

The latest news and announcements from the
Wright State University College of Science and Mathematics

THE COLLEGE OF
SCIENCE+MATHEMATICS

Newsletter



Summer 2017

Dean's Message

As we rapidly approach the start of the new academic year, we find ourselves once again gearing up to welcome the next class of future Wright State graduates to campus. This year will be particularly special as we celebrate Wright State's 50th anniversary and welcome our new President, Dr. Cheryl Schrader, to Dayton. These are truly reasons to celebrate and renew our focus on our core missions. To be sure, this has been a challenging period in Wright State's history. We have been tasked with a number of difficult decisions over the past year as we've worked to realign the university's budget with the realities of declining state support and altered student demographics. CoSM has not been immune to these cuts, which have necessitated a number of position eliminations and reductions in other forms of faculty, staff and student services. Although unfortunate, we are now at a point where we can begin to move forward as a college to rebuild and, hopefully, begin to replace some of what has been lost.



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Alumni Spotlight

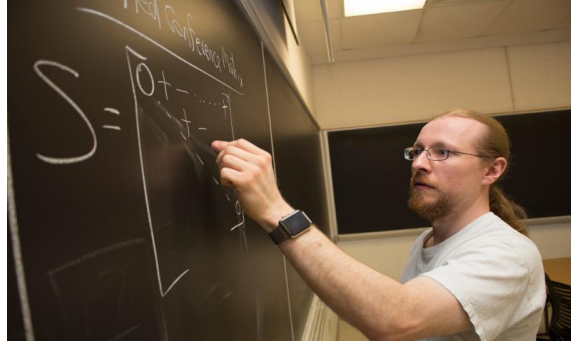
IASM: Radar & Sequences

Jeff Hollon, who is working on his Ph.D. in [Interdisciplinary Applied Science and Mathematics \(IASM\)](#), has been working with [Professor K.T. Arasu](#) on research that applies sequences to things like radar systems.

Radar systems, error correcting codes, cell networks applications and data security all use sequences of numbers.

Mathematicians call these strings of numbers sequences, engineers call them signals and computer scientists would call them codes.

Hollon earned a Bachelor of Science and a Master of Science in Mathematics at Wright State University.



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COSM Spotlight

Stormy weather

Wright State University student, Desi Niewinski and French Intern, Luc Bodénès, participated in a summer research project developed by Wright State University [Department of Chemistry Associate Professor Audrey McGowin](#), researchers at YSI/Xylem in Yellow Springs, and Benjamin Silliman at Glen Helen Nature Preserve to test a new

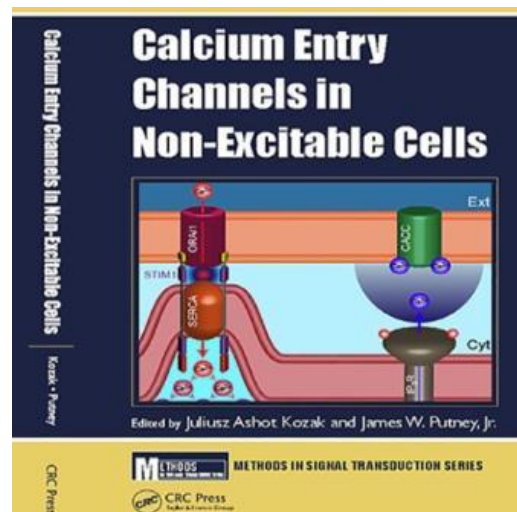


water-monitoring probe under development at YSI/Xylem. The goal was to collect data during "normal" stream flow conditions but also after rainstorms.

[Read more](#)

Methods in Signal Transduction

The concept of signal transduction is a well-established tenet of biological sciences. Calcium ion plays an essential role primarily through cell signaling. Over the past two decades, considerable advances have been made in the molecular and biophysical properties of calcium entry pathways in non-excitable cells. The term "non-excitable" refers to cells that are not capable of firing action potentials. With the exception of neurons, muscle cells and some endocrine cells, all cells in the body are non-excitable.



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2017 Science & Mathematics Outstanding Teaching Award

On behalf of the CoSM Dean's Circle, the college is pleased to announce David Turner, Ph.D. as this year's winner for the College of Science & Mathematics "Student's Choice Award for Outstanding Teaching."

Below are just a few of the numerous comments received by students:

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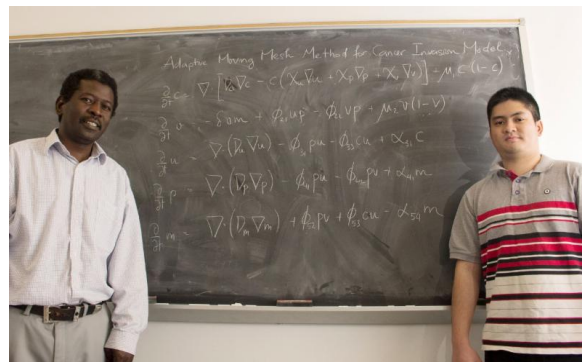


Using math to predict how cancer progresses in the human body

Mathematics and Statistics' Assistant Professor Mohamed Sulman, Ph.D. and his doctoral student, Truong Nguyen are investigating mathematical models that describe cancer cells invasion of a biological tissue.

Sulman examines mathematical models simulating cancer cells invasion of the extracellular matrix (ECM). The invasion is driven by the cancer cells movement as a result of their interactions with the proteins in the ECM, their diffusion, the gradients of the chemicals (chemotaxis) within the ECM and the gradient in the structure of the ECM.

[Read more](#)

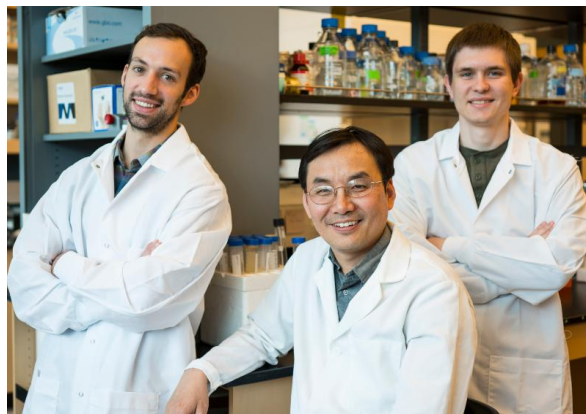


Commentary by Wright State researchers on Lou Gehrig's disease featured in prestigious scientific journal

A prestigious scientific journal that featured a paper on research into the causes of Lou Gehrig's disease asked a team of Wright State University researchers conducting similar research to evaluate the findings and submit expert commentary to be published along with the paper.

The Proceedings of the National Academy of Sciences, one of the world's most-cited and comprehensive multidisciplinary scientific journals, published a commentary, "[Supersaturated proteins in ALS](#)," from Shulin Ju, assistant professor of [biological sciences](#); Elliott Hayden, an M.D./Ph.D. student from Cleveland; and Alan Cone, a [biomedical sciences Ph.D.](#) student from Dayton.

[Read more](#)



International Researchers Attend the 19th Aviation Psychology Symposium

This year more than 280 researchers from around the world came to Wright State University from May 8th through May 11th to attend the 19th International Symposium on Aviation Psychology.

"The symposium is a meeting of researchers and practitioners from industry, government agencies, research laboratories, and universities to discuss the advancement of aviation psychology towards a safer and more efficient sky," said Pamela Tsang, Ph.D., professor of psychology at Wright State and one of the event organizers.



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On the frontline

The lab tables are sealed with protective paper, lab coats and safety goggles are donned as 13 area laboratorians study bacteria that look and react like potential biothreat agents. They came to Wright State University on April 5, 2017 to participate in a bio-terrorism agent workshop sponsored by the Ohio Department of Health Laboratory.



Participants of this one-day workshop reviewed the primary agents of bio-terrorism, safe handling of samples and cultures, and how to recognize biothreat agents through staining and biochemical characteristics. The Ohio Department of Health designs workshops like this one using surrogate, or look-alike, bacteria for clinical microbiologists and those responsible for the oversight of biothreat agent testing.

Laboratorians in our hospital and clinical laboratories play an important role as they are most likely to be the first to encounter these bacteria in their laboratories.

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Neuroscientist for a day

On Friday, April 28th, faculty and students from the Department of Neuroscience, Cell Biology, and Physiology provided a unique opportunity for high school students from Yellow Springs High School to engage in neuroscience and the scientific process. For ninety minutes, students experienced the Neuro Lab, which is centered on the interaction between the nervous system and musculature, and allowed the students to be neuroscientists, conducting



experiments and collecting data related to this topic.

Students were also introduced to concepts regarding what neuroscience is, why it's important, and what neuroscientists do.

[Read more](#)

Student Spotlight

Chemistry graduate student works with researchers on local fentanyl use

It seems nowadays you hear the word "Fentanyl" in local and national news sources daily. Montgomery County is currently leading the nation in overdose deaths per capita. Dr. Ioana Sizemore, associate professor in the Department of Chemistry at Wright State, and I are in a 3-way collaboration with Dr. Raminta Daniulaityte, associate professor of Population and Public Health Sciences at Wright State and Dr. Matthew Juhascik, lead toxicologist at the Montgomery

County Coroner's Office. At the Coroner's office, we developed an LC-MS/MS method for the detection of 24 different fentanyl analogs and metabolites. LC-MS/MS stands for Liquid Chromatography-Mass Spectrometry and is a commonly used instrument in the forensic toxicology field.



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Congratulations to the College of Science & Mathematics' Top Scholars

The College of Science and Mathematics (CoSM) is proud to feature our department Top Scholars along with our college Top Scholar, Eugene Matthew Almazan, who graduated from the Department of Biological Sciences spring 2017.

Top Scholars must have at least a 3.6 GPA and be on track to graduate in the spring. One student from each CoSM department was nominated by their department chair and submitted to the dean. From these distinguished nominations, the dean selected a college top scholar.



[Read more](#)

Wright State students do creek, library and garden work in

Appalachia as part of honors sustainability course

A storefront in the tiny southeastern Ohio village of New Straitsville pulses as a nerve center of efforts to undo the environmental ravages of pre-regulation coal mining. Inside, three Wright State University students cluster around a watershed coordinator, peppering him with questions about their role.



The students are about to take water samples from Monday Creek, which at one time was said to be "dead as a bag of hammers" due to acid mine drainage. The small Monday Creek Restoration Project (MCRP) storefront provides plenty of inspiration for the students to help reclaim the creek.

[Read more](#)

Supporting the College

Experiential learning opportunities for all CoSM students

CoSM would like all undergraduate students in the college to have research opportunities, field experiences, clinical placements, and internship experiences during their undergraduate studies. These types of opportunities fall under the umbrella of experiential learning. As this future is realized, the college will be transformed in remarkable ways. Experiential learning will lend "real world" experience to classwork.



[Read more](#)

Planned giving to Wright State

Planned gifts to the College of Science and Mathematics have a profound impact on the future of

Wright State University.

Planned gifts can support student scholarships, student research, departmental program funds, special projects and STEM events, student travel to professional

association meetings and conferences, faculty research, technology and facility needs, student and faculty awards, or other articulated outcomes.



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Announcements

- [Wright State hosted 19th Annual Midwest DNA Repair Symposium](#)
- [John Flach, Department of Psychology professor and former chair retires](#)
- [CoSM to host Pub Science at homecoming 2017](#)
- [Wright State biology professor Don Cipollini finds emerald ash borer larvae in olive trees](#)
- [Wright State professor Julian Gomez-Cambronero recognized in his native Spain for scientific work](#)



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