

***CHEMICAL ENGINEERING NEWS***

Spring

2001

## Message From The Chair

Carl R. F. Lund

As usual, lots of things are happening in the CE Department. We spent a lot of time and effort this past semester looking for new faculty. We are very happy to announce the hiring of two new full-time faculty members. **Dr. Jeffrey Errington** will be coming home to U.B. this fall. Jeff earned his B.S. from the department, and now he'll be re-joining us as an assistant professor. **Dr. Manolis Tzanakakis** has also accepted an offer as an assistant professor of chemical engineering, but his arrival will be delayed while he gains some additional research experience as a post-doctoral fellow.

Unfortunately, I also must report that **Professor Ashish Gupta** has resigned from the department. Ashish was a good colleague and contributed much in his relatively short time here. He was the leader in establishing both our GAANN Fellowship Program and our NSF REU Program. We're all going to miss him!

Our productivity has remained high, despite being understaffed at the faculty level. This past year CE faculty authored 57 refereed journal publications and 13 conference publications, presented 86 scientific lectures, and made 21 poster presentations. In addition, there were 59 student presentations from the CE department at scientific/technical meetings. We graduated 42 B.S. CEs, 9 Masters and 7 Ph.D.s. CE faculty were PI or co-PI on new grants totaling \$2.98M. One new patent was awarded to **Dr. Ruckenstein**, and 7 additional inventions were disclosed.

**Professor Hlavacek** was a Fulbright Fellow visiting in Germany where he worked on elimination of soot from diesel engine exhaust. **Professor Ryan** received a Service Excellence Award from the Division of University Services for his contributions to the IT Literacy Program for Incoming Students. **Professor Alexandridis** was named Innovator of Upstate New York, Upstate Alliance for Innovation. **Professor Mountziaris** was an invited lecturer in a plenary session at the Annual AIChE Meeting. You may even have heard about the department on CNN: research on artificial skin that **Professor Andreadis** performed during his post-doc at the Shriners Hospital (and which he is continuing here at U.B.) was featured on CNN and in several international newspapers.

Our web site continues to grow, and we are getting more and more visits there from alumni. If you have the time, check it out at <http://www.cheme.buffalo.edu> and in particular, visit the alumni section. You might be able to catch up on some of your classmates, and you can share your wisdom and experience with our students and our faculty.

If you have the opportunity to come back to Buffalo, please stop in and say hello. We're also planning another reception at the Annual AIChE meeting in Reno in November; stop by if you're at the meeting. ♦

*We hope to see you at our Hospitality Reception at the  
Annual AIChE Meeting in Reno, Nevada*

*The Reno Hilton*

*November 2001*

## PRAXAIR Supports CE

Praxair has a long history of supporting the Chemical Engineering Department. This is evident again this year in several new ways. First, Praxair has committed to providing a \$5,000.00 graduate student override for the next five years. This generous gift will help the department recruit from among the very best potential graduate students, by adding to the base stipend awarded to incoming graduate students. The first of these Praxair Fellowships is expected to be made in the Fall of 2001.

In addition, Praxair is also sponsoring the Department's seminar series again this year through a gift of \$5000.00. This allows us to invite leading chemical engineers from across the U.S. to come to campus and present seminars on their research. The faculty benefit through direct interaction with these distin-

guished visitors. Our students share in the rewards by hearing about the latest research in a given field and having the opportunity to question the speakers.

Praxair is also working with the Department to revitalize our process control lab and course. Praxair engineers have visited the control lab and are developing plans to modernize its instrumentation. According to the plan, the process control lab will expose the students to a whole range of control instrumentation, including state-of-the-art PLCs. In parallel with the laboratory improvements, control experts at Praxair are working with CE faculty to revise the courses offered in process control. Current plans call for two courses: one that provides an introduction to the field, followed by an elective that will teach advanced concepts and methods.♦

## GAANN Fellowships

For the past three years the Department has been awarding Graduate Assistantships in Areas of National Need (GAANN) fellowships. This has been possible through a grant from the U.S. Department of Education which will expire this fall. The School of Engineering also contributed matching funds. The theme of these fellowships has been "Environmentally Benign Chemical Processes and Products." Each fellowship provided a stipend for the awardee to conduct graduate research, along with a supervised teaching experience. The program has been very successful, with a total of eight GAANN fellowships awarded.

In addition to the stipends, the fellowship program has funded the travel for the fellows to attend national conferences and present papers describing their research efforts. It has also provided the funds for the development of a new experiment for the undergraduate laboratory sequence. This experi-

ment involves study of the catalytic decomposition of oxides of nitrogen. The development of this experiment was tied to the fellows' supervised teaching experience. When first appointed, the fellows were assigned as teaching assistants for the chemical engineering laboratory course sequence. During this time, they also worked on the design of the new experiment, emphasizing its environmental theme. After they gained familiarity with the laboratory courses and experience as teaching assistants, the fellows were assigned full course responsibility for one of the laboratory courses. This valuable experience helped to prepare them for possible careers in education, with an emphasis on environmental issues.

While federal funding will end this fall, the Department will continue to administer the program to the remaining fellows through their graduation.♦

**Shape the Future of Chemical Engineering Education at  
UB!**

**Let us know your view of the skills needed by practicing engineers (and how well we taught them to you).**

**Please complete the survey at**

***[www.cheme.buffalo.edu/curriculum](http://www.cheme.buffalo.edu/curriculum)***

## Sriram Neelamegham Receives NIH Award

**Sriram Neelamegham**, Assistant Professor of Chemical Engineering, recently received an RO1 Award from the National Institute of Health to examine the mechanisms that regulate the adhesion of neutrophils (a major type of white blood cells) to endothelial cells (a cell type that forms the innermost layer of blood vessels).

The focus of the project is on three families of adhesion molecules that are expressed on the neutrophils and endothelial cells, namely the selectins, integrins and immunoglobulins. The study of these receptors is thought to be important since neutrophil-vascular endothelial cell interactions mediated by these molecules is a critical step that controls the response of neutrophils during bacterial infection and inflamma-

tory disease. It is currently felt that controlling the adhesion process by the development of specific inhibitors to the selectins, integrins and immunoglobulins may generate a new family of anti-adhesive therapy that will find application in a variety of diseases. The funded work examines the structure-function relationships that guide the cell adhesion process under physiologically relevant conditions. It also places emphasis on understanding how hydrodynamic forces found in the vasculature modulate the function of these receptors.

Aspects of the work that deal with the nature of the selectin-ligand are being conducted in collaboration with Dr. Khushi L. Matta, Cellular and Molecular Biophysics, Roswell Park Cancer Institute. ♦

## AIChE's "Bullmobile" Finishes Third

UB students took third place in the annual Chem-E-Car Competition held in November 2000 at the American Institute of Chemical Engineers' national convention in Los Angeles.

UB's entry, the "Bullmobile," competed against 11 other teams from around the nation.

The competition stipulated that a car, powered solely by a chemical reaction and designed within certain criteria, was to travel a given distance while carrying a given load. The distance and load were randomly determined within preset ranges just prior to the start of the competition. Teams were also judged on a

poster presentation and the safety merits of each entry.

The UB team had gained the right to participate in the nationals by winning the AIChE's regional match hosted by the university last spring.

Members of the "Bullmobile" team were **Larry Lenz, Mark Przybylski, Scott Boyle, Gary Gomalak, Brian D'Amico, Michael Wolbert, Janine Horn, Luong Luu, Jian Yu and My Luu.**

**Dr. Mark Swihart** is the Faculty Advisor for UB's section of the AIChE. ♦

## CE Receives Mission Review Grant from SUNY

Through a competitive process, our Department was selected to receive a prestigious three-year \$180,000 grant from Albany to be used for enhancing its graduate recruiting efforts at the doctoral level. The grant money is being used to provide top-off fellowships for incoming and continuing students with the purpose of attracting and retaining the best possible doctoral candidates.

The impact of the Mission Review Grant is already significant. Our incoming class of doctoral candidates is the largest in recent years, consisting of 14 very gifted students. Another positive sign is the high acceptance rate of our doctoral-level admission offers, that approached 70% this year. We expect an even higher impact next year since we plan to advertise this opportunity to a wide spectrum of prospective doctoral students. ♦

## 12 Students Receive Chemical Engineering Awards

Twelve Chemical Engineering undergraduate students received awards at the School of Engineering and Applied Sciences graduation/convocation ceremony held on May 12, 2001 at UB's Alumni Arena.

They are:

- Gordon M. Clarke II** of Cato, *AIChE Outstanding Senior Award.*
- Daniel P. Fulcher** of Eden, *Society of Plastics Engineers, Buffalo Section Student Award.*
- Christopher S. Hunter** of Athol Springs, *Society of Plastics Engineers, Buffalo Section Student Award.*
- Sarah C. Karl** of Preble, *OxyChem Scholarship.*
- Kelly McLaughlin** of Kenmore, *AIChE Outstanding Junior Award.*
- Carla A. Ng** of Queens, *Allied Signal Scholarship.*

**Parag Patel** of Warsaw, *AIChE Outstanding Senior Award.*

**Martin P. Schaefer** of Buffalo, *National Electrical Manufacturers Association Scholarship, and Society of Plastics Engineers, Buffalo Section Student Award.*

**Sarah Schaub** of Rochester, *J.W. McLernon Scholarship.*

**Carol A. Schuster** of Avon, *OxyChem Scholarship.*

**Rainee Van Natter** of Buffalo, *AIChE Outstanding Junior Award.*

**Jian H. Yu** of Brooklyn, *Western New York Section of the American Chemical Society, Outstanding Senior Award.*

Congratulations to all on their dedication and hard work!♦

## Research Experience for Undergraduates

**Professor Ashish Gupta** successfully obtained funding from the National Science Foundation to support *Research Experiences for Undergraduates (REU)*. The purpose of the program is to provide summer-long projects to undergraduates in order to conduct a research activity full time under the supervision of a faculty member. The theme of these research projects is Environmentally Benign Processes and Products.

The competitive application process is open to students nationwide (although only U.S. citizens or permanent residents are eligible). Last year nine students participated in the program with projects being directed by **Professors Paschalis Alexandridis, Ashish Gupta, David Kofke, Carl Lund, Sriram Neelamegham, and Mark Swihart** all from Chemical Engineering, and **Professors James Jensen and Scott Weber** from the Department of Civil, Structural and Environmental Engineering. The NSF

grant provided the students with a \$2500 stipend for the summer, in addition to lodging and travel expenses. This year ten students are participating with projects being offered by **Professors Paschalis Alexandridis, Stelios Andreadis, David Kofke, Carl Lund, Lakis Mountziaris, Mark Swihart, and Carel J. van Oss**. The NSF stipend this summer is \$3500, in addition to covering lodging and travel expenses. Most of the participating students live in the residence halls on campus.

The program also involves tours and field trips to local area companies. This program includes a weekly series of lectures and discussions on the topic of Ethics in Research, conducted by **Professor Michael Ryan**.

The experience of both students and faculty in the program has been very positive.♦

Visit us on our website at:  
[www.cheme.buffalo.edu](http://www.cheme.buffalo.edu)

# AIChE Student Chapter Plans

By Nick Masiello, AIChE Student Chapter President

The UB AIChE Student Chapter is looking forward to an eventful and exciting 2001-2002 school year. The newly elected officers have a sound plan to increase club membership, as well as student/faculty interaction both academically and socially. The new chapter officers are Nick Masiello (President), Dustin Skare (Internal Vice-President), Barry MacLaughlin (External Vice-President), Lisa Wetzel (Treasurer), Leigh Vorreuter (Secretary), Matt Zimmer (Junior Rep.), and Rob Sawyer (Junior Rep). The club also looks to appoint dedicated members to new positions, provide a relaxed atmosphere for students and faculty to interact, and establish tradition and strengthen pride in the Chemical Engineering Department.

Some of the events the club has planned for the upcoming year are: bowling with the faculty, a golf tournament, student/faculty lunch meetings, bi-weekly happy hours, plant tours, the annual semi-formal with a student/faculty roast and awards ceremony, and the annual student conference in Reno, Nevada. At this year's conference the UB ChemE

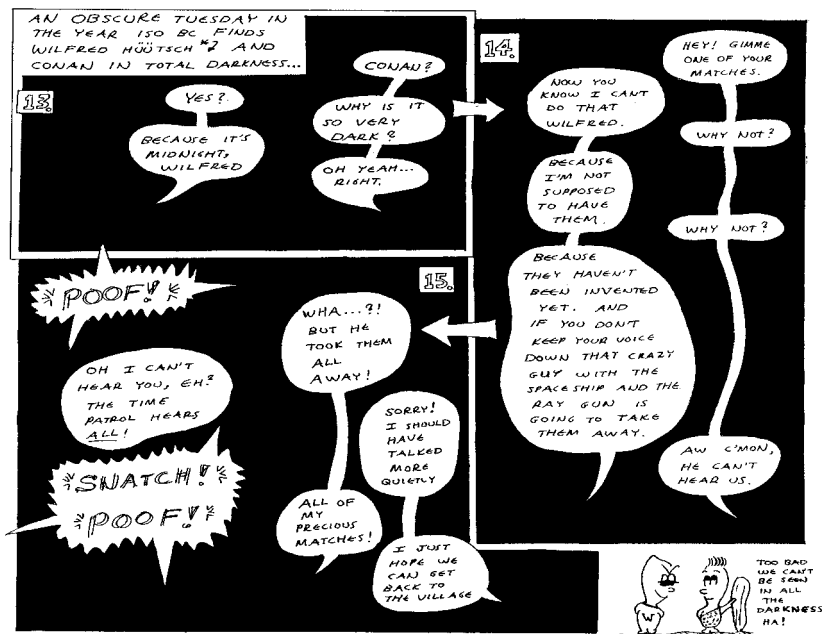
Car Team will compete for the \$2,000 first prize in the national competition with their electrochemically powered car.

The tutoring of Sweet Home High School Students, involvement with city school districts, and participation in the Adopt-a-Highway program will add to the club's community involvement.

This year's AIChE will pick up right where they left off, with further promotion of the club and the prestigious CE department within UB and at a national level. With a great student body, a committed faculty and chapter advisor, and an experienced e-board, the sky is the limit for the University at Buffalo's AIChE.

For more information, to pass on ideas concerning AIChE, or to volunteer to be a guest speaker or host a plant tour, contact Nick Masiello at [rounderz33@hotmail.com](mailto:rounderz33@hotmail.com) or Prof. Mark Swihart (faculty advisor) at [swihart@eng.buffalo.edu](mailto:swihart@eng.buffalo.edu) or (716) 645-2911 x2205.♦

## Elroy and the Big Technical Conference — Episode 4



\* EDITOR'S NOTE: PERHAPS WE RECALL THAT WILFRED HÜÜTSCH IS ELROY HUTCH'S GREAT, GREAT, . . . ., GREAT GRANDFATHER. THEN AGAIN, PERHAPS NOT.

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## *UB Career Planning & Placement Office Helping Alumni*

### **Need Engineers?**

UB's School of Engineering and Applied Sciences has partnered with the UB Career Planning & Placement Office to make connections between employers and engineering candidates. If your firm is in need of entry level or experienced engineers, feel free to utilize the Online Career Office for free! The Online Career Office allows you to post your part-time or full-time jobs and view resumes of candidates 24/7. You are also welcome to visit the campus for Career Fairs or On Campus Interviewing.

### **Job Searching?**

Are you thinking of a career change, searching for a new position, or contemplating graduate school? If so, you may utilize the services of the Career Planning & Placement Office. Specifically, the Online Career Office website also allows you to view and respond to job openings, take part in On Campus Interviewing and obtain assistance from our Meet a Mentor Volunteers.

Visit the Career Planning & Placement website at [www.ub-careers.buffalo.edu](http://www.ub-careers.buffalo.edu) and/or contact **Melissa Ruggiero**, the Engineering Career Counselor at ([mrugg@buffalo.edu](mailto:mrugg@buffalo.edu)), or call her at (716) 645-2232 ext. 117. ♦

## **PRAXAIR Seminar Series**

The following seminars will be presented as part of our **Praxair Seminar Series**. All seminars are held at 3:30 pm in Room 206 Furnas Hall on UB's Amherst Campus. Watch our website and next newsletter for additional seminars for the Fall semester as they are scheduled.

**September 5, 2001**

**Howard Brenner**

Department of Chemical Engineering, Massachusetts Institute of Technology  
"On the Molecular and Convective Transport of Volume in Liquids"

**September 12, 2001**

**Daniel A. Hammer**

Department of Bioengineering, University of Pennsylvania  
"Dynamics of Cell Adhesion Underflow: From Molecular Properties  
To Collective Cell Interactions"

**September 26, 2001**

**Robert Pelton**

McMaster Centre for Pulp Paper Research, McMaster University  
"The Strength of Polymer-Induced Colloidal Flocs -  
An Unsolved Problem"

## *Alumni News ~ What are they up to now?*

**Todd J. Burns** (BS, 1989) is a Patent Attorney for the firm of Foley & Lardner in Washington, DC. He lives in Arlington, Virginia and can be reached at (202) 672-5583.

**David Conlin** (BS, 1965) and **George Neuner** (BS, 1965) are pleased to announce the successful merger of their Intellectual Property Law Firm, Dike, Bronstein, Roberts & Cushman, with the lawfirm of Edwards & Angell, LLP. Both firms were founded in the 1800's. The resulting firm has offices in Boston, New York, Providence, Hartford, Short Hills, New Jersey, Palm Beach and Fort Lauderdale, and practices in all areas of the law. George and Dave head the firm's Intellectual Property Practice Group in the Boston office. Both of them would be delighted to hear from some of their classmates.

**Martin Doster**, PE (BS, 1982) is currently the Regional Engineer for Hazardous Waste Remediation for the Buffalo office of the New York State Department of Environmental Conservation.

**Mehmet Alaittin Hastaoglu** (PhD, 1977) is Professor and Chair of the Chemical and Petroleum Engineering Department at the United Arab Emirates University.

**Rachel (Gonas) Kaiser** (MS, 1996) is currently working at Hatch Associates. Rachel also has a second full-time job taking care of her daughters, Layla and

Madeline.

**George Kosanovich** (PhD, 1975) was President of Stella-Jones, Inc., (a company dealing in pressure treated lumber) until May 2001. Currently he is on the Board of ARC Resins (part of Tembec), and is a consultant for Grant Forest Products.

**Janet (Liebl) Maliga** (BS, 1978) is currently working as a math/science teacher at Good-Will Hinckley in Maine.

**Ashutosh Sharma** (PhD, 1988) is a Professor of Chemical Engineering at the Indian Institute of Technology, Kanpur, India.

**Peter Smirniotis** (PhD, 1994) is currently an Associate Professor of Chemical Engineering at the University of Cincinnati. Peter is the recent recipient of a Young Investigator Award (US Army), Science for Peace Programme Award (NATO, Belgium), and a BP Faculty Excellence Award.

**Palligarna T. Vasudevan** (MS, 1984) is an Associate Professor of Chemical Engineering at the University of New Hampshire. He recently received the Jean Brierley Award for Teaching Excellence and the Excellence in International Engagement Award from the University of New Hampshire.♦

## Moving?

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We would like to hear from you to know what you've been up to since graduation! Please take a few minutes to fill out the form below and mail it to us, or reply via the web at: [www.cheme.buffalo.edu/alumni](http://www.cheme.buffalo.edu/alumni). We'll put your news in future issues of our newsletter, unless you indicate otherwise. (Please check one of the boxes below to indicate your preference).

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UB CE degree(s) and years: \_\_\_\_\_

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