

KU Discovery & Innovation

News from KU Research

February 2014

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- 2 Large Data Management Genomic Biodiversity Summit
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"Water Issues in the West" Offers Regional Perspectives on Interstate Law and Policy



A lively and timely discussion of water-related issues that affect Kansas, the Great Plains, and the West is scheduled for Friday, February 28 from 3-6 p.m. at the Lied Center Pavilion. The event is sponsored by the [KU Water Research Planning Committee](#).

Featured speakers will be Mike Hayden, former Governor of Kansas and now executive director, Missouri River Association of States and Tribes, and Burke Griggs, consulting professor for the Bill Lane Center for the American West at Stanford University.

Hayden will offer a regional perspective on the Missouri River Basin and the effect it has on the states and tribal nations politically, economically and societally. He will also comment on the influence of multi-state and international agreements along the Colorado River, and discuss whether there are lessons to be learned from these agreements that can help influence and guide decisions within the Missouri River Basin.

Griggs will discuss the historical and current perspectives about how the boundaries of Kansas have influenced water decisions. He will provide an interstate perspective on agreements – past and present – that involve the Republican River and the Colorado River, asking whether there are lessons to be learned from these agreements that can help shape future water decisions. Griggs received a law degree from KU, where he teaches natural resources law as an adjunct professor.

Brad Loveless, director of Biology and Conservation Programs at Westar Energy and a member of the Kansas Water Authority, will serve as moderator. A reception will follow. For more information, contact Tricia Bergman, tricia.bergman@ku.edu (785) 864-3303. To RSVP for planning purposes, please email rgs@ku.edu by Tuesday, February 25.



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Reminder: Strategic Initiative Grant Proposals Due March 1

The final Level I proposal deadline for the 2013-14 academic year is Saturday, March 1 at 5 p.m. Proposals are submitted using a [secure, online system](#), and evaluated by the Research Investment Council. Level II proposals involving smaller amounts of funding may be submitted at any time, using the same system. See page 3 for descriptions of the three Level I awards announced in January.

KU Research: Mission Continues

In 2007, the Office of Research joined with the Graduate School to become Research and Graduate Studies (RGS). This has been a successful six-year relationship for both offices and for KU, reflected in the heightened emphasis in the *Bold Aspirations* strategic plan on research, doctoral education, and innovation.

With the appointment of Michael Roberts as dean of graduate studies, oversight of the Office of Graduate Studies (which includes the Self Graduate Fellowship and the Office of Graduate Military Programs) shifted to the Provost's Office in January. It now reports to Sara Rosen in her role as senior vice provost for academic affairs.



Existing RGS units and staff that were not part of Graduate Studies are now operating as the KU Office of Research, generally referred to as KU Research (see logo) or abbreviated when appropriate as

KURES. This includes the bi-campus KU Innovation and Collaboration (KUIC) technology commercialization group.

This change has no effect on the functions of the KU Center for Research, Inc. (KUCR), including Pre-Award Services, Post-Award Services, Contract Negotiations, Financial Services, or Research Integrity. The change also has no effect on our mission statement, which remains "To facilitate innovation, creative activity, discovery, and the application and dissemination of knowledge"

Steve Warren
Vice Chancellor for Research

March 3 Deadline for Vice Chancellor for Research Book Publication Award

The Vice Chancellor for Research Book Publication Award is sponsored by the Office of Research in cooperation with the Hall Center for the Humanities. The \$1,500 award assists in the publication of meritorious book manuscripts resulting from humanities research by KU faculty members. The award can be used to reimburse the author's expenses related to illustration or indexing costs, or to provide a subvention to the press publishing the book. [Application information is available online.](#)



Left to right:
Steve Warren,
Representative Lynn
Jenkins, Chancellor
Bernadette Gray-
Little, and Bala
Subramaniam.

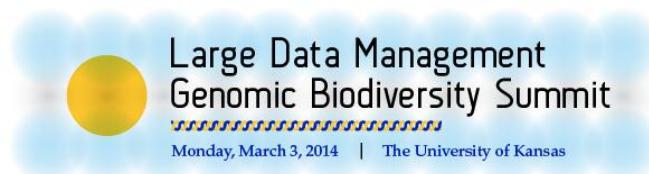
U.S. CONGRESSWOMAN LYNN JENKINS visited KU's Center for Environmentally Beneficial Catalysis (CEBC) on January 23. She received a briefing on the chemical biorefining initiative from Bala Subramaniam, director of CEBC, and learned more about the Bioscience & Technology Business Center at KU. Jenkins spent more than an hour at the CEBC and toured related spaces (above) in the Life Sciences Research Labs facility.

March 3 Summit to Address Large Data Management Genomic Biodiversity

KU Research and KU Innovation and Collaboration, in collaboration with the Office of the Provost, KU Information Technology, Microsoft Azure, and Internet2, will host a Large Data Management Genomic Biodiversity Summit on Monday, March 3. The free program begins at 9 a.m. at The Commons in Spooner Hall and concludes at 4:30 p.m. An opening reception is scheduled for Sunday, March 2, at 6:30 p.m. at The Oread.

[The full summit agenda is available online.](#) Invited speakers include representatives of Argonne National Laboratory, the Field Museum of Natural History, the University of Oklahoma, Microsoft, and Internet2. KU presenters include Jeff Vitter, provost and executive vice chancellor; Kris Krishtalka, director of the Biodiversity Institute; and Jorge Soberón and Pauly Cartwright of the Department of Ecology and Evolutionary Biology.

The summit is open to all interested persons. [Registration is required and available online.](#)



New Strategic Initiative Grants Support KU Research Projects

Three new University of Kansas research projects are the latest recipients of internal Strategic Initiative Grants, designed to achieve goals laid out in KU's Bold Aspirations strategic plan. The three Level I projects address significant global challenges and will receive more than \$982,000 in funding over the next three years.

"KU faculty and staff continue to make innovative proposals in response to this unique research opportunity," said Jeffrey S. Vitter, provost and executive vice chancellor. "By making focused investments, KU is able to build competitive research capacity by forming multidisciplinary teams to work on important, high-priority problems."

The three new projects involve 17 different researchers representing 12 different departments and centers at the Lawrence and Medical Center campuses. Each project is aligned with one or more of the Bold Aspirations strategic initiative themes: Sustaining the Planet, Powering the World; Promoting Well-Being, Finding Cures; Building Communities, Expanding Opportunities; and Harnessing Information, Multiplying Knowledge.

The latest award recipients:

- **"Sustainable Hydrocarbon Recovery in Unconventional Reservoirs" (\$299,000, two years)**

Participating researchers are Jenn-Tai Liang, Cory Berkland, Reza Barati, Jyun-Sung Tsau, Steve Johnson, Ed Peltier, Belinda Sturm and Karen Peltier, representing the Tertiary Oil Recovery Program, the Department of Chemical & Petroleum Engineering, and the Department of Civil, Environmental and Architectural Engineering.

KU already has a reputation for research into enhanced oil recovery in conventional reservoirs. This initiative will utilize a range of technologies and involve the formation of joint industry projects in four thrust areas: produced water treatments, hydraulic fracturing in shale formations, enhanced oil recovery in shale formations and reservoir characterization and simulation.

- **"Developing a Research Consortium on Aggression and Drug Abuse" (\$383,174, three years)**

Participating researchers are Marco Bortolato, Merlin Butler, Paula Fite, Erik Lundquist and Ann Manzardo,

representing the Department of Pharmacology and Toxicology, the Center for Molecular Analysis of Disease Pathways, the Clinical Child Psychology Program, the Department of Psychology and the Department of Psychiatry & Behavioral Sciences at KU Medical Center.

The consortium will be the first multidisciplinary network in the country for studying how and why pathological impulsive aggression and substance abuse and addition disorders exist concurrently but independently in a subject. Using a unique combination of clinical and preclinical studies, the goal is to develop effective preventive and therapeutic interventions.

- **"Creating a Center for Metagenomic Microbial Community Analysis" (\$299,925, two years)**

Participating researchers are Belinda Sturm, Sharon Billings, Stuart Macdonald, Jennifer Roberts and Ben Sikes, representing the Department of Civil, Environmental & Architectural Engineering, the Kansas Biological Survey, the Department of Ecology & Evolutionary Biology, the Department of Geology and the Department of Molecular Biosciences.

Microorganisms are abundant in humans, soils and waters throughout the world. Understanding the structure and function of microbial communities promises to provide revolutionary insights for human health, environmental sustainability, and energy generation. This project applies existing next-generation DNA sequencing and computing infrastructure at KU to advance knowledge of microbial communities in diverse environments.

The Research Investment Council, which reviews all Level I Strategic Initiative Grant proposals, has now recommended 12 Level I awards totaling nearly \$4.4 million since the program began in 2012. A number of smaller Level II awards have also been made.

The final Level I proposal deadline for the 2013-14 academic year is March 1. Proposals are submitted and evaluated using a [secure, online system](#). Level II proposals may be submitted at any time, using the same system.



“Research-to-Products” is Theme for Bi-Campus Summit

KU Innovation and Collaboration invites you to participate in the Kansas Research-to-Products Summit on Monday, February 24. It’s a free, bi-campus, TED-style event, featuring the perspectives of senior leaders from the medical devices industry and The University of Kansas Hospital. Also featured will be a presentation by an M.D. physician innovator and case studies of academic research developing into commercial opportunities.

The goal of the summit is to inspire collaboration amongst attendees to help build and grow a robust medical device industry in the region. [Event registration is online.](#) Direct questions to [Bethany Scothorn](#), KU Innovation and Collaboration, (785) 864-6457.

Summit Agenda

- 8 a.m.
Welcome by Jeff Vitter, Provost and Executive Vice Chancellor
- 8:10 a.m.
Bob Page, President and CEO, The University of Kansas Hospital
- 8:30 a.m.
Rob Fredericks, Vice President, Global Marketing, Research and Development, and Strategy, Medtronic Spine, Memphis, TN
- 9:15 a.m.
Michael Puma, Director, Portfolio Marketing, Stryker Spine, Kalamazoo, MI
- 10 a.m.
Networking Break
- 10:30 a.m.
Roy Chin, Serial Medical Device Entrepreneur, Chairman and CEO, Chest Innovations, Inc., Palo Alto, CA

11:15 a.m.
Dr. Harold Hess, M.D., Physician and Co-Founder/Co-Manager, Spinal Simplicity, LLC, and CEO, Enduraloc, LLC

Noon: Lunch Provided

1 p.m.
Case Study Presentations and Panel Discussion: Moderator, Paul Arnold, M.D., Professor, Neurosurgery, KU Medical Center

- Case Study 1:
Richard Hopkins, M.D., Thomas Holder/Keith Ashcraft Endowed Chair, Pediatric Surgery Research, Children’s Mercy Hospital, Kansas City
- Case Study 2:
Sarah Seguin, Ph.D., Assistant Professor, Electrical Engineering, University of Kansas; Stephen Waller, M.D., Associate Professor, Infectious Diseases, KU Medical Center; and Richard Gilroy, M.D., Associate Professor, Gastroenterology and Hepatology, KU Medical Center
- Panel Questions and Response

2:30 p.m.
Closing remarks by Paul Arnold, M.D., Professor of Neurosurgery and Vice-Chairman for Research, KU Medical Center

3:30 p.m.
Open House: KU Bioengineering Program, Eaton Hall

5 – 7 p.m.
Networking, Poster Session and Reception, Eaton Hall

Steve Warren Hosts KU Research Faculty Forum February 20 for Sciences, Math

Faculty in the natural sciences and mathematics are invited to join Steve Warren for lunch at The Commons on Thursday, February 20. There will be a brief presentation and group discussion of relevant KU research challenges and opportunities. Pizza and salad are provided.

This is the third in a series of informal sessions for different faculty groups during 2013-14. It was rescheduled from February 5 due to bad weather. (Future forums will take place on April 1, 8, 16 and 22, as noted on page 7.)

For more information about any of the research forums, contact Kevin Boatright, kboatright@ku.edu, 864-7240.

Historian Peter Brown to Discuss Early Christianity March 11

The next presenter in the Humanities Lecture Series will be Peter Brown, professor emeritus of history at Princeton University. He will speak at the Lied Center Pavilion on Tuesday, March 11 at 7:30 p.m. The title of his talk is "Through the Eye of a Needle: Wealth, the Fall of Rome, and the Making of Christianity in the West, 350-550 A.D."



Brown (left) is credited with having created the field of study referred to as late antiquity, during which Rome fell, the three major monotheistic religions took shape, and Christianity spread across Europe. His major research interest is the rise of Christianity, and he has investigated such diverse topics as

Roman rhetoric, the cult of the saints, the body and sexuality, and wealth and poverty.

Brown's most recent book – also the topic of his KU lecture – looks at wealth in Christianity in the waning days of the Roman Empire. He examines the rise of the church through the lens of money and the challenges it posed to an institution that espoused the virtue of poverty.

The Humanities Lecture Series is sponsored by the Hall Center for the Humanities. The final speaker in the 2013-14 series will be Jeffrey Toobin, senior legal analyst for CNN and author of *The Supreme Court in the Age of Obama*. His talk is scheduled for Thursday, April 24 at 7:30 p.m. at Woodruff Auditorium in the Kansas Union. All programs are free and open to the public.

Federal Funding of KU Research Reached Another Record in 2013

Federal funding of research at KU supports advances in health, energy, information technology, the humanities and many other fields. More than 85 percent of KU's research dollars come into the state from a variety of federal agencies, and the level of federal funding determines KU's annual research ranking – currently 38th – among national public research universities.

In 2013, federal funding of research at KU increased for the fifth straight year, climbing from \$171.0 million in 2012 to a record \$174.0 million at the Lawrence and Medical Center campuses combined. Leading sources of support included the National Institutes of Health, the Department of Education, and the National Science Foundation. Rankings based on the 2013 figures will be available next fall.

"KU researchers deserve a lot of credit," said Chancellor Bernadette Gray-Little. "Their work leads to discoveries that increase our knowledge and deepen our understanding. Their research supports great teaching and innovation. The environment for grant funding is incredibly competitive. The normal research challenges were magnified last year by the uncertain political situation in Washington."

Overall, externally sponsored KU research expenditures from all sources for all purposes declined in 2013 for only the second time in the past 21 years. Spending totaled \$275.2 million in 2012 and \$263.7 million in 2013. The overall drop of \$11.5 million reflected a \$15.1 million decline in one category: capital spending. Several large capital projects were completed in 2012-13, including the new Measurement, Materials and Sustainable Environment Center and renovations to Nichols Hall and the Biodiversity Institute on the Lawrence campus, and the KU Clinical Research Center in Kansas City.

"The new and renovated facilities are one-time projects that add to our research capacity," said Steve Warren, vice chancellor for research. "They are strategic investments in targeted areas of strength and will support research at KU for years to come." He noted that KU research expenditures since 1993 total \$3.4 billion, two-thirds of which came in the past decade.

KU continues to diversify its sources of research funding, said Warren. For example, industry-funded research grew to \$13.3 million in 2013 from \$8.4 million in 2012, and efforts are under way to increase the amount of research funded by private foundations.

Nationwide, the outlook for federally funded research remains clouded. "The financial effects of the ongoing federal budget sequester were evident in 2013 and are continuing into 2014," said Warren. "Agencies are awarding fewer and smaller grants. This affects younger faculty especially. The sequester has the potential to undermine the nation's research infrastructure and global competitiveness if it's not ended soon."

KU Researcher Kudos

- **Iris Smith Fischer**, English, and **Arienne Dwyer**, Anthropology, have received **National Endowment for the Humanities Fellowships** to pursue their research in 2014. Smith Fischer received a grant for “Charles Peirce and the Role of Aesthetic Expression in 19th Century U.S. Philosophy and Semiotics” and Dwyer for “Narrative and Metanarratives of the Silk Road.” KU faculty members have received 21 NEH Fellowships since 1998.
- **Shawn Kehmiri**, Aerospace Engineering, and a team of researchers from the Center for Remote Sensing of Ice Sheets (CReSIS) received a **\$200,000 grant from the Paul G. Allen Family Foundation** to develop technology that better maps and tracks the conditions within glaciers and at the bottom of fast-flowing ice sheets.
- **Ben Chappell**, American Studies, **Iris Smith Fischer**, English, **Jacob Dorman**, History and American Studies, and **Margot Versteeg**, Spanish and Portuguese, were selected as **2014-15 Research Fellows** by the Hall Center for the Humanities. **Michael Krueger**, Visual Art, was awarded a Creative Work Fellowship.
- Doctoral candidate **Jacob Carter**, Ecology and Evolutionary Biology, is one of four interns this spring at the Office of Science and Technology Policy in Washington. He is in the Division of Environment and Energy, working on projects relating to White House renewable energy science and policies. Carter participated in the NSF-funded C-CHANGE IGERT program, led by **Joane Nagel**, Sociology, and is now doing climate change research with **Joy Ward**, EEB.
- KU graduate students **Joshua Homan**, Anthropology, and **Jacob Longaker**, Political Science, are two of 80 recipients nationwide of **2014 Fulbright-Hays Doctoral Dissertation Research Awards**.
- This spring, 50 KU students will work on research projects funded by the **Undergraduate Research Award** program, coordinated by the Center for Undergraduate Research. Recipients will receive \$1,000 to fund their projects, which encompass departments from across campus and explore a wide range of topics. Proposals for the summer and fall semesters are due March 28.

KU Research Notes

New NSF Proposal and Awards Guide as of February 24

The National Science Foundation (NSF) has issued a new Proposal & Award Policies and Procedures Guide (PAPPG), (NSF 14-1) that will be effective for all proposals submitted on or after February 24. A **summary of all changes is available online**.

While the Grant Proposal Guide does not include significant changes to proposal submission procedures, many mandates from the previous guide have been clarified. Recent interactions with NSF indicate that stricter enforcement of their guidelines may be expected in the future. In particular, complete reporting of Results from Prior NSF Support, removal of voluntary committed cost-sharing, and standardized language for letters of collaboration have been scrutinized more carefully.

Failure to adhere to the guidelines may result in proposals being returned without review. Please consult with your Pre-Award specialist to ensure that your proposals meet the new NSF specifications.

Thursday Research Topics: “HIPAA and Research”



On Thursday, March 13, Jane Rosenthal, left, director of the KU Privacy Office, will present on the privacy regulations of the Health Insurance Portability and Accountability Act. The program is 11-11:50 a.m. at the Simons Biosciences Laboratories Auditorium, and is open to research administrators and others.

HIPAA requires health care providers and organizations, as well as their business associates, to develop and follow procedures that ensure the confidentiality and security of protected health information (in all forms) when it is transferred, received, handled, or shared.

Thursday Research Topics is a regular monthly program hosted by the KU Office of Research. Future programs are “KU Innovation and Collaboration Update” on April 10 with Jennifer Haaga, assistant director for industry agreements, and “Establishing Service Rates” on May 8 with Elizabeth Bennett-Monroe, finance manager, Core Support Labs. Sessions are recorded and made available on Blackboard for those unable to attend in person.

Upcoming Events

Additional details are available at the [KU Calendar](#).

FEBRUARY 20

KU Research Forum: Science and Mathematics
Noon-1 p.m.
The Commons

FEBRUARY 24

KUIC: "Research-to-Products Summit"
8 a.m. – 7 p.m.
KU Medical Center and School of Engineering

FEBRUARY 28

Seminar: "Water and the West: Regional Perspectives"
3-6 p.m.
Lied Center Pavilion

MARCH 1

Deadline: Strategic Initiative Grants Level I Proposals

MARCH 3

Large Data Management Genomic Biodiversity Summit
9 a.m. – 4:30 p.m.
Spooner Hall, The Commons

MARCH 11

Humanities Lecture Series: Peter Brown, "Through the Eye of a Needle: Wealth, the Fall of Rome, and the Making of Christianity, 350-500 A.D."
7:30 p.m.
Hall Center for the Humanities

MARCH 13

Thursday Research Topics: "HIPAA and Research"
11 a.m.
Simons Laboratories Auditorium

APRIL 1

KU Research Forum: Business, Engineering and Pharmacy
Noon-1 p.m.
The Commons

Friends of the Hall Center: Celebration of Books Published by Humanities, Social Sciences, and Arts Faculty in 2013

4-6 p.m.
Hall Center for the Humanities

APRIL 3-4

5th Annual Mid-America Humanities Conference:
"The Human, Human Rights, and the Humanities"
Kansas Union

- Keynote: "Blue Water: Inhumanity in Deep Time," **Bruce Robbins**, Columbia University
4 p.m., April 3, Kansas Union, Alderson Auditorium

APRIL 8

KU Research Forum: Education, Journalism and Social Welfare
Noon-1 p.m.
The Commons

APRIL 10

Thursday Research Topics: "KU Innovation and Collaboration Update"
11 a.m.
Simons Laboratories Auditorium

APRIL 16

KU Research Forum: Music, Architecture, Law and Libraries
Noon-1 p.m.
The Commons

APRIL 22

KU Research Forum: Technology, Climate and Energy
Noon-1 p.m.
The Commons

April 26

Interactions: The First Annual Kansas Conference on History
Co-Hosts: KU, K-State History Graduate Student Organizations
All Day
Kansas Union

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