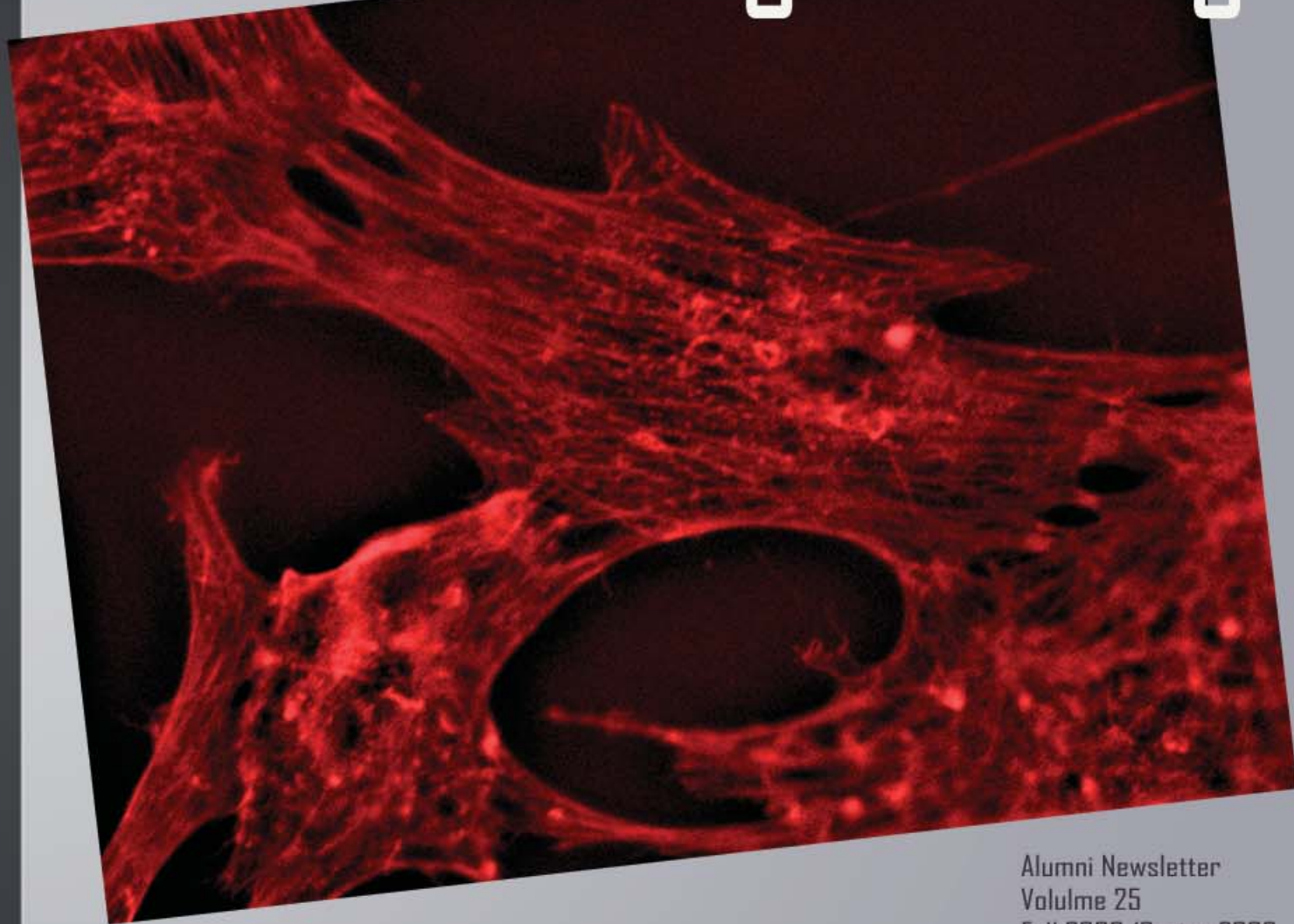


ChE
100

Chemical Engineering



Alumni Newsletter
Volume 25
Fall 2008/Spring 2009

Cain Department of Chemical Engineering

LOUISIANA STATE UNIVERSITY

A Word of Thanks

Volume 25
Fall 2008/Spring 2009

On the Cover

The image on the front cover is part of active research ongoing in Prof. James Henry's lab. The image represents MC-3T3 mouse preosteoblast cells growing on whey protein isolate gels. They have been stained to show the actin filament organization in the cells. The strong, parallel filament formation indicates a strong, biological cellular confirmation and structure.

Chemical Engineering

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

Comments and suggestions should be directed to:

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LSU IS AN EQUAL OPPORTU-
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Although financial support has been impressive, departmental expenses continue to rise and further renovations are essential if we are to remain competitive with our counterparts at other universities. We would like to thank the following corporations and individuals for their role in maintaining the outstanding reputation that LSU has achieved throughout the years.

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Dear Friends and Alumni:

I am pleased to be able to report several events and changes that have occurred in the department during this year.

The department celebrated its centennial year in October 2008 with a two-day event. Highlights from the event are included in the newsletter as well as an extensive history authored by Prof. Kerry Dooley. We were delighted to see many familiar faces in attendance at the dinner and the seminars. We appreciate the support shown by our alumni and friends as we celebrated this momentous event in the department's history.

In August 2009, the department will be welcoming one new professor. K. Nandakumar will be joining the faculty as the second Cain Chair Professor in Chemical Engineering. He is the editor of the *Canadian Journal of Chemical Engineering*. His research focus is in computational fluid dynamics and modeling of multiphase flows. We look forward to his arrival and are confident he will be a valuable addition to the faculty. Prof. Jerry Spivey was promoted to full professor this year. He also received a new grant of \$12.5 million from the Department of Energy to establish an Energy Frontier Research Center in the department.

The department is continuing to modernize the undergraduate laboratory under the leadership of Dr. Harry Toups and Prof. Jose Romagnoli. You can see the most recent renovations to the lab on the back of this newsletter.

The faculty and staff in the department met for an Annual Retreat in March. The main topics of discussion included the department's upcoming ABET review in 2009, the graduate program and graduate recruiting efforts, and ways to improve the department metrics. Two members of the department's Industrial Advisory Committee (IAC) attended as well to lend their input – Marvin Borgmeyer (ExxonMobil) and Margaret Reaves (Shell). Also in March, the department IAC, chaired by Vernon Fabre (B.S. ChE, 1973), met to discuss the current state of the undergraduate program and curriculum, ABET preparations, faculty recruitment, and upgrade of laboratories. Interim Dean David Constant and the incoming Dean Richard Koubek addressed the IAC to update them on the University initiatives and long-term perspectives. You can read more about the new Engineering Dean in this issue.

Our alumni and friends have continued their support of the department by establishing and contributing to the professorships and chairs for the faculty, and scholarships for our students. These efforts have helped us recruit and retain excellent faculty and students to our undergraduate and graduate programs. In our continuing efforts to honor some of our donors, the department hosted its Second Annual Scholarship Donor & Recipient Dinner on April 13.

Fundraising effort for our new building is proceeding under the able leadership of Ron Cambre (B.S. ChE, 1960) who is chairing the Campaign Steering Committee. We have received substantial contributions from several individual donors and corporations who are recognized in this newsletter. At the present time, the LSU 5-year Capital Outlay plan calls for a 50:50 split in private/public funds.. We have so far raised \$8.1 million towards our private fund raising goal. We hope that we can look forward to an enthusiastic response from our alumni this coming year so that we can close out our building fund-raising. The new 100,000 square feet building will more than double our current size and will be the most modern building for research and teaching on campus. More details about the building are available on our department Web site and the LSU Forever Campaign Web site. There are numerous ways in which you can help with this effort and I urge you to do so.

I encourage everyone to visit our redesigned Web site at <http://www.che.lsu.edu> for the most up-to-date information concerning the department as well as the latest news. I also encourage you to visit our Alumni Guestbook to let us know how you are doing.

I wish you all the very best for the rest of 2009 and beyond. If you happen to visit Baton Rouge, please stop by the department.



Kalliat T. Valsaraj
Department Chair
Charles & Hilda Roddey Distinguished Professor and
Ike East Professor



100 YEARS OF CHEMICAL ENGINEERING AT LSU

The department celebrated its centennial year with a two-day event on October 23-24, 2008.

On October 23, the department hosted invited speakers, LSU administrators, prominent donors and alumni, and members of both the Industrial Advisory Committee and the Campaign Steering Committee as well as current and former department faculty and staff at a dinner held at the Sheraton Baton Rouge Convention Center Hotel. Both the department chair, Kalliat Valsaraj, and LSU Provost Astrid Merget spoke concerning the unique history of our department as well as its importance to the LSU campus and the economy of the State. In addition Jeff McLain, Vice President for Development at the LSU Foundation, took an opportunity to acknowledge major donors thus far to the New Chemical Engineering Building Fund and presented them with LSU Arches.

On October 24, the department hosted an all day seminar series on the LSU campus in the Rotunda of the Energy, Coast, and Environment Building that was open to the public. We were delighted that many alumni were able to attend this event as well as many people from across the LSU campus. The speakers and the titles of their talks are as follows:

"Taking on the World's Toughest Energy Challenges"

Dan Schuessler - Site Manager, Baton Rouge Chemical Plant, ExxonMobil Chemical Company

"Nanoparticle Cancer Therapeutics: From Concept to Clinic"

Mark Davis - Warren and Katharine Schlinger Professor of Chemical Engineering, Dept. of Chemical Engineering, California Institute of Technology

"FOREVER LSU Campaign and the New Chemical Engineering Building"

Ronald Cambre (B.S., 1960) – retired CEO of Newmont Mining; Chair of the ChE Campaign Steering Committee

"Design of New Products"

Edward Cussler - Distinguished Institute Professor, Department of Chemical Engineering & Materials Science, University of Minnesota

"100 Years of ChE at LSU"

Edward McLaughlin - Dean Emeritus, College of Engineering, LSU and
Kerry Dooley – BASF Professor, LSU Chemical Engineering

"Changes in the Chemical Industry-Past, Present & Future and How They Impact the Skills Required by the LSU CHE Graduate"

Sharon Cole (B.S., 1981)- Louisiana Operations Site Director, Dow Chemical Company

Chancellor Michael Martin, along with Prof. Valsaraj made opening remarks and welcomed the attendees to the event. In addition, a surprise visitor addressed the afternoon crowd. Louisiana's First Lady Supriya Jindal, who is a fellow chemical engineer, presented the department with a commemorative certificate from the Office of the Governor in honor of our 100 years at LSU.



Following the seminars the department's facilities were open to those who wished to visit and tours of our newly renovated Undergraduate Operations Laboratory were provided.

In honor of this momentous event, Prof. Kerry Dooley has written an in-depth history of the department. A full version of the text is included as an insert in this newsletter. In addition, an assortment of articles and photos comprising the department's history and the centennial celebration events can be found on our Web site at: www.che.lsu.edu/ourdepartment/history.htm.



Centennial Celebration



New Engineering Dean: Richard Koubek



Dr. Richard J. Koubek, formerly Professor and Head for the Harold and Inge Marcus Department of Industrial and Manufacturing Engineering at The Pennsylvania State University (Penn State), began his tenure as Dean of the LSU College of Engineering on June 1, 2009. Koubek has also held the Peter and Angel Dal Pezzo Department Head Chair at Penn State. Prior to the Penn State appointments he held the posts of Professor and Chair for the Department of Biomedical, Industrial and Human Factors Engineering, and Associate Dean for Research and Graduate Studies for the College of Engineering and Computer Science at Wright State University. He served six years on the

faculty in the School of Industrial Engineering at Purdue University and began his academic career as a faculty member in the College of Engineering and Computer Science at Wright State University.

Koubek's research focuses on usability, human aspects of manufacturing, and human-computer interaction. He has been editor of the *International Journal of Cognitive Ergonomics*, and is a member of the Editorial Board for the *International Journal of Human Factors in Manufacturing* and the *International Journal of Human-Computer Interaction*. Dr. Koubek was Conference Chair for the Fifth International Conference on Human Aspects of Advanced Manufacturing and Hybrid Automation and Co-Chair for the Fourth International Conference on Engineering Psychology and Cognitive Ergonomics. He holds bachelor's degrees from Oral Roberts University in Tulsa, Okla., and Northeastern Illinois University in Chicago, and a master's degree and PhD in industrial engineering from Purdue University.

Koubek also has co-authored numerous journal articles, book chapters and books and has given invited presentations at venues across the globe, including the U.K., China and Japan. He has a number of teaching and research awards to his credit, has served in an editorial role and as a referee for several scientific journals and trade publications in his field and has served as a proposal reviewer for the National Science Foundation, NASA and the Office of Naval Research.

The College of Engineering dean search was co-chaired by Dr. Peter Haynes, dean of the School of Veterinary Medicine, and Greg Guidry, a senior vice president of Exploration and Production at Shell and chair of the College's Dean's Advisory Council. The search drew candidates nationally and internationally and while conducted by LSU, was assisted by D. P. Parker and Associates executive search firm.

Koubek is LSU's tenth Dean of the College of Engineering. Previous Deans include: Zaki Bassiouni (2004-2008), Pius J. Egbelu (2000-2004), Adam T. Bourgoyne (1997-1999), Edward McLaughlin (1987-1997), Richard A. Matula (1976-1986), Roger W. Richardson (1965-1976), Fred H. Fenn (1957-1961), Leo Joseph Lassalle (1931-1957), and Thomas W. Atkinson (1907-1927).

Article by Mimi LaValle, LSU College of Engineering Development Office

The Department wishes to congratulate **Paul Rodriguez**. Paul has been named as one of eight 2008 recipients of the LSU Foundation's Outstanding Staff Service Award. Award recipients were honored for their superior service and dedication at a reception on November 18 at the LSU Faculty Club. Paul has been with the chemical engineering department for 25 years and currently serves as Manager of the department's Machine Shop. Paul is an indispensable member of the chemical engineering staff and the department is delighted that he has been honored by the University as he is more than deserving of this honor.

The following faculty and staff received *Years of Service* awards at the 2009 Employee Recognition Program, held on May 6 at the Lod Cook Alumni Center:

25 Years

Margaret Cygan
Paul Rodriguez
Louis Thibodeaux

30 Years

David Wetzel

40 Years

Ralph Pike

LSU receives DOE Energy Center

A new \$12.5 million Energy Frontier Research Center (EFRC), awarded to LSU by the Department of Energy, will be housed in the Cain Department of Chemical Engineering and headed by Chemical Engineering Professor **Jerry Spivey**. LSU is one of 46 universities and laboratories to receive funding from DOE (out of 260 total applications) for a multi-million dollar EFRC to pursue advanced research on energy. The title of the LSU EFRC is "Computational Catalysis and Atomic-level Synthesis of Materials: Building Effective Catalysts from First Principles." Along with Spivey, chemical engineering professors **Kerry Dooley**, **John Flake**, and **Greg Griffin** will serve as co-PIs for the center. The center will be initially supported for five years with the possibility of a second five years of funding at the approval of DOE if the research proves to be useful.

The main objective of this project is to develop computational catalysis to accurately model reactions at realistic conditions and to significantly advance the tools of materials synthesis and characterization, allowing atomically precise catalysts identified by computation to be prepared and characterized unambiguously. The research will use recently developed tools to carry out a catalytic reaction purely by computation, from first principles, providing an entirely different way to develop new materials. At the same time, the ability to synthesize catalytic surfaces with atomic-level precision is improving. Various methods will be employed, including advanced computational research such as kinetic Monte Carlo simulations; and, cutting edge STM, AFM, and Synchrotron-based spectroscopies.

The ultimate goal of this project is to develop the computational and synthesis tools needed to prepare next-generation of catalysts



New CoE Dean Koubek visited Spivey's labs recently to learn more about his ongoing research on energy and clean fuels.

that are essential to our energy future. Spivey stated, in an article that appeared in *The Advocate* on May 8, that "he believes energy processes can be made cleaner and more environmentally friendly by studying them more closely through computer modeling and real-time reactions." Spivey also said, "We

want to make our resources go further and impact the environment less." If successful, scientists will be able to carry out a reaction computationally, identify an exact catalyst, synthesize it precisely, and fully characterize it. This will provide a different way to develop new materials other than by experimental trial and error.

Researchers will rely heavily on LSU's own synchrotron radiation facility, the Center for Advanced Microstructures and Devices (CAMD) for synthesis and characterization of novel nanostructured catalysts. The chemical engineering faculty will be joined in the center by Challa Kumar from CAMD and Ward Plummer, Phillip Sprunger, and Richard Kurtz who are all in the Department of Physics & Astronomy. Major institutional participants in the LSU EFRC, along with LSU, are Tulane University, UT-Battelle/Oak Ridge National Laboratory, Texas A&M University, University of Florida, Clemson University, Georgia Institute of Technology, Utrecht University (The Netherlands), Grambling University, and Louisiana Tech University.

ChE Researchers create model for forecasting chemical contaminants

Chemical engineering researchers have developed a model for forecasting the level of harmful contaminants that first-responders may be exposed to in disaster areas based on a study of Katrina-flooded homes. The recent study by **Nicholas Ashley**, **Louis Thibodeaux**, and **Kalliat Valsaraj** suggests that Katrina-flooded homes may contain harmful levels of contaminants, such as aerosols and gases, which could pose serious and lasting effects on individuals entering those homes. The study was published in the April 2009 issue of *Environmental Engineering Science (EES)* and was first presented by Ashley at the national meeting of the American Institute of Chemical Engineers (AIChE) in November 2008, where it received one of three first place awards for 2008 Graduate Student Papers.

The model details the possible types and levels of volatile and semi-volatile organic pollutants that might be present in the

multiple indoor phases, or MIPs, inside Katrina-flooded homes. These include hazardous chemicals present in the inhalable vapor phase, in mold films, or in aerosolized spores.

The study, entitled, "Multiphase Contaminant Distributions Inside Flooded Homes in New Orleans, Louisiana, after Hurricane Katrina: A Modeling Study," concludes that these newly identified inhalation exposure routes could present a significant health risk to persons who simply walk inside and breathe the air in contaminated homes, even if there is no dermal contact with the sediment covering the floors or the mold growing on the walls and other surfaces.

Domenico Grasso, editor-in-chief of *EES* as well as dean and professor in the College of Engineering and Mathematical Sciences at the University of Vermont-Burlington, states that "this is an excellent and important study by one of the top research teams in the nation. It will help us better prepare first responders for the additional risks that may be posed by such events."

Faculty News & Awards



Benton, second from left, pictured at the awards ceremony with Vice Chancellor Brooks Keel (far left), Donghui Zhang (second from right) and Chancellor Michael Martin (far right).

Mike Benton is one of two LSU recipients of this year's Ralph E. Powe Junior Faculty Enhancement Award from the Oak Ridge Associated Universities (ORAU), which is a consortium of doctoral-granting academic institutions. The Powe award recognizes exceptional work by junior faculty across several

disciplines, including engineering, mathematics, life sciences, and physical sciences. The award provides a grant of \$5,000, which is matched by LSU, to support research and other needs of these young faculty. Benton's research focuses on the expression of genes under varying conditions of cellular growth. His research seeks to identify stresses in the cellular microenvironment that can lead to nutrient depletion, DNA damage, and possibly to cancer. Benton has already stated that he will use the grant primarily for travel to Bethesda, Maryland, and research with a collaborator at the National Institutes of Health. Benton, along with fellow LSU recipient Donghui Zhang (Department of Chemistry), received a commemorative plaque at a small ceremony on July 15, with Chancellor Michael Martin and Vice Chancellor for Research & Economic Development Brooks Keel.

Francisco Hung received a Petroleum Research Fund grant from the American Chemical Society (ACS), upon recommendation by the ACS Petroleum Research Fund Advisory Board. The grant is in the amount of \$100,000 for the period January 1, 2009 through August 31, 2011. Hung will use the funds to support current research in his lab.

The department congratulates **Jose Romagnoli**, Cain Chair Professor in Chemical Engineering. Romagnoli, along with co-researchers, S. Mostafa Nowee and Ali Abbas from the University of Sydney, Australia, were awarded the 2008 PSE Model-Based Innovation Prize for their paper, "Model-based optimal strategies for controlling particle size in antisolvent crystallization operations." PSE, or Process Systems Enterprise Limited, offers an annual monetary prize for the best paper describing the use of gPROMS in an innovative way or in a novel area of application or technology.

The group's paper was published by the American Chemical Society and presents a model-based optimal strategy for the control of particle size in antisolvent crystallization using a detailed dynamic model that includes ternary equilibrium and crystallization kinetics. The PSE judges were impressed by the scope and technical depth of the paper, which scored high points in each of the five evaluation categories.

Romagnoli accepted the award on behalf of his co-researchers at the 2008 Annual Meeting of the American Institute of Chemical Engineers in Philadelphia in November.

Louis Thibodeaux, Jesse Coates Professor in Chemical Engineering, was selected to serve as an ad hoc member of the Federal Insecticide, Fungicide and Rodenticide Act for the Scientific Advisory Panel (FIFRA/SAP) for its October 2008 meeting. The meeting focused on the selected issues associated with the Risk Assessment Process for Pesticides with Persistent, Bioaccumulative, and Toxic Characteristics. The meeting was held at the Environmental Protection Agency (EPA) Conference Center in Arlington, Virginia.

The FIFRA SAP serves as the primary scientific peer review mechanism of EPA's Office of Prevention, Pesticides and Toxic Substances (OPPTS) and is structured to provide scientific advice, information and recommendations to the EPA administrator on pesticides and pesticide-related issues as to the impact of regulatory actions on health and the environment. The FIFRA SAP is a Federal advisory committee established in 1975 under FIFRA that operates in accordance with requirements of the Federal Advisory Committee Act. The FIFRA SAP is composed of a permanent panel consisting of seven members who are appointed by the EPA Administrator from nominees provided by the National Institutes of Health and the National Science Foundation. FIFRA, as amended by FQPA, established a Science Review Board consisting of at least 60 scientists who are available to the Scientific Advisory Panel on an ad hoc basis to assist in reviews conducted by the Scientific Advisory Panel. As a peer review mechanism, the FIFRA SAP provides comments, evaluations and recommendations to improve the effectiveness and quality of analyses made by Agency scientists. Members of the FIFRA SAP are scientists who have sufficient professional qualifications, including training and experience, to provide expert advice and recommendation to the Agency.

Ralph Pike was elected and installed as the Chair of the Fuels and Petrochemicals Division of AIChE at the spring national meeting, held April 26-30, in Tampa, Florida. The division has 1,200 members and is the largest and one of the oldest divisions in AIChE. It provides a forum for the exchange of information and ideas among chemical engineers engaged in all phases of fuels and petrochemicals activities. It conducts programming, recognizes outstanding leaders with awards, and maintains a Web site with information important to the members. The division also provides leadership, assistance, and expertise to the institutional, industrial, educational, and governmental groups including safety, health, and environment.

In addition Pike and **Carl Knopf** have received a grant from the Department of Energy with TDA Research, Inc. in Denver, Colorado, for the support of the project, "Low-Cost Sorbent for Capturing Carbon Dioxide Emissions Generated by Existing Coal-Fired Power Plants." Pike and Knopf will serve as co-PIs on the project with Dr. Jeannine Elliott and Dr. Robert Copeland of TDA Research. The total funded amount of the project is \$1.37 million, with \$146,217 allotted for LSU.

Kalliat Valsaraj has been **elected as a Fellow of the American Institute of Chemical Engineers (AIChE)** by its Board of Directors at its recent meeting. He joins fellow ChE faculty, **Ralph Pike** and **Louis Thibodeaux**, in being honored with this prestigious distinction. Election as Fellow is in recognition of professional attainment and significant accomplishments in chemical engineering. AIChE Fellows constitute less than 5% of the institute's membership. AIChE, founded in 1908, is a professional association of more than 50,000 members. It provides leadership in advancing the chemical engineering profession by fostering and disseminating knowledge, supporting the professional and personal growth of its members, and applying members' expertise to address societal needs. AIChE celebrated its centennial year, along with the Department, in 2008.



Valsaraj was honored with another award as well. He was awarded the Rotary Vocational Excellence Award 2009 by the Rotary District Governor, Mr. M Prakash. The award was presented at the District convention of the The Rotary Club of

Cannanore (North) in India. The award was in recognition of the achievements of Valsaraj, who hails from this area of his native State of Kerala where he grew up and completed his high school diploma. He completed his Bachelor of Science degree in Kerala as well before moving on to the Indian Institute of Technology (IIT) Madras for his Master's degree.

Karsten Thompson received two major grants in 2008. Thompson, along with collaborators Clint Willson (Civil and Environmental Engineering), Chris White, Mayank Tyagi, and Steve Sears (Petroleum Engineering), received a grant from ExxonMobil Upstream Research Corporation to study the role of inertial forces on near-wellbore flows in oil and gas formations. The research will make use of high-resolution 2D and 3D imaging equipment at LSU, along with state-of-the-art computational models being developed in our department, the Department of Petroleum Engineering, and CCT. The research will lead to improved methods for computational modeling of oil and gas reservoirs, which in turn can aid in the design and planning of production strategies. The research is especially relevant to reservoirs with high production rates, including many in the deepwater Gulf of Mexico.

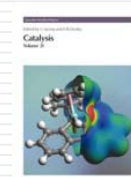
In addition, Thompson and collaborators Willson and Dimitris Nikitopoulos (Mechanical Engineering) received a grant from the Advanced Energy Consortium (AEC) to study the transport of nanosensors in oil and gas formations. The AEC is a private consortium funded by nine companies and managed by the Bureau of Economic Geology at the University of Texas. One of the current AEC missions is to develop a new class of reservoir characterization techniques based on the injection of nanosensors into subsurface formations and tracking their movement and/or other responses. The LSU group will be using high-resolution 3D imaging, particle velocimetry experiments, and computational modeling to study the relationship between the measured behavior of the nanosensors and the subsurface structure.

Lastly, Thompson is on the organizing committee for the GeoX 2010: the Third International Workshop on X-ray CT for Geomaterials. The 2010 event follows workshops held in Kumamoto, Japan (2003) and Grenoble, France (2006). The four day workshop and short course will bring together an international group of scientists to discuss the latest research on three-dimensional imaging of geologic materials using x-ray computed tomography (CT) imaging. This technology is relevant to oil and gas production, marine sciences, geomechanics, and more. The 2010 workshop will be held March 1-3 in New Orleans. For more information, visit the conference Web site at: www.cee.lsu/geox2010/workshop.

Several chemical engineering faculty have recently had books published related to their research work.

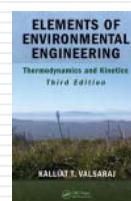


Ralph Pike is the co-author of an advanced textbook entitled, "Computational Transport Phenomena for Engineering Analysis" with colleagues Dr. Richard C. Farmer (SECA, Inc.), Professor Gary C. Cheng (University of Alabama, Birmingham), and Dr. Yen-Sen Chen (National Space Organization, Taiwan). The book was published by Taylor and Francis Publishing Company, 2009.



James Spivey and **Kerry Dooley** edited *Catalysis: Volume 21* released by RSC Publishing (Cambridge, UK) in 2009. This series provides systematic and detailed reviews of topics of interest to scientists and engineers in the catalysis field. Each chapter is compiled by recognized experts within their specialist fields, and provides a summary of the current literature. This series will be of interest to

all those in academia and industry who need an up-to-date critical analysis and summary of catalysis research and applications. Volume 21 covers literature published during 2006.



Kalliat Valsaraj had two books published in 2009. The first is *Elements of Environmental Engineering: Thermodynamics and Kinetics, Third Edition*, published by CRC Press. This is a revised and updated third edition of a bestseller. It contains new problems, an instructor's solution manual available from the web site, and new examples that better illustrate theory. New topics include green chemistry and engineering, pollution prevention, global climate change, and more.



Valsaraj's second book, published by the Oxford University Press, USA, in February 2009 is entitled *Atmospheric Aerosols Characterization, Chemistry, Modeling and Climate (ACS Symposium Series)*. Valsaraj co-wrote this work with Raghava R. Kommalapati. It delves into how atmospheric aerosols play a large role in air pollution in urban areas and in regulating climate.

Marina Braun-Unkhoff

German Aerospace Center
Institute of Combustion Technology, Stuttgart, Germany
September 26, 2008

About Combustion of Conventional and Alternative Fuels

Tommy Knotts, Ph.D.

Assistant Professor
Chemical Engineering Department
Brigham Young University
October 17, 2008

Unraveling the Behavior of DNA at the Molecular Level

Mark E. Davis, Ph.D.

Warren & Katharine Schlinger Professor of Chemical Engineering
Chemical Engineering
California Institute of Technology
October 24, 2008

Nanoparticle Cancer Therapeutics: From Concept to Clinic

Edward L. Cussler, Ph.D.

Distinguished Institute of Technology Professor
Department of Chemical Engineering & Materials Science
University of Minnesota
October 24, 2008

Design of New Products

Clifford Henderson, Ph.D.

Associate Professor
School of Chemical & Biomolecular Engineering
Georgia Institute of Technology
November 7, 2008

Advancing Micro-and Nanomanufacturing: New materials, methods, and models for enabling precision fabrication at small length scales

Coray Colina, Ph.D.

Associate Professor
Department of Materials Science & Engineering
Pennsylvania State University
February 13, 2009

Towards the Understanding of Soft Materials in Silico

Fernando Escobedo, Ph.D.

Associate Professor
School of Chemical & Biomolecular Engineering
Cornell University
February 22, 2009

Mesoscopic Simulations of Order-Disorder Transitions and Self-Assembly in Colloidal and Polymeric Systems

Keisha Walters, Ph.D.

Assistant Professor
David C. Swalm School of Chemical Engineering
Mississippi State University

Advanced Polymer Systems - Building Function by Design

Markus Flury, Ph.D.

Professor
Department of Crop and Soil Sciences
Washington State University
March 13, 2009

Colloid Transport in Unsaturated Porous Media: On the Role of the Liquid-Gas Interface

David Cocker, Ph.D.

Associate Professor
Department of Chemical & Environmental Engineering
University of California-Riverside
April 17, 2009

Predicting Secondary Organic Aerosol Formation: RH, Light, Temperature, and Gas-Phase Chemistry

Daniel Crowl, Ph.D.

Herbert H. Dow Professor for Chemical Process Safety
Department of Chemical Engineering
Michigan Technological University
April 24, 2009

Explosion Characteristics of Hydrogen-Air Mixtures in a Confined Space



President: Allyson Kirzner
Vice President: Jason Atwood
Secretary: Katherine Bell
Treasurer: Jonathan Maddox
Fundraising: Kirk Rollins
Car Team Chair: Chuck Combs

Social Chair: Lauren Giles
Webmaster: Blake Kliebert
Senior Representative: Danielle Durbin
Junior Representative: Robert Ingram
Sophomore Representative: Ryan Pazdera
Freshman Representative: Sarah Roark

The LSU Student Chapter of AICHe experienced another busy year with several meetings in the fall and spring semesters sponsored by various corporations. These meetings give the students a chance to interact with local industry and build professional networking skills. The chapter held some of the traditional gatherings as well, including the BASF Barbecue, the Second Annual Sage Crawfish Boil, and Young Professional's Night.

Robbie Ingram, ChE undergraduate, served on a national student board with AICHe and participated in "board activities" at the Annual Meeting of AICHe in Philadelphia.

But, by far, the most high profile performance has once again come from the Chem-E car teams. With the stellar performance at last year's regional conference, LSU earned an invitation to compete



Take it to the Limit team members pose with their second place awards and the car at the 2008 national competition along with their faculty adviser, F. Hung (far right).

at the national conference that was held in Philadelphia in November 2008 at the Annual Meeting of AICHe where *Take it to the Limit* placed second. LSU competed against 29 other colleges and universities from across the country in the national competition. Cornell University in Ithaca, N.Y., won the contest and Texas A&M University placed third. The LSU students received \$1,000 and earned an invitation to compete in the Chem-E-Car World Finals in Canada in August 2009. Both WBRZ Channel 2 in Baton Rouge and The Advocate have run stories highlighting the achievements of the LSU Chem-E car teams. The department could not be more delighted with the positive recognition that the



AICHe faculty advisers (l to r) Mike Benton and Francisco Hung.



Members of both LSU Chem-E car teams prepare their cars for competition at the regional meeting.

students have repeatedly brought to LSU and the ChE program.

At the 2009 Southeastern Regional Conference of AICHe, held April 3-5 at the University of Alabama in Tuscaloosa, LSU

placed third overall in the Chem-E car competition, behind Puerto Rico and Tennessee and third in the poster competition as well. Team *Swamp Thing* placed fourth and team *Black Box Project* placed fifth in the car competition. Puerto Rico took first and second place with Tennessee taking third. Since only one car from each university can proceed to the national competition, LSU automatically advances to the nationals. The next national Annual Meeting of AICHe will be held in Nashville, Tennessee, in November 2009.



Swamp Thing: (top row, l to r) Ingram, Juncker, Brassett, and Pazdera; (bottom, l to r) Rollins and Daniel.

Swamp Thing is comprised of team members: Matt Daniel, Kirk Rollins, Ryan Pazdera, Angela Juncker, Robert Ingram, Kristin Brassett, Barrett Ainsworth, Steven Hurst, and Josh Spahn. And, *Black Box Project* is comprised of: Chuck Combs, Blake Kliebert, Long Huynh, and Brendan Flynn.

Faculty advisers Mike Benton and Francisco Hung attended both the national and regional meetings along with the students.



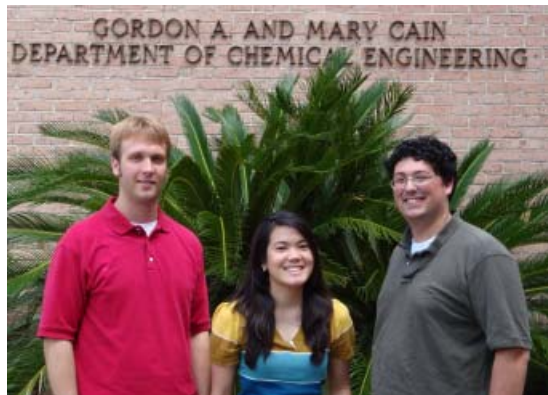
Chuck Combs (left) and Blake Kliebert of the *Black Box Project* at the 2009 regional competition.

Students from both car teams would like to especially thank Paul Rodriguez, Fred McKenzie, and Joe Bell (all staff members in the ChE Shop) for their tremendous assistance in building the cars.

The students would like to give special thanks to all of the companies that have provided their time, resources, and contributions to the student chapter of AICHe during the past academic year. Without your support, none of this would be possible.

Student News & Highlights

Tau Beta Pi, the Engineering Honor Society, has named three LSU chemical engineering juniors as 2009-10 scholars. **Robert Ingram**, **Danica Nguyen**, and **Stephen Wilson** will all be receiving scholarships from the national chapter of Tau Beta Pi for the upcoming academic year in the amount of \$2,000 each. The scholarships are awarded on the basis of academic achievements, campus leadership and service, and promise of contributions to the engineering profession. Consideration is also given to academic need and academic commitment. The department is delighted and proud of these outstanding students for receiving this national recognition and congratulate them on this exemplary achievement.



Tau Beta Pi scholarship winners, left to right: Stephen Wilson, Danica Nguyen, and Robert Ingram.

Debalina Sengupta, a Ph.D. student studying under the direction of **Ralph Pike**, presented two separate papers during the academic year. At the 2008 National Meeting of AIChE held in Philadelphia in November, she presented the paper, "Developing and Integrating Sustainable Chemical Processes into Existing Petro-Chemical Plant Complexes." Co-authors of this paper were Pike, Professor Helen H. Lou of Lamar University, and Mr. Thomas A. Hertwig of Mosaic Corporation. The second paper entitled, "Integrating Fermentation and Transesterification Industrial Scale Processes in the Lower Mississippi River Corridor" was presented at the 2009 Spring National Meeting of AIChE in Tampa, Florida. This paper was also co-authored with Pike and Lou.

Two of the department's May 2009 B.S. graduates are graduates of LSU's Louisiana Science, Technology, Engineering, and Mathematics (LA-STEM) Research Scholars Program (LA-STEM). **Noelle McBride** and **Michael Parent** were honored for their achievements in the LA-STEM program at a luncheon held on May 12, 2009, at the LSU Faculty Club. The LA-STEM program is coordinated by the Office of Strategic Initiatives (OSI) with funding from the National Science Foundation, Research Corporation, and the Louisiana Board of Regents. The LA-STEM scholarship is one of the most prestigious awards offered by LSU. The program provides the necessary support, motivation, and resources to help LA-STEM students achieve the highest levels of intellectual and personal development while at LSU.

Akinyanju Adeyanju and **Adebola Coker**, both May 2009 B.S. CHE graduates, earned LSU Distinguished Communicators certification following the completion of their studies at LSU. The Distinguished Communicators program is organized by Communication across the Curriculum (CxC). This program helps students improve their written, oral, visual, and technological communication skills while earning their degrees. It is the only program of its kind in the nation, which provides students with the skills needed to be highly competitive in today's demanding marketplace. Following successful completion of the program, students will receive a special certification that will appear on their official transcripts. To earn certification, students must meet a series of requirements including: choosing a faculty advisor and meeting regularly to ensure timely submission of all components needed for certification; participation in an internship, service-learning, research, or study abroad experience; earning a 3.0 or higher in at least 12 C-I course hours; and, completion of an approved digital portfolio.



This photo displays the medal that is awarded to LSU Distinguished Communicators at the commencement ceremony (courtesy of the CxC Web site).

Following are excerpts from the spring 2009 CxC commencement reception booklet highlighting Akinyanju and Adebola:

Akinyanju Adeyanju has earned a degree in Chemical Engineering after outstanding work and two internships at Kimberly-Clark Corporation in Paris, Texas, and Roswell, Georgia. One of many internship projects was appropriately entitled "SOCCER," ("Stretch Outer Cover Can Expand Rewards") and involved developing expandable covers. While at LSU, Adeyanju has actively participated in and serves offices in the National Society of Black Engineers, the Nigerian Student Organization, the National Society of Collegiate Scholars, and the American Institute of Chemical Engineers. He received the Academic Excellence Award and the Torch Bearer Award from the National Society of Collegiate Scholars. Advisor: Harold Troups, Chemical Engineering.

Adebola Coker has grown up with a passion for engineering that came from her father who is an engineer in oil-rich Nigeria. After completing three internships and her degree, she plans to pursue a master's degree in Chemical Engineering with a focus on clean engineering so that she can insure a better future for the world. Coker has held many leadership positions at LSU, serving as the vice president of the Society for Women Engineers, as a senator of the National Society for Black Engineers, and on homecoming committees for the Residential Life Community Council. Advisor: Karsten Thompson, Chemical Engineering.



Nicholas Ashley, a Ph.D. student conducting his research under the supervision of **Kalliat Valsaraj** and **Louis Thibodeaux**, received a **2008 Paper Award by the Environmental Division of AIChE**. Nick was one of only three first place awardees for the 2008 Graduate Student Papers Competition for his paper

entitled, "Multi-phase contaminant distributions inside flooded homes in New Orleans, LA, following Hurricane Katrina: A Modeling Study." Nick received a \$500 cash award along with an engraved plaque from AIChE and was honored at a formal awards presentation, held just prior to the Lawrence K. Cecil lecture, at the 2008 Annual Meeting of the AIChE in Philadelphia in November.

Alan Bussard is the 2009 recipient of the **Best Dissertation Award** from the Baton Rouge Chapter of AIChE. Alan graduated from LSU with his Ph.D. in Chemical Engineering in May 2008 and his major professor was Kerry Dooley. The title of his dissertation was "Heterogeneous Catalyzed Macromolecular Hydrogenations in Oscillating Systems."

Mia Dvora, a Ph.D. student in the research group of assistant professor **James Henry**, received the **2009 Dow Award for Excellence in Macromolecular Studies**. She received a cash prize and was honored at a ceremony, hosted by the Department of Chemistry, at the LSU Faculty Club on May 5. The recipient of this award is selected by the co-Directors of the LSU Macromolecular Studies Group. The recipient must be a candidate for a Ph.D. degree and must have a GPA of 3.5 or higher in graduate level coursework. Additional selection criteria may include: the imagination, resourcefulness and independence displayed by the student during the conduct of his or her research, especially as evidenced by publications and presentations; commitment to any assigned teaching responsibilities; and, the promise of the student for enhancing the capabilities and reputation of the LSU Macromolecular Studies Group.

Mayank Gupta, a Ph.D. student working with **Jerry Spivey**, received a **Kokes Award** to attend the North American Catalysis Society (NACS) 21st National Annual Meeting (NAM), which was held June 7-12, in San Francisco. He received the award, along with a handful of other young scientists from across the region, for his meritorious research achievements in the field of catalysis. The Richard J. Kokes Travel Award program of NACS aims to encourage graduate students to attend and participate meaningfully in the NAM conference. It provides funding for their conference registration fees, accommodations, and a travel allowance to cover incidental expenses. The award is sponsored by the generosity of the NACS and the local Pacific Coast Catalysis Society, as well as major support from the division of Basic Energy Sciences of the U.S. Department of Energy and the National Science Foundation. Mayank also attended the Materials Research Society (MRS) meeting held in April, also in San Francisco. At the meeting he presented a paper entitled, "Synthesis of Ethanol and Higher Alcohols from CO Hydrogenation Using Electrodeposited Co-Cu-ZnO Nanowires as Catalysts."



Robert Schexnailder, a senior in chemical engineering, has received a **Southwest Chemical Association Scholarship (SCA)** for 2009-10. This is a one time \$5,000 award given to a student based on academic achievement as well as extracurricular activities.

Michelle Somers Walker was awarded a **2008 Coates Research Award** by the LSU Graduate School. The Coates Research Award is a two-year award of \$5,000 per year, with second year funding contingent upon successful progress in the student's doctoral program. Only four of these awards can be active at any one time. This award is funded by the Charles E. Coates Memorial Fund, which was set up to support promising doctoral research by superior graduate students in the disciplines of chemical engineering, chemistry, or physics. Other awards given by the Coates Memorial Fund include: outstanding dissertation award, conference travel award, and research travel grant. Michelle is a Ph.D. student in the research group of **Judy Wornat** and is expected to complete her degree in summer 2009. Following is the proposal she submitted, which outlines her doctoral research:

Hypersonic jet aircraft is currently under development by the US Air Force. These high-speed aircraft will require fuels to absorb excess heat produced by the engine, acting as a coolant and being preheated prior to combustion. Fuels used in this capacity are exposed to increased temperatures and pressures, promoting the fuel to a supercritical state. The increased temperatures and pressures also cause pyrolysis reactions, forming polycyclic aromatic hydrocarbons (PAH) and eventually solid deposits. The objective of this research is to use a model fuel, a single component of jet fuel, to study its reaction pathway in the supercritical state and determine the temperatures and pressures which form PAH and solid deposits. The model fuel used in this study is 1-methylnaphthalene, a 2-ring aromatic component of jet fuel. The identification of PAH is performed through the utilization of HPLC/UV/MS and GC/MS/FID analysis. HPLC/UV/MS is an isomer-specific technique which allows the unequivocal identification of PAH products by comparing product spectra with those of reference standards.

Two PhD graduate students in the research group of Professor **Judy Wornat**, **Shiju Thomas** (graduated in May 2008) and **Nimesh Poddar**, have had papers accepted for publication in the Proceedings of the Combustion Institute 32 (2008). These papers were presented orally at the Thirty-Second International Combustion Symposium, held in Montreal, Quebec, in August 2008. Unlike most conferences, the International Combustion Symposium requires submission of full-length papers at least eight months prior to the conference, and acceptance rates for oral presentation and publication in the Proceedings are historically well below 50%. In addition, only a majority of these papers are usually written by graduate students, which makes the selection all the more competitive. The first paper is entitled, "Polycyclic Aromatic Hydrocarbons from the Co-Pyrolysis of Catechol and 1,3-Butadiene" authored by Shiju Thomas and M.J. Wornat. The second paper is entitled, "Interactions of NiO Particles with Polycyclic Aromatic Hydrocarbons and Acetylene Generated from the Pyrolysis of a Model Fuel" authored by Nimesh Poddar, Shiju Thomas, Franz S. Ehrenhauser and M.J. Wornat. Nimesh also earned some travel awards from the Combustion Institute to attend the conference.

August 2008

Master of Science in Chemical Engineering

Mayank Gupta
Vikram Reddy Kalakota
Gibert Merle Magpantay
Rajib Mukherjee

Doctor of Philosophy in Chemical Engineering

Jing Chen
Jianrong Liu

December 2008

Bachelor of Science in Chemical Engineering

Sarah K. Babin
Stephen M. Drago
Russell J. Guilfou
William G. Lopez, Jr.
Jason M. Lousteau
Daniel P. McGraw (*Summa Cum Laude*)
Adam P. Millet
David P. Orth
Joshua P. Wiggins

Master of Science in Chemical Engineering

Neha Shrikant Damle
Jerome Apilan Robles

Doctor of Philosophy in Chemical Engineering

Adefemi Egbebi



Fall graduates who attended the departmental reception.



PhD recipient, Adefemi Egbebi (second from the right), along with his family at the departmental reception. His research advisor was Jerry Spivey.

May 2009

Bachelor of Science in Chemical Engineering

Akinyanju Adewale Adeyanju
 Jason M. Atwood
 Jodie-Ann L. Barber
 Blake D. Basso
 Katherine A. Bell
 Saade A. Bou-Mikael
 David H. Burke
 Dewaki K. Chamupathi
 Adebola T. Coker
 Charlton M. Combs
 Adam C. Coy
 Danielle R. Durbin
 Rebecca K. Ferrell
 Brendan T. Flynn
 Lauren C. Giles
 Kenneth J. Gumpert
 Travis A. Gwin
 Meghann M. Hutchinson
 Long T. Huynh
 Niko A. Imbraguglio
 Jasleen S. Kaur (*Magna Cum Laude*)
 Allyson R. Kirzner (*Summa Cum Laude*)
 Blake M. Kliebert
 Minh T.H. Le (*Magna Cum Laude*)
 Kyle M. Leibenguth, Sr.
 Andrea J. Longworth
 Casey M. Madere
 Noelle J. McBride (*Magna Cum Laude*)
 Kevin P. Meyers
 Derek J. Michell
 Adam R. Orlando
 Michael C. Parent (*Magna Cum Laude*)
 Amy L. Picou
 Anthony P. Radesky, Jr.
 Melissa L. Tooke (*Cum Laude*)
 Maria B. Toscano
 Hien V. Tran
 Sergio L. Velasquez



Departmental Awards

The 2009 *Jesse Coates Award* was presented to [Noelle McBride](#) while the *High GPA Senior Award* was awarded to [Allyson Kirzner](#), who graduated with a cumulative LSU GPA of 3.977. Both Noelle and Allyson were presented with engraved plaques at the department's commencement reception on May 15. As part of the Coates Award, Noelle was also presented with an engraved LSU watch.

The following students received the *Senior Award*, which is given to students who are able to finish in four years without dropping any courses: [Jason Atwood](#), [Dewaki Chamupathi](#), [Adebola Coker](#), [Anthony Juneau](#), [Jasleen Kaur](#), [Allyson Kirzner](#), [Minh Le](#), [Noelle McBride](#), [Michael Parent](#), [Anthony Radesky](#), and [Melissa Tooke](#).



Doctor of Philosophy in Chemical Engineering

Daira Aragon Mena



Noelle McBride, right, with David Wetzel.



Allyson Kirzner, center, with Wetzel (left) and Kalliat Valsaraj.

Scholarship Donor & Recipient Dinner

The department hosted its Second Annual Scholarship Donor & Recipient Dinner on April 13, 2009, at the LSU Faculty Club. The dinner served to honor both the students who receive departmental scholarships as well as the donors who graciously support our programs by supporting our outstanding students. It also served to allow donors to interact with the students they assist.



Twenty-five scholarship recipients attended the dinner along with a handful of donors, both private and corporate. The guest speaker at the dinner was Kenneth Riley, who received his B.S. from LSU in 1963 followed by his M.S. in 1965 and Ph.D. in 1967, all in chemical engineering. He is currently a Global Technical Specialist in Hydroprocessing Catalyst at Albemarle Corporation in Baton Rouge. Prior to joining Albemarle in 2004, he worked at the

ExxonMobil Process Research Laboratories in Baton Rouge for 37 years. He is the inventor on 71 U.S. patents for which he has earned many accolades over the years. In 2001 he received an American Chemical Society (ACS) Industrial Innovation Award for the SCANfining Process for removing sulfur from gasoline. Then, in 2002, he received honors for the Nebula Catalyst when he was presented with the Thomas Alva Edison Patent Award by the Research and Development Council of New Jersey. Twice the ACS has selected Riley as a "Hero of Chemistry" for his outstanding work. In 2005, he was selected for this distinction for the SCANfining and SCANfining II processes he developed and again in 2008 for a new type of Nebula catalyst used for producing cleaner diesel fuel.

At the scholarship dinner Riley addressed the scholarship recipients focusing on his life experiences in a seminar entitled, "Everything I ever needed to know, I learned from my grandchildren."



Alan M. Raymond Scholarship

Matthew Stewart

Chevron/Texaco Chemical Engineering Scholarship

Michael Bujol
Jason Krumholt

Clara and Frank R. Groves, Sr. Undergraduate Scholarship

John Tate

DuPont Chemical Scholarship

Daniel McGraw

Floyd S. Edmiston, Jr. Memorial Scholarship

Robert Frost
Jean-Paul Pitre
Uyen-Thu Tai

Gerard Family Undergraduate Scholarship

Rebecca Ferrell
Meghann Hutchinson
Megan Manchester
Adam Orlando
Evan Ours
Anthony Radesky
James Kirk Rollins
Aaron Smith

Marathon Petroleum Scholarship in Chemical Engineering

Jason Atwood
Allyson Kirzner

O. Dewitt Duncan Undergraduate Scholarship

Lucy Arowolo
Austin Beard
Jerad Brockman
Avery Cook
Matthew Daniel
Kristen Eason
Joseph Maltempi
Adam Millet
Danica Nguyen
Sarah Roark
Stephen Wilson

Paul M. Horton Memorial Undergraduate Scholarship

Saade Bou-Mikael
Dewaki Chamupathi
Anthony Juneau
Jasleen Kaur
Kalen Minvielle
Michael Parent

Paul N. Howell Memorial Scholarship

Wade Eveland
Rachelle Kusch
Sergio Velasquez

R.L. Hartman Scholarship

Michael Schulz

Ram Bhatia Scholarship

Arpan Seth

Walter G. Middleton Jr. Endowed Scholarship

Noelle McBride

William E. McFatter Undergraduate Scholarship

Blake Basso





Edward A. Schmitt, a 1969 Chemical Engineering (ChE) graduate who served as Chairman, President and CEO of Georgia Gulf from 1998 until his retirement in July 2008, reflected on his experience at LSU. “My ChE degree is the basis for my career of nearly forty years in the chemical industry,” said Schmitt. “I discovered that the uniqueness of a ChE degree from LSU in 1969 gave the holder a leg up in the chemical industry. The curricula stressed unit operations of chemical processes, which coincided with the surge of chemical companies moving into Louisiana to build new plants on the Mississippi River. LSU ChE grads received multiple “top dollar” job offers.”

LSU ChE grads received multiple “top dollar” job offers.”

A native of Baton Rouge and a 1964 graduate of Istrouma High School, Schmitt worked through multiple obstacles to reach his degree goal at LSU. “After leaving Southeastern LA University on a baseball scholarship and majoring in Chemistry, I transferred to LSU and remained in Chemistry, but realized that I enjoyed the application of science and mathematics more than the theory,” stated Schmitt. “I also discovered that engineers were being offered higher salaries after graduation. Using my degree to get a good job was an important goal, and it was this mindset which led me into Chemical Engineering. Meanwhile I was working my way through school since I no longer had the scholarship. Working after classes didn’t allow much time to participate in many of the non-scholastic activities, and I even lived at home, since I was from Baton Rouge. I can honestly say that I did not go to LSU for the fun and enjoyment. For me, the experience was strictly a business proposition.”

Following in the reflections of many engineering alumni, Schmitt stressed the difficulty of the curriculum, but credits the faculty for providing clarity and challenges in the subject material, explaining “One day during the fall semester of 1968, I ran into Dr. Paul Murrill, asking him for a minute of his time. I explained that it seemed as if I had been going to school forever and was wondering when I would be able to graduate. He spoke to me as if he had known me the entire time I had spent in Chemical Engineering, and I don’t ever recall talking to him but that one time. We walked into his office. He pulled my records from the file, and began looking over my transcript. Then he said, ‘Heck Ed, you can graduate in May. You just need to take the senior class project.’ That moment had to be one of the happiest during my life at LSU. I graduated with a BS ChE in May 1969 and started work in June with ALCOA.”

After graduation, Schmitt and his wife, Karen Wax of Denham Springs, moved to Bauxite, Arkansas where he began his career as a process engineer with ALCOA. His early career found Schmitt working in a process and production engineering capacity to design and install new production units, start up new plants and improve the operations of existing plants. Later, he was promoted to supervisory and management positions of other engineers, production units, entire plants and chemical complexes, working for three chemical companies: ALCOA, Allied Chemical Corp. and Georgia Gulf Corp. Schmitt reflected “The last twenty nine years with Georgia Gulf were the most rewarding for both my financial situation and my career. I retired this year as CEO and Chairman of the

Board of Georgia Gulf. Unequivocally, none of this would have happened or been possible, if not for my ChE degree and education at LSU.”

Schmitt expanded on his LSU experience “The education and degree I earned at LSU taught me much about virtue: Dedication, commitment, determination, teamwork. My degree in ChE was the first unique achievement of my life, and it meant something, not only to me, but to others in my family; for example, I was the first in my family to get a college degree. Two of my four brothers graduated later from LSU in ChE. I was a kid when I started college, but when I graduated, I had a purpose for my future. For me to get a college education, I had to take charge of my life. If I needed help, I had to initiate the effort. Studying engineering taught me logical thinking and to think before one acts. One of the best compliments I receive from friends and family to this day is, ‘you think like an engineer.’” There are so many options around your home to apply the engineering approach to repair or improve them. My ChE education has saved me a lot of money on service and repair costs around the house.”

Schmitt is a strong supporter of his alma mater, serving as a Forever LSU Campaign Cabinet member, College of Engineering (COE) Dean’s Advisory Board member and a member of the ChE Forever LSU Campaign Steering Committee. He also secured a Georgia Gulf Distinguished Professorship for the COE. In 1997, he was honored as a recipient of the LSU College of Engineering Hall of Distinction. Recently Schmitt gave a million dollar gift for the new Chemical Engineering Building fund, propelling the College closer to meeting our goals with the FOREVER LSU Campaign. In its new projected home, the Cain Department of Chemical Engineering will triple its physical space in keeping with first-class facilities of the University of Mississippi, Auburn, Texas A&M, Georgia Tech, and the University of Arkansas. Schmitt’s gift toward the new building will also help ensure that ChE at LSU attracts and recruits the best and brightest students, postgraduates, and new faculty. When asked why he felt compelled to support LSU’s future engineering students, he responded “The simple answer is my education and degree as an LSU engineer provided opportunity and opened doors for me to enjoy a successful career and to provide a good life for my family. I feel indebted and obliged to share this fortune with those who made it possible.”

“I recognize that expectations from future engineers are changing, and LSU and the College of Engineering must change to meet these new requirements. While I dare to predict what these changes may be, I know that financial support will provide resources, which can be used to make the future engineering graduates of LSU unique from other engineers,” said Schmitt.

Schmitt’s wife, Karen, is a 1968 graduate of LSU in education and later earned an MS Ed. from LSU. They have two daughters, Laura Lea and Mary Elizabeth, who both received Masters of Education in 1997 from LSU. Schmitt reflected “Maybe most important is that graduating from college caused me to insist that my children’s education was not complete until they graduated from college.”

This article is courtesy of TigerLand News, produced by the Tiger Athletic Foundation, March 18, 2009 edition.

Alumni News & Awards

Alumnus Honored for ChE Support

In August 2008, **George Daniels (M.S., 1963)** was honored by the Forever LSU Campaign for his continued generosity and support of the Department of Chemical Engineering.



Daniels has already contributed \$200,000 to the New Chemical Engineering Building Fund. His most recent commitment is a planned gift with LSU as a named beneficiary, which could total approximately \$2 million at its maturation, to be earmarked to support the George A. Daniels Graduate Fellowships in Chemical Engineering.

Daniels is a native of Kansas and received his bachelor's degree in chemical engineering from the University of Kansas in 1955. He later received his Master's degree from LSU in chemical engineering. He currently works for the Albemarle Corporation in Baton Rouge and is a member of the Chemical Engineering Campaign Steering Committee, the 1860 Society, and a charter member of the Society for Engineering Excellence.

"I have taken this action to share in my success as a chemical engineer and as an investor, and to provide opportunities for others," said Daniels. "It should be noted that I have funded an undergraduate scholarship at the University of Kansas in a similar manner."

The department is deeply grateful for Daniels' continued support of our programs, our students, and our faculty as well as supporting our desire for future advancement by contributing to the department's plans for a new facility.

David W. Clary was named to a newly created position of vice president and chief sustainability officer for Albemarle Corp., of Baton Rouge, in August 2008. He will work with Albemarle's technology groups to quicken the creation and commercialization of socially and environmentally sound products. Clary graduated from LSU with a Bachelor of Science degree in chemical engineering in 1981.

In 2007, **Erick Comeaux (B.S., 1997)** and his wife, Courtney, opened their own toy store. Santa's Toy Emporium is not like most of the giant toy retailers. This toy store specializes in unique educational toys as well as hard-to-find toys from smaller manufacturers. Comeaux handpicks the toys sold in his store and follows four principles in his selection process: is the toy moral in nature; is it safe and well-constructed; is it educational and developmental in nature; and, most important, is it fun. He credits his LSU education and the skills he acquired while in residence at LSU to his entrepreneurial success. He even utilizes some of his engineering training by using advanced inventory control and planning models to assist with toy inventory. In addition, he periodically conducts his own tests on the toys to ensure they are safe. Santa's Toy Emporium is located at 8210 Jefferson Highway in Baton Rouge.

ChE Alumnus Inducted into CoE Hall of Distinction



Jack Hopper, a 1969 Ph.D. graduate in chemical engineering, was one of two inductees into the LSU College of Engineering 2008-2009 Hall of Distinction. Hopper, along with Donald W. Keller (B.S., Petroleum Engr., 1957), was honored at the Hall of Distinction banquet on April 16, held at the LSU Faculty Club.

Hopper was born in Highlands, Texas. He received his B.S. in Chemical Engineering from Texas A&M University in 1959 and his M.S. from the University of Delaware in 1964. Prior to beginning his graduate studies though, he worked as a Junior Research Engineer for Humble Oil & Refining Co. R&D in Baytown, Texas. From 1964 to 1967, he served as a Research Engineer for Esso Research and Engineering Company. Upon entering the Ph.D. program at LSU in 1967, he was a Research Associate. Upon graduating with his Ph.D., Hopper accepted a position as an Assistant Professor in the Chemical Engineering department at Lamar University in Beaumont, Texas, and has remained with Lamar University ever since. He currently serves as the Dean of the College of Engineering. Since October 2007, he has also served as the Executive Assistant to the President for Economic Development & Industrial Relations.

In addition to his many active roles at Lamar University, Hopper is also still very active serving as a consultant and expert witness for many companies. He is an active member on various editorial and advisory boards, including our department's Industrial Advisory Committee.

Hopper has more than 150 publications in research areas ranging from kinetics and catalysis to pollution prevention and waste minimization. He has been honored with many awards, including being named a Fellow of the American Institute of Chemical Engineers in 1985.

Sharon Cole, who earned her B.S. in chemical engineering from LSU in 1981, was an invited speaker for the LSU Center for Energy Studies Energy Leadership Speaker Series in May. She currently serves as the Site Director for the Dow Louisiana Operations, which includes 23 chemical plants near Plaquemine and a brine operation in Grand Bayou. The focus of her seminar was on alternative energy and how Dow continues to push for sustainable business models on every platform. As mentioned previously in this issue, Cole was also a featured speaker at the department's Centennial Celebration.

Cecil Smith (B.S., 1963; M.S., 1965; Ph.D., 1966) has published a book on process control entitled, "Practical Process Control: Tuning and Troubleshooting." To learn more about this book, please visit Wiley Publishing on-line at: http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470381930_descCd-description.html. Smith was on the ChE faculty at LSU from 1966-79. He is currently President of Cecil L. Smith, Inc. located in Baton Rouge, which is a firm specializing in automation technology.

If you would like for us to print news of your latest achievements, please complete the short form included in this newsletter and return it to us. Or, you may send us an e-mail at gradcoor@lsu.edu or visit our Alumni Guestbook on our Web site at www.che.lsu.edu. We would love to hear from you!

1960s

Eugene Coco (B.S., 1963) is retired.

Jim D. Pottorff (B.S., 1963) is a developer of major gasification projects in the USA. Current projects include producing ammonia, methanol, and downstream products.

1970s

Vernon Fabre (B.S., 1973) retired from BASF Corporation's Geismar plant in 2008 after 29 years and three children with two degrees each from LSU. He is currently the chair of the Industrial Advisory Committee for the Cain Department of Chemical Engineering and a member of the Forever LSU Campaign Chemical Engineering Steering Committee. He plans to enjoy his retirement by following LSU sports, fishing more than he could in the past, and staying active with LSU.

Charles P. Freeburgh (B.S., 1975) has been employed with Georgia Gulf Corporation since 1986. He is currently general manager of Operations, Chemicals, and Polymers at the Plaquemine plant. He is responsible for operations, engineering, environmental health and safety, maintenance, and reliability for the Plaquemine site as well as Georgia Gulf facilities in Pasadena, Texas; Lake Charles, Louisiana; and, Aberdeen, Mississippi. He is the past chairman and currently serving on the Board of Directors of the Louisiana Chemical Association and the Louisiana Chemical Industrial Alliance. He is also currently on the Board of Directors of Our Lady of the Lake Regional Medical Center and Our Lady of the Lake College.

1980s

James Combes (B.S., 1982) is presently employed with Lexmark International in Boulder, Colorado, developing and optimizing toner processes. He and his wife, Amy, have two sons - Jack (9) and Daniel (6). When he is not working, he and his family enjoy camping in and exploring the Rockies just outside their door. James would love to hear from classmates...any from Class of 1982 in Colorado as well?

Richard David Farrell (B.S., 1984) is currently the owner of Tricon Energy, LTD located in Houston (www.triconenergy.com). Tricon Energy is a Petrochemical Trading Company with several offices around the world.

1990s

Linette Dutari (B.S., 1995) has been working 10 years with ExxonMobil in Panama. She currently is the lead for Fuels Marketing programs in Central America and the Caribbean.

2000s

Benjamin Bryson (B.S., 2003) is employed with Davies Engineering, Inc. as a process engineer.

Louis O. Chemin, III (B.S., 2000) is a Board Certified Anesthesiologist and an assistant professor in Anesthesiology at Emory University in Atlanta.

Shirlene Chow (B.S., 2001) is a process engineer with Sarawak Shell Berhad, Malaysia.

Natalie Guillot (B.S., 2008) is a process engineer with OxyChem in Geismar, Louisiana.

Zhanhu Guo (Ph.D., 2005) joined Lamar University in Beaumont, Texas, in 2008 as an assistant professor in the Department of Chemical Engineering and has built up his Integrated Composites Laboratory (ICL) since then. He has worked in Mechanical and Aerospace Engineering at the University of California, Los Angeles as a postdoctoral research associate for about three years prior to joining Lamar University. His research involves magnetic nanostructural materials, polymer nanocomposites, conductive polymer composites, GMR sensors, and microwave absorption.

In Memoriam

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

Carney Brice, Jr. (B.S., 1951)

Eugie Abner Martin (Ph.D., 1962)

John Anthony Miller (B.S., 1966; M.S., 1968; Ph.D., 1970)

Marshall B. Nelson (B.S., 1972)

Milton Alvis Wales (B.S., 1951)

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