

CSMCONNECT

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COLLEGE OF SCIENCE AND MATHEMATICS BIENNIAL NEWSLETTER

ECOLOGY, EVOLUTION, AND ORGANISMAL BIOLOGY

CHEMISTRY AND BIOCHEMISTRY

MATHEMATICS

MOLECULAR AND CELLULAR BIOLOGY

PHYSICS

STATISTICS AND ANALYTICAL SCIENCES

CSMConnect is the College of Science and Mathematics (CSM) biannual newsletter designed to keep you informed of the latest activities and developments going on in the college. CSM is soaring into the next level of national prominence through cutting-edge research. The College is active in local and international scientific communities and promotes innovation in teaching. CSM values the networks developed with partners on and off campus. You are important in our network of partners.

THE ISLAND OF STABILITY

By Robert Godlewski & Jennifer Hafer, University Relations

IUPAC Periodic Table of the Elements

Key: atomic number, Symbol, name, standard atomic weight

Sounds like a nice place, doesn't it? "The Island of Stability." This is no tropical paradise, but rather a theoretical place on the periodic table that could one day lead to unknown technological advances.

Scientists recently took four more steps toward "The Island of Stability," with the discovery of new elements, Nos. 113, 115, 117 and 118. Discoveries that should be exciting to even non-California Institute of Technology grads, according to Caltech grad and Kennesaw State physics professor Nikolaos Kidonakis.



Photo courtesy of iupac.org

Kidonakis says creating the higher number elements is a simple matter of attraction. The higher the number on the periodic table, the heavier the elements.

A theoretical physicist, Kidonakis' research involves the elementary particles in physics, including quarks and the Higgs boson, which the media often refers to as the "God particle."

Kidonakis' calculations have been used by scientists running experiments at the Large Hadron Collider at CERN, the European Laboratory for Particle Physics. A few years ago, scientists at CERN made news around the world when, after analyzing data from a series of experiments, they announced they were certain that the Higgs boson had been discovered.

Watch Dr. Kidonakis' interview [Super-heavy Elements Discovered Part 1](#) and [Part 2](#) on YouTube for more information on the newly discovered elements.

OWL INAUGURAL CLASS FINDS SUCCESS IN BRIDGES PROGRAM

The new Peach State Bridges to the Doctorate program in the College of Science and Mathematics launched in Fall 2015 with an inaugural class of seven participants. Participants include five first year M.S. students and two second year M.S. students, all based out of our Master of Science in Integrative Biology and Master of Science in Chemical Sciences degree programs. Although the program started in the fall, it has already given the participants several opportunities to distinguish themselves from other candidates for doctoral programs.

Second year students Juan Rodriguez and Verra Ngwa (pictured L to R) are currently interviewing at top-tier doctoral programs, including Vanderbilt and Emory. Both Ngwa and Rodriguez have presented at several conferences since the start of the program, and Ngwa will give a talk at the upcoming meeting of The American Society for Biochemistry & Molecular Biology in San Diego.



“The Bridges to Doctorate program has given me more hands on experience including skills and techniques on optical biosensing, confocal microscopy, and tissue culture,” says Ngwa, who has also co-authored a paper published in Journal of Cell Science that will be featured as a spotlight paper in March. “The program has prepared me to hit the ground running as I utilized my skills when I get into a doctoral program.”

First year students include a Gates Foundation Scholar, a McNair Scholar and the former student body president of Miles College in Alabama, with research interests ranging from neuroscience to human genetics to virology. First year student Carmen Vails is author on a paper recently published in the Journal of Colloid and Interface Science.

“We are off to a great start,” says Jonathan McMurry, director of the program. “Our inaugural class is a very talented, eager and ambitious bunch. The faculty have been very impressed with how quickly they have immersed themselves into the process of becoming research scientists. Discoveries have already been made.”

One of only 18 such programs nationwide, the NIH-funded, five year project aims to increase the number of biomedical Ph.D.-level scientists from underrepresented minority groups by providing outstanding training to students at the masters level and assuring successful transitions to doctoral programs. Participants are also pursuing professional development and networking opportunities with the program’s doctoral partners, UGA, Georgia Tech and the Medical College of Georgia. Recruiting partnerships have been established throughout the Southeast with baccalaureate institutions and the program has drawn nationwide interest from applicants.

The Bridges to Doctorate program is currently recruiting the Class of 2018 to start in August 2016. Visit bridges.kennesaw.edu to learn more about the program.



Kennesaw State elevated to doctoral research institution in Carnegie Classification

Kennesaw State University has been elevated to a doctoral research institution with moderate research activity — designated “R3” — in The Carnegie Classification of Institutions of Higher Learning 2015 update. The University was previously classified among larger Master’s Colleges and Universities or “M1” institutions.

Under the Carnegie classifications, doctoral research institutions are those that awarded at least 20 research/ scholarship doctoral degrees during the upgrade year. In FY 2015, Kennesaw State awarded 40 doctoral degrees, including the Ph.D. in International Conflict Management and doctorates in education, business administration and nursing science. Continue reading at <http://bit.ly/20T1CtW>

College Distinguished Awards **CONGRATULATIONS!**

CSM honors outstanding faculty and staff



Research:

Yuliya Babenko, Ph.D.
Associate Professor of Mathematics

Staff:

Vickie Burris
Administrative Associate

Service:

Linda Galloway, Ph.D.
Lecturer of Mathematics

Mentoring:

John Haseltine, Ph.D.
Associate Professor of Chemistry

Teaching:

*Lake Ritter, Ph.D., Associate
Professor of Mathematics*

Professor:

*Tad Watanabe, Ph.D.,
Professor of Mathematics Education*



Alumni Spotlight



Aridth Gibbons (left center) with President Daniel Papp and other Distinguished Alumni Award recipients.

Congratulations Aridth Gibbons!

Kennesaw State University's Office of Alumni Relations recently recognized three successful alumni and a faculty member with a ceremony and banquet celebrating their achievements as part of Homecoming 2015. **Aridth Gibbons** graduated with a bachelor's degree in biology. She works for the Centers for Disease Control and Prevention's Viral Special Pathogens Branch, studying highly infectious viruses. At the CDC, she was part of the response team fighting to control the 2014/2015 Ebola outbreak in Sierra Leone, helped track the Hantavirus in Montana and was deployed to Uganda in 2012 to battle the Marburg virus.



Dr. John C. Salerno

Professor and Neel Distinguished Chair of Biotechnonology

Dr. John C. Salerno, Professor of Biology and Chemistry and Neel Distinguished Chair at Kennesaw State University, passed away on Dec. 25, 2015. Dr. Salerno was eminent in his field, having authored over 200 scientific publications, including fundamental discoveries in spectroscopy and enzymology. He mentored many young scientists and co-founded New Echota Biotech.

Dr. John Salerno joined KSU in the academic year of 2006/2007. He was recognized by the KSU Foundation with the university's "Distinguished Professor" award in August 2015.

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College of Science & Mathematics Research



Dr. Daniela Tapu Associate Professor of Chemistry

Dr. Daniela Tapu's research interests lie at the interface between organic, organometallic and material science with the main focus in an area of urgent industrial interest – catalysis. Although the fundamental processes for refining petroleum and its conversion to basic building blocks are based on heterogeneous catalysts, many important value-added products are manufactured by homogeneous catalytic processes. Development of improved catalysts was identified as one of the today's key challenge in the Department of Energy's Vision 2020 report. Currently funded by the National Science Foundation, Tapu's research challenges conventional models of chemical bonding and structure and it is centered around the development of new synthetic methodologies and strategies to facilitate the synthesis of new and improved catalysts. Understanding the relationship between molecular architecture, electronic structure and chemical reactivity of these new compounds allows for the development of more efficient homogeneous and heterogeneous catalysts and possible strategies to facilitate their recovery. Tapu's laboratory provides undergraduates and graduate students at KSU the opportunity to develop as young scientist-scholars in the classroom, laboratory and as presenters at scientific meetings.

ScienceTalk: A lecture series

Founder & CEO of ArrayFire John Melonakos will focus on high-performance engineering and entrepreneurship.

When: Wednesday, March 23 at 2:00pm
Where: Marietta Campus, Wilson Student Center, Ballroom A&B.

Space is limited!
Register today at <http://bit.ly/ScienceTALKMar2016>





College of Science and Mathematics

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This newsletter is a collaboration between the College of Science and Mathematics and the KSU Alumni Association.



Alumni Spotlight

Be featured in CSMConnect, our alumni newsletter! Let us know what you are doing after graduation and how our programs prepared you for your career.

Submit your story at <http://bit.ly/CSMAumniSpotlight>

Plant the seed of Education

and donate to the College of Science and Mathematics



Kennesaw State University
College of Science and Mathematics

Now with a [LinkedIn](#) University Page

Follow the CSM Page on LinkedIn for news, discussions, jobs and networking opportunities!



ATLANTA SCIENCE FESTIVAL

March 19-26, 2016

Atlanta Science Festival is a week-long celebration of local science and technology held each year. Scientists and educators from local colleges, museums and companies will uncover mysteries and explain discoveries in hands-on activities, facility tours, stimulating presentations, and riveting performances for adults and children of all ages. Our college will be participating with the following events:

The Next Generation of Scientists: How STEM fields will impact children

Dr. Karen Hypolite
Sat., March 19, 12-1pm
Atlantic Station

An engaging discussion how you can get kids ready for the changing direction of the STEM fields.

"The Element of Surprise!"

Dr. Nancy Jo Kirk
Sat. March 26, 11am-5pm
[ASF Exploration Expo](#)

Chemistry demonstrations and hands-on activities for the curious.

"Boiling Ice"

Dr. Lori Kingler-Maffe
Sat. March 26, 11am-5pm
[ASF Exploration Expo](#)

Have you ever seen ice that can boil water? How about ice that turns water different colors? And why would a bubble sink instead of rise?