Welcome to the Fall 2013 edition of the CoSM Newsletter. Fall is a special season because trees around campus magnificently display their true colors. As you begin to read please allow me to call your attention to another magnificent display we see each year that showcases the college’s true colors. Every year CoSM carefully cultivates an educational environment where undergraduate and graduate students have easy access to our world class faculty educators and researchers. This access creates dynamic relationships where students and faculty learn, explore and conduct research together. In this issue of the CoSM newsletter you will learn about partnerships between students and faculty where discoveries are made in cancer research, statistical abnormalities, and environmentally sustainable resources.

I hope you enjoy learning about these rewarding experiences for both students and faculty. There is much for you to be proud of as a CoSM graduate. Creating these opportunities takes a daily investment of time and resources. I invite you to partner with CoSM as we strive to expand these opportunities. Your engagement and support can play a critical role in helping CoSM achieve even greater success in the days ahead. Read on and re-tell these stories to show your Raider pride!

Dean Li pictured with the 2013-2014 Dean's Circle members reaching out to CoSM students. The Dean’s Circle was established in 2008 as a student advisory board who represents the College’s six comprehensive departments: biological sciences, chemistry, earth and environmental sciences, mathematics and statistics, physics, and psychology.

Learn how you can support your alma mater on page 3.
Congratulations Brage Golding Distinguished Professors of Research

K. T. Arasu, Ph.D., is a world-class scholar who has led pioneering research projects but can still explain complex mathematical concepts to even the most baffled undergraduate.

“Despite his mastery of the material, Arasu was never condescending to students; therefore, we were not afraid to ask questions,” said current Ph.D. candidate Alex Gutman, who earned degrees from Wright State in 2007 and 2009. “The behind-the-scenes stresses of academia never seemed to compromise his teaching.”

Read more>>>

Julian Gomez-Cambronero, Ph.D., and his research team have accomplished much since the Boonshoft School of Medicine hired Cambronero in 1995. Recent events, however, would indicate the best could be yet to come.

Cambronero has published findings that may prove significant in cancer research. His team discovered a key protein that plays a critical role in the development of breast cancer tumors and the spread of the disease to the lungs. The next goal is to utilize that knowledge to find a way to stop the metastasis of cancer cells before they attack new tissues. Read more>>>

Biological Sciences professor earns a Lifetime Achievement Award

The Greater Dayton Partners for the Environment awarded James Amon, Ph.D., the Lifetime Achievement Award. The award celebrates those who work to protect, preserve, and restore the environmental and agricultural resources of the Great Miami River and Little Miami River watersheds. Amon is professor emeritus of biological sciences, wetland scientist, and microbial ecologist specializing in conservation ecology and restoration of wetlands. Projects include studies of wetland microbial communities, control of invasive plants and strategies for managing natural and man-made wetlands. He has been a key technical advisor to the Beavercreek Wetlands Association for 25 years, and works with other nearby universities including the Air Force Institute of Technology at the nearby Wright Patterson Air Force Base.

Statistics professor earns Humanitarian Award

The National Conference for Community and Justice of Greater Dayton (UCCJ) will honor Wright State Professor of Statistics, Munsup Seoh, Ph.D. with their prestigious Humanitarian Award at the 2013 Friendship Dinner on October 28, 2013. Seoh has been at Wright State since 1983. He teaches a variety of undergraduate and graduate courses with emphasis on subjects in applied statistics, and computational statistics as well as having served as the Director of Statistics Programs. As president of the Dayton branch of the Korean-American Scientists and Engineers Association, Seoh organizes the annual Ohio Mathematics Contest, hosted by the Department of Mathematics and Statistics. He also helps minority communities in the Greater Dayton area with interests in human and civil rights. Recipients of the Humanitarian Award are selected for their commitment to the work of building a community dedicated to the elimination of bias, bigotry and all forms of discrimination. Read more>>>  View Seoh's video>>>
Scholarships connect alumni and students

A constant fact since the university was founded is that Wright State students are hard workers. Students work hard to be successful in their studies. They also work hard in part-time or full-time jobs, while attending classes, to pay for their education. Most students at Wright State work to pay their way through college. A 2011-2012 study shows CoSM students work at a higher percentage than any other college at Wright State. Students in the College of Science and Mathematics come from backgrounds that are as varied as you might imagine. Regardless of their major, year in school, hometown, or family situation students are all faced with an increased need for scholarship support.

Most CoSM alumni know that scholarships provide critical funds to help a student pay for books, tuition and fees. The college wants to make sure CoSM alumni also know that scholarship support can fund a student to pursue undergraduate research in their field of study that will make them a more employable graduate while simultaneously earning money to pay for college. Scholarship support can help students engage in experiential education opportunities (short or long-term study abroad opportunities, unpaid internships in a laboratory or office, and much more) that they could not afford otherwise. Scholarship support can help the College of Science and Mathematics to recruit and retain the very best students who are excelling in their studies. Scholarship support can also impact the large percentage of WSU students who are solid students that don’t qualify for either need based scholarships or merit based scholarships.

Providing scholarship support to deserving students is a priority for the entire Wright State community. Scholarship support can be pooled from small annual gifts, provided by larger one-time gifts or multi-year pledges, be increased by corporate matching gift programs, or be provided by Wright State alumni who include the college in their will or estate plans. If you would like to learn more about how you can join the ever growing number of Wright State alumni who are supporting students with scholarship gifts please contact Chris Adkins-Lamb at 937-775-4980 or christopher.adkins-lamb@wright.edu. Learn about CoSM areas of support

Conquering Circumstances

Psychology student focused on achievement, changing the lives of others, not her personal loss

Nautica Hereford got the phone call we all fear. Her sister back home was on the other end of the line. Their mother, she explained, had been gazing out her front window when a stray bullet took her life.

It was the latest tragic twist for Hereford, who had been thrust into foster care and later separated from her siblings, who had been told she was sure to become just another statistic from her crime-cursed neighborhood, who had been told she had no future, who had been told not to try.

“You get two paths. You get path A, and path B,” said Hereford. “And a lot of people when they are in pain, they take that easy path, path B. Well, I want to show people that path A, may be harder, but it’s well worth it in the end.”

A sophomore psychology major with a 3.6 GPA, Hereford has lost much in life, but the Cleveland native refuses to let her hardships become reasons for failure. Instead they motivate her to give back.

People can take so many things away from me, but they can’t take away my hard work, the long hours, the sacrifices that I’ve put in.” A beneficiary of Wright State’s Paul Laurence Dunbar Scholarship and several other sources of aid, Hereford is determined to make good on those investments and much more. “I don’t think my Wright State story has really started yet,” said Hereford. “By the time I graduate, I want to be remembered as a student that not only achieved but also as a student who brought people along the way, somebody who raised others up too.”

Listen to Nautica’s testimonial

Supporting Academic Excellence

Changing Lives

THIS IS RAIDER COUNTRY
2 CAMPUSES. 1 COMMUNITY. WORLD REACH.
WSU scientist named to prestigious NIH pregnancy study section

The National Institutes of Health has named Thomas L. Brown, Ph.D., a NCBP full professor and researcher, to its prestigious pregnancy study section that is instrumental in national biomedical research.

“Selection to serve as a full member of the Pregnancy and Neonatology Study Section is a tremendous honor, as it highlights the national recognition and standing our research program in pregnancy-associated disorders has here at Wright State University,” Brown said. “While serving as a study section member involves a substantial time commitment and a high level of responsibility, the ability to be surrounded by the brightest minds on the cutting edge of ground-breaking research is truly exciting and inspiring.” Read more>>

Biology students return from the Amazon with new perspective

It was a life-changing experience for graduate student Emily King and seven other biological sciences students this summer when they traversed remote parts of the Peruvian jungle during a field study trip for their Tropical Field Ecology class.

It’s the fifth time associate professor of biological sciences, Tom Rooney has organized the two week class for biology undergraduate and graduate students, many of whom have never taken such a trip.

“You’re putting students into a place they’ve read about, sure, but a place where everything is just so much larger and more intense than they ever could have imagined,” said Rooney. “You can see the rainforest on PBS, but when you are there, experiencing the heat of the sun, the humidity, the cycling temperatures, and you hear the monkeys rustle in the trees ahead of you and you try and get good looks at them and you start chasing monkeys through the forest…there’s just no experience like that.” Read more>>

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And visit Rooney’s blog>>

CoSM hosts visiting scholars from Xi’An University

The Department of Mathematics & Statistics is pleased to welcome visiting scholars, Professors Xiaqing Shang and Hongli Yu of Xi’An University of Arts and Science, China, for the Fall semester. Dr. Shang and Dr. Yu are math educators from Xi’An. They are interested in exchanging ideas and views with our math education colleagues on curriculum and scholarship issues in the teaching of mathematics at all levels. Both are members of a group of visiting scholars from Xi’An visiting Wright State this year.

Wright State students lead professional geologists on field trip

The students from the College of Science and Mathematics’ Department of Earth & Environmental Sciences organized and led the trip to Hocking Hills State Park on August 17 for members of the Ohio section of the American Institute of Professional Geologists. The 18-member group included geologists from the Ohio Department of Natural Resources, the Ohio Environmental Protection Agency and consultants for environmental firms. Read more>>>
After a four-year stint in the Army, his friends invited him to sit in on classes at Wright State, where he was attracted by the small class sizes, the accommodating professors and the welcoming nature of the university’s Veterans Affairs Office.

Read Shank’s full student statement>>
Learn more about Earth and Environmental Sciences Graduate programs.>>

Shank turned his love of history and geophysics into a master’s degree thesis project. He uses magnetics, electromagnetics and ground-penetrating radar to find missing gravestones and graves of military veterans at a Xenia cemetery.

Shank tried ground penetrating radar to look for reflections in the subsurface that might reveal an object. As it turned out, the magnetometer has yielded the most promising information.

“The data we collected from the magnetometer was probably the best, and I was the least excited about that going into it,” Shank said. “Initially it looks like I’ve got some decent data. I think we can be pretty confident in this.”

Shank has also been selected to give an oral presentation of his thesis work at this year’s national conference of the American Institute of Professional Geologists (AIPG) in Denver, Colorado.

Wright State University, a story that gets better
Wright State is not the same school it was in 1967. The campus has grown, the number of students has increased dramatically and graduates from the College of Science and Mathematics have gone on to have wonderful success in their chosen careers. Please keep the college updated on your career successes, we would love to celebrate with you.

Send fond memories of your time at WSU and professional updates to christopher.adkins-lamb@wright.edu.
Chinese officials from The Museum of Terracotta Soldiers and Horses of Shi-Huang-Di arrived at Wright State University as part of a new partnership initiative. Vice Curator Wang Mingsheng and Chief Chemist Rong Bo visited Wright State on August 12.

The College of Science and Mathematics has geophysics experts who can discuss new ground-sensing techniques that could aid in excavating the relics without damaging them. And Yi Li, dean of the college, said the Chinese officials are bringing samples they want the college’s experts on surface and composite chemistry to analyze.

The terracotta sculptures depicting the armies of Qin Shi Huang, the first Emperor of China dating from 3rd century B.C. will now be available to Wright State faculty and students to study because of the new agreement.

Wright State is the only U.S. university to have such a partnership with the museum, which has similar agreements with the Ludwig-Maximilian University of Munich, Germany; Oxford University and University of London, England; and the University of British Columbia, Canada.

August 13, Rong Bo gave a public presentation on preservation techniques to a Wright State University audience. The funerary art was buried with the emperor in 210 B.C. to protect him in the afterlife and was discovered in 1974 by the eastern suburbs of Xian, Shaanxi province, by some local farmers digging a well.

The mausoleum is a World Heritage Site, listed by the United Nations as special cultural and physical significance. The Museum of Terracotta Warriors and Horses of Emperor Qin Shihuang is a key scientific research base of ancient polychrome pottery conservation state administration for cultural heritage. Last year it attracted 5 million visitors. It is believed to be one of the most important findings of the 20th century. Prior to the presentation, Bo and Vice Curator Wang Mingsheng met with officials and students in Wright State’s public history program and took part in a roundtable discussion with officials from the National Museum of the United States Air Force. Later, Bo was scheduled to meet with Wright State experts in chemistry, physics and sensors in hopes of some technological interchange.
The College of Science and Mathematics welcomes new faculty.

Shulin Ju, Ph.D., Department of Biological Sciences, Assistant Professor

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, is a relentlessly progressive, fatal neurodegenerative disease. Patients with ALS suffer from degeneration of motor neurons in the brain and spinal cord, leading to progressive muscular weakness, culminating in death due to respiratory paralysis, typically 2-5 years after onset. Unfortunately, no effective treatment is currently available. While most forms of ALS are sporadic and idiopathic (sALS), ~10% of cases are inherited in a Mendelian fashion and are designated familial ALS (fALS). Research interest is to characterize the functions of proteins involved in fALS to target them for drug design. Ju's research goal is to study the molecular mechanism of ALS, and to utilize the information for new therapeutics development. To achieve this goal, interdisciplinary approaches involved in several research areas will be utilized, including molecular and cellular biology, biochemistry and structure biology, large scale compound screening, and structure based drug design.

Labib Rouhana, Ph.D., Department of Biological Sciences, Assistant Professor

Research in Rouhana’s laboratory is centered on the regenerative abilities of planarian flatworms. Planarians are fascinating organisms capable of regenerating their entire body from small fragments barely visible to the naked eye. The planarian body relies on a large population of adult somatic stem cells to continuously grow, maintain, and regenerate every part of their body. This unique characteristic makes planarians a great in vivo model for the study of stem cell biology.

More specifically, his research focuses on the mechanisms involved in regulating gene expression at the messenger RNA level. His previous work identified RNA-binding and processing factors required for proper maintenance and/or differentiation of planarian stem cells. Currently, the laboratory is aimed towards the identification of mRNA targets for such factors. A related focus of the laboratory is the analysis of conserved networks of post-transcriptional regulation and the molecular characterization of “chromatoid bodies”, large ribonucleoprotein granules in planarian stem cells. From these efforts, we will gain better understanding of how gene expression is regulated to properly balance between proliferation and differentiation of stem cells.

Quan Zhong, Ph.D. Department of Biological Sciences, Assistant Professor

Biological systems are composed of tightly integrated components linked through elaborate networks of biochemical and biophysical interactions. To achieve a global view of how biological systems function, we need a better understanding of the underlying molecular interaction networks. Zhong is interested in developing and employing new strategies and techniques to map and characterize protein interaction networks in different organisms. Identifications of dynamic alterations of such interaction networks due to genetic or environmental changes over physiological or evolutionary timescales should provide insights into the molecular basis of complex genotype-phenotype relationships.
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This newsletter is published
by the College of Science
and Mathematics for its
alumni, faculty, staff and
friends.

We are pleased to announce that we have
launched a new website. Visit us today >>>

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American Crossroads: Exploring the 21st Century Cultural Landscape

The Wright State University Presidential Lecture Series was developed to advance human justice and promote the
university’s commitment to creating a diverse university community and learning environment. All events are free and
open to the public unless noted.

David Frum
November 14, 2013
5:30 p.m. Public Reception
Endeavour Room, Student Union
7 p.m. Lecture
Wright State University Student Union

David Frum is the author of six books, including most recently COMEBACK: Conservatism That Can Win Again. He is a columnist and a regular contributor to
American Public Media’s Marketplace. He served as special assistant and
speechwriter to President George W. Bush for one year. In 2005, he formed and
led the group Americans for Better Justice. In 2007 and 2008, he was a senior
policy adviser to the Rudy Giuliani presidential campaign. He is a member of the board of directors of the
Republican Jewish Coalition.