Spend one year in our department of chemical engineering and one becomes unmistakingly familiar with its confluence of energy and passion, the measureable and immeasurable ways in which intellectual discovery takes center stage and most notably, the pride of our students who are empowered to far exceed the threshold of excellence and expertly develop into competent and skilled academians, researchers and chemical engineers in an ever expanding sphere of opportunity.

As always, we consistently strive to deliver our utmost care in all our areas of study, all our powerhouse systems of knowledge and in the myriad ways the field of chemical engineering continues to abound with breakthrough upon breakthrough: in finding transformative solutions to address the needs of the society, the state, and the nation. From the College of Engineering’s 25 by 25 plan to the Chancellor’s Research Initiative, we are highly empowered to provide cutting-edge resources and access to world-renowned faculty who have transformed our department into a global classroom. We have experienced unprecedented growth in the numbers of our faculty and students. Looking more deeply, our freshman class had the highest SAT scores of any department on campus in 2013.

Clearly, our students deserve the best.

Truly,

M. Nazmul Karim, Ph.D.
TOTAL FACULTY
Professors: 12
Associate Professors: 5
Assistant Professors: 6
Lecturers/Senior Lecturers: 7
Endowed Chair Holders: 3
Endowed Professorship Holders: 8
Endowed Faculty Fellowships: 1
Regents Professors: 2
CAREER Award Winners: 6

NATIONAL MERIT SCHOLARS
79 - Class of 2017

U.S. NEWS & WORLD REPORT
Rankings among public institutions:
12th Undergraduate (2012)
17th Graduate (2013)

RESEARCH
Direct expenditures in FY 2013: $7.81 mil

PUBLICATIONS
Refereed journal publications in 2013: 197

2013

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Enrollment Statistics

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<th>Undergraduate</th>
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|                | Fall '12      | Fall '13 | Fall '12    | Fall '13    |
|----------------|---------------|----------|-------------|
| University     | 614           | 578      | 1192        |
| College of Engineering | 663    | 605      | 1269        |
| Chemical Engineering | 686    | 640      | 1326        |

Entering SAT Scores Fall 2013 (Avg.)

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Entering GRE Scores Fall 2013 (Avg.)

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Chen Degrees Awarded

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</table>
The Artie McFerrin Department of Chemical Engineering is committed to maintaining the highest standards in teaching and research while striving toward new heights for students.

Research has a positive impact on society by creating new knowledge and technologies. The students involved in this work develop into exceptional professionals who in their careers will continue to advance to the forefront of science and technology.

Research Areas

- Biomedical & Biomolecular
- Complex Fluids
- Computational Chemical Engineering
- Energy
- Environment and sustainability
- Materials
- Microelectronics

- Microfluidics
- Modeling and Simulation
- Nanotechnology
- Process Safety
- Process Systems Engineering
- Reaction Engineering
- Thermodynamics
PERLA B. BALBUENA  
Holder of the GPSA Professorship  
Ph.D., The University of Texas, Austin  
balbuena@tamu.edu

Dr. Balbuena’s research includes the prediction of physical and chemical properties of materials using atomic-level simulations. She has contributed to an improved design of power sources such as lithium-ion batteries and fuel cells; also to the development of new materials for catalytic processes. Her interests include reactions on nanoclusters and surfaces: applications to catalysis, electrochemistry and corrosion; prediction of thermodynamic and transport properties; and first-principles materials design. Balbuena was elected in 2013 as an AAAS Fellow for “distinguished contributions to the theory of interfacial processes, through molecular simulation of electrochemical reactions and materials properties at the nanoscale.” She also received the title of TEES Senior Fellow for outstanding research performance.

RESEARCH


“First Principles Modeling of SEI Formation on Bare and Surface/ Additive Modified Silicone Anode,” Lawrence Berkeley Laboratory, 4/2013-4/2017, $172,000 [PI].

“SEI Layer Formation and Control on Carbon-Based Electrodes of Li-ion Batteries,” Honda RD Americas, Inc. 10/2013-9/2014, $139,684 [PI].

PUBLICATIONS


RESEARCH


PUBLICATIONS

Dr. Bukur’s research includes areas of chemical reaction engineering, applied catalysis and catalyst synthesis; GTL and CTL technology, and mathematical modeling. In 2013, Bukur was elected vice-chairman of the Natural Gas Conversion Board. He was also appointed to NGCB’s international scientific advisory board.

RESEARCH


“Potentials for the Shale Gas Monetization: Lessons Learned from the Qatari Experience with Natural Gas,” National Science Foundation, 10/2013-9/2014, $33,185 (PI).


*Original grant value shared among Phs as of Jan 2012.

PUBLICATIONS


Dr. Glover’s research includes asphalt materials’ rheological properties; asphalt oxidation kinetics; and the development of a thermal and oxygen transport model for the oxidation of asphalt binders in pavements. Additionally, he collaborates with researchers in the Zachry Department of Civil Engineering and the Texas A&M Transportation Institute on the effects of binder oxidation on pavement performance—with age-related fatigue cracking being an example.

PUBLICATIONS


Dr. Hall’s research includes precision measurement of the thermophysical properties of fluids and their mixtures as well as the development of molecular-thermodynamic models and correlations. He evaluates thermo-dynamic properties for a variety of fluids and their mixtures, to yield further insight into process and product design in chemical and related industries. Hall received the ISHM 2013 Laurance S. Reid Award.

PUBLICATIONS


Dr. Holtzapple’s research includes bio-based fuels and chemicals, food and feed processing, water desalination, air conditioning, high-efficiency engines, jet engines, and vertical-life aircraft. He has developed a wide variety of technologies, including conversion of alcohol fuels from biodegradable wastes and protein sugar recovery from energy cane. He has developed the StarRotor engine, which is three times more efficient than the conventional internal combustion machine. In 2013, Holtzapple received the Bush Excellence Award for Faculty in Public Service.

RESEARCH


PATENTS


PUBLICATIONS


ARUL JAYARAMAN

Holder of the Ray Nesbitt Professorship
Director of the Graduate Program
Ph.D., University of California, Irvine
arulj@tamu.edu

Dr. Jayaraman’s research includes molecular systems biotechnology, specifically the use of integrated experimental- and modeling approaches for investigating problems in human health and medicine. Current research projects include systems biology of cytokine-signaling in inflammatory diseases; inter-kingdom signaling interactions between bacteria and human cells in GI tract infections; and the development of microfluidic model systems for combinatorial drug screening and vascular tissue engineering.

RESEARCH

“Rewiring Cellular Metabolism to Control Biofilm Formation and Virulence by Tuning Cell Regulators,” Pennsylvania State University, 1/2012-7/2014, $271,446 (PI).


PUBLICATIONS

Dr. Kuo’s research includes nano and microelectronics, with emphasis on semiconductor and optoelectronic materials, processes and devices; thin films and plasma technology are also studied. In his Thin Film Nano and Microelectronics Research Laboratory, Kuo develops new materials, novel processes and advanced devices with the ultimate goal of creating high-performance, highly-reliable, manufacturable devices for present and future applications. Current projects include use of the following: TFTs, ULSC, LEDs, solar cells and bio sensors. He was the keynote speaker at the Symposium of Semiconductor Science and Technology in Beijing, China.

**RESEARCH**


**PUBLICATIONS**

Kuo, Y. The Progress of Thin Film Transistor Technology—Large-Area Mass Production and Beyond. Proc. Active Matrix Flat Panel Displays 2013, 5-8.


Kuo, Y.; Lin, C.-C. A Light Emitting Device Made from Thin Zirconium-Doped Hafnium Oxide High-k Dielectric Film with our without an Embedded Nanocrystal Layer. Appl. Phys. Lett. 2013, 102(3), 031117.

Kuo, Y.; Lin, C.-C. Electroluminescence from Metal Oxide Thin Films. ECS Solid State Letters 2013, 2(8), Q59.


Lin, C.-C.; Kuo, Y. Light Wavelength Effect on Tungsten Oxide Dielectric Properties. ECS Trans. 2013, 58(7), 259-263.

Lin, C.-C.; Kuo, Y. Nonvolatile Memory MOS Capacitors Made of CdSe Embedded ZrHfO High-k Gate Dielectric. MRS Proceedings 2013, 1562.

Lin, C.-C.; Kuo, Y. Temperature Effects on Nanocrystalline Molybdenum Oxide Embedded ZrHfO High-k Nonvolatile
M. SAM MANNAN
Regents Professor
Holder of the T. Michael O'Connor Chair I
Director, Mary Kay O'Connor Process Safety Center
Ph.D., University of Oklahoma
mannan@tamu.edu

Dr. Mannan’s research interests include aerosol research, inherently safer design, quantitative risk assessment, reactive chemicals, modeling of silane releases, LNG safety and flammability of materials. As director of the Mary Kay O'Connor Process Safety Center, Mannan has served as a consultant to numerous entities in both the academic and private sectors. He also has testified before the U.S. Congress on multiple occasions, lending his expertise on matters of national security as it relates to chemical safety and infrastructure. In 2013, he was named Distinguished Honorary Professor at Rajiv Gandhi University of Petroleum Technology in Rae Bareli, India.

RESEARCH


PUBLICATIONS


RESEARCH

“First Principles Modeling of SEI Formation on Bare and Surface/Additive Modified Silicon Anode,” Lawrence Berkeley Laboratory, 4/2013-4/2017, $172,000 (Co-PI).


“Identifying the Presence of Uranium and/or Plutonium,” Argonne National Laboratory, 1/2013-12/2014, $86,000 (PI).

PUBLICATIONS


Dr. Cheng studies complex fluids and active soft matter. His research focuses on the self-organization of intelligent colloids and anisotropic particles; the fabrication of photonic crystals and integrated photonic circuits; solar hydrogen production via water splitting; and the application of microfluids to bio-encapsulation. The techniques developed will be applicable to the modeling of phase transitions and liquid crystal materials; the engineering of nanocomposites and semiconductors of light; solar energy harvesting; and a wide range of therapeutic treatments.

RESEARCH


PUBLICATIONS


Dr. Jeong’s research includes the development of novel methodologies to design, modify, deposit and microfabricate nanostructured materials and to build them into hierarchical structures and complex forms for wide ranges of applications including separation membranes, selective catalysts, and adsorbents. Jeong’s research group develops several innovative and commercially viable strategies to prepare ultra-thin nanoporous framework membranes with unprecedentedly high olefin/paraffin separation performances. In collaboration with Dr. Dong-Hee Son, Jeong’s team is developing highly efficient semiconductor nanocrystal/graphene composites for photocatalytic hydrogen production.

RESEARCH


PUBLICATIONS


Dr. Laird's research includes large-scale nonlinear optimization, parameter estimation, and parallel computing. Particular applications include network problems, where Laird has worked on developing algorithms as part of an early warning contaminant detection system in municipal drinking water networks. In addition, Laird is involved in the modeling and optimization of infectious diseases, working to determine the fundamental driving forces affecting the spread of infectious disease in both time and space.

**RESEARCH**


**PUBLICATIONS**


**VICTOR M. UGAZ**

**Holder of the Kenneth R. Hall Development Professorship**

**Director of the Undergraduate Program**

Ph.D., Northwestern University

uggaz@tamu.edu

Dr. Ugaz’s research focuses broadly on harnessing the unique characteristics of transport and flow at the microscale, with specific interests in microfluidic flows (both single-phase and nanoparticle suspensions); microchip gel electrophoresis; PCR thermocycling in novel convective flow devices; and construction of 3D vascular flow networks for biomedical applications. In 2013, the Association of Former Students presented Ugaz a Distinguished Achievement Award for teaching. He also received the American Electrophoresis Society (AES) Service Award.

**RESEARCH**


“High Throughput Collection and Detection of Environmental Nanoparticles,” National Science Foundation, 10/2010-6/2013, $8,915 (PI).

**PUBLICATIONS**


**BENJAMIN A. WILHITE**

Ph.D., University of Notre Dame

benjaminwilhite@tamu.edu

Dr. Wilhite’s research includes the study of interactions between chemical kinetics and transport processes for process intensification. Areas of investigation include the design of multi-layer catalytic and/or perm-selective membranes for natural gas processing and hydrogen production; synthesis of electroceramic membrane material for CO2 capture and reuse; heat-exchanger microreactor technologies for natural gas processing, and catalytic gas-liquid-solid reactor design. In 2013, Wilhite was named a member of the editorial advisory board, for the *Journal of Industrial & Engineering Chemistry Research* (ACS).
RESEARCH


PUBLICATIONS


In particular, his research group evaluates the interfacial issues of thermal interface materials, nanomaterials in the environment, nanoparticle-based lubricants, enhanced oil recovery and biointerfaces. In 2013, Akbulut received the DARPA Young Faculty Award.

RESEARCH

“Young Faculty Award: Next-Generation Soldiers Involving Dispersion of Soft Ligand Functionalized Boron Nitride Nanoribbons or Nanosheets in Alloys as Thermal Interface Materials (TIMs),” DOD-Defense Advanced Research Projects Agency, 8/2010-7/2016, $250,000 (PI).


PUBLICATIONS


ZHILEI CHEN
Ph.D., University of Illinois, Urbana-Champaign
zchen4@tamu.edu

Dr. Chen’s research involves the application of protein engineering principles for biomechanical applications. Her goal is to engineer novel agents for the treatment of viral infections, including hepatitis C and HIV. She is currently working toward developing new technologies to facilitate related measures: involving gene therapy, biofuel cells, tissue engineering, drug delivery and the identification of novel drug targets. In 2013, Chen was awarded TEES Select Young Faculty honors.

RESEARCH


KATY C. KAO
Ph.D., University of California-Los Angeles
kao.katy@tamu.edu

Dr. Kao’s research includes genomics, systems biology and biotechnology. In the lab, she utilizes related tools to observe microbial adaptation in various environments. Kao studies the evolution of microorganisms such as yeast and E. coli for their enhanced tolerance to the toxicity of desired bioproducts, such as biofuels. She uses ultrahigh throughput sequencing technology and monitors transcriptome and metabolism in an effort to identify the cellular components responsible for the selected traits. Kao received the Fluor Distinguished Teaching Award in 2013.

RESEARCH


PUBLICATIONS


JODIE L. LUTKENHAUS
Ph.D., Massachusetts Institute of Technology
jodie.lutkenhaus@tamu.edu

Dr. Lutkenhaus’ research interests include the design of organic thin films and nanostructures to enable the development of novel organic energy systems and smart-coatings. Areas of investigation include the behavior of polymer thin films and coatings, thermal analysis, polyelectrolytes, and electroactive polymers for energy storage.

RESEARCH


PUBLICATIONS


SREERAM V ADDIRAJU
Ph.D., University of Louisville sreeram.vaddiraju@tamu.edu

Dr. Vaddiraju’s research includes the development of vapor phase techniques for the mass production of organic and inorganic nanostructures, and the development and implementation of in-situ and ex-situ schemes for the large-scale integration of these nanostructures into energy conversion devices. He employs the study of novel electrical, electronic and mechanical properties of ultra-thin nanowires in the gravitation of efficient thermoelectrics and solar cells.

RESEARCH


HUNG-JEN WU
Ph.D., Texas A&M University hjwu@tamu.edu

Dr. Wu’s research includes nanotechnology and bioengineering. He integrates nanostructured materials and analytical tools to study the organization, dynamics and functions of biomolecules at biological interfaces. The applications of the developed techniques include infectious disease screening; imaging of complex biological networks that are critical to the development of disease; exploration of cell membrane function and drug discovery. Wu also focuses on synthetic mimics of the cellular surface to enable the development of novel materials and catalysis. He was awarded, “Outstanding Performance Presentation of 2013” at the Annual Symposium for the Society of Chinese Bioscientists in America.

PUBLICATIONS


GILBERT F. FROMENT
Ph.D., University of Gent-Belgium
gilbert-f-froment@tamu.edu

Dr. Froment’s research includes the kinetic modeling, based on the single event concept and the process modeling of hydrocracking, catalytic cracking, catalytic reforming, hydrodesulfurization, synthesis gas production by steam reforming, Fischer-Tropsch synthesis and olefin production by thermal cracking.

PUBLICATIONS


ALIM DEWAN
Ph.D., Washington State University
alim.dewan@tamu.edu

Dr. Dewan’s research focuses on biofuels and bioenergy. Currently he is investigating the population dynamics of single-cell microalgae using microfluidic techniques. The goal of the project is to understand cellular growth phenomena relating to algal biofuel productivity. He is developing alternative power sources based on sediment microbial fuel cells, aiming to replace the batteries used for electronic devices deployed on the seabed.

PUBLICATIONS

RAY A. MENTZER
Ph.D., Purdue University
ramentzer@tamu.edu

Dr. Mentzer has over 28 years of experience in the upstream oil and gas industry, with a variety of technical and management assignments in safety/environment, design, operations, finance and research. He teaches the Chemical Process Safety, Industrial Safety & Health, and Oil & Petroleum Processing courses. As a member of the Mary Kay O’Connor Process Safety Center his research includes various aspects of process safety management & metrics, downhole drilling safety, personnel safety, inherently safer technology, security and LNG.

PUBLICATIONS


CINDY M. RAISOR
M.A., Texas A&M University
c-raisor@tamu.edu

As a technical communication instructor for the department, Raisor has taught writing courses at the university since 1985. She has experience with workplace writing, teacher training, program management, curriculum development, assessment, instructional web technologies, and the use of ePortfolios in advancing critical thinking, reflection, and lifelong learning.

PUBLICATION

WILLIAM J. ROGERS
Ph.D., The Ohio State University
wjrogers@tamu.edu

Dr. Rogers is a research scientist in the Mary Kay O’Connor Process Safety Center, where he has been a scientist since 1979. He utilizes experimental research techniques for measurements of thermophysical and thermochemical properties. Rogers’ research interests include predictive models and applications of quantum chemistry.

PUBLICATION

MARIA A. BARRUFET
Professor, Petroleum Engineering
Baker Hughes Endowed Chair
Ph.D., Texas A&M University
barrufet@tamu.edu

Dr. Barrufet’s research interests include the evaluation of different methods used to desalinate oilfield brines. She studies unit operation aspects of evaporators, membranes, osmotic separation, heat transfer, energy and mass balance computations. Barrufet advances the discussion on enhanced oil recovery, studying thermodynamics and transport phenomena applied to chemical, miscible, and thermal recovery processes. She also evaluates rock and fluid properties in addition to multiphase flow.

TAHIR CAGIN
Professor, Materials Science & Engineering
Ph.D., Clemson University
tcagin@tamu.edu

Dr. Cagin’s research includes computational materials science and nanotechnology with emphasis on design, characterization and development of multifunctional, nanostructured materials for device and sensor applications; fundamental studies on transport phenomena (heat, mass and momentum) at nanoscale and in confined media; thermal, mechanical, electronic and magnetic properties; phase behavior of materials; materials for thermal management, power generation and energy harvesting; and development and application of multiscale simulation methods.
Dr. Hasan is an expert in the subject of production engineering. He focuses on modeling complex transport processes in various components of petroleum production systems. Hasan’s research group has pioneered systematic modeling of heat transfer in wellbores, and one of the most recognized impacts of this research is in production safety analysis. Hasan’s solutions to problems involving transient heat flow situations have found application in flow assurance, flow metering, and pressure transient testing.

Dr. Nikolov’s research interests include recovery of recombinant biomolecules; bioprocessing of transgenic plants and algae; protein purification; and bioprocess design and economics.

Dr. Pishko’s research interests include microfabricated biosensors, neovascularization of implanted bio-materials and “smart” drug delivery systems. Pishko has co-authored more than 90 peer-reviewed research publications and developed 19 U.S. patents.

Dr. Rajagopal is recognized internationally for his significant contributions to the world of continuum mechanics, computational mechanics, biomechanics and technology. He was elected to the Hall of Fame for Engineering, Science and Technology (HOFEST), which include such luminaries as George Eastman, Thomas Alva Edison, Albert Einstein, Henry Ford, Bill Gates, Louis Pasteur and George Westinghouse.

Dr. Scully’s research interests include laser physics, quantum optics, non-equilibrium statistical mechanics and bioengineering. His bioengineering work includes the first real-time measurement of small amounts of anthrax – experiments carried out in his Jack E. Brown lab. The Scully-Lamb quantum theory of the laser was the first theoretical treatment that yielded laser photon statistics, laser linewidth and all higher-order photon correlations. The theory was later extended to explain behavior of the single-photon maser. Scully and his coworkers have demonstrated that the laser master equation analysis also provides a good quantitative description of fluctuations in the Bose-Einstein condensate.

Dr. Wooley’s research includes the fundamental development of synthetic methodologies that allow for the construction of increasingly complex polymers and nanostructured materials, including their hierarchical assembly into functional devices. Specific functional targets include nanoparticles for the treatment of infectious diseases and cancer of the lung and urinary tract; amphiphilic polymer coatings for anti-biofouling applications with emphasis on the marine environment; anti-icing polymer coatings; hybrid polymer-inorganic nanoparticles for oil-spill cleanup; controlled polymer architectures for advanced photoresist technologies, and bioengineering polymers from renewable resources.
EMERITUS FACULTY

DR. RAYFORD G. ANTHONY
(TOP LEFT)

DR. JERRY A. BULLIN
(TOP RIGHT)

DR. RON DARBY
(BOTTOM LEFT)

DR. LEO D. DURBIN
(BOTTOM RIGHT)

NEW MEMBERS: INDUSTRIAL ADVISORY BOARD

Ron Hyden
Completions Manager
Southwestern Energy

Jeffrey McFerrin
President
KMCO

John R. Miller
Area Sales Director, Chemicals
Aspen Technology

James D. Slaughter
Vice President
S&B Engineers & Constructors

Dr. Lee M. Tillman
President/CEO
Marathon Oil Corp.

We would like to recognize and thank all the members of the Artie McFerrin Department of Chemical Engineering’s Industrial Advisory Board. Their leadership and vision continue to make the department one of the best programs in the country.

Steve V. Bross
Project Development Manager
ConocoPhillips

Dr. Jerry A. Bullin
President, Bryan Research & Engineering

Stephen J. Butler
Manager, Texas Research & Development

Greg Garland
President/CEO
Phillips 66

Stephanie Hertzog
Vice President, Sales & Marketing
Exterran

Wes Lohec
Vice President, Health, Environment & Safety
Chevron

Dr. Joseph E. McAdams
Shell Downstream Inc. (Ret.)

Michael R. McAtee
Sr. Vice President, Engineering & Maintenance
BASF

Arthur R. McFerrin
CEO/Founder
KMCO

Brock Nelson
President
Spring Creek Capital

T. Michael O’Connor
President
O’Connor Ventures

Cordelia Price
Rohm & Haas (Ret.)

Dr. John B. Rodden
Vice President & Treasurer
Tribune Company

Dennis J. Seith
President/CEO
INEOS Olefins & Polymers USA, LLC

James Turner
Executive Director
Process Technology & Engineering
Fluor Corporation

Mike Walzel
Technology & External Manufacturing
Dow Chemical

Lynn E. Weaver
Enterprise Products (Ret.)
**Texas A&M Association of Former Students:**

**2013 Distinguished Achievement Award for Teaching**

“It was a huge honor to receive this recognition because we have so many faculty in our department who are incredibly dedicated teachers. Ironically, part of the reason I chose an academic career was because I was often frustrated that I couldn’t fully understand the material in many of my classes. I never thought I would end up teaching some of the same classes in which I initially struggled, much less receive any kind of award! I try to use this experience to motivate students so that they won’t become discouraged if they don’t pick up everything the first time. Learning is a lifelong journey. You can’t expect to become an expert after taking only one class, but the foundation you create now can give you something to build on in the future.” - Dr. Victor Ugaz

Dr. Victor Ugaz also received an external honor: the American Electrophoresis Society (AES) Service Award.

**Texas A&M University:**

**2013 Bush Excellence Award for Teaching**

Holtzapple was recognized as the most prolific inventor in the entire Texas A&M System... Holtzapple says he wants people to know him best for his desire to improve the sustainability of our world by creating new forms of “green energy” from wastes and by using energy more efficiently.

Holtzapple’s research has developed technologies that promote sustainable economic development, primarily in the areas of biofuels, food and feed processing, desalination and efficient engine development. These technologies provide affordable fuel without adding carbon dioxide to the atmosphere. One nominator said that Holtzapple is ‘one of a small group who has the ability to identify key problems, invent novel solutions and develop the abstract solutions into working, large scale plant size pilot demonstrations to prove the economic and technical value of the new technologies.’

Through presentation of his research and constant advocacy for energy sustainability, Dr. Holtzapple connects with the community, industry, academic colleagues and elected officials around the world. His service enhances the public awareness of the issues his research seeks to solve and broadens the reputation of Texas A&M as a leader in these fields. - TAMU Times, October 2013

**Additional Faculty Honors**

- **Dr. Mustafa Akbulut:** Received the DARPA Young Faculty Award
- **Dr. Perla Balbuena:** Elected as a Fellow of the American Association for the Advancement of Science (AAAS); TEES Senior Fellow
- **Dr. Dragomir Bukur:** Elected vice-chairman of the NGCB; appointed to its international scientific advisory board
- **Dr. Zhilei Chen:** Received TEES Select Young Faculty Award; Young Investigator Award
- **Dr. Mahmoud El-Halwagi:** Recipient of the Celanese Teaching Award; Most cited honors (*Comput. Chem. Eng.*)
- **Dr. Kenneth Hall:** Received the ISHM 2013 Laurance S. Reid Award
- **Dr. Katy Kao:** Received the Fluor Distinguished Teaching Award
- **Dr. Jodie Lutkenhaus:** Appointed William & Ruth Neely Faculty Fellow
- **Dr. M. Sam Mannan:** Named Distinguished Honorary Professor at Rajiv Gandhi Univ. of Pet. Tech., India; Most cited honors (*Comput. Chem. Eng.*); TEES Senior Fellow
- **Dr. Ben Wilhite:** Named a member of the *Journal of Industrial & Engineering Chemistry Research*’s editorial advisory board
- **Dr. Hung-Jen Wu:** Awarded “Outstanding Performance Presentation of 2013,” Annual Symposium for the Society of Chinese Bioscientists in America

**Undergraduate Research**

“In 2013, I conducted undergraduate research under the supervision of Dr. Balbuena in the chemical engineering department. The objective of this project was to model the catalyzed growth of single-walled carbon nanotubes, under various operating parameter constraints. I enjoyed this project very much, and would recommend it to any student interested in studying chemical engineering at Texas A&M. Such a project will enhance an incoming student's ability to reason, write and communicate ideas to a wide range of audiences. In particular, the student will likely be provided with opportunities to present research in poster sessions at conferences.”

Jenni Beetge earned a bachelor's degree in chemical engineering in 2013.
Two seniors from the Artie McFerrin Department of Chemical Engineering at Texas A&M University won first-place prizes at this year’s Student Research Week. Jenni Beetge won for her poster presentation in the category of Astronomy, Chemistry, Physics and Material Sciences. Keven Barnett placed first in oral presentations in the Engineering category. Student Research Week 2013 was a platform for showcasing outstanding research undertaken by graduate and undergraduate students of Texas A&M.

**CRAIG C. BROWN OUTSTANDING SENIOR ENGINEER AWARD**

The Dwight Look College of Engineering at Texas A&M University honored nine students with its Craig C. Brown Outstanding Senior Engineer Award during a banquet, Sept. 19 at the Memorial Student Center on the Texas A&M campus. Four of the nine award recipients were chemical engineering students.

David Chaar, Ali El-Halwagi, James Havlock, and Andrew Sanchez each received this award.

**DNA REPLICATION USING USB | 2ND PLACE WINNER IN AGGIE-CHALLENGE**

Undergraduate student Danielle Cope competed in the AggiE-Challenge 2013 with fellow students from the Department of Chemical Engineering, winning second for the DNA-replicating device the team created. Outside of the competition, Cope has garnered significant experience in the field of chemical engineering, through her pursuit of internships and research endeavors. “I have always enjoyed science fairs, but I first became interested in research after [my] internship,” Cope said. “I learned I enjoyed gathering and analyzing data. Professors advised me to try both internships and research, to see whether industry or academia was the right path for me.”

In the AggiE-Challenge, Cope “researched how [fluorescent] DNA can be analyzed by a smartphone camera. Her research group prepared an inexpensive, portable device that uses connective flow to cycle and replicate DNA. Cope added, “Ideally this device will be used in medical applications in third world countries with little access to health care.”

Cope, Class of 2015, is from Houston, Texas.

**GRADUATE RESEARCH**

In the spring of 2013, graduate student Dariya Reid completed her Master of Science degree in chemical engineering. She continued her studies at Texas A&M in the pursuit of a Ph.D. in chemical engineering, under the direction of Dr. Jodie L. Lutkenhaus. “Currently my work is focused on fundamental findings but in the future I hope it may be applied in the energy storage field,” said Reid.

“I chose to attend Texas A&M because of the wide range of research fields and opportunities available and the quality of research facilities provided.”

Reid is from Corpus Christi, Texas.

**QUICK FACTS**

In 2013, departmental faculty represented 43 different professional societies as a member or fellow. Nineteen belong to the American Institute of Chemical Engineering and 11 are members of the American Chemical Society.
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