

Institutional Support and Biodiversity Informatics Management

The presence of a strong biodiversity informatics manager or information technology professional is a common thread in the management of large-scale digitization programs. In large institutions committed to digitization {Yale, MCZ, HUH, NYBG}, biodiversity informatics managers enjoy broad institutional support, are usually trained in the biological sciences, and often pursue their role full time or nearly so. In smaller or decentralized organizations, IT professionals usually serve several programs within a large biological sciences department {FSU, UGA, AMNH}. In smaller institutions {VSU}, IT professionals may serve a collection of several departments or colleges.

Effective collections-dedicated biodiversity informatics managers displayed a combination of technical skills and personality characteristics that contributed substantially to the success of their roles. Most were biological scientists with combined interests in technology, biology, and collections management. This combination allowed them to bridge the knowledge gap between collections managers and information technology standards, and to ensure the successful implementation of digitization equipment, workflows, and protocols. The most successful biodiversity informatics managers we observed were:

- personable and positive,
- oriented toward service to staff,
- skilled in personnel management,
- 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.

The importance of institutional support for biodiversity informatics and biodiversity informatics managers cannot be stressed too strongly. Those organizations where digitization was ongoing and organizationally pervasive commonly enjoyed institutional leadership that supported and in many cases were responsible for integrating digitization into the institution's core mission. In most cases, organizational leadership originated at the level of museum director and/or collections director. This top-down support vested biodiversity informatics managers with the authority and access required to perform their mission. Upper level institutional support also included: adequate funding, coordination of digitization activities across the institution, adoption of institution-wide digitization policies, an organizational support structure that allowed for rapid response to digitization challenges and concerns, and standardization of database management systems across the institution.

Several institutions report that cultural norms and traditional practices are often much more difficult to overcome than technological issues. This is especially true for collections with rigidly adhered-to protocols and standards, decentralized organizational structures, or that are highly protective of academic independence. Several institutions reported significant resistance

to standardizing database software, while others have not attempted to bridge this divide. Institutions that adopted a central, institution-wide database system were tasked with finding methods for eliminating reliance on small desktop database applications (e.g. Excel and Access) in favor of moving data to a central repository and enterprise level database system. Effective biodiversity informatics managers were deemed essential components in this transition.