Notes from the Chairman

Dear Friends:

It is the close of another year, and time for news and an update of the Department’s progress over the last year. We are now fully recovered from the Katrina years. In 2009, we will graduate the last of the students who joined Tulane as Freshmen in the Fall of 2005. The classes of 2006 through 2009 will always be special to us. They came back to us and worked with us to rebuild Tulane and the Chemical Engineering Program. The classes of 2006-2008 have gone out into the world to begin fruitful and productive careers. They are being enormously successful in graduate school, professional schools and in the workplace. The renewal and success of our program is in large part due to them.

The Department is now fully integrated into the School of Science and Engineering, and with 11 faculty members, is at the largest size it has been. Over the last year, we have hired two faculty members, Dr. Lawrence Pratt, and Dr. Noshir Pesika. You will learn more about their research in the Newsletter. We are extremely proud of them and know that they will be at the forefront of our efforts to build our reputation in research and educational excellence. There are significant collaborations with the physical and life sciences, and with the School of Medicine and the School of Public Health. Interdisciplinary work is fostered at the University and we are realizing significant opportunities through such collaborations. Our young faculty are doing well in their careers and Tulane has become a place to establish a national reputation.

One of the highlights of the year is our successful passage through reaccreditation. While we have not received the final report from our accreditation organization (ABET), all indications at the exit meeting with the ABET team of evaluators, was that we should get another six years as a fully accredited program. The Department and the University were lauded for the congruence of vision transmitted all the way from the President to the students. The accreditation team was impressed by the vibrancy of our Program and the quality of education we impart to our students. Opportunities have significantly improved for our students – they are being admitted into high quality graduate programs and job opportunities in the region have improved tremendously in the rejuvenated chemical industry in the region. We are also proud of the fact that our students participate in public service, which is now a hallmark of a Tulane education.

Finally, we are in the final stages of fundraising for the Taylor Laboratory, being only about $700K short of our goal of $3M. Architectural plans are being drawn up and the university should soon give us the go ahead. This is the highest renovation and building priority in the School of Science and Engineering. I request our alumni to help us finish the endeavor. Instructions can be found at the back of the newsletter.

As always, we look forward to hearing from our alumni. You have made us proud through your accomplishments, and we intend to maintain the standards of excellence in research and education through the coming years. Thank you for being so supportive of the Department.

Wishing you a wonderful holiday season with all good wishes for the coming year.

With very best regards,

Vijay John, Chair
Faculty News
Professors Ashbaugh and Pratt chaired technical sessions at the 2008 AIChE Annual Meeting in Philadelphia and several faculty presented their research at the conference. The Department considers presentation at the AIChE meeting a formative research experience for our doctoral students. Ph.D. students Bonnie Barrilleaux, Jia Zhou, Jingjing Zhan, Joy St. Dennis, Ashish Sangwai and Amit Jain presented papers and posters on their research.

Vijay John was a co-organizer for two workshops of the National Science Foundation, at the AIChE Annual Meeting in Philadelphia. His research group presented five papers at the meeting.

Victor Law welcomes two Post-Doctoral Fellows
Dr. Harshad Velankar has joined Dr. Law’s research group to work on a CPERC (see related story) project to produce butanol from waste biomass (sugar mill wastes in particular). Dr. Velandar was most recently a postdoctoral research fellow at the University of Stellenbosch, South Africa. His work was related to recombinant fermentations, membrane immobilized amidases for nitrile biotransformations and bioethanol production from cellulosic substrates.

Dr. Ramalingam (Raams) Subramaniam has joined Dr. Law’s group to work on a DOE supported project entitled Aspen Plus Modeling of the Three-Reaction Version of the Copper-Chloride Thermochemical Cycle for Hydrogen Production from Water. Raams was most recently Assistant Professor in the Department of Chemical Engineering, SSN College of Engineering in Tamilnadu India. His areas of specialization are Process Modeling, Simulation and Optimization.

CPERC Gets DOE Grant
CPERC (Clean Power and Energy Research Consortium) is a coalition of five Louisiana Universities (LSU, Nicholls State, Southern (B.R.), Tulane, University of Louisiana Lafayette and the University of New Orleans. The Consortium has been awarded a grant from DOE entitled Production and Utilization of Next Generation Fuels for Clean Power. Tulane’s tasks involve research into the production of butanol from sugar mill wastes.

Tulane researchers include Dr. Victor Law (P.I.), Dr. John Prindle and Dr. W. Godbey from CBE; Dr. David Mullin from Cell & Molecular Biology and Dr. Larry Byers of the Chemistry Department. Members of the Freeman School of Business are also involved with this project.

Kyriakos Papadopoulos gave an invited lecture, "Capillary Video Microscopy: Visualization of Transport, Reactions and Coalescence," at the Symposium held in honor of Professor Clarence Miller at the Centennial Meeting of the AIChE, November 18, 2008.

John C. Prindle has continued to encourage interest in science and engineering by conducting demonstrations in classrooms in New Orleans area schools. Over the past year, he has conducted demonstrations for classes at several area high schools and for high school students participating in the Tulane Science Scholars Program. His largest recent performance was for the entire Sophie B. Wright charter school last spring entitled Science Explosion. The dust cloud explosion shown below is one of the more popular demonstrations.

Student News
Jingjing Zhan, a Doctoral student in the Department, won second place in the AIChE Environmental Division’s 2008 Graduate Student Paper Competition for his paper, “Transport and partitioning characteristics of nanoscale functional zero-valent iron/silica composites for in-situ remediation of trichloroethylene.” Jingjing was recognized at the Environmental Division’s reception at the AIChE Annual Meeting in Philadelphia.

Weil Professorship
Vijay T. John is the recipient of the Leo S. Weil Professorship in Engineering. The endowed Professorship was established in 1997 by Mr. and Mrs. Harold L. Bohn in memory of Leo Schwartz Weil, Mrs. Bohn’s father. Harold Bohn is an alumnus of University College and Mrs. Bohn graduated from Newcomb College in 1949. The late Leo S. Weil was a 1911 (BE) and 1915 (ME) alumnus of the School of Engineering. He is known for designing the air-conditioning system for the first completely air-conditioned store in the nation, the Krauss Department Store in New Orleans. He introduced air-conditioning to Tulane University and many other commercial buildings across the nation. The Weil Bohn Foundation supports the arts, civil rights, voter education, education, federated giving programs, human services and Jewish agencies and temples.
Emeritus Faculty Accolade

Professor Emeritus, Richard Gonzalez, was recently chosen as 2008 Peoples Health Champion. Peoples Health recognizes New Orleans area residents age 65 and older for exceptional achievements. Dr. Gonzalez was recognized at the New Orleans Saints football game on Monday, November 24th, and was featured in a full-length TV commercial which ran the following week. Over the past 19 years, beginning at age 57, Dr. Gonzalez has run marathons on every continent in the world. His most recent in 2007 in Dubai. Other 2008 Peoples Health Champions include celebrity chef, Paul Prudhomme and New Orleans artist and designer, Mignon Faget.

Even though he retired in 2003, Dr. Gonzalez still teaches a graduate-level catalysis course in the Department, reviews approximately 50 proposals and publications each year, and is hiring a postdoctoral researcher to do controlled drug delivery studies through a Tulane Research Enhancement Award Dr. Gonzalez received with Ulrike Diebold in the Physics Department. In his spare time, Dr. Gonzalez is learning Italian and Danish. We congratulate him on his many accomplishments!

Alumni News

Blake Simmons, (Ph.D. 2003), manager of the Energy Systems Department at Sandia National Laboratory has been appointed Vice President of the Deconstruction Division of the new DOE Joint BioEnergy Institute (JBEI). According to the DOE web site, scientists at JBEI are focused on four areas of research: developing new bioenergy crops; enhancing biomass deconstruction; producing new biofuels through synthetic biology; and creating technologies that advance biofuel research. In JBEI’s Deconstruction Division, Blake leads a team of researchers centered on finding advanced enzymes and organisms and developing new pretreatments that can assist in a more efficient conversion of biomass into biofuels. The goal is that this will eventually lead to a cleaner environment and less dependence on fossil fuel sources and foreign oil.

Pam Buff, (class of 2001), was inducted into the Tulane Athletics 2008 Hall of Fame, in the field of women’s golf, Oct. 3, 2008, at the Doubletree Hotel in New Orleans. During her participation at Tulane, Pam was a three-time Conference USA Player of the Year and honorable mention All-American. She earned her highest finish of 13th as an individual at the 1999 NCAA Regional Championship. In 2001 Pam was named Engineering Student of the Year. After receiving her Chemical Engineering degree, Pam worked for a chemical company in the Atlanta area. She now lives in Southern Florida with her husband and child and runs a cosmetology clinic with her in-laws. More information about Pam’s golf career can be found on the Tulane Athletics web site at www.tulanegreenwave.com.

Lisa Jackson (class of 83), the newest member of our advisory board, has been appointed Chief of Staff to New Jersey Governor, Jon S. Corzine, effective December 1, 2008. While she will be implementing the Governor's economic and energy agendas, she will also be managing the staff and day-to-day operations of the Governor's office. Lisa has served as Commissioner for the New Jersey Department of Environmental Protection, since February 2006. As another Board member, Franz Vogt puts it, “ChE’s can do anything.” Congratulations Lisa!
New Faculty Member Profiles

Dr. Lawrence R. Pratt was appointed as the Herman and George R. Brown Chair in Chemical Engineering as of January 2008. Dr. Pratt conducts research in thermodynamics and statistical thermodynamics, with applications in solution thermodynamics, biological thermodynamics, interfacial and assembled systems, super-capacitors for electrical energy storage, and charge transport in solution, ion channels, and fuel cell membranes.

Dr. Pratt grew up in Flint, Michigan, attending Michigan State University where he obtained his Bachelors Degree (1972). He subsequently obtained his Ph.D. in Chemistry from the University of Illinois Urbana-Champaign (1977), followed by a post-doctoral appointment at Harvard University. Prior to joining Tulane University in 2008, he held appointments in Chemistry at the University of California Berkeley and as a Technical Staff Member at Los Alamos National Laboratory.

To date, Dr. Pratt has authored 130 peer-reviewed articles and book chapters and presented over 150 invited lectures. He has made ground-breaking contributions in the understanding of the immiscibility of oil and water, beginning with the inceptive paper “Theory of the Hydrophobic Effect” (Journal of Chemical Physics 1977), commonly referred to as Pratt-Chandler Theory. He has organized international symposia and workshops on a wide range of topics, including: electrostatic interactions, hydrophobic phenomena, and hydration. Most recently he has coauthored the monograph “The Potential Distribution Theorem and Models of Molecular Solutions” (Cambridge University Press 2006). Dr. Pratt has wide ranging collaborations, and a number of his former students and post-doctoral advises have gone on to research positions in Federal Laboratories as well as faculty appointments in Chemistry and Chemical Engineering departments. Dr. Pratt’s contributions to thermodynamics and liquid state theory have earned him an international reputation for scientific excellence befitting his appointment as the Herman and George R. Brown Chair in Chemical Engineering.

The Tulane University Department of Chemical and Biomolecular Engineering happily welcomes the appointment of Dr. Noshir S. Pesika as an Assistant Professor as of July 2008. Dr. Pesika’s interest include nanomaterial synthesis and characterization, surface functionalization and rheology, bio-inspired materials, surface science and electrochemistry.

Dr. Pesika attended Carnegie Mellon University where he obtained his Bachelors Degree (1999) in Chemical Engineering and French. He then obtained his Ph.D. (2005) in Chemical and Biomolecular Engineering from Johns Hopkins University where he developed a novel microfabrication technique involving microcontact printing and electrochemistry. The latter led to a provisional patent. Following his Ph.D., Dr. Pesika joined the University of California in Santa Barbara as a postdoctoral fellow.

Dr. Pesika has authored 13 peer-reviewed journals and presented his work at several professional conferences. His honors include a Graduate Student Fellowship from NASA to study the nucleation and growth of zinc oxide nanoparticles and a Postdoctoral Fellowship from the Intelligence Community to study the nanoscale contact mechanics of geckos.

New Staff Member Profiles

San Hla Aung is a professor of practice in the School of Science and Engineering and has a half-time appointment in CBE and in BME. His main responsibilities are teaching Engineering Science courses and developing engineering laboratories. At present, he is teaching Mechanics of Materials and involved in the renovation of CBE and BME labs. He also manages purchases for CBE under the Research Commercialization and Educational Enhancement Program (RC/EEP) grant. He has a Ph.D. in civil engineering from Tulane, an M.S. from M.I.T., and a B.S. from the University of Rangoon in Burma (now Myanmar). He taught at the Rangoon Institute of Technology before coming to Tulane in 1989 and was with the Civil Engineering Department before his appointment in SSE in 2007.

The Department enthusiastically welcomes our new administrative assistant, Brett Tribou. Brett joined the department full-time this summer to coordinate the purchasing, grant accounts management, and graduate student recruiting efforts, as well as assisting in all other aspects of department administration. Before coming to Tulane, Brett was pursuing a degree in Sociology at Southeastern Louisiana University in Hammond, LA. He will continue his studies at Tulane in the Spring along with pursuing a minor in Business Development.
2007-2008 Graduate Degrees

Geandra Davis (M.S.)
Max Hetzer (Ph.D.)
Carolina Rojas-Gonzalez (Ph.D.)
Aaron Peterson (M.S.)
Ryan Schexnaydre (Ph.D.)
Kyriakos Vitsas (M.S.)
Tonghua Zheng (Ph.D.)

2008 BS Graduates

Randy Bordes
Jaime Castillo
Daniel Charles
Vivien Cherry
James Harvey
Harold Hatch
Cory Hoerner
Christine Hutchison
Cari Launiere
Jesse Ledbetter
Su Liu
Rachel Lynn
Kristin Meyertholen
Ai Nguyen
Katherine Powell
Brian Robeson
Nathan Sinkula
Whitney Stoppel
Kara Verryt