

# STEPHEN F. AUSTIN STATE UNIVERSITY

## DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY



### SPRING 2018 INSIDE THIS ISSUE:

- 2 Dr. Brian Barngrover**
- 2 Intellectual Property**
- 3 James Dickerson**
- 3 Dr. J. Brannon Gary**
- 4 Dr. Xiaozhen Han**
- 4 Dr. Duben**
- 5 Ms. Catherine Kwiatkowski**

### YOU'RE INVITED!

The annual awards dinner and undergraduate research symposium is the last Saturday in April. Contact Dr. Alyx Frantzen (afrantzen@sfasu.edu) for information or to RSVP for the 2019 event.

## WELCOME LETTER FROM THE CHAIR

Greetings to alumni and friends of the Stephen F. Austin State University Department of Chemistry and Biochemistry! I would like to update you on our recent personnel changes. We have recently hired Drs. Xiaozhen Han and Brannon Gary to replace Drs. Moore and Langley, who retired at the end of the spring 2017 semester. We also added Ms. Catherine Kwiatkowski as a lecturer to help us meet the demand of our chemistry courses. We appreciate both Drs. Moore and Langley's long careers with our department and wish them well in retirement.

With the support of our alumni, friends, faculty and staff, we continue to graduate successful chemists from our programs. The SFA Department of Chemistry and Biochemistry at has a straightforward and important mission – to educate, train and prepare students for what ultimately will become their life's work. The Department of Chemistry and Biochemistry strives to educate students with a "personal touch." The department not only educates students about chemistry in the classroom, but also uses research as a teaching tool to inspire students in the field of science. We had approximately 20 presentations at national and state conferences involving undergraduates and four publications submitted with undergraduate as co-authors over the last year

Since we began requiring several semesters of research for all our majors, our program numbers have been growing. Our upper-level courses have the highest enrollment in the history of our programs. The retention rate of

our students has been over 80 percent for each of the past three years, which is well above our typical retention rate of approximately 50-60 percent. The Department of Chemistry and Biochemistry has made great strides in improving our programs to be the programs of choice for academically minded students looking to prepare themselves with a complete education both inside and outside the classroom. We believe by involving our students in research as early as their sophomore year, we are helping them develop the skills they need to be successful after graduation.

The department wishes to thank those alumni and friends who have made donations to the department which have helped to support the research of our students and faculty. Without this support, it would be difficult for us to improve the chemistry and biochemistry programs to produce quality graduates. Alumni support is essential in helping the department achieve its mission of academic excellence both inside and outside the classroom for our students.

Hopefully, our newsletter reminds you that SFA and the Department of Chemistry and Biochemistry helped to develop the skills needed for you to be successful after graduation. Our Department truly thanks you for giving us that opportunity, and we look forward to developing our current and future students in the same way.

*Best regards,  
Michael A. Janusa, Ph.D.  
Chair, Department of Chemistry  
and Biochemistry*



## NEW FACULTY MEMBER – DR. BRIAN BARNGROVER

Dr. Brian Barngrover was born in Germany and raised in Kansas. He received his Bachelor of Science in forensic science and biomedical chemistry in 2010 from Kansas Wesleyan University in Salina. He earned his doctorate in theoretical computational physical chemistry from Kansas State University in Manhattan in 2015.

Barngrover joined the department in fall 2015. His current research interests are the elementary steps for the growth mechanism of thiolate protected noble metal nanoparticles, the reaction mechanism of chemical developers with amino acids in the development of latent fingerprints, and the binding energy of divalent metals and resins with amino acid tags.

Students may learn in Barngrover's lab techniques such theoretical nanoparticle synthesis, calculating binding energies and Gibbs' energies, determining possible reaction pathways, and determine many physical properties of systems of interest, as well as properties including NMR, UV- visible, IR, Raman, density of states (DOS), and electronic configurations and excitations.



*Dr. Robert and Kathy Lehmann visited with faculty and administrators during the ribbon cutting ceremony for the Lehmann Chemistry Building.*

## NEW NAME FOR CHEMISTRY BUILDING

Our chemistry building has been named the Robert and Kathy Lehmann Chemistry Building. Dr. Robert Lehmann established Lehmann Eye Center in Nacogdoches 40 years ago. His wife, Kathy Lehmann, attended SFA and is a Nacogdoches native. Kathy serves as an administrator for the Lehmann Eye Center and holds a B.S. in nursing. The Lehmann Eye Center has been at the forefront of surgical techniques in the management of eye diseases and in bringing new technology to the field of ophthalmology.

At the dedication ceremony in April 2017, Dr. Baker Pattillo, SFA president, said, "Dr. Robert and Kathy Lehmann are part of this university. They have dedicated time, expertise and financial resources to SFA, and we are honored to express our admiration and gratitude to them with this recognition."

The Lehmanns have contributed to SFA student scholarship and to the advancement of university programs, including fine arts, modern languages, hospitality, athletics, nursing, the College of Science and Mathematics, and the Women in STEM initiative.

## NEW CLASS – INTELLECTUAL PROPERTY

Dr. Michele Harris has been selected to begin an intellectual property and patent application initiative for the SFA College of Sciences and Mathematics. The idea for coursework and funding for the initiative was provided by Deborah Nicholas Pruitt and Tom F. Pruitt. The Pruitts worked closely with Dr. Kimberly Childs, dean of the college, to select Harris to implement

the program.

The first course, Introduction to Intellectual Property, was offered in fall 2017, and the second course, Patent Application, will be offered in spring 2018. The goal of this initiative is to provide SFA STEM majors a unique set of courses that are not offered at the undergraduate level anywhere else in Texas.



## DISTINGUISHED ALUMNUS – JAMES DICKERSON

James Dickerson is a recent recipient of the SFA Distinguished Alumnus Award. Dickerson graduated from SFA in 1968, then went to work at Dow Chemical Company. For the next 11 years, he worked as a research chemist during the day and attended the South Texas College of Law in Houston at night.

In 1979, Dickerson earned his Juris Doctor and spent three years teaching business law at Delta College in Saginaw, Michigan. For the next 26 years, Dickerson worked in Dow's intellectual property department in both the U.S. and Europe, managing litigation, budgets, and intellectual property, as well as overseeing dozens of legal professionals.

In 2007, Dickerson was appointed to serve on SFA's Board of Regents. During his term, he served as board secretary and chairman of the academic affairs committee.

Dickerson and his wife have been heavily involved in community service since retirement. In New Braunfels, their work was recognized when they were selected as New Braunfels 2016 Unsung Heroes.



From left, Dr. Michele Harris, James Dickerson, Jim Garrett and Dr. Kimberly Childs at the Alumni Awards.

Dickerson regularly volunteers his expertise at SFA by guest lecturing for Chemistry's patent class, helping undergraduate students with career advice, and judging at end-of-the-semester Chemistry Research Symposia. He is well-known and well-loved by many in the Department of Chemistry and Biochemistry.

"We congratulate Mr. Dickerson on being selected to receive the Distinguished Alumnus Award," said Dr. Kim Childs, dean of the College of Sciences and Mathematics. "To be 'distinguished' means that what one has done with his or her education and career is extraordinary and is worthy of special recognition. Mr. Dickerson has certainly met this criteria."

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## NEW FACULTY MEMBER – DR. J. BRANNON GARY



Dr. J. Brannon Gary began serving as an assistant professor in the Department of Chemistry and Biochemistry in fall 2017. Gary attended Carlisle High School, a small high school in Price, Texas (about 50 miles northwest of Nacogdoches).

While in high school, Gary was a varsity basketball power forward (he is 6'6" tall, and yes, generally the weather is nice up there), an all-district first baseman in baseball, varsity golfer, and a member of the Sweepstakes and TMEA honor band playing trumpet and baritone.

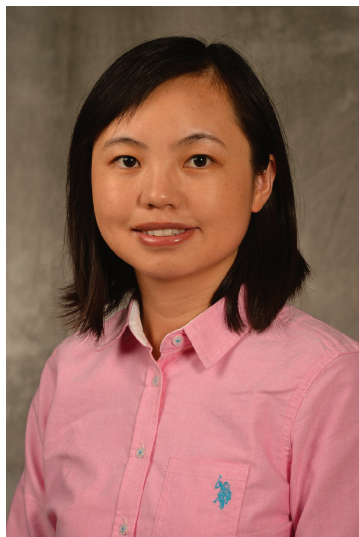
Gary received his Bachelor of Science in chemistry summa cum laude from the University of Texas at Tyler. He decided to brave the cold and attended the University of Michigan at Ann Arbor for graduate school. Gary received his Master of Science and Ph.D. in inorganic chemistry; his research involved the

use of organometallic chemistry for the direct functionalization of carbon-hydrogen bonds.

After surviving the harsh winters, Gary moved to California to work as a National Institute of Health postdoctoral fellow with Professor T. Daniel P. Stack at Stanford University. His research at Stanford focused on the potential role of the copper(III) oxidation state in biology.

Gary decided to return to his Texas roots and was a postdoctoral scholar at the University of North Texas, where he studied the mechanisms of inorganic reactions using computational chemistry.

Gary teaches general chemistry and inorganic chemistry (both undergraduate and graduate classes), and his research is focused on understanding the controlling factors enzymes use to regulate reactive intermediates and how these design features can be harnessed to develop new transition metal catalysts.



## NEW FACULTY MEMBER – DR. XIAOZHEN (JENNY) HAN

Dr. Xiaozhen Han was born and raised in China. She received her bachelor's degree in chemistry in 2009 from Huangshan University, China. She earned a master's degree in organic chemistry at Nankai University in Tianjin, China, in 2012 and received the Distinguished Graduate Student Award. With strong interest in research, she decided to pursue a Ph.D in the United States.

At Baylor University, Han worked with a group involved in designing and synthesizing new flavonol derivatives as ligands and their platinum, ruthenium, osmium coordinated complexes for biomedical applications. Her dissertation focused on enzymatic and non-enzymatic reaction process of bioactive molecule flavonol with HNO and oxygen. Han's research interests are in the field of inorganic and organic synthesis, structure characterization, reaction kinetics and mechanism, and bioinorganic catalysis

## RETIREMENT OF DRS. MOORE AND LANGLEY

Our beloved Drs. Moore and Langley retired in the spring of 2017. Langley joined SFA in 1982 as an assistant professor and provided 35 years of valuable service. Initially hired as the lab coordinator for Chemistry 133, Moore served SFA for 46 years in various roles, including assistant professor, associate professor, professor, and interim chair for both the chemistry and biology

departments. He received the Teaching Excellence Award in 2002, the SFA Foundation Teaching Award in 2006 and was named Regents Professor 2008-2009. When asked which award he worked the hardest for, Moore replied, "I really never worked to achieve any of the awards. I just pursued what interested me and what I felt was best for my students. The awards just fell into place from there."



*Dr. Anthony Duben is pictured with his wife, Barbara, and eight of their ten children at a wedding celebration for their two oldest adopted daughters, Aileen and Melody. Pictured are their two youngest biological sons, Michael and Christopher. The other four are Julia, Martin, Phoenix and Celeste. The latter three are still in high school.*

## A NOTE FROM DR. ANTHONY DUBEN

Retirement is not just sitting around doing nothing. After two moves in the past two years requiring considerable downsizing, my wife, our youngest three daughters and I are all settled into a modest house in Old Town Tallahassee near Florida State University and Florida A&M University. You can see the Florida State Legislature from the front porch.

Now that relocation and lugging boxes are behind me, I can turn my attention to thinking. When I am not tutoring math and science or teaching driving to the three youngest teens, I am still writing for

"Computing Reviews" and am working on breathing life back into shelved projects in computational chemistry. I joined the Tallahassee Scientific Society and am a member of its board. I transferred my Knights of Columbus membership to the Father Hugon Council in Tallahassee and am involved in its work and in the local parish, which is right across the street.

If you are ever in the vicinity, send me an email, and I can take you to Wakulla Springs where the classic creature feature "The Creature from the Black Lagoon" was filmed.



# NEW FACULTY MEMBER – CATHERINE KWIATKOWSKI



Catherine Kwiatkowski teaches introductory chemistry classes to non-science majors. She has 20 years of teaching experience, mostly at the high-school level. Her experience ranges from alternative schools to traditional, from middle school to online community colleges. She has developed online courses in biology, as well as alternative curriculums in chemistry to reach at-risk students.

Using her favorite hobby of writing fiction, Kwiatkowski has self-published two novels that teach chemistry: “Mr. Haley’s Summer School, Semester A” and “Mr. Haley’s Summer School, Semester B.” The idea of using a fictional story to teach chemistry came about when she saw how Rick Riordan’s “Percy Jackson” series inspired thousands to learn about Greek mythology. While working at a Nacogdoches alternative school, she wrote the novels to try to capture the interest of students who wouldn’t read a textbook.

Kwiatkowski earned her master’s in biochemistry at Arizona State University, studying the purification and characterization of a neurotoxin venom extracted from the Canebrake rattlesnake, *Crotalus horridus*. Her interest in snakes originated from her husband, Dr. Matthew Kwiatkowski, who currently teaches in the SFA biology department and has a deep interest in reptiles and amphibians. Having grown up exploring the deserts of southern New Mexico and having owned several snakes throughout her married life, it is not unusual to find a frozen snake in her freezer, right beside the ice cream.

Kwiatkowski said she is excited about joining the faculty at SFA as a lecturer. “I’ve had a passion for teaching ever since I was a high school student,” she said. “I can’t picture myself in a better career, and SFA has proven an exceptional environment to work in.”

## ACCOMPLISHMENTS IN THE DEPARTMENT

- 11 faculty publications, many including students
- Dr. Michele Harris developed the Intellectual Property Initiative
- Dr. Alyx Frantzen elected as vice president of the Texas Academy of Science
- 51 student/faculty presentations
- Dr. Brian Barngrover is a professional collaborator with Region 7
- Megan Jenkins and Carmel Tovar selected as Spotlight Speakers, Undergraduate Research Conference, 2015, 2016
- Carmel Tovar, Outstanding Undergraduate Biochemistry Poster, UTSA Research Conference (2016)
- Carmel Tovar inducted into the ASBMB Honor Society, 2017

## WE’D LOVE TO HEAR FROM YOU!

Like us on Facebook at [facebook.com/SfasuChemistryDepartment?ref=hl](https://facebook.com/SfasuChemistryDepartment?ref=hl).

Send news items for the next newsletter to: [afrantzen@sfasu.edu](mailto:afrantzen@sfasu.edu)

*Stop by the department for a visit any time you’re in Nacogdoches!*

**Department of Chemistry and Biochemistry**

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