Planning a Digitization Project and Delivering Collection Data

Steps for Launching a Digitization Project

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Purpose of Digitization

- To gain intellectual and physical control
- To upgrade management of collection data
- To improve the level of data capture
- To expand the accessibility of specimens, data, and associated archives
- To increase the capacity for collections-based research
Institutional Digitization History

1970s—Biological collections
1980s—VertPaleo
1990s—InvertPaleo
2000s—Archaeology, Ethnology, Art, Classics, Paleobotany, Genomic Resources, Native American Languages, Recent Invertebrates (mollusks)
2010s—Recent Invertebrates (arthropods)
## Status & Funding of Digitization

<table>
<thead>
<tr>
<th>Collection</th>
<th>Size of Collection</th>
<th>% Digitized</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammals</td>
<td>66,000</td>
<td>100%</td>
<td>Internal, NSF (2)</td>
</tr>
<tr>
<td>Birds</td>
<td>28,000</td>
<td>100%</td>
<td>Internal</td>
</tr>
<tr>
<td>Fish</td>
<td>54,000 lots</td>
<td>100%</td>
<td>Internal</td>
</tr>
<tr>
<td>Reptiles and Amphibians</td>
<td>52,000</td>
<td>100%</td>
<td>Internal</td>
</tr>
<tr>
<td>Recent Invertebrates</td>
<td>&gt;500,000</td>
<td>50%</td>
<td>Internal, IMLS (2)</td>
</tr>
<tr>
<td>Genomic Resources</td>
<td>13,000</td>
<td>100%</td>
<td>Internal</td>
</tr>
<tr>
<td>Vertebrate Paleontology</td>
<td>73,000</td>
<td>100%</td>
<td>Internal, NSF (3)</td>
</tr>
<tr>
<td>Invertebrate Paleontology</td>
<td>&gt;1 million</td>
<td></td>
<td>Internal, NSF (2)</td>
</tr>
<tr>
<td>Paleobotany</td>
<td>65,000</td>
<td></td>
<td>Internal, NSF (2)</td>
</tr>
<tr>
<td>Archaeology</td>
<td>&gt;5 million</td>
<td></td>
<td>Internal, IMLS (1)</td>
</tr>
<tr>
<td>Ethnology, Art, &amp; Classics</td>
<td>15,000</td>
<td>100%</td>
<td>Internal</td>
</tr>
<tr>
<td>Native American Languages</td>
<td>5,000</td>
<td>100%</td>
<td>Internal</td>
</tr>
</tbody>
</table>
The Memphis Collection: Endangered and Orphaned

An endangered and orphaned collection is “a substantive body of systematic material which is or soon may be no longer regarded as of value in its present ownership...The collection thus is in danger of becoming lost to the systematic research and education community...”(West 1988)
The Memphis Collection: The Urgency

- Lack of staff and funds for care and preservation
- Change in focus of the department
- Eventual retirement of the curator
- In 2010, UM determined it was in the best interest of the collection to seek an institution to provide for its long-term care and preservation
SNM Self-Assessment

• How does the project relate to our institutional mission statement and strategic plan?
• How does the project serve as an investment in our institutional capacity?
• Who is our audience and how will the project strengthen our ability to serve them?
• Are staff, equipment, space, facilities, and other resources available or are additional external and/or internal resources needed?
• What are the outreach plans to reach our intended audience(s)?
• What are the intended products that will result from the project?
• What are the measurable results and how will we evaluate them?
• How will we sustain the results over time?
• What will be the long-term impact of the project after funding ends?
The Challenge

- ca. 16,500 catalogued specimens
- ca. 8,000 uncatalogued and partially prepared specimens
- Electronic catalogue
- Written catalogue
- Archival documents
- Loans records
The Project

I. Project Preparation
II. Database Design
III. Specimen and Archive Inventory and Data Capture
IV. Physical and Electronic Accessibility to Specimens and Database
I. Project Preparation

• Establish project benchmarks and completion dates

• Review/revise protocols and standards for:
  – Curation
  – Inventory
  – Cataloguing
  – Electronic Capture
  – Osteoscribing
  – Georeferencing
  – Evaluation and Quality Control
I. Project Preparation

• Hire and train project staff
  – Selection of personnel should be guided by skill sets associated with the success of tasks
    • attention to detail
    • commitment to efficiency
    • productivity

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Staff</th>
<th>GS</th>
<th>US</th>
<th>Interns</th>
<th>NS Vol</th>
<th>S Vol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Prep</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pack-Move</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Curation, Cataloguing, etc.</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>17</td>
<td>59</td>
</tr>
</tbody>
</table>
Project Advisory Team

• Staff stakeholders
• Provide feedback in aspects of the project, including database design, security, search capabilities, evaluation, and database and webpage content
• Explore ways that specimen information can be presented to support the curriculum needs of students and teachers at all academic levels, the general public, and other users
II. Database Design

- Review and modify database design and user interfaces
- Review and revise documentation standards
- Review and revise data management plan
III. Specimen and Archive Inventory and Data Capture

Initial Curation

- Make copies of documents
- Rehouse documents
- Organize specimens
- Match specimen parts
- Update nomenclature
III. Specimen and Archive Inventory and Data Capture

Cataloguing and Electronic Capture of Information

• Assign catalogue numbers and attach tags
• Create catalogue records that include information from specimen labels AND associated documents
• Rehouse specimens
• Generate labels
• Record information for future preservation and conservation
III. Specimen and Archive Inventory and Data Capture

Quality Control

• Process for corrections and adjustments

• Procedures included:
  – creation of auto-entered, self-building, or pull-down database field entries
  – comparison of catalogue records against specimen labels and associated written records
III. Specimen and Archive Inventory and Data Capture

**Evaluation**

- Progress is assessed by plotting the number of records electronically captured each month
- Formal quarterly evaluation
  - Modifications, if necessary
Specimens Catalogued
III. Specimen and Archive Inventory and Data Capture

**Evaluation**

- Progress is assessed by plotting the number of records electronically captured each month
- Formal quarterly evaluation
  - Modifications, if necessary
IV. Physical and Electronic Accessibility to Specimens and Database

- Install specimens, reorganizing if need
- Update case, shelf, and drawer labels
- Upload data to museum website and VertNet at end of each quarter
# Project Afterthoughts

<table>
<thead>
<tr>
<th></th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student personnel</td>
<td>Experience for a large, diverse group</td>
<td>High turnover</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule conflicts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inexperienced</td>
</tr>
<tr>
<td>Non-student personnel</td>
<td>Reliable</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Almost no turnover</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Committed to success of project</td>
<td></td>
</tr>
<tr>
<td>Number of personnel</td>
<td>Increased productivity</td>
<td>Ability to manage workflow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality control</td>
</tr>
</tbody>
</table>
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<th>Cons</th>
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</thead>
<tbody>
<tr>
<td><strong>Quality control process</strong></td>
<td>Decreased data entry errors</td>
</tr>
<tr>
<td><strong>Evaluation process</strong></td>
<td>Helped maintain productivity and project oversight</td>
</tr>
<tr>
<td><strong>Workflow</strong></td>
<td>Bottlenecks</td>
</tr>
<tr>
<td><strong>Image capture of specimen labels</strong></td>
<td>Reduction in specimen handling</td>
</tr>
<tr>
<td></td>
<td>Increased efficiency and accuracy</td>
</tr>
<tr>
<td></td>
<td>Elimination of need to re-access specimens</td>
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Acknowledgements