek skipperling Project	Anna Monafils

Publications - We have published an overview of the LepNet project (Seltmann et al 2017), and we are planning for a short communication publication on developing standards for images used in research.

Seltmann, K.C. N.S. Cobb, L.F. Gall, C.R. Bartlett, A. Basham, I. Betancourt, C. Bills, B. Brandt, R.L. Brown, C. Bundy, M.S. Caterino, C. Chapman, A. Cognato, J. Colby, S. P. Cook, K.M. Daly, L. Dyer, N.M. Franz, J.K. Gelhaus, C.C. Grinter, C.E. Harp, R.L. Hawkins, S.L. Heydon, G.M. Hill, S. Huber, N. Johnson, A.Y. Kawahara, L.S. Kimsey, B.C. Kondratieff, F. Krell, L. Leblanc, S. Lee, C.J. Marshall, L.M. McCabe, J.V. McHugh, K.L. Menard, P.A. Opler, N. Palffy-Muhoray, N. Pardikes, M.A. Peterson, NE. Pierce, A. Poremski, D.S. Sikes, J.D. Weintraub, D. Wikle, J.M. Zaspel and G. Zolnerowich. (**2017**) LepNet: The Lepidoptera of North America Network. *Zootaxa*, *4247*(1), pp.73-77.

Google Analytics: Below are summary graphical stats for the period since our last report August 31, 2018 to November 6,, 2018) for the SCAN portal, http://scan-bugs.org/portal/index.php and the LepNet data portal http://symbiota4.acis.ufl.edu/scan/lepnet/portal/index.php. The LepNet data portal actually shares the same underlying database with SCAN and so some people that only participate in LepNet still enter, annotate, and review Lepidoptera data from the SCAN portal. We also have a WordPress site http://www.lep-net.org/ that features LepNet but also provides SCAN updates. There was a slight decreasing trend in use from May to July that likely corresponds to the field season and travel to collecting sites.



Published on *iDigBio* (https://www.idigbio.org)

Submission #1508

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by dcblackburn
Thursday, November 8, 2018 - 13:39
10.243.21.179

TCN Name:
oVert: Open Exploration of Vertebrate Diversity in 3D

Person completing the report:
david.c.blackburn@gmail.com

Progress in Digitization Efforts:
Since 1 September 2017 (when our TCN officially began), we have added more than 2,500 media files representing >1,500 specimens to MorphoSource as part of the oVert TCN. We have CT-scanned >5,500 fluid-preserved specimens representing >2,200 genera of amphibians, reptiles, fishes, mammals, and birds in ~500 families of living vertebrates. These include specimens from across the institutions forming the oVert TCN as well as other US institutions such as the American Museum of Natural History, Carnegie Museum, North Carolina Science Museum, and University of Texas, Arlington. To date, data generated by the oVert TCN have been viewed ~24,000 times and downloaded >700 times from MorphoSource.

While scanning is on-going at institutions across the TCN, we have developed priority lists of target species using iDigBio specimen data. We have shared lists for fishes, reptiles, and mammals such that different institutions can begin prioritizing and mobilizing specimens in their collections for imaging. We are now working to finalize the list for bird taxa represented in US collections. Scanning of amphibian genera is nearly complete, and we intend to create a “data publication” representing this 3D data store in the coming months. We have worked with iDigBio staff Kevin Love on generating these priority lists by taking the type species of each genus and then determining US institutions that have representative specimens of these species, prioritizing specimens from oVert-participating institutions that have associated locality data and tissue samples. We have also recently started work using the Macaulay Sound Library’s collection of vouchered animal calls to select fluid-preserved frogs that have associated audio recordings as priorities for contrast-enhanced CT-scans.

Share and Identify Best Practices and Standards (including Lessons Learned):
We continue to work closely with staff at both iDigBio (Dan Stoner, Kevin Love) and MorphoSource (Doug Boyer, Julie Winchester) on issues related to the oVert TCN, including reporting on data in MorphoSource (https://www.morphosource.org/About/report). While we have developed protocols for institutions to ingest information from the MorphoSource RSS feed into their IPT (https://github.com/FLMNH/MorphoSourceRSSDownloader), several institutions have lingering concerns about this workflow or are choosing to ingest data using their own custom-built tools. We are thus beginning conversations with IT staff at those institutions (e.g., FMNH, YPM, MCZ) to facilitate ingestion of media files and/or metadata hosted by MorphoSource.

Zach Randall (UF) and Mark Sabaj (ANSP) have recently experimented with protocols for shipping specimens such that they are already packaged to go directly from the loan shipment to the CT-scanner without the need to repackage. We have had moderate success with this protocol, which saves resources and time of curation staff, and intend to write this up for dissemination via oVert.

We have recently been working to scan more large-bodied specimens, including at alternate scanning sites such

as the medical schools at both Yale University and the University of Chicago. We are exploring these alternate sites due to the reduced costs of transporting these specimens from the collections to a scanning site (i.e., as opposed to shipping to TAMU). This has raised new issues for our team regarding how to customize temporary storage bags for these large fluid-preserved specimens to prevent dehydration during scanning. After experimenting with cadaver bags (for CT-scanning apes, including gorilla and chimpanzee), we have opted to use large (16-inch) rolls of 4 mil plastic in combination with a handheld heat sealer to create customized large bags.

During 5–6 November 2018, we hosted a hands-on workshop for personnel at participating oVert-scanning centers on-site at FLMNH and the UF Nanoscale Research Facility. This included 9 staff and students from seven institutions with various components led by Ed Stanley (oVert CoPI), Julie Winchester (MorphoSource), and Kamil Szepanski (Volume Graphics). This workshop focused on developing best practices and standardizing workflows for scanning, data management, batch-uploading to MorphoSource, analysis of CT data, and more.

Identify Gaps in Digitization Areas and Technology:
We continue to deal with challenges of long-term data storage for the project, since scanning produces large amounts of 3D data.

Share and Identify Opportunities to Enhance Training Efforts:
In Year 1, we have focused on training staff at CT-scanning institutions in an effort to standardize scanning. We have also focused on developing resources (both guides and code) that facilitate sharing of media files with MorphoSource.

In addition, the oVert team has been developing digital media (both PDFs and short videos) that provide background information about CT-scanning as well as guides on creating, sharing, and using media generated by the oVert TCN. Files are available via the oVert iDigBio wiki and videos are available on the MorphoSource YouTube page (https://www.youtube.com/channel/UCusG--ELmxbSHNuTIcVL5mQ). Several institutions have undergraduate and doctoral students working as grant-funded technicians, which provides an opportunity for training students in CT research methods. ANSP has involved high school students from the Women in Natural Sciences program in working with CT data generated by oVert, and now has multiple workstations for training staff and students in using CT-data. ANSP has also highlighted the oVert TCN during their annual Member's Night (12 October 2018). During Fall 2018, Casey Dillman (PI, Cornell) taught a CT-course that exposed 12 undergraduates in working with CT-data. Similarly, Ed Stanley (CoPI, UF), taught a course introducing 12 graduate students in Anthropology, Biology, and Entomology to the process of generating CT data and using data such as from oVert in their research. Scripps Institution of Oceanography recently highlighted oVert in a new display at the Birch Aquarium. Similarly, images and 3D prints of oVert-related specimens will appear in an upcoming exhibit in the Reynolds Gallery at the Memorial Student Center at Texas A&M University. In addition, oVert is supporting training of students and scientists at Friday Harbor Labs through an open call for proposals for 'mini projects' that can be accomplished in a week or two of scanning effort at that institution.

We continue to advertise opportunities for training in CT-scanning at Friday Harbor Labs as part of the Broader Impacts of the oVert TCN (http://bit.ly/ScanWithoVert). While at scientific conferences, we are disseminating this advertisement to solicit applications from undergrad and graduate students as well as professionals.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Almost as soon as the oVert TCN began in September 2017, there was wide interest from colleagues and institutions in the US and internationally in participating in or collaborating with our project. The first PEN proposal (oMEGA) submitted by Leif Tapanila (Idaho State University) has been funded, and two additional PENs were recently submitted to NSF: (1) oUTCT (PI Jessie Maisano, UT-Austin) to mobilize via MorphoSource legacy data in UTCT and DigiMorph; and (2) FuncQEE (PI Noé de la Sancha, Chicago State University) to generate new 3D anatomical data representing the functional morphological diversity of rodents.

Share and Identify Opportunities and Strategies for Sustainability:
The oVert TCN builds on existing resources by adding media files to an existing database platform, MorphoSource (supported by Duke University and the US National Science Foundation), and each institution is individually responsible for long-term storage of original media files if they choose to do so.

The University of Florida has also recently entered into a licensing agreement to share CT scans generated using UF funds (i.e., not funded by NSF) with Interspectral (http://www.interspectral.com/). Revenue generated through licensing CT datasets from UF specimens will be used to support curation, research, and education at

FLMNH. While not directly funded by oVert, this strategy of licensing media files for commercial use may provide funds that sustain data storage and museum curation into the future.

Share and Identify Education and Outreach (E&O) Activities:
We are now beginning to plan our first on-site educator workshop that will be held in June 2019 at UF. This will be led by Julie Bokor at the UF Center for Precollegiate Education and Training and oVert personnel based at UF with the goal of developing high school lesson plans using oVert-generated data. We would like to make the digital and 3D-printed models resulting from oVert broadly accessible to K-12 educators via MorphoSource or on-line platforms such as Sketchfab. In addition, UF undergraduate Amber Singh and UF PhD student Rachel Keeffe (both in PI Blackburn's lab) have been working through best practices in 3D-printing and will present a poster presenting recommendations on creating durable and dynamic 3D-printed objects for use in the classroom at the upcoming Society of Integrative and Comparative Biologists meeting in Tampa, FL in January 2019.

Information about products from the oVert TCN are regularly communicated on social media (https://twitter.com/hashtag/overttcn). Social media coming from oVert is received well on-line and often used by the US National Science Foundation in their social media feeds.

Google Analytics

Other Progress (that doesn't fit into the above categories):
As of this report, there are nine scientific publications citing one of the 16 oVert TCN Awards. In addition, there have been so far 18 presentations at professional meetings related to oVert. These publications and presentations are detailed on the oVert iDigBio wiki page: (https://www.idigbio.org/wiki/index.php/OVert:_Open_Exploration_of_Vertebrate_Diversity_in_3D).

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1508

Submission #1510

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by jrallen99
Thursday, November 8, 2018 - 17:41
128.138.130.234

TCN Name:
SoRo: Using Herbarium Data to Document Plant Niches in the High Peaks and High Plains of the Southern Rockies - Past, Present, and Future

Person completing the report:
james.allen@colorado.edu

Progress in Digitization Efforts:
Collectively for the current quarter roughly August – October of 2018 we have entered 23,574 new records into databases, barcoded 95,605 new specimens, imaged 91,918 new specimens and georeferenced 2,544 records. In aggregate the project has now produced 99,761 new database records, 395,817 newly barcoded specimens, 383,875 new images and 10,884 new georeferences.
Work on collections with fewer than 15,000 specimens is mostly wrapping up. Most of these collections had a one year project scope to barcode and database with work shifting to larger collections to complete georeferencing.
NAVA has completed all digitization efforts (collection will be georeferenced at ASC)
BRU has completed all digitization efforts (collection will be georeferenced at COLO)
RMBL Barcoding, sorting and filing, and georeferencing is now complete for the entire collection of all 7626 catalogued and imaged specimens.
COCO has completed all barcoding and imaging (collection will be georeferenced at COLO)
MESA has completed all barcoding and imaging. Georeferencing in progress at COLO.
WSC ~1,000 specimens will be transferred to COLO for imaging. Georeferencing in progress at COLO.
ALAM imaging complete, waiting for transcription (collection will be georeferenced at COLO).
FLD ~50% imaged and 33% georeferenced.
YU imaging almost complete (collection will be georeferenced at COLO).

Share and Identify Best Practices and Standards (including Lessons Learned):
SJNM
Syncing the photo edits on Adobe Lightroom on all photos taken. Having workers tag specimens before taking photos to flow faster.
UNM
We had too many people printing barcodes and ended up with ca. 250 duplicate barcodes. While we've known that would be a disaster, experiencing it first-hand has been a good education for all of us to take cautionary steps to make sure that everything is carefully documented and makes sense to all employees and volunteers.
Phil Tonne developed a new camera mount design that was used for other SoRo lightbox set-ups that started imaging this fall. (CSCN, BHSC, SJNM, COLO and GREE with some modifications,)
FLD
For hiring students, Ross McCauley initially hired upper-division students since these were the students he had more contact with and who initially approached me with interest in the project. As it turns out these students were in general very erratic in their ability to work, although when they did the work was well done. When hiring new employees at the start of the semester Ross has been more explicit about the time requirements and expectations and was able to pick up principally lower-division students. The quality of the work performed is the

same but their commitment to a schedule is much better. Almost all upper-division students live off campus at Fort Lewis and to afford that in Durango need to maintain off-campus employment. Many of these jobs are in the tourist and service industries and sometimes do not follow set schedules. Another issue with upper-division students is our requirement for all upper-division students to be completing a year of mentored research. Some students were informing me that the time commitment for this research experience was preventing them from continuing with herbarium work.

Identify Gaps in Digitization Areas and Technology:
ASC
The shared drive on the NAU server that is working fabulously except when the campus sustains a direct lighting hit during monsoon season. This happened twice this quarter and forced us to save images to external hard drives while Ethernet port switch was fixed. Discussions continue with the NAU library about housing the DNGs with them as well.
SJNM
Several specimens have not been entered into SEINet correctly or have never been entered. This requires extra time. Many specimens (ferns) have been moved into different families that have not been entered into SEINet. K.Heil is in charge of entering those vouchers that have never been entered into SEINet and selecting which plant families vouchers belong to. It took several weeks for HR to hire student workers due to lengthy background checks.
CSCN
Back-ordered equipment (specifically the power adapter for the Nikon D850) can cause delays to start dates even when equipment is ordered well in advance of project start dates.

Share and Identify Opportunities to Enhance Training Efforts:
SJNM and FLD
Several existing relationships have been enhanced under the project. Specifically FLD and SJNM have been working together to launch the SJNM digitization process after the Curator at SJNM moved on to a new position. Ross McCauley has stepped in to help get Ken Heil up to speed as he takes over leading the digitization process at SJNM. Ken has found that working with individual workers on utilizing the Lightroom software (Adriano) and having them write down notes with instructions that co-workers can follow. Helps to streamline the process.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Contacting Ross McCauley (Fort Lewis College Herbarium-FLD). As we ran into a few problems with SEINet entries and Adobe Lightroom, Ross McCauley was a big help.
FLD and SJNM
SJNM ran into a few problems with SEINet entries and Adobe Lightroom, Ross McCauley (FLD) was a big help. As SJNM has begun their digitization under the grant and since their herbarium curator left during the summer, Ross hass been providing some assistance and advice to them. Ross has visited their collection to help set up equipment and he talk with them most weeks to answer questions and troubleshoot small problems. Ross mentioned that Fort Lewis and San Juan College have historically had a very close working relationship and he is am happy to continue this via this grant work.

Share and Identify Opportunities and Strategies for Sustainability:
FLD
This year Ross McCauley more widely advertised and promoted the work-study opportunities available in the herbarium. The job had been registered with financial aid for some time, but he made it a point of renewing it on the campus on-line job board to give it more attention. As the herbarium has zero budget within its department, with the end of the ADBC grant their ability to hire workers will again be limited. By working harder to attract good students with work study early in the year they should be able to sustain the work on development of the collection and continue with digitization of newly accessioned specimens into the future.
RMBL
RMBL has included collections and data archives as an emphasis in their new 5-year strategic plan. This could significantly expand the budget and activities of the herbarium in the future.

Share and Identify Education and Outreach (E&O) Activities:
SJNM
Six students are volunteering in the herbarium and earning a credit in service learning. These students are working with plants that have not been processed. This includes gluing of plants/labels and filing. They started with one cabinet full of unprocessed plants.
CSCN
An article on the digitalization project is being prepared to appear in our alumni magazine. Steve hopes to

encourage donations for infrastructure and to sustain digitalization efforts beyond the granting period.
UNM
The imaging systems have been discussed in multiple tours of the herbarium; they have recruited five new volunteers, since the last report, and inspired students to use the images available for research and expanding their understanding of the flora of the American Southwest.
RMBL
Rick Williams has been curating an iNaturalist project “RMBL Biota” to document distribution, diversity and phenology of local organisms, particularly plants. The project now has over 12,000 photo-vouchered observations collected by almost 1000 participants.
FLD
Ross McCauley developed a portion of a phenology exercise which he is currently testing in his junior-level Plant Form and Function class requiring students to work with raw data, generate graphs, and perform statistical analysis.

Google Analytics
Analytics All Web Site Data Audience Overview 20180308-20181107.pdf

Other Progress (that doesn’t fit into the above categories):
All equipment has been ordered for the collections starting in year two of the grant (ASC, BHSC, CSCN, GREE and SJNM). Some equipment was backordered (CSCN) and we are awaiting the arrival of some components to start work. PM Allen made site visits to BHSC, CSCN, GREE and SJNM to assist with building imaging stations and to give an introduction to workflows and software available for digitization. Specimen images from these collections are already being posted using the iDigBio Media Appliance and have been associated with SEINet. 21 new employees where hired during this reporting period and 13 new volunteers contributed to aspects of the project.
ASC
Two new students, Jazlee Crowley and Paige Thompson, were hired this quarter bringing the total number of student hires to five. No one is working more than 8 hours per week so imaging has not ramped up yet. The three fabulous volunteers continue to help with barcoding: Jack Humbles, Vera Markgraf, and Gisela Kluwin.
BHSC
Four undergraduate students have been hired at BHSC.
CSCN
Steve has hired two undergraduate students to begin work on the project. At this point they have focused on sorting, repairing, weeding unnecessary duplicates and barcoding specimens in selected families. Additionally they have made an effort to push forward the processing and accessioning of recent donations and labelled backlog so that these specimens can be included in the project.
WSC
Current employees working on the project during this reporting period: 2 undergraduate students, Erin Twaddell (paid through SORO) and Cassidy Cichowisz (paid through state/federal workstudy).
UNM
Staff at UNM have repaired thousands of specimens that were identified as needing restoration during the imaging process. While time consuming these repairs improve their collection as they move through the digitization process. Repairs and accessions are completed using non-grant funding.
In the last two weeks UNM hired two new undergraduate work-study employees.
FLD
Ross interviewed a number of students and hired three who are being paid off the grant. Two students who applied were eligible for work study and preferred to use those funds and thus are working on the project but not being paid via the ADBC grant. Ross has two other work study students who are working on specimen mounting and data input who are not currently involved in digitization although he may shift them over to digitization.
NYBG
NY will soon be posting positions and interviewing for two more SoRo interns to start after the fall semester.
YU
Two volunteers and four undergraduates conducted digitization tasks. These individuals received training in herbarium curation, biodiversity informatics, and specimen digitization.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1510