

# KU Discovery & Innovation

News from KU Research

May 2014

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## Students Recognized at KU Innovation Fair; Cory Berkland Receives Jim Baxendale Award

The inventive research of faculty and students was recognized and celebrated May 1 at the **second annual KU Innovation Fair**. The program was hosted by KU Innovation and Collaboration, the university's technology commercialization office.

Cory Berkland, professor in the Department of Chemical and Petroleum Engineering and the Department of Pharmaceutical Chemistry, received the Jim Baxendale Commercialization Award. It recognizes a KU faculty member whose research has resulted in significant advances and commercial opportunities for the university.



Berkland (shown at left with Rajiv Kulkarni, director of KU Innovation and Collaboration) is the co-founder of three companies since coming to KU in 2004: Orbis Biosciences, Savara Pharmaceuticals and Orion BioScience. These companies are focused on therapies for asthma, pain management, autoimmune diseases and other conditions.

Berkland also helped initiate and co-directs a unique collaborative innovation program with

ConocoPhillips and Schlumberger related to oil and gas recovery.

At the two-hour event in the Kansas Union Ballroom, 20 undergraduate and graduate students presented their discoveries on posters. A 10-member panel of judges awarded \$4,500 in prizes to the top-six student projects:

### Undergraduate Division

- First place (\$1,000): James Borner, Mechanical Engineering, Industrial Design, "FSAE Brake System Research and Design"
- Second place (\$750): Kelly Rodriguez, Ned Howard, Brittany Limones, Kenneth McChesney, Electrical Engineering And Computer Science, "Dual-Channel Sense-and-Avoid Radar for Small UAV's"
- Third place (\$500): Henry Clever, Mechanical Engineering, "Ultramouse: A Communicative Device Which Allows Those with Disabilities to Operate a Computer Using Head Movement"

### Graduate Division

- First place (\$1,000): Christopher Kuehl, Pharmaceutical Chemistry, "NanoClusters and the Future of Asthma Treatment"
- Second place (\$750): Lei Shi, Electrical Engineering and Computer Science, and Robert Knight, Aerospace Engineering, "Airborne Collision Avoidance Radars"
- Third place (\$500): Connor Dennis, Chemical and Petroleum Engineering, Bioengineering, "Enhancing Endochondral Ossification for Bone Defect Regeneration: Converging Native ECM Biomaterials and Self-Assembling Colloidal Gels"



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## Hummert Begins Interim Role



Mary Lee Hummert will become interim vice chancellor for research on May 19. She has served as vice provost for faculty development since 2006, and is a professor of communication studies at KU. She is also a member of the graduate faculty in the Gerontology Center, an interdisciplinary research unit in the Schiefelbusch Institute for Life Span Studies that administers KU's gerontology doctoral program.

As interim vice chancellor, Hummert will lead an extensive organization on the Lawrence campus that includes 12 university research centers and institutes, two state surveys, two affiliated centers, and a number of core research resource laboratories. She will serve as interim president of the KU Center for Research, Inc., the nonprofit research foundation responsible for the administration of research grants and other external awards. She will also share overall responsibility for KU Innovation and Collaboration, the university's bi-campus technology commercialization office.

Hummert joined KU in 1987, accepted an assistant professor position in 1990, and advanced to full professor in 2001. Her research examines the social cognitive processes linking age stereotypes and communication and has received support from the National Institute on Aging/National Institutes of Health. A Fellow of the Gerontological Society of America, she has published extensively in communication, psychology, and gerontology journals, and is the co-editor of two books on communication and aging.

Hummert's previous administrative positions include interim vice provost in the Office of Student Support (2002-03) and associate vice provost for research (2004-06). Her academic background includes a B.A. in speech and theatre from Fontbonne College, an M.A.Ed. in speech communication from the University of Nebraska-Kearney, and a Ph.D. in communication studies from KU.

Hummert succeeds Steve Warren, who will resume his full-time faculty role in 2015 following a research leave.



## CReSIS Receives Global Recognition

Since its formation in 2005, the NSF-funded Center for Remote Sensing of Ice Sheets (**CReSIS**) has amassed a global reputation for its research work in Greenland, Antarctica, and elsewhere. KU is the lead institution for CReSIS, which is headquartered in Nichols Hall and directed by Prasad Gogineni, Deane E. Ackers Distinguished Professor in the School of Engineering.

One measure of the impact CReSIS is having is the above image, created by Bailey Wells, a KU graphic design student. Over the past five years, CReSIS has been featured on the cover of nine different professional publications. These include the *Journal of Glaciology*, the *Annals of Glaciology*, and several issues of *Geoscience and Remote Sensing*.

A different form of recognition was announced in April, with the official designation of the **Gogineni Subglacial Trench in Antarctica**. It's not yet named on Google Maps, but can be found at coordinates 80°41'49"S 155°44'13"E.

## NIH, AHRQ Announce Updated Application Re-Submission Policy

The National Institutes of Health (NIH) and the Agency for Healthcare Research and Quality (AHRQ) recently announced a clarification to the policy for application submission. Effective immediately, for application due dates after April 16, 2014, following an unsuccessful resubmission (A1) application, applicants may submit the same idea as a new (A0) application for the next appropriate due date.

An [April 22 NIH notice \(NOT-OD-14-074\)](#) stated “During the Enhancing Peer Review initiative, the NIH and AHRQ reduced the number of allowable resubmission applications from two to one and stipulated that any subsequent submission for that project must demonstrate significant changes in scientific direction compared to the previous submissions. Those policies were implemented to address the growing trend for resubmission applications to be scored more favorably, which in essence created a queue for meritorious applications before success in funding.

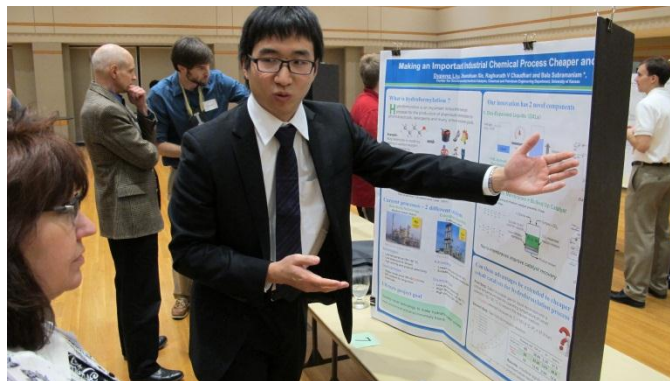
“In this extended period of tight funding, this approach resulted in many meritorious research applications being deemed ineligible for additional submissions, and many investigators having to propose substantial changes to productive research programs. New investigators may have been significantly affected because new research directions may be quite difficult during this phase in their careers.”

The NIH and AHRQ will not assess the similarity of the science in the new application to any previously reviewed submission when accepting an application for review. The subsequent new application need not demonstrate substantial changes in scientific direction compared to previously reviewed submissions.

Questions concerning this positive development at the federal level should be directed to [Nancy Biles](#), assistant director of Pre-Award Services at KU Research, 864-7434.

### Correction: SIG Level I Deadline Dates

In the April edition, it was stated that June 1 was the next deadline for [Level I Strategic Initiative Grant](#) proposals. The correct date is actually Monday, September 15. The subsequent deadline will be February 15, 2015. More information will be posted as the dates approach.



**KU Innovation Fair:** Graduate student Dupeng Liu, Chemical and Petroleum Engineering, was one of 20 student presenters on May 1.



**KU Innovation Fair:** Undergraduate student Henry Clever, Mechanical Engineering, explains his project to judges Cory Berklund and Rebecca Peterson. Clever received third place honors and \$500.

## Panel to Discuss NSF CAREER Program

Eligible KU faculty members are invited to attend a panel discussion on Tuesday, May 13 to learn more about the [National Science Foundation's CAREER](#) program for early investigators. The meeting is scheduled for 1-2:30 p.m. at The Commons in Spooner Hall.

To be eligible for a CAREER award, you must hold a tenure-track position but be untenured; have submitted two or fewer previous CAREER proposals; and propose to conduct innovation research in an area NSF funds.

Panelists are Andy Gill, Electrical Engineering and Computer Science; Joy Ward, Ecology and Evolutionary Biology; Michael Detamore, Chemical and Petroleum Engineering; Leigh Stearns, Geology; and Tim Jackson, Chemistry. Nancy Biles of KU Research Pre-Award Services will also speak.

Attendees will learn about proposal strategies, CAREER program details and beneficial resources, and how to prepare a CAREER proposal. For more information, call 864-3289 or email Alicia Reed at [researchdevelop@ku.edu](mailto:researchdevelop@ku.edu).

## May 14 NCURA Webcast to Address Key OMB Uniform Guidance Issues

The new Office of Management and Budget (OMB) Uniform Guidance (or "Omni-Circular") was released on December 26, 2013. It has been called "the single most significant change in research regulations in the past 50 years." It consolidates eight OMB circulars into a single document and changes some fundamental concepts underlying the management of sponsored programs.

To help KU grants coordinators and other research administration personnel better understand the key issues involved with the Guidance, KU Research will host a national webcast on Wednesday, May 14 from noon to 2:30 p.m. The free program will take place in the Ron Evans Apollo Auditorium at Nichols Hall and is produced by the [National Council of University Research Administrators](#) (NCURA).

A box lunch will be provided, but RSVP is required at [resadmin-events@ku.edu](mailto:resadmin-events@ku.edu). Panel moderator is Kim Moreland, University of Wisconsin-Madison. Panelists are Michelle Christy, MIT; Mark Davis, Attain; Cindy Hope, University of Alabama; David Kennedy, Council on Governmental Relations; and Jim Luther, Duke University. They will target the information universities need to understand about what the Guidance means and how it will affect current policies and business practices.



Each year the Kansas City Area Life Sciences Institute (KCALSI) and the veterinary schools at the University of Missouri and Kansas State University join forces to offer a symposium on key issues in the animal health industry. **This year's event is Monday, August 25** from 8 a.m. to 2 p.m. at the Kansas City (MO) Convention Center. It will take place in conjunction with a tech transfer program, an industry dinner, and an investment forum the next day. [Contact KCALSI for more information.](#)

## KU Research Notes

### Thursday Research Topic Sessions Set for June 12, July 10

Staff from Post-Award Services in KU Research will present at the next Thursday Research Topics program, scheduled for June 12 at 11-11:50 a.m. in the Simons Laboratories Auditorium. The subject is ["Cost Transfers and Retroactive Funds Adjustment Revisited."](#) The program is free and open to interested staff members. The subsequent TRT program is ["Establishing Service Rates,"](#) scheduled for the same time and place on July 10 with Elizabeth Bennett-Monroe, finance manager, KU Research Core Support Labs.

### Large Data Management Summit Rescheduled

The Large Data Management Genomic Biodiversity Summit, originally scheduled for March 3, was cancelled due to bad weather. The event has been rescheduled for Monday, September 22, from 9 a.m. to 4:30 p.m. More information will become available as the date approaches.

### NIH to Introduce New Inclusion Management System

According to [NOT-OD-14-085](#) and [NOT-OD-14-086](#), notices published by NIH on April 30, a new module is being rolled out in eRA Commons for reporting sex/gender, race, and ethnicity information. The Inclusion Management System is set to fully replace the existing Population Tracking System by October 17, 2014. NIH already rolled out updated formats for structured inclusion data in competing application forms (see [NOT-OD-13-092](#)).

Starting this summer, inclusion data will be reported on RPPRs using the new reporting format, and full migration to the Inclusion Management System will be finalized in the fall, allowing grantees to access and update their inclusion enrollment data in the eRA Commons.

For more information regarding the format used to report sex/gender, race, and ethnicity information (as required by the [NIH Policy on the Inclusion of Women and Minorities in Clinical Research](#)) on NIH-defined clinical research awards and non-competing progress reports, please see the timeline provided under [NOT-OD-14-085](#). You can direct questions to [Megan Todd](#) in Pre-Award Services, 864-7782.

### Youngberg Hall East Parking Lot to be Reconstructed

Lot 221 east of Youngberg will be closed this summer. Lot 222 on the west will remain open except when the intersection at Lot 221 is reconstructed. Parking is available nearby at Nichols Hall, or use the campus bus system if possible.

## Paul Terranova Steps Down from Senior Research Position at KUMC



Paul Terranova, vice chancellor for research at the KU Medical Center and president of the KUMC Research Institute since 2007, stepped down from those positions on May 4. He continues as senior associate dean for research and graduate education in the School of Medicine, a position he has held since 2005.

His successor is Richard Barohn, the Gertrude and Dewey Ziegler Professor of Neurology and chair of the Department of Neurology. Barohn came to KUMC in 2001 from the University of Texas Southwestern Medical Center in Dallas. He is an active researcher and PI of KUMC's \$20 million NIH Clinical and Translational Science Award.



"Dr. Terranova led the research enterprise during a time of phenomenal growth," said Douglas Girod, KUMC executive vice chancellor. "Dr. Barohn has demonstrated his ability to foster collaboration not just within our medical center, but also with other

institutions in the region and across the country. I have great confidence he will continue the trajectory established by Dr. Terranova."

## 2014-15 Hall Center Humanities Lectures

- **Katherine Boo**, "Behind the Beautiful Forevers," September 16, Woodruff Auditorium, Kansas Union
- **John Symons**, "What Can We Teach Our Posthuman Descendants?," October 7, The Commons, Spooner Hall
- **Amy Wilentz**, "Haiti: Tragedy and Hope," November 3, Woodruff Auditorium, Kansas Union
- **Anna Deavere Smith**, "Snapshots: Portraits of a World in Transition," February 18, Lied Center
- **Natasha Trethewey**, "An Evening with the U.S. Poet Laureate," March 3, Woodruff Auditorium, Kansas Union
- **James Oakes**, "Rethinking Emancipation: Freedom National," April 9, Woodruff Auditorium, Kansas Union

All [Humanities Lecture Series](#) presentations begin at 7:30 p.m.



## Recent KCPT "Local Show" Episode Focuses on Restoration of the Panorama

The necessary and long-awaited [assessment of KU's Natural History Museum Panorama in Dyche Hall began in March](#). On April 17, the PBS affiliate in Kansas City, KCPT, featured the ongoing project in an episode of "The Local Show" with reporter Julie Denesha.

Among those speaking on camera were Kris Krishtalka, director of the Biodiversity Institute and the Natural History Museum; Ron Harvey, a conservator with Tuckerbrook Conservation LLC; Bruce Scherting, director of exhibits at the museum; and Bill Sharp of KU Research, co-author of *The Dashing Kansan*, a biography of Lewis Lindsay Dyche, creator of the Panorama in the 1890s.

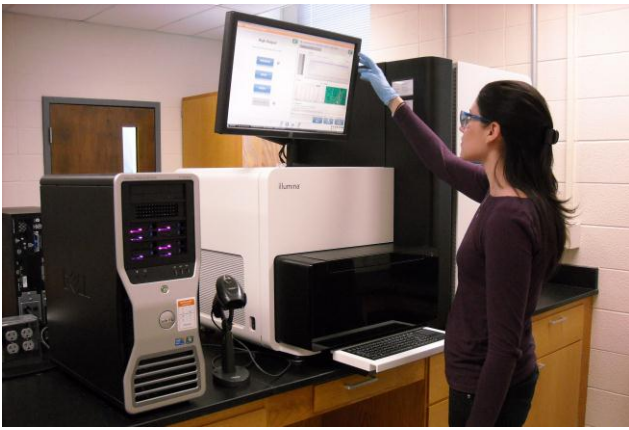
[The seven-minute "Local Show" segment](#) is available online and well-worth watching for those who agree with Krishtalka that the Panorama is "one of America's cultural treasures."

## KU Researchers Utilize New Tools to Analyze Microbial Communities

*A version of this article appeared in the [March 2014 edition of Life Sciences Bulletin](#), posted by the Kansas City Area Life Sciences Institute.*

Microbial communities are everywhere: in the soil, in water, and in us. Understanding their structure and function can provide insights applicable to water quality, energy, agriculture, and human health. A new research project at the University of Kansas, making use of new resources at the Lawrence campus, seeks to advance our knowledge of the planet's smallest organisms.

"KU has great expertise in molecular biosciences and genomic sequencing," says Belinda Sturm, associate professor of civil, environmental and architectural engineering. "The center we're forming will enhance our ability to study and



Laura Gardner, assistant director of KU's Genome Sequencing Core Laboratory, is shown with the lab's Illumina HiSeq 2500 instrumentation. KU photo by Gary Webber.

analyze the microbiomes that live in the body. This is a very hot area of research right now, because it has so many applications."

Sturm is leading a five-member team that received a two-year, \$300,000 KU Strategic Initiative Grant in January. It's a diverse group that includes the Kansas Biological Survey and four academic departments. The internal grant program aims to achieve goals laid out in KU's Bold Aspirations strategic plan, by addressing significant global challenges in four theme areas: Sustaining the Planet, Powering the World; Promoting Well-Being, Finding Cures; Building Communities, Expanding Opportunities; and Harnessing Information, Multiplying Knowledge. KU has awarded nearly \$4.4 million since the program began 2012.

Sturm's project is made possible by recent infrastructure investments at KU. The Center for Molecular Analysis of Disease Pathways, formed in 2012 with a five-year, \$11 million grant from the National Institutes of Health (NIH), contains a state-of-the-art Genome Sequencing Core Laboratory. In 2013, KU opened the Advanced Computing Facility (ACF), funded by a \$4.7 million NIH grant. The new ACF infrastructure can support 24 times more high-performance computing power than existed previously. Together, these new resources provide the tools needed for large and complex projects. Also important, KU's core facilities are available to non-KU researchers at companies and other universities on a contract basis.

"Every microbial community is unique and contains mixed populations," says Sturm. "With the Illumina equipment in the Genome Sequencing Core Laboratory, plus the ACF, we will develop KU's capacity to sort and interpret the enormous sequencing sets obtained for each sample. This will make us even more competitive for future grants."

## KU Researcher Kudos

- Congratulations to three KU recipients of **2014-15 fellowships from the American Council of Learned Societies**: **Jacob Dorman**, History and American Studies; **Stephanie Fitzgerald**, English; and **Jay T. Johnson**, Geography. ACLS fellowships are highly prestigious and competitive awards. "The fellowships testify to the rich scholarship of faculty in the humanities and social sciences at KU," said Victor Bailey, director of the Hall Center for the Humanities, "and to the support work of the humanities grant development office."
- **Joe Lutkenhaus**, University Distinguished Professor of Microbiology, Molecular Genetics and Immunology at the KU Medical Center, was **elected in April to the National Academy of Sciences**. He joined the KUMC faculty in 1981 and is considered one of the country's foremost bacterial cell researchers. Also elected was **Dale Boger** of the Scripps Research Institute. Boger is a 1975 KU alumnus in chemistry and a former faculty member in Medicinal Chemistry (1979-85).
- **Andrew Keinsley**, a doctoral student in the Department of Economics, is one of 480 students from 80 countries selected to attend the **5<sup>th</sup> Lindau Meeting** of the "Laureates of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel," i.e., the Nobel Prize in Economic Sciences. The meeting, last held in 2011, will take place in Lindau, Germany August 19-23. It will be attended by 19 past laureates, including **Vernon L. Smith**, who received an M.A. in economics at KU in 1952 en route to sharing the Nobel Prize in 2002. Keinsley was nominated for the Lindau Meeting by **Shu Wu**, associate professor, associate chair, and graduate program director in the Department of Economics.
- **Adrian Melott**, Physics and Astronomy, is co-recipient of a **\$500,000 NASA award** for a three-year study to assess the potential damage from a near-Earth supernova. Likely consequences include radiation effects, a depleted ozone layer, and an increase in cosmic rays, all of which would be bad for life on Earth. In the spring 2014 issue of **Paleobiology**, Melott and colleague Richard Bambach of the Smithsonian's National Museum of Natural History published "Analysis of Periodicity of Extinction Using the 2012 Geological Timescale."

## Undergraduate Research Symposium a Showcase for Students and Mentors

The 17th Annual Undergraduate Research Symposium was held April 26 in the Kansas Union. "It's KU's celebration of the excellent research, scholarship and creative works completed by KU undergraduates each year," said John Augusto, assistant vice provost.

The symposium is sponsored by the Center for Undergraduate Research, Coca Cola, and the Office of Research. One way that excellence in undergraduate research and mentoring is celebrated is by recognizing a select group of students and mentors with awards.

The ACE Research Talks featured six undergraduate researchers and were designed to showcase students who can present their research and creative projects in an (A)ccessible, (C)reative, and (E)ngaging way. Award winners each received a \$500 award, co-sponsored by the James K. Hitt Award through the University Honors Program and the Center for Undergraduate Research.

Along with the ACE Research Talks, more than 120 undergraduate students presented their research and creative projects. There were 20 presentations that each received a \$50 award.

In addition to the student awards, two undergraduate research mentoring awards, one for faculty and one for graduate students or staff, were given at the symposium:

### Barbara Schowen Undergraduate Research Mentor Award (faculty):

- 2014 Award Winner: **Kostas Kokkinakis**, Speech-Language-Hearing
- Honorable Mention: **Renee Perelmutter**, Slavic Languages and Literatures

### Undergraduate Research Mentor Award (graduate student/staff):

- 2014 Award Winner: **Rachel Bowes**, doctoral student, Ecology and Evolutionary Biology
- Honorable Mention: **Jacob Carter**, doctoral student, Ecology and Evolutionary Biology

A list of presenters and award recipients is [available online](#).

## Final Thought . . .

"In my mind, there is no question at all that both the Humanities and the STEM disciplines are inherently valuable. In fact, they are fundamentally necessary to one another, both in the world of academia and in our broader contemporary culture. When either side tries to 'go it alone' the other side is proportionally diminished in the transaction, and everyone loses."

*Stephen Behrendt, George Holmes Distinguished Professor of English, University of Nebraska-Lincoln, "So What Good are the Humanities, Anyway?," Nebraska Lecture, April 16, 2014*

## Upcoming Events

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

### May 13

#### Panel: NSF CAREER Program for Early Investigators

1 – 2:30 p.m.

Spooner Hall, The Commons

### May 14

#### Webcast: "The OMB Uniform Guidance: Key Issues for Universities"

Noon – 2:30 p.m.

Nichols Hall, Ron Evans Apollo Auditorium

### JUNE 12

#### Thursday Research Topics: "Cost Transfers and Retroactive Funds Adjustment Revisited"

11 – 11:50 a.m.

Simons Laboratories, Auditorium

### JULY 10

#### Thursday Research Topics: "Establishing Service Rates"

11 – 11:50 a.m.

Simons Laboratories, Auditorium

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