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A sample specimen from the VSU herbarium, which represents flora primarily from the Coastal Plain region of Georgia. See story page 10.



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NSF Grant Helps Create Online Imaging Database

Story by Thressea H. Boyd

THE NATIONAL SCIENCE Foundation (NSF) presented the herbaria at Valdosta State University and the University of Georgia (UGA) with a grant in the amount of \$397,591. The funds have been distributed equally between the institutions to develop a digital database, with images of more than 225,000 accessioned sheets, including 525 type specimens.

According to the grant proposal, 84 percent of the plant specimens in Georgia are housed at the UGA and VSU herbaria. The collections are widely used by researchers, students and personnel of various governmental agencies.

Dr. Richard Carter, professor of biology and curator of VSU's herbarium, explains that the online database and atlas, will provide global access to collections currently housed at both universities.

"The database will be accessible to everyone—individuals can look at specimens, do an online search for certain species in the herbaria by geographical areas, and view an actual image," Carter said. "The main function of the grant is to prepare high resolution images of all the mounted and filed specimens, and then extract information from the labels to

build the atlas."

The VSU herbarium provides a repository for the preservation of specimens that represent flora primarily from the Coastal Plain region of Georgia and contains more than 70,000 specimens that are mounted, numbered, and accessioned in a climate-controlled environment.

"The project will provide experience for our biology students, both at the graduate and undergraduate levels," Carter said. "The students will photograph specimens and enter the information into the database."

The NSF grant will also allow Valdosta State to purchase additional storage cabinets to house currently processed specimens, as well as provide secured storage for future growth.

Biology students Bobby Sanderson and Stephanie Nichols assist Dr. Richard Carter with the process of developing a digital database, with images of more than 225,000 accessioned sheets, including 525 specimens. The NSF grant given to Valdosta State University and University of Georgia will help develop an online database and atlas, which will provide global access to collections currently housed at both universities.

GROWING UP ON A FARM in the Mississippi Delta region, Dr. Richard Carter, professor of biology and curator of Valdosta State's herbarium, developed an affinity for plant life and the outdoors.

"My parents were very interested in camping and natural history. When they took us on vacations, we camped so that we could pursue our interest in natural history, and they encouraged us a lot," Carter said. "I also learned a lot about the practical aspects of growing plants."

However, when Carter arrived at Mississippi State University, it was the study of animals, not plants that had his attention.

"I received my undergraduate degree in zoology, and it wasn't until my senior year that I 'saw the light' and became interested in botany," Carter said. "I took a lot of courses in various areas of biology, and in the last semester of my senior year, I was required to take a plant taxonomy course. I would have never taken it if it hadn't been required; it was simply a course I had to take and loved it."

Carter gives the credit for his conversion to Dr. Sidney McDaniel, professor of botany at Mississippi State University, who retired in 2002.

"He was a really great teacher and thought I had some potential and he encouraged me to consider graduate school," Carter said. "I really did not have plans after graduation, but I certainly had an interest in biology."

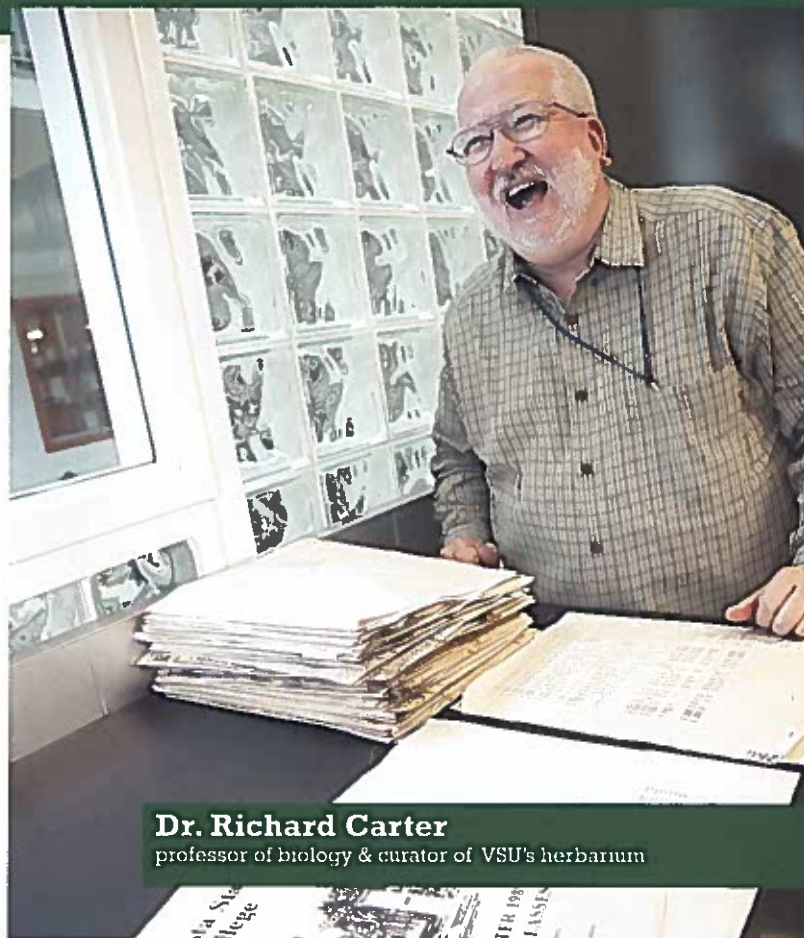
Carter credits McDaniel's work with the Institute for Botanical Exploration, a field station in Iquitos, Peru, as his first insight into the concept of a herbarium.

"Through his field station in South America, Dr. McDaniel would provide plant material for screening in potential drug research. Some would call this 'botanical prospecting,' and he was able to support this work through grants with the National Institute of Health," Carter explained. "I first became acquainted with the concept of a herbarium with Dr. McDaniel, and before this, I really didn't know this kind of facility existed."

Carter earned a master's degree in botany from Mississippi State University and then a doctorate in biology from Vanderbilt University.

When Carter arrived at Valdosta State in 1984, the institution's herbarium was under the direction of Dr. Wayne Faircloth, a professor of biology who was instrumental in building the small herbarium from a few hundred specimens to more than 30,000 accessions.

"When I arrived at Valdosta State, the herbarium was located in a small room in Nevins Hall. There was barely enough storage space, and within a few years, the cabinets



Dr. Richard Carter

professor of biology & curator of VSU's herbarium

and space were filled beyond capacity," said Carter, who specializes in sedges and the flora of the Coastal Plain region.

In 2001, the Bailey Science Center opened, and as part of the expansion, the herbarium space tripled in size, and some new cabinets were added.

"Before we were incredibly cramped and I could not do anything efficiently because we lacked adequate storage," Carter said. "Now we have a separate area for preparing the specimens and a room dedicated solely for the storage of our growing collection."

Since 2001, the collection has continued to grow, filling all the available herbarium cabinets—some beyond capacity—and again, Carter has had to resort to storing specimens outside of cabinets where they are potentially at risk of damage by insects. The NSF grant enables Carter to purchase new herbarium cabinets for adequate specimen storage for the future.

Carter, who continues to remain active in field research, said that he and student workers continue the lengthy process of preserving a backlog of more than 20,000 specimens that are not counted among the 70,000 specimens that are mounted, labeled, and stored in specialized cabinets.

A noted researcher, with more than 50 papers published in peer-reviewed journals, as well as numerous other professional publications, abstracts, and reports, Carter continues to document flora of the Coastal Plain region and hopes to inspire his students, as he was once influenced by his professor and mentor.