iDigBio

Integrated Digitized Biocollections

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. All images used with permission or are free from copyright.

Biodiversity Informatics Management

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Scripps

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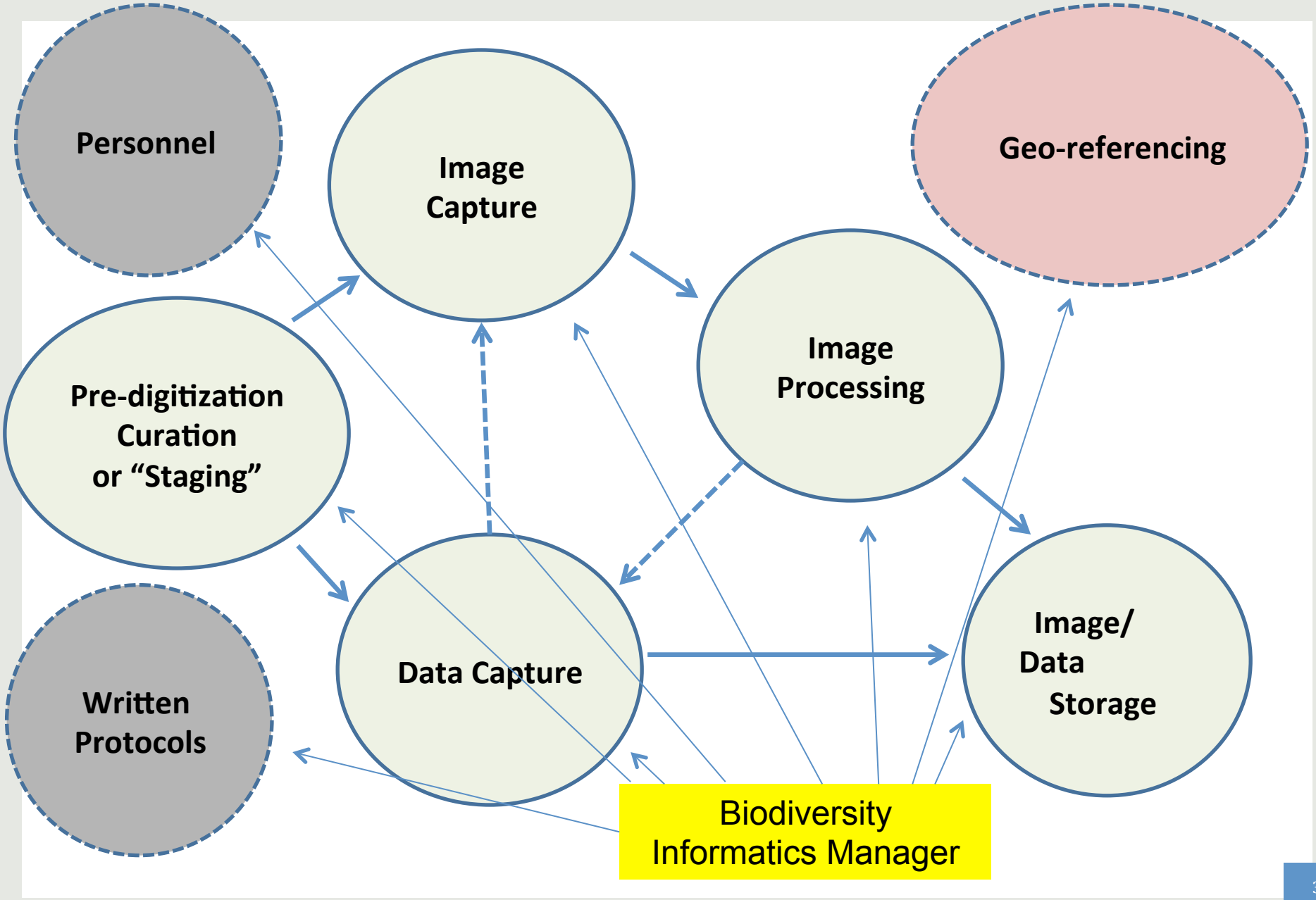

Personnel
Image Capture
Geo-referencing
Image Processing
Pre-digitization Curation or "Staging"
Written Protocols
Data Capture
Image/ Data Storage
Biodiversity Informatics Manager

Assessing Digitization Practices in Biological and Paleontological Collections

28 Collections
10 Museums
Spanning biological and paleontological collections
Insects and other invertebrates, plants, birds, mammals
Wet, dry

Five task clusters that enable efficient and effective digitization of biological collections

Gil Nelson, Deborah Paul, Gregory Riccardi, Austin R. Mast

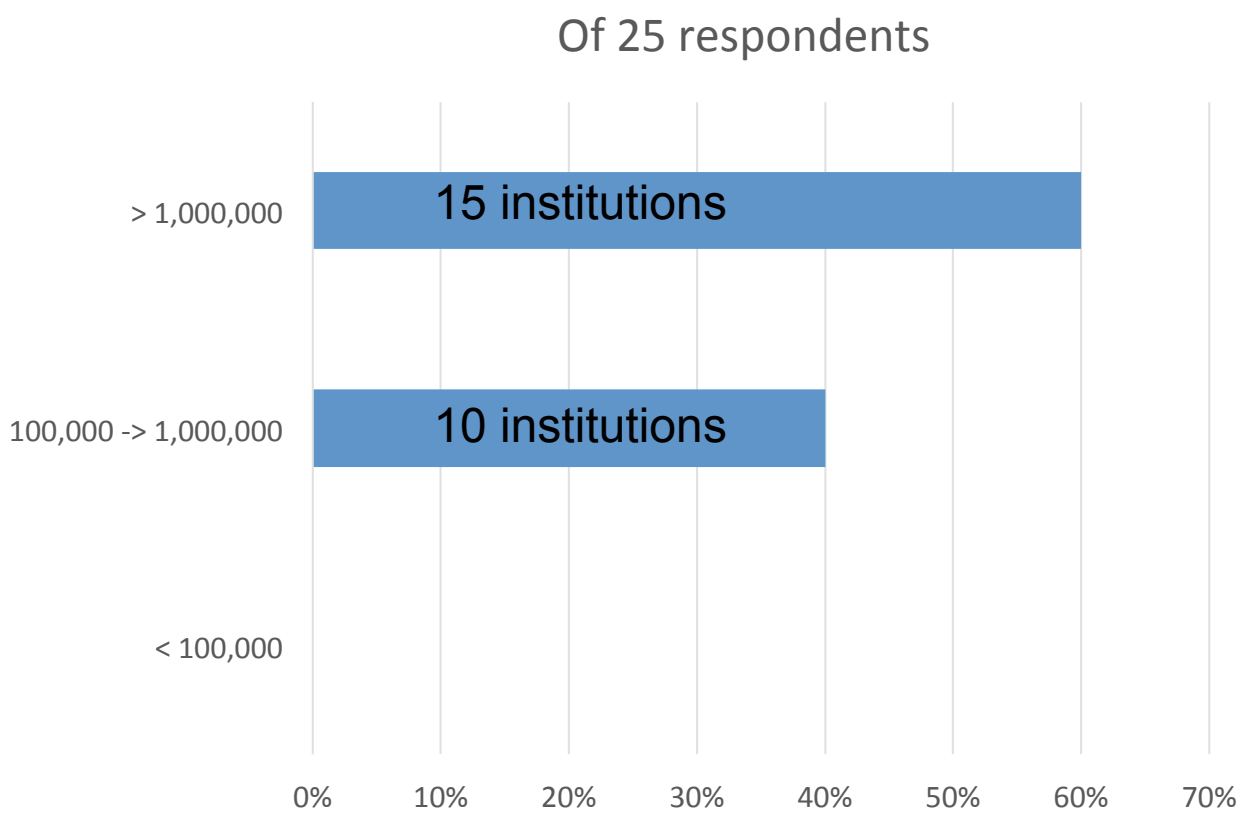
A peer-reviewed open-access journal
ZooKeys
Launched to accelerate biodiversity research

American Museum of Natural History
Botanical Research Institute of Texas
Florida Museum of Natural History
Florida State University
Harvard Herbarium
Museum of Comparative Zoology (Harvard)
New York Botanical Garden
Southeast Regional Network for Expertise and Collections
Specify Software Project (University of Kansas)
Symbiota Software Project (Arizona State University)
Tall Timbers Research Station and Land Conservancy
Tulane University Museum of Natural History
University of Kansas Insect Museum
Valdosta State University
Yale Peabody Museum

The most successful biodiversity informatics managers we observed were:

- filling a staff-type relationship to collections/digitization personnel,
- skilled in negotiating staff relationships & personnel management,
- personable and positive,
- oriented toward service to staff; helpful, supportive,
- oriented toward staff education and training,
- oriented toward rapid response to requests and suggestions,
- open to new and/or enhanced protocols,
- observant for methods to increase efficiency and productivity,
- trained in the biological sciences,
- experienced with and skilled in collections management,
- skilled in the installation and use of technology, and
- skilled in the creation and customization of database interfaces and digitization software and equipment,
- receiving broad institutional support,
- often pursuing their role full time or nearly so.

In what types of institutions do biodiversity managers work?



Question	Yes	No	I am not responsible for this activity.	Total Responses
Predict, plan for, and resolve digitization obstacles.	19	1	4	24
Provide the human interface between collections staff and digitization technology and processes.	20	0	4	24
Design, evaluate, monitor, and revise digitization workflows.	19	1	4	24
Recognize and resolve workflow bottlenecks.	18	1	5	24
Provide for workflow issue escalations and notifications.	16	2	6	24

Represent those more closely aligned with IT than digitization

Question	Yes	No	I am not responsible for this activity.	Total Responses
Provide leadership and manage projects.	20	1	3	24
Write or collaborate on grant proposals.	23	0	1	24
Attend internal and external meetings relevant to collections digitization.	24	0	0	24
Act as an advocate for digitization within the collection and institution.	21	2	1	24
Manage major informatics projects for the collection such as crowdsourcing or georeferencing.	19	4	1	24

Question	Yes	No	I am not responsible for this activity.	Total Responses
Provide leadership and manage projects.	20	1	3	24
Write or collaborate on grant proposals.	23	0	1	24
Attend internal and external meetings relevant to collections digitization.	24	0	0	24
Act as an advocate for digitization within the collection and institution.	21	2	1	24
Manage major informatics projects for the collection such as crowdsourcing or georeferencing.	19	4	1	24

Service vs. Leadership

Question	Yes	No	I am not responsible for this activity.	Total Responses
Provide leadership and manage projects.	20	1	3	24
Write or collaborate on grant proposals.	23	0	1	24
Attend internal and external meetings relevant to collections digitization.	24	0	0	24
Act as an advocate for digitization within the collection and institution.	21	2	1	24
Manage major informatics projects for the collection such as **crowdsourcing** or **georeferencing**.	19	4	1	24

Question	Yes	No	I'm not sure	Total Responses
Perform data migration among various database management systems.	22	3	0	25
Create and implement globally unique identifiers (GUID).	14	10	1	25
Perform scripting and database customization.	20	5	0	25
Seek out and import useful authoritative datasets for database augmentation.	22	3	0	25
Write database driven web applications.	16	9	0	25
Contribute open source code to biodiversity related projects.	11	12	2	25
Write SQL (select, insert, update, delete, join, create view, etc.) and other queries.	22	3	0	25

Question	Yes	No	I am not responsible for this activity.	Total Responses
Manage failsafe replacement of digitization hardware.	7	8	9	24
Configure and support computer hardware and software.	16	3	5	24
Perform industry standard data backups, mirroring, and archiving.	8	7	9	24
Write scripts and software to access APIs and web services from common tools (e.g., GEOlocate, Biogeomancer, GBIF, ITIS, etc.).	16	6	2	24
Evaluate competing database management systems for potential adoption.	17	4	3	24
Manage taxonomic, geographic, and other database authority files.	20	2	2	24
Oversee database standards.	23	1	0	24

Question	Very important	Important	Somewhat important	Not important	Ideally, this should not be the responsibility of an informatics manager.	Total Responses
Create templates for offline and online data entry.	10	8	7	0	0	25
Write data entry and imaging protocols.	14	7	3	1	0	25
Write data entry standards.	13	7	4	1	0	25
Teach data entry standards to staff and volunteers.	14	5	4	0	2	25

Question	Yes	No	I am not responsible for this activity.	Total Responses
Create and monitor imaging and file-naming standards, including files for archive or display.	20	2	2	24
Ensure the distribution of images and data for web-based access.	21	1	2	24
Install and configure, and use imaging equipment and related software (to include DSLR cameras, microscopes, scanners, etc.).	11	9	4	24
Monitor and enforce/comply with digital imaging ethics policy.	13	6	5	24
Process, upload, and store images.	17	3	4	24
Make images	11	7	6	24

What types of biodiversity informatics services are provided at SCRIPPS?

Are there gaps?

What are the needs for effectively producing and managing digitized biodiversity data?

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