The background of the cover is a photograph of a modern, multi-story university building. The building features a mix of architectural styles, including large arched windows and doorways, and sections with dark, horizontal slat facades. A person is visible near the entrance. In the foreground, there is a green lawn and a black street lamp. The sky is overcast.

LSU

College of
Engineering

Cain Department of
Chemical Engineering

ALUMNI NEWSLETTER

VOL. 32

FALL 2017

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ON THE COVER



In December 2017, the LSU College of Engineering will complete the last phase of a \$110 million renovation of 300,000 square feet in Patrick F. Taylor Hall (PFT) and the expansion of a new 110,000-square-foot Chemical Engineering Annex.

LSU

LSU IS AN EQUAL
OPPORTUNITY/ACCESS UNIVERSITY

FROM THE CHAIR



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

Dear Alumni and Friends:

It has been a great year! I am happy to remove the “interim” from my job title and proud to lead our department. The Gordon A. & Mary Cain Department of Chemical Engineering now includes approximately 900 undergraduate students, 60 graduate students, 18 full-time faculty, and six part-time and emeritus faculty.

After 109 years on our own, we moved in with our college. The new building is great! As you can see from the photos in this newsletter, it is a wonderful place to teach, learn, collaborate, and do research. I’m sure the building will benefit our faculty, staff, and students for a long time.

Educating engineers has always been the cornerstone of our department. Our graduates go to work in plants and refineries all over the world to produce a lion’s share of the fuels and chemicals we use on a daily basis. This is a “big deal!” In Louisiana alone, the chemical industry generates about \$60 billion in yearly revenue and is projected to reach \$90 billion by 2025. Louisiana leads the nation in chemical engineers per capita, more than five times the national average. For more than 100 years, our department has been the major supplier of those engineers, so it is important that our program at the state’s flagship university remains a top-tier training ground.

Likewise, it is important to remember that world-class research is what brings the best faculty to LSU. Much of the research centers on advancing the fundamental science and engineering that drives Louisiana’s economy. In addition to teaching our students, our faculty generate new designs, new catalysts and invent many other new products, materials and processes that fundamentally change how we live. We have great students and great facilities; it is time to grow the faculty. This is critical to maintain a top-tier undergraduate experience and serve the engine that drives our economy. With your help, we are bound to be successful.

Best Wishes,

UNDERGRADUATE ENROLLMENT 915*	MS ENROLLMENT 4	 College of Engineering Cain Department of Chemical Engineering
	PHD ENROLLMENT 50	
18 FACULTY MEMBERS 8 PROFESSORS 3 ASSOCIATE PROFESSORS 5 ASSISTANT PROFESSORS 1 PROFESSIONAL IN RESIDENCE 1 INSTRUCTOR	MS DEGREES AWARDED 8	BS DEGREES AWARDED 129
	PHD DEGREES AWARDED 4	

*undergraduate enrollment includes UCFY

FACUTLY

AWARDS & NEWS



Judy Wornat Named Dean of the LSU College of Engineering

LSU has appointed Mary Julia “Judy” Wornat dean of the LSU College of Engineering. As dean, she holds the Bert S. Turner Chair in Engineering.

“We are pleased to name Dr. Judy Wornat as dean of the LSU College of Engineering,” said LSU President F. King Alexander. “This is an exciting time for our engineering students, faculty, and staff as the renovations to Patrick F. Taylor Hall are coming to completion, giving LSU one of the largest standalone engineering facilities in the country. Under Dean Wornat’s leadership, we look forward to continued growth and the continued rise of our College of Engineering.”

LSU conducted a national search for dean of the College of Engineering and four candidates participated in on-campus interviews and an open forum with students, faculty, and staff in the fall. Vice Provost for Academic Programs and Support Services Matt Lee chaired the search committee.

“Dr. Judy Wornat is an inclusive and collaborative leader who has demonstrated her ability to tackle the role as dean,” said LSU Executive Vice President & Provost Rick Koubek, who previously served as dean of the College of Engineering. “I believe she is uniquely qualified, working closely with the

faculty, staff, and the community, to elevate the college in both prominence and stature, and I look forward to seeing the College of Engineering advance under her leadership.”

Wornat graduated summa cum laude with a bachelor’s degree in chemical engineering from Rensselaer Polytechnic Institute in 1981, before pursuing her graduate studies at the Massachusetts Institute of Technology, where she performed research in the general area of fuels and combustion and earned her master’s and doctoral degrees in chemical engineering in 1983 and 1988, respectively.

“I am absolutely thrilled to be appointed the new dean of the LSU College of Engineering,” Wornat said. “Thanks to the tremendous efforts of our previous dean and the college’s faculty, staff, alumni, and corporate and community partners, the LSU College of Engineering has made great progress over the last several years on so many fronts: increasing the enrollment and diversity of our student body; adding new faculty in research areas important to the Louisiana economy; forging successful alliances with other institutions and industry to land major research centers; and, of course, the \$114 million renovation and expansion of Patrick F. Taylor Hall, which will ultimately provide LSU College of Engineering students, faculty, and staff more than 430,000 square feet of state-of-the-art laboratories, classrooms, offices, and gathering spaces where they can learn, design, discover, and create.”

She added, “The elements are in place for the LSU College of Engineering to have a great future, and I am looking forward to working with everyone to make that great future a reality.”

At the completion of her formal education, Wornat held various positions, including working two years as a research scientist at the Commonwealth Scientific and Industrial Research Organization, Division of Coal and Energy Technology, in Sydney, Australia, and two years as a senior member of technical staff at Sandia National Laboratories, Combustion Research Facility, in Livermore, California.

In 1994, Wornat joined the faculty of Princeton University’s Mechanical and Aerospace Engineering Department, where she served eight and a half years before coming back to her home state of Louisiana in 2002 to join the faculty in the Gordon A. & Mary Cain Department of Chemical Engineering at LSU.

Through the course of her academic career, Wornat has authored or co-authored 75 refereed journal articles, secured more than \$4.25 million in research funding, served on the editorial boards of three international journals, and participated widely in a variety of professional organizations. From 2007 to 2009, she served as president of the International Society for Polycyclic Aromatic Compounds. She received a National Science Foundation CAREER Award in 1996, a Distinguished Paper Award from the Combustion Institute in 2009, and an LSU Rainmaker Award in 2009.

At LSU, Wornat has participated in a variety of committees and initiatives within the Cain Department of Chemical Engineering, College of Engineering, and on the university level. She served as the Cain Department of Chemical Engineering's director of graduate studies from 2005 to 2011 and as department chair from 2011 to 2015. Since July 2015, she has served LSU as the interim dean of the College of Engineering.



Flake Named Chair of Department of Chemical Engineering

LSU Professor of Chemical Engineering John Flake was named chair of the Gordon A. & Mary Cain Department of Chemical Engineering after having served as interim chair for two years.

"I am honored to serve as the 14th department chair of the Cain Department of Chemical Engineering," Flake said. "Our department has a distinguished history, and we are at the beginning of a new era with a new building, growing faculty, and expansion of the chemical industry."

"It is a wonderful time to be a part of LSU Chemical Engineering, and I look forward to working with our students, faculty, staff, administrators, alumni, and friends to make it a great experience for everyone."

Flake joined the Cain Department of Chemical Engineering in 2006. He holds bachelor's and master's degrees in chemical engineering from Louisiana Tech University and a PhD in chemical engineering from Georgia Institute of Technology.



Hanley Joins Chemical Engineering Faculty

BATON ROUGE – Brian Hanley recently joined the LSU College of Engineering Gordon A. & Mary Cain Department of Chemical Engineering as a professional in residence.

Hanley joins the college after recently serving as Principal Engineer at Aspen Technologies Inc. He earned his Bachelor of Science in Chemical Engineering in 1979 from the University of Massachusetts and his PhD in Chemical Engineering in 1987 from the University of Minnesota.

"We are proud to welcome Dr. Hanley as a new faculty member," said John Flake, chair of the Department of Chemical Engineering. "He has a great deal of experience in chemical processing and I'm sure his teaching

and research will enrich our program. It's great to match a world expert in distillation with one the world's most active areas for chemical processing."

Over the course of his career, Hanley has developed state-of-the-art hydraulics/mass transfer models for Aspen Rate-Based Distillation, issued four patents, and published a number of articles in publications such as the Journal of Chemical Engineering Data and the AIChE Journal.

"I have had the great fortune over the course of my 30-year industrial career to have worked in a number of industrially important areas," Hanley said. "I have also been lucky enough to advance the practice of chemical engineering with a few insights specifically related to distillation columns and column internals. Joining the Department of Chemical Engineering here at LSU is an exciting new opportunity for me.

"The department is well-respected for valuing the responsibilities of conducting research that benefits industry and society, for teaching cutting-edge courses, and for mentoring both undergraduate and graduate students. It's my sincere hope to contribute in some small way to that mission."



2017 Dow Excellence in Teaching Award

Kevin McPeak received the 2017 Dow Excellence in Teaching Award.

Balloting was conducted earlier in the semester, and all seniors who expected to graduate during 2016-17 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 April 25, 2017, each finalist was introduced by a student who recounted several of their experiences with the faculty member. The results were then announced and every finalist was given

a trophy to commemorate the event. In addition, McPeak received a monetary award and his name was emblazoned on the plaque memorializing past recipients in the main hallway of the Chemical Engineering Building.

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.



2017 Tiger Athletic Foundation Awards

Adam Melvin a 2017 Tiger Athletic Foundation President's Award. The award recognizes a faculty member for extraordinary classroom teaching as demonstrated by an impact on and an involvement with students, a scholarly approach to teaching and learning, and contributions to the profession of teaching. The award carries with it a one-time cash prize of \$2,500.

Mike Benton received a 2017 Tiger Athletic Foundation Undergraduate Teaching Award. The award carries with it a one-time cash prize of \$2,000.



Jerry Forest Receives Cat Herder Trailblazer Award

Members of the Process Safety Advisory Group (PSAG) recognized **Jerry Forest** (BS, 1984) with the Cat Herder Trailblazer Award, which recognizes “his exceptional leadership and personal contribution in advancing process safety in the petroleum and petrochemical industries. Jerry is currently the general manager of process safety at Celanese, as well as a part-time instructor. His contributions provide greater insights into the challenges we face, and contribute to reducing risks of major hazards and process safety incidents.” American Fuel and Petrochemical Manufacturers (AFPM) has only given this award one other time, to Ron Rife, the global process safety manager at ExxonMobil for leading the Advancing Process Safety effort from its inception in 2010 through 2015. The Cat Herder Trailblazer Award is considered quite a unique honor in industry.



Ye Xu Becomes Chair-elect for the Southwest Catalysis Society

Assistant Professor Ye Xu has been named chair-elect for the Southwest Catalysis Society (SWCS). During the two-year term, Xu will work with the rest of the leadership team (Chair Dr. Lin Luo, Dow Chemical) and members of the society to:

- 1) Promote participation from all member states in the society’s activities;
- 2) Enhance electronic communication of the society’s mission, goals, and activities;
- 3) Increase awareness and interest of graduate and undergraduate students in the catalytic science and its importance to our economy and society.

If you have ideas for improving the SWCS, please feel free to contact Xu.

About the Southwest Catalysis Society (SWCS)

The SWCS is a nonprofit organization providing opportunities for members in Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. We promote the exchange of ideas between the industry and academia, and support the involvement of students in the science and research of catalysis. We are a chapter of the North American Catalysis Society.

American Society for Engineering Education (ASEE) Summer School

From July 29 to August 3, six of the assistant professors from the Gordon A. & Mary Cain Department of Engineering – Christopher Arges, Bhuvnesh Bharti, Kunlun Ding, James Dorman, Adam Melvin, and Elizabeth Melvin – attended the ASEE Chemical Engineering Faculty Summer School at North Carolina State University in Raleigh, North Carolina. The goal of the workshop “was to promote excellence and pertinence in the teaching of chemical engineering.” A total of 174 professors from 94 institutions of higher learning were instructed by 74 senior chemical engineering faculty members. Attendees participated in workshops, plenaries, and networking events to learn new teaching methods and foster new collaborations. Three evenings were capped off with a poster session, which allowed attendees to present new educational approaches to teaching and outreach. The top posters were selected each night by a panel of judges. Adam Melvin was selected as one of the 2017 ASEE Chemical Engineering Summer School Poster Awardees for his poster entitled *ENGage LSU: How to Organize and Implement an Engineering Outreach Day for Middle Schoolers*.



K. Nandakumar Invited to Speak in Montreal & Mexico City

Professor Krishnaswamy Kumar was invited to give two talks at different events in early June. First, he was invited by Ecole Polytechnique in Montreal to give a keynote lecture on Enabling Process Innovation through Computation (EPIC) during the institute’s research day event on June. On June 4-7, he was invited to give a plenary talk at the International Symposium on Advances in Hydroprocessing of Oil Fractions in Mexico City.

RESEARCH NEWS

REU 2017

This summer, the Gordon A. & Mary Cain Department of Chemical Engineering hosted 11 students as part of a Research Experiences for Undergraduates (REU) program entitled “Developing Entrepreneurs in Energy Storage, Catalysis, and Biofuels.” The 10-week program gave students from across the country a chance to perform graduate-level research under the direction of the professors in the department. Students were also given instruction in entrepreneurship and how research and new ideas could translate to new products, startup companies, and collaboration with industry. Additional activities included weekly seminars, a tour of the LSU Center for Advanced Microstructures and Devices (CAMD), a trip to New Orleans, a swamp tour on Lake Menten, and two workshops at the LSU Innovation Park. The summer ended with a poster competition where the students presented their research and its entrepreneurial potential to a panel of LSU faculty and staff. The students were:

Ryan Biggins (Lehigh University)

Mentor: Prof. Kerry Dooley

Marriia Chernova (City College of New York)

Mentor: Prof. Chris Arges

Isaiah Dorsey (Mississippi State University)

Mentor: Prof. Mike Benton

Benjamin Drewry (University of Arkansas)

Mentor: Prof. Ye Xu

Justin Hayes (University of Rhode Island)

Mentor: Prof. Kevin McPeak

Andrew Kristof (NC State University)

Mentor: Prof. Adam Melvin

Stefanie Parisi (Syracuse University)

Mentor: Prof. James Dorman

Amber Pete (McNeese State University)

Mentor: Prof. Mike Benton

Madeline Pipkin (LSU)

Mentor: Prof. Kevin McPeak

Vanel Porter (University of Louisiana Lafayette)

Mentor: Prof. Bhuvnesh Bharti

Corbin Witt (Francis Marion University)

Mentor: Prof. K. Nandakumar



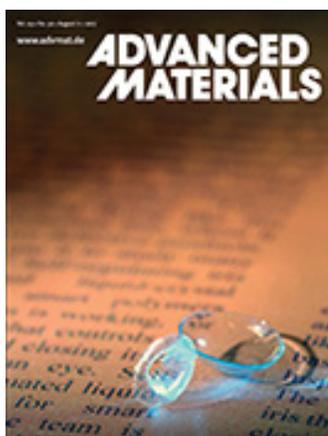


Chris Arges

Assistant Professor Christopher Arges was guest editor for the spring issue of *Electrochemical Society Interface* (Volume 25, Number 1, Spring 2017). He provided a commentary for the issue, in addition to co-authoring an article. He also contributed to the cover artwork!

In addition, he co-authored an article entitled *Directed Self-Assembly of Colloidal Particles onto Nematic Liquid Crystalline Defects Engineered by Chemically Patterned Surfaces* in the journal, *ACS Nano*. The article abstract follows below:

In exploiting topological defects of liquid crystals as the targeting sites for trapping colloidal objects, previous work has relied on topographic features with uniform anchoring to create defects, achieving limited density and spacing of particles. We report a generalizable strategy to create topological defects on chemically patterned surfaces to assemble particles in precisely defined locations with a tunable interparticle distance at nanoscale dimensions. Informed by experimental observations and numerical simulations that indicate that liquid crystals, confined between a homeotropic-anchoring surface and a surface with lithographically defined planar-anchoring stripes in a homeotropic-anchoring background, display splay-bend deformation, we successfully create pairs of defects and subsequently trap particles with controlled spacing by designing patterns of intersecting stripes aligned at 45° with homeotropic-anchoring gaps at the intersections. Application of electric fields allows for dynamic control of trapped particles. The tunability, responsiveness, and adaptability of this platform provide the opportunities for assembly of colloidal structures toward functional materials.



Bhuvnesh Bharti

Assistant Professor Bhuvnesh Bharti recently published an article entitled *3D Printing by Multiphase Silicone/Water Capillary Inks* in the journal, *Advanced Materials*. It garnered a EurekaAlert! news highlight! Read the abstract below:

3D printing of polymers is accomplished easily with thermoplastics, as the extruded hot melt solidifies rapidly during the printing process. Printing with liquid polymer precursors is more challenging due to their longer curing times. One curable liquid polymer of specific interest is polydimethylsiloxane (PDMS). This study demonstrates a new efficient technique for 3D printing with PDMS by using a capillary suspension ink

containing PDMS in the form of both precured microbeads and uncured liquid precursor dispersed in water as continuous medium. The PDMS microbeads are held together in thixotropic granular paste by capillary attraction induced by the liquid precursor. These capillary suspensions possess high storage moduli and yield stresses that are needed for direct ink writing. They could be 3D printed and cured both in air and under water. The resulting PDMS structures are remarkably elastic, flexible, and extensible. As the ink is made of porous, biocompatible silicone that can be printed directly inside aqueous medium, it can be used in 3D-printed biomedical products or in applications such as direct printing of bioscaffolds on live tissue. This study demonstrates a number of examples using the high softness, elasticity, and resilience of these 3D-printed structures.

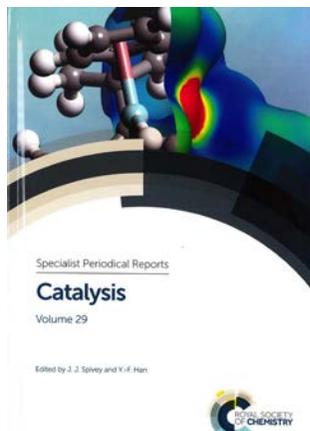


Kevin McPeak

Assistant Professor Kevin McPeak received a \$10,000 award from LSU's Faculty Research Grant (FRG) Program with an Emerging Research Grant. McPeak would like to enhance plasmonic devices by tuning nanoalloy phases to improve hot electron injection and thereby the sensitivity of these devices.

The FRG program is intended to provide seed funding for new research projects or provide resources for major planning grants that lead to center-scale proposals to federal or philanthropic agencies. Faculty are required to leverage the funding they receive from the FRG by submitting at least one full proposal to an external federal funding agency, national foundation, or industrial source before reapplying to this program. Emerging Research Grants support innovative research in emerging areas that have the potential for continued support from external sources.

Emerging Research Grants are limited to a maximum of \$10,000 over one year and typically involve a small group of faculty or a single investigator from eligible departments.



Jerry Spivey

Professor Jerry Spivey received an LSU Lift2 award for his project entitled *Catalytic Conversion of Methane to Higher Value Hydrocarbons and Hydrogen Using Superacids*. He received \$35,000 "to demonstrate the conversion of methane into hydrocarbons and high-value hydrogen, using solid superacid catalysts. There is a significant opportunity for these materials. The 'shale revolution' has brought the price of natural gas to historically low levels, and virtually all projections claim that it will remain low. This requires new catalysts. Superacids are one example. These materials allow methane to be converted directly without intermediate steps, greatly reducing capital costs."

The LSU LIFT2 Fund was created by the LSU Board of Supervisors in January 2014 to help "leverage innovation for technology transfer" across all LSU System campuses. By permanently securing a portion of licensing income for the LSU LIFT2 Fund, LSU has ensured continual reinvestment in new innovation opportunities and affirmed its commitment to advancing discoveries for public benefit. Moving concepts closer to commercialization is the fundamental purpose of the LSU LIFT2 Fund. A primary objective of technology transfer at LSU, like most other research universities nationwide, is the transition of innovations from the academy to the marketplace for public use and benefit. Many discoveries, however, require significant additional development to prove sufficient technical feasibility to attract commercial partners. Funding for this type of research is difficult to obtain from either government or private sources, leaving many promising innovations languishing in a funding gap often referred to as "the valley of death." The LIFT2 Fund is specifically designed to increase the number of LSU innovations licensed to industry partners.

Also, congratulations go to Jerry Spivey for being part of an editing team that, in 2017, published "Specialist Periodical Reports: Catalysis-Volume 29: A Review of Recent Literature." The book is published by the Royal Society of Chemistry.

FACULTY SPOTLIGHT

Kevin McPeak **Assistant Professor**

LSU Engineering Professor, Kevin McPeak, Receives NSF's Top Honor for Young Faculty

Gordon A. & Mary Cain Department of Chemical Engineering Assistant Professor Kevin McPeak was recently honored by the National Science Foundation with the most prestigious award for young faculty in science and engineering. As recipient of the NSF Faculty Early (CAREER) Development Award, McPeak will receive \$500,000 over the next five years to develop his research program.

NSF's CAREER program supports junior faculty who exemplify the role of teacher-scholars. Recipients of the award are expected to lead advances in the mission of their department or organization, through activities that build a firm foundation for a lifetime of leadership in integrating education and research.

"The first goal of this project is to advance the understanding of chiral light-matter interactions," said McPeak.

The study of these chiral light-matter interactions can provide a non-invasive method for characterizing the structure of biomolecules. McPeak explained this will enable devices that can rapidly identify diseases like Parkinson's and Alzheimer's, and ultimately advance the search for cures.

"The funds will allow me to commit one graduate student full time to this project for five years," said McPeak. "Furthermore, the funds will enable my lab to build a one-of-a-kind characterization tool for measuring the unique optical properties of chiral materials."

McPeak also intends to engage third grade and high school students in science and engineering research through videos and mini-courses related to polarized light. Beyond these efforts, this project will directly benefit graduate and undergraduate researchers through mentoring; and more broadly, K-12 students with interests in polarized light-matter interactions.

"The CAREER Award is extra special because it acknowledges both the quality of the proposed scientific work and the STEM related activities that my lab will pursue to support the science," said McPeak. "Having the NSF acknowledge the combined excellence of both activities is a great honor to me personally."



THE MOVE TO PFT

In December 2017, the LSU College of Engineering will complete the last phase of a \$110 million renovation of 300,000 square feet in Patrick F. Taylor Hall (PFT) and the expansion of a new 110,000-square-foot Chemical Engineering Annex. The expanded, renovated complex houses the majority of the engineering departments, as well as the college's administration.

Large capstone labs and integrated fabrication shops will support interdisciplinary work. In all, the building will have 436,691 square feet of usable, assignable space. There will be:

- 41,202 square feet of student collaboration space
- 134,969 square feet of teaching and laboratory space
- 1,576 classroom seats
- 272 faculty and staff offices

Upon completion, PFT will be the largest academic building in the state of Louisiana and one of the largest freestanding college of engineering buildings in the United States.

The groundbreaking ceremony for the \$100 million renovation was held in November 2014. Renovation of the building's north side began soon after and was completed in July 2016. Phase two (renovation of the south side) began in September 2016 and is expected to be complete by the end of 2017.

The new engineering complex will include state-of-the-art labs and gathering spaces such as the Capstone Gallery, which is currently under construction, the BASF Sustainability Lab and the Roy O. Martin Auditorium.

The BASF Sustainability Lab, which is the first of its kind at LSU and in the southeast region, is an innovative space that promotes problem-based teaching and research focused on sustainable solutions to meet global challenges.

The graduating class of 2021 will be the first to utilize the new building in its entirety.



IAC



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.

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Vice Chancellor, Work Force Development
Baton Rouge Community College

Sharon Hulgán

Site Logistics Director
Dow Chemical Company

Kim Odell

Process Engineer
Louisiana Refining Division
Marathon Petroleum Company LLC

Enrique Osuna

Process Control Senior Section Supervisor
Baton Rouge Refinery
ExxonMobil

Mr. Rodney Porter

Capital Manager
Motiva Enterprises LLC

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

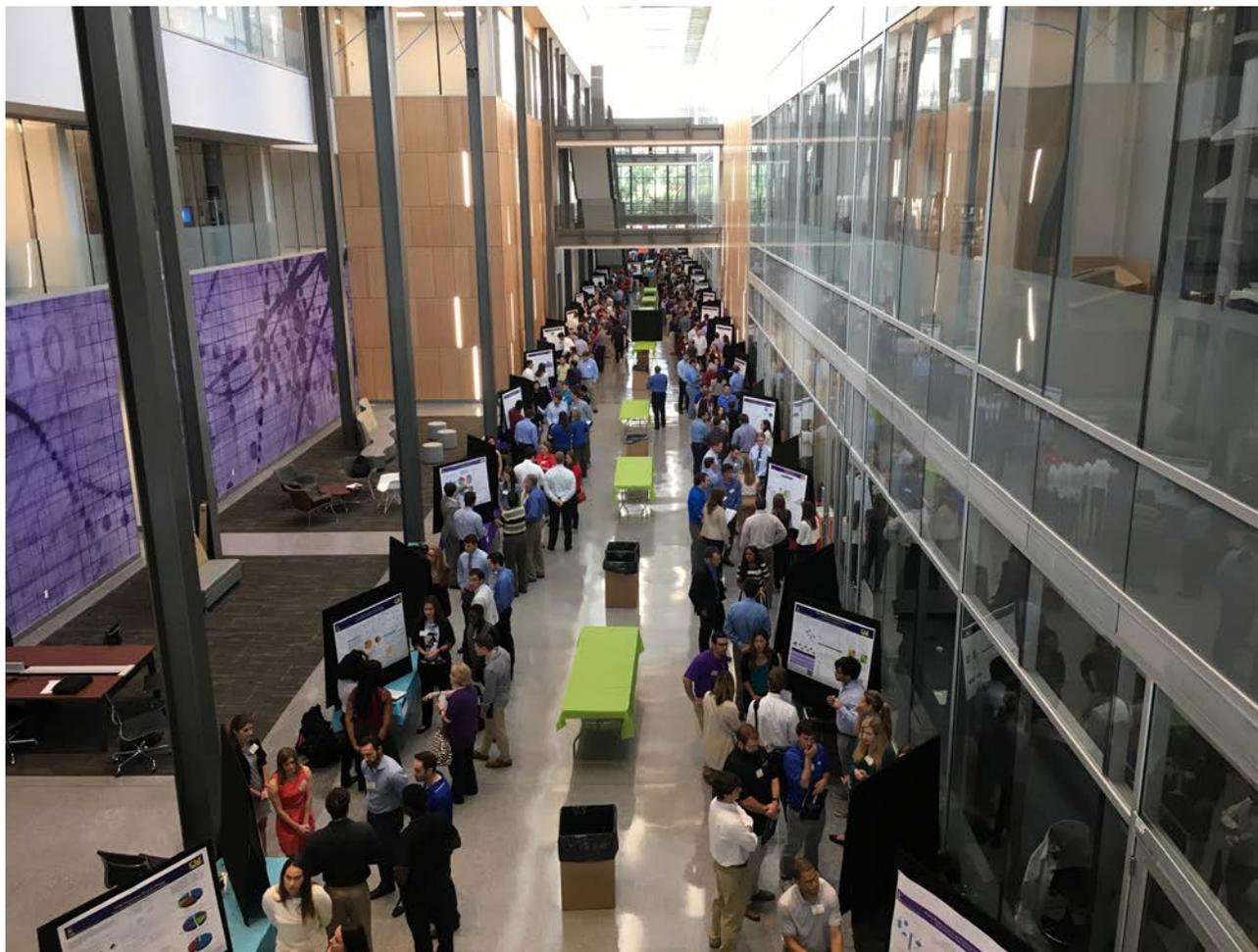
2017 GRADUATE RECRUITMENT WEEKEND

On Thursday, February 23, six prospective graduate students arrived in Baton Rouge to take part in our 2017 Graduate Recruitment Weekend. They attended the College Kickoff/Breakfast Friday morning, then traveled to Tiger Stadium for a tour of the facilities and field. Next, Aaron Harrington — LSU ChE Graduate Student Association President — took them on a guided tour of LSU's campus. Following the morning activities, they participated in a round robin of faculty poster presentations and lab tours, as well as a tour of LSU's Center for Advanced Microstructures & Devices (CAMD) facilities. 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 Maryland. Saturday they were able to experience a unique part of Louisiana's culture — the Spanish Town Mardi Gras parade. Sunday morning they parted our company and returned to the airport, excited about their visit to our beautiful campus.

The department would like to thank all who participated and made this event a success.



STUDENT AWARDS & NEWS



Junior/Senior Poster Presentations — April 2017

The Department would like to thank the 120 Industry professionals — 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. This year, the department held the poster presentations in the Cambre Atrium of Patrick F. Taylor Hall. As you can see from the picture above, it was the biggest and best poster presentation session to date.

Each year, juniors in ChE 3171 and seniors in ChE 4172 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, 33 groups of four juniors worked to determine the optimal pump replacement in the production of isocyanates. The endothermic reaction to produce toluene diisocyanate (TDI) takes place in a continuous stirred tank reactor by combining toluene diamine (TDA) with excess phosgene (COCl_2) in the presence of a solvent, monochlorobenzene (MCB). Diisocyanate is a precursor to polyurethanes, a widely used type of foam. Anhydrous hydrochloric acid (HCl) is a co-product. Unreacted TDA combines with TDI to give off urea and is a yield loss. The students were asked to evaluate alternatives to minimize the risk of phosgene releases. One alternative is to install a double mechanical seal pump that experiences relatively more frequent failures that are of less consequence than the second alternative. The second alternative is to install a sealless magnetic drive pump that fails infrequently, but catastrophically when it fails. Industry judges were impressed with the juniors work and scored their projects with high marks.

Thirty-eight groups of three or four seniors designed a process to produce Vinyl Chloride Monomer (VCM) by the balanced process. The process consists of a reactor to produce EDC (di-chloro-ethane) from chlorine and ethylene, a pyrolysis reactor to crack the EDC into VCM and HCl, and an oxy-chlorination reactor to consume the HCl by reacting it with ethylene and oxygen to produce EDC. A kinetic model was made available to the students to study the effect of reactor conditions on the residence time and reaction conversion and selectivity for the direct chlorination (DC) and oxy-chlorination (Oxy) reactors.

The project was carried out in four phases:

1. Review the literature on the process and carry out the material balances to determine the raw material requirements and the recycle flows.
2. Simulate a simple base case of the process in Aspen HySys.
3. Do a complete economic evaluation of a simple base case to determine the costs of the major equipment and utilities, and the cost per pound of producing VCM.
4. Evaluate design alternatives to reduce the cost of production

The problem is defined as producing VCM for internal use by a plant that produces PVC. Thus, the cost of capital is determined by setting the net present value to zero to calculate the required uniform annual income that produces 15% effective annual rate of return on the total capital investment. In Phase 4 the students used a pinch analysis package known as HINT to design a heat exchanger network. The major result of the pinch analysis is the installation of a cross-exchanger between the exit stream from the pyrolysis furnace and the feed to the furnace to reduce the heat load of the furnace. As with the juniors, the judges were impressed with the seniors, scoring their posters with high marks and outstanding comments.



ChE Graduate Students Receive 2016 PSE Model-Based Innovation Prize

The Gordon A. & Mary Cain Department of Chemical Engineering would like to congratulate Professor Jose Romagnoli and two of his PhD graduate students, Navid Ghadipasha and Aryan Geraili. At the AIChE Annual Meeting, held in San Francisco in November 2016, their paper, *Combining On-Line Characterization Tools with Modern Software Environments for Optimal Operation of Polymerization Processes*, was selected as the winner of the 2016 PSE Model-Based Innovation Prize, which carries a \$3,000 award.

The judges were particularly impressed by the paper, commenting that “this is an excellent work presenting a gPROMS-based modelling, estimation, optimization, and feedback control framework for an industrial polymerization process. The work illustrates nicely the open communication capabilities of gPROMS. Specifically, it combines the powerful capabilities of an automatic continuous online polymerization monitoring system with a gPROMS dynamic model. Extensive parameter estimation studies have been performed using experimental and pilot plant data followed by dynamic optimization of the underlying process.”

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

BASF awarded \$5,000 in scholarships to two ChE students at Louisiana State University (LSU) in Baton Rouge. This is the fourth year BASF has provided annual scholarships through the BASF Team Chemistry Scholarship Program to students as part of the company's education outreach and workforce development efforts.

"BASF scholarships provide direct financial support to LSU students to help them continue their degree programs and fulfill their dream of becoming engineers," said Tom Yura, Senior Vice President and General Manager of the BASF site in Geismar, Louisiana. "Through our continued partnership with LSU's College of Engineering, we also promote career opportunities that are available at BASF and provide hands-on learning and mentoring opportunities for students."

Each student received a \$2,500 scholarship from BASF. In addition to maintaining excellent grade-point averages, scholarship recipients are active in campus and community organizations.

Emily Bergeron is a sophomore chemical engineering major from LaPlace, Louisiana, who graduated as salutatorian

from St. Charles Catholic High School. She works at the LSU Women's Center and is actively involved in her sorority, Kappa Alpha Theta.

Amanda DiVittorio is a sophomore chemical engineering major from New Orleans and a graduate of Mount Carmel Academy. She is actively involved on campus as a member of Delta Gamma Sorority, the American Institute of Chemical Engineers and Christ the King Catholic Church. She volunteers at the Louisiana School for the Visually Impaired and as a coach for Bengal Gymnastics.

"BASF has played an integral role in the development of our LSU engineers and in the growth of our college," said Mary Julia Wornat, Interim Dean of the LSU College of Engineering. "As a result of the company's continued support, our students have been afforded the opportunity to learn in state-of-the-art facilities, and to receive the financial assistance needed to succeed in the classroom – and beyond."

BASF's manufacturing presence near LSU includes operations in Geismar, the corporation's largest site in North America, Zachary and Vidalia. BASF sites in Louisiana employ a workforce of around 2,000 people and invest nearly \$300 million in the state through annual payroll, purchases, taxes and charitable contributions. Visit www.basf.us/la for more information.



Emily Bergeron



Amanda DiVittorio

DEPARTMENTAL AWARDS

THE DAVID M. WETZEL FUND IN CHEMICAL ENGINEERING

This year marked the first time the David M. Wetzel Award was given. The honor goes to an instructor for excellence in teaching and a female sophomore for outstanding scholarship. This year's recipients are Instructor Harry Touns and Michelle West. Each will receive a \$1,000 cash award and a trophy signifying their achievement.



NATALIE BURGES RECEIVES 2017 JESSE COATES AWARD

Burges was presented with both the Jesse Coates Award and an engraved watch at the Cain Department of Chemical Engineering's 2017 Undergraduate Awards Banquet. The Coates Award is voted on by all department faculty and is given to a student who exemplifies both academic integrity and leadership in extracurricular endeavors.



2017 JUNIOR AWARD

Matt Lambert and Lauren MacKenzie received the 2017 Junior Award for holding the highest GPA at the end of the semester in which they had completed 90 hours.



2017 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 Sulaiman Al Rawahi, Rebecca Austin, Cody Beck, Dylan Bernard, David Bienvenu, Natalie Burges, Jacob Cheramie, Victoria Croft, Joseph Devereux, Travis Dugas, Chinedum Emelobe, Jonathan Gardner, Aleshia Hector, Anna Hoying, Daniel Hulgán, Stephen Hurdle, Andrew Issa, Amanda Jenkins, Alexandra Kiritsis, Cara Leger, Caroline Limbaugh, Lauren MacKenzie, Sabrina Ordoyne, Precious Orji, Amanda Ourso, Ana Perez, Bethany Sarabia, Keely Senical, Hatem "Tim" Shaded, Delaney Sheehan, Jade Sorrell, Macie Sticker, Brian Stumpe, Jon Wilson, and José Sylve.



SCHOLARSHIPS

2016-17 UNDERGRADUATE SCHOLARSHIP RECIPIENTS

Alan M. Raymond Endowed Scholarship
Jon Wilson

American Society of Sugar Cane Technologists Scholarship

Gloria Alvarado
Kyle Bankston
Matthew Blanchard
Stacey Wieseneck

BP Scholarship for Energy in Engineering

Natalie Burges
Lauren Mac Kenzie
Caroline Limbaugh
Lauren Mac Kenzie
Justin Nahn
Rachel Nguyen
Jacqueline Ras
Juan Rubio

Clara & Frank R. Groves, Sr. Engineering Scholarship

Kyle Bankston
Mae Mangaoil

College of Engineering Alumni Scholarship

Lindsay Blouin
Lee Burnett
Kevin Kirchner
Garett Lambert
Angela Stark
Katrina Taylor

Donald F Othmer Sophomore Academic Excellence Award

Joshua Campbell

Donald W. Clayton Engineering Excellence Scholarship

Joshua Campbell
John Lacey

Eugene R. Cox Scholarship

Alexandra Kiritsis
David Rau

ExxonMobil Diversity Scholarship

Riad Elkhanoufi
Aleshia Hector
Breanna Lee
Leonardo Martinez
Tristin Paul-Olivier

Floyd S. Edmiston, Jr. Endowed Memorial Scholarship

Alexis Hanson

Frank Jr. & Phyllis Heroy Endowed Scholarship

Mallory Mire

Gene Perdue Lowe Scholarship

Ruwa Abufarsakh
Jeffery Anderson
Andrew Badeaux
Joshua Baldassarro
Gabriella Bergeron
Emily Duplechain
Madison Ferda
Rathnayaka Gunasingha
Jacob Hewson
Patrick Holden
Andrew Jordan
Truong Nguyen
Andrew Peterson
Mason Roussel
Nicholas Volpi

Gerard Family Undergraduate Scholarship

Rebecca Austin
Garett Lambert
Lauren Mac Kenzie

Henry G. Abbott Scholarship

Caroline Kieffer

Jerry and Gloria DesRoche Fund for Engineering

Ricardo Aguilar
Kelsey Blosser

Jesse Coates Memorial Scholarship

Andrew Jordan

Leo Broering Memorial Scholarship

Giuliano Campesi

Leo C. Comeaux Chemical Engineering Scholarship

Christopher Reed

Leonel E. Tustison and Helen L. Tustison Scholarship

Gena Bergeron
Jordan Cantrell
Kathryn Craft
Quincia Ezejiifo
Ethan Kraemer
Talisha Parker
Brandon Perrien

Lubrizol Scholarship

Allison Bourdon
Natalie Burges
Caroline Limbaugh
Karen Stanton

LyondellBasell Industries Scholarship

Joseph Balhoff
Riad Elkhanoufi
Cole Guillory
Joshua Janway

Mable and Boykin W. Pegues Scholarship

Jeremy Alcanzare
Joseph Balhoff
Kelsey Blosser
Michael Denham
Jonathan Gardner
Aleshia Hector
Daniel Hulgán
Grant Landwehr

Marathon Oil Undergraduate Minority Scholarship

Matthew Faucheux

Marathon Scholarship in Chemical Engineering

Estelle Seghers

Mathcounts

Michael Denham

NACME Scholarship

Victor Alvarado
Riad Elkhanoufi
Andrew Peterson
Bethany Sarabia
Jade Sorrell

O. Dewitt Duncan, Jr. Endowed Scholarship

Joseph Balhoff
Joshua Campbell
Jacob Cheramie
Rachel Devall
Travis Dugas
Riad Elkhanoufi
David Englehardt
Nathan Grotte
Stephen Hurdle
Cara Leger
Brooke Pendergast
Robert Quiring
Macie Sticker
Edward Thistlethwaite

Patrick F. Taylor Scholarship in Engineering

Emily Heath

Paul M. Horton Memorial Undergraduate Scholarship

A'mer Abu Shamleh

Nihal Agrawal
Morgan Donaldson
Darby Maloch

Paul N. Howell Endowed Memorial Scholarship

Wayne Wortmann

R. L. Hartman Memorial Scholarship

Hunter Simonson

Robert Sherrod Stricklin Scholarship

Monica Guillot

Ryan D. Fontenot Scholarship

Kayla Haydel

S&B Engineers Brookshire Scholarship in Engineering

Elizabeth Allain
Colleen Atkins
Joshua Baldassarro
Kyle Bankston
Alexander Baumann
Vanessa Beall
Dylan Bernard
Kelsey Blosser
John Boyce
Megan Campbell
Giuliano Campesi
Joseph Chavalitlekha
Kelly Cohen
Victoria Dang
Travis Dugas
Riad Elkhanoufi
Kristin Ellis
Joseph Fishburn
Jonathan Garitty
Corey Guercio
Rathnayaka Gunasingha
Aleshia Hector
Elizabeth Herman
Dat Hoang
Joshua Janway

Brian Johnson
Jasmine Jones
Stephen Jones
Andrew Jordan
Seth Kaplan
Caroline Kieffer
John Lacey
Breanna Lee
Tara Malone
Devin Manning
Amy Morgan
Rachel Nguyen
Truong Nguyen
Tristin Paul-Olivier
Schuyler Pablico
Tristin Paul-Olivier
Jacob Pettigrew
Victoria Pham
Bradley Poret
Jacqueline Ras
Christopher Reed
Eric Reviere
Jacqueline Samson
Ryan Scroggins
Estelle Seghers
A'mer Abu Shamleh
Jenna Shepherd
Hunter Simonson
Noah Taylor
Austen Theriot
Edward Thistlethwaite
Candace Thomas
Linda Tran
Thao Vo
Nicholas Volpi
Jeremy Wade
Austin Watts
Bryanna West
Michelle West
Stacey Wieseneck

Shell Engineering Ambassador Scholarship

Kristin Ellis

Suzanne and Jamal al-Barzinji Engineering Scholarship

Michelle West

SWCA Scholarship Award

Riad Elkanoufi

Thomas H. Hopkins Scholarship

Thomas Abrahams
Nihal Agrawal
Christopher Fowler
Darby Maloch
Jacob Pettigrew

Traditions Scholarship in Engineering

Thomas Abrahams
Nihal Agrawal
Christopher Fowler
Darby Maloch
Estelle Seghers
Angela Stark
Katrina Taylor

Walter G. Middleton, Jr. Endowed Scholarship

Andrew Jordan
Seth Kaplan
Annie O'Keefe

William E. McFatter Endowed Scholarship

Breanna Lee



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



SUMMER 2016

Master of Science in Chemical Engineering

Lucy Olukemi Arowolo
Nishant Desai
Elizabeth Anne Hurst

Bachelor of Science in Chemical Engineering

Jacquelyn Nguyen

Jacob Mark Ieyoub
Janine Said Ismail
Matthew Thomas Johnson
Caroline Adele Joseph
Austin Mark LeBlanc
I-Ting Liu
Christopher Michael Millet
Brooke Amanda Pendergast
Robert Allan Quiring
Brittany Marie Quirk
Paige Alyce Shreve
Thomas Wade Turner

Victoria Elizabeth Croft
Mason Paul Cuevas
Christine Marie Daigle
Thanh Dang
Victoria Hoang Dang
Seth Peter Dessauer
Rachel Nicole Devall
Joseph Clement Devereaux
Jeffery Lynn Dobbs
Travis Michael Dugas
Kristin D. Ellis
Chinedum Paul Emelobe
David Christian Englehardt
Seth Michael Eues
Jonathan Alexander Gardner
Landon David Gautreau
Tylor Ray Gonzales
Gina Angelle Guillory
Alexandra Claire Gulino
Christopher Travis Harp
Shane Thomas Harrington
Aleshia Lexus Hector
Daniel Patrick Henry
Kristen Leigh Hillburn
Jacob Alexander Hingle
Laura Christine Horn
Anna Kathleen Hoying
He Huang
Daniel Joseph Hulgan
Zachary Joseph Hull
Stephen William Hurdle
Andrew Perre Issa
Austin Tyler Iverstine
Amanda Lizabeth Jenkins
Ryan Anton Jesina
Stephen James Jones
Kevin Lawrence Kirchner
Alexandra Kiritsis
Taylor Harrison Krone
Garett Paul Lambert
Ashten Elise Landry
Jason Christopher LaValla
Brennan Gerard LeBlanc
Alexis Adair Ledoux

Cara Alyse Leger
Brandon John Lewis
Caroline Grace Limbaugh
Lauren Ayla MacKenzie
Devin O'Mally Manning
Gregory Michael Martini
Peter Gerard O'Brien
Bailee Marie Ordes
Sabrina Lynn Ordoyne
Precious Chidinma Orji
Amanda Nicole Ourso
Gavin Andrew Pappas
Ana Sofía Pérez
Quintin Michael Picard
Bryan David Poché
Trey Michael Prejean
Jacqueline Elise Räs
David Emerson Rau
Michael David Rodriguez
Shelby Morgan Rogers
Bethany Lynn Sarabia
Hayden Mitchell Saucier
Mary Virginia Schoolfield
Keely Nicole Senical
Tim Shaded
Delaney Hennessy Sheehan
Camille Ann Smith
Grace Elizabeth Solari
Melissa Faye Sorensen
Jade Angelle Sorrell
Karen Fisher Stanton
Macie Leigh Ann Sticker
Brian Terre Stumpe
Jose Tillman Sylve
Edward Alexander Thistlethwaite, III
Kayla Christine Thomas
Luan P. Tran
Justin Frank Waddle
Brennan Fisher Waddle
Lauren Bridget Westholz
Rachel Elizabeth Williams
Jon Colter Wilson

FALL 2016

Doctor of Philosophy in Chemical Engineering

Michael Carl Thomas
Zi Wang

Master of Science in Chemical Engineering

Colin Thomas Dyroff
Jaren Lee
Benjamin Seth Roberts

Bachelor of Science in Chemical Engineering

Pilar I. Albert
Kathryn Elizabeth Anthony
Taylor Evan Broussard
Kristopher Anthony Clavin
Ashley Anaansa Dauntain
Trung Huu Dong
Clay Emile Ducote
Gage Michael Fos
Stacy Marie Good
Nathan Carl Grotte, Jr.
Austin Ak Guidry
Stephanie Anne Hevert
Eva Hidalgo
Jonathan Michael Hurt
Daniel Andres Hurtado

SPRING 2017

Doctor of Philosophy in Chemical Engineering

Eva Christine Caspary
Yuwu Chen

Master of Science in Chemical Engineering

Mohamad Barekati Goudarzi
Vikram Gowri Shankar

Bachelor of Science in Chemical Engineering

Sulaiman Al-Rawahi
Jeremy Cabrido Alcanzare
Ajibola Oluwatoyin Ashade
Rebecca Lynn Austin
Camille Frances Bailey
Cody Michael Beck
Dylan Michael Bernard
David Joseph Bienvenu
Cole Christian Billeaud
Jonathan Andrew Bonin
Allison Paige Bourdon
Natalie Angelica Burges
Daniel Scott Candler
Maggie Schexnayder Chauppetta
Jacob Paul Chermie

LSU DISTINGUISHED COMMUNICATORS

Four chemical engineering students earned the LSU Distinguished Communicator Award by meeting high standards set by faculty in various colleges and by the LSU Communication Across the Curriculum program. The students earned high GPAs in communication-intensive courses – based on written, spoken, visual, and technological communication – and built digital portfolios, displayed as public websites, which included their communication projects from courses, internships, leadership roles, and public service. The LSU Distinguished Communicator program was created in 2006 to enhance learning experiences for LSU students and support the improvement of students' communication skills.



Kristin Ellis



Aleshia Hector



Michael Rodriguez



Edward Thistlethwaite, III

HONORS COLLEGE GRADUATES

The LSU Honors College engages a diverse population of high-achieving students in a dynamic interaction of outstanding instruction, innovative research, and public service, and seeks to train today's high-achieving students to become tomorrow's leaders. The following chemical engineering students graduated with college honors, completing a minimum of 32 hours of honors coursework, including the upper-division honors program:



Aleshia Hector



Edward Thistlethwaite, III



Jon Wilson

ChE Summa Cum Laude – 3.90-4.00

Rebecca Austin, Garrett Lambert, Caroline Limbaugh, Lauren MacKenzie

ChE Magna Cum Laude – 3.80-3.89

Natalie Burges, Jonathan Gardner, Christopher Harp, Stephen Hurdle, Lauren Westholz, Jon Wilson

ChE Cum Laude – 3.70-4.79

Jacob Cheramie, Travis Dugas, Aleshia Hector, Daniel Hulgan

DEPARTMENT NEWS

ExxonMobil Advancing Academic Excellence through Matching Gift Program

ExxonMobil has announced a donation of more than \$1.2 million to the LSU Foundation as part of the ExxonMobil Foundation's 2016 Educational Matching Gift Program.

LSU Executive Vice President & Provost Rick Koubek and ExxonMobil representatives made the announcement at an on-campus presentation in April. Among the crowd were ExxonMobil employees and retirees who participate in the matching gift program, as well as LSU faculty and leadership whose departments benefit from ExxonMobil's philanthropy. The gift represents \$323,655 in donations made by employees, retirees and surviving spouses, along with the ExxonMobil Foundation's unrestricted three-to-one company match, for a total donation of \$1,279,104.

Since 2011, LSU has received more than \$6.8 million in donations through ExxonMobil Foundation's Educational Matching Gift Program, which enhances the departments whose academic goals align with those of ExxonMobil's and includes continued support for minority and female students.

"ExxonMobil, its employees and retirees have remained steadfast partners for LSU. Their continued generosity is a testament to our mutual commitment to providing quality education, solutions and resources for tomorrow's energy industry," Koubek said. "On behalf of LSU's faculty, staff and students, we express our sincerest gratitude to ExxonMobil." In addition to the ExxonMobil Foundation's Educational Matching Gift Program, ExxonMobil also contributes to various colleges and departments on campus through its departmental grant program, faculty-sponsored research and its local employee volunteer program.

"Quality education is the foundation for individual opportunity and economic prosperity," said Ben Soraci, president of the ExxonMobil Foundation. "We have a long history of supporting educational excellence around the country, including our investment at LSU. It's a shared priority, year after year, with our ExxonMobil employees."

About the ExxonMobil Foundation

The ExxonMobil Foundation is the primary philanthropic arm of Exxon Mobil Corporation (NYSE:XOM) in the United States. The foundation and corporation engage in a range of philanthropic activities that advance education, promote women as catalysts for economic development and combat malaria. In the United States, ExxonMobil supports initiatives to improve math and science education at the K-12 and higher education levels. In 2015, the ExxonMobil Foundation together with Exxon Mobil Corporation, its divisions and affiliates along with employees and retirees, provided \$268 million in contributions worldwide. www.exxonmobil.com/community.



Talent Pipeline: Halliburton Presents First Installment of \$1.2 Million Gift to LSU College of Engineering

In April, Halliburton representatives joined LSU President F. King Alexander, LSU Executive Vice President & Provost Richard Koubek, LSU faculty and staff, LSU Foundation staff and LSU College of Engineering students for an on-campus celebration of the company's generosity to the university. At the event, Halliburton presented the first of four installments of a \$1.2 million gift to the College of Engineering.

"We greatly appreciate Halliburton's show of support for our students," LSU President F. King Alexander said at the event. "Thanks to their generosity, students in our College of Engineering will now have even more opportunities to solve real-world problems while earning their degrees and will remain incredibly competitive in the global marketplace after graduation."

The Halliburton donation will create more experiential learning opportunities for LSU's next-generation engineers. The Halliburton Scholars Program will support high-achieving engineering students who are pursuing a career in energy and will prioritize gender diversity, encouraging more women to enter the field. The program will be an important and celebrated catalyst for gender diversity in engineering and interdisciplinary education at LSU.

"To collaborate and engineer solutions that maximize asset value for our customers, Halliburton employs the

brightest individuals who understand the importance of working together, continuously strive for improvement, and execute in challenging environments," said Lawrence Pope, executive vice president of administration and chief human resources officer for Halliburton. "LSU is one of the top tier schools from which we hire because it produces leaders, problem solvers, and innovators, and provides a first-class educational environment to students who may be our future employees."

Halliburton is one of the world's largest providers of products and services to the energy industry. With approximately 50,000 employees, representing 140 nationalities, and operations in approximately 70 countries, the company serves the upstream oil and gas industry throughout the lifecycle of the reservoir – from locating hydrocarbons and managing geological data, to drilling and formation evaluation, well construction, completion, and production optimization.

"Halliburton is interested in hiring students who are not only technically competent but also good communicators who work well in teams, who are globally aware and at ease in working in diverse environments. Those objectives are fully in line with the LSU College of Engineering's strategic plan," College of Engineering Dean Judy Wornat said. "This new gift from Halliburton to the College of Engineering will help to attract top-notch talent and offer hands-on learning for students to acquire the skills they will need in the workforce."



ALUMNI SPOTLIGHT

Jerry Forest



Jerry Forest never imagined a degree in chemical engineering would lead him to a successful career in process safety.

Forest, a 1984 LSU alumnus, has more than 30 years of experience in process safety with a strong manufacturing background in isocyanates, hydrazine propellants, and refining at Celanese Corporation and at previous companies LyondellBasell and Olin.

He currently works as a global process safety manager for Celanese, overseeing the management system and helping build the culture and provide technical support to all Celanese locations, which include 25 manufacturing sites in 12 countries.

In April 2017, the 56-year-old Lake Charles native was hired as an adjunct lecturer for Introduction to Plant Design and Process Safety at LSU's College of Engineering.

Forest said Kerry Dooley, a professor in the chemical engineering department, asked him for help in teaching developmental process safety. Previously, Forest was the CCPS industry chair for the process safety textbook used in the university's engineering curriculum.

Forest saw Dooley's request as the perfect opportunity to give back.

"I wouldn't have a global role in process safety if it had not been for the background I got at LSU," Forest said. "It is really that simple."

"I have a pretty long resume. Deleting everything off of my resume and just putting that I was an adjunct lecturer in chemical engineering means more to me than any other accomplishment I've had."

Additionally, he decided to give back to LSU by establishing an endowed scholarship, funded by the salary he receives from the College of Engineering.

"Doing lectures and donating the money to an endowed scholarship is something my wife and I always wanted to do," Forest said. "Education is one of our core values. She is a college professor as well, so it just made sense for us to do this."

Forest met his wife, Sharron, while they were both studying chemical engineering at LSU.

He said after graduation, there were no jobs available, so the couple decided to become teachers in the East Baton Rouge School System. Sharron eventually went back to school to obtain a doctorate in nursing and is currently teaching at the University of Texas Medical Branch in Galveston, Texas.

Forest began his career with the Olin Corporation, which also paid for his master's degree in pastoral studies from Loyola University.

He explained that in the 1990s he worked in site management for Olin, and the company wanted to interconnect chemical engineering and culture. At the time, Forest was also responsible for public relations and community involvement. The company paid for his education, and he went on to publish a paper on process safety progress and how to measure process safety culture.

Forest has enjoyed many accomplishments over the course of his career. During his seven years at Celanese, he has worked with China's State Administration of Workers Safety (SAWS) and became the co-chair of a group that developed process safety guidelines in China.

In addition, Forest said he created a successful initiative at Celanese called Walk the Line. The program prevents operating errors and spills of chemicals that occur due to operator line-up failure. Roughly 40 different companies in the United States have adopted the program.

"My goal is to eliminate operator line-up error in industry," Forest said. "We are actually making this progress as an industry and it has been quite rewarding."



OPPORTUNITY TO GIVE

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.lsu.edu/eng/che/support.

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