

Engineering Success through Ethical Leadership

Michael J. Dolan, senior vice president of Exxon Mobil Corporation, delivers the fall 2010 ConocoPhillips C.J. "Pete" Silas Ethics and Leadership Lecture to a standing-room-only crowd.

For almost 15 years, the School of Chemical & Biomolecular Engineering has hosted the ConocoPhillips/C.J. "Pete" Silas Ethics and Leadership Lecture. Established in 1996 by the Phillips Petroleum Foundation in recognition of the outstanding career achievements of retired chairman and CEO of Phillips Petroleum Company, **Pete Silas**, ChE '53, the annual lecture is part of a broader program in the School that integrates the topics of ethics and leadership into the required chemical engineering courses.

The fall 2010 speaker, Michael J. Dolan, senior vice president of Exxon Mobil Corporation, began his talk by paying homage to the program's namesake. "Pete's life is an inspiring reminder of the lasting contributions that engineers make to social progress and economic opportunity in our world," said Mr. Dolan, who has spent more than thirty years in the oil industry.

In his lecture, entitled *Engineering Success through Ethical Leadership*, Mr. Dolan said that engineering influences virtually every element of modern life. Engineering advances in the U.S. extend beyond borders and make a global impact. This widespread reach creates a special obligation for engineers, said Mr. Dolan. "It is up to us as individual problem solvers, creative thinkers, and innovators to ensure that professional integrity and excellence drive everything we do," he said.

Mr. Dolan graduated from Worcester Polytechnic Institute in 1975 with a degree in chemical engineering and accepted a job with the global engineering firm of UOP. In 1980, Mobil Oil Company recruited him to work on new processing technology, including the startup of new fluid catalytic-cracking units. Following the Exxon and Mobil merger in 2000, he became the Middle East and Africa regional director of ExxonMobil Chemical Company located in Brussels, Belgium. Over his career, Mr. Dolan has worked in all areas of ExxonMobil's business, both in the U.S. and abroad, and has held a variety of research, development, engineering, manufacturing, and business management positions. The company appointed him to his current position in April 2008.

By 2030, the world's energy demand is expected to be approximately 35 percent higher than it was in 2005. Mr. Dolan addressed the importance of meeting these energy needs by increasing efficiency, expanding supplies, and reducing emissions. He also focused on the importance of research and the development of advanced engineering technologies in reaching these critical goals.

As a leader in the largest publicly traded oil and gas company in the world, Mr. Dolan brings a wealth of experience to the topics of ethics and leadership. ExxonMobil's position as a global, integrated company with activities on six continents results in a diverse range of responsibilities for employees around the globe. One of the most important ways ExxonMobil communicates its values to new employees is through a standards of business conduct, which is distributed as a handbook to new hires and sets clear expectations for all of its 80,000 employees.

The unique set of ethical challenges facing energy companies today is a responsibility that ExxonMobil takes very seriously. For example, since 2005, the company has invested \$1.3 billion in activities to improve energy efficiency and reduce greenhouse-gas emissions. "As a result of this investment, ExxonMobil is now a world leader in co-generation," Mr. Dolan said.

"It is important for us as engineers to integrate into our professional goals not only a relentless drive to solve engineering problems in an efficient, innovative, and cost-effective way, but also a responsibility to solve these problems in a way that is safe, secure, and environmentally responsible," Mr. Dolan said. "Nowhere is this twin challenge of ingenuity and responsibility felt more than in our energy industry," he added.

At the end of his lecture, Mr. Dolan said that engineering is "a great responsibility and lifelong adventure." He charged the students in the audience to remember that engineering should be seen as "a responsibility, as a service to mankind, and as a place for leadership."



During his lecture, Michael Dolan reminded the audience that "professional integrity plays a foundational role in engineering excellence."

Photo by Rob Felt

Pharmaceuticals:

Materials & Medication

Over the past decade, researchers have discovered many new methods for improving the design and functionality of medicines and therapeutic materials. Millions of Americans with cancer, diabetes, heart disease, and other deadly diseases will benefit from new pharmaceutical discoveries. ChBE faculty members research the mechanisms of disease, track molecular biomarkers that signal the onset of disease and its response to treatment, and design drugs that are safe and clinically effective for individuals based upon a personalized approach.



Photo courtesy of iStockphoto



Photo by J. Giles

Dr. **Lakeshia Taite** is investigating ways to surreptitiously deliver powerful chemotherapeutic drugs and chemical compounds to tumor cells, thus increasing the cancer-killing activities of the drugs and reducing their toxic side effects on healthy cells. One project involves developing a cancer drug delivery vehicle composed of a gold nanoparticle core with tree-like polymers called dendrimers attached to the surface. The many branches and cavities of the polymer can encapsulate

chemotherapy drugs, and targeting molecules can be attached to the surface. When near-infrared light shines on the tumor, the nanoparticles heat up, which leads the dendrimers to shrink and the drug to be released. Ablation takes place at temperatures that can be uncomfortable to the patient, so the Taite group is developing dendrimers that require lower transition temperatures to release the drug. The lower temperature may not kill all of the cancer cells, but the addition of the chemotherapeutic will damage them enough to cause tumor cell death.



Photo by Caroline Joe

Dr. **Mark Prausnitz** and colleagues study biophysical methods of drug delivery, which employ microneedles, ultrasound, lasers, electric fields, heat, and other physical means to control transport of drugs, proteins, genes, and vaccines into and within the body. A major focus of his research involves microneedle patches that apply vaccines to the skin in a painless manner. In collaboration with Emory and the CDC, Dr. Prausnitz's group is developing a self-administered influenza vaccine using microneedles and further translating microneedles technology to make vaccination in developing countries more effective.

The Prausnitz group has also developed hollow microneedles for injection into the skin and eye in collaboration with Emory. In the skin, research focuses on insulin administration to human diabetic patients. In the eye, hollow microneedles enable precise targeting of injection to treat macular degeneration. His group also studies novel mechanisms to deliver proteins, DNA, and other molecules into cells using ultrasound and laser-excitation of carbon nanoparticles for gene-based therapies.



Photo by J. Giles

A significant component of Dr. **Michelle Dawson's** research is focused on the development of more effective cell-based, nanoparticle, and retroviral gene delivery systems. Her research combines aspects of cellular, genetic, and chemical engineering with quantitative biophysical techniques, which are used to characterize the transport of the gene delivery systems. Complex biological environments, such as the cell cytoplasm, the mucus lining the airways of the

lungs, or networks of extracellular proteins, can pose significant barriers to

efficient therapeutic gene delivery. Dr. Dawson's research group focuses on the development of more efficient gene delivery vectors that can overcome *in vivo* and *ex vivo* biological barriers without sacrificing the safety of the patient. Current studies in the Dawson lab are focused on the development of stem-cell-based gene delivery vectors for the treatment of cancer and chronic wounds. In addition, her research group investigates mucosal barriers to nanoparticle gene delivery.



Photo by Caroline Joe

Dr. **Athanassios Sambanis's** research focuses on developing cell- and tissue-based therapies for metabolic diseases, specifically insulin-dependent diabetes. Such therapeutic treatments may provide a more effective, less invasive, and possibly less costly approach than daily insulin injections. Projects in his laboratory span several technologies and include cell encapsulation for implant immune protection, preservation for off-the-shelf availability, and non-invasive monitoring of implants.

The latter project uses nuclear magnetic resonance to simultaneously measure oxygen concentration within the implant and in the host, which can provide valuable information on the viability and functioning of the implanted cells. In another approach, Dr. Sambanis's group is engineering non-pancreatic cells, which can be retrieved from the same patient and are therefore immune acceptable, to secrete insulin in response to physiologic stimuli. These studies, many of which are in collaboration with life scientists and clinicians, will advance therapies based on living biological substitutes towards clinical application.



Photo by Caroline Joe

A primary feature of Dr. **Ronald Rousseau's** research is influenced by the important role crystallization plays in the recovery and purification of active pharmaceutical ingredients that may be synthesized by chemical or biological reactions. One avenue of Dr. Rousseau's work has explored methodologies for separating chiral compounds into pure fractions. This is important because many synthesis procedures produce racemic mixtures containing two isomers, one that

has pharmaceutical relevance and a second that may be completely inactive or, worse, deleterious to the patient. Simply obtaining crystal products is far from the end of the story in producing a useful drug. Formulation into a tablet, gel, or slurry, and stability during manufacture, shipment, and storage also are important characteristics of pharmaceutical compounds. For example, a given chemical compound may have the ability to crystallize in more than one structure, or it may crystallize with a number of solvent or water molecules incorporated into the crystal structure. These variations can have great impact on crystal properties such as density, solubility, and utilization as a drug. Dr. Rousseau's research has used sodium naproxen, acetaminophen, and other model compounds to examine how different solvents influence crystal structure and purity, and then considered the stability of the hydrates and solvates of these species.



Dr. **Sven Behrens**'s research group applies principles of physical chemistry and materials design to challenges in the formulation, storage, and delivery of pharmaceutical substances. Particular emphasis is placed on understanding and predicting the aggregation kinetics of therapeutic proteins, developing new strategies for the encapsulation and controlled release of water-soluble pharmaceutical actives. Recent accomplishments in his group include the introduction of a fast

and convenient method for predicting the mid- and long-term stability of protein solutions with different ionic compositions, and a new type of "smart" microcapsule with tunable permeability for an enclosed drug and a trigger for fast release. Ongoing studies also explore new and gentle synthesis routes for "nanogels" that can act as vehicles for the delivery of sensitive water-soluble substances to cells. By working towards improved stability of therapeutic proteins and better control in drug delivery, the Behrens lab ultimately aims at more efficient medical treatments.



Dr. **Julie Champion**'s research interests are positioned at the interface of chemical engineering, materials science, and medicine. Specifically, her lab is developing protein-based therapeutic materials that have the ability to alter the behavior of cells through protein-protein interactions. To create these materials, the Champion lab borrows proteins from bacterial pathogens that have evolved to have very specific effects on human cells. For example, the group is creat-

ing anti-inflammatory materials using bacterial proteins that degrade inflammation-inducing proteins. They engineer new types of nanoparticles to protect and deliver the proteins to human cells without bacteria. With different combinations of proteins and delivery strategies, the Champion lab is working to develop new therapies to help people with severe wounds or burns, breast cancer, and autoimmune diseases.



Many of Dr. **Hang Lu**'s research projects are focused on engineering microsystems to address drug screening and manufacturing. This research involves designing high-throughput and automated lab-on-a-chip technologies and using these chip-based systems to understand disease mechanisms and the behavior of drugs in these mechanisms using cells and small organisms. Potential applications include diseases such as cancer, Alzheimer's, diabetes, lupus, multiple

sclerosis, and obesity. Conducting experiments and testing large collections of drug candidates are currently very expensive. The advantages of the lab-on-a-chip systems are at least two-fold. First, only small amounts of expensive reagents are required since these chip systems have a volume of $\sim 1/100$ of a drop of blood. Secondly, many of these systems can be operated in parallel and automated, allowing a large number of combinations of drugs and conditions to be tested. This engineering approach could yield better drug candidates sooner and with less expense than conventional practices.



Dr. **Yoshiaki Kawajiri**'s research addresses safe and efficient purification of active pharmaceutical ingredients (APIs). In the last few years, pharmaceutical manufacturing has experienced an unprecedented change calling for more efficient drug production, which was initiated by the federal drug administration (FDA). Dr. Kawajiri's group investigates modeling, operation, and design of two specific separation processes, simulated moving bed (SMB) chromatography and crystalliza-

tion processes, by using process systems engineering techniques such as nonlinear optimization, parameter estimation, and mathematical modeling. These separation techniques can be applied to many complex biopharmaceutical products and chiral drugs. Advanced purification techniques developed in these studies will enable development and production of safe and low-cost drugs.



Dr. **Mark Styczynski**'s research group is developing new approaches to pharmaceutical design. Proteins naturally bind to and are regulated by a variety of natural small molecules, known as metabolites, in the cell. The Styczynski lab aims to use knowledge of natural interactions between proteins and metabolites to drive the selection of the proteins that drugs target and the basic molecular structure of those drugs. Metabolites can then be re-engineered into drugs that mod-

ulate a protein's activity, resulting in a change in the cell's behavior, and ultimately in the patient's symptoms. To move towards this approach, the Styczynski lab is developing technologies to identify and catalog these natural interactions, which they will then use to predict good starting points for engineering new drugs. This approach could lead to the development of an entirely new class of drugs that would not be found using the ad hoc methods often employed for drug discovery.



Biotechnology has brought hundreds of protein drugs (including several life-saving drugs) to market over the past two decades. While these proteins provide much-needed medical intervention in a wide variety of diseases, such as cancer, the high cost associated with protein drugs limits their accessibility. More than 50% of the manufacturing cost of these highly effective drugs comes from the isolation and purification of the products. To address the cost-prohibi-

tive issue, Dr. **Rachel Chen** and her group, teaming with Dr. Wilfred Chen (University of California, Riverside), are developing innovative technologies to streamline the production processes. In a project recently funded by the National Science Foundation (NSF), the Chen group aims to develop novel methods to transport protein targets outside the producing microorganisms and engineer thermo-responsive biopolymers that capture the target proteins with selectivity and affinity that match those exhibited by antibodies. The captured protein targets can subsequently be collected by precipitation following a small adjustment of temperature. Preliminary findings indicate that this chromatography-free technology is not protein target specific and thus broadly applicable.



The expertise of Dr. **Andreas Bommarius**'s research group is the biomolecular engineering of proteins, especially in the areas of biocatalysis, bioprocessing, and protein stability. The Bommarius lab focuses on three key challenges: to develop novel functional proteins, to design more stable proteins in the optimum solvent, and to compress the cycle time for novel protein development. The group discovered novel redox proteins for the reduction of C=C, C=O, and C=N

bonds and works on beta-lactam hydrolases with altered substrate specificity. The Bommarius group also focuses on predicting protein deactivation and aggregation in buffers. Proteins have specific design rules and they have specific interactions with different surrounding media. Research in the Bommarius group focuses on developing new and better biocatalysts that enable the low-footprint synthesis of building blocks for pharmaceuticals with their increasing complexity and stringent quality standards. The development of more stable therapeutic proteins will enable broader use of promising medicines.

Center for Drug Design, Development & Delivery

The Center for Drug Design, Development & Delivery (CD4) is a unique center for research and education. In contrast to traditional pharmaceutical research, CD4 brings a different perspective through the engineering and physical science strengths of Georgia Tech in a highly interdisciplinary and collaborative manner. CD4 includes 35 faculty members from multiple departments in engineering and the sciences. With more than 150 undergraduate and graduate students engaged in pharmaceutical research, CD4 impacts the field through novel pharmaceuticals and pharmaceutical technologies while training a new generation of interdisciplinary pharmaceutical researchers.

ChBE Class Notes

1960s

Joe Stoner, ChE '66, received an Outstanding Service Award from the Georgia section of the American Chemical Society (ACS) in recognition of his years of outstanding leadership through service as chair and councilor of the organization and as a contributor to numerous Georgia and national ACS committees.

1970s

John F. Brock III, ChE '70, MS ChE '71, has become a member of the Buckhead Coalition. John is chairman and CEO of Coca-Cola Enterprises Inc. He delivered a speech, "Open Happiness With a Georgia Tech Degree," to alumni and friends during a Homecoming celebration on Oct. 7 at the Global Learning Center in Technology Square.

1980s

Sandee Coats-Haan, ChE '87, has been selected by President Obama and the National Science Foundation to receive the Presidential Award for Excellence in Mathematics and Science Teaching. As part of the award, Sandee will receive \$10,000 and will travel to Washington, D.C., to meet the president. She is a physics teacher at Lakota East High School in Cincinnati.

Ali Erdemir, MS Met '82, PhD ChE '86, of Naperville, Ill., has been named a fellow of the American Society of Mechanical Engineers. Ali, also a distinguished fellow at the Argonne Na-

tional Laboratory, developed new materials and coatings in surface engineering and tribology that provide ultra-low-friction and wear coefficients. He holds nine patents.

1990s

Nagesh Kukunoor, MS ChE '91, a Bollywood film director, released his latest film, *Aashayein*, in the United States in August.

Kevin Prevost, ChE '99, has been promoted to senior manager in the strategy practice at Accenture. Kevin lives in Marietta, Ga., with his wife, Sara, and two children, Parker and Mason.

Todd Whittemore, ChE '91, completed his assignment as startup manager for the Ethylene Cracker Complex project for Shell Eastern Petroleum Ltd. in Singapore and relocated to Katy, Texas, to lead the process evaluations group of Shell Global Solutions. He and his wife, **Megan Lane Whittemore**, ChE '91, have three children.

Keisha Wilson Tanner, ChE '95, was promoted to serve as the engineering team lead at BP in April. That same month, Keisha was featured in the corporate brass section of *Who's Who in Black Houston*.

2000s

Wendy Anderson Cocke, ChE '02, and her husband, Andy, announce the birth of a son, Anderson Jackson "AJ" Cocke, on June 21. AJ is the

couple's first son. Both Wendy and Andy work at Kimberly-Clark in Roswell, Ga. The family lives in Marietta, Ga.

Joshua Hernstrom, ChE '01, and his wife, Stacia, announce the birth of a son, Andrew Conner, on May 9, Mother's Day. Andy joins sister Sophia and brother Samuel at the family's home in Austin, Texas. Joshua is a senior software engineer at National Instruments.

Courtney Ratto Wright, ChE '01, and **Mike Wright**, ChE '00, announce the birth of a son, Wyatt Alexander, on July 21. Wyatt joins big sister Savannah at the family's home in Chattanooga, Tenn.

In Memoriam

1940s

James E. Dodgen, ChE '43, a resident of Colorado Springs, Colo., on March 24. Mr. Dodgen was the former president and owner of Dodgen Engineering Co.

Mendel T. Gordon, ChE '48, MS ChE '54, of Wilmington, Del., on May 2. He began his long career with DuPont in the Chambers Works plant technical section in 1955 and retired as a senior engineering associate in 1989. At his retirement celebration, Mr. Gordon's co-workers quoted Joseph Addison to describe how they felt about him: "Cheerfulness keeps a kind of daylight in the mind, filling it with a steady and perpetual serenity." A veteran of World War II, Mr. Gordon enlisted in the Army Air Forces and served as a radio operator in the Pacific.

Richard C. Houstoun, ChE '46, of Coral Gables, Fla., on Aug. 25. Mr. Houstoun retired from Gables Engineering in 2001. He was a member of Elks Lodge 948 and the Army and Navy Club.

1950s

Donald Keith "Don" Judd, ChE '59, of Midland, Texas, on June 12. Mr. Judd was a freelance process engineer in the petroleum and natural gas industry. Mr. Judd was a lifelong member of the National Rifle Association, West Texas Astronomers, the Republican Party, and the Civilian Marksmanship Program.

John MacPherson, ChE '53, MS ChE '59, of Gulf Breeze, Fla., on Aug. 4, after a seven-year battle with cancer. After retiring from a 37-year career as an engineering consultant and a manufacturing technologist with Monsanto/Solutia, he served as a process control consultant for Don Stuart & Associates. He received a master's de-

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Brock Family Makes Lasting Contributions to Georgia Tech



Georgia Tech's football program will have an indoor practice facility, thanks to a commitment from Mary R. and **John F. Brock III**, ChE '70, MS ChE '71. An 80,000-square-foot facility will be built on the current site of Rose Bowl Field, the team's current practice facility behind the Ford ES&T Building.

The cost of the facility is estimated at between \$6 and \$7 million, and the Brocks have committed to fund half the total project cost, up to \$3.5 million.

"We are confident that our gift will encourage other alumni to provide additional financial giving across both academic and athletic opportunities," said John, chairman and CEO of Atlanta-based Coca-Cola Enterprises. "For many years, Georgia Tech football has been a tremendous source of pride and enjoyment for Mary and me, and we look forward to its continued winning program."

A member of both the Georgia Tech Foundation and the Alexander-Tharpe Fund boards, John also chaired his 40th reunion committee this year. He previously served as a member of the Georgia Tech Advisory Board and his 25th reunion committee, and he was named a College of Engineering Distinguished Alumnus in 1996. Recently, he agreed to chair the Campaign for Georgia Tech.

The Brocks also recently established an undergraduate scholarship in ChBE and provided funding for two Georgia Research Alliance chairs and eminent scholars in cancer research at both Georgia Tech and Emory University.

EAB: *Member Profile* C. Brent Hastie

C. Brent Hastie shines as one of ChBE's most accomplished young alumni, but his drive and determination in the fast-paced world of Coca-Cola are matched equally by his devotion to family.



Photo courtesy of C. Brent Hastie

"I enjoy playing golf in my free time but it is more important to me to spend time with my girls, and they don't really like golf yet!"

Although **C. Brent Hastie**, ChE '95, graduated from Georgia Tech a little more than fifteen years ago, he has already firmly established a name for himself in the business world. His accomplishments during such a short period of time earned him a spot on the College of Engineering's Council of Outstanding Young Alumni in 1998.

Brent is proud of his career achievements, but he is above all a family man. His greatest pride is his family, which includes his wife, Kristi, and his two daughters, Parker and Taylor. Brent's job at Coca-Cola requires him to divide his time between his office in New York City and his home in Atlanta. "I spend quite a bit of time traveling," Brent says, "and my daughters always have plans for me when I am at home."

For Brent, choosing Georgia Tech was a family tradition—he is a third generation graduate. His father, Charles R. Hastie, received a degree in civil engineering in 1964, and his maternal grandfather, Henry W. Persons, was an electrical engineer who graduated in 1931. Brent says that he chose chemical engineering because he had heard that starting salaries for graduates were among the highest of the engineering disciplines. "It seemed like a good idea," he said. Even as a freshman, Brent was already planning his path to success. His decision has served him well, and his early training as a chemical engineer has prepared him to face the diverse challenges he sees every day at Coca-Cola.

As the president of the Glacéau Business Unit for Coca-Cola North America, Brent oversees the daily operations of one of Coca-Cola's newer segments, which includes the brands vitamin-water™, smartwater™, POWERADE™, FUZE™, NOS™, and Full Throttle™. Coca-Cola's \$4.1 billion acquisition of glacéau™ in 2007 was the largest in the company's history and served as a catalyst for growth across its total beverage portfolio. Brent says that leading this diverse and growing still-beverage sector brings new challenges every day and is full of excitement.

Brent joined Coca-Cola in 2006 as the head of strategy and planning for the North America Division. He successfully led a variety of initiatives for the company, which caught the attention of his superiors and earned him a promotion in 2008 to lead the Glacéau Business Unit, which is considered by industry analysts to be one of the most promising sectors for rapid expansion. Brent says that Coca-Cola will continue to create new beverages to meet consumers' evolving lifestyles and taste preferences, especially by offering new choices that provide benefits such as vitamins and nutrients.

Prior to joining Coca-Cola, Brent had already earned respect as a proven leader. After graduating from Georgia Tech, he joined McKinsey & Company as a business analyst working on international projects. He took a sabbatical from work to earn an MBA with honors from Harvard University in 1999. He then rejoined McKinsey & Company, where he served a variety of clients with a primary focus on consumer goods and transformational strategy. He was named partner in 2004.

Brent says that even the fast-paced world of Coca-Cola does not offer as many surprises as raising two young girls. "Every day they manage to surprise me and Kristi. Watching them grow up and learn about the world around them is one of the most exciting parts of my life," he said. "Managing the energy and ingenuity of a child is definitely one thing that chemical engineering did not prepare me for," he added.

ChBE Chair's Report 2010

established • eclectic • enduring

Ranked among the top engineering programs in the nation, the School of Chemical & Biomolecular Engineering at Georgia Tech is also one of the oldest, largest, and most diverse programs. With more than 40 full-time faculty members who are leaders in their fields, state-of-the-art research facilities, and access to numerous opportunities for interdisciplinary collaboration, ChBE@GT is unlike any other program of its kind. The following statistics detail the size and scope of the School's operations.

Faculty Members (Fall 2010)

Tenure-Track in ChBE	
Assistant Professors.....	8
Associate Professors.....	11
Professors (6 endowed chairs).....	18
Professors of the Practice.....	2
Academic Professional.....	1
Joint Appointments.....	6
Adjunct Faculty Members.....	3
Emeritus Faculty Members.....	11
Research Faculty Members.....	6
Post-doctoral Associates.....	46

Staff Members (Fall 2010)

Development.....	1
Business, Finance, Administrative.....	19
Communications.....	1
IT Specialists.....	3
Machinists, Facilities.....	3

Enrollments	Fall 2009	Fall 2010
Undergraduates	706	716
M.S. & Ph.D.	195	195

Degrees	2008-09	2009-10
B.S.	92	88
M.S.	10	17
Ph.D.	34	28

Research Output	2008	2009
ISI Publications	180	213
Other Publications	50	27
Presentations	284	293
Seminars	127	119
Patents* and Invention Disclosures	32	43

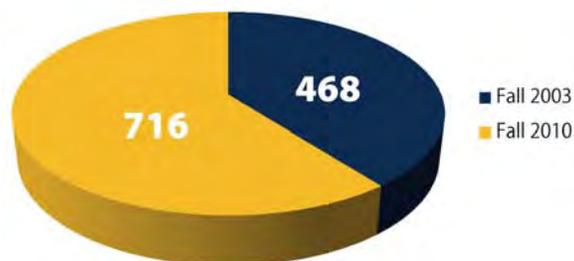
Expenditures	FY 2009	FY 2010
General Ops	\$8,537,000	\$8,750,000
Research in School	\$15,338,000	\$16,970,000
Research in Centers [†]	\$4,000,000	\$4,000,000
TOTAL	\$27,875,000	\$29,720,000
State	\$8,979,000	\$9,226,000
Non-State	\$18,896,000	\$20,494,000

FY 2010 expenditures reflect an increase from FY 2006

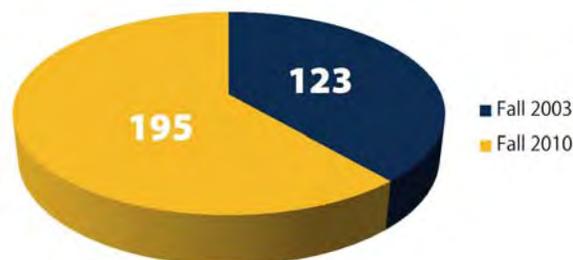
General Ops	+30%
Research in School	+150%
Research in Centers	no change

*issued or filed †estimated

Undergraduate Enrollment



Graduate Enrollment



Faculty at a Glance

- ▶ Received a combined total of more than 70 national and international awards
- ▶ 7 National Academy of Engineering (NAE) members
- ▶ 13 NSF CAREER Award winners
- ▶ 10 current journal editorships
- ▶ Strategic initiatives in energy and sustainability, biomolecular engineering, novel materials, and complex systems
- ▶ Core strengths in catalysis, reaction kinetics, complex fluids, microelectronics, polymers, microfluidics, pulp & paper, separations, thermodynamics, MEMs, environmental science, CO₂ capture, biomedicine, solar energy, cancer diagnostics & therapeutics, biofuels, air quality, modeling, process synthesis & control, optimization, and bioinformatics



◀◀◀ Timothy Langlais, ChE '05, pictured with his wife, Sarah, was inducted into the Council of Outstanding Young Engineering Alumni. Tim is the director of industrial products at ConocoPhillips.



◀◀◀ Dr. Christopher Jones received the Ipatieff Prize from the American Chemical Society (ACS) for his work in the field of catalysis. Chris is the J. Carl and Sheila Pirkle Faculty Fellow in ChBE.



◀◀◀ Dow sponsored the 4th Year Colloquium, which spotlights the research of students entering the fourth year of the ChBE doctoral program.

▶▶▶ Dr. William Koros received the William H. Walker Award from AIChE for his outstanding contribution to chemical engineering literature. Bill is the Roberto C. Goizueta Chair for Excellence in ChBE and the GRA Eminent Scholar in Membranes.



▶▶▶ Sean McClenaghan, ChE '87, pictured with his wife, Jenny, was inducted into the Council of Outstanding Young Engineering Alumni. Sean is a consultant with Egon Zehnder International, a privately held management consulting company.



A Few Highlights from 2010



◀◀◀ Christopher Hobson, ChE '79, pictured with his wife, Patti, was inducted into the Academy of Distinguished Engineering Alumni. Chris is senior vice president of research and environmental affairs and chief environmental officer at Southern Company.

▶▶▶ Joy Jordan, ChE '92, pictured with CoE Dean Don Giddens (left) and C. Dean Alford, College of Engineering Advisory Board Chair, was inducted into the Council of Outstanding Young Engineering Alumni. Joy is the global strategy program leader for personal care materials development at Kimberly-Clark.



▶▶▶ Dr. David Sholl received the Early Career Award from the Computational Molecular Science and Engineering Forum (CoMSEF) of AIChE for his outstanding research in the area of computational molecular science. David is the Michael E. Tenenbaum Family Chair and GRA Eminent Scholar for Energy Sustainability.



◀◀◀ Air Products sponsored the ChBE Undergraduate Student Symposium, which awards prizes to the top three posters presented by undergraduate researchers. Paul Mattiola (second from right), technology manager at Air Products, is pictured with School Chair Ron Rousseau and the student winners—from left, Taylor McClung, Emily Gong, and Daniel McGrail.



◀◀◀ Dr. Hang Lu (left) received a Faculty Early Career Development (CAREER) award from NSF to further her research in multiplex microfluidic and automation tools for neurogenetics and live imaging.

▼▼▼ ConocoPhillips/C.J. "Pete" Silas Ethics and Leadership Lecturers: Michael J. Dolan, Senior VP of Exxon Mobil Corporation and John Brock, ChE '70, MSChE '71, Chairman and CEO of Coca-Cola Enterprises

25th Annual Ashton Cary Lecturer: Dr. Klavs F. Jensen, Head of the Chemical Engineering Department at MIT

▶▶▶ Dr. Carson Meredith was tapped to lead a team of researchers in a \$7.5 million project funded by the Department of Defense (DoD). The project, entitled "BioPAINTS: Bio-enabled Particle Adherents for Interrogative Spectroscopy," is part of the DoD's Multidisciplinary University Research Initiative (MURI) program.



Remembering Engineering Hall of Famer, Dr. James R. Fair, ChE '42

Dr. **James R. Fair**, ChE '42, the McKetta Centennial Energy Chair Emeritus in the Chemical Engineering Department at The University of Texas at Austin, passed away on October 11, 2010.

After receiving a B.S. degree in chemical engineering from Georgia Tech and an M.S. degree from the University of Michigan, Dr. Fair completed a Ph.D. at UT-Austin. He joined the faculty of his alma mater in 1979, after 34 years of industry experience at Shell Development and Monsanto, where he rose to director of technology. Dr. Fair was awarded the first endowed chair in UT-Austin's College of Engineering, the Ernest and Virginia Cockrell Chair. His wealth of experience in process engineering and design and diagnostic techniques immediately enriched the department's offerings in design and graduate research in separations.

Dr. Fair was a former director of American Institute of Chemical Engineers (AIChE), a former president of James R. Fair, Inc., a former vice-president of Fractionation Research, Inc., and was a registered professional engineer in Texas and Missouri.

His honors included the Personal Achievement Award of *Chemical Engineering Magazine*; the William H. Walker Award, the Chemical Engineering Practice Award, the Founder's Award, and the Gerhold Award in Separations Technology, all from AIChE; the Separations Science and Technology Award of the American Chemical Society; the Distinguished Engineering Graduate Award from UT-Austin; election to AIChE Fellow; and election to the National Academy of Engineering.

In November 1979, Dr. Fair delivered the Annual Institute Lecture before AIChE, and in November 1983, he was honored as an Eminent Chemical Engineer at the AIChE Diamond Jubilee meeting. In November 2000, he was honored in a special symposium of AIChE for his many contributions to its distance learning program.

Dr. Fair received the 1987 Joe J. King Professional Engineering Achievement Award from UT-Austin. He held the Cockrell Chair in Engineering from 1979 to 1985 and the McKetta Centennial Energy Chair in Engineering from 1985 through 1992. In 1991, he received the Malcolm Pruitt Award from the Council for Chemical Research. In 1993, he received the Gold Medallion Award from the American Society for Engineering Education. In October 1993, he was honored by a Festschrift of the international journal *Industrial and Engineering Chemistry Research*. More recently, Dr. Fair was inducted into the inaugural class of the Engineering Hall of Fame at Georgia Tech in 1994. He also served on ChBE's External Advisory Board for several years.

The author or co-author of seven books and more than 200 technical articles and book chapters, Dr. Fair supervised the master's and doctoral research of 42 graduate students. He lectured internationally on many occasions, and for 25 years taught a continuing education course under the sponsorship of AIChE.

Dr. Fair is survived by his wife of 61 years, Merle Innis Fair, and by two children and their spouses, James Rutherford Fair III, and wife Linda; and Richard Innis Fair, and wife Kathy. A third child, Elizabeth Fair Drews, died in 2010; her husband is Donald Drews. Dr. Fair is also survived by a brother, Robert Fair, and six grandchildren.

gree in systems analysis from the University of West Florida and served 30 years in the Navy on active duty and in the Reserve, retiring as a captain. During the early 1980s, he served on the founding committee and board of directors of Hospice of Northwest Florida. He was a board member and former treasurer of the Pensacola Council of the Navy League, a member of the Gulf Breeze Rotary Club, and a Paul Harris fellow. He enjoyed sailboat racing and in retirement sailed to the Bahamas, Bermuda, the Caribbean Islands, Venezuela, and Trinidad. He served two years as commodore of the Pensacola Yacht Club and was a member of the Florida Commodores Association. He also was a member and former officer of the Emerald Coast Georgia Tech Club.

John Jefferson Porter, ChE '56, PhD Chem '60, of Clemson, S.C., on June 17. Dr. Porter was a professor of textile chemistry at Clemson University for 35 years.

Joseph William "Jay" Rabern, ChE '51, of Brigham City, Utah, on Nov. 21, 2007. He enlisted in the Navy in 1943 and served as an electronic technician's mate onboard the USS

Wasatch during World War II. He worked for Thiokol Chemical Corp. for 27 years, retiring in 1987. He was active in the Brigham City Jeep Patrol for many years. Survivors include his brother Thomas J. Rabern, IM '58.

Robert McKinlock Sharp, ChE '54, MS ChE '56, of Asheville, N.C., on June 17, his birthday. He began his 28-year career with Exxon in engineering, developing some key oil refining patents, and later worked in marketing and supply coordination management positions with Exxon International. He retired as marine sales manager to U.S.-based shipping companies and pursued several entrepreneurial ventures. While living in New Canaan, Conn., he assisted with photography of dance productions and was a Stamford camera club member. In 2002, he moved to Asheville, where he was a member of the symphony guild and racquet club and a First Church Christ Scientist board member.

Robert H. Slaughter, ChE '52, of Conroe, Texas, on June 20. Mr. Slaughter was a chemical engineer with Shell Oil Co. for 39 years. A member of Alpha Tau Omega fraternity and Phi Kappa

Phi at Tech, he served in the Army during the Korean War and continued to serve in the Reserve until 1960. He served as a member of the board of directors of the River Plantation Municipal Utility District for 23 years and as an emergency coordinator for American Radio Relay League Inc. He was a ham radio operator and builder of model ships and airplanes.

1960s

David Julian Bueker Sr., ChE '64, MS ChE '65, of Victoria, Texas, on June 25. In 2002, he retired from DuPont, for which he worked as a chemical engineer for 37 years. Survivors include his brothers Paul Bueker, AE '67, MS IM '70; Cris Bueker, IE '70; and Dan Bueker, IE '70.

1970s

Ken Rogers, MS ChE '70, PhD ChE '73, of Marietta, Ga., on Sept. 17. Dr. Rogers, who received a bachelor's degree in chemical engineering from Northwestern University, held a professional engineering license for most of his career, during which he worked in both the public and private sectors. He served with the 11th Airborne Infantry Division from 1946 to 1947 during the occupation of Japan.

Reflections: *from the desk of* Ron Rousseau

Photo courtesy of Ronald Rousseau



Dr. Rousseau with the late Dr. James R. Fair, ChE '42, during a 2004 visit to the Fair home in Austin.

Alumni and Friends of the School:

It is October in Atlanta, which is one of the most overlooked great times of the year. The weather is cooler, the fall semester is humming along, budgets have (usually) been set, the federal fiscal year should have begun and funds for federally sponsored projects have been approved, new graduate students are selecting advisors for their graduate studies, and there are still bright, sunny days to enjoy. It is also the time we celebrate homecoming.

In preparing to meet an alumni group on campus for homecoming, I started thinking about why that term is used in the context of alumni returning to campus. Consider the meaning of home, which can be defined as a family's place of residence, a congenial environment, or a place of origin. Clearly the first of these excludes universities, and there may be disagreements over the congeniality of a university environment. But none can argue with the view that a university represents a point of origin. It is where time was spent studying, creating a knowledge base, and developing skills that last a lifetime, and thus it is this meaning that in my view best fits the celebration of homecoming. We recognize from our own feelings when we return to our origins how others feel nostalgia, appreciation, and sometimes love that goes beyond the mandatory football game, floats, slogans, and the Wreck Parade. We appreciate and thank all alumni for embracing the concept of homecoming, for returning to their origins to see what new things are happening in their home, and to celebrate all they have done since leaving.

We regret to report that in October our friend and alumnus **James R. Fair**, ChE '42 and Emeritus Professor of Chemical Engineering at the University of Texas, passed away two days prior to his 90th birthday. Jim had served on ChBE's External Advisory Board, was a loyal supporter of Georgia Tech, and was a member of the Georgia Tech Engineering Hall of Fame. My relationship with him extended all the way back to my time at North Carolina State University, when he was director of corporate technology at Monsanto and had been selected as an engineer-in-residence by the NCSU College of Engineering. Although our careers were at much different stages, we became good friends as we challenged each other's knowledge of baseball and I soaked up all that I could relative to separations.

In subsequent years, he contributed enormously to a case study on methanol synthesis in the first edition of *Elementary Principles of Chemical Processes*, which I co-authored with Rich Felder (Wiley, 1978). After I agreed to be the editor of *Handbook of Separation Process Technology*

(Wiley, 1986), he graciously served on the Board of Advisors and acquiesced to writing the chapter on distillation. Still later, I persuaded him to join the staff of an industrial short course I had been asked to organize by the Center for Professional Advancement for presentation in Amsterdam. The course was given annually for a number of years, and Jim would arrive in the early morning after flying across the Atlantic; the two of us would walk to the Café Americain, a great art deco room, for coffee and pastries, and then he would give the next day's lectures and either hurry back to Austin or visit European colleagues. There were countless other interactions that were quite meaningful to me, and I greatly admired Jim and will miss him. All of his friends at Georgia Tech extend condolences to his wife, Merle, their sons, and their families.

We also are saddened by the death of **Clyde Orr**, PhD ChE '53, an alumnus, long-time faculty member in the School, and a member of the Georgia Tech Engineering Hall of Fame. Clyde was the prototypical researcher-entrepreneur and embodied the vision that many have for today's push in universities for innovation coupled to research. Research by Clyde and his team led to the development of an all-metal device to measure properties of particulates, especially porosity and surface area. That technology ultimately led to the founding of Micromeritics, whose annual sales today top \$50 million.

Georgia Tech opened the public phase of a \$1.5 billion capital campaign, and once again an alumnus of the School, **John Brock**, ChE '70, MS ChE '71, chairman and CEO of Coca-Cola Enterprises, has agreed to chair the effort. The last campaign ended in 2000 and was led by **Cecil J. "Pete" Silas**, ChE '53, **Thomas L. Gossage**, ChE '56, MS ChE '57, and **L.L. "Larry" Gellerstedt, Jr.**, ChE '43. We are very pleased by the service our alumni are willing to give to Georgia Tech and believe their example is important for both today's and tomorrow's students.



Clyde Orr, Jr., PhD ChE '53, chairman of the board of Micromeritics Instrument Corporation, passed away on September 15, 2010, at the age of 88.

Since cofounding Micromeritics with Warren P. Hendrix in 1962, Dr. Orr was instrumental in guiding the company to its industry leadership role as a developer of instrumentation for the physical characterization of materials. A highly respected scientist who made many contributions to the fields of materials science and particle technology, Dr. Orr was involved in designing instrumentation and providing a constant stream of new ideas and analytical instruments.

In 1995, Dr. Orr was inducted into the Georgia Tech College of Engineering's Hall of Fame during the second year the honor was available. Those who knew him best say that he was an inquisitive, yet humble, man who asked that his family keep quiet when he was tapped for this honor. At the time of his death, Dr. Orr continued to work daily as company board chairman of Micromeritics.

Dr. Orr is preceded in death by his wife, Mary Gardner Orr. He is survived by his four children: Donald Orr, Douglas Orr, Jeanne Thomas, and Lynne Strickland; their spouses; four grandchildren; and numerous extended relatives.

Making a Difference: Kathy Betty

“When we are dreaming alone it is only a dream. When we are dreaming with others, it is the beginning of reality.” –Dom Helder Camara

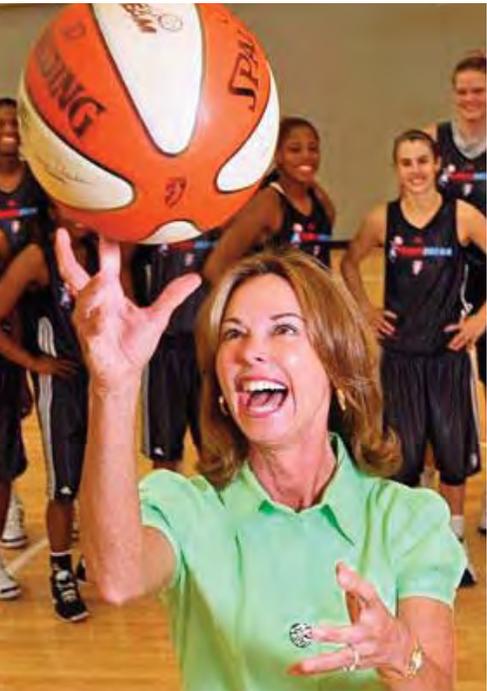


Photo by Jason Getz (@jezebjc) courtesy of the Atlanta Journal-Constitution

“Part of our vision is about winning, but another part of our vision is to dream to make a difference. My goal for the Dream is to provide a role model for young women in the community.”

If you are lucky, when a dream dies, another one is born. If you are dedicated, you embrace the opportunity for a second chance. If you are Kathy Betty, you not only make your own dreams come true, you also give hope to an entire team of women and bring enthusiasm back into the professional sports scene of Atlanta.

A little more than a year ago, in October 2009, Kathy embarked on a new stage in her life when she made the decision to purchase the WNBA Atlanta Dream. Both Kathy and the women’s basketball team had been struggling and were at a low point. Kathy had lost her husband, **C. Garry Betty**, ChE ’79, Earthlink CEO, to cancer in January 2007, and the Dream was in danger of being traded or disbanded due to their original owner’s financial troubles.

Kathy, an astute businesswoman, formed an investment group, appropriately named Dream Too, LLC. As its leader, she finalized the purchase of the Dream. Although she is the first female owner of a professional sports team in Atlanta, much of her career has been spent working with small start-up companies, including her own business, the Tradewind Group. She was also one of the first female partners at accounting firm Ernst & Young and an executive vice president at ScottMadden.

“The opportunity to own the Dream, which is all about providing accessible and affordable world-class entertainment for the families of Atlanta, is what excites me,” said Kathy in an interview soon after the acquisition. “In addition, the fact that these women serve as role models for youth, and especially young girls, is something I feel strongly about,” she said.

Although Kathy did not set out to purchase a sports team, the indirect path that led her there was natural. Garry was not only an accomplished engineer and businessman, he was also an avid sports fan and loved all of the Atlanta teams, especially the Yellow Jackets. She and Garry had season tickets to every team: Braves, Falcons, Hawks, and Thrashers. The couple was there for nearly all the big events in the city’s sports history, from World Series to Final Fours to Super Bowls.

None of those big games compared to what Betty felt on September 7 when the Dream’s head coach, Marynell Meadors, led the team to a 105-93 win over the New York Liberty. With that win, the Dream earned the Eastern Conference title and advanced to the WNBA Finals. Although they were swept by the best team in the league, the 28-6 Seattle Storm, the Dream did not lose any game by a margin of more than three points during its bid for the national title.

The unexpected playoff run has helped the Dream’s bottom line. As a businesswoman, Kathy knew the team must start making money at some point. “You better believe I have a plan,” she said, “and winning a conference championship really jump-starts that plan.” Kathy sees opportunities for the team’s future in Atlanta. “We have come from winning only four games in the first season to making the playoffs in year two, and then advancing to the championship games in year three,” she said.

If all had gone according to her original dream, today Kathy would be retired from work and inseparable from her husband. Instead, she has reinvented herself in the almost four years since Garry’s death. “I feel like I’m alive again,” she said. “This is my Garry. I have told so many people the Dream fills so many voids and I am truly happy.”

Kathy continues to serve as the CEO of the Garry Betty Foundation, a partnership with the V Foundation dedicated to cancer research. The Garry Betty Foundation funds The Garry Betty and The V Foundation Chair in Cancer Nanotechnology at Georgia Tech and the Garry Betty Scholars Program for international researchers at the University of Michigan Multidisciplinary Adrenal Cancer Clinic.

Kathy is also a major contributor to Georgia Tech’s men’s and women’s basketball programs and serves in a leadership capacity for a number of organizations, including the Alexander-Tharpe Fund, Children’s Healthcare of Atlanta Foundation, Big Brothers Big Sisters of Atlanta, the Metro Atlanta YMCA, and the Atlanta Tipoff Club. Recently, she agreed to serve as an at-large member of the Campaign for Georgia Tech.

Now, after the Dream has won on the court, Kathy is ready to take the franchise to the next level and is actively seeking potential investors. She plans to remain the majority owner as she sets her goals high to reduce losses next season and make a profit in 2012.

Turning a women’s team into a financial success is not an easy feat. But then, neither is recovering from the unexpected loss of your husband. Kathy says that Garry would have loved the Dream. “This is what we were all about. He would have been so proud. I wish he could be here. He is here.”

Briefly: *news from* ChBE

Dr. **Pradeep Agrawal** has been named the lead investigator on a \$1.5 M project to study coal-biomass co-gasification for the U.S. Department of Energy (DOE). Funded primarily by the DOE, with additional contributions from Georgia Tech, the project commenced in October and will continue for three years. Dr. **Carsten Sievers** and Dr. Kristiina Iisa of the National Renewable Energy Laboratory (NREL) in Golden, Colorado serve as co-principal investigators.

Ph.D. graduate student **Avishek Aiyar** received a 2010 Center for Organic Photonics and Electronics (COPE) Fellowship. Students funded by this fellowship receive a \$5,000 award and present their research at the end of the year to the COPE community. Avishek works in Dr. **Elsa Reichmanis**'s research group.

Dr. **Sujit Banerjee** presented the 2010 Horizons Lecture at Kimberly-Clark.

In December, Dr. **Victor Breedveld** will participate in the National Academy of Engineering's 2010 Frontiers of Engineering Education Symposium. Additionally, he presented "Structure and Dynamics of Colloidal Microgel Suspensions: Softness Matters" as part of the 2010 Chemical and Biomolecular Engineering Department Seminar Series at the University of Pennsylvania.

Graduate student **Maria Elena Casas**, who entered the ChBE doctoral program this fall, was selected as a National Institutes of Health (NIH) trainee for the GT BioMat Program, an interdepartmental program that trains students in the interdisciplinary field of biomaterials to rationally design new materials capable of integrating into the body or remodeling *in vivo*. The fellowship provides a two-year stipend. The 2010-2011 academic year marks the program's third year, and Maria is the first ChBE student selected for this honor.

Dr. **Julie Champion** received three research grants for her work on developing protein-based therapeutic biomaterials with anti-inflammatory properties. The first award is from the Georgia Tech and Emory Center for Regenerative Medicine (GTEC). The second award is a Broadening Participation Research Initiation Grant in Engineering (BRIGE) sponsored by the Chemical, Bioengineering, Environmental, and Transport Systems (CBET) Division of the National Science Foundation (NSF). The third award, given by the Kenneth Rainin Foundation, is for a joint project with Dr. Andy Neish of Emory University Medical School.

Dr. **Rachel Chen** was appointed to the editorial board of *Biotechnology & Bioengineering* and was named an associate editor of *Microbial Cell Factories*.

Ph.D. graduate student **John Copeland** won the second prize poster award at the annual meeting of the Southeastern Catalysis Society. His advisor is Dr. **Carsten Sievers**.

Dr. **Michelle Dawson** received two research grants for her work in mesenchymal stem cells (MSCs). MSCs are bone-marrow-derived adult stem cells that are involved in wound healing and tissue regeneration. One award is sponsored by the Georgia Tech and Emory Center for Regenerative Medicine (GTEC). The other award, a Broadening Participation Research Initiation Grant in Engineering (BRIGE), is sponsored by the Civil, Mechanical and Manufacturing Innovation (CMMI) Division of the National Science Foundation (NSF).

In conjunction with the 2010 Fall J.D. Lindsay Lecture Series at Texas A&M University, Dr. **Martha Grover** presented "Microstructure Design of Inorganic Materials Using Process Systems Engineering."

Dr. **Christopher Jones** was named the inaugural editor-in-chief of the American Chemical Society's (ACS) newest journal, *ACS Catalysis*. Scheduled to launch in January 2011, the journal will include original research on heterogeneous catalysis, homogeneous catalysis, and biocatalysis. Additionally, Dr. Jones delivered several invited lectures, including the William Flowers Hand Lecture at the 2010 Mississippi State Biofuels Conference, the 2010 Robert W. Vaughan Lecture at Caltech, and the 2010 Eastman Lecture at the University of Virginia.

AIChE named Dr. **William Koros** the 2010 recipient of the William H. Walker Award for Excellence in Contributions to Chemical Engineering Literature.

Dr. **Hang Lu** received a 2010 Faculty Early Career Development (CAREER) award from NSF. Additionally, she was named a member of the National Institutes of Health (NIH) Center for Scientific Review Instrumentation and Systems Development (ISD) study section, which considers research applications seeking to design and develop instrumentation and systems for biological research. In November, Dr. Lu will give an invited lecture at the New York Academy of Sciences, bringing her number of invited lectures this year to eleven.

Dr. **Athanasios Nenes** and his research team participated in the Genesis and Rapid Intensification Processes (GRIP) experiment in August and September. A collaboration between NASA and the National Oceanic and Atmospheric Administration (NOAA), the GRIP campaign marked the first time that storm data of this type have been collected and will likely result in improved characterization of storm structure and environment. Dr. Nenes's team flew through Hurricane Earl when it was a category one storm, using a cloud nucleation chamber to collect sample data.

Ph.D. graduate student **Samir Patel** was awarded an Anthony Shuker Scientific Poster Award at the 2010 Georgia Life Sciences Summit. Sponsored by the Georgia Research Alliance, this award was given to the top five research posters among the 130 presented at the conference. Samir is co-advised by Dr. **Mark Prausnitz** and Emory's Dr. Henry Edelhofer.

Dr. **Mark Prausnitz** was appointed to the Emerging Research Areas Advisory Board of the *AIChE Journal* and to the inaugural editorial advisory board of the journal *Drug Delivery and Translational Research*. His publication on influenza vaccination using a dissolving microneedle patch in the journal *Nature Medicine* attracted extensive media attention, including interviews on CNN, BBC, and Al Jazeera.

Dr. **David Sholl** has been named the 2010 recipient of the Early Career Award given by the Computational Molecular Science and Engineering Forum (CoMSEF) of AIChE. This year marks the second year the award has been given.

Dr. **Carsten Sievers** received more than \$33,000 from the Strategic Energy Institute at Georgia Tech for a proposal entitled "Methanol Production from Glycerol Over Novel Ni Catalysts" as part of the Creating Energy Options program. Additionally, Dr. Sievers presented "Stability and Activity of Solid Acid in Water" at Oak Ridge National Lab (ORNL).

ChBE graduate student **Scott Wilson** received the 2010 Outstanding Oral Drug Delivery Paper Award by the Controlled Release Society. Scott is pursuing a doctoral degree in bioengineering, which is an interdisciplinary program offering advanced courses in bioengineering, engineering specialties, and life sciences. He is advised by BME's Dr. Niren Murthy.

Mark your calendar...

► Wednesday, March 9, 2011 • 4:00 p.m.

26th Annual Ashton Cary Lecture
Dr. Mark E. Davis, Warren and Katharine Schlinger Professor of Chemical Engineering and Member of City of Hope Comprehensive Cancer Center, Experimental Therapeutics Program at the California Institute of Technology

ChBE Hosts Interactive Research Seminars on Cancer and Energy in Conjunction with Homecoming 2010

The Georgia Tech Alumni Association organized the first official homecoming celebration in 1920 to celebrate its reorganization. Highlights from the event included a barbecue on Grant Field, a baseball game between students and alumni, and a banquet at the Ansley Hotel. Alumni from New York and Pennsylvania, and one all the way from Canada, returned to the campus for the celebration, which was during a period in U.S. history when travelling such distances was noteworthy.

Homecoming festivities have come and gone over the last 90 years, and many of the iconic traditions that are considered essential to the GT Homecoming experience today are relatively new, including the infamous Ramblin' Wreck Parade. One tradition that has remained the same is the opportunity for alumni to gather together to celebrate GT's proud and well-earned position as one of the leading research institutions in the country.

This year, ChBE played an integral role in the homecoming experience for more than 100 alumni. The School offered two interactive seminars on cancer and energy research held concurrently at the Global Learning Center in Technology Square. The seminars included panels comprising faculty members who discussed their recent contributions to these key research topics. Moderated by Dr. **Martha Grover**, "Emerging Medical Solutions to Cancer" featured Drs. **Julie Champion**, **Mark Styczynski**, and **Carson Meredith**. "Powering a Sustainable Future: Current Energy Research" featured Drs. **William Koros**, **Paul Kohl**, **Christopher Jones**, and **Athanasios Nenes**, and was led by Dr. **Krista Walton**. Following the seminars, alumni toured laboratories in the Ford ES&T Building, where they had the opportunity to meet graduate student researchers and see first-hand the places where ChBE's cutting-edge research takes place.

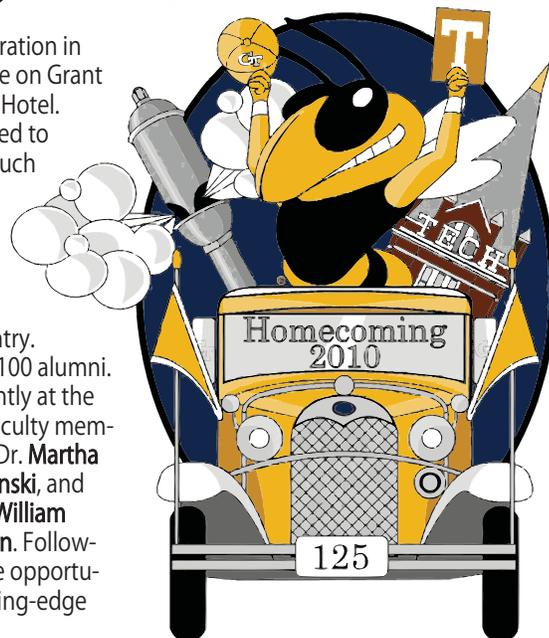


Illustration courtesy of the 2010 Georgia Tech Homecoming Committee

We Welcome Your
Questions, Comments,
and News

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