



**BIODIVERSITY  
COLLECTIONS NETWORK**

**BCoN Workshop  
Addressing Legal Issues Involved in Digitized Collections:  
The Nagoya Protocol as a Test Case  
(NSF grant DBI #1441785)**

**Abstracts of Speakers (3)**

Title: New Horizons for Research and Collections: The Nagoya Protocol on Access and Benefit-Sharing

Presenter: Breda Zimkus

Museum of Comparative Zoology, Harvard University, Cambridge, MA

Abstract: The Nagoya Protocol, a supplementary agreement to the Convention on Biological Diversity (CBD), was developed to ensure compliance with fair and equitable sharing of benefits arising out of the utilization of genetic resource, which includes specimens in biological collections. This agreement establishes a legal framework for access and benefit-sharing (ABS), requiring countries to clarify access procedures, share benefits that arise from utilization of genetic resources, and ensure that users comply with provider country laws. The changing international landscape associated with ABS is greatly altering the way that researchers and collections can acquire and use traditional natural history specimens and their associated genetic samples. Therefore, biodiversity collections must be aware of the implications of the Protocol, regardless of whether it is ratified by their country. This presentation provided an overview of the Protocol and explained how international research and the work in biodiversity collections must adapt to this new landscape. Relevant resources, guidelines, and tools were also presented.

Title: Legal Compliance during the Life Cycle of a Specimen: How will Nagoya change our status quo?

Presenter: Linda S. Ford

Museum of Comparative Zoology, Harvard University, Cambridge, MA

Abstract: A museum specimen is part of many activities that begin from the point of being acquired/collected in the wild, and is continuous throughout the research life cycle of that specimen. From a museum's perspective of responsibility, this research life exists for as long as the specimen can be utilized, which is assumed to be in perpetuity. All activities involving that specimen (documented as transactions for research, exhibition and teaching) comprise legal compliance issues that include permits, permissions, certificates and agreements required to allow those activities. Implementation of the Nagoya Protocols, ratified in 2014, will provide new sustainability protections for countries where specimens are collected. Although these protections lead to new opportunities for research collaborations, it will require museums to take on new responsibilities associated with tracking and implementing current and historical regulations associated with the acquisition and/or subsequent activities associated with specimens. Navigating this complex legal terrain will be challenging and has inherent difficulties owing to the diversity of the different type of documents for legal compliance, and the individual temporal components associated with each. With this potential variability, the responsibility that museums must assume is daunting and illuminates the need for mechanisms that support and protect museums as daily management activities are pursued. This presentation explores this new legal landscape and the ultimate need for museums to implement digital solutions to oversee and track legal compliance paperwork. Digital solutions must allow the documentation and recall of all activities, transactions, uses (current and future) and byproducts throughout the life cycle of the specimen. Systems must also have dynamic retrieval of legal documents for decision-making on use permissions (e.g., upstream agreements relating to downstream use), and temporal flexibility including the ability to track temporal changes to legal documents through time.



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Title: Reasons to reason across disparate data types: Linking species, phenotypes, genes, and more

Presenter: Paula Mabee

University of South Dakota, Vermillion, SD 57069

Abstract: The successful integration of disparate data requires not only the development and alignment of standards and technology but also sociological connections across disparate communities. The Phenoscope project brought together linked semantic gene-to-phenotype data from the model organism community with biodiverse species data for phenotypes from the evolutionary literature. Lessons learned from Phenoscope may be generalizable to the needed integration of natural history collection data with that required for compliance with the Nagoya protocol. In Phenoscope, data from the evolutionary domain was rendered computable and integrated with the semantic gene-to-phenotype data, by leveraging where possible, the existing resources (e.g., ontologies, software, syntax) in the model organism domain. This enabled a new broadened community where both groups are stakeholders in maintaining, building, and disseminating the resources. Data integration was guided by a focus on current and future use; user needs were considered broadly. Ontologies and resources were developed according to need and not according to some theoretical ideal. Differences in concepts across the communities were aligned through meetings of small groups of experts. Communication, via face-to-face meetings, shared advisory boards, jamborees, personnel exchanges, symposia, etc. was integral to building and maintaining trust across disparate communities. Enlarging perspective by including experts on analogous or related systems/technologies was useful for introducing new ideas, perspective, and inspiration. Finally, being ready for emergent outcomes and new opportunities and ensuring that data are available for uses that cannot be anticipated is important.