

Department of Chemical Engineering

principles



ChemE Receives NSF Education Grant | page 4

UConn ChemE Hosts AIChE Student Conference | page 11

Alstom Power Sponsors New Distinguished Lectureship | page 13

Alumni News | page 16

In this Issue

4



Features

- 3 A Message from Department Head Joe Helble
- 4 ChemE Receives NSF Education Grant
- 6 Faculty Research News
- 8 Alumnus Wins Major Award
- 9 ChemE Senior Gardiner Wins Big East Scholar-Athlete Award
- 11 UConn ChemE Hosts AIChE Student Conference
- 13 Alstom Power Sponsors New Distinguished Lectureship
- 16 Alumni News
- 19 ChemE Hosts Accreditation Visit
- 19 Alumni Donors



8

In Addition

- 5 In Passing: Leroy F. Stutzman 1917-2002
- 5 A New Look for Engineering II
- 8 Green Power for Engineering II
- 10 Alumni Profile: G. Michael Howard
- 11 Students and Alumni Receive Awards
- 12 Alumni Profile: Arthur Kaufman
- 12 SPE Honors Shaw and Weiss
- 14 Focus on Faculty: Richard S. Parnas
- 15 Alumni Profile: Ann Marie (Dorris) Wanner



11

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21st Century UConn...

Dear Alumni and Friends:

It has been quite a year.

Our undergraduate program has continued to attract many of the best students on campus. At the time of this writing, an astounding 30% of our undergraduates are participants in the **University Honors Program**, up from 25% two years ago and an indication of the strength of our incoming classes. This remains by far the highest level of Honors participation in the entire university. Alumni have responded generously to our first-ever direct fundraising campaign, a campaign to help build the **"Howard Educational Excellence Fund,"** which will help us improve our teaching labs and offer academic scholarship aid to greater numbers of outstanding students.

At the graduate level, **Ph.D. program enrollments** have reached our goal of 40 students one year ahead of schedule. This growth has been fostered by an across-the-board increase in research funding. The recent establishment at UConn of the **Connecticut Global Fuel Cell Center** involving chemical engineering faculty will only help accelerate this trend. And our new **NSF-supported REU Site in "Chemical Engineering at the Nanoscale"** will bring talented sophomores and juniors to UConn each summer to work in faculty laboratories. By exposing these students to the excitement of research careers, this program should contribute to the continued growth of our graduate research program.

Several professors won major awards this year. **Pat Mather** received a **CAREER Award** from the National Science Foundation, awarded to the most promising young academics in the United States. **Bob Weiss** was named recipient of the **Society of Plastics Engineers (SPE) International Research Award** in recognition of his outstanding contributions in the area of block co-polymers. **Monty Shaw** was named recipient of the **SPE International Award**, the major award given by the society, in recognition of his exceptional fundamental contributions to the fields of polymers and polymer rheology.

Richard Parnas, a specialist in composite materials, joined our faculty in August 2001 after an outstanding early career as a young research scientist at NIST. We are excited by our recent success in recruiting two other outstanding young scientists,



Lei Zhu (polymers, U. Akron) and **Ranjan Srivastava** (biochemical/biomedical engineering, U. Wisconsin), to join us as Assistant Professors this summer. These three faculty members will clearly help grow our research programs in areas of critical technological need.

Despite a downturn in the economy, our graduating seniors are doing well in the job market. Those that have accepted positions thus far are primarily choosing positions in industries such as fuel cells, pharmaceuticals, biopharmaceuticals, and personal care products, consistent with trends we have seen in our classes of the past few years.

Alstom Power made a major contribution to establish the **"Frontiers Distinguished Lectureship"** in Chemical Engineering, a perfect complement to our well-established weekly lecture series sponsored by the continuing support of Uniroyal.

And, of course, if you have visited our campus, you cannot help but notice that renovation and new construction continue. Our home, Engineering II, has been **renovated** inside and outside, front and back, to blend in nicely with the surrounding buildings. **A fuel cell power supply** is in place to provide building power. And if "21st Century UConn," the Governor's proposed **\$1.3 billion** capital plan is approved by the legislature this year, the excitement generated by the new facilities constructed under "UConn 2000" will continue... into 2015!

I think you will find as you read through these pages that there are many reasons to remain excited about our progress. The future indeed looks bright for Chemical Engineering and "21st Century UConn."

Joe Helble

ChemE Receives NSF Education Grant

Undergraduate students busy with coursework rarely have the opportunity to engage in hands-on scientific research. UConn's Chemical Engineering department landed a prestigious grant in January, through the National Science Foundation (NSF) to support a special educational program that pairs 10 college students each summer with departmental faculty to participate in ongoing research programs. The program, known as the Research Experiences for Undergraduates (REU) program, funds undergraduate summer research at designated university programs nationwide, giving students valuable exposure to the academic research environment and motivating them to consider graduate study in technical fields. In the ChemE REU program, which commences this summer, the focus will be on chemical engineering research conducted at the nanoscale. This summer's dates are June 3 – August 10, 2002.

The three-year program will bring 10 different undergraduates from around the nation to UConn each summer, to work one-on-one with individual faculty members for 10 weeks. The program awards participating students a \$3,500 stipend plus coverage of expenses associated with housing and transportation.

NSF awarded the REU based on a proposal submitted last year by Department Head Joe Helble (principal investigator) and co-PI Can Erkey. Other participating faculty include Luke Achenie, Doug Cooper, Jim Fenton, Pat Mather, Richard Parnas, Monty Shaw, Bob Weiss and Tom Wood. The range of research areas among these faculty members is broad; however, an underlying theme common to their research programs is the need to control material processes and properties by manipulation of the small-scale architecture of a system, whether the objective is genetic engineer-

ing of enzymes or production of nanometer-scale ceramic powders.

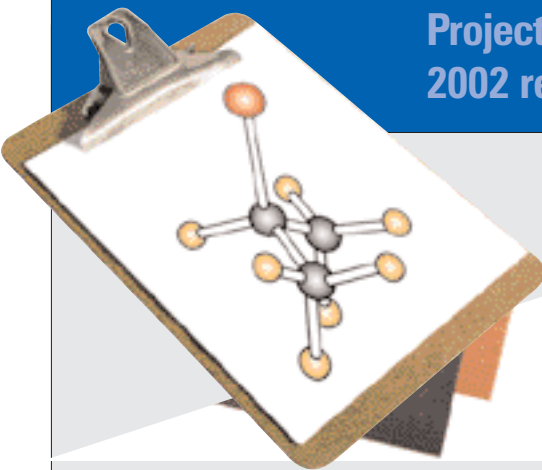
The ChemE REU program will target students from small engineering colleges and liberal arts colleges with strong science programs; in addition, students will be recruited from chemical engineering programs nationwide. Recruiting will focus particularly on students enrolled at Smith College and at the University of Puerto Rico (UPR), with whom UConn has a special agreement to foster educational exchange.

Participants in the REU program will experience more than laboratory science as part of their summer at UConn. Students will participate in workshops and discussion groups on the subject of ethics in science, to be administered by staff from the Scientific Freedom, Responsibility and Law Program of the American Association for the Advancement of Science. The NSF REU program in chemical engineering will also include plant tours and lectures by industrial scientists. Weekend cultural and recreational events, including a planned trip to Fenway Park, will enhance the students' experiences. Each year, at the conclusion of the summer program, the department will hold an REU research symposium jointly with the university's Chemistry and Polymer Science REU programs, at which students will present their work before their REU peers.

For information concerning this unique educational opportunity, please refer to our web page at:

www.uconn.edu/cheg/REU

Projects targeted for summer 2002 research include:

- 
- Control of nanoparticle chemistry using combustion aerosol synthesis
 - Nanoparticle synthesis using supercritical fluids
 - Development of regenerative dental materials using polymeric nanocomposites
 - Probing surfaces using fluorescent nanopores
 - Development of novel enzymes for green chemistry and solvent remediation
 - Solvent design through molecular modeling
 - Fabrication of nanostructured electrode assemblies for fuel cell applications

Honors Students Partial to ChemE

Chemical engineering has always attracted top undergraduate students over the years as it is considered one of the most challenging and difficult majors at UConn. However, in the last three years, the numbers of ChemE undergraduates participating in the University's Honors Program have increased dramatically.

As members of the Honors Program, students must take typically one honors course each semester throughout their undergraduate program. During the first two years, a large selection of honors courses in general education areas is available, augmented by seminars and other activities. In addition, honors students must participate in undergraduate research and submit a scholarly honors thesis to qualify for graduation.

Currently, 30% of all ChemE undergraduates participate in the Honors Program. This places chemical engineering at the top of more than 90 undergraduate academic majors at the University. The next highest participation of an accredited program is at the 15% level, with the average university-wide participation about 8.5%.

In response to having so many honors students, chemical engineering has identified a core course in each semester in the second and third years to be offered for honors credit. During the fall 2001 term, the chemical engineering department offered the first-ever special honors course in transport phenomena to junior class honors students. Other ChemE classes typically offer honors students customized, more demanding work/projects to qualify a course for honors credits. During their senior year, ChemE honors students perform their undergraduate research and thesis under a faculty advisor for either one or two semesters.

The department plans to continue supporting ChemE honors students as this type of programming is attractive to top students coming to the University and provides our honors graduates with an excellent educational experience.

a new look



Engineering Building II: Students from the 70's, 80's and early 90's may not recognize the Engineering II Building. Most remember the cellar-like basement level, the dark corridors where the Chemical Engineering Office was located, and perhaps even the outdated bathrooms. Not to mention the loss of the main entrance with the addition of the United Technologies Building in 1987. But thanks to an infusion of nearly \$1.5 million over the past five years, the Engineering II (EII) building is no longer the ugly duckling of engineering.

Although renovations have been spread over several years, the transformation is noteworthy. The process started in 1996 with the creation of a "Computer Learning Center" on the third floor. This facility combined computer-teaching labs with high-tech classrooms and project workrooms for first and second year students. Further improvements to EII were undertaken in 1998 with carpeting, repainting, and new furniture for faculty offices. Painting and new lighting in the hallways, renovations of the stairwells, modernization of all the bathrooms, and total reconfiguration of the department's main office soon followed. The most significant change has been the remodeling of the west entrance (facing Jorgensen Auditorium). A totally new look has been created which now provides a grand and welcoming entrance into the facility. If you haven't been on campus for a while, please stop by for a visit. You can witness the transformation produced by UConn 2000 and view the smaller transformation that has taken place in Engineering II.

In Passing: Leroy F. Stutzman (9/5/1917 – 4/11/2002) The Department mourns the passing of Dr. Leroy Stutzman, former Professor and Department Head, who died on April 11, 2002. Dr. Stutzman, a native of Indiana, received his B.S. degree in 1939 from Purdue University, his M.S. in 1940 from Kansas State University, and his Ph.D. from the University of Pittsburgh in 1946.

"Stutz" was appointed Professor and Head of the Department of Chemical Engineering in 1963. He stepped down as Head in 1971 but remained active in his faculty duties until his retirement in March 1983. In 1987, with the cooperation of the ChE Department, the Graduate School established a permanent fellowship in his name. Before coming to UConn, Stutz was Head of Chemical Engineering at Northwestern University; during his career, he was also influential in helping to found the Control Data Corporation and helping to establish the first chemical engineering graduate program in Chile.

Dr. Stutzman leaves his wife, Hazel (Nelson); children, Judy Geaghan and husband Bernie; son Paul and wife Lillian Stutzman; grandchildren Charlene, Carolyn, Debbie, John, Scott and Chris; six great grandchildren; step children and their families; and many friends.

Faculty Research News



Luke Achenie is continuing research into solvent design and flexibility analysis through three new federal grants. He is also looking at systems engineering approaches to computational biology funded through the UConn Health Center. A project in the area of bioinformatics, specifically on gene expression profiling and elucidating underlying genetic networks based on microarray gene expression data, has been initiated in collaboration with the University of Connecticut Health Center and Tom Wood's research group.

Thomas Anderson stepped down from his role as Associate Dean for Academic Affairs in November 2001. After nearly 13 years in administrative positions (Department Head for 9 years and Associate Dean for 3½ years), he welcomes the opportunity to focus on being a full-time faculty member. He is particularly excited about his role in a recently funded NSF grant to integrate engineering into secondary school curricula.

James Bryers has continued to expand his biomaterials research program with funding from several new grants. The first is a continuation of funding from NSF and NIH to assess bacterial infection of biomedical devices. This grant will investigate the effects of mixtures adsorbing on molecule conformation and subsequent bacterial response. The second will refine dynamic multiple photon laser microscopic methods to non-invasively quantify plasmid retention, transfer, and expression within model bacterial biofilms. The third will develop biomaterials that biologically prevent bacterial colonization and thus subsequent foreign device-based infection.

Douglas Cooper has continued his research and development of software that simulates multivariable process control, a function of importance in many industrial applications. Recently he and his students have developed a novel multiple model controller design method that builds on the model predictive control framework popular in industry. It has been programmed into the newly released Control Station 3.0 software package. <http://www.engr.uconn.edu/control>

Robert Coughlin recently presented the M.S. research work of Larry Gibson at the 2001 AIChE National Meeting describing production of microbial pullulan, a microbial polysaccharide that has promising properties for a variety of potential applications in the food, packaging and pharmaceutical industries.

Michael Cutlip has returned to the Department after serving three years as the Honors Director for the University. He is co-director of the American Society for Engineering Education Summer School to be held at the University of Colorado in late summer, which will host 200 faculty for a weeklong conference. This unique Summer School for the Chemical Engineering Division is held every five years for newly hired faculty across the U.S. His latest POLYMATH program for numerical problem solving is available to UConn alums just for the asking (e-mail him at Michael.Cutlip@uconn.edu).

Can Erkey has initiated a new research program on development of catalysts for fuel cell applications. Initial results suggest that the aerogel based catalysts may be promising materials for polymer electrolyte membrane fuel cells.

James Fenton is expanding his fuel cell research activities as part of the new Connecticut Global Fuel Cell Center. New funding from the DOE, NSF and industry is being used for direct methanol and low humidity hydrogen proton exchange membrane fuel cell research, hydrogen reforming membrane purification reactor research and design, and hands-on fuel cell education demonstrations being developed for K-12 and undergraduate curriculums.



Suzanne Fenton, with the department's accreditation visit now past, is focusing her current efforts on developing Chemical Engineering outreach materials aimed at K-12 students and teachers. She is also developing and implementing a fuel cell laboratory experiment for the senior laboratory.

Joseph Helble has expanded his research on mercury air pollution to focus on strategies for capturing mercury within existing air pollution control devices. Under new funding from EPA and local industry, he is exploring homogeneous and heterogeneous pathways for enhanced mercury oxidation and capture. Prof. Helble's group has also begun exploring a novel method of monitoring polluting particles in the air. His student and post-doc were recipients of a Best Poster Award at the 2001 AIChE National Meeting in Reno for this work.

Patrick Mather has initiated research under his NSF CAREER Award to prepare and characterize new "nematic elastomers" — or ordered rubber — that may someday function as soft artificial muscle at the macroscale, or as miniature valves in microfluidic devices. What makes Mather's approach novel is the incorporation of dye molecules that will yield a photomechanical response: shine light and they shrink... remove the light and they expand. In the microfluidic implementation, this will allow non-contact fluid "pumping" that is driven only

by stroboscopic illumination. With funding from the Air Force, Mather's group has also developed a new type of surfactant, "telechelic amphiphilics" that, for the first time, incorporate molecular silica on both ends of long-chain, water-soluble molecules. Such a simple alteration to polymer structure has a profound influence on aqueous behavior, making it a thickener of potential use in personal care products.

Montgomery Shaw is investigating the aging characteristics of nano-structured polymeric materials in collaboration with Steve Boggs of UConn's Electrical & Computer Engineering Department. These materials may have application in corona-resistant wire coatings for use in motors where high reliability is needed. His group is also collaborating with Pat Mather in the area of electrosprayed fibers. By subjecting a drop of a fluid to a high electric field, one can draw off a fine spray of charged droplets. If polymer is added to the fluid, the droplets become tiny fibers. Research is being done to find out what controls the properties of these fibers and how these can be used, in applications such as transparent composite materials.

Robert Weiss and Pat Mather began a cooperative research program on thermoplastic dental restoratives with Jon Goldberg at the UConn Health Center and Generic Pentron, one of the leading manufacturers of dental prostheses.

Bob Weiss and Monty Shaw commenced cooperative research with Oxford Performance Materials to develop new proton exchange membranes for fuel cell applications. That work focuses on sulfonated poly(aryl ether ketone) ionomers and blends with other polymers. Bob also has been spending much of his sabbatical year working with Spalding Sports to develop new materials for improving golf ball performance.

Thomas Wood has continued his work on the molecular evolution of dioxygenases for bioremediation of nitro compounds in a joint project with Barth Smets of UConn's Civil & Environmental Engineering Department. Trinitrotoluene (TNT) is very difficult to degrade and is present as a contaminant at many industrial and munitions sites. Work focuses on evolving dioxygenases using DNA shuffling to create bacteria which can degrade this recalcitrant compound. Using directed evolution and molecular breeding, monooxygenases will also be evolved for a new green engineering project investigating the conversion of naphthalene to naphthol and for creating a chiral styrene epoxide.



a powerful donation



Green Power for Engineering II: Thanks to a generous gift from Connecticut Natural Gas (CNG) Corporation, UConn's School of Engineering has a new 200 kW fuel cell power plant. The PC 25[®] Fuel Cell, manufactured by Connecticut-based UTC Fuel Cells (formerly International Fuel Cells), was installed previously at CNG Headquarters in Hartford. When CNG finalized plans to move their operations, they elected to donate the fuel cell unit to the Connecticut Global Fuel Cell Center recently established by the School of Engineering.

CNG's decision to donate the fuel cell to UConn was driven in large part by the School's recent long-term investment in becoming an international force in fuel cell R&D. This powerful PC 25 unit will also help the fuel cell research ongoing in the department under the direction of chemical engineering professor James Fenton and Dr. Russell Kunz.

The donation will strengthen the activities in fuel cell research and enable the School to attract new faculty in this important growth area. The unit will also provide an excellent source of first-hand, practical experience and knowledge benefiting both undergraduate and graduate students. The PC 25 is expected to serve also as a demonstration unit for visitors interested in seeing how a fuel cell can convert natural gas to a power-plant energy supply.

As an additional benefit, this unit will provide the United Technologies Engineering Building and Engineering II building with highly efficient, computer-grade electrical power. At a future date, this will be configured to provide emergency power to support critical research activities in times of power outages.




Above: Fuel cell being lifted by a crane from its former position at CNG. Below: Components of the fuel cell are being installed to provide power to the United Technologies Engineering Building.

Alumnus Wins Major Award

The American Physical Society distinguished alumnus Timothy Bunning (B.S., '87; M.S., '88; Ph.D., '92) with the 2002 John H. Dillon Medal. He received the award for his "outstanding accomplishments in developing polymer based materials for optical applications and for elucidating the physics and chemistry underlying their formation." The medal, established in 1983, is awarded to one individual yearly in recognition of outstanding research accomplishments by young polymer physicists who have demonstrated exceptional research promise early in their careers. It entails a \$2,000 award, up to \$1,000 allowance for travel to the meeting of the Society at which the award is being presented, a bronze medallion, and a certificate citing the accomplishments of the recipient.

Tim's doctoral research was advised by eritus professor Herb Klei. The work was sponsored by an Air Force Office of Scientific Research Doctoral Fellowship under the auspices of the Materials and Manufacturing Directorate at Wright-Patterson Air Force Base, Dayton, OH. Tim then completed a post-doc at Cornell University before returning to Wright-Patterson AFB as an on-site contractor with Science Applications International Corporation. In his current work as a government research engineer, he has collaborated on a number of research initiatives with ChemE professor Patrick Mather — who was group leader of Structural Polymers in the Materials & Manufacturing Directorate at Wright-Patterson AFB before joining the UConn faculty in 1999.

A photograph of Kristin Gardiner, a senior soccer player at UConn, in action on a green field. She is wearing a white jersey with "UCONN 16" and "DIADORA" on it, and dark shorts with "16" on the side. She is running towards the left, with a white soccer ball in front of her. The background shows a blurred crowd in bleachers.

ChemE Senior Gardiner Wins Big East Scholar-Athlete Award

Kristin Gardiner, a defensive specialist for the nationally ranked UConn women's soccer team and chemical engineering senior, was selected as the top female scholar-athlete at UConn, joining 13 female student-athletes from the Big East conference as a Big East Academic All Star and receiving a \$2,000 stipend for graduate studies. Kristin has been a three-time member of the Big East Academic All-Star Team. Since the Big East Scholar-Athlete Award was begun in 1984-85, only six engineers have received the award.

Reflecting on her award, Kristin says "It was an honor to be named one of 12 Big East Scholar Athletes. The opportunity to compete at the highest level in academics and athletics has been a very time-consuming but rewarding experience for me, and I am very grateful for the recognition from both the University of Connecticut and the Big East."

The only engineering student to receive the 2001-02 award, Kristin was a four-year starter on defense at UConn, and played in 23 of 24 games in 2001 in helping the Huskies to an 18-6-0 season. She was known to be a fierce competitor with a tireless work ethic. She stands tied for sixth in the UConn record books in games played during her four years: a total of 98.

Her efforts in chemical engineering have been equally impressive as she has been a four-year member of the Honors Program and is graduating as an Honors Scholar in the department. In spite of a major 20 hours/week effort for soccer, she has remained one of the top students in her class throughout her career. She earned an academic Presidential Scholarship as a freshman, and she received one of the 40 initial Connecticut Innovations Technology Scholarships awarded in fall of 2000. As an Honors student, Kristin was advised by Dr. Tom Wood in completing research leading to her honors thesis in the area of biochemical engineering.

Kristin has accepted a research associate position with Regeneron Pharmaceuticals, Inc., Tarrytown, NY and plans to begin graduate coursework in the fall at Columbia University while working. She hopes eventually to pursue her Ph.D. in biochemical engineering.

Alumnus and emeritus professor **G. Michael Howard** (Ph.D. '67) has experienced academia from both sides, as a graduate student and as a faculty member. During his long association with the Chemical Engineering Department, Mike has been a key contributor to the department's profound growth. The experience has been akin to helping nurture a well-loved child through different stages of development. "I have had the good fortune," he reflects, "to be part of the department during the education of every student who has earned a degree in chemical engineering at the University of Connecticut."

Mike came to UConn in 1961 as a full-time instructor intent on answering his own burning questions about teaching as a possible career. After earning his master's degree in engineering at Yale in 1959, he worked for several years at a small chemical company. During this period, he began to ponder the idea of a teaching career. When he joined the ChE faculty, Mike was among the first full-time instructors hired by the Head of the

newly established department. In those early days, he comments, it was possible to hold a regular faculty position with only a master's degree.

Planning to test the waters and pursue a Ph.D. elsewhere

if he enjoyed teaching, Mike quickly found UConn provided a stimulating educational environment and decided to remain at the university. Conveniently, ChE began its graduate program in 1961, so Mike began his doctoral program while also working full-time as a teacher. The early growth of the department was led by professor and Department Head ('64-'71) Leroy F. Stutzman, and Mike comments "I am eternally grateful for Stutz's mentorship and friendship." Mike also remembers a number of fellow students who also were earning doctoral laurels at the same time and who went on to teaching careers, including the first Chemical Engineering Ph.D., Herb Slotnick, as well as Angie Perna, Pat Marino, George Knepple, Ron Biederman and Herb Klei who, like Mike, stayed on as a faculty member.

The tools of engineering education have changed in four decades, comments Mike. The hand calculator that simplified mathematical calculation in the '70s led to spreadsheets, math packages, word processing and process simulation — all altering engineering education. Data are better correlated, models are fit and presented in computer-generated graphs, and many more cases are considered. "Some things about learning chemical engineering have not changed," he continues, "Input - Output + Generation = Accumulation is still true. I have always believed that students learn and teachers are learners' helpers... Our students continue to be eager to learn and work hard at learning," he says.

Mike taught the department's first course in Process Dynamics and Control. He developed and taught the general course, "Introduction to Engineering," for all engineering freshmen when it was first introduced, and he developed other courses in transport phenomena, chemical process safety and energy process technology. His excellence as a teacher was rewarded repeatedly: Mike won the Outstanding Teacher Award presented by the University Student Government and the Roger's Outstanding Teaching Award in Chemical Engineering on two occasions. But his greatest reward as a teacher was seeing the joy on students' faces when



the proverbial "light dawned" and they understood complex concepts.

He was never considered an easy grader, and his questions are always "challenging." In fact, one of his former students, overheard telling a friend about a recent job interview, described how he had to deliver a 10-minute presentation on his independent study project and was then subjected to an hour of detailed questioning about it. "Wow," the friend said, "that must have been really tough. Didn't you start to get nervous?" The answer. "No, it was easy. Remember, I had Howard for lab."

Mike is famous for his dedicated attendance of UConn sporting events. He has held season tickets to the men's basketball games since 1961 and regularly attends men's and women's games in nearly every sport. A college basketball and tennis player, Mike has played pick-up basketball for most of his four decades at UConn. He quips, "I have played with or against more great UConn basketball players than anyone else." In the off-season, varsity players joined the pick-up games in the gym. Mike says he always knew who to pass the ball to.

Now "retired," Mike remains actively involved in the department: he consults with students in the senior laboratory courses, helping them understand and plan their experiments; he still constructs the lab schedule; and he reviews plans of study and serves as senior academic advisor for students and faculty.

If an institution's vitality arises from its foundation, Mike Howard — Professor, former Associate Dean of Engineering for 14 years, and long-time member of the University Senate — has been an enduring and vigorous architect whose contributions will help the Chemical Engineering Department remain strong and flourish.

Students and Alumni Receive Awards

Congratulations to several of our students and recent alumni who have won awards for their work during the past year.

Adrian Perrone (B.S. candidate, 2002) earned third place honors in the student research paper competition held as part of the New England Regional Student Chapter Meeting of the AIChE in April 2001.

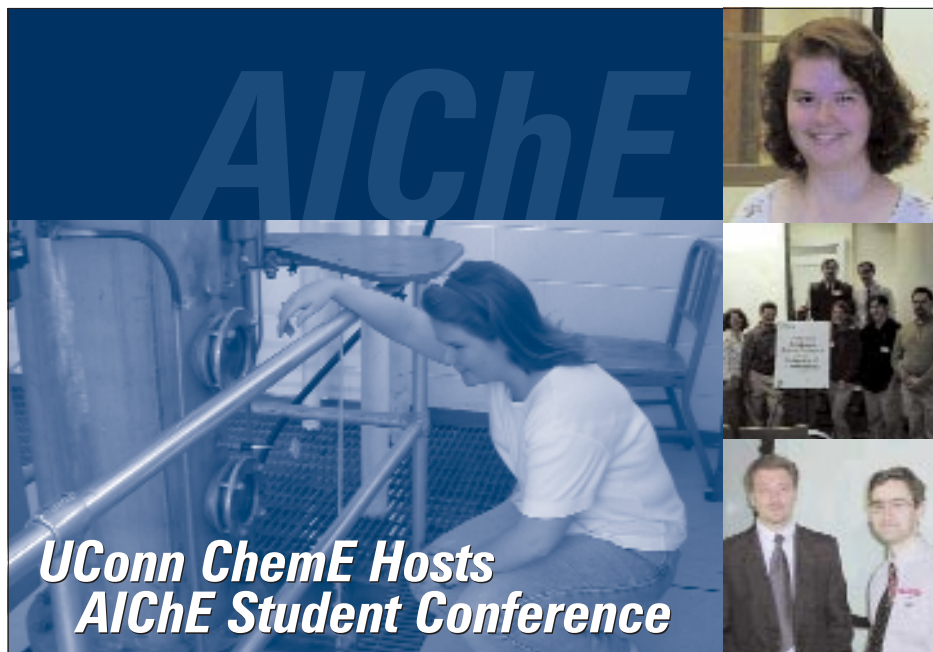
Ulrike Klueh (M.S., 2000) received a “Best Paper Award” for her work presented at a recent Society for Biomaterials Annual Meeting.

Amit Limaye (Ph.D. candidate) received first place honors for presenting his work at the annual student technical speaking competition held jointly by the local chapters of the American Society of Materials and The Minerals, Metals, & Materials Society in March 2002.

Amit was also one of only six New England region graduate students selected and sponsored by the International Division of the American Association for the Advancement of Science (AAAS) to attend the AAAS annual meeting in Boston in February 2002. Pictured is Amit at the conference with Dr. R. A. Mashelkar, Director General of the Council of Scientific and Industrial Research (CSIR) in India, the largest group of industrial research and development institutions in the world.



Luying Wang (M.S. candidate) and **Jose Fabrega** (post-doctoral fellow) received the “Best Poster Award” from the particle technology division of AIChE for their work on particle thermophoresis presented in November at the 2001 AIChE Annual Meeting in Reno.



UConn ChemE Hosts AIChE Student Conference

UConn was the venue for the Northeast Regional Student Conference of the American Institute of Chemical Engineers (AIChE) held in Storrs on April 21, 2001. The one-day conference drew attendees from UConn; the Massachusetts Institute of Technology (MIT); Northeastern University; the universities of New Hampshire, Rhode Island, Maine and Massachusetts-Amherst; Worcester Polytechnic Institute and – for the first time since 1982 – Syracuse University. Students delivered seven papers in two morning sessions on such varied topics as bioreactors, zeolite-polymer mixed matrices, colloidal gas aphrons, immobilized yeasts, aerosol delivery of cells to damaged trachea, supercritical fluids and Taxol’s effect on cancer. All technical presentations were followed by lively question-and-answer sessions.

José Manuel (Manny) Otero, a senior at MIT, took first place honors in the paper competition for his presentation titled “Evaluation of Transport and Shear Stress in Bioreactors.” Adrian Peronne, a UConn ChemE junior, was third with her presentation titled “Synthesis of Poly(4-ethylphenol) in Supercritical Carbon Dioxide.” Adrian conducted her research project in Dr. Can Erkey’s laboratory.

Following the technical presentations, attendees enjoyed a buffet lunch, giving everyone a chance to mingle with student peers from other schools. Post-lunch activities included a presentation by UConn ChemE alumnus Scott Kennedy of Rogers Corporation (a specialty materials manufacturer), who spoke on “Graduation and Beyond: A Look Forward.” A six-year veteran of the U.S. Navy, Scott graduated in 2000 with a degree in chemical and materials engineering. He now works as a development engineer in the company’s R&D Department. His talk centered on several themes: having aggressive educational goals, pursuing work experience prior to graduation, and keeping a “nothing is impossible” attitude.

Thanks to outstanding fundraising and support, the conference was free for all students, faculty, and guests. Conference sponsors included AIChE, Arch Chemicals, Dow Chemical Company, Hamilton Sundstrand, Ichthyologists (AIChE Boston Local Section), Olin, Pfizer, Procter & Gamble, Rogers Corporation, Saint-Gobain Abrasives, Unilever, and the UConn ChemE department. The conference was organized by a committee comprising chapter advisor Can Erkey, chapter president Michael Newman and various student members.

alumni profile

DR. ARTHUR KAUFMAN



In recent months, fuel cell technology has made headline news as the government and U.S. automakers seek to diversify the nation's energy sources. Fuel cells hold promise for not only automakers, but also a vast array of industrial, residential, medical and military applications. Among the companies on the vanguard of the fuel cell revolution is H Power Corporation of Clifton NJ, whose Chief Technology Officer is UConn ChE alumnus

Dr. Arthur Kaufman
(Ph.D., 1973).

Arthur has been involved in fuel cell stack and system R&D for more than 30 years, beginning his career with

UTC's Power

Systems Division (now UTC Fuel Cells) and later with Engelhard Corporation. He joined H Power in 1989 as President and guided the company in its evolutionary period on its way to achieving a leading position in proton-exchange membrane (PEM) fuel cell technology. Thanks in part to Arthur's stature in the fuel cell community, in 1991 the Department of Energy awarded H Power a prime contract to design, develop, fabricate and test three methanol-fueled, phosphoric acid fuel cell powered test-bed buses. In his current capacity as CTO, Arthur oversees all technology development programs within the

company, monitors developments in fuel cell technology throughout the community, and plays a key role in the selection of technology approaches to be followed in pursuit of H Power's product objectives.

UConn helped train Arthur for his career in propelling a cutting edge technology. "The graduate courses and the thesis effort stimulated the ability for analytical thought and for gaining a clear physical understanding of a problem to be solved, thereby providing a sound basis for mathematical analysis," he comments.

He characterizes chemical engineering as an attractive field for prospective students because of its great breadth of applicability, "providing

strong interfaces with many areas of chemistry and materials science as well as with other engineering fields. I have found it," he continues, "to be particularly applicable to the field of fuel cells because of the many domains of fuel cell systems that are well-served by chemical engineers, ranging from electrochemical engineering to chemical process engineering."

While Arthur's years in his doctoral program were dominated by rigorous study and hard work, he still found time to see friends. On one occasion, entertaining a friend actually cost him several days of precious experimental lab time. He recalls that he invited an interested

"Take a step back once in a while and consider what the underlying message is in the task that you are undertaking."

podiatrist friend to visit the lab and see the experimental apparatus they had often discussed. "As I explained the operation during an actual experiment," he remarks, "I apparently became distracted enough to overlook the fluid building up in a manometer (measuring the pressure in the system). I wound up having to clean up an overflow and lost two days of testing." Arthur cautions others, "I hope that this serves as a lesson to others who might place themselves in a similar situation!"

His advice to today's ChemE students? "Take a step back once in a while and consider what the underlying message is in the task that you are undertaking."

He earned his B.S. and M.S. degrees, both in chemical engineering, from MIT and the University of Florida, respectively. In 2001, the UConn School of Engineering presented him a Distinguished Engineering Alumni Award for his outstanding achievements as a technological innovator and visionary.

SPE Honors Shaw and Weiss

In May, Chemical Engineering professors Montgomery Shaw and Robert Weiss will be presented two of the three top annual awards of the influential international Society of Plastic Engineers (SPE). The awards will be bestowed formally during the society's annual technical conference (ANTEC) in San Francisco. Both Monty and Bob specialize in polymer science research and are affiliated with Chemical Engineering and the Polymer Program in

UConn's Institute of Materials Science.

Monty is receiving the SPE International Award in recognition of his fundamental contributions and outstanding achievements in the area of polymer flow, or polymer rheology. It is the society's top award and includes a \$5,000 honorarium. (The 2001 recipient, Alan MacDiarmid of the University of Pennsylvania, was the 2000 Nobel Prize winner in chemistry.) As a recipient of the

International Award, Monty will deliver a speech during ANTEC in which he discusses the promise of electric, magnetic and mechanical fields for enhancing the properties of current materials to produce entirely new materials. He plans to donate his honorarium to the UConn Foundation/Stephanie H. Shaw memorial scholarship, which seeks to encourage high achievement of women in polymer science and engineering.

continued on page 20

Alstom Power Sponsors New Distinguished Lectureship

Alstom Power Inc. of Windsor, CT, recently joined with the Department of Chemical Engineering to launch a new “*Frontiers in Chemical Engineering Distinguished Lectureship*.” The distinguished lectureship, which will involve two lectures yearly by a renowned chemical engineering expert and will take place on the Storrs campus, is designed to complement the annual technical seminar series supported by Uniroyal Chemical.

The *Frontiers* Lectureship debuted on April 15 and 16 at the Storrs campus with two lectures by Dr. Christopher Macosko (Ph.D. Princeton University), professor of Chemical Engineering and Materials Science at the University of Minnesota. Dr. Macosko delivered his first lecture, entitled “Valuable Plastics: Beyond Milk Bottles and Lego® Bricks,” before a general audience in the Thomas J. Dodd Research Center. His second lecture, more technical in flavor, concerned “Reactions at Polymer/Polymer Interfaces.” Dr. Macosko is a member of the prestigious National Academy of Engineering and is internationally recognized for his research in reactive polymer processing, a blend of transport phenomena, chemistry, and materials science. His work has been applied to diverse fields from ceramics formation to protein crosslinking, and has resulted in more than 350 publications and numerous conference presentations.

In various years, the lectureship will recognize outstanding faculty members of the academic community, the industrial community, government and media who are leaders in research, technology development and in communications of scientific and technological ideas, with the purpose of stimulating discussion and growth within UConn and the broader community.

Department Head Dr. Joseph Helble explains that the *Frontiers* Lectureship is intended to recognize outstanding accomplishments and developments in chemical engineering technology and to share the excitement of engineering science and technology with a broad audience that includes Connecticut high school students and teachers.

The idea took root nearly two years ago, says Dr. Helble, finally gaining momentum when he formally presented it to members of the ChemE Advisory Board — a select group of top corporate executives from throughout the Northeast.

One board member, David Anderson of Alstom Power, was particularly excited by the idea of a distinguished



lectureship and asked Dr. Helble to submit a formal proposal. Alstom Power Inc., which employs numerous UConn ChemE graduates and has lengthy ties with the department, agreed to sponsor the series for an initial three years, with a longer-term relationship to be examined at a later date.

Alstom Power Inc., an international company with operations worldwide, is a global specialist in energy and transport infrastructure. The company is active in power generation, power transmission and distribution, and power conversion; and in transport through its rail and marine activities. The company has the largest installed base of conventional power generating equipment in the world, with a 20 percent market share, and annual global sales exceeding \$20 billion.



(Top to bottom): *Frontiers* lecturer Christopher Macosko describing polymeric structure; Prof. Macosko receiving *Frontiers* award from Department Head Joe Helble and Dr. David Anderson of Alstom Power; high school junior Daniel Holevoet of Wilbur Cross High School, New Haven receiving award for his essay on 21st century plastics; attendees at the dinner in honor of Prof. Macosko.

Poet Robert Frost would delight in the “road less traveled” by the newest member of the Chemical Engineering faculty. With the fall 2001 term, the department welcomed associate professor **Richard S. Parnas**, an individual whose career path has included side trips into industry, government and now academia. For five years preceding his leap to the ivied towers, Richard was composites group leader with the Polymers Division at the National Institute of Standards and Technology (NIST). His decision to join academia as a polymer scientist was motivated, he says, by a nagging desire for independence and the urge to try teaching. UConn was already well known to him: Richard had developed long-term ties with the university, particularly with ChemE professor emeritus Tony DiBenedetto, so Storrs was a natural place to commence his academic career.

Richard earned his Ph.D. (1990) and M.S. degrees in chemical engineering at the University of California, Los Angeles (UCLA). In addition to his duties on the Chemical Engineering faculty, Richard also serves as a member of the graduate polymer program in the university’s interdisciplinary Institute of Materials Science.

During his years with NIST, Richard researched composite processing methods involving fluid flow through the porous fabrics of glass and carbon fibers typically used as reinforcements. “We were the first

Dr. Parnas’ love of polymers began during his master’s studies when he understood the “ridiculous notion that life on earth depends on a bunch of stuff that acts a lot like a plate of wriggling spaghetti.”

to clearly demonstrate the importance of fluid flow on the formation of defects in the composite structure...we demonstrated that an important type of defect, voids, should form because of the differences in local fiber densities throughout

the material.” The work was of such significance that it produced a large program expansion at NIST and continuing research worldwide.

While many academics proceed directly from their B.S. on to graduate studies, Richard took a more storied and multifarious path, working in industry between degrees. Following completion of his bachelor’s degree in chemical engineering with a minor in political science at MIT, Richard went to work for Exxon Research & Engineering in New Jersey doing coal gasification process control. During this time, he got married and “realized that school was easier than work,” so the Parnases left for California where he earned his M.S. at UCLA and his wife worked as an engineer specializing in satellites. After Richard completed his master’s degree, he joined SRI International for a short time before returning to UCLA for his doctorate. Upon earning his doctorate, Richard and his family moved to Washington, DC where Richard took a position at NIST.

Richard’s love of polymers began during his master’s studies when he understood the “ridiculous notion that life on earth depends on a bunch of stuff that acts a lot like a plate of wriggling spaghetti,” he says. His research interests embrace the use of fiber optic spectroscopy for analysis, control and monitoring of composite processes; liquid composite molding; and localized fluorescence measurement of interfacial polymeric properties. “Interfaces between dissimilar materials govern the performance of bones, boats, airplanes, and most modern structures,” he says. His interest in this area began in graduate school, when Richard wanted to measure



interfacial structure and properties; at the time, he says, the technology was immature and the cost prohibitive. Since then, he has pursued his study of interfaces by researching the critical role the interface plays in polymer composite materials, allowing him to finally finish the work begun 15 years ago.

In the transition time between leaving NIST and joining UConn, Richard took a one-year sabbatical leave in Belgium, where he worked in a composites group focusing on micromechanics and textile structures. There, he learned to use X-ray micro CT equipment and worked on image analysis targeting artificial intelligence algorithms using the textile topography as an automation aid.

Richard has received numerous awards during his career, including a Fulbright Scholarship and a Senior Fellowship for study at the Catholic University in Belgium, a Visiting Scholar Award presented by the Johns Hopkins Chemical Engineering Department, several SPE best paper awards, and the NIST Bronze Medal. He has authored more than 100 publications including the recent book, *Liquid Composite Molding*.



Ann Marie (Dorris) Wanner (B.S.E., '81 Chemical Engineering & Materials Engineering) has been flouting stereotypes and transforming challenges into opportunities from the time she first set foot in Connecticut as a high school junior fresh from Dallas, Texas. Back then, her chief trial was to adjust to the culture shock presented by Yankee life — a challenge she met handily, graduating at the top

“The thinking, analyzing, problem-solving skills are tremendously valuable in any career choice, and they create a foundation that will serve you lifelong.”

of her class and with numerous school activities to claim her time. Today, she is a prominent physician specializing in allergy/immunology and practicing with The Everett Clinic, a large multi-specialty clinic in the Seattle area.

Ann entered UConn as a biology student, with aspirations for medical school.

Sometime during her freshman year,

Ann decided that given the difficulty of gaining admittance to medical school, she should have a

sound career option at the ready in case her dreams of doctoring fell through. She enjoyed chemistry and math, so “when someone in my dorm suggested I look into chemical engineering as a major, I got very excited.” It seemed to offer the right combination of math, chemistry, creativity and lots of problem solving, says Ann. Equally appealing were the high demand for chemical engineers — within both industry and academic institutions — and the fact that very few female engineers were enrolled in UConn’s ChemE program at the time:

just two, counting Ann, and both were University Scholars.

Ann’s undergraduate years in UConn ChemE were pleasant and provided a good educational groundwork for her challenges in med school and in her career. She particularly enjoyed the logical way in which engineering concepts build on one another, with little memorization.

“The thinking, analyzing, problem-solving skills are tremendously valuable in any career choice, and they create a foundation that will serve you lifelong. As a medical student, I loved looking at problems from different angles and coming up with different solutions,” she reflects.

After earning her M.D. at the University of Connecticut in 1985, Ann’s medical education proceeded through a three-year internal medicine residency at Baylor University Medical Center followed by a two-year research fellowship in allergy/immunology at Duke University Medical Center. During her fellowship, Ann presented and published two research papers, and published a clinical research paper and two review articles — an astounding output for any medical fellow in a two-year period. Moreover, her work at Duke benefited from Ann’s undergraduate research with ChemE professor Robert Coughlin which she calls “invaluable.”

Since moving to Seattle, in addition to working at the clinic, Ann has taught and lectured at the University of Washington

Medical Center. Recently, she was promoted to Associate Professor of Clinical Medicine in Allergy/Immunology. Ann says, “I feel very strongly that medical students need to see medicine from a real life perspective.” Ever energetic and purposeful, she has also found time to write a chapter in an allergy and immunology textbook that was published in 2001. Not surprisingly, given her amazing career achievements, Ann has received numerous awards and fellowships in prestigious national organizations.

Ann has fond memories of her years in ChemE. For example, in 1980 she and her roommate ran across campus following the Olympic torch as it traveled through Storrs on its way to Lake Placid, and it was Ann’s engineering class that installed the unique kinetic sculpture that stands prominently in front of Castleman Building on the green. The most enduring experiences for Ann are associated with the many close friendships she made at UConn, both with fellow students and faculty. Over the years, she has maintained contact with several of the university’s emeritus and current faculty, including professors Coughlin, John Tanaka and Cecile Hurley (chemistry) and their spouses, who have already begun recruiting Ann’s three children as prospective UConn students. Who knows? In a few years ChemE may welcome another generation of Dorris *kinder*.




Alumni News



To Our Alumni:

Thank you once again for the news of your current activities. We are pleased to present it here. Because of space constraints, we were forced to condense entries. We hope that we have retained the essence of your updates. Please keep us informed as your careers continue to develop!

1960s Alumni




Richard J. Heller (M.S., 1965) reports that he has been employed as a Sales Engineer for Aqualogic Inc. in North Haven, CT.



Robert John Klancko (B.S., 1967) is a partner at the consulting firm Klancko & Klancko, LLC in Woodbridge, CT. Governor John G. Rowland issued an Official Statement proclaiming April 17, 2001 as Robert John Klancko Day in recognition of Mr. Klancko's "35 years of distinguished service to the materials industry of CT as manager, technical professional, and educator. He has shared his knowledge, expertise and compassion for others not only with his colleagues, but also with the community at large. I commend Mr. Klancko for his numerous professional and civic contributions to the materials industry and the State of Connecticut." In the 25 years that Materials Week has been observed, just eight individuals have been so honored with this prestigious award.

1970s Alumni



Robert W. Shone (B.S., 1970) writes that he is a Managing Partner in BG & Associates, LLC selling specialty chemicals to the steel industry, utilities market and coalmines. He has been in specialty chemical sales his entire career.

Thomas Benjamin (B.S., 1971; M.S., 1976) has joined Argonne National Laboratory as Technical Advisor to the U.S. Department of Energy in the area of fuel cells for transportation after 10 years in various management positions at M-C Power Corporation.

Thirumalai (Deva) Devanathan (M.S., 1976) is the Vice President of Research and Development at TP Orthodontics, Inc. in LaPorte, IN.

Sal Viscontini (M.S., 1977) reports that he has been with Valero Energy Corporation (corporate offices in San Antonio, major brand name Diamond Shamrock) since 1996. He is currently Operations Manager at the Valero Texas City Refinery. Recent work has involved refinery redesign projects at Texas City totaling \$400 million in projects. Prior to Valero, Sal worked for Mobil Oil in areas of refinery engineering from '79 to '96 at a number of locations in New Jersey and overseas in Saudi Arabia and Italy. Sal can be reached at ViscontiniS@Valero.com.

1980s Alumni

Mark P. Vergnano (B.S., 1980) recently relocated with E.I. DuPont Co., Inc. from Richmond, VA to Wilmington, DE. He is the Global Business Director for DuPont Nonwovens. He resides in Westchester, PA with his wife, Betsy Reddington Verganan (UConn class of '81) and two daughters, Haley (age 13) and Elise (age 14).

John Andresakis (M.S., 1981), is director of technology for Oak-Mitsui (a joint venture of Honeywell International and Mitsui Mining and Smelting). He previously was engineering manager for Hadco Corp. (Oswego, NY and Hudson, NH).

Frank Chimbole (B.S., 1981) currently works as a freelance consulting engineer for small startups and mid-size companies in Connecticut. In the last year he has worked in semiconductor lithography, software development, pharmaceutical production safety analysis, fuel cell development and non-chemical water treatment product development.

Steve Kos (B.S., 1982) writes that he has been in sales for over 15 years and loves it. He says, "A chemical engineering background has been a tremendous asset." His two boys keep him busy when he's not working.

Daniel L. D'Aquila (B.S., 1983; M.S., 1990) reports that he works as a Project Manager at the CDI Engineering Group, Inc. in Philadelphia, PA.

Paul DePriest (B.S., 1983) married Donna Oakley in June 2000. Their first child, John Paul, was born in July 2001. Paul is a Project Manager at Process Facilities Inc. in Boston, MA.

James Droney (B.S., 1983) was appointed Vice President of Quality Assurance at H.D. Bronson (Automotive Supplier). He received his M.S. degree in metallurgy from RPI in October 1996. He resides in Suffield with his wife, Diane, and four children, Emily, Madeline, Jimmy and Jack.

Janet M. (Callahan) Hampikian (B.S., 1983) reports that after completing her B.S., she earned her M.S. in metallurgy in 1986 and Ph.D. in materials science in 1990, also from the University of Connecticut. After a post-doctoral appointment to CSIRO in Melbourne, Australia, she returned to the U.S. in 1992 as an Assistant Professor of Materials Science at Georgia Tech. Promoted in 1999 to Associate Professor, Dr. Hampikian's achievements at Georgia Tech include receiving a National Science Foundation CAREER award and over \$1 million in external funding. Her research focus areas include high temperature materials, thermally grown oxide coatings, combustion chemical vapor deposition and coatings with applications in biomedical engineering. She is married to UConn alumnus, Greg Hampikian and has three children, ages 4, 10 and 18.

Ki-Pung Yoo (Ph.D., 1983) is living in Korea and employed at Greentek21 Co., Ltd., as CEO in addition to his professorship at Sogang University. Greentek21 Co., Ltd. is a venture business specializing in supercritical fluid technology in process engineering. Ki-Pung was the first Ph.D. student of Professor Tom Anderson.

Brian O'Shea (B.S., 1984) joined Omnexus, a global plastics business-to-business e-marketplace, from Ticona, LLC, a division of Celanese, AG, where he served as senior product manager, Celcon® Acetal Engineering Polymers. He previously was northeast regional sales and marketing manager for Hoechst Technical Polymers.

Sandip Bhagat (M.S., 1984) is President and Chief Investment Officer of Travelers Investment Management Company, a subsidiary of Citigroup. He specializes in quantitative investment strategies for both institutional and individual clients.

Thomas Salimeno (B.S., 1986) was promoted from Senior Project Manager to Vice President at Loureiro Engineering Associates, Inc. (LEA). He has over 14 years of experience in the planning, design, supervision, review, and management of projects in civil, chemical and environmental engineering.

Timothy J. Bunning (B.S., 1987; M.S., 1988; Ph.D., 1992) of the U.S. Air Force Research Laboratory will receive the 2002 Dillon Medal, sponsored by Elsevier Science Ltd., publisher of *Polymer*. The citation was awarded for his outstanding accomplishments in developing polymer-based materials for optical applications and for elucidating the physics and chemistry underlying their formation.

George Haddad (M.S. 1989) writes that he works at Honeywell International.

1990s Alumni

Bronislaw (Brian) Kozikowski (B.S., 1990) is currently employed as Product Quality Engineer at EBM Industries in Farmington, CT.

Joseph R. Arrigo (Ph.D., 1991) is employed as a Principal Development Engineer with ABB Lummus Global Inc. in Bloomfield, NJ. Dr. Arrigo joined Lummus a year ago after working for 10 years in R&D for American Cyanamid Company/Cytec Industries Inc. in Stamford, CT. He and his wife and three children reside in Fairfield, CT. Dr. Arrigo can be contacted via e-mail at joseph.r.arrigo@us.abb.com.

Jung-Chou Lin (M.S., 1995, Ph.D., 2001) is a senior research engineer at Microcell Corporation, a start-up company focusing on the development of fuel cell technologies. The company is located in Research Triangle Park, NC.

continued on next page

Zahi K. Bourjeili (B.S., 1996) works at the Headquarters of United States Central Command (USCENTCOM), Directorate of Operations, Exercise Division, at MacDill Air Force Base, Tampa, FL. He is an Army Captain, in the Corps of Engineers, and his job position is Country Officer for Kuwait and the Kingdom of Saudi Arabia. He married Lisa A. Falk in 1998, and they had a baby boy, Gabriel in 1999.

Thomas Neyarapally (B.S., 1997) was recently elected to the Board of Directors of Gene Network Sciences, Inc., a biotechnology software company in Ithaca, N.Y. He invites fellow alumni employed in the areas of bioinformatics and drug discovery to visit the GNS website or to contact him at tan9@cornell.edu.

Jennifer (Murphy) Williams (M.S., 1997) has been working at Environmental Risk Limited, an environmental consulting firm in Bloomfield, CT, since graduating with her M.S. in Environmental Engineering 4½ years ago. As an Environmental Engineering student, she studied under Can Erkey in the Chemical Engineering department. Jennifer works as an Associate in the air quality services department of Environmental Risk Ltd., where she provides consulting services to her clients – mostly industrial facilities, educational institutions and hospitals – helping them interpret and comply with the air pollutant regulations at the state and federal levels. Her duties include preparing permit applications and emission reports for submittal to the Department of Environmental Protection. Jennifer was married in September 1997. She and her husband live in South Windsor, CT and are expecting their first child in July 2002.

Louis Corsino (B.S., 1998) is employed as an Air Pollution Control Engineer II by the CT Department of Environmental Protection in the Bureau of Air Management, Hartford, CT. Louis married Margaret Kowal, who has a B.S. and M.S. in Chemical Engineering from the University of New Hampshire, in September 2001. They reside in Manchester, CT pending completion of their new home in East Windsor.

Rhonda S. Fowler (B.S., 1998) is employed as a process engineering with Analog Devices, Inc. She is responsible for maintaining and improving the epitaxial processes and chemical vapor deposition processes for semiconductor manufacture. She previously worked as a liaison engineer with Kaman Aerospace. Rhonda is working on her MBA in technology. Outside of work, she is active in Habitat for Humanity and Analog in Action, and she substitute teaches for her town's elementary and middle schools.

Michelle LaFond (B.S., 1998) has been employed for three years with Regeneron Pharmaceuticals in Tarrytown, NY. She's involved with a group that does pre-clinical manufacturing and process development.

Kamal G. Nainani (M.S., 1998) has worked at Corning Incorporated since August 2000 as a Senior Development Engineer with the Process and Product Development Group in the Optical Fiber division. He previously was employed with Schering Plough Corporation in New Jersey from August 1998 to August 2000.

Jeffrey M. Zgorski (B.S., 1998) works as a Technical Service Engineer for CYRO Industries in Orange, CT. He resides in Newington, CT. CYRO Industries is the largest manufacturer of acrylic sheet and molding and extrusion compounds in North America. Job responsibilities include technical support for flat sheet customers in Central/Northern US, Eastern Canada, and International including Mexico, Latin America, and Brazil. He is also pursuing his MBA at UConn.

Linette Lozoda (M.S., 1999) works as a manufacturing Process Engineer with Agere Systems in PA. Her job entails production of InP lasers and photodetectors. Linette writes that she is enjoying the work and life in the Pennsylvania countryside despite the cold winter weather.

Kerry A. Riek (B.S., 1999) is a control systems engineering with Applied Control Engineering in Wilmington, DE. She enjoys designing control systems, but misses living in Connecticut, near family and friends. She passed the FE exam in the fall of 1999, and has 3 more years of practice

before she can take the PE exam. Kerry is Treasurer for her local section of the Society of Women Engineers, and remains active in expanding her dance repertoire beyond Ballroom, Latin, and Swing. She has also begun a landsman-in-training course with the Kalmar Nyckle Foundation, a group that built and sails a replica all-wooden, square rigged, three-masted circa 1638 ship.

Scott Thompson (B.S., 1999; M.S., 2001) completed his M.S. in Material Science at UConn on the most notorious of days: September 11, 2001. Scott is now a ceramic engineer at Carpenter Advanced Ceramics in Auburn, CA. His responsibilities include design of binder/dispersant systems for spray drying alumina powder, development of a new product line of boron carbide for nuclear applications, and development of an injection molding process for the consolidation of zirconia toughened alumina and alumina parts with complex geometries. It is expected he will assume project management for the injection-molding project. Scott wishes to thank Dr. Suzanne Fenton for all the unit operations and fluids lessons in her transport course, and Dr. Bob Weiss for the polymer course and the additional rheology he learned there. He says he doesn't know how he ended up working with polymer chemistry, but he did. Finally, he thanks Dr. Joe Helble for colloidal theory learned while doing independent studies with him.

2000 Alumni

Anderson Costa (B.S., 2000) is working for CYRO Industries, an acrylic plastic manufacturer. He works in Orange, CT in the technical center as an Applications Development Engineer.

Justina Eisler (B.S., 2000) recently moved to Atlanta, GA and reports that Atlanta is a great city and the suburbs are even better. She says her company, RETEC, has several job postings for entry level engineers now listed on its website at <http://www.retec.com>. Justina asks that readers pass on this web address to any students or colleagues who may be interested.

continued on page 20

ChemE Hosts Accreditation Visit

Last fall, the ChemE department underwent a rigorous program evaluation by a national organization, ABET, and emerged from the process with a positive appraisal. What exactly is ABET? It stands for the Accreditation Board for Engineering and Technology, the prime organization charged with certifying the quality of engineering education at U.S. colleges and universities. ABET accreditation tells students, parents, and employers that a program effectively prepares graduates to practice engineering professionally.

In October, following two years of preparation and extensive reporting, the Department hosted ABET evaluators who reviewed the department's undergraduate programs for re-accreditation. Departmental preparation for the evaluation included review of program objectives by faculty, alumni, our Industrial Advisory Board and newly formed Student Advisory Board, analysis of responses to student and alumni surveys, and implementation of a program improvement plan.

ABET requires that graduates be able not only to master textbook problem solving but also analyze and interpret data, work on multi-disciplinary teams, comprehend contemporary issues, and understand the impact of engineering decisions in a broad societal context. The review process spurred ChemE to implement several changes based on student, alumni and employer feedback on the needs of today's engineering graduates, including:

- changing senior design to a one-semester four-credit course,
- increasing the number of required professional electives to four,
- offering a new elective course in "Engineering Entrepreneurship,"
- providing alumni and students access to job postings on the ChemE web homepage.

Chemical Engineering will receive the formal ABET decision in summer 2002.

The department wishes to thank all alumni and students who have provided valuable input regarding our undergraduate program.

Special Thanks To Alumni Donors

In late 2001, the Department initiated its first-ever alumni campaign to raise funding in support of the Howard Educational Excellence Fund, graduate student fellowships, and other initiatives. We are grateful to the following alumni who have already chosen to contribute to support our current and future students:

Nancy Ann Abbazia Sicilian	Thomas C. Fitzgerald	Ted Ross Peyser
Virginia Joyce Andrews Ryan	Rhonda S. Fowler	Allan Bruce Pilver
Bruce Martin Arnio	Christopher F. Franzoso	Frederick Charles Presnick
Coreen Lee Biercevicz	Raymond Anthony Gailunas	John Joseph Prior, Jr.
Athanasios Biros	Raymond Raulfs Gansley	Robert Quinn, Jr.
Leslie R. Boette	Stephen John Gondar	Donald P. Rey
Carl Bouchard	Michael Edward Gorman	Kerry Anne Riek
James Michael Bradshaw	Dawn K. Griffith	Alice E. Robbins
Thomas E. Brayman, Jr.	Peter Eugene Grulke	Richard G. Roux
Joyce Ann	Anthony Jesse Gullitti	Luis Felipe Sa
Bucchieri Densmore	William R. Gustafson	Peter C. Sanford
Kevin Robert Cahill	Lisa Ann Harris Shelanskas	LeeAnn S. Santoro Schetchter
Joseph R. Caspouse	Chunzhi He	Douglass William Sevont
Salvatore Casadonte	G. Michael Howard	Paul Christopher Stuart
Ming-Cheng Chien	Ipek Kaya	William Summers, IV
Mary Beth Chojnacki	Joseph E. Koonankeil	Adam Szczesniak
Shah Alam Choudhury	Brian David Litke	Paul Andrew Tanski
John F. Ciaccio	Linette Lozada	Patti Thorpe Conlan
Andrew M. Clock	Virginia A. Malik	Myhang T. Truong
Anderson Luiz Costa	Paul Maurice Mansfeld	Jennifer M. Ulz
John Steven Danyi	Thomas J. Marchione	Carlos Valazquez-Figueroa
Daniel Louis DiAquila	David Paul McGrath	Mark P. Vergnano
Vincent M. DeMatteo	Joel Raymond Misinsky	Donald J. Victory
Constantine DeNora	Russell Currie Mitchell	Charles B. Wheeler
Paul Anthony DePriest	William M. Neumann, Jr.	William R. White
Ann Marie Dorris Wanner	Thomas Anthony Neyarapally	Mark Wiatrowski
Patrick James Draper	Garry M. Nichols	David Handel Williams
Lawrence E. Earnshaw	Thomas C. O'Connor	Ki-Pung Yoo
Justina Marie Eisler	Roger Michael Orsulak	Daniel Zibello, Jr.
Andrew James Esposito	Mark D. Perlot	
Joseph Kenneth Evitts, Jr.	Pamela A. Petro Pawlowski	

Special Recognition

The following individuals received their B.S. degree in Engineering, with major in Chemical Engineering, during the 2000-2001 academic year. Congratulations to our newest alumni.



Prem Barua	James Andrew Furman	William Papale
Brett Michael Beauregard	Jeffrey R. Goodyear	Lisa Ramdhanie
Athanasios Biros	Christopher Halfmann	Marcus D. Rice
Peter J. Bonzani	Jody T. Johnson	Jeffrey Richard Schnyer
Ricardo O. Brown	Stephen Kowalski	Vittorio J. Seccareccia
Anderson Luiz Costa	Orest V. Ladyzhynsky	Ellen Marie Shepard
Joel Martin Desjardins	Edward Lipnickas	Visal Som
Dariusz Dziubinski	Michael Benjamin Newman	Aaron Andrew Spearin
Justina Marie Eisler	Tim Van Nguyen	John Joseph Tedesco

SPE Honors Shaw and Weiss (cont'd)

Bob Weiss was honored with the 2002 SPE international Research Award, which confers a \$2,500 honorarium, for his outstanding contributions in the field of block co-polymers. He has elected to donate his honorarium to the Connecticut Eye Bank. Both are Fellows of the prestigious society, among whose 30,000 members just 183 are elected Fellows.

Monty is a polymer rheologist who is also known for his pioneering research in

the technology of polymer blending, one of the fastest growing segments of the plastics industry. Rheologists study the deformation of materials, and Monty's research on electrorheological fluids has paved the way for significant advances in the design of polymer-based "smart" materials. He has co-authored two widely used books in the polymer field, one on polymer blends and one that makes rheological analyses more understandable to engineers and technologists.

Bob researches property-structure relationships in polymers with complex

structures, such as ionomers, conductive polymers, block co-polymers, and liquid crystalline polymers. These materials have applications as fuel cell membranes, chemical sensors, and high-performance plastics. He is known for engineering the molecular structure of materials to achieve particular properties in advanced plastics. His work has led to 14 U.S. patents.

The two have collaborated in research for more than 15 years in the area of polymer blends, most recently on the design of polymer electrolyte membranes, the critical component of fuel cells.

Alumni News (cont'd)

Larry Gibson (M.S., 2001) completed his M.S. research with professor Bob Coughlin and has begun working as a bioprocess engineer with Pfizer.

Chunzhi He (Ph.D., 2000) is currently working for H Power Corporation in Belleville, NJ as a Research Chemical Engineer.

Lisa Ramdhanie (B.S., 2001) attends Virginia Commonwealth University where she is working on her master's degree in Biomedical Engineering. Her expected graduation date is August 2003.

Chunyong Wu (Ph.D., 2001) is employed as a Coating Application Engineer in the Optic Fiber Division of the OFS Fitel Company. The division is located in Norcross, GA.

Venkateshwarlu Yadha (M.S., 2001) works as an Associate Engineer in the Systems Group at UTC Fuel Cells located in South Windsor, CT.



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