

The Director's Letter

How is it possible that more than seven years have come and gone since our dedication in October of 2006? Perhaps it is because so many wonderful events have taken place in those seven years, and 2013 was no exception.

Several of our colleagues and students have received awards and recognition for their work during the past year. Professor Heather Desaire and Dr. Melinda Toumi were featured at the University Research & Entrepreneurship Symposium, one of the nation's most exclusive venture capital events. Three KU Chemistry faculty members were added to the ranks of the American Chemical Society Fellows, George Wilson, Dick Showen, and myself.

Adams Institute researchers continued to win support for their research in 2013, especially our junior faculty. Shenqiang Ren was awarded NSF, DOE and ARPA-E grants this summer, and Yong Zeng and David Weis were awarded National Institutes of Health (NIH) Center of Biomedical Research Excellence

(COBRE) Pilot Project Grants through the Center for Cancer Experimental Therapeutics (CCET).

Graduate students were also recognized. Rachael Lane, chemistry graduate student in the Craig Adams group received a Sigma Xi Grant-in-Aid of Research, and the Society for Electroanalytical Chemistry named Dulan Gunasekara, a Sue Lunte Group member, as a recipient of a SEAC Student Travel Award for the 2013 Pittcon. In addition, Rachel Saylor, also in the Sue Lunte group, was selected as a winner of a poster contest celebrating the 75th anniversary of the ACS Division of Analytical Chemistry. The winning poster chronicled the life of Buzz Adams. Finally, Joe Siegel was named one of 6 graduate students to receive the Madison and Lila Self Graduate Fellowship at KU for 2013.

The University of Kansas is placing heightened emphasis on undergraduate research, and Adams Institute undergraduate researchers have been in the news. Erin Evans in the Sue Lunte Group and Mitchell Newton in the Craig Lunte Group received Undergraduate Research Awards (UGRA) that funded their research during the summer of 2013.

These and other news items are covered in greater depth in the articles that follow. May I wish you all the best in 2014, and thank you for your continuing support of the Adams Institute.

Susan Lunte
Director

CMADP COBRE Completes First Year



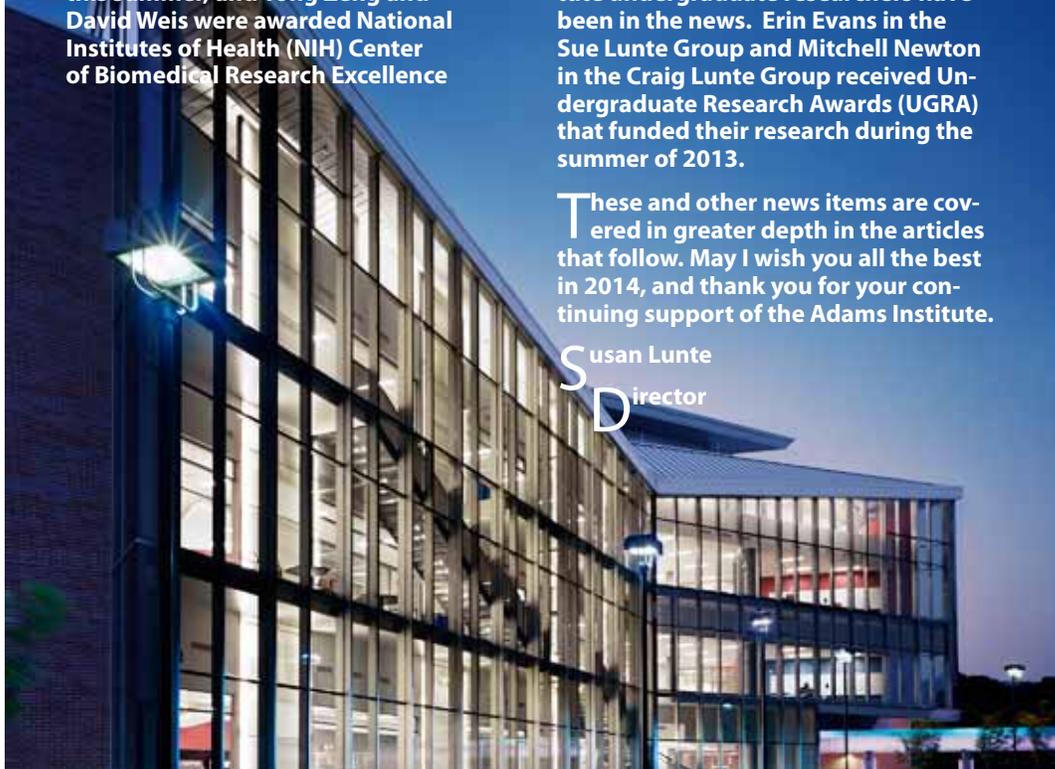
The first year of operation of the Center for Molecular Analysis of Disease Pathways COBRE (CMADP) was marked by the first Annual Meeting & Symposium on October 11 & 12, 2013. CMADP is administered by the Adams Institute.

The meeting took place over a warm fall weekend and provided Center personnel an opportunity to meet our External Advisory Board (EAB) at a number of venues. The EAB received reports from Director Sue Lunte and the three Core Lab Directors on Friday morning, Oct. 11, and after lunch participated in a Research Symposium attended by over 80 students and faculty.

Dr. Steve Soper, EAB member from the University of North Carolina, was one of three excellent presenters at the 1:00 pm Research Symposium, which also featured CMADP Co-PI Erik Lundquist and K-State Distinguished Professor Sue Brown.

A poster session followed with 41 posters from two Universities and 5 departments. The posters included overviews of the Core Laboratories and research posters describing the work of the four Research Investigators, the four Pilot Research Investigators, and their students.

The participants met for dinner at the Adams Alumni Center, and meetings with Research Investigators and Principal Investigators on Saturday morning completed the annual meeting. Thanks to all who contributed to making the first annual meeting a resounding success.



Mitchell Newton Named University Scholar



The University Scholars Program announced the 32nd class of students, naming Mitchell Newton, Overland Park, a soph-

omore in chemistry to the program. Mitchell is a member of the Craig Lunte Group.

This competitive opportunity is for students selected on the basis of academic credentials, commitment to their education, intellectual promise and evaluations by instructors, advisers and other faculty members. Students in their second year at KU with a 3.75 cumulative grade-point average were invited to apply.

Our heartfelt thanks to Dr. Richard Hart for his generous donation to the Adams Institute, and to Eddie And Alice Seo for their continuing support of the Seo Undergraduate Research Award.

Adams Institute Undergraduates Selected for Awards

Undergraduates affiliated with the Adams Institute continue to demonstrate leadership and excellence in research, and to win recognition for these qualities. Three Adams undergraduate researchers were named as award winners during the annual Honors Banquet held each spring.

- Rodi Torres-Gavusto of the Cindy Berrie Group received the Alpha Chi Sigma Award for the outstanding graduating senior in chemistry or chemical engineering, and the Wakarusa Valley ACS Section award.
- Mitchell Newton of the Craig

Lunte Group received the Jacob Kleinberg Award for outstanding progress in research and a Seo Research Award.

- Yiqui Yin, Yong Zeng Group, received a Seo Undergraduate Research Award.

Two undergraduate researchers have won KU Undergraduate Research Awards (UGRA) that will fund their research during the summer of 2013. Erin Evans in the Sue Lunte Group and Mitchell Newton in the Craig Lunte Group received awards for \$1,000 each. These awards are provided each year by the Center for Undergraduate Research.

Graduate Student News

Sue Lunte Group Graduate Students in the News



The Society for Electroanalytical Chemistry named Dulan Gunasekara as a recipient of a SEAC Student Travel Award for the 2013 Pittcon. Dulan is working in Susan Lunte research group and developing novel analytical methodologies to detect reactive nitrogen and oxygen species produced in cells using microchip electrophoresis with electrochemical and fluorescence detection. Dulan presented a talk titled "Detection and Identification of Reactive Nitrogen Species using Microchip Electrophoresis with Electrochemical Detection" at Pittcon 2013.

Joe Siegel was selected to receive the University of Kansas prestigious Madison and Lila Self Graduate Fellowship as he begins the 2013-2014 academic year. Self Graduate Fellowships are four-year awards to new or first-year doctoral students who demonstrate leadership, initiation and a passion for achievement.

During his first year at KU Siegel was awarded the Carl and Catherine Chaffee Scholarship, the Bailey Memorial Scholarship. He intends to finish a doctoral degree in chemistry at KU so that he can become a leader in analytical chemistry research.

Rachel Saylor, member of the Sue Lunte Research Group, re-

ceived a \$500 travel award to the 246th American Chemical Society National Meeting and Exposition in Indianapolis. Rachel's poster was selected as a winner in a contest celebrating the 75th anniversary of the ACS Division of Analytical Chemistry. The winning poster chronicled the life of Buzz Adams. You may view or download the poster here: https://adamsinstitute.ku.edu/about/ralph_adams

Adams Students Receive Awards

Ten Adams Institute graduate students received departmental awards for their achievements this year.

- Phillip Gingrich, Ren Group, received the Frank Dains Award for outstanding first year teaching assistant.
- Christina Edwards, Berrie Group, received the Ray Q. Brewster Award for advanced graduate teaching.
- Sara Thomas was awarded the Snyder Award for the graduate student of considerable promise.

Dulan Gunasekara, Sue Lunte Group, received the J.K. Lee Award in Analytical Chemistry for superior academic performance and research accomplishments by an advanced doctoral student, and a Kuwana Graduate Opportunity Fund Award.

- Rachel Saylor, and David Scott, Sue Lunte Group, and Zhikai Zhu, Desaire Group, received Kuwana Graduate Opportunity Fund Awards.
- Tom Linz, Sue Lunte Group, was awarded the Higuchi

- Doctoral Progress Award for the superior post-comprehensive student in his or her final year.
 - Sam Kaplan, Mike Johnson Group, and Zhikai Zhu, Desaire Group, received Charles and Beatrice Kulier Scholarships for graduate student in chemistry.
 - Sarah Wildgen, Dunn Group, received a Reynold T. Iwamoto Scholarship based on academic performance.
 - Daniel Kim, Dunn Group, was awarded the Kenneth L. and Gertrude Irene Marsi Scholarship for superior academic performance by an advanced graduate student.
 - Alec Kirkemide, Ren Group, received the McCollum Research Scholarship.
- Rachael Lane, chemistry graduate student in the Craig Adams Group,, received a Sigma Xi



Grant-in-Aid of Research. These grants are highly competitive, with only 20% funded.

The grant will provide research

supplies for an investigation into the “fate of BPA and BADGE leached from epoxy coatings into drinking water.”

Results will complement and be incorporated into those of a larger project funded by the U.S. Environmental Protection Agency through a grant to the Water Research Foundation and KU. Rachael is working under the supervision of Dr. Craig Adams, adjunct Chemistry faculty member.

Faculty News

Three KU Chemistry Professors Named 2013 ACS Fellows



Sue Lunte



Richard Showen



George Wilson

Congratulations to the three KU Chemistry Professors who have been named ACS Fellows by the American Chemical Society for 2013. Susan Lunte, Ralph N. Adams Distinguished Professor of Chemistry and Pharmaceutical Chemistry and Director of the Adams Institute for Bioanalytical Chemistry, Richard Showen, Professor Emeritus of Chemistry, and George Wilson, Professor Emeritus of Chemistry, were feted along with the other 93 fellows at the society's fall national meeting in Indianapolis this last September, in a ceremony hosted by ACS Immediate Past-President Bassam Z. Shakhshiri.

“This is an honor bestowed on members for their outstanding accomplishments in scientific research, education, and public service,” said Shakhshiri in announcing the 2013 class of

ACS Fellows. “Their individual contributions to ACS, to science, and to society are hallmarks of distinction in keeping with the ACS mission of advancing the chemical enterprise and its practitioners for the benefit of Earth and its people. Selection as an ACS Fellow greatly honors each individual and also honors ACS. It is also a charge to each fellow to maintain his or her excellence in advancing chemistry and serving society.”

The three join four other KU Chemistry Professors, Kristin Bowman-James, Joe Heppert, Ted Kuwana and Daryle Busch, who were named ACS Fellows in previous years. The fellows program began in 2009 as a way to recognize and honor ACS members for outstanding achievements in and contributions to science, the profession, and ACS.

Desaire Group Research Featured at Venture Capital Symposium



Heather Desaire's research was presented by KU Alumnus Dr. Melinda Toumi at the University Research & Entrepreneurship Symposium, one of the nation's most exclusive venture capital events. The symposium, which

took place on April 3, in Cambridge, Mass., was designed to introduce a select group of cutting-edge university technologies to investors and entrepreneurs, with the goal of securing funding for new startup companies and converting university technologies into new products and cures.

Dr. Desaire's research includes analyzation of glycoproteins and small organic molecules impacting human health hormone therapies in addition to identifying disease markers.

Sue Lunte Included in List of Top 100 Analytical Scientists



Congratulations to Sue Lunte for being named one of the 100 most influential analytical scientists in the world! Dr. Lunte was named to the “Power List 2013” by The Analytical Scientist, an

international publication. “I am honored to be included in this group. I think it is indicative of the strong bioanalytical program that we have here at the University of Kansas”.

North Carolina Distinguished Professor Receives Ralph N. Adams Award



J. Michael Ramsey, Minnie N. Goldby Distinguished Professor of Chemistry Chair at the University of North Carolina – Chapel Hill, was awarded the Ralph N. Adams Award in Bioanalytical Chemistry at PITTCON 2013 in Philadelphia. The Award is spon-

sored by the Pittsburgh Conference and Friends of Ralph N. Adams. The Adams Award was established in 2005 to honor an outstanding scientist who has advanced the field of bioanalytical chemistry through research, innovation, and/or education.

Dr. Ramsey's current research interests include microfabricated chemical instrumentation, micro- and nanofluidics, single molecule DNA sequencing, single cell assays, point-of-care clinical diagnostic devices, and highly miniaturized mass spectrometry.

Junior Faculty Win COBRE Awards

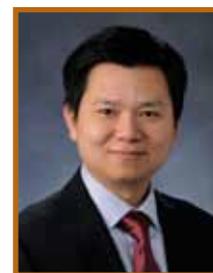
Two Adams Institute Junior Faculty, David Weis and Yong Zeng, received National Institutes of Health (NIH) Center of Biomedical Research Excellence (COBRE) Pilot Project Grant through the Center for Cancer Experimental Therapeutics (CCET).

Prof. Weis's proposal is entitled "Proteome-scale discovery of li-



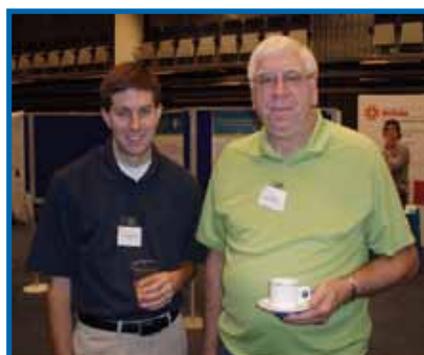
gands targeting ezrin, an osteosarcoma target." The objective is to develop new isotope-exchange assay to discover drug-like molecules targeting cancer-related proteins.

Prof. Zeng's proposal is entitled "High-throughput glycomic profiling in ovarian cancer using integrated microfluidic lectin arrays." The objective of this proposal is to develop new microfluidic approaches for exploring



glycomic fingerprints of ovarian cancer to advance the early detection and personalized treatment of the disease.

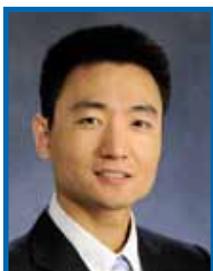
Father and Son Participate in Reid Forum



In the forty years of the International Reid Bioanalytical Forum, the series has seen many things, but never before a father and son appearing in the same program. Reid regular, John Stobaugh (University of Kan-

sas) was joined by his son Jordan (AbbVie (formerly Abbott Laboratories; former graduate student of Jim Jorgenson (University of North Carolina)). The Reid Forum was held Sept. 9-12, 2013, at the University of Surrey, Guildford, UK.

Getting Acquainted



In this issue we will learn more about one of the junior faculty in the Adams Institute, Assistant Professor Shenqiang Ren.

Shenqiang grew up in the city of Nanjing, on the "East Coast" of China. He attended Nanjing University of Aeronautics and Astronautics in 2000, and

obtained the bachelor degree in the Materials Chemistry. After college, he came to US for graduate school at University of Maryland College Park in 2005. Following the completion of his PhD degree in Materials Science in 2009, he moved to Massachusetts Institute of Technology (MIT) as a postdoctoral fellow. Two years later in August of 2011, he joined in the chemistry department at the University of Kansas as Assistant Professor.

His research group at KU, Renewable and Emerging Nanomaterials (REN) Laboratory, explores expressive possibilities for sustainable material nanotechnology and nanotechnolo-

gies, such as artificial atoms for energy harvesting and imaging.

Dr. Ren's research interest focuses on the control of material structures up to the atomic level to manipulate thermal, photonic, electronic and magnetic properties. He expects that new nanomaterials and nanodevices developed by his group will be

a source of rich new chemistry and physics, and can make an impact in sustainable energy, imaging and sensing applications.

Both Shenqiang and his wife, Xin Zhao, are from Nanjing, where they met during college. In his spare time, he enjoys swimming and playing Lego with his daughter, Olivia.

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