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Ogden College of Science & Engineering Newsletter (Fall 2012)

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Ogden College of Science & Engineering

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College/Department News



Annual Gunsmithing Seminar Provides Unique Opportunity for Participants

Darrin McDonal of Illinois was among more than 60 participants who attended the 31st annual NMLRA Gunsmithing Workshop and Seminar, hosted by WKU's Department of Architectural and Manufacturing Sciences. (WKU photo by Clinton Lewis) ([full story](#))

SkyTeach Students, Faculty, Staff Attend UTeach Institute National Conference

Students, faculty and staff in [WKU's SKyTeach program](#) presented five research posters, two program promotional posters and four presentations recently at the 2012 UTeach Institute's National Conference in Austin, Texas. ([full story](#))



Hoffman Institute Joins WKU-Habitat for Humanity Durbin Project

The [Hoffman Environmental Research Institute](#) is the newest partner to join the WKU-Habitat for Humanity Durbin Project. This project will develop an integrated green infrastructure, green building, mixed-income, mixed-use neighborhood on a 14.3-acre site owned by the [Bowling Green-Warren County Habitat for Humanity](#) as a statewide demonstration.

Initial funding for the Durbin Project was awarded by the Kentucky Division of Water through a grant from the Environmental Protection Agency. The grant is administered by the WKU [Center for Environmental Education and Sustainability](#), which has the mission to work with a broad set of stakeholders to provide resources and leadership to advance education for a sustainable future through educational programs, professional development, community service, and research. ([full story](#))

WKU Offers State's First Elementary Mathematics Specialist Endorsement

WKU now offers an elementary mathematics specialist endorsement, the first program of its kind in the state. Through a partnership between WKU School of Teacher Education and WKU Online Learning, the [Elementary Math Specialist \(EMS\) Endorsement](#) provides teachers, teacher leaders and math coaches with instruction in math pedagogy, problem solving and assessment with a concentration in technology and diverse learners. ([full story](#))

Deans Gifts to WKU Graduates: First-year Dues for Alumni Association

WKU students graduating this weekend will be getting an unexpected present, courtesy of their academic dean: first year membership in the [WKU Alumni Association](#). [\(full story\)](#)

WKU Storm Chasers Prepare for Annual Forecast Adventure Across Great Plains

During WKU's May 2012 summer term, eight meteorology students in Dr. Josh Durkee's annual *Field Methods in Weather Analysis and Forecasting* course will set out to forecast, analyze and document severe convective storms across the Great Plains.



During his 2011 course, WKU's Josh Durkee captured this image of a severe storm moments before a tornado developed and headed toward Joplin, Mo. Eight meteorology students will be participating in this year's course from May 17-31.

This will be the third year of this course offering at WKU, which won the 2010 "Creativity and Innovation Award" from the North American Association for Summer Programs. [\(full story\)](#)

Geography and Geology Class Studies Diverse Landscape History of Ozarks

A group of [WKU geography and geology](#) students participated in a fieldtrip winding through the Ozarks, including the Salem Plateau and the St. Francois Mountain area of southeastern Missouri, as part of a Spring 2012 course in Geomorphology taught by Dr. Jason Polk. [\(full story\)](#)



During a geomorphology course in Missouri, a WKU group explored Elephant Rocks State Park. From left are Gil Oullette, Kyle Hogancamp, Nancy Toney, Evan Crowe, Ben Miller, Jenna Nall and Micah Ruth.

WKU Storm Chasers document five tornado touchdowns during 2012 course



A May 28 wind storm near Olney, Texas, was among the severe weather documented by WKU Storm Chasers. (Photo by Josh Durkee)

The May 2012 summer term was the third year that Dr. Josh Durkee's *Field Methods in Weather Analysis and Forecasting* class set out across the Great Plains, forecasting and verifying a wide variety of severe weather. As with previous years, the WKU group accomplished much success in their mission. ([full story](#))

Mesonet adding Todd County site

The [Kentucky Mesonet](#) is expanding its weather and climate monitoring network to Todd County. The Mesonet's 64th station will be installed this summer between Elkton and Trenton on a farm owned by Carl Jenkins. ([full story](#))

State climatologist, soil scientist survey intensifying drought conditions

Unless you're living in a cave, you know that June weather conditions have been hot and dry in many areas, especially in far western Kentucky. ([full story](#))



State climatologist Stuart Foster photographs a cornfield in far western Kentucky. Foster visited the region in late May and returned on June 25 to compare how dry conditions have impacted crops. He expects to make another visit to the area in late July. (WKU photo by Tommy Newton)

Meteorology students research March tornado event in eastern Kentucky

For WKU's five-week June 2012 summer session, Dr. Josh Durkee designed an undergraduate research seminar for meteorology students. ([full story](#))

Engineering program's submersible device moves toward commercialization

Faculty, staff and students in WKU's [Department of Engineering](#) are working to take a remotely operated submersible project to a new level. The portable underwater device was developed in 2008 for the Warren County Rescue Squad and remains in use today. However, staff engineer Ron Rizzo and electrical engineering faculty member Stacy Wilson have continued their efforts to commercialize a more cost-efficient model that could be used for bridge inspections, cave exploration, troubleshooting water and sewer systems, and other research activities. ([full story](#))

Follow along as state climatologist visits drought-stricken western Kentucky

Today (July 27), state climatologist Stuart Foster, director of the [Kentucky Climate Center](#) and the [Kentucky Mesonet](#) at WKU, is making his third trip of the summer to drought-stricken areas of western Kentucky. ([full story](#))



Darwin Newton told Dr. Stuart Foster about another field on his family farm in Webster County. Even though yields will likely be lower, Newton was pleased with his corn and soybean fields after seeing other crops on a tour of western Kentucky.

‘Curiosity on Mars’ featured in presentation at Hardin Planetarium

On Aug. 6, NASA’s 2,000-pound robotic rover named Curiosity landed on Mars for a 98-week mission. Curiosity is the biggest and most advanced laboratory ever to investigate another planet. A continuously updated presentation at WKU’s [Hardin Planetarium](#) will include the most current news from the red planet and discuss the history of Mars exploration, how Curiosity compares to previous missions, and the initial shakedown of the scientific instrumentation. ([full story](#))

International



11 Students Participate in 12-day Wildlife Management Class in South Africa

WKU biology professor Michael Stokes led a group of 11 students on a 12-day African wildlife management class in June. As part of [BIOL 485 Field Biology African Wildlife Management](#), the WKU group, working with [Parawild Edu-capture](#), captured giraffe, crocodile, buffalo and tsessebe (a large antelope). The class also

visited Kruger National Park, Moholoholo Wildlife Rehabilitation Center, Khamai Reptile Center, Elephant Whispers (an elephant sanctuary) and a crocodile farm. (*Photos courtesy of WKU photojournalism student Sam Oldenburg*) ([full story](#))

WKU Faculty Member Leading Habitat Service Trip to Trinidad and Tobago

Bryan Reaka, a faculty member in WKU’s [Department of Architectural and Manufacturing Sciences](#), will be leading a [Habitat for Humanity International Global Village](#) short-term service trip to Trinidad and Tobago on May 19-27. The team will consist primarily of members of the [WKU Campus Chapter of Habitat for Humanity](#), alumni and others who are willing to carry out the vision statement of [Habitat for Humanity International](#) and become a world where “everyone has a decent place to live.” ([full story](#))

Keeling makes 3 international trips for research presentations, projects



Over the past two months, Dr. David Keeling, head of WKU's [Department of Geography and Geology](#), has made three international trips traveling more than 30,000 miles.

He returned on July 6 from Edinburgh, Scotland, where he presented a research paper at the annual conference of the Royal Geographical Society. With co-authors Dr. Holli Drummond, associate professor of sociology at WKU, and Dr. John Dizgun, assistant director of the Kentucky Institute for International Studies (KIIS) and adjunct faculty in the Department of Geography and Geology, Keeling presented "Accessibility and Mobility in a Conflicted City: Medellín, Colombia," reporting on recent work on the

changing fortunes of Comuna 13, a poor neighborhood sprawled up the western slopes of the Andes mountains. [\(full story\)](#)

WKU students serve as interns at GIS international conference

For the 12th consecutive year, students from WKU's [Department of Geography and Geology](#) served as interns for a Geographic Information Systems (GIS) international conference. [\(full story\)](#)



WKU students (from left) Dustin Horn, Thomas Woodall, Josh Montgomery and Huajian Zhang attended a GIS conference in San Diego.

Awards/Recognitions

USDA Honors WKU Graduate Student for Agricultural Work in Afghanistan

Agriculture Secretary Tom Vilsack recently recognized the efforts of 62 U.S. Department of Agriculture (USDA) employees who have helped revitalize the agricultural sectors in Afghanistan and Iraq. Among those honored during a ceremony June 4 was WKU biology graduate student **Robert Moore** of Lavinia, Tenn., who served as an agricultural advisor in Balkh, Samangan, Sar-e-Pol and Jowsjan Provinces, Afghanistan, from 2010 to 2011. [\(full story\)](#)



2 WKU Graduates Awarded Fulbright Grants to Study Abroad

For the sixth year in a row, WKU students have been awarded [Fulbright](#) grants to spend a year studying and working abroad. May 2012 graduates Mario Nguyen and Alyssa Surina are the

latest recipients. [\(full story\)](#)





2 WKU Students Earn Honorable Mentions in 2012 Udall Scholarships

WKU students John Clark of Bowling Green and Abby Rudolph of Louisville earned honorable mentions for the 2012 [Morris K. Udall](#) scholarship competition.



Established by Congress in 1992, the Udall Foundation provides scholarships for students who have demonstrated commitment to a career related to the environment, tribal public policy, or Native health care. This year the Udall Foundation recognized just 130 university students through this scholarship program. Both Clark and Rudolph plan to pursue careers within the environmental field. ([full story](#))



2012 Student Awards: Ogden College of Science and Engineering

WKU's [Ogden College of Science and Engineering](#) honored its outstanding students during an annual awards ceremony. ([full story](#))



WKU Chemistry Student Receives NSF Graduate Research Fellowship

WKU student Nicholas Wright has been awarded a [National Science Foundation Graduate Research Fellowship](#).

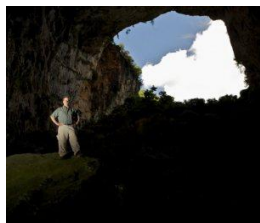
A chemistry major from Berea, Wright works in the lab with Dr. Hemali Rathnayake, assistant professor of chemistry. His research has focused on solar energy, specifically working to construct nanoscale carbon-based materials to produce cost-effective portable solar plastics. ([full story](#))

WKU graduate to lead science/resource management area at Mammoth Cave

Superintendent Patrick Reed announced that WKU graduate Bobby Carson has been selected as the Chief of the Science and Resource Management Division of Mammoth Cave National Park. Carson is a 35-year veteran of the National Park Service, with most of his years at Mammoth Cave. ([full story](#))



Groves named ministry-level finalist for national award in China



China's Ministry of Land and Resources has named WKU Hydrogeologist Chris Groves as a finalist for the 2012 People's Republic of China Friendship Award, that country's highest award honoring foreign experts working in China. ([full story](#))

Chris Groves at the entrance to Yunan Cave.

Foster new president of American Association of State Climatologists



State climatologist Stuart Foster, director of the [Kentucky Climate Center](#) and the [Kentucky Mesonet](#) at WKU, is the new president of the [American Association of State Climatologists](#). [\(full story\)](#)

Keeling appointed as University Distinguished Professor

Dr. David Keeling, an internationally renowned expert on Argentina and global transportation issues, has been appointed a University Distinguished Professor at WKU.



Dr. David Keeling on the Trans Siberian Railway at the dividing point between Asia and Europe in Russia.

Dr. Keeling is a professor of geography and has served as the head of the [Department of Geography and Geology](#) since July 2001. WKU's Board of Regents approved the five-year appointment on July 27. [\(full story\)](#)

Gheens Foundation makes gift to support WKU's SKyTeach Program

A Louisville foundation has partnered with WKU to provide scholarships that will train future math and science teachers from Jefferson County. According to Kathryn Costello, WKU's Vice President for Development and Alumni Relations, the [Gheens Foundation](#) made a gift of \$50,000 to support WKU's [SKyTeach](#) Program. [\(full story\)](#)

Research/Grants

NSF Highlights WKU Research in Africa



WKU researchers are developing "high-tech scarecrows" to reduce crop damage by large mammals in Africa. From left in this photo on the Balule Nature Reserve in South Africa are Mark Cambren, faculty member in Department of Engineering; Molly DuVall, biology graduate student; Bruce Schulte, head of Department of Biology; Michael Stokes,

faculty member in Department of Biology; and Shilo Felton, biology graduate student. ([full story](#))

Group Visits Swine Operation for Look at WKU-USDA Animal Waste Research

About 50 soil scientists visited the Daviess County farm of swine producer Jerry O'Bryan (a 1974 WKU graduate) who is part of a collaborative research project between WKU and the USDA Agricultural Research Service Animal Waste Management Unit.

ARS is working to determine on-farm management and land application practices for sustainable management of swine compost. The project is one of several under way at the ARS national laboratory near the WKU Farm. The May 23 field trip to one of the state's largest swine operations was part of the weeklong [National Cooperative Soil Survey's Southern Regional conference](#), which is being held in Bowling Green. ([full story](#))



NSF grant supports workshop on Nuclear Magnetic Resonance

Nuclear Magnetic Resonance (NMR) is one of the most powerful technologies that provide useful structural information about chemical compounds. To foster knowledge of and facilitate access to this technology, WKU's Department of Chemistry hosted a thematic NMR workshop on June 18-21. ([full story](#))

NSF grant supports summer research experience at WKU

WKU's Department of Chemistry and Department of Geography and Geology are hosting a National Science Foundation Research Experience for Undergraduates (REU) program. ([full story](#))

WKU students conducting research on black rhinos in South Africa

WKU biology students John Clark, a Bowling Green senior, and Rachel Beyke, an Indianapolis junior, are conducting research on black rhinos in South Africa for their Honors Capstone Experience/Thesis projects. Clark is creating an index of the vegetation rhinos prefer to eat and Beyke is exploring the effect humans have on where rhinos choose to roam. ([full story](#))

WKU Chemistry Department receives \$267,000 research grant from NSF

WKU's [Chemistry Department](#) has received a \$267,000 grant over three years from the National Science Foundation (NSF) that will support an interdisciplinary project titled "Production of Highly Reactive Metal-Oxo Species with Molecular Oxygen and Visible Light for the Selective Oxidative Catalysis." ([full story](#))

Biotechnology research program prepares students for graduate school

Eleven students from across the United States and Puerto Rico have been conducting research and preparing for graduate school as part of a National Science Foundation (NSF) program this summer at WKU. WKU Biology Department's NSF Research Experiences for Undergraduates

(REU) program wrapped up on Aug. 3. Dr. Shivendra Sahi, Dr. Rodney King and Dr. Audra Jennings direct this grant-funded program that focuses on the interdisciplinary field of Investigative Biotechnology. [\(full story\)](#)