



The Resource

Fall 2010

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Welcome to the new look RESOURCE! A huge thanks to Kara Henderson (with assist from Anita Carter and others) for designing and developing the content for our new SNR newsletter. We are going to try to deliver the new format, electronic RESOURCE to you at least twice a year. Let us know what you think, what you like, what you'd like to see more of. It has been a busy, exciting, at times challenging, and ultimately rewarding year for students, staff, and faculty in The School of Natural Resources. Our enrollments are up to historical high levels; with more than 500 undergraduates and over 100 graduate students for Fall Semester 2010. Research productivity whether measured in publications or grant dollars continues to increase in the School – and that means more new knowledge to apply to substantive issues affecting natural resources and their sustainable use. As you read through the RESOURCE you will see a few of the amazing things going on in the School.

Just some of my favorite highlights this year include the excitement of our commencement ceremonies. For Spring 2010, then Director of the Missouri Department of Natural Resources, Mark Templeton addressed our graduates. This semester, Dr. Chris Ingersoll, Branch Chief – Toxicology, from U.S. Geological Survey's Columbia Environmental Research Center spoke on the value of diverse teams in addressing environmental problems. I've been delighted to work with new faculty and staff (Dr. Shibu Jose, Garrett Chair in Agroforestry; Dr. Nick Watanabe, Parks, Recreation, and Tourism (Sports Management); Mr. Matt Foster, Program Coordinator for our incipient Sports Management emphasis area in PRT). I even got to teach this past semester! Dr. Bruce Cutter invited me to co-teach a non-majors course (Contemporary Issues in Natural Resources). Bruce did all the heavy lifting in the course, but it was a thrill for me to be back interacting with students. Most of all, I enjoy the energy in the hallways, classrooms, and offices in the Anheuser Busch Natural Resources building as students, faculty, and staff work to make our School the best of its kind in the nation. I am extraordinarily proud of all of them!

In my family, at this time of the year, we celebrate the Winter Solstice (my oldest daughter's 18th birthday this year!), we celebrate Christmas as both a family tradition and my wife Carol's birthday (she is...another year older this year 😊); and we celebrate New Year's Day as a renewal of all the things we hold dear. Whatever you celebrate this time of year – from my family to you and yours... Happy Holidays; Happy Solstice; [Happy Birthday if it applies]; and a very Merry Christmas and a Happy New Year!
Mark Ryan, Director





Forestry

Forestry department helps work toward biomass boiler

The University of Missouri Power Plant is now utilizing biomass as an alternative fuel source in their boilers with the help of the Forestry Department at the School of Natural Resources.

Using the current boilers, wood waste is being co-fired at up to five percent with coal. The use of this alternative fuel has reduced greenhouse gas and carbon dioxide emissions, as well as the amount of diesel fuel normally used to deliver coal to the power plant.

With such positive results, the University Power Plant now intends to install a boiler strictly reserved for the use of biomass. This is the most reliable, renewable, cost-friendly option, and it also helps to support the local economy. This 100 percent biomass boiler will also increase the power plant's output in comparison to the current boiler being used.

Some of the woody biomass needed to fuel the new boiler will come from strategic forest thinning.

"The university forestry department has been actively involved with the project, helping source woody biomass from waste trees. They're highly interested in supporting a forestry thinning effort and establishing the criteria for that," said Greg Coffin, superintendent of the MU Power Plant.

Hank Stelzer, (a state forestry extension specialist, is a member of MU's Forestry department that has been working on this forest-thinning project. He says that the state forests would benefit from thinning because they are not as healthy as they could be.

"We're developing a set of thinning and harvesting guidelines to make sure we protect the long-term integrity of the state forests, yet create a sustainable source of biomass, not just for the university but for other facilities across the state," Stelzer said.

These guidelines would apply to the company chosen to supply the biomass materials. This will protect soil and water resources today, along with forests in the future.

Much of the woody biomass will be grown in unproductive river bottoms that were affected in the floods of 1993 and 1995. The trees will be clipped every three years until they reach 20 years of age, when they will be replaced with a new tree.

Stelzer says at the end of each three-year growing cycle, about nine to 13 dry tons of biomass will be produced. Such high yield for low production and labor costs is bound to garner the attention of local farmers.

The Forestry department hopes to involve upper-class undergraduate students in the process of managing the increased interest from these regional landowners. They will work with private consulting foresters to make sure the wood being supplied to the boiler is being grown and harvested sustainably. This will provide the students with experience in the field and will also help professional foresters manage the increasing interest in the market.

Forestry and Center for Agroforestry faculty will also be developing "fast-growing dedicated woody energy crops like cottonwood, hybrid poplar, willow and silver maple to increase the profitability of area farmers while improving marginal cropland at the same time," said Stelzer.

While still in the development stages, the Forestry department will continue to play a large role in the plan to convert to a 100 percent biomass boiler in 2012. They also have the potential to pave the way for other power plants to follow suit. In fact, many hope they will.

"We can't expect to have an established biomass market until demand increases," said Coffin.

Until that day comes, the Forestry department will continue to develop ways to take biomass "from forest to furnace," as Stelzer said.



Fisheries & Wildlife Sciences

Missouri CO-OP Unit stays strong in changing times

Since its beginning in 1937, The Missouri Cooperative Fish and Wildlife Research Unit has been conducting research on fish and wildlife ecology relating to its home state and to the nation as a whole. Although they have recently undergone quite a few changes, they remain focused on that fundamental mission.

The Missouri Unit has many cooperators, including MU, the Missouri Department of Conservation, US Geological Survey, US Fish and Wildlife Service and the Wildlife Management Institute. These groups work closely together, and the Missouri Unit makes sure to address all of their cooperators' needs.

Craig Paukert, cooperative associate professor in the Department of Fisheries and Wildlife, became the Unit leader in June 2010. Paukert replaced Charlie Rabeni, who worked for the Missouri Unit since 1979. Paukert is a fisheries scientist, and will primarily be conducting research with the cooperators on river and stream fisheries issues.



Craig Paukert is the new Missouri Coop Unit leader.

David Galat, also a cooperative associate professor in the Department of Fisheries and Wildlife, will be retiring from his position at the end of 2010. He has been with the Missouri Unit since 1988. His position will be filled with a landscape fish ecologist.

The Unit is also looking to fill their wildlife position, which has been vacant since 2003 when Ron Drobney left. They hope to fill this position with a wetland or waterbird ecologist in the near future.

Though these personnel changes indicate a time of transition for the Missouri Unit, cooperators are confident that it will stand the test of time.

"We have a long history and will continue to build on that history in the future," said Paukert.

Scientists and students alike have been actively involved in the Missouri Unit and have accomplished a lot despite the transient times. There are four master's students, three Ph.D students, two post-doctoral researchers and one research associate who regularly work with the Unit scientists. All have obtained their degrees from the Fisheries and Wildlife Sciences department at MU. Together, these students and scientists have published nine books or book chapters and 30 peer reviewed publications since 2008. Recent graduates also often receive academia and jobs within state and federal agencies.

While the Missouri Cooperative Fish and Wildlife Research Unit does have a few positions to fill, that has not seemed to hinder its success. With a full staff planned for the near future, the Unit will surely continue its success as it has for the past 73 years.



Parks, Recreation and Tourism

PRT to add Sport Management emphasis

Incoming students of Parks, Recreation and Tourism (PRT) will have a new option for an emphasis area: Sport Management. The curriculum is currently going through the University's approval process, and classes are set to start Jan. 11, 2011 for about 35 students who are accepted. Students who declare this emphasis area are still required to take the core courses required in the PRT Department.

The idea for this program is by no means a new one. According to David Vaught, PRT Department Chair, discussions have taken place over the last 10 to 15 years. "PRT has always been involved in those discussions," he said.

The new emphasis area is geared toward "people who have an interest in sport outside playing sports," said Matt Foster, the Director of the program.

Students will be educated on a wide array of topics that will prepare them for Graduate school and give them tools to use while working in the field. Some of these courses include the business of sport, sport facility design, legal aspects of sport and sport economics and finance. Although the courses are not available at present, an eight-week elective course is opening at the end of this semester called "Contemporary Sports Journal." Any student is eligible regardless of their area of interest. Vaught will be the main professor of this course and will focus on interactive discussions and current events within the scope of sports management.

"The program will be run in such a way to compliment a student's desire to live and breathe sports," Vaught said. He also aims to create an environment in which students can become a close-knit and motivated group.

Participating students will have the opportunity to see other options in the sports field that they didn't know about before. "Sports is much bigger than most of these kids realize," Vaught said.

Volunteering will also give students the chance to broaden their horizons so that they can "see things from a different perspective of sports," said Foster. Volunteering will give them real-life experiences that they can apply to their careers in the future.

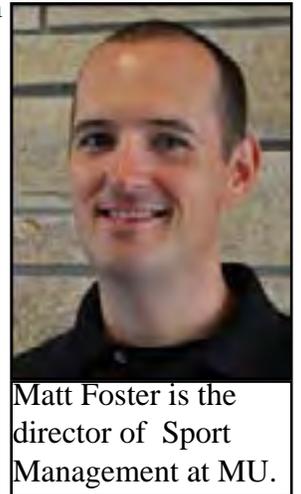
Ideally, students declaring a sports management emphasis would continue on to Graduate school to continue their studies. According to Foster, the Undergraduate classes are designed to give students more experience, to give them perspective and to teach them how to be professional in their field. Those involved in the planning of these courses also hope to have follow-up Graduate level courses available in about two years.

The benefits of this emphasis area reach beyond its educational value. "Sport is almost a \$70 billion market," Vaught said.

This number bodes well for students to find job opportunities in the future. These students with a specifically sports management-gearred education will have the upper hand during and after the application process. They will study to be proficient in many areas, such as campus recreation, sports marketing and sports clubs or associations.

The value of this emphasis area not only will be experienced by the students involved, but by the University as a whole. "We believe this program will gain national recognition over a period of time, and it is designed to become sustainable," Vaught said.

With its growing popularity and much thought put into the program's future, the Sport Management emphasis is a welcomed addition to PRT and the School of Natural Resources.



Matt Foster is the director of Sport Management at MU.



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Soil, Environmental & Atmospheric Science

SEAS student chosen from nationwide search

This past summer, Environmental Science undergraduate student Elizabeth Dolan was chosen to participate in the University of Arizona's Research Experience for Undergraduates (REU) program. It is a competitive 10-week program sponsored by the National Science Foundation. Dolan was one of 12 students selected from a nationwide search.

Dolan spent a total of ten weeks in the program. She spent the majority of her time there conducting research in Oracle, Ariz., where the Biosphere 2 is located. She also worked at the Jemez River Basin Critical Zone Observatory (in New Mexico) and on-campus at the University of Arizona in Tucson. The Biosphere 2 functions as a research and learning facility about Earth, its systems, and its significance to the universe. Each of the ten interns in the REU program was assigned their own research project and was also required to do lab work for eight hours per day.

Dolan was chosen to work in Dr. Jon Chorover's environmental soil chemistry lab. There, she studied various methods of extracting soil solution and found that different methods produced different results. She was able to utilize sophisticated equipment, like a carbon analyzer. She was also allowed independence in making certain decisions concerning the project.

"This internship was extremely beneficial for me because it introduced me to research, which is necessary to be successful in graduate school," Dolan said.

There are more benefits to REU participants than just research experience. At the conclusion of the program, each student presents their project at the 15th Annual University of Arizona Graduate College Undergraduate Research Opportunities Consortium Conference. This gives the participants practice in presenting their research and in answering questions or criticisms.

REU students are also given the chance to network with professionals in their fields of interest. These connections are important, as it is possible that students will work with those people in their future careers.

"The program really broadens a student's horizons," said Dr. Keith Goynes, MU Assistant Professor of Environmental Soil Chemistry. Goynes aided Dolan in her application process for the REU program. "I would encourage other students to apply for the program," he said.

Dolan is not the first MU student to be chosen in the REU nationwide search. John Gardner was selected to participate the previous year as well.

"It's a testament to the university that MU students were chosen to participate two summers in a row," Goynes said.

As for her future, Dolan is planning on applying to graduate school. She says that after her experience in the REU program, she will be sending an application to the University of Arizona.



Elizabeth Dolan spent at least eight hours per day in the lab through the REU program.



Patrick Market is a professor at MU and will be the next NWA president.

Dr. Patrick Market to be NWA president 2011

In 2011, Dr. Patrick Market, associate professor of Atmospheric Science at MU, will serve as President of the National Weather Association (NWA).

“The NWA started as a means to serve people who use weather every day or who make forecasts,” Market said. Both weather observers and forecasters enjoy the information they have provided for 36 years.

Market first got involved with the NWA because his graduate professor encouraged him to do so. Since then, Market has held a variety of positions within the organization. He is confident that his year as president will run smoothly.

“I am lucky in that I’m inheriting an organization that’s in pretty good shape,” he said.

Though the organization is already well managed, Market still has plans to make improvements. The NWA regularly publishes journals that are all on paper. Market wants to convert these journals to PDF files to make the information more accessible to people who could benefit from using it.

Market also wants to demystify area forecast discussions, because they contain jargon that many people might not relate to. He thinks that the information contained in these area forecast discussions could be beneficial to many people who work in the emergency management field, among others.

With a strong organization run by a capable representative of MU’s Soil, Environmental and Atmospheric Sciences department, the NWA will be taking steps to make their useful weather information more applicable to the general public.

Leslie Palmer to retire

Leslie Palmer, a member of the SEAS Office Support Staff, will be retiring at the end of this year. Palmer has worked at SNR since July 2007 and has contributed much to the department. However, her favorite memories come from the people and experiences she has had while working for SNR.

“I greatly appreciate the opportunity to work with everyone at SNR,” Palmer said. “I have enjoyed the work and feel that I have made a contribution in helping SNR make the transition to providing more with less. The School is providing a great service to the citizens of the State of Missouri.”

Palmer currently isn’t sure what the future holds for her, and she is fine with that. She plans to go on vacation, volunteer at a dog boarding service, visit family and help out at a local greenhouse to fill her time.



Leslie Palmer has worked for SNR for three and a half years.



Recent Events

The Art and Science of Ancient Trees

From Oct. 22 through Dec. 31, Dr. Richard Guyette showcases an exhibit of the collection of tree samples. The samples come from the Department of Forestry's Tree Ring Laboratory and have been dated at up to 14,000 years old.



Dr. Guyette stands with one part of the collection.



A close-up view of the samples can show details of age, damage and growing conditions of each year.

Annual Christmas tree sale continues



The Forestry Club continued their annual Christmas tree sale this year. The sale was Dec. 3-5 and was a big success. The proceeds from the sale go toward Timberfest and Conclave (other club events). Left: Forestry Club members Ashley Owens, Danny Keating and Dan Berger personally deliver a Christmas tree to the Chancellor's residence.



Recent Events

Homecoming Float



Above and right: SNR celebrated the Mizzou Homecoming tradition with their own float in the parade!



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