

MONTU Awarded National Science Foundation Grant

by Peter Lesica & Elizabeth Crone

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Bioinformatics. It's a word that not many of us know or use, and yet it was the promise of Montana bioinformatics that won MONTU over one-third of a million dollars from the National Science Foundation (NSF). Last spring Lila Fishman, the new director of MONTU and professor in the Division of Biological Sciences, Elizabeth Crone, professor in the College of Forestry and Peter Lesica wrote a proposal to review the determinations and update taxonomic nomenclature of all 72,000 MONTU Montana collections and then digitize the label information to form the basis for an interactive on-line database available to anyone with internet access. Photographs and county dot maps for each species will also be available as part of this database. In December Lila was informed that MONTU had been awarded a competitive grant by NSF's Biological Research Collections Panel. The Montana Flora On-line Project is projected to take three years beginning this spring.

Museums have taken on a new importance because they are the primary source of information on the earth's biological diversity. They contain a huge amount of data that is not easy to access unless you are at that particular museum. Yet this knowledge is urgently needed to help protect and manage biodiversity now. These data provide the baseline for the next generation of biodiversity studies and conservation activities. Enter bioinformatics. Bioinformatics refers to the tools and techniques for sorting, handling and communicating large amounts of biological data in the age of computers and the internet. Many major western herbaria can already be accessed via the internet. These include the University of Idaho, Oregon State University, University of California at Davis, University of Colorado and University of Wyoming. A recent

meeting of representatives from scientific societies and agencies as well as museums recognized the need to bring in new technologies to expand access to collections. They proposed creating a "Legacy Infrastructure Network for Natural Environments" to coordinate museums in every state, and increased funding for modernizing collection facilities, updating determinations and expanding electronic access. The UM Herbarium is now on the forefront of this movement.

Accessioning MONTU's collections information is important at this time in order to make it more readily available to the research community. Two ambitious North America plant systematics projects are currently underway: The Flora of North America Project (FNA) and the Biota of North America Program (BNA). Both projects are working towards cataloguing the diversity of plants in North America. Montana plant distribution information is inadequate in both of these projects. BNA relies on county distribution data from Booth and Wright's 1959 flora and Dorn's 1984 manual. Neither of these represent the UM Herbarium collections. As a result, many BNA distribution maps under represent species' occurrences in the western part of the state. In Volume 23 of the Flora of North America, the genus *Kobresia* is not shown to occur in Montana even though three species are represented among MONTU's collections. This omission might not have occurred if the monographer had easy access to label data housed at the UM Herbarium. The flora of western Montana has not been studied intensively for many decades. However, undescribed species have often been discovered among MONTU collections when they have been examined by experts. At least 12 new taxa have been described from MONTU collections in the past 20 years. A systematic examination of the Montana collections is likely to bring other novelties to light and promote a more thorough understanding of the flora of the Northern Rocky Mountains.

It is envisioned that the Montana Flora On-line Project will employ Peter Lesica as part-time curatorial specialist, four part-time undergraduates, a part-time graduate student and a part-time computer specialist for three years. The grant

also provides money to purchase three new computers, a slide scanner, microscope and a laser printer. In addition to creating an on-line database of Montana's vascular plants, the project will also conduct workshops for agencies, school teachers and Native American land managers to introduce the database and demonstrate its use.

...MONTU is heading into the 21st Century. Stay tuned, we'll be digital before you know it.