



Field Station

Nature's Laboratory at Ole Miss

Our Mission:
to foster eco-
system
steward-
ship by
providing a
natural
laboratory
for research,
education
and service

Spring 2008 Newsletter

Photo by Michelle Edwards

Canada goose, *Branta canadensis*, with large goslings

The Journey: A Good Start ...

As stated in our Fall 2007 Newsletter (<http://www.baysprings.olemiss.edu>), our ultimate goal is to develop the UM Field Station into the leading research and teaching field station in the Mid-South. I'm pleased to report that we're off to a very good start in our exciting and challenging journey to achieve this goal.

A major step forward is our new partnership with the National Center for Natural Products Research (page 2). This is a wonderful opportunity and I look forward to a highly successful collaboration with the natural products center and, especially, to working with their highly capable and friendly staff.

We continue to fine-tune our staff while adding capabilities. Some new faces are staff replacements but others represent growth – all are contributing to progress in our journey.

In something of a bittersweet milestone, we mark in this issue the retirement of Dr. Charlie Cooper of the USDA Agricultural Research Service's National Sedimentation Laboratory. While Charlie's retirement is certainly well-deserved, he will definitely be missed at the Field Station. Charlie was a strong advocate for establishing the Field Station in the 1980s and for developing strong linkages between the "Sed Lab" and the station. We congratulate Charlie on a terrific career and look forward to working with his colleague and replacement, Dr. Matt Moore.

One of the highlights of being the Field Station director was the recent visit by Sen. Thad Cochran and the opportunity to give him a tour of "Nature's Laboratory at Ole Miss". Sen. Cochran has been instrumental in development of the Field Station, its

research programs and the facilities of our Center for Water and Wetland Resources.

I hope you will find this issue of the newsletter informative and enjoyable. I also hope you are enjoying our journey toward excellence in education and research as much as I am. All aboard!

Ray Highsmith



Photo by Robert Jordan

Dr. Highsmith takes Sen. Cochran, Dr. Alice Clark and Bill Canty on a tour of the UM Field Station

Field Station Staff

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As the Field Station begins the journey to accomplish major goals, new staff have joined the effort. Michelle Edwards came on board last June as the assistant to the executive director for marketing and business development. Her responsibilities include preparing newsletters, press releases and organizing other communications activities. She previously worked at Oxford Publishing and Pizza Marketing Quarterly Magazine. Linda Williams joined us in October as our senior staff assistant, after spending the previous 15 years in the UM Accounting Dept. Her knowledge of university policies, procedures and accounting system is a real asset. Graham Green, our newest staff addition, is our IT Network Administrator. Before joining us he was employed by Google in Atlanta. Graham is also an Ole Miss graduate (M.Sci.) and former employee, so he brings important strengths to our program.

Academic appointments in the Center for Water and Wetland Resources include Ikhlas Khan and Rita Moraes, who also retain their primary appointments in the National Center for Natural Products Research (see the New Partnership announcement). Joko Sumiyanto is Moraes' research assistant. Robbie Kroger recently earned his Ph.D. in the UM Biology Dept. under Marjorie Holland and in his postdoctoral position works closely with scientists at the USDA Agricultural Research Service's National Sedimentation Laboratory.

New Partnership with Natural Products Research Center

The Center for Water and Wetland Resources (CWWR) at the Field Station and the National Center for Natural Products Research (NCNPR) will team up to work on discovery and development of natural products with new applications in health, agriculture and ecological preservation. Natural products constitute nature's chemical repository – a wealth of novel and useful compounds derived from microbes, plants and animals in marine, terrestrial or wetland environments.

In February, Dr. Larry Walker, NCNPR director, and Dr. Highsmith signed an agreement to collaborate on

- 1) conservation and utilization of plants for health and environmental protection;
- 2) cultivation of medicinal plants and other commercially important botanicals as potential new Mississippi crops;
- 3) entomological interventions and
- 4) environmental toxicological studies.

To facilitate these activities, two NCNPR scientists will have joint appointments in the Water and Wetlands Center. Dr. Ikhlas Khan, assistant director of NCNPR, has been appointed research professor and coordinator for natural products research in the CWWR, and Dr. Rita Moraes NCNPR research assistant professor will have a similar appointment in the Center. The NCNPR plans to establish additional positions at the CWWR, including technicians, postdoctoral researchers and an entomologist.

According to Highsmith, "this new partnership is a very significant step in our plans to expand usage of the Field Station and increase research at the Center for Water and Wetland Resources".



Drs. Larry Walker, Ikhlas Khan and Ray Highsmith

Photo by Michelle Edwards

Research Spotlight

Rita Moraes' Healing Plants

Rita M. Moraes, research assistant professor at the National Center for Natural Products Research (see Partnership item on p. 2) and our newest addition to the UM CWWR/Field Station research staff, absolutely glows when she talks about her “babies”. Like any proud parent, she can’t wait to tell you all about them and her enthusiasm is infectious. Rita’s babies are her plants. She is currently involved in some exciting research with the South American plant *Smallanthus sonchifolius*, commonly called yacon. Yacon has a sweet, crunchy root that tastes sort of like a cross between a watermelon and an apple. Since the sweetness comes from inulin, instead of glucose, the human body cannot metabolize it, so it has no effect on blood sugar. This makes it a great food for diabetics and dieters. Considering the recent epidemic of overweight and diabetic Americans - Mississippians in particular - the yacon could provide a natural alternative to a growing health crisis. Moraes also pointed out another potential advantage to the yacon research – it could be a great new crop for small farmers. Part of the yacon research at the Field Station is determining the best procedure for growing the plant for the Mississippi climate and how the procedure could affect the active constituents the plant produces. Muhammad Ilias, research associate professor at NCNPR, is working to standardize the yacon products produced in Mississippi. Once the best growing practices are established, the researchers will then concentrate on how to best harvest and process the plant for optimal health value.

Rita’s other project is a plant already known for its potential health benefits– *Echinacea* or commonly called,

purple coneflower. *Echinacea* is presently on the market and is used as a dietary supplement for helping to strengthen the immune system. Rita, in collaboration with David Pasco, Nirmal Pugh and Ikhlas Khan is taking a closer look at the plant to isolate the active

ingredients responsible for the activation of the immune system. These compounds can be used as a biomarker to evaluate the quality and biological activity of the products. The goal is to improve the quality of the *Echinacea* that is available to the public. Since the FDA does not regulate dietary supplements as drugs, the quality of botanicals on store shelves might not be consistent and therefore the activity level may vary. Five years of research results will be published soon in scientific journals.

Dr. Moraes plans to expand her research at the Field Station to include work on local plants, particularly those that are rare or endangered, to see what secrets they hold and to work on restoring those that need help. In addition, other hard-to-acquire plants that produce potentially valuable compounds may be cultured with her green thumb. Ray Highsmith said “We are delighted with the addition of Rita’s studies to the activities of the CWWR/FS and are now thinking about long-range plans for a botanical garden.”



Joko watering the *Echinacea* plants

Photo by Robert Jordan



Dr. Rita Moraes with the yacon plant



Rita’s “babies” in the lab and in the field

All photos above by Michelle Edwards

UM Field Station Neighbors



Christine & Eddie Gene White

When you are in the country, miles from “town”, the importance of having good neighbors cannot be overstated. The Field Station is blessed with great neighbors. So, starting with this newsletter, we are going to dedicate some space to the people we share our beautiful spot with on this Earth.

Edward Eugene White (Eddie Gene) and his wife, Christine, live directly across Bay Springs Road from the Field Station on the property where he was raised. The land has been in his family since his grandfather bought it in December of 1939.

He and Christine have lived in this area all their lives and raised their family of four kids, three boys and one girl, here. Eddie Gene’s father, George White, worked at the Field Station’s ponds when it was Minnows Inc. (1947-1980s). As children, Eddie Gene and Christine not only grew up playing and hunting on the property, they were both baptized in one of the ponds.

These days, after each retired from 30-plus-year careers at Ole Miss, they spend time keeping up the family farm and enjoying the grandkids and great-grandkids. “All my life, I’ve been right here,” Eddie Gene said. “To make a long story short, this is just home.”

Charlie Cooper Retires

A dear friend and long-time supporter of the UM Field Station, Dr. Charlie Cooper retired after 31 years with the USDA Agricultural Service’s National Sedimentation Laboratory in Oxford. Retirement means fishing to some people, but these days, Charlie is busier than ever! He uses his “time off” to train horses for kids with disabilities, and he has joined a disaster relief team after he spent six weeks helping the victims of a January tornado in Abbeville get their lives back in order. But wait, there’s more ... he is also involved in a project in Honduras to help build and install a water purification and wastewater treatment system for hospitals that can be constructed solely with hand labor. “The system,” he said, “is a direct result of a study done at the Field Station.”



photo by Peggy Greb

Charlie was one of the first people to do research at the Station in the early 1980s and was instrumental in convincing Ole Miss that the property would be a great addition to the University. In order to conduct his first research out here, he had to clear willows out of the ponds and start from scratch. After the Minnows Inc days (the site was previously a bait farm), the place sat idle for a couple of years and all the old ponds had become overgrown, except for the springs. Charlie helped get the place cleaned up – clearing and burning brush just to get to the ponds. He said he knew that the place had great potential, even back then. “You have everything out here from wetlands to hills, the variety and versatility are a treasure.” We are truly grateful for Charlie’s efforts to establish the Field Station, his long-term “Sed Lab” research at the station, his advice and his unwavering support.



Photos by
Michelle
Edwards

Mark Baker, Charlie Cooper and Ray Highsmith at
Charlie’s retirement party

Visitor's Page



Bramlett Elementary's first grade class participates in the Adopt-a-School Program sponsored by the USDA's National Sedimentation Lab



Resident Director Mark Baker gives Stephanie Showalter's Wetlands Law & Regulation class a tour of the Field Station



Student teachers participate in Dr. Debby Chessin's Project Learning Tree workshops



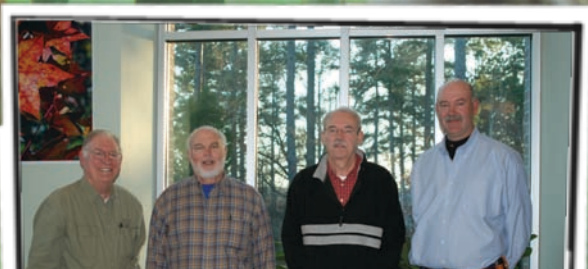
Members of Sen. Roger Wicker's Staff tour the Field Station with three ORSP staff members (on left)



The Field Station was honored to have Sen. Thad Cochran here for a visit and tour of the facilities with Vice Chancellor Alice Clark
Photo by Robert Jordan



Lafayette 3rd Graders from Mrs. McClusky's class tour the Field Station



Pete Heard & Ed Hackett from USDA Agricultural Wildlife Conservation Center visit the Field Station



Staff Council holds a meeting at the Ed Building at the Field Station



Flowering Dogwood, Cornus florida

Photo by Michelle Edwards

The
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