

## THE COLLEGE OF NATURAL AND APPLIED SCIENCES

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## NSF Funds Impact Research

Dr. Kevin Evans and Dr. James Miller in the Department of Geography, Geology, and Planning were successful in securing a \$133,000 grant from the National Science Foundation (NSF) for geologic research on the Weaubleau structure. This feature is about 70 miles north of Springfield and comprises a 12-mile wide area of folded, faulted, and fractured (brecciated) strata. Although the feature had been known for more than fifty years, remote sensing as well as subsequent field and laboratory studies have shown that it was not related to volcanic activity, as was suggested in the past. A growing body of evidence suggests that it formed from a meteorite impact. Funds from NSF will be used to further stratigraphic investigations and to purchase a state-of-the-art petrographic microscope.

The Weaubleau Breccia is truly a rare rock that resembles "nature's concrete." Fossils from the breccia indicate an age of approximately 340 million years.



Example of an injection breccia. The clasts in this photo were derived from the Northview Formation.

## Astronomy Students Shine

Dr. Mike Reed, associate professor in Physics, Astronomy, and Materials Science Department, is clearly proud of the accomplishments of our astronomy students. Seniors Joe Eggen and Grant Gelven (both NASA/Missouri Space Grant interns) have been involved in several of his astronomy projects. In the fall of 2006, Dr. Reed, Joe, and Grant were involved in two multi-site campaigns using Baker Observatory. They observed one week per month from July through November for collaborators in Poland and Belgium. Data from Baker Observatory was published in four journal papers during 2006.

Besides mastering Baker Observatory, Joe and Grant have also been to Michigan-Dartmouth-MIT Observatory to observe with the 1.3 and 2.4 meter telescopes and Joe has used the 2.1m telescope at Kitt Peak Observatory. Both observatories are located on the same Arizona mountain about 56 miles southwest of Tucson. Joe has contributed to seven journal papers and presentations.

Joe Eggen graduated this spring with a degree in physics, a first minor in astronomy and a second minor in mathematics. He plans to pursue a Ph.D. in Astrophysics at Georgia State University.

Grant Gelven graduated this spring with a double major in physics and mathematics, and a minor in astronomy. He plans to attend Washington University in St. Louis and pursue a Ph.D. in physics. He will work there this summer with modeling TeV gamma-ray emissions from supernova remnants.



# College Update



It's been approximately six months since I introduced myself and I'm preparing to complete my first year as dean. It's been a good year! I have learned so much and I continue to learn (that life-long learning that we try to instill in our students). I have learned from the faculty, staff, department heads, CNAS Student Advisory Board, various program/department Advisory Boards, my peers - the other deans, the provost and her assistants/associates and staff, and many, many others at Missouri State University.

It is truly the faculty and students who have accomplished the most in the past year.

- CNAS faculty have submitted 75 external grant proposals (more than any other college) and 48 have been funded for nearly \$2.5 million.
- CNAS faculty published 131 peer-reviewed publications or juried projects. They also gave over 225 presentations at regional, national and international professional conferences in the past year.
- 1,138 students achieved the CNAS Dean's List in fall 2006 and spring 2007.
- 450 graduated from CNAS in fall 2006 and spring 2007.
- Two CNAS faculty were recognized with "Professorships". Mark Richter for his work in the Honors College and Dennis Schmitt received an Alumni Professorship for his research work.
- CNAS graduate students were active participants in the Missouri State University Interdisciplinary Forum.
- Six new faculty members have joined CNAS. We will introduce you to them in our fall *NewsWatch*.
- CNAS is ready to begin the new joint engineering program with UM-Rolla when funding is made available.
- Due to enrollment growth and demand, the Applied Consumer Science Department will be split in 2007 into Hospitality and Restaurant Administration AND Fashion and Interior Design.
- CNAS is reviewing several proposed new programs and will prioritize the list in 2007-2008.

This summer I have one major goal – a complete space analysis for the college. This analysis will be done in preparation for renovations made possible through the Lewis and Clark Bill passed this spring. This gives Missouri State University nearly \$30 million to do some much needed maintenance and renovation. CNAS buildings affected include Shepard Hall in Mountain Grove and Temple Hall and Kings Street Annex in Springfield. In addition, we have received funding from Provost McCarthy to renovate lab spaces. We also gain some space as CASE and JVIC move downtown to their newly renovated facility – the Roy Blunt Jordan Valley Innovation Center. In addition we must plan for engineering and the space needs of this new program.

I'm looking forward to another exciting year in the College of Natural and Applied Sciences!

## A year of activity at Bull Shoals Field Station



The Drury House was built in 1924 by Frank Drury. It is now solar-powered and will provide housing for classes or research.

This has been a year of activity at the Bull Shoals Field Station. We hired another staff person: Dr. Beth Bowles has an expertise in aquatic ecology, especially algae. Dr. Bowles will be developing long-term monitoring protocols, conducting research and various other activities.

Renovations on the Drury House (built in 1924) are now complete. It is now solar-powered and will provide housing for researchers or classes. Along with our other house (Mincy House), we have beds for 20. We also have a new classroom building for meetings and classes.

Along with several aquatic monitoring projects, we are working with the Greater Ozarks Audubon Society and the Missouri Department of Conservation to monitor bird populations in giant river cane habitats. They are restoring cane habitat along Bee Creek, and we are helping monitor for the endangered Swainson's warbler.

Several new graduate student research projects are also beginning.

For more information about the field station, check out the website at <http://www.bullshoals.missouristate.edu/>. Or you may contact Dr. Janice Greene at [JaniceGreene@missouristate.edu](mailto:JaniceGreene@missouristate.edu), or 417-836-5306.

## New fossil species named in honor of geology professor

James Miller, a geologist and professor in the department of Geography, Geology and Planning has had a second type of fossil named after him.

In January 2007, Dr. Miller's colleagues, Jon Adrain from the University of Iowa and Steve Westrop from the University of Oklahoma named the new trilobite fossil -- *Notchpeakia milleri* -- in honor of Dr. Miller.

This kind of tribute in the field of geology is rare and a very special honor. This is the second time Miller has been recognized in this manner. The first came in 2004 when a fellow geologist, Michael J. Vendrasco of the University of California, Los Angeles, named a species of chiton for Miller.

## Physics First

Dr. Mani K. Manivannan, associate professor of Physics, Astronomy and Materials Science, is a co-principal investigator for the three-year project "Academy for Teachers -- Inquiry and Modeling Experiences for Physics First (A TIME for Physics First).

The statewide training initiative intends to design and implement a professional development curriculum for teachers to teach Physics First in ninth-grade classrooms, with the long-term goal of increasing the proficiency of students in science, increasing the number of highly qualified physics/physical science teachers and increasing student interest and success in science or engineering degrees.

## Field Biology class to travel to rainforests and coral reefs of Belize

A new field course is being offered this Summer Intersession, enabling Biology students to travel and study the tropical rainforests and coral reefs of Belize.

Dr. Daniel Beckman, Biology professor will offer a summer intersession course called Tropical Marine and Field Biology: Belize (BIO 527). This is the first time this course has been offered; however, this past January Dr. Inno Onwueme paved the way with his Agriculture 399 course.

During the nine-day agricultural trip, the group toured a number of research facilities, farms and a farmers' market. Production operations visited included swine, aquaculture, banana, lumber and citrus fruit. Dr. Clydette Alsop, associate professor of horticulture who traveled with the students to Belize, said the amount of subsistence agriculture remaining in Belize is surprisingly small.

During the Field Biology course, students will visit the Belize Zoo and will see hands-on some of the animals they hope to encounter in the wild: tapirs, jaguars, howler monkeys, toucans, storks, crocodiles, and iguanas, to name a few. Although Belize is small (about the size of New Hampshire), it isn't heavily populated, so the group will be able to travel to remote locations. Lodging will be in places with self-descriptive names like the Pine Ridge Forest Reserve, Monkey Bay Wildlife Sanctuary, Cockscomb Jaguar Sanctuary and Tobacco Caye Island.

The inland portion of the trip will carry out field studies in tropical forests, mountain ecosystems and rivers. The class will make a two-day canoeing and camping excursion down the tropical Sibun River, studying fish and other wildlife encountered. The final portion of the trip will begin with a boat ride to one of the small islands just offshore of Belize, called Cayes, where the class will lodge at a field station for three days. This caye is located along the second longest barrier reef complex in the world, much of it protected as marine reserves. The class will swim and boat to snorkeling locations along the coral reefs and mangrove marshes. Here they will study coral reef fish and ecosystems, with a chance of encountering manatees, sea turtles, dolphins, and whale sharks.

For many of the students, this will be their first trip out of the United States. It will be an opportunity to observe tropical ecosystems and organisms not present in the U.S., in one of the most biologically diverse regions on earth. They will also encounter a new culture and see the conservation efforts of the citizens of Belize. CNAS and the Biology Department look forward to continuing to offer regular opportunities for students to participate in field classes to Belize in the future.

## Mathematics Honor Society hosts KME National Meeting

The Missouri Alpha Chapter of Kappa Mu Epsilon, Mathematics Honor Society, hosted the Thirty-Sixth Biennial Convention held on the campus of Missouri State University on April 12-14, 2007. The convention was attended by 91 students and faculty representing 14 chapters of KME. The main focus of the convention was the presentation of undergraduate research by student members of KME. Students competed for top paper honors as judged by an awards committee consisting of faculty and students. Kimberly Moss, a member of the Missouri State University chapter served on the awards committee. The convention also included a mixer held in the Plaster Student Union Games Room, business meetings of Kappa Mu Epsilon and a banquet.

The banquet was held Friday evening at Evangel University and featured Dr. Larry Campbell, Missouri State Mathematics professor. The keynote address was entitled "Celebrating Mathematics."

Kappa Mu Epsilon was founded in 1931. Missouri State began its chapter in 1932. Missouri State has been very active in KME, having hosted the National Convention on previous occasions and usually having a delegation at national and regional conventions.

KME's advisor is Dr. John Kubicek.



# Horticulture Club wins awards at regional conference



Horticulture Club members pictured with the team trophy won at MACHS are (front, l-r) Tyler Kuske, Andrew Scheuer and Tom Lampe, and (back, l-r) Kirk Amato, advisor Dr. Clydette Alsup, Shiloh Van Nostrand, Anitra Lewis and Jessica Roller.

The Missouri State University Horticulture Club took third place team honors during this year's competition among horticulture students from the Midwest Region.

Seven Missouri State horticulture students attended the 34th annual Mid-America Collegiate Horticultural Society (MACHS) conference held March 8-11 at Purdue University, West Lafayette, Indiana.

Two Missouri State seniors, Tyler Kuske and Andrew Scheuer tied for first place in Woody Plant Identification competition. Jessica Roller won second place in Crop Judging and third place in a General Knowledge Exam. Other students from Missouri State University who attended were Horticulture Club President Tom Lampe, Shiloh Van Nostrand, Anitra Lewis and Kirk Amato. Van Nostrand was elected MACHS Financial Officer for 2007-08.

Michigan State University was the first place team in the competition. The University of Minnesota-Crookston finished in second place. Other schools who attended the conference were host team Purdue, University of Illinois, University of Wisconsin, Northwest Missouri State University and Iowa State University.

This is the sixth year that the Horticulture Club students have attended the MACHS conference. Missouri State University students have won individual awards and have placed among top teams in various categories, but this is the first time for the club to finish among the top three overall teams. The 2008 MACHS conference will be held at the University of Wisconsin.

Horticulture Club advisors are Clydette Alsup and Pamela Trewatha.

## Student Profile: Marc Allison

Marc Allison graduated in Spring 2007 with a degree in Agricultural Business. This summer he is in Washington, D.C. where he works as an intern at the American Farm Bureau Federation.

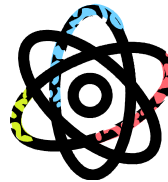
Marc is no stranger to Farm Bureau. He has served as past President and Public Relations Officer of the Missouri State University Farm Bureau Chapter. Marc said that being involved with Farm Bureau is one of his favorite college memories, especially the Washington, D.C. trip he made to the Federation in March 2006 and planning the Agricultural Forum that is hosted by the Missouri State University Farm Bureau Chapter each year.

The 2007 Agricultural Forum panel included Congressman Roy Blunt and Charles Kruse, President of Missouri Farm Bureau. Over 200 attended this year's Forum in April to hear discussion and ask questions about agriculture issues such as Missouri Farm and Food Preservation Act, the 2007 Farm Bill, the National Animal Identification System and drought assistance.

Marc's internship involves working with the Economic Analysis Team which works primarily with the economic impact of agriculture and how new policy or changes in policy affect agriculture economically. The team will also take in-depth looks at each industry to determine how specific policies affect specific industries. Marc is currently doing research for economic data and will later work with animal welfare issues and 2007 Farm Bill issues.

Marc's hometown is South Greenfield, Missouri. When asked reasons for attending Missouri State University, Marc says there were several. "I wanted to stay close to home and family. Also, Missouri State is a family tradition. At least 12 family members have graduated from Missouri State University!"

When Marc completes his summer internship, he will enter the agricultural economics master's program at Texas A&M University. Career plans are to continue to work in agricultural policy.



## Missouri Innovation Academy takes a new approach to business and science

The Missouri Innovation Academy is merging the fields of business and science together to give Missouri high school students a taste of 'real world' science.

The first academy will be held June 9-23rd on the Missouri State University campus.

Student participants will design a robot of market-importance from a given set of parts and supplies with the aid of university faculty, scientists, and industry experts. In addition, they will build a business model around their robot, as if they were a real high technology business.

The two weeks of work culminates on the last day of the program where the students present their robot and business idea overview to the university and their families. University and corporate affiliates will review the robots and business models.

There are no costs to students selected to participate. The academy is funded by Missouri State University and The William T. Kemper Foundation.

Enrollment goals for next year are to have 40 student participants.

For more information, visit the website at: [www.missouristate.edu/mia](http://www.missouristate.edu/mia).



# HRA's Third Annual Wine Tasting and Dinner a success



For the third consecutive year, the Hospitality and Restaurant Administration (HRA) faculty, staff and students hosted their annual wine tasting and dinner. The event, sponsored by Woody Justice of Justice Jewelers, raised over \$12,000 to be used for HRA student scholarships and research efforts at the Mountain Grove campus.

During the reception portion of the event, guests were treated to a tasting of premium Missouri wines (made possible by the Missouri Wine and Grape Board), a showcase of live jazz and scrumptious hors d'oeuvres. Immediately following the wine tasting, guests were seated for a gourmet five course meal - a treat for even the most discerning gourmand. Each course of the meal was perfectly paired with its own distinctive glass of wine, (selected by fine wine experts such as Matt Bekebrede of Vino100, Nathan Smith of Golden Barrell, and Chris Beiermann of Glazers). Throughout the evening, guests had the opportunity to bid on a wide array of auction items - travel packages, gourmet chocolates, theatre tickets and fine wines, just to name a few.

Each year the wine tasting and dinner event provides

hands-on learning opportunities for HRA students to understand the challenges that goes into hosting a high-end special event. For the wine tasting and dinner, the HRA faculty members work closely with students from the initial planning to final clean-up. Under the direction of the faculty, students set the rooms for service, prepared and served all the menu items, cleared the rooms at the end of the evening and stayed to wash all of the dishes (over 700 hundred glasses alone were used for this event). Following the event, students are assigned to write a paper about the experience. Students agree that it is a lot of work, but say they are glad they chose to be a part of it. Nearly every student writes that the event was "a great learning experience" and, most importantly, they had fun.

Plans are already underway for the Fourth Annual Wine Tasting and Dinner to be held February 21, 2008. Seating for this event is limited, so if you are interested in attending, contact Jaimie Trussell, CNAS Director of Development, at 417-836-5161 to reserve your table today.



**Peggy Sanford, Bill Darr, Virginia Darr and Woody Justice at the 2007 Wine Tasting and Dinner.**

## Student Profile: David Vinyard

David Vinyard, spring 2007 graduate continues his graduate studies in the chemistry lab at Missouri State under the advisement of Dr. Mark Richter. David graduated with a double major in chemistry and agriculture. He has been working with Dr. Richter for almost two years studying electrogenerated chemiluminescence (ECL). He currently has three publications through his work with Dr. Richter and a fourth has just been accepted to Analytical Chemistry.

David explains that he chose to attend Missouri State because he was offered a great financial aid package and he felt the campus was much more friendly and community-oriented than other schools he had visited.

"I have experienced some great things at Missouri State, but a few really stand out. Dr. Richter has done a great job of advising me through chemical hurdles. There have been many times that I spent weeks doing a set of experiments, only to find out later that the work was flawed and I had to start over. You have to be able to limit your frustration and learn to create new approaches."

David was chosen by the College of Natural and Applied Sciences as a speaker for the Spring 2007 commencement exercises. "A couple of days beforehand I was ridiculously stressed out, but the day of graduation I found myself very calmly walking to the podium. I must admit it felt great to have people recognize me as 'that guy who spoke at graduation!' I hope Dr. Jahnke didn't mind me calling her organic chemistry exams "infamous" in front of over 6,000 people!"

David is the current president of the Missouri State University chapter of the American Chemical Society-Student Affiliates and the Chemistry Honor Society. He recently served a six-month term on the Springfield News-Leader Editorial Advisory Board and has performed two summer internships with the USDA as a soil conservationist.

In addition to David's chemistry and agronomy studies, he has also continued his musical studies, spending literally hundreds of hours preparing for his senior piano recital. "I was very proud (and relieved) to have accomplished such a huge performance," he says.

David plans to graduate with his master's degree in May 2008 and enter a PhD program, preferably at a university far away! Career plans are to continue research and perhaps teach.

David is originally from Stockton, Missouri.



# Students experience China's fashion industry

Fourteen students in the Clothing, Textile, and Merchandising program participated with Michele Granger and Marciann Patton in the Study Away Program to China March 16th-25th. The ten-day trip included 3-day jaunts in Beijing, Dalian and Shanghai. The program incorporated fascinating visits to silk, cloisonné, pearl, and tea production facilities, as well as the fabric and tailoring market. The group met with over 50 of the 2,800 students attending Dalian's Institute of Light Industries (Fashion and Graphic Design), one of China's largest fashion schools. The students also visited Missouri State University's Dalian campus and interacted with students and faculty from that campus. Part of the educational segment of the tour included visiting a Chinese Super Walmart to compare and contrast the American vs. Chinese retailing and marketing techniques of the world's largest corporation.

The group also visited the Great Wall, the Forbidden City, the Heavenly Temple, the Shanghai Museum and Bazaar and Dalian's shoreside sculpture garden, among other landmarks. They also viewed the 2008 Olympic Village and took a stunning night harbor cruise of Shanghai's cityscape. Dr. Yongwei Zhang coordinated the trip schedule, one that took the group on a global adventure they will always remember.



## New research at Center for Grapevine Biotechnology

Laszlo Kovacs and Wenping Qiu of the Center for Grapevine Biotechnology (CGB) at the Mountain Grove Campus have been venturing into new research areas at the interface of plant biology and other sciences.

They are collaborating with statistician Mathematics professor Yingcai Su to study gene expression patterns in ripening grape berries. Two undergraduate mathematics majors: Tracey Wharton and Matthew Knepper are also involved in the project. This interdisciplinary collaboration was built on an earlier project in which Yingcai Su joined forces with CGB to comparatively analyze the activity of genes in two diverse grape species. The results of this work have just been published in the journal *Genetic Resources and Crop Evolution*. It is one of the first papers on microarray analysis in grapevine, and the only one which presents large-scale gene expression data in a disease-resistant grape from North America.

The CGB also teamed up with Paul Durham, Biology associate professor and Richard Biagioni, Chemistry professor in studying the health benefits of polyphenolic metabolites of grapes – research which involves neurobiology, chemistry and agriculture. Aside from these efforts, the CGB is maintaining its focus on deciphering the molecular basis of disease susceptibility and resistance in grapevine. While the emphasis remains on fungal diseases, CGB researchers are working on identifying the causal agent of a severe virus-like disease which emerged in Missouri commercial vineyards a few years ago. More than 90% of Chardonnay vines exhibit disease in a commercial vineyard. The virus-like pathogens remain in the vegetatively propagated vines and can be transferred to other varieties by grafting. The new disease has been characterized at CGB, but the true identity of the pathogen remains a mystery.

## Ozarks Regional Herbarium

The Ozarks Regional Herbarium is housed in Kings Street Annex at Missouri State University and has over 100,000 specimens with 48,000 bryophytes and 53,318 vascular plants. The collections represent most of the introduced and native plants in Missouri. The date of the oldest collection is 1936.

This summer, approximately 2,000 specimens from students in Michelle Bowe's courses will be added.

Requests for loan of plant specimens and visits are continuously received because of the phytogeographic significance of the Ozarks (Study by Herbarium Associates). Over the years, many students got their start in systematics working with the staff and using the herbarium.

The herbarium is also supported by extensive holdings of journals and reference books in the fields of plant systematics, plant ecology and plant geography. Some of the subjects available are: Wildflowers of the Ozarks, Poisonous Plants, Vegetation of the Ozarks, History of Ozark's Vegetation and Guided Wildflower Walks.

The herbarium is registered in Herbaria of the World as Missouri State. As a registered herbarium, specimens may be borrowed from other herbariums for study.

If you would like to visit the herbarium, contact Michelle Bowe at 417-836-6189 or e-mail: MBowe@missouristate.edu.



**Virus-like symptoms appear on Chardonnay vines after they were propagated from hardwood cuttings, suggesting that pathogens can spread via vegetative propagation.**



**Virus-like symptoms appear on Cabernet franc variety after grafted with sick buds from the original diseased Chardonnay vines, proving that agents are graft-transmissible.**



# Biology Students Conduct Research on Pain Blockers

by Daphne N. Smith

If you've ever experienced migraines, sinus pain, or jaw pain, you can rest assured that the students in Dr. Paul Durham's laboratory are working hard to help make that pain a thing of the past. Most of their research involves treatments designed to reduce the amount of CGRP secreted by neurons. CGRP is a protein that is a marker for pain. The higher the levels of CGRP produced by neurons, the more pain the individual experiences. Graduate research assistant Debra Deloach described CGRP as "the million-dollar molecule"—discovering how to block it would represent a giant step in the treatment of migraines and other pain associated with the trigeminal nerve system.

The researchers in Dr. Durham's laboratory work on projects funded by pharmaceutical companies such as Merck, Glaxo-Smith-Kline, Allergan, and Ortho-McNeill to test a variety of compounds with potential to act as CGRP blockers. Carrie Vause, a research scientist who received her Master's degree in Biology from Missouri State in December, explained that they are using radioimmunoassays (RIA) to measure the human CGRP levels produced by neurons in response to each treatment. Another method

they use to determine the responsiveness of the neurons is fluorescence microscopy, which allows them to use fluorescent dyes to visualize the CGRP produced in the trigeminal ganglia. Filip Garrett, one of the graduate students using fluorescence microscopy, described the importance of gap junctions in this research. "Gap junctions form where connexin proteins meet and are likely to play an important role in initiating and maintaining inflammatory responses in the trigeminal ganglia."

Graduate research assistant Srikanth Thalakoti recently co-authored a paper published in the journal *Headache* about the function of gap junctions and the communication between neurons and glial cells. He injected capsaicin (another protein) into rats to activate the trigeminal nerves and create an inflammatory response in the jaw or temporomandibular joint (TMJ). At intervals of 15, 30, 60 and 120 minutes, he removed the trigeminal ganglia from some of the rats and stained the ganglia using a blue dye for monitoring gap junction activity. When he looked at the ganglia under a fluorescence microscope, he found that over time, the dye moved from cell-to-cell through gap junctions rather than leaking into the intercellular tissue. This type of cell-to-cell communication is likely to be involved in the underlying pathology of TMJ disorders and migraine. This was a very exciting result which also earned him an invitation to speak at the National Headache Foundation Research Summit meeting in Palm Springs, California earlier this year.

Graduate student Stanka Kankipati is also working on the problem of pain. Clinical studies on humans have indicated that carbon dioxide helps relieve migraine pain; however, very little effort has been made to determine exactly how the carbon dioxide treatment works. Kankipati exposed rats to the carbon dioxide treatment for 40 seconds, then removed the trigeminal ganglia and viewed it for signs of increased gap junction activity. He concluded that the treatment blocks the gap junctions, which prevents CGRP from being released from neuronal cells.

There are currently twelve students and three staff members (all of whom were previously Missouri State graduate assistants) working in Dr. Durham's lab.



## Missouri State University impacts on science education

Department of Geography, Geology, and Planning professors Dr. Kevin Evans and Dr. Kevin Mickus are serving as mentors in a cooperative educational and research effort with Springfield's Kickapoo High School. Last fall, Drs. Evans and Mickus helped Katie Click, a Kickapoo senior and her Earth Science teacher, Rick Snyder, use sophisticated geophysical equipment owned jointly by Missouri State University and the Watershed Committee of the Ozarks to elucidate the structure of the Haviland meteorite crater near Greensburg, Kansas.

At the joint meeting of the North-Central and South-Central Sections of the Geological Society of America held this spring in Lawrence, Kansas, Katie presented a paper titled "Ground-penetrating radar (GPR) profiles of Haviland Crater, Kansas" and Rick presented a paper on "Integrating new technology and research in secondary school Earth Science education." Katie plans to enroll at Missouri State University this fall and major in geology.



**Kickapoo High School Earth Science teacher Rick Snyder confers with senior Katie Click over the mobile ground-penetrating radar instrument.**

# CNAS NewsBriefs

## Alumni Profiles

### Dr. Dorothy Simon

"If you give happiness to other people – it's like perfume; a few drops get on you." Dr. Dorothy Simon shares these words of wisdom as her philosophy of philanthropy. Missouri State University has been one of the places touched by Dr. Simon's generosity, and the department of Chemistry is proud to announce a new undergraduate fellowship which will memorialize Dr. Simon's father, Dr. Richard Martin, a former chair of the Sciences here at the University and a great humanitarian in his own right.

After leaving Missouri State as the first 4.0 student in the school's history, Dorothy went on to achieve notoriety as a prominent research scientist in the field of internal combustion. Her career included time spent at NACE (now NASA), DuPont and with the Atomic Energy Commission. Dr. Simon retired as Vice President of Avco Corporations to begin her own consulting company, Simon Associates. At the height of her career she was recognized by Business Week as one of the "Top One Hundred Corporate Women in the U.S."

As impressive as her credentials are, the love she exhibits for her alma mater is even more so. When asked her about her affinity for the University, she says, "I guess growing up there and living right across the road for all those years just got to me." We are certainly glad it did, Dr. Simon!

### Dr. Jerry Atwood

Dr. Jerry Atwood graduated with a BS in Chemistry in 1964. He is currently Curator's Professor and Chair of Chemistry at the University of Missouri-Columbia. World-renowned as an expert in the field, Dr. Atwood often serves as a star witness in high profile lawsuits.

Jerry fondly recalls the professors he knew here during his undergraduate career. He recently established a new Missouri State scholarship in honor of his favorite professor, Dr. William Husa, now retired and residing in Florida. Upon learning of the award established by his former student, Dr. Husa said, "He [Dr. Atwood] was always my shining star." It seems that Dr. Atwood has been destined for celebrity for many years!

### Gary Tompkins

Gary Tompkins, Vice President of Ag/Business at FCS Financial, was not a stellar student – or so he tells us. "If it weren't for Dr. Bernie Warren taking me to the 'academic woodshed' and telling me to get my act together, I would never have graduated from the University." It was largely through the efforts of Dr. Warren and the late Dr. J.N. Smith that Gary finished college and secured his first position at the then-named Farm Credit Services, now FCS Financial. It was obviously a good fit – Gary has been there for over 20 years, even returning after a year-long sabbatical as National President of the United States Junior Chamber (Jaycees) where he remains active on their foundation board. Today Gary and wife Sydney reside in Eldon, Missouri and still work the family farm.

## Professor travels miles for public service program



Traveling by bicycle, on foot and by car, Dr. Mike Roling will cover 10,000-13,000 miles this year throughout the Ozark region as he participates in the Missouri Department of Agriculture Gypsy Moth Program. He has been involved with the program for 14 years as a "trapper" and is also a member of the Advisory Committee.

In the past three years, Mike has made four trips to Jefferson City by bicycle. The 240-mile, 3-day trip consists of cycling on busy highways, back roads and miles and miles of trail. He travels with a tent, sleeping bag, extra clothes and bicycle repair tools. He takes a few items of food, but says that finding unique, out-of-the-way cafes and restaurants in small towns is part of the experience. He always finds an interesting person or two to strike up a conversation with.

Day 1: Mike leaves Springfield and travels the Ozark Greenways Frisco Highline Trail to Bolivar. He describes the first day as a leisurely trip. Day 2: Traveling on Highway 13 to Clinton where he reaches the Katy Trail. Day 3: Travel on the Katy Trail to Jefferson City. He describes the ride into Jefferson City on the 6-lane bridge as exhilarating!

The Ozark Greenways trails are filled with wildlife. Coyote, deer, snakes, snapping turtles and other wildlife are seen on a regular basis. On a recent cycling trip, Mike came across a mother bobcat with her two cubs playing and wrestling on the trail. The cubs were oblivious to the cyclists, but Mom wasn't!

The purpose of the ride to Jefferson City is to meet with the Advisory Committee to discuss plans for this year's gypsy moth tracking and to pick up the vehicle and tracking supplies for the summer's survey.

Right now, the gypsy moth is classified as only a threat in Missouri. Ten gypsy moths were captured in 8 counties in 2005 in the state. However, the moth already occupies most of the northeastern United States and moth populations spread about 15 miles per year. That means a major moth infestation will be in Missouri around the year 2030. That seems like a long way off, but when the moth gets here, it will cost the state many millions of dollars in lost forest products, tourism, real estate revenues and will threaten water quality. Missouri forests could be devastated because one of the moth's favorite food is oak leaves and Missouri forests have a high percentage of oak trees. Gypsy moth caterpillars can kill trees in the second season of their attack.

Moths can be brought into Missouri accidentally from infested states, as was the case in the 1990s in Dent County and in northern Arkansas near Branson. These infestations were controlled, delaying the introduction of gypsy moth for the time being.

About 12,000 traps will be set in Missouri this year. Mike will set about 400-600 traps in his designated counties of Greene, Stone and Taney. For the past three years, the program has used GPS devices to record coordinates of traps. "The GPS has made our job easier. Previously it took many hours to process data. Now we record the coordinates with the GPS when we set the trap, and then we just download the information. The download is complete in about 5 minutes. It has advanced the program tremendously."

Agencies providing personnel and resources to conduct the survey are the Missouri Department of Agriculture, the Missouri Department of Conservation, USDA APHIS, USDA Forest Service, US Department of Defense, Missouri National Guard and US Fish & Wildlife Service.

Mike gives a lot of credit for the success of the program to the public. Traps are normally placed on private land where he spends a lot of time talking with people and explaining the program, the impact the moth will have on Missouri and what MDA is doing to control the population. "People are generally very interested in the program and are cooperative. Every once in awhile you meet with someone who is convinced the government is plotting against them or has other strange ideas, but for the most part, the people are great! I really enjoy talking with them."

More information about the gypsy moth program can be found at: <http://mdc.mo.gov/forest/health/gypsy/>.



# CTM Department hosts “Dream” Fashion Show

The Clothing, Textiles, and Merchandising Department had yet another successful spring fashion show. “Dream” was held on April 21 at the Oasis Convention Center. The show featured 81 original designs from design students and a Senior Collection designed and constructed by 20 senior design students. Fashions ranged from crazy skirts to formal dresses to men’s suits.

The Fashion Show Production class worked in four different committees to produce and plan this year’s show.

- The Modeling Committee held modeling auditions to secure models, arranged for hair and makeup for over 150 models and worked with the photographer and videographer.
- The Staging Committee designed the stage, props, and backdrops along with securing the music and MC. This year’s MC was Erin Israel from KOLR 10.
- The Public Relations Committee set a goal of \$9,000 (approximately \$2,000 more than last year) for the show’s expenses and scholarship fund. The goal was reached by holding two fundraisers: Panera Night and a Zio’s event. They also raised funds by selling ads to local businesses, merchandisers and parents of senior designers that were displayed in the program.
- The Garment Committee held the Jury of Selection, designed and sold t-shirts as well as securing, labeling and the transportation of 200 garments to the show. They also recruited dressers and finalized the show’s line-up.

The Jury of Selection was held on March 31st and April 1st to determine which original design garments would be featured in the show. Judges selected 80 out of 150 garments to walk down the runway. Judges were Gerri Mack from MACK and CO; Meghan Stack-Chambers, owner of Staxx Apparel and Donna Charles, lead buyer for Town and County.

Senior design students designed 5-8 pieces throughout the spring 2007 semester. This year’s collection ranged from wedding dresses to athletic wear. Jurors evaluated each garment on advanced construction, creativity, target market, price range and marketability and gave helpful advice and constructive criticism. After seniors made corrections or alterations to their garments as suggested by the jury, their collections were then debuted in the fashion show.

Senior Collections jurors were Laura McGrew, owner of TomBoy in Kansas City; Torrye Brown, designer for Capstone in Kansas City; Allyson Thornton, product development and design for Target in Minneapolis and Melody Edmondson, fashion industry consultant from Arizona.

No seam was left unturned. All the hard work over the past four months from the students and instructors paid off. There were approximately 1,200 guests in attendance at the sold-out show, the largest-attended fashion show thus far.



# CNAS NewsBriefs

## Retirements

### William Cheek, GGP & CNAS

Dr. Bill Cheek will retire July 1, 2007 after 34 years at Missouri State University. He joined the Department of Geography, Geology and Planning in 1973.

Bill received his B.A. in 1965 and M.A. in 1967, both in geography, from Arizona State University. He completed his Ph.D. in geography from Michigan State University in 1976. Additionally, he passed the national exam to become a member of the American Institute of Certified Planners in 1991. Bill served as Assistant and later Associate Dean, College of Natural and Applied Sciences from 1991 until accepting his current position as Acting Associate Provost in August, 2006. He led the University’s successful Higher Learning Commission re-accreditation efforts in 1995 and again in 2005.

He is a member of several professional organizations including the Association of American Geographers, American Planning Association, and the American Institute of Certified Planners. Bill serves on the Aviation Advisory Committee for the Missouri Department of Transportation. Additionally, he serves on the board of directors of the Missouri Chapter, American Planning Association, Missouri Pilots Association, the Watershed Committee of the Ozarks and the James River Basin Partnership.

### Jim Broerman, PAMS

Dr. Jim Broerman retired April 1, 2007 after teaching graduate and undergraduate physics at SMSU/MSU for 16 years. He received both his undergraduate and his Ph.D. degrees in Physics at Saint Louis University. During his tenure at Missouri State, Broerman taught a number of undergraduate and graduate courses and served as coordinator of the graduate program in Materials Science.

### Richard Myers, Biology

Dr. Myers began his teaching career at Missouri State (then Southwest Missouri State University) in 1972 and retired in May of 2006. He continued to teach biology courses part-time through the Spring of 2007. He received his BS degree from Delta State College in Cleveland, Mississippi and his MS from Memphis State University. He earned his PhD from the University of Oklahoma in Norman, Oklahoma. Dr. Myers has been very active in several professional organizations including serving as President, Vice President and Sec.-Treas. for the Missouri Branch of the American Society for Microbiology, served as a National Counselor; and was the Director of Biological Sciences for the Mo. Academy of Sciences.



# CNAS NewsBriefs

## Schmitt receives Alumni Professorship

Dr. Dennis Schmitt, animal science professor, has been named the recipient of the new Alumni Professorship in Reproductive Biology – the first endowed professorship in the College of Natural and Applied Sciences (CNAS).

Schmitt, who also serves as chair of veterinary care and director of research for Ringling Bros. Barnum and Bailey Circus®, used the endowment to establish a junior research scientist position and increase the efforts of the university's reproductive biology lab. The reproductive laboratory operates as a service and research laboratory investigating unique methods of monitoring reproductive status in elephants, blue iguanas, North American river otters and several other species.

During his professional career, Schmitt has consulted with zoos across the country, as well as a few in England and other areas in Europe. He has taught several workshops for veterinarians working with elephants in India. He has been active in helping develop a model elephant camp in Sumatra for captive elephants through the International Elephant Foundation, an organization which he helped found.

## Young Honors College Professorship Awarded

Mark Richter, associate professor of chemistry was awarded a Young Honors College Professorship in April. Three professorships were established due to a gift commitment from a private donation and will provide annual funding for the appointment of three faculty members as Honor College Professors.

The Honors College provides a program of enhanced, advanced study and recognition for students of unusually strong academic achievement and motivation. Students are provided with intellectual opportunities beyond those generally found in the more traditional programs.

The professorship includes an annual stipend and is renewable up to three years.

Dr. Richter plans to develop a second honor's chemistry course, help students look for fellowship/scholarship opportunities, and seek out honors students to assist with research opportunities.

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Biology Graduate Student **Ryan Combs** was awarded a Theodore Roosevelt Memorial Fund Grant from the American Museum of Natural History in the amount of \$1660 to support his research. The competition for the Roosevelt Grant is open to advanced graduate students (both MA/MS and Ph.D.) and postdoctoral researchers, so Ryan's award is quite an accomplishment.

Ryan's research involves the impact of post-Pleistocene recolonization history and dispersal behavior on the genetic structure (phylogeography) of Western Cottonmouths (*Agkistrodon piscivorus leucostoma*).

The grant will be used to defray the cost of travel to collect the snakes and the laboratory expenses to sequence their DNA. Ryan is a student in Dr. Mark McKnight's lab.

## Chemistry Department celebrates with SURF Reception

On August 2nd 2007, The Chemistry Department will celebrate the establishment of the Chemistry Summer Undergraduate Research Fellowship program with a special reception and poster session showcasing the efforts of our SURF students (along with other Chemistry Department scholars).

Please join us in the Temple Hall Atrium beginning at 5:00 pm for light refreshments and a brief program where our students will present their summer research. Tours of Temple (highlighting our labs and equipment) will also be given. We would be honored if you would join us for this unique opportunity to learn about the impressive things our Chemistry Department is doing!

## Expanding Your Horizons

Expanding Your Horizons (EYH) is an annual one-day conference offered to young women grades sixth, seventh and eighth. This year's conference will be held on the campus of Missouri State University on September 29.

The conference offers participants a chance to get involved with scientific learning through hands-on activities and the opportunity to talk with women scientists and professionals from the community about their careers, work experience and education.

This year's theme is "Footprints." Registration begins on August 20 and ends September 13. More information can be found at <http://www.cnas.missouristate.edu/eyh>.

## Interior Design students give back to the community

Nancy Asay's Contract I Interior Design students designed, presented, and specified a multipurpose room for the Family Violence Center. The room functions as reception area, personal phone area, mail room, office area, and small private meeting space. The students were very successful in meeting all of the client's requirements.

The final presentation was also given to the Springfield Homebuilders Association as a project that they could adopt.

The Family Violence Center was so appreciative of the class project they sent a thank you letter to Ms. Asay's class expressing their deep gratitude for the tremendous job the class performed.





## Welcome new members of the Founders Club at Missouri State University!

On June 29th the University will host its most spectacular event of the year exclusively for members of The Founders Club. The dinner, held at the University Plaza Hotel in Springfield, commemorates the individuals and organizations that have chosen to make a difference in lives of Missouri State students through outstanding philanthropy.

The Founders Club of Missouri State University is the University's most prestigious organization for recognizing major donors. Individuals, businesses, foundations and organizations who have made a minimum commitment of \$10,000 to the Foundation will come together to celebrate the highlights and achievements of fiscal year 2007, which will conclude on June 30.

In addition to a wonderful meeting of Missouri State friends and family, attendees will enjoy a sumptuous meal and live entertainment.

The theme for the 2007 dinner is "For Your Eyes Only: 007", and we are certain that attendees will be "stirred" by the program in store. This will be my first Founders Club event, and I can't wait to see all the wonderful people that help build the University that I love – all together in one place!

For those of you who are not already members of The Founder's Club, please note:

While a minimum gift of \$10,000 dollars does represent a very significant contribution to the University, membership in The Founders Club is not out of reach for most of those who are committed to supporting higher education.

- The minimum requirement for membership is \$10,000 in cash, securities, or real or personal property.
- Pledges may be paid in installments for up to ten years (that's just \$83.33 per month or \$1,000 per year - if starting with no previous gifts).
- Planned gifts through a bequest, life income agreements, trust agreements, or other acceptable planned or deferred giving instruments are acceptable forms of pledge funding.
- The minimum gift requirement includes any gifts from a matching employer (i.e. if your employer matches charitable contributions 100%, you may join The Founders Club with a personal commitment of just \$5,000 – payable over ten years -- or, \$500 per year from you and \$500 from your employer through the matching gift program.\*

Though it would be wonderful to see dozens of new members to The Founders Club each year, I can't stress how important it is for each of us to participate in the advancement of the University in our own way. Certainly a gift of any size can make a significant impact, as can a word of encouragement, a letter of thanks, or a job well done. I challenge you to simply remember your University.

If you would like more information about joining The Founders Club or about contributing to the University in another way, please contact me at 417-836-5161 or by email at [jtrussell@missouristate.edu](mailto:jtrussell@missouristate.edu).

\*Donors must fill out the necessary paperwork for matching gifts and send it to the Foundation.

# CNAS NewsBriefs

**Ben Anders**, a graduate student in the Biology department, recently received the Linnaeus Fund Award of \$1,000 for a research proposal he submitted to the Chelonian Research Foundation.

The grant will be used to fund Anders in his research of the reproduction biology of three endangered Asian turtle species. Anders will be collaborating on this project with his advisor, Dr. Don Moll.

"This work has important ramifications for the rehabilitation of these species, as it is important to produce balanced sex ratios in hatchlings incubated in captivity that are destined to eventually be released back into natural habitats," Moll said.

Anders primarily focuses on turtle biology and conservation measures. "This study's results should facilitate action plans regarding the hopeful recuperation of these turtle species," he said.

Anders was one of only five students across the country to receive the award this year.

**Rebekah VanWey**, Geospatial Sciences major has been awarded a scholarship from the National Association of Geoscience Teachers to attend University of Missouri's field geology course this summer. Eighteen recipients from 92 well-qualified applicants nationwide received this award. **Congratulations, Rebekah!**

## In Memory of

**Dr. J.N. Smith**, emeritus professor of Agricultural Business at Missouri State University, passed away Dec. 16, 2006, at age 75.

In 1959 Smith came to the Springfield campus from the University of Missouri-Columbia to help develop the agricultural economics program. Smith was founder of the Agricultural Industry Study at the university and was involved with the project for over 25 years. Smith retired in 1999.

"Dr. Smith's greatest joy seemed to come after he had just helped some student, their family, business person or colleague through a serious challenge," said Dr. Anson Elliott, Department of Agriculture head. "His impact has been felt by thousands of individuals. He will be fondly thought of and truly missed."

**Dr. Joseph Trigg**, emeritus professor of Computer Science, passed away on December 18, 2006 in Jefferson City, Mo.

Dr. Trigg retired as an Associate Professor of Computer Science after 16 years of teaching at Missouri State University. He served for eleven years as Director for the Mid-Central USA Region of the ACM International Collegiate Programming Contest, and was recognized for his service in 2002. The annual regional contest typically has 120 teams representing 75 universities, competing simultaneously at ten sites in five states.

Joe was well-known for spending time with students and his customary greeting, "Hey, doc!" to everyone he knew.





## Upcoming Events 2007

June 29	Missouri State Board of Governors Meeting Mountain Grove Campus
June 30	Missouri Strawberry Plasticulture Workshop Mountain Grove Campus
July 10	Mountain Grove Advisory Board Meeting Mountain Grove Campus
July 22-27	Missouri Minerals Workshop Missouri State University
August 3	CNAS Summer Graduation Reception
August 3	Summer Commencement
August 15	State of the College Address 3:00 p.m. - Missouri State University
Sept. 29-Oct. 1	Missouri Association of Herpetologists Bull Shoals Field Station
September 5	Missouri Cut Flowers: From Field to Market Mountain Grove Campus
September 29	Expanding Your Horizons Missouri State University
October 12-15	Central Plains Society of Mammalogists Bull Shoals Field Station
October 26-27	Homecoming Missouri State University
December 13	CNAS Fall Graduation Reception
December 13	Fall Commencement

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