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NSF grant helps preserve parasite collections

Leslie Reed

University of Nebraska - Lincoln

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May 19, 2015

NSF grant helps preserve parasite collections



Craig Chandler | University Communications

The National Science Foundation has awarded a \$500,000 grant that will allow four major parasite collections to be digitized. The collections are part of UNL's Harold W. Manter Laboratory of Parasitology. Scott Gardner (pictured) is the curator and director of the Manter Laboratory.

A \$500,000 grant from the National Science Foundation will allow the Harold W. Manter Laboratory of Parasitology to digitally preserve four major collections of parasite specimens donated to the University of Nebraska-Lincoln during the past five years.

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The specimens represent the work of four top-ranked U.S. scientists who toiled for decades, collecting and studying myriad parasites from around the world.

Scott Gardner, Manter Laboratory curator and director, said the four collections contain, literally, hundreds of thousands of specimens and comprise a crucial record for how the Earth's biological diversity had been endangered by anthropogenic habitat destruction and climate change.

"These kinds of collections serve as the foundation for our understanding of biological diversity now," he said.

Yet when the scientists retired or died, few arrangements had been made to preserve their life's work or to share it with new generations of scientists.

Before they were donated to UNL, some of the collections sat unused on back shelves or storage rooms for years.

However, before obtaining the three-year grant from the Collections in Support of Biological Research program of the NSF's Division of Biological Infrastructure, Manter scientists could do little more than safeguard the specimens. More funds were needed to catalog the collections and create online digital records of them so that other scientists can study them from any internet-connected computer or device.

The paper documentation of one collection was in such deteriorating condition that the laboratory bought frost-free freezers to store them. By cycling through their auto-defrost mechanism, the freezers in effect freeze-dry and kill the fungi that were consuming the documents. These documents are extremely important in that they contain the essential data on when, where, and from what host the parasite specimens were collected.

The collections to be catalogued include those of:

- **Sam R. Telford Jr.**, described by Gardner as a world-class parasitologist from the University of Florida at Gainesville. In 2012, he donated his entire hemoparasite slide collection, which contains bloodstream parasites collected from reptiles around the world, to the Manter Laboratory.
- **W. J. Hargis Jr.**, former director of the Virginia Institute of Marine Science, who died in 2008. Hargis's collection contains samples of marine flatworms from around the world, including hundreds of thousands collected from research expeditions in Antarctic waters.
- **Malcolm McDonald**, a waterfowl parasitologist who worked for the National Wildlife Health Center in Madison, Wis., from 1957 to 1981. His collection, Gardner said, is an amazing record of the parasitic worms of waterfowl from the Central Flyway from the 1960s through the 1980s.
- **Nixon Wilson**, a biology professor at the University of Northern Iowa from 1969 to 1997. Wilson collected ectoparasites, such as fleas and lice, from mammals in North America and around the world. "It's a huge and very interesting collection," said Gardner. Wilson died in 2011.

Gardner said NSF grants, as well as private donations, represent a significant amount of the support for the Manter Laboratory. Without this support, knowledge of parasite biodiversity of the earth would be severely limited, the collections housed in the laboratory are that important, he added.

Written by:

[Leslie Reed | University Communications](#)

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