

**LSU**

College of  
Engineering

Cain Department of  
Chemical Engineering

**ALUMNI NEWSLETTER**



**VOL. 31**  
**FALL 2016**

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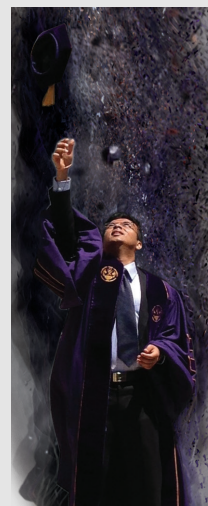
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## ON THE COVER



LSU Chemical Engineering PhD graduate Devendra Pakhare celebrates his achievements.

**LSU**  
LSU IS AN EQUAL

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# FROM THE CHAIR



*John C. Flake  
Jay Affolter Endowed Professor  
Interim Department Chair*


Dear Alumni and Friends:

I am happy to report that we are moving. Most of our labs moved to the new ChE Annex this past summer. Faculty offices and senior lab will move this summer or soon after. The new building is a wonderful place for teaching and learning, and I'm sure it will serve our students for a long time. Speaking of serving our students for a long time, Prof. Wetzel retired last spring after 37 years of service. When he told me he was ready to retire, I asked him to hold a special lecture and invited all of his former students. The outpouring of support was remarkable. Over 200 former students—including several from his time at Catholic University and numerous legacies (generations of family members who were all his students)—returned to hear his last lecture. It was heartwarming to hear the stories from Bob Spurr, Jaime Jurado, Sharon Hulgán, Leslie Hollis, and many others. Wetzel gave a terrific talk and I was proud to see so many former students, along with our new faculty members, in the audience. It was also great to see such support for the endowment created in his honor, which is still open at [www.lsufoundation.org/wetzelfund](http://www.lsufoundation.org/wetzelfund). Likewise, Prof. Knopf let us know this summer that he would retire from LSU as he accepted a new position as Chair of the Chemical & Biomolecular Engineering Department at the University South Alabama. We will certainly miss both of these faculty members and we wish them well in their new adventures.

The department also hired two new faculty members this fall, Dr. Kunlun Ding from Northwestern and Bhuvnesh Bharti from NC State. See their backgrounds, along with their photos, within this newsletter. They are off to a great start and I hope they will enjoy long and fruitful careers in our department.

Finally, I would like to thank all of our alumni and friends who have served on our advisory committee, acted as judges for our junior/senior poster presentations, and/or made a contribution to our department. There are a few things that make our department special and the greatest among these is our alumni. Thank you!

Best Wishes,

|   |                                  |  |
|---|----------------------------------|--|
| UNDERGRADUATE ENROLLMENT<br><b>879*</b>   | MS ENROLLMENT<br><b>9</b>        |  College of Engineering<br>Cain Department of Chemical Engineering |
|   | PHD ENROLLMENT<br><b>47</b>      |  |
| <b>18</b> FACULTY MEMBERS<br><b>8</b> PROFESSORS<br><b>3</b> ASSOCIATE PROFESSORS<br><b>5</b> ASSISTANT PROFESSORS<br><b>1</b> PROFESSIONAL IN RESIDENCE<br><b>1</b> INSTRUCTOR | MS DEGREES AWARDED<br><b>5</b>   | BS DEGREES AWARDED<br><b>103</b>   |
|   | PHD DEGREES AWARDED<br><b>11</b> |  |

\*undergraduate enrollment includes UCFY



## BUILDING UPDATE

### NEW CHEMICAL ENGINEERING BUILDING – LABS UP & RUNNING

Starting July 4 and continuing throughout the summer, Joe Bell (Shop Manager) and his team successfully moved 12 of our professor's labs, graduate student offices, and the Junior Lab to the new Chemical Engineering Building connected to Patrick Taylor Hall. His team worked long and hard hours to make this a reality, and the faculty and staff cannot thank him enough for his dedication and drive during the long, hot summer months. Construction and the renovation of Patrick Taylor Hall are still ongoing, but as you can see by the photos, we're well on the way to achieving the December 2017 completion date and finalizing the move of the entire faculty and staff to our new building!





*José T. Sylve & Rachel Devall*

“The new facility provides much needed space for LSU’s growing engineering program.”

-Joshua Story, ChE Senior

“I think the new building and all that comes with it will promote and better our engineering program. It’s something we can and should take pride in.”

-José T. Sylve, ChE Senior



*Joshua Story*

“The new lab is great for both current and prospective students. Current students are provided with the opportunity to display their knowledge with cutting-edge equipment and materials. Prospective students are able to observe current students in action.”

-Dr. Liz Melvin, Professional in Residence



*Hannah Holmes & Seth Enes*

“LSU has always had a history of consistently producing the most prepared engineers and this new engineering building will propel the college of engineering onto the global arena, once again. The new engineering building provides exceptional instructional and research lab space for graduate and undergraduate students.”

-Tochuwku “Tee” Ofoegbuna, 1st Year ChE PhD Student



*CHE 3104 - Engineering Measurements Laboratory (Junior Lab)*

# FACUTLY AWARDS & NEWS

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## AFTER 40 YEARS IN ACADEMIA, DAVID WETZEL GIVES FINAL LECTURE



“Education is a full professor with time to listen.”

That’s the motto that’s guided David Wetzel’s more than 40-year career in academia.

Wetzel, a professor in the Cain Department of Chemical Engineering, retired May 2016 and gave his final lecture on Friday, April 22, to a packed crowd of current and former students, colleagues, and friends in the Energy, Coast and Environment Building’s Dalton J. Woods Auditorium.

Wetzel began his career as an instructor of chemical engineering at The Catholic University of America, in Washington, D.C., in 1972. After seven years, he joined the faculty at LSU as an assistant professor, and over time, climbed the ranks here to become the associate dean for instruction and an associate professor. During his tenure, he’s held memberships with the American Institute of Chemical Engineers and the American Society for Engineering Education, and he’s received numerous awards for his teaching and advising.

In his career, it’s estimated Wetzel has taught more than 3,000 students—including multiple generations in one family—and graded more than 30,000 exams. And he’s inspired many prospective engineers to find success.



Bob Spurr, a former engineering student who was enrolled in one of Wetzel’s classes at Catholic University, is one of them. Spurr, along with several of his peers, attended Wetzel’s final lecture and spoke about the impression Wetzel made on his education and his life.

“Dave was my first chemical engineering professor,” Spurr said. “Everyone has that one professor who inspired them, who sparked their interest. He was mine.”

Spurr described how Wetzel could take complex subjects and make them easy to understand. He also praised how Wetzel treated students like “future peers” and “friends.”

And how. “It was snowing in D.C., and the city shut down,” Spurr recalled, adding that he and some friends were studying and there was no access to the food services because of the storm. “We called Dave, and without hesitation, Dave said, ‘Come over. I’ll cook you breakfast.’”

Leslie Hollis, another former student, also spoke about Wetzel’s generosity and his ability to connect with people.

“He came to my wedding, and he gave me the most valuable gift—candid photographs of the reception,” she said. “He really captured the human element, and it’s a treasured possession in my family still today. He understood the technical side of things, but he also understood people.”

His warmth and passion were evident to both his students and his colleagues, said Interim Dean Judy Wornat, who worked with Wetzel in the chemical engineering department for more than a decade.

“He could always tell me about an aspect of a student’s life, or draw me their family tree,” she said. “It was not too much trouble for him to be aware.”

She recalled the times she would walk into the faculty lounge—a place that was supposed to serve as a place of relaxation for professors—and find him grading papers, another example of his unwavering dedication.



“However early I arrived to work, Dave was already there,” she said, laughing. “And however late I left, he was still there getting ready for the next day.”

“Would I do this again?” he asked.  
“Study chemical engineering again?  
Teach again? Well, I was encouraged to  
study art, and I did consider architecture,  
but yes, I would.”

Other former students and colleagues also spoke about his influence, and John Flake, interim chair of the chemical engineering department, announced the establishment of the “David M. Wetzel Fund” with the LSU Foundation, which will help support a legacy award, such as a scholarship or professorship. As of then, about \$40,000 had been collected.

Wetzel thanked the department for that honor, the various speakers for their kind remarks, and all attendees who traveled from near and far to participate in the event.

But he didn’t remain sentimental for long. Rather, he used the time to detail—with a deadpan delivery—how things have changed since he started his career (he entered grades by hand on transcripts, and a ticket to the 1960 World Series cost him \$2.20); his rules to live by (“Vote,” and “a gift should not need a tag”) and the top 10 reasons he is retiring (his 60th high school reunion is approaching, and he needs to paint his house).

The crowd was even treated to a brief “quiz” about their experiences with art and music, and a handout to help them determine whether they were right or left-brained. (Wetzel, after all, is equally skilled in the arts and sciences, and he appreciates and practices art outside of the classroom).

To contribute to the “David M. Wetzel Fund,” visit [www.lsufoundation.org/wetzelfund](http://www.lsufoundation.org/wetzelfund).



## AFTER OVER 35 YEARS AT LSU, F. CARL KNOPF RETIRES



Carl Knopf, Anding Distinguished Professor of Chemical Engineering, retired from LSU in May 2016 after almost 36 years of service. Carl was Chair of the department from 1998-2005, and was a pivotal figure in the development of several classes, including 4172 (Design II), 3171 (Economics and Optimization) and 4162 (Sr. Laboratory). He also greatly expanded the department's endowment during his tenure as Chair, oversaw the renovations to the machine shop and both of the (now old) ChE buildings, and was responsible for several research and educational initiatives during his long career at LSU.

Carl was hired as part of a hiring wave in the late '70's to early '80's by then-Chairs Doug Harrison and Eddie McLaughlin. He came from Purdue Univ., with industrial experience as well at Radian Corp. He was hired in particular to fill the department's needs for someone proficient in simulation, and especially in the chemical process simulators, which at the time were still housed on mainframe computer systems. Carl handled the transitions away from mainframes to PC's and between many versions of simulators (ASPEN, SimSci, HYSYS) over the years, while also teaching their use in classes. He also introduced the concepts of heat integration

("pinch technology") to these classes, and even wrote his own open-source heat exchanger networking package when there were only proprietary ones at the time. He taught just about every computer-related class during his time here, along with several others such as 4151 (Design I), the Thermo classes, and the ChE labs. He was well-liked by the students and won multiple teaching awards during his career, and was known for being unstinting in giving his time to help students.

Carl's research initially followed that of his PhD work in flowsheeting and optimization, but he soon branched into separations work focusing on supercritical fluids for extractions from solid and liquid phases. He built from scratch a well-equipped high-pressure lab and received several contracts (from EPA, the regional Hazardous Waste Research Centers, and DOD) to study extraction of contaminated soils and waters. Several of the papers from this period had significant impact, but Carl soon moved on to more fundamental studies of kinetics in supercritical fluids using the then-nascent field of femtosecond spectroscopy. He spent time in Germany building his own system in conjunction with the only commercial manufacturer at the time, and for a time had one of the few such spectrometers in the U.S.

Carl's tenure as Chair can be summed up in the French saying, "Ce qu'on voit et ce qu'on ne voit pas" (that which is seen, and that which is unseen). A lot of what was accomplished was behind the scenes – in some cases by necessity, because he and right-hand man Paul Rodriguez were known to cut a few corners to get the job done. He took over in Jan. 1998 in what was a difficult time for the department. Several years of budget cuts and short staffing had taken their toll on the infrastructure and the endowment accounts. When he inventoried the Department at the time he saw that the undergraduate labs had no interfaced experiments, there were only a few computers in the entire department that were not obsolete and full of viruses, and the number of donors and recruiters was down. He immediately attacked these problems and the next seven years were replete with activity. Some of the more notable accomplishments were a many-fold increase in the endowment accounts, the first control systems for the undergraduate labs (using little departmental money, by way of deals with vendors and major recruiters), complete revamping of the computer system, several new undergraduate lab experiments, and





major renovations to the machine shop (the first computer-controlled lathes and milling machines) and both buildings. With Chancellor Jenkins and Dean Burgoyne, he helped secure the Gordon Cain endowment, other endowed chairs, and many undergraduate scholarships. He was also responsible for recruiting several new faculty, including Mac Radosz from Exxon-Mobil, Judy Wornat, Jerry Spivey, and Jose Romagnoli. The money to fuel a lot of this effort came from alumni and corporate donations. Carl visited a number of the 150 chemical plants and refineries in the lower Mississippi River corridor, and during these visits he described the department's capabilities and explored educational opportunities to assist plant engineers. Although not designed to directly solicit funds, these visits were successful in increasing alumni and industrial gifts to support laboratory improvements and other needs. At the same time, he did not neglect the more traditional duties of Chair and was instrumental in curriculum revisions over this period.

By 2005, Carl decided that he had had enough of administration, and he gave up the Chair job. He immediately resumed teaching and research work, and launched a book writing effort which ultimately resulted in the publication (by Wiley) of "Modeling, Analysis and Optimization of Process and Energy Systems" in 2012. This book surveyed computer applications in engineering economics, energy and mass balances, data reconciliation and gross error detection, power-plant operations, energy integration, and site utility integration. It is a book for the practicing engineer and is loaded with code and example problems, all written by Carl himself. He also wrote a series of grants devoted to the teaching of this material, and sustainable energy

processes. One result of this effort was his partnering with the LSU Cogeneration Facility in provision of remote (but not virtual) ChE laboratories. This project was funded for 10 years by the National Science Foundation, and its efforts were propagated to other schools. Most of the product can be found at: <http://www.esrl.lsu.edu/> (hosted by the LSU Center for Energy Studies). The educational modules cover key aspects of energy production and sustainability, such as cogeneration, biomass utilization, solar, and nuclear. Available free of charge, the instructional activities contained within them are based on actual processes, and provide data (real-time/archived) from the processes. They can be used in the 2-4 weeks cycle of a typical engineering laboratory course, or modified for use in traditional lecture-based courses (e.g., Thermodynamics, Heat Transfer, Reactor Design) as assignments or projects.

Carl was also the Associate Director of the Minerals Processing Research Institute in the Center for Energy Studies for 20+ years, where he conducted research and public service programs in sustainable development, energy management, and inherently safer design. This included "pinch technology," which had immediate, substantial energy savings in chemical plants and refineries. Small-to-medium-sized chemical companies do not have the trained personnel needed to apply this technology, and Carl conducted numerous short courses on these topics with grant support from the Louisiana Department of Natural Resources. Finally, in recent years he developed new research in microreactors and enhanced mixing techniques utilizing low frequency, high amplitude oscillations. The latter involved an innovative piston-based design (with Paul Rodriguez).

Carl will be missed by his colleagues and we wish him well in his retirement and future endeavors.

*Submitted by Profs. Kerry Dooley & Ralph Pike*



## CHE WELCOMES NEW FACULTY



**Bhuvnesh Bharti**  
*Assistant Professor*



**Kunlun Ding**  
*Assistant Professor*

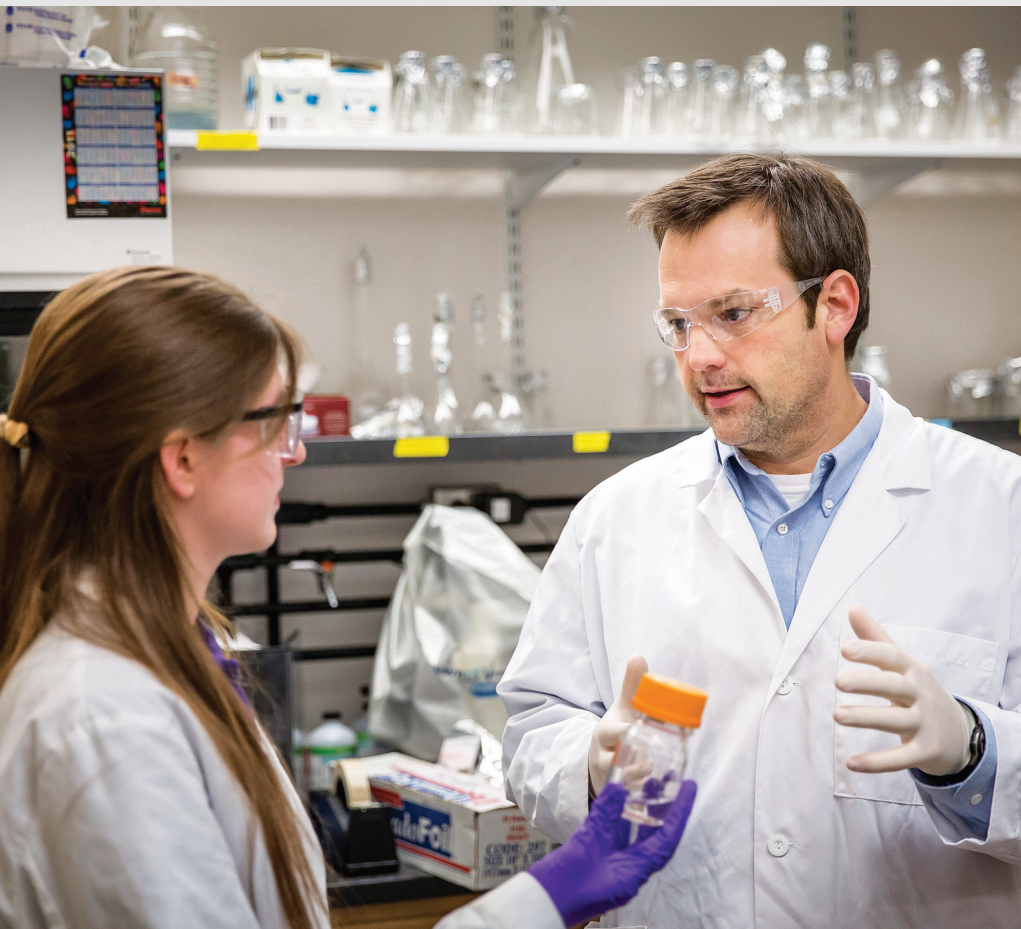
**Bharti** graduated in 2012 with a PhD in Physical Chemistry from the Institut für Chemie, Technische Universität, Berlin, Germany. His research interests include: nanoscience, colloid and interface science, bio-nano interactions, soft matter, multiresponsive materials, and directed-assembly.

“My research is focused on the directed assembly of matter at all length scales, i.e. from molecular to mesoscale. Previously, I studied the fundamentals of intermolecular and interparticle interactions, which govern the assembly of colloids in bulk and at interfaces. These interactions determine the equilibrium assembled state of the particles

and hence dictate the physical properties of the supracolloidal structures. In addition, I gained experience in controlling and modulating these interparticle interactions to engineer new materials. The general theme of my research is to develop fundamental understanding of colloidal interactions and address challenges in the fields of materials engineering, biomedicine, energy, and environmental science.”

**Ding** graduated in 2009 with a PhD in Chemistry from the Institute of Chemistry, Chinese Academy of Science, Beijing, China. His research interests include: catalysis, materials chemistry, spectroscopy, and energy.

“Catalysis is the heart of the chemical industry and energy processing. Among the various types of catalysts, heterogeneous catalysts are the most widely used because of their ease of separation from the reaction mixture. Largely owing to the structural heterogeneities of their complex surfaces, most heterogeneous catalytic systems have not yet been fully understood at the atomic level. My aim is to achieve a more in-depth understanding of heterogeneous catalysts, as well as designing and constructing well defined structures for superior catalytic performance, and come to a systematic understanding of the catalytic mechanisms.”



**Michael Benton**  
*Associate Professor*

## FOUR YEARS RUNNING!

Mike Benton has done it again. For the fourth year in a row, he has been named the recipient of the **Dow Chemical Excellence in Teaching Award**.

Balloting was conducted earlier in the semester, and all seniors who expected to graduate during 2015-16 were eligible to vote. Voters were instructed to identify their top three choices from the list of full, associate, and assistant professors. The ballots were then tabulated anonymously and the top three selections in order of overall preference were determined.

At the Senior Awards Dinner, hosted by Dow on May 2, 2016, each finalist was introduced by a student who recounted several of their experiences with the faculty member. The final results were then announced and every finalist was given a plaque to commemorate the event. In addition, Benton received a monetary award and his name was emblazoned on the plaque memorializing past recipients in the main hallway of the Chemical Engineering Building.

In addition, Benton was selected as the **2016 Student Choice Award for Instructor Excellence!** This is the second year in a row that Mike has won the award. This shows that his dedication and love of teaching is evident to his students. Way to go Mike, we're all proud to call you a member of our department!

*The Excellence in Teaching Award was started in 1988 with financial support from Dow Chemical USA, and is intended to recognize the chemical engineering professor that graduating seniors consider to be the most outstanding teacher in courses they have taken from the department during their time at LSU.*

*The Student Choice Award is part of the Dean's Fund for Instructor Excellence, established in 2015 by 1963 petroleum engineering alumnus Harry Longwell. Longwell served as the first chairman of the LSU Petroleum Engineering Industry Advisory Committee and was inducted into the College's Hall of Distinction in 1990.*

## **KERRY DOOLEY RECEIVES 2016 SWCS AWARD FOR EXCELLENCE IN APPLIED CATALYSIS**



It is with great pleasure to announce that Dr. Kerry Dooley, BASF Professor of Chemical Engineering at LSU, has been selected as the recipient of the 2016 SWCS Award for Excellence in Applied Catalysis.

“As an educator, instructor, research and thesis mentor/administrator, Kerry has been a

part of the development and progression of the LSU department of Chemical Engineering since 1983. Kerry is well known in the field of catalysts and catalytic applications of these materials, including carbonylations, alkane and amine dehydrogenations and homologations. He has over 100 publications, patents and presentations. Kerry has an interesting body of work in catalytic oxidation, that includes direct oxidation of methane to methanol, and most notably his research on combined supercritical fluid extraction (SCFE) of priority pollutants from contaminated soils, with catalytic oxidation of the extract. He has related contributions in the field of high-pressure processing and extraction. Kerry's service to the SWCS and the catalysis community has been exceptional; he has held every office in the SWCS and was also President of the 2007 NAM.”

Kerry received the award, which included a plaque and a \$1,500 check, at the SWCS symposium on Friday, April 22. Please join me in congratulating Prof. Kerry Dooley for this award!

Best Regards,

Teng Xu  
2016 Chair  
Southwest Catalysis Society (SWCS)

## **K. NANDAKUMAR NAMED ERUDITE SCHOLAR**



Prof. K. Nandakumar was named as the Erudite Scholar at the Cochin University of Science and Technology from March 14-18, 2016. He gave several lectures on EPIC, CFD, and the “Impact of Computers on Education, Design, and Society.” The Erudite Program of the Kerala State government in India brings in distinguished scholars from abroad to the

campuses of Kerala State Universities to interact with faculty and students in order to promote excellence in graduate research. Nandakumar is the 3rd faculty member from LSU to participate in this program—the other participants were Profs. Kenneth A. Rose and Samuel J. Bentley of the LSU College of the Coast & Environment.

## **JERRY SPIVEY & TEAM RECEIVE PATENT**



Congratulations go to Prof. Jerry Spivey for being part of a team that was awarded US Patent #9,150,476 B1! Working with DoE/NETL, Spivey and team worked out a method for higher alcohol synthesis.

**Abstract:** A method of hydrogenation utilizing a reactant gas mixture comprising a carbon oxide and a hydrogen agent, and a hydrogenation catalyst comprising a mixed-metal oxide containing metal sites supported and/or incorporated into the lattice. The mixed-metal oxide comprises a perovskite, a pyrochlore, a fluorite, a brown millerite, or mixtures thereof doped at the A-site or the B-site. The metal site may comprise a deposited metal, where the deposited metal is a transition metal, an alkali metal, an alkaline earth metal, or mixtures thereof. Contact between the carbon oxide, hydrogen agent, and hydrogenation catalyst under appropriate conditions of temperature, pressure and gas flow rate generate a hydrogenation reaction and produce a hydrogenated product made up of carbon from the carbon oxide and some portion of the hydrogen agent. The carbon oxide may be CO, CO.sub.2, or mixtures thereof and the hydrogen agent may be H.sub.2. In a particular embodiment, the hydrogenated product comprises an alcohol, an olefin, an aldehyde, a ketone, an ester, an oxo-product, or mixtures thereof.

*The full text can be accessed at [www.osti.gov/doi/patents/biblio/1222642](http://www.osti.gov/doi/patents/biblio/1222642).*

## K.T. VALSARAJ ELECTED TO NATIONAL ACADEMY OF INVENTORS

LSU Professor and Vice President of Research & Economic Development K.T. Valsaraj has been named a Fellow of the National Academy of Inventors, or NAI.

Valsaraj is now one of 582 NAI Fellows representing more than 190 prestigious research universities and governmental and non-profit research institutions. These academic luminaries have positively influenced the economy through cutting-edge discoveries, creating startup companies and enhancing the culture of academic invention.

The 2015 Fellows account for more than 5,300 issued U.S. patents, bringing the collective patents held by all NAI Fellows to more than 20,000.



“This is a recognition of our progress in technology commercialization and the role that LSU plays in the overall economic development efforts within the state. I am also delighted that my own research, which has gone from the laboratory to large-scale industrial implementation, has been recognized by this award,” Valsaraj said.

The academic inventors and innovators elected to the rank of NAI Fellow are named inventors on U.S. patents and were nominated by their peers for outstanding contributions in areas such as patents and licensing, innovative discovery and technology, and support and enhancement of innovation in their field.

Being elected as an NAI Fellow is a high professional distinction accorded to academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible improvement on quality of life, economic development and the welfare of society.

Several NAI Fellows are presidents or senior leaders of research universities and non-profit research institutes; Nobel Laureates; members of the National Academies; inductees of the National Inventors Hall of Fame; and recipients of the U.S. National Medal of Technology and Innovation and U.S. National Medal of Science, among other awards and distinctions.

*K.T. Valsaraj  
Professor and Vice President of  
Research & Economic Development*

The NAI Fellows were inducted on April 15 as part of the Fifth Annual Conference of the National Academy of Inventors at the U.S. Patent and Trademark Office, or USPTO, in Alexandria, VA. USPTO Commissioner for Patents, Andrew Hirshfeld, will provide the keynote address for the induction ceremony.

Valsaraj is a Charles & Hilda Roddey Distinguished Professor, an Ike East Professor, and Vice President of Research and Economic Development at LSU. He received his doctorate from Vanderbilt University and master's degree from the Indian Institute of Technology. His research involves several areas of environmental, chemical, and materials engineering.

# RESEARCH NEWS

## BASF SELECTS RESEARCH PROJECT FOR SUSTAINABLE LIVING LAB AT LOUISIANA STATE UNIVERSITY

*LSU engineering professor to research creating safe drinking water using sunlight*

BATON ROUGE, LA, and GEISMAR, LA, May, 19, 2016 – Louisiana State University (LSU) and BASF selected Kevin McPeak, PhD, as the first researcher in residence at the BASF Sustainable Living Laboratory. BASF donated \$1 million to the LSU College of Engineering in 2014 to create an innovative space that promotes problem-based teaching and research focused on sustainable solutions to global challenges. The lab is the first of its kind at LSU and in the Southeast region, and is located in the newly designed Patrick F. Taylor Hall College of Engineering building, which opened this fall.

Dr. McPeak and his research group will use the BASF Sustainable Living Lab to develop a water disinfection system using visible light from the sun. This portable water filtration system has the potential to provide safe drinking water in developing countries where traditional energy-intensive disinfection methods are not feasible.

“This opportunity to create chemistry with BASF elevates the chances of this research becoming a real solution to providing safe drinking water globally,” McPeak said. “There is great synergy between BASF’s sustainability mission—to make the best use of available resources—and our use of visible light from the sun to disinfect water.”

Approximately 1 billion people in the world do not have access to clean drinking water, resulting in one child dying every 20 seconds from water-related illnesses. BASF, through its partnership with LSU, is driving sustainable solutions to improve quality of life for the world’s growing population. Traditional methods for solar driven water purification only utilize ultraviolet light, which makes up five percent of the solar spectrum, whereas visible light constitutes over 40 percent of the solar spectrum.

“Solving water scarcity concerns amid growing demand is central to BASF’s commitment to sustainability,” said Charlene Warren-Wall, Sustainability Director, BASF North America. “Aligned with the United Nations Sustainable Development Goals, BASF believes everyone should have access to clean drinking water and sanitation. Dr. McPeak’s dedication to building water purification systems using visible light could bring much needed access to many populations in water-stressed geographies.”

This project is part of BASF’s workforce development activities in the Gulf Coast region to invest in students and prepare them for career opportunities in science, technology engineering and math (STEM). In addition, the BASF Sustainable Living Lab will support broader community and STEM outreach efforts with local elementary and high schools. The research will be showcased through school tours and webcasts as well as being used in other educational resources.

“Our long-standing relationship with LSU is a great example of the successful partnerships BASF creates in the communities in which we operate,” said Tom Yura, Senior Vice President, BASF site in Geismar. “Whether it is through our financial support for research or mentoring, professional development, and recruitment of LSU students, we believe the best talent for the future workforce can be found in our own backyards.”

### **About Kevin McPeak, PhD**

*Kevin McPeak, PhD joined the Cain Department of Chemical Engineering faculty at Louisiana State University at Baton Rouge in 2015 after completing his post-doctoral work at Swiss Federal Institute of Technology, Optical Materials Engineering Laboratory in Zurich, Switzerland.*

### **About BASF**

*BASF Corporation, headquartered in Florham Park, New Jersey, is the North American affiliate of BASF SE, Ludwigshafen, Germany. BASF has nearly 17,500 employees in North America, and had sales of \$17.4 billion in 2015.*



**Kevin McPeak**  
*Assistant Professor*

## KEVIN MCPEAK - ACS PHOTONICS MOST DOWNLOADED PAPER OF 2015



Congratulations to Prof. Kevin McPeak, who joined LSU ChE fall 2015, on his article “Plasmonic Films Can Easily Be Better: Rules and Recipes.” His article was the most downloaded paper of 2015 in *ACS Photonics*.

The full article can be accessed at [pubs.acs.org/doi/abs/10.1021/ph5004237](https://pubs.acs.org/doi/abs/10.1021/ph5004237).

was published in—and made the cover of—*Chemistry of Materials* (2016, Volume 28, Issue 5).

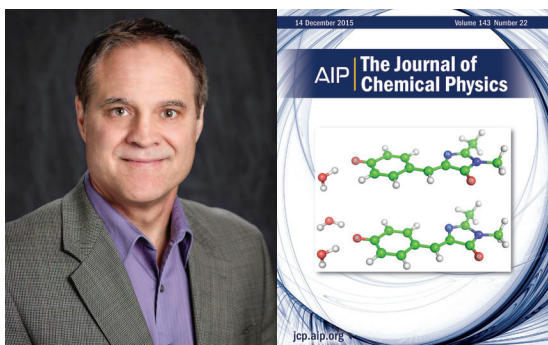
The abstract can be accessed at [today.anl.gov/2016/01/nanostructured-block-copolymer-electrolytes](http://today.anl.gov/2016/01/nanostructured-block-copolymer-electrolytes).

The full article can be accessed at [pubs.acs.org/doi/abs/10.1021%2Facs.chemmater.5b04452](https://pubs.acs.org/doi/abs/10.1021%2Facs.chemmater.5b04452).

## EPIC HOSTS INTERNATIONAL WORKSHOP IN CANADA

The EPIC Group at LSU conducted an international workshop in Banff, Canada August 7-12. This workshop was organized by Dr. Krishnaswamy Nandakumar and sponsored based on a competitive funding by the Banff International Research Station (BIRS). About 40 international researchers representing USA, Canada, England, Australia, France, Germany, Norway, India, Brazil and other countries gathered for a five-day intense discussion on topics related to the theme of Enabling Process Innovation through Computation. The topics covered computational and experimental aspect in understanding multiphase flows and its application to process innovation in chemical industries.

## TWO CHE PROFESSORS AUTHOR PUBLICATIONS FEATURED ON COVERS OF TOP-TIER JOURNALS



Congratulations to Prof. William “Bill” Shelton on his recent article “Probing microhydration effect on the electronic structure of the GFP chromophore anion: Photoelectron spectroscopy and theoretical investigations,” which made the cover and was the focus of the December issue of *The Journal of Chemical Physics*.

The full article can be accessed at [scitation.aip.org/content/aip/journal/jcp/143/22](http://scitation.aip.org/content/aip/journal/jcp/143/22).

Additional can be accessed at [phys.org/news/2016-01-combined-approach-photophysics-green-fluorescent.html](http://phys.org/news/2016-01-combined-approach-photophysics-green-fluorescent.html)

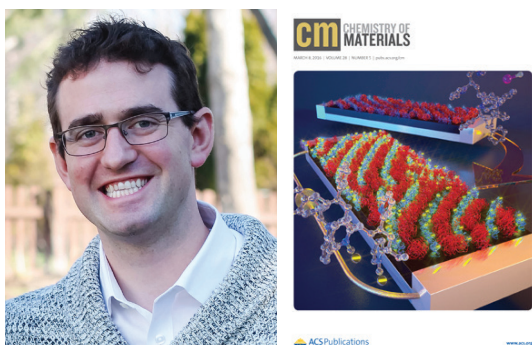


K. Nandakumar  
Cain Professor

## CHEMICAL ENGINEERING SUMMER REU PROGRAM

This summer, our department hosted eight high-achieving undergrads from various universities for a summer Research Experience for Undergraduates (REU) program. They worked with faculty members in the research labs and got a taste of what grad school is like. This program was funded by an NSF grant received by Profs. Mike Benton and Adam Melvin.

The program ended with poster presentations for the College and LSU’s SURF Forum for undergraduate research. Here are a few of the highlights from their summer, as well as a list of their names, universities, and advisors from the college.



Congratulations to Prof. Christopher Arges for co-authoring the paper “Perpendicularly Aligned, Anion Conducting Nanochannels in Block Copolymer Electrolyte Films.” It



# REU 2016

Riley Manning, University of Alabama  
Advisor: Adam Melvin (CHE)

Nick Latz, NC State University  
Advisor: Kevin McPeak (CHE)

Dana Lobmeyer, University of Florida  
Advisor: James Dorman (CHE)

Autumn Douthitt, Tennessee Tech University  
Advisor: Teresa Gutierrez-Wing (Civil)

Sean Overa, University of South Carolina  
Advisor: Doran Boldor (BAE)

Hannah Hymel, University of Louisiana-Lafayette  
Advisor: Mike Benton (CHE)

Ken Kuchnir, Washington University St. Louis  
Advisor: Chris Arges (CHE)

JC Davila, Texas A&M University  
Advisor: Kerry Dooley (CHE)





## FACULTY SPOTLIGHT

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### James J. “Jerry” Spivey Shivers Professor Eidt Jr. Professor

Jerry Spivey, director of the LSU Center for Atomic Level Catalyst Design, aims to develop advanced research tools—especially catalysts—that can more efficiently convert resources into clean energy and higher-value products. The research and discoveries in his lab and at the LSU synchrotron facility, the Center for Advanced Microstructures and Devices, or CAMD, could unlock a myriad of opportunities for natural gas.

#### **What opportunities does natural gas offer?**

We are beneficiaries of one of the greatest developments in our lifetime—new technologies to tap the vast new discovery of natural gas and its associated energy. At LSU, we are developing more efficient ways to convert that natural gas into clean energy. For example, if you look at how our electricity is produced in this country, about half of it is generated by coal. Coal is abundant but difficult to convert into clean energy. However, natural gas can be converted into clean energy to replace some of those coal resources.

One thing I learned recently is, for the first time, the U.S. has become a net exporter of energy. That’s because of new sources of natural gas and oil as an energy source. I’m really interested in how we can use catalysts to convert natural gas into clean energy and higher value chemical intermediates.

#### **What is a catalyst?**

Very simply, a catalyst is a material that makes a reaction occur faster than it would otherwise. Catalysts are absolutely essential to every process involved in the chemical or fuel industries. They direct the reaction kinetically in the way we want it to go.

Those catalytic processes are more efficient, they make less waste, and they are more profitable. My research focuses on the development of catalysts for conversion of resources like biomass, natural gas, or coal into clean fuels and energy.

#### **How does the energy industry work with the Center for Atomic Level Catalyst Design, or CALC-D?**

In my lab, we develop catalysts. For example, we have worked with the chemical company Albemarle to develop a way in which we can convert natural gas into clean fuels. We looked at an entirely different process to do that. Another example in my lab is conversion of synthesis gas, or syngas, which is a mixture of hydrogen and carbon monoxide. In that case, we converted it to alcohols, which was a project supported by Chevron.

#### **How does partnering with LSU researchers, such as yourself, benefit leaders in the energy industry?**

We bring research and industry expertise together with faculty and students, many of whom are already addressing the same problems industry faces. How do we convert natural gas, for example, into clean fuels and what catalysts are needed to make that work? So we have people already working on those very same processes. We also have our own scientists who can work side-by-side with faculty and students here to focus on a very specific problem.

The second is access to facilities like the synchrotron facility here. The next closest synchrotron is in Chicago. There are only eight such facilities in the U.S. that allow researchers to analyze, characterize, and look at solid catalysts atom-by-atom.

Also the synchrotron facility at LSU provides access for the students so we can train them to analyze and recognize the types of catalysts they produce. That is unique among other synchrotrons, where access is more limited.

#### **Tell us how you became interested in this research and what drives your passion in this field.**

One of the reasons why I got interested in this research is the importance of energy. When we look at energy, it is clear that energy permeates everything in our lives—how we drive to work, how we heat and cool our homes or buildings, and how we carry out the research here at the synchrotron. All of that requires energy. I’m particularly interested in how catalysts can be used to convert those resources—whether biomass, coal, or natural gas—into clean fuels. Catalysts are an essential part of that process, and I want to help develop ways to do it better.

#### **What are some of the challenges of developing catalysts?**

At the Center, we are working toward advancing the capabilities of computation, synthesis, and characterization of catalysts. As of today, those three areas are not bridged. We cannot seamlessly design a catalyst atom-by-atom. For example, after someone designs a catalyst on a computer or solves the equations that tell how the atoms are arranged in a catalyst, that catalyst must be synthesized with the atomic precision that corresponds with the computation. Once that’s done, the third step is to characterize the catalyst. There are limitations in each capability. So what we are trying to do in our Center is use facilities, like the synchrotron, to bridge those capabilities.



Our Industrial Advisory Committee (IAC) is a driving force behind the success of our department. We would like to express our appreciation for their passion, commitment, and leadership.

## 2015-16 COMMITTEE MEMBERS

### Kevin J. McCarroll

**Chair**  
Operations Director  
BASF Corporation - Geismar Site

### Dustin Beebe

CEO  
Prosys, Inc.

### Marvin Borgmeyer

Operations Manager (Ret.)  
ExxonMobil Chemical Company

### Claire Cagnolatti

Vice President, Chemical Studies  
Solomon Associates, Inc.

### Dr. Dave Clary

Chief Technology Officer  
Vice President, Performance Chemicals Research & Technology  
Albemarle Corporation

### Glynn Fontenot

Plant Manager  
Methanex

### Charlie Freeburgh

Vice Chancellor, Work Force Development  
Baton Rouge Community College

### Kathleen Garey

Process Owner, Manufacturing Learning from Incidents  
Shell Oil Company

### Sharon Hulgan

Site Logistics Director  
Dow Chemical Company

### Edward McGinnis

Capital Projects & Central Engineering Manager  
Monsanto Company - Luling Plant

### Kim Odell

Process Engineer  
Louisiana Refining Division  
Marathon Petroleum Company LLC

### Enrique Osuna

Process Control Senior Section Supervisor  
Baton Rouge Refinery  
ExxonMobil

### Dr. Christopher Roberts

Dean, Samuel Ginn College of Engineering  
Uthlaut Professor  
Auburn University

### Dr. Ronald Rousseau

Professor & Cecil J. "Pete" Silas Chair  
School of Chemical & Biomolecular Engineering  
Georgia Institute of Technology

### Dr. Phillip Westmoreland

Professor, Department of Chemical & Biomolecular Engineering  
Executive Director, NCSU Institute for Computational Science  
& Engineering  
North Carolina State University



# RECRUITMENT

## 2016 GRADUATE RECRUITMENT WEEKEND

On Thursday, March 10, seven prospective graduate students arrived in Baton Rouge to take part in our 2016 Graduate Recruitment Weekend. They ate lunch at Walk-Ons, a local restaurant, after which Aaron Harrington—LSU ChE Graduate Student Association President—took them on a guided tour of LSU's Center for Advanced Microstructures & Devices (CAMD) facilities. The next morning they traveled to Tiger Stadium, where they ate breakfast in the Lawton Trophy Room and were given a tour of the stadium. Following the morning activities, they participated in a round robin of faculty poster presentations and lab tours. Later that day they were outfitted with personal protective equipment and surprised with a private tour of the new classrooms and labs still under construction in Patrick Taylor Hall. That evening they were treated to a Louisiana specialty, a good old-fashioned crawfish boil. After eating—and getting to know the faculty and current grad students—they traveled to Alex Box Stadium where they watched LSU play Ball State. Saturday, they parted our company and returned to the airport. The department would like to thank all who participated and made this event a success.



# STUDENT AWARDS & NEWS

## JUNIOR/SENIOR POSTER PRESENTATIONS—APRIL 2016

The department would like to thank the 90 industry professionals (by far our biggest turn out yet)—and the companies they represent—who gave their time, energy, and thoughtfulness in judging this year's student participants. Without their efforts, the event would not have been such a success. In addition, the students enjoyed the chance to meet and greet some of Louisiana's best and brightest industry leaders.

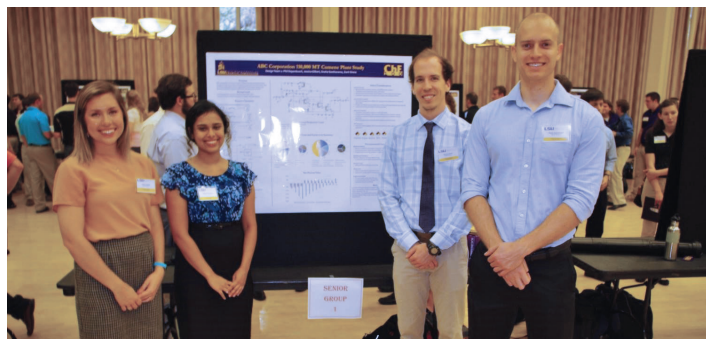
Each year, juniors in CHE 3171 (Process Economics and Optimization) and seniors in CHE 4172 (Process Design) are placed in small groups and assigned a problem for which they must find a solution. During the semester, they work together to research the problem, prepare a solution to the problem, produce a poster demonstrating their solution, and present that poster to industry leaders and members of the ChE faculty.

This year, 35 groups of three or four juniors worked out how many barrels of propane or butane can be added to a Mogas pool composed of 7,500 barrels of reformat and 2,500 barrels of light cat naphtha, given the RVP specification of 10 psi maximum. For each solution, they had to determine the ON of the resulting Mogas pool. A new stream of high-ON, low-RVP molecules, called alkylate, then becomes available, and a mixture of the alkylate and either propane or butane (or both propane and butane) can be created that matches the RVP of the Mogas pool they created. Overall, the groups did very well and the industry judges were impressed.

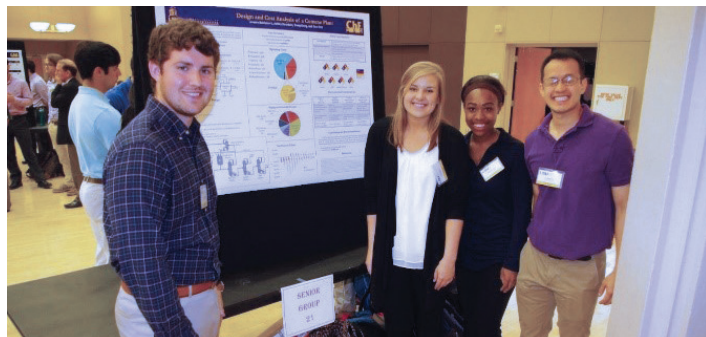
Twenty-eight groups of three or four seniors were asked to design a process to produce cumene by alkylation of benzene. The students simulated the process using the HySys simulator and estimated the production costs by

sizing and costing the major pieces of equipment. After the costs of the base case were determined the students evaluated a number of process alternatives to reduce costs. Their presentations included the process costs, and the environmental and safety consideration of the design. To work out this problem, seniors had to pull together and use all of the knowledge and skills they had learned during their chemical engineering education. As with the juniors, the judges were impressed with the seniors, scoring their posters with high marks and outstanding comments. However, there were two groups that stood out and tied for the Best Design Award for 2016: (1) Phillip Depenbusch, Jessica Gilbert, Sneha Seetharama, and Zachary Sirera; (2) Jeremy Baldassaro, Ashley Dautain, Trung Dong, and Dara Dye.

The Best Design Award is given each year to the team(s) that scores the highest grade on the final design report. The report grade is based on the team's knowledge of the process, the justification of their design decisions, and their discussion of the process economics, environmental impact, and safety considerations.



Group 1 - Depenbusch, Gilbert, Seetharama, Sirera



Group 2 - Baldassaro, Dautain, Dong, Dye





American Institute of Chemical Engineers

## 2016 AIChE REGIONAL CONFERENCE

The 2016 AIChE Regional Conference was held in Tuscaloosa, AL from March 31 to April 2. Six LSU ChE students presented their research at the conference—one, Seleipiri Charles, placing in the top five! Four LSU AIChE students competed in the annual ChE Jeopardy competition where they answered questions related to chemical engineering fundamentals and applications with topics including fluids, thermodynamics, material and energy balances, and unit operations. The team won the quarter-finals, but lost to Tennessee Tech in the semi-finals. At the conference, LSU successfully bid to host the 2018 AIChE Regional Conference!



## EVA CASPARY RECEIVES YOUNG SCIENTIST AWARD

Congratulations go to Eva Caspary on receiving a Young Scientist Award for Best Oral Presentation at the 25th ISPAC Conference. The ISPAC conference (International Symposium on Polycyclic Aromatic Compounds) is a biennial meeting that is held alternately in North America and Europe. This year's conference took place in Bordeaux, France, on September 13 - 17, 2015, and nearly 200 scientists working in academia, national labs, and industry came from all over the world to discuss new findings of various aspects of polycyclic aromatic compounds (PAC). The topics relevant to PAC research presented at the meeting

included toxicological effects, synthesis, standard reference materials, environmental presence, and PAC formation from fuels. Her presentation focused on the formation and growth reactions of polycyclic aromatic hydrocarbons (PAH) from the pyrolysis of 1-alkenes, which are decomposition products of practical solid fuels.



*Eva Caspary, ChE PhD Candidate (Advisor: M.J. Wornat)*

## PARIA AVIJ PLACES 1ST AT DWTS



*Paria Avij  
ChE PhD Candidate  
(Advisor: K.T. Valsaraj)*

Congratulations to Paria Avij, ChE PhD candidate and research assistant, for placing 1st in the student oral presentations at the 19th annual Gulf of Mexico Deepwater Technical Symposium held in New Orleans. The award is given to an outstanding oral presentation of research that represents a distinctive and valuable contribution to Deepwater Science and Technology.

## KURT RISTROPH NAMED 2016 DISCOVER SCHOLAR

Kurt Ristroph is an Honors College Senior double majoring in Chemical Engineering and Liberal Arts. The May 2016 graduate is a part of the Honors College Student Council, Honors College Advocates, National Senior Classical League, and the LSU chapter of the American Institute of Chemical Engineers.

Kurt believes undergraduate research takes you beyond the 'recipes' you follow in a chemistry lab class or the research papers you write for a humanities class. "There is a joy that comes in designing your own experiments, creating your own methodology, or crafting a truly holistic response to a question of literature or the human experience," Kurt said. "Usually, you don't have to worry about a grade, and you can flex your intellectual muscles and really bend your focus

onto some problem, some obstacle, and begin to get to chip away at it. Undergraduate research teaches you how to solve problems, rework or reevaluate after failure, and take pride in your answer.”

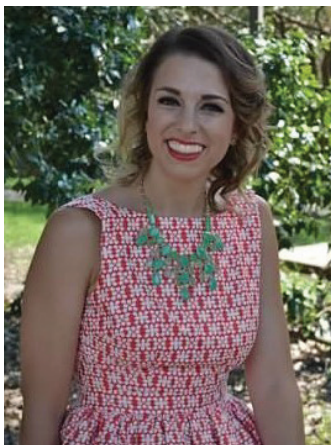
After graduation, Kurt wants to attend graduate school beginning in the fall and become a university professor after earning a PhD in chemical and biological engineering.

*The LSU Discover Scholar award recognizes students who exemplify the potential for undergraduate research and creative endeavors at LSU. These outstanding students were nominated by a faculty member and selected by a panel of judges. LSU Discover congratulates the 2016 Discover Scholar Awardees, each of whom will be honored at a breakfast with LSU President F. King Alexander.*



**Kurt Ristroph**  
ChE Undergraduate  
(Nominated by Dr. Cristina Sabilov)

## AUBREY HEATH RECEIVES DISTINGUISHED DISSERTATION AWARD



**Aubrey Heath**  
ChE PhD Candidate  
(Advisor: K. T. Valsaraj)

Aubrey Heath was selected to receive an LSU Alumni Association Distinguished Dissertation Award in Science, Technology, Engineering & Mathematics.

In her dissertation, Aqueous Atmospheric Species, a Dual Study: Phase 1. Comparison of the Effects of Temperature, Oxygen Level, Ionic Strength and pH on the Reaction of Benzene with Hydroxyl Radicals at the Air-water Interface to the Bulk Aqueous and Phase 2. Determination of Carbonyl Compounds in Fog Water Samples via Online Concentration

and HPLC, Aubrey Heath performed both laboratory and field studies to further understand atmospheric processes and the fate of common environmental pollutants, such as benzene and carbonyl compounds, in fog droplets.

The bulk of the dissertation focused on the reaction of benzene, a common primary atmospheric pollutant, with the hydroxyl radical in both a bulk-phase reactor and a thin film flow-tube reactor.

Volatile organic compounds, like benzene, can oxidize in the environment to form additional fog water pollutants, including carbonyl compounds. These compounds can form secondary organic aerosols and are precursors to photochemical smog. This study helped gain a better understanding for fog/smog processes in the natural environment. An award committee member noted that this research stood out as “impactful and impressive,” and the college selection committee highlighted its outstanding technical quality.

Heath received her bachelor of science degree in chemical engineering with a minor in chemistry from Florida Institute of Technology in Melbourne, Florida, and her PhD in chemical engineering from LSU in 2015 under the guidance of her committee chair K.T. Valsaraj. While at LSU, she received the William Brookshire Graduate Assistantship in Chemical Engineering. She has made presentations at eight conferences, received the Student Presenter Award in chemical processes at the 249th ACS National Meeting, and was first author on three publications. Heath is currently working as a process engineer at G. R. Stucker and Associates in Baton Rouge.

## SANTIAGO SALAS PRESENTS CONFERENCE IN ECUADOR

Santiago Salas is a PhD candidate in Chemical Engineering at Louisiana State University with specialization in Process Control Engineering. He obtained his bachelor at Universidad Central del Ecuador and Master of Science in Chemical Engineering at Louisiana State University as a Fulbright scholar. Recently, he traveled to Ecuador and gave a conference at Universidad Central del Ecuador. The topic presented was: “Introduction to the optimization of chemical plants.”



**Santiago Salas**, ChE PhD Candidate (Advisor: José Romagnoli)



Photo provided by SUSAN ANDRIES—from left to right: Matthew Skapura, Rebecca Andries, Anne Cooper, Kurt Ristroph, and Margaret Granier

## FAB 5: STUDENTS START SCHOOL TOGETHER AS 4-YEAR-OLDS, ALL GRADUATE LSU TOGETHER AS ENGINEERS

When Susan Andries taught 4-year-olds in St. Aloysius' Sunday school about 16 years ago, she knew her students were building more than just biblical knowledge.

They were building, from an early age, a "strong sense of community and faith," Andries said, that would come to serve all of those students in their non-religious studies.

Andries watched over the weekend as five of those children—her daughter, Rebecca Andries, and Anne Cooper, Matthew Skapura, Kurt Ristroph and Margaret Granier—all graduated with honors from LSU with degrees in chemical engineering.

They thrived despite the demands of the program, Cooper said, in part because they shared great teachers along the way.

The five attended elementary and middle school together at St. Aloysius, said Rebecca Andries, where they got a good foundation and a little inspiration from St. Aloysius parishioner and LSU professor Armando Corripio, with whom they would all come to study. And, they got inspiration at home.

"Each of us has parents who are engineers, so the career path was not foreign to us," Cooper said with a laugh, adding that they had fun and inspiring teachers in math and science at St. Joseph's Academy for the women and Catholic High, for the men.

Rebecca Andries agreed.

"St. Aloysius and SJA/CHS prepared us well and made us all enthusiastic about science," she said, adding that she appreciated how unique her experience has been having the same four classmates throughout their academic careers, even predating academics.

Cooper also credits the emotional and study support that came with those close ties. "I can firmly say I could not have made it through this major without a support system. Rebecca and I work very closely as well as Margaret, Matthew, and Kurt," she said. "From group projects to homework and studying, we've spent a lot of time together over the past 4 years."

Skapura estimates he and Ristroph shared at least 30 teachers, from preschool to college.

"In addition, LSU has a very good chemical engineering department, and perhaps our similar backgrounds led us to see ourselves becoming successful through this route," Skapura said.

Looking at those five graduating seniors, Susan Andries thinks of the 4-year-olds sitting in her classroom, and knows they could not have done it without individual dedication.

"These students all demonstrated a considerable amount of fortitude and hard work," she said.

Original article featured on [TheAdvocate.com](http://TheAdvocate.com).

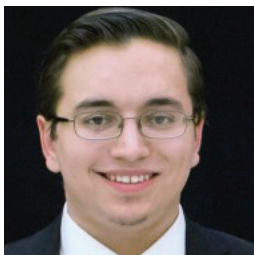
## BASF AWARDS \$5,000 IN SCHOLARSHIPS TO TWO LSU CHE STUDENTS

GEISMAR, LA, November 3, 2015 – BASF recently awarded \$10,000 in scholarships to four engineering students (\$5,000 to ChE students) at Louisiana State University (LSU) in Baton Rouge, Louisiana. BASF awards scholarships annually to top-performing students in the fall semester as part of the company's education outreach and workforce development efforts.

"BASF is investing in the future of our industry and our state by helping engineering students continue their studies at LSU," said Tom Yura, Senior Vice President and Manager of the BASF site in Geismar, Louisiana. "Through our continued partnership with LSU's College of Engineering, we promote career opportunities that are available at BASF and provide hands-on learning and mentoring opportunities for students."

Four winning students will receive a \$2,500 scholarship from BASF. Grants are awarded to students who maintain excellent grade-point averages and are active in campus and community organizations.

The ChE scholarship winners are:



*Jake Campesi  
ChE Undergraduate*

Giuliano "Jake" Campesi, a junior chemical engineering major and business administration minor, is a graduate of Catholic High School in Baton Rouge and a National Merit Scholar. He has maintained a 4.0 GPA since fall 2014 and is a member of Tau Beta Pi Engineering Honorary Society and Phi Kappa Phi. He was awarded the LSU Flagship and Global Leaders scholarships, and has served as a research assistant in the Cain Department of Chemical Engineering and an intern for NFR BioEnergy in White Castle, Louisiana.



*Justin Nhan  
ChE Undergraduate*

Justin Nhan of Shreveport, a graduate of Caddo Magnet High School, is a sophomore chemical engineering major. He is a member of Society of Peer Mentors, American Institute of Chemical Engineers, Tiger Transition Team, and LSU Men's Club soccer team. He is also a volunteer tutor for the English as a Second Language program through the Honors College.

"BASF is a long-time supporter of our students," said LSU College of Engineering Interim Dean Judy Wornat. "By presenting scholarships here at LSU, BASF is investing in the next generation of future leaders and engineers."

## DEPARTMENTAL AWARDS

### REBECCA ANDRIES RECEIVES 2016 JESSE COATES AWARD

Andries was presented with both the Jesse Coates Award and an engraved watch at the department's 2016 Undergraduate Awards Banquet. The Coates Award is voted on by all ChE faculty and is given to a student who exemplifies both academic integrity and leadership in extracurricular endeavors.



*Rebecca Andries  
receives Jesse  
Coates Award and  
engraved watch  
from Prof. Wetzel*

### ABIGAIL BURCHAM RECEIVES 2016 CHE JUNIOR AWARD



Abigail Burcham received the 2016 Chemical Engineering Junior Award for holding the highest GPA at the end of the semester in which she had completed 90 hours.

*Abigail Burcham  
ChE Undergraduate*

### TEN CHE STUDENTS RECEIVE 2016 SENIOR AWARDS

The Senior Award is given to graduating seniors that complete the program in four years with no dropped courses. This year's recipients were Rebecca Andries, Lexie Breaux, Abigail Burcham, Anne Cooper, David Gauthreaux, Margaret Granier, Anteneh Lisan, Kurt Ristroph, Joshua Saltz, and Bryant Woods.



# SCHOLARSHIPS

## 2015-16 UNDERGRADUATE SCHOLARSHIP RECIPIENTS

**Alan M. Raymond Endowed Scholarship**  
Breanna Lee

**American Society of Sugar Cane Technologists Scholarship**  
Chase Ellefson, Caroline Limbaugh, Justin Nhan, Matthew Skapura

**BASF Corporation Engineering Scholarship**  
Jeffery Anderson

**BASF Team Chemistry Scholarship**  
Giuliano Campesi, Justin Nhan

**BP Scholarship for Energy in Engineering**  
Stephen Hurdle

**BP Scholarship for Energy in Engineering #2**  
Seleipiri Charles, Monica Guillot, Lauren Mac Kenzie, Rachel Nguyen, Annie O'Keefe, Adriana Ready, Delaney Sheehan, Yina Zhang

**Chemical Engineering General Scholarship**  
Sulaiman Al Rawahi, Gabriel Alarcon-Caine, Jeremy Alcanzare, Jeremy Baldassarro, Jade Bates, David Biennu, Allison Bourdon, John Boyce, Lexie Breaux, Lee Burnett, Jacob Cheramie, Kristopher Clavin, Lillian Cormier, Victoria Croft, Mischael Daniel, Chase Ellefson, Matthew Fauchaux, Madison Ferda, Gage Fos, William Ghrist, Paulina Gonzalez-Quiroga, Stephanie Hebert, Anna Hoying, Logan Jacob, Seth Kaplan, Ashten Landry, David Lawrence, Cara Leger, Caroline Limbaugh, I-Ting Liu, Timothy McMahan, Leandre Millet, Mallory Mire, Justin Nhan, Karisha Olson, Precious Orji, Amanda Ourso, Brooke Pendergast, Jacqueline Ras, Tiffany Robinson, Shelby Rochelle, Delaney Sheehan, Connor Sinanan, Karen Stanton, Macie Sticker, Edward Thistlethwaite, Thao Vo, Zachary Webb, Francesca White, Jon Wilson, Peter Youngblood

**Chevron Minority Engineering Program Undergraduate Scholarship**  
Ruwa Abufarsakh, Emily Bergeron, Sarah Eggie

**Chevron Scholarship in Chemical Engineering**  
Andrew Jordan, Lauren Mac Kenzie, Garrett Lambert, Kurt Ristroph

**CITGO Petroleum Scholarship in Chemical Engineering**  
Rebecca Andries, Abigail Burcham, Nathan Grotte, Kaitlyn Nixon

**Clara & Frank R. Groves, Sr. Engineering Scholarship**  
Thomas O'Brien, Kurt Ristroph

**College of Engineering Alumni Scholarship**  
Rebecca Andries, Christina Black, Lindsay Blouin, Lee Burnett, John Fleming, Kevin Kirchner, Garrett Lambert, Eric Roos, Katrina Taylor

**David S. and Martha L. Bunnell Scholarship**  
Lauren Mac Kenzie, Kevin Whittaker

**Eugene R. Cox Scholarship**  
Dillian Beechler, Tanner Martin, David Rau

**ExxonMobil Diversity Scholarship**  
Aleshia Hector, Breanna Lee, Jeremy Wade

**Floyd S. Edmiston, Jr. Endowed Memorial Scholarship**  
Quinn Dotson, David Englehardt

**Gene Perdue Lowe Scholarship**  
Jacob Cheramie, Mischael Daniel, Travis Dugas, Matthew Fauchaux, Mark Graham, Sean Guillory, Stephanie Hebert, Anna Hoying, Logan Jacob, Garrett Lambert, Cara Leger, Amanda Ourso, Shelby Rogers, Stacey Wieseneck, Jon Wilson

**Gerard Family Undergraduate Scholarship**  
Sami Marchand, Matthew Skapura, Kevin Whittaker, Stacey Wieseneck

**Houston-LSU Engineering Scholarship**  
Natalie Burges

**Jerry and Gloria DesRoche Fund for Engineering-Junior Scholarships**  
Ricardo Aguilar

**Jerry and Gloria DesRoche Fund -Freshman Scholarships**  
Kelsey Blosser

**Jesse Coates Memorial Scholarship**  
Nathan Grotte

**Josephine R. Losavio Scholarship**  
Tara Malone

**Leo Broering Memorial Scholarship**  
John Lacey

**Leo C. Comeaux Chemical Engineering Scholarship**  
Stephen Hurdle

**Leonel E. Tustison and Helen L. Tustison Scholarship**  
Rebecca Austin, Joshua Campbell, Patrick Holden

**LyondellBasell Industries Scholarship**  
Aranya Ahmed, Monica Guillot

**Mable and Boykin W. Pegues Scholarship**  
Jeremy Alcanzare, Joseph Balhoff, Kelsey Blosser, Abigail Burcham, Michael Denham, Jonathan Gardner, Aleshia Hector, Grant Landwehr, Kurt Ristroph, Edward Thistlethwaite

**Marathon Oil Undergraduate Minority Scholarship**  
Gabriel Alarcon-Caine, Matthew Fauchaux, Jessica Mire

**Marathon Scholarship in Chemical Engineering**  
Rebecca Andries, Aleshia Hector, Allen Huang, Brooke Pendergast

**Melissa Dillon-Dotson Scholarship**  
Leonardo Martinez

**NACME Scholarship**  
Victor Alvarado, Riad Elkhanoufi, Andrew Peterson, Bethany Sarabia, Jade Sorrell

**O. Dewitt Duncan, Jr. Endowed Scholarship**  
Anne Cooper, Victoria Dang, Rachel Devall, Gage Fos, David Gauthreaux, Mark Graham, Eva Hidalgo, Caroline Limbaugh, Devin Manning, Jeff Mauras,



Thomas O'Brien, Joshua Saltz,  
Jacqueline Samson, Channing Simmons

**Patrick F. Taylor Scholarship in Engineering**

Emily Flake, Emily Heath

**Paul M. Horton Memorial Undergraduate Scholarship**

Andrew Jordan, Ashley Merriweather

**Paul N. Howell Endowed Memorial Scholarship**

Robert Quiring, Zachary Sirera

**R. L. Hartman Memorial Scholarship**

Natalie Burges

**Ram N. Bhatia Scholarship**

Sneha Seetharama

**S&B Engineers Brookshire Scholarship in Engineering**

Dylan Bernard, Kelsey Blosser, John Boyce, Lexie Breaux, Megan Campbell, Joseph Chavalitlekha, Travis Dugas, Dat Hoang, Jasmine Jones, Breanna Lee, Devin Manning, Jacqueline Ras, Christopher Reed, Norris Rosser, Jacqueline Samson, Jade Sorrell, Edward Thistlethwaite, Candace Thomas, Linda Tran, Zachary Webb, Michelle West

**Scholarship for MEP Students in Chemical Engineering**

Riad Elkhanoufi

**Thomas H. Hopkins Scholarship**

Michael Denham, Jacob Pettigrew

**Tiger Athletic Foundation Scholarship**

Kyle Bankston, Abigail Burcham,

Chase Ellefson, John Lacey, Caroline Limbaugh, Christopher Reed, Juan Rubio, Matthew Skapura, Michelle West, Lauren Westholz, Kevin Whittaker, Stacey Wieseneck, Wayne Wortmann

**University College Tiger Athletic Foundation Scholarship**

Amanda Clements, Jessica Sims

**Walter G. Middleton, Jr. Endowed Scholarship**

Rebecca Austin

**William E. McFatter Endowed Scholarship**

Rachel Nguyen, Delaney Sheehan, Lauren Westholz

**Willow Johnston Memorial Scholarship**

Seleipiri Charles, Monica Guillot

## 2015-16 GRADUATE SCHOLARSHIP & AWARD RECIPIENTS

**Evan Andrews** – Clayton Engineering Excellence Award for Outstanding Graduate Students

**Paria Avij** – 1st place in the student oral presentations at the 19th annual Gulf of Mexico Deepwater Technical Symposium

**Eva Caspary** – Received the Young Scientist Award for best oral presentation at the 25th ISPAC Conference; Gordon A. and Mary Cain Graduate Assistantship

**Xun Cheng** – Materials Science & Engineering Graduate Assistantship

**Daniel de Oliveira** – Science Without Borders Fellowship; George A Daniels Graduate Fellowship

**Sara F. Stofela Figueiredo** – Science Without Borders Fellowship; George A Daniels Graduate Fellowship

**Aaron Harrington** – Flagship Graduate Assistantship; Clayton Engineering Excellence Award for Outstanding Graduate Students

**Aubrey Heath** – LSU Alumni Association Distinguished Dissertation Award in Science, Technology, Engineering & Mathematics

**Elizabeth Hurst** – Graduate Assistantship Supplement Award

**Venky Kalpathy** – Gordon A. and Mary Cain Graduate Assistantship

**Daniel Norena Caro** – Fulbright Fellowship

**Ben Peterson** – Brookshire Fellowship

**Santiago Salas** – Fulbright Fellowship

**Michael Thomas** – Clayton Engineering Excellence Award for Outstanding Graduate Students; Flagship Graduate Assistantship

**Zenghui Zhang** – Dissertation Year Fellowship



ASEE annually publishes the leading data on engineering colleges in the United States including both individual college statistics and national trends.

In academic year 2015-16, LSU's College of Engineering (CoE) was among the top five percent nationally in enrollment and top nine percent nationally in degrees conferred. The CoE was ranked 16th nationally in the number of undergraduate students enrolled and 31st nationally in the number of undergraduate degrees granted out of 352 schools reporting.

LSU's chemical engineering program ranked number 37 out of 160 schools reporting for bachelor degrees conferred.

### LSU CAREER SERVICES

Based on starting salary data provided by LSU Career Services and Michigan State University's Collegiate Employment Research Institute in 2016, six CoE disciplines exceeded national averages.

| <u>Discipline</u>       | <u>National Average</u> | <u>LSU Average</u> |
|-------------------------|-------------------------|--------------------|
| Computer Science        | \$56,974                | \$77,488           |
| Chemical Engineering    | \$63,389                | \$81,490           |
| Construction Management | \$49,672                | \$65,575           |
| Mechanical Engineering  | \$59,681                | \$72,707           |
| Electrical Engineering  | \$61,173                | \$66,760           |
| Computer Engineering    | \$63,313                | \$66,500           |



# COMMENCEMENT

## SUMMER 2015

**Doctor of Philosophy in Chemical Engineering**  
James Edward Bruno  
Aubrey A. Heath

**Master of Science in Chemical Engineering**  
Cameron Joseph Loebig

**Bachelor of Science in Chemical Engineering**  
Sarah Allison Mills

## FALL 2015

**Doctor of Philosophy in Chemical Engineering**  
William Barrett Ainsworth  
Paria Avij  
Oladapo Olanrewaju Ayeni  
Xiaoxia He  
Courtney Edward Lane  
Abhijit Rao

**Master of Science in Chemical Engineering**  
Harsha Sirigireddy  
Tommy Nhan Trieu

**Bachelor of Science in Chemical Engineering**  
Ory James Aguilard  
Dillon Paul Angelle  
Jade Elizabeth Bates  
Taylor Paul Cavalier  
Emily Mary Daniel  
Staci Nicole Duhon  
Frank James Fincher  
Erick Geovanni Flores  
Harry Charles Frederick  
Chris L. Galli  
Daniel Frank Harrell  
Allen Whei Ping Huang  
Jeffrey Ludovico Kramer  
David Matthew Lentz  
Sami Gail Marchand  
Ahmed Kocade Odeyemi  
Katherine Victoria Reaney  
Blair Elizabeth Rispone

Tiffany Marie Robinson  
Victoria Rose Roy  
Herman Ricardo Sanchez  
Eryn Dean Short  
Chaning Elizabeth Simmons  
Allison Ann Simms

## SPRING 2016

**Doctor of Philosophy in Chemical Engineering**  
Subramanian Venkateswaran  
"Venky" Kalpathy  
Guoying Qu  
Zenghui Zhang

**Master of Science in Chemical Engineering**  
Jared Michael Bourgeois  
Santiago David Salas Ortiz

**Bachelor of Science in Chemical Engineering**  
Gabriel Marcos Alarcon-Caine  
Jordy Anthony Allen  
Rebecca Catherine Adries  
Jeremy Scott Baldassaro  
Dillian Andrew Beechler  
Marshall Lawrence Berg  
Laura Bertrand  
Connor James Bourgeois  
Matthew Gabriel Bourgeois  
Sam Houston Boyer

Lexie Lynne Breaux  
Jennifer Patricia Breve  
Abigail Elizabeth Burcham  
Hannah Elizabeth Carter  
Seleipiri Charles  
Brett Michael Collier  
Anne Elizabeth Cooper  
Lillian Elaine Hebert Cormier  
Hannah Layne Cross  
Ashley Corrine Deaton  
Joseph Samuel Dick  
Rory David Dobbs  
Quinn H. Dotson  
Dara Dye  
Jason Clark Eades  
John Paul Fleming Jr.  
George Ross Fontenot  
Janna Michelle Foret  
David James Gauthreaux  
Jessica Nycole Gilbert  
Margaret Ann Granier  
Nicholas Michael Graves  
Laura Emily Guillory  
Andrew James Hewett  
Jessica Ann Hunt  
Taylor Matthew Johnson  
Chase Taylor Kairdolf  
Taoheed Olalekan Kassin Jr.  
Kelsey Monica Labourdette  
Jeffrey Kyle Lang  
Anteneh Amha Lisan  
Zachary Michael Loupe  
Tanner Allen Martin  
Isai Samuel Martinez

Jeffrey Paul Mauras  
Zachary Allen McDaniel  
Leandre Michael Millet  
Timothy Scott Montet  
Maegan Elizabeth Nicholas  
Kaitlyn Rae Nixon  
Thomas Whitmeyer O'Brien Jr.  
James Edward O'Kroley  
Presley Renee Opbroek  
Kristina Marie Ordemann  
Garrett Lee Osborne  
Andrew Connolly Paulsen  
Andrew Tien Pham  
Hillary Elaine Prevot  
Leigh Erin Priddy  
Logan Mitchell Ramagos  
Ilich Emil Ramirez  
Ryan Christopher Renfroe  
Kurt David Ristroph  
John Kaleb Rollins  
Hunter Shelby Rouillier  
Joshua Ryan Saltz  
Sneha N. Seetharama  
Tiffany Anne Simms Lindsey  
William Chase Sinquefield  
Zachary Erwin Sirera  
Matthew William Skapura  
Tyler John Stevens  
Kenneth Prescott Sweeney  
Anam Waheed  
Zachary Tyler Webb  
Kevin Partick Whittaker  
Bryant Stephen Woods  
Kelly Leigh Ann Yates

## LSU DISTINGUISHED COMMUNICATORS

### FALL 2015



Jade Bates & Tiffany Robinson

### SPRING 2016



Laura Bertrand, Seleipiri Charles, Kurt Ristroph, Joshua Saltz & Kelly Yates

*LSU Distinguished Communicators is a unique academic excellence program where students work to refine their communication skills and learn discipline-specific approaches to communication that will enable them to excel in their chosen profession. Candidates undergo a variety of training experiences and are required to build a digital portfolio, demonstrating proficiency in written, spoken, visual, and technological communication. They must also show successful use of their communication skills in leadership roles and community service. Upon completion of the program, these students possess the competitive skills and knowledge needed for 21st-century leadership. This coveted designation becomes part of official transcripts and gives the certified graduate significant leverage in today's job market. LSU is one of the only universities in the country recognizing students who excel in communicating within their discipline.*

# ALUMNI NEWS & UPDATES

## STEPHEN GRIFFIES (BS 1986)



On February 19, Dr. Stephen Griffies of the NOAA Geophysical Fluid Dynamics Laboratory and Princeton University visited LSU and gave a seminar entitled, “Elements of Sea Level in a Changing Climate”. Dr. Griffies is a well-known expert in ocean dynamics, with special emphasis on the Atlantic and Southern Oceans, sea level, ocean heat transport, formulating subgrid-scale parameterizations for ocean mixing and stirring processes, and in identifying novel analysis methods to comprehend the ocean as a turbulent hydro-thermodynamic system. He most recently won the European Geosciences Union’s Fridtjof Nansen Medal for oceanographic research. Dr. Griffies is a 1986 graduate (BS) of Chemical Engineering.

## HONGFEI LIN (PHD 2005)



RENO, Nev. (AP)—Three decades ago, a University of Nevada researcher who obtained one of the first U.S. Energy Department grants to study the potential to turn plants into biofuels became convinced that a roadside weed—curly top gumweed—was growing along the road to the future.

Now, scientists who’ve been cultivating gumweed on the Reno campus think they are on the verge of producing diesel fuel, and perhaps someday jet fuel, from the sticky cousin of the sunflower that grows across much of Nevada’s high desert and doesn’t compete for acreage with animal feed or food crops used to make ethanol.

Glenn Miller, an environmental sciences professor in UNR’s College of Agriculture, Biotechnology and Natural Resources, is leading the project in the second year of a four-year, \$500,000 grant from the U.S. Department of Agriculture.

Miller didn’t know much about gumweed when Darrell Lemaire, a mining engineer, secured the DOE grant in 1980 and approached him about doing some research in his lab. Lemaire was an interesting guy.

“He read chemical abstracts for recreation,” Miller recalled. “He built a big house up in the rocks (above campus) with a wine cellar 50 feet down. He gave me a couple bottles—of Gumweed Extract, 1981-82, 1982-83.”

The two scientists began growing gumweed on campus about 10 years ago and their project evolved from the premise that biofuels shouldn’t be competing with food crops in Nebraska and Kansas.

Gumweed, also known as tar weed, requires little water to grow.

“You could grow it in places like Nevada where you are not growing soybeans or corn,” Miller said.

Lemaire, 89, published his findings in a 1982 book, *Cultivation of Hydrocarbon Producing Plants Native to the Western U.S., and the Whole Plant Utilization of the Oils and Byproducts*.

“This was after the Carter years when Jimmy Carter wore sweaters whenever he addressed the nation from the White House to indicate to everybody we were running out of energy,” Miller said.

Miller said UNR researchers have successfully produced fuel by extracting hydrocarbons from the weed’s oil and are in the process of getting it tested as a diesel fuel. Now it’s a question of refining the process to determine if farmers can make money on it.

In recent years, environmentalists have argued that ethanol adds to global warming by removing millions of acres of land from conservation reserve programs for use in corn production, and has led to higher food costs worldwide as more corn is used for fuel.

Bill Payne, dean of UNR’s College of Agriculture, said the gumweed research addresses those concerns while anticipating current low oil prices won’t last forever.

“As prices once again reach \$80 or more per barrel, this type of technology will look increasingly attractive to an industrial world struggling to reduce its carbon emissions,” Payne said.

Hongfei Lin, a collaborator in UNR’s College of Engineering, is trying to find a more cost-effective way to convert biomass into fuel. Instead of adding hydrogen to biomass, he’s exploring utilization of oxidation—the same process involved when substances come in contact with oxygen molecules, such as when a fresh cut apple turns brown or a copper penny turns green.

Lin estimates that if gumweed was raised on just 10 percent of the thousands of square miles in Nevada where sagebrush currently grows, it could produce an estimated 400 million to 600 million gallons of biofuels annually.

Gumweed has been used many different ways historically. Native Americans used it for medicinal purposes and early pioneers chomped on it as a substitute for chewing gum. “I have tried eating the stuff,” Miller said. “It tastes terrible. I don’t think there’s any future in that.”

*The full article can be accessed at [bigstory.ap.org/article/5a025738e78d4147b4aa628352daa70e](http://bigstory.ap.org/article/5a025738e78d4147b4aa628352daa70e).*

# ALUMNI SPOTLIGHT

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## FONTENOT FAMILY CONTINUES TRADITION OF STUDYING AT LSU COLLEGE OF ENGINEERING

When Ross Fontenot walked across the stage at the spring commencement ceremony in May, he was doing more than just receiving his bachelor's degree in chemical engineering—he was continuing his family's legacy.

Fontenot is one of many members of his immediate and extended family to graduate from the LSU College of Engineering, and more specifically, from the Cain Department of Chemical Engineering.

"The main reason I chose chemical engineering was because my father and grandfather were chemical engineers," Fontenot said. "I mean, I did excel in math, chemistry and physics in high school, but going into LSU, I truly had no clue what a chemical engineer was or what they did in their careers. I just figured since my Dad and Grandpa were successful chemical engineers, then I could follow in their footsteps and succeed as one as well."

### The First Fontenot

The family tradition of studying at LSU started with Leonard Fontenot, Ross's grandfather, who graduated in chemical engineering in 1959.

"I wish I could tell you a glorious story about how I always wanted to be an engineer," he said, laughing. "But that's not how it went."

Leonard made the decision to attend LSU on a whim, more or less. He didn't know much about the school; neither of his parents had attended college so they didn't have any influence on his choice; and most of his classmates went to the university now known as University of Louisiana at Lafayette. Simply put: he "just felt LSU would be a better school."

So he enrolled in 1954 to study chemistry. After two years in that major, after doing some work at a plant, and after an enlightening conversation with the chair of the chemical engineering department, he made the switch to engineering.



"Dr. Coates, the head of chemical engineering [at that time], explained that, while mechanical engineers might look at pieces of equipment or electrical engineers deal with electricity, chemical engineers looked at the whole process," he recalled.

The transition wasn't easy, Leonard remembered. There was a high dropout rate because of the program's difficulty, and because he changed his major halfway through his college career, he had a lot to catch up on. Despite the obstacles, he finished after two and a half more years.

During that time, he also participated in ROTC, and met and married his wife, Mary, who received her degree in science education. The couple enjoyed their experience at LSU, he said, particularly attending the football games.

"We went to all the games," he said. "Mary and I didn't have much, but we could go to those games for free. And it was the most glorious thing because we were there for the 1958 national championship. That was the real deal."

After graduation, Leonard served in the army, took a job with a paper company in Bastrop, Louisiana, and was then employed in the power production area of an electric



From left to right:

Russel Babin (BS 1980)

Kyle Babin (BS 2012)

Leonard Fontenot (BS 1959)

Ross Fontenot (BS 2016)

Glynn Fontenot (BS 1983)

was engrained in them from an early age.

“There was some brainwashing involved,” he joked. (It should be noted, too, that all but one of Glynn’s four children attend or attended the university).

Glynn graduated in chemical engineering in 1983 and worked at Georgia Gulf until 2012. He is now a plant manager at Methanex USA, LLC, and he credits LSU for much of his success.

Asked what he remembers most fondly about his time here, Glynn recalled influential professors, like David Wetzel, who retired in the spring after more than 30 years in academia; the Saturday nights in Tiger Stadium; and the satisfaction of finding out he passed his exams.

“LSU chemical engineering has been a big part of my life, starting with the influence my Dad had on me and ending with my connection to the campus, the sports,” he said. “It was so gratifying to see the day the third Fontenot, Ross, graduated in the same curriculum.”

#### **‘May the Engineers Continue’**

Ross, who now works as a process engineer at Georgia-Pacific, agreed: “Dad and Grandpa spent the entire day with me leading up to the actual graduation ceremony, and it was really one of the best days of my life. I could tell how proud both my Dad and Grandpa were of me for what I had accomplished at LSU.”

Very proud, Leonard said, “When Ross finished, it was really special. It’s hard to believe it could go down that far, that you would have so many finish in chemical engineering.”

“I’m probably the most blessed man in the world,” he said of his career and his family. “It’s been a fascinating ride. It’s kind of a dream. It’s not something that happens very often.”

“And,” he added, “may the engineers continue.”

company in central Louisiana, where he climbed the ranks to eventually become the vice president.

#### **‘It’s in their Genes’**

Meanwhile, he also grew his family. Leonard and Mary had three sons who all went on to receive degrees in engineering—one in chemical and the others in electrical—and a daughter, who graduated in science education, like her mother, and who married a chemical engineer.

What’s more: Eight of their grandchildren are either graduates of LSU or currently enrolled here. Of the five graduates, two graduated in chemical engineering, one in construction management, one in finance and one in geology, and of the three current students, two are studying engineering.

“It sounds like we took a stick and beat them until they went to LSU engineering, but I promise we didn’t,” he said, laughing. “It’s in their genes. The way they look, the way they ask questions, they don’t think like everybody else.”

Though Leonard denies he forced his children and grandchildren to attend LSU, Glynn Fontenot, his oldest son and Ross’s father, said the family’s love for purple and gold

# ALUMNI FEEDBACK

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## ANITA ROLLO (BS 1960, MS 1967)

Your recent Alumni Newsletter (Volume 30, Fall 2015) included a number of items about women engineering students. I believe I was the first woman to receive a chemical engineering degree from LSU. I may also have set some sort of record for elapsed time and perseverance because it took nine years to earn my BS and six more for the MS.

I began college at The Rice Institute (now Rice University) in the fall of 1951. I married later that year and transferred to LSU in January 1952. I enrolled for 19 semester hours and the registrar objected, stating that, "Our girls should not be taking that many hours." She relented when she realized I was married and had the support of my husband who was also an engineering student.

Life as the only woman chemical engineering student was full of "adventure". Dress code did not allow female students to wear pants. Ever try to wear a slide rule with a dress? Of course, now the question would be, "What is a slide rule?" Times change.

I received my BS in chemical engineering in 1960. During these nine years, I had other commitments that included the birth of three children and two years' employment while my husband was in graduate school. I managed to stay continuously enrolled with a mix of full time, part time and evening classes. If life as a woman engineering student is complicated, try it with the addition of a husband and three children.

I was motivated to do well to prove that chemical engineering was an appropriate career choice. I graduated in the top quartile of my class and was awarded the women's badge from Tau Beta Pi, the honorary engineering society. Years later, I was initiated as a full member when Tau Beta Pi opened their membership to women. On graduation I joined Ethyl Corporation and enrolled in evening classes in pursuit of a master's degree. I received my MS ChE in 1967.

I would not recognize today's chemical engineering facilities. The physical plant has undergone dramatic changes. Recent photographs show pristine bench scale lab facilities and not the grungy pilot scale operations that I remember. We had a single building; labs were on the first floor; classrooms were on the second. The sugar building supported some of our lab work.

I enjoyed a very satisfying and successful career as a chemical engineer. Today, I am enjoying retirement in Kerrville, Texas with my 1951 husband, J.R. Rollo (LSU BS PE 1955). Most of our retirement time is devoted to hobbies and travel. We enjoy visiting our expanded family that now numbers 22. World travel has become an important activity for us. We have visited 36 countries and plan to add two more this fall. Our favorites are Bhutan, Mongolia, and Botswana. Expect us to continue our quest for new favorites.

Anita Rollo  
February 12, 2016

## JACK O. PHILLEY (BS 1968) – RECALLING LSU SUGAR MILL EXPERIENCE

The sugar mill was a wonderful enrichment to my chemical engineering education and experience. As a student worker in 1966, I learned for the first time simple chemical process equipment operation and instrumentation control. Some of the equipment was original 1920's vintage. I recall wrought iron filigree spokes on some of the valve wheel handles, and large open caged DC motors. I also learned that things do not always operate per initial intended design. The convicts in St Gabriel would cut the cane and bring it up to the campus for grinding and primary refining. Three weeks into a hot damp September harvesting season, the sugar juices got pretty ripe.

In those days all LSU chemical engineering students also had to take sugar engineering courses. It made a big difference when we had to learn practical applied technology. There were several students from the Indian Ocean French island of Mauritius in our class. We took them crawfishing and they insisted on bringing home everything we caught to cook, even the water bugs and snails. The one-inch crawfish were fried in butter and eaten like potato chips.

There is a bit more to my sugar mill story. When coming home at the end of my student work shift, my clothes were pretty stinky from the fermenting sugar juices. My wife allowed me to enter the house, but I had to leave my clothes outside the back door.

I have another story, but it probably would not be appropriate for the Alumni Newsletter. Short version is the Livingston Parish Sheriff's office confiscated a major part of our senior design project documents one week before they were due in late May 1968. The documents were differential equation calculation results printouts written in Fortran IV language. The deputies were convinced the documents were some sort of drug ring coded information. Dr. Callihan was very understanding and cut us some slack.

## IN MEMORIAM

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We are saddened to learn of the passing of the following alumni. We extend our belated condolences to their families and friends.

David E. Allan, PhD 1970

Edwin L. Anderson, MS 1962

Joseph Franklin Butterworth Jr., BS 1947

Glen W. Gipson, BS 1952

Woodrow A. "Woody" Mansur Sr., BS 1944

The Honorable James R. McClelland, BS 1969

Charles Preston Siess Jr., BS 1948

Dale Gordon Williams, BS 1973



# OPPORTUNITY TO GIVE

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## SUPPORTING LSU CHEMICAL ENGINEERING

The Cain Department of Chemical Engineering is committed to delivering the highest possible educational experience to its students. To further that end, we invite all who would like to share in this commitment to contribute to the Chemical Engineering Development Fund. These funds are used to support instructors with industrial experience for labs; new faculty start-up costs; equipment, computers, and supplies for undergraduate labs; and numerous other endeavors.

Our alumni, friends, and other supporters are critical to the success of our department and we are grateful for the generous gifts that we continue to receive in support of our academic programs.

**You can make a gift online** through the LSU Foundation's secure online giving site via [www.che.lsu.edu/support](http://www.che.lsu.edu/support). Pledge your support by selecting "Make a Gift Now."

**If you prefer to mail your gift**, please make checks payable to "LSU Foundation" and note in the memo line the area you would like to support (e.g., Chemical Engineering Development Fund, Chemical Engineering Faculty Development Fund, Chemical Engineering Undergraduate Lab Support Fund, Chemical Engineering Equipment Fund, Chemical Engineering Scholarship Fund, Graduate Assistant Fellowship). Mail to:

Dr. John C. Flake, Interim Chair  
Cain Department of Chemical Engineering  
Louisiana State University  
Baton Rouge, LA 70803

## STAY CONNECTED

The Cain Department of Chemical Engineering values our esteemed alumni and would like to connect with you! We would enjoy hearing about your first job, new job, promotions, accomplishments, and/or other significant events in your life. If you would like to share your achievements with us, or if you'd simply like to update your contact information, please complete our online update form at [www.che.lsu.edu/alumni/connect](http://www.che.lsu.edu/alumni/connect). Thank you for your continued support and best of luck in your future endeavors!





College of  
Engineering  
Cain Department of  
Chemical Engineering  
110 Jesse Coates Hall  
South Stadium Rd.  
Baton Rouge, LA 70803

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Chemical Engineering Alumni Newsletter is published for the benefit of the LSU Cain Department of Chemical Engineering's alumni and students.

Comments and suggestions should be directed to:  
Rachel Landry, *Editor* [relandry@lsu.edu](mailto:relandry@lsu.edu)  
Frank Blystad, *Co-Editor* [fblyst13@lsu.edu](mailto:fblyst13@lsu.edu)