



Message From The Chair — Carl R. F. Lund

You'll read elsewhere in this issue that Professor Eli Ruckenstein has been honored with another of the most prestigious awards an engineer can receive. He previously won the U. S. Medal of Science and was elected to the National Academy of Engineers (NAE), now he's been selected from among the members of the NAE as the recipient of its Founder's Award. So how does all of this impact the Department of Chemical & Biological Engineering (CBE)? You might think that its only value to the department lies in its "propaganda value." It's true, we can plaster it all over our web site, feature it in our department newsletter, mail out special announcements about it, and publicize it in every way we can think of (and we do/will!). I'd like to argue here, however, that that is a minor benefit.

The primary benefit is that each of us on the faculty gets the opportunity to observe, day by day, the underlying reason why Eli has been so honored. In so many ways, Eli Ruckenstein is an inspiration and a role model for every faculty member in CBE. He'll be celebrating his 80th birthday later this year, and he hasn't lost any of his drive or sheer enthusiasm for engineering and chemistry knowledge. I marvel at his sustained productivity over the decades, and my colleagues in the department tell me the same. He's become the poster child (at nearly 80!) for the culture of the Department of Chemical & Biological Engineering.

"So what is that culture?" you may ask. I think the Department of Chemical & Biological Engineering at UB has a very special culture comprising three major components: a drive for the generation of new knowledge, excellence in teaching, and cohesiveness. Eli's the obvious example for the first element, but he's not alone. Over my years in the department I've seen, among others, Sol Weller, Paul Ehrlich, and Bob Good retire. All of them were actively engaged in research and the generation of new knowledge right up to the time they retired. They had fresh ideas and actively sought funding to pursue those ideas, and many of you reading this newsletter benefited as a consequence. This group set (or in Eli's case is still setting) a standard that has become a part of our culture: actively engage in research for your *entire* career.

There's a second group of now-retired faculty who shaped our culture. Among them I'd include Don Brutvan, Ken Kiser and Tom Weber. They were dedicated educators who worked hard to achieve excellence in their teaching. I recall that just a few years ago, before so many of these founding fathers retired, there were more winners of the SUNY Chancellor's Award for Teaching Excellence in CBE than there were in the rest of the

school of engineering combined! It's the legacy of this group that our faculty today are not content with "covering the material," but instead they invest the time and effort to be outstanding teachers, and once again, most, if not all, of you who are reading this are the beneficiaries.

The other component of our culture is the cohesiveness of our faculty. This department is a chairperson's dream; the faculty pull together and work well with each other. I know a lot of people in a lot of other chemical engineering departments, and I can honestly say that there is no other group that I'd prefer to be a member of. The faculty of the Department of Chemical & Biological Engineering at UB is a great group to work with. It's apparent to anyone who visits the department. Countless seminar speakers and faculty candidates have remarked to me at the end of the day that they can sense our spirit of collegiality.

I'm proud that our faculty is research active from top to bottom and that they take their responsibilities as teachers so seriously. There isn't any "dead wood" that needs to be pruned from our branches. Departments that are uniformly strong from top to bottom in *both* research *and* teaching, and that remain friendly and collegial are rare indeed. I'm proud to count our department as one that is and does.

Those of you who've sat in one of *my* classes may recall that I occasionally go off on a tangent and forget what I was talking about at the point of departure. I just remembered that I started off attempting to honor Eli Ruckenstein. When I started this departmental newsletter, I was determined not to use it to ask for money, but I'm going to break my own rule (hopefully just this once). You see, with the culture that exists now in our department, I figure that Eli's going to keep doing research for a long, long time, and for his 80th birthday I'd really like to give him a new, state of the art laboratory to work in over the next decade or two. So, if any of you have a few million that you don't know what to do with, give me a call....

Point added in proof: You'll also find an article in this issue about Mike Ryan's promotion. Remember all those comments above about our culture of excellence in teaching? Mike's done a fantastic job as associate dean, especially (working with Bill Wild) in the area of freshman retention and easing the transition from high school to college. I'm really excited that he's now vice provost and can now impact the entire university in the same positive way he's impacted engineering.

I'd better quit now; I feel another tangent coming on!▪

Dr. Eli Ruckenstein Receives Founder's Award from National Academy of Engineering

Dr. Eli Ruckenstein, SUNY Distinguished Professor of Chemical & Biological Engineering and the first full-time professor in the SUNY system to be elected to the prestigious National Academy of Engineering (NAE), has been honored with the organization's Founder's Award. This award is presented to outstanding members who have upheld the ideals and principles of the NAE and who are "the elite of the NAE," individuals who have proven their worth not only to the engineering community throughout the years, but also through their dedication to the organization.

Widely seen as one of the world's most influential chemical engineers, Ruckenstein is the first UB professor to receive the coveted National Medal of Science, which is considered to be the US equivalent to the Nobel Prize.

Professor Ruckenstein conducts both theoretical and experimental research that not only has changed scien-

tists' understanding of the fundamental phenomena of chemical processes, but also has led to the development of enhanced research methods and new materials. He has made groundbreaking contributions in areas including transport phenomena, the stability of nanosized liquid and solid films and thermodynamics of complex systems. He pioneered the theoretical and experimental treatment of the stability of supported metal catalysts, developed the first kinetic theory of nucleation, theories for colloidal forces and theories in molecular thermodynamics. He also invented new synthetic methods for preparing polymeric membranes and polymeric catalytic particles. He has published more than 800 papers and has received numerous awards.

Ruckenstein received his bachelor and doctoral degrees in engineering from Polytechnic Institute in Bucharest, and has been a UB faculty member since 1973. ■

Dr. Michael E. Ryan Promoted to UB Vice Provost & Dean of Undergraduate Education

Following a national search, **Dr. Michael E. Ryan** has been appointed to the position of UB Vice Provost and Dean of Undergraduate Education.

Addressing Ryan's appointment, UB Provost Satish K. Tripathi said that he "will lead university-wide efforts to ensure that undergraduate students are provided an excellent educational experience and have appropriate opportunities to engage in truly distinctive research, scholarly, creative and public-service activities."

Tripathi continued by saying, "During Professor Ryan's tenure in the School of Engineering and Applied Science, he has worked tirelessly — through providing innovative academic programming — to promote the success of undergraduate students."

"His understanding of the entire undergraduate enterprise and the undergraduate experience, along with his first-hand knowledge of how faculty-guided research and creative activities enhance undergraduate education, make him

ideally suited for this position."

Professor Ryan joined UB's Chemical Engineering Department in 1976. He served as Director of the Business-Industry Affiliates Program in the New York State Center for Hazardous Waste Management at UB from 1988-1994.

In 1995, Ryan was appointed Associate Dean for Student Services in UB's School of Engineering & Applied Sciences. He was responsible for matters relating to undergraduate engineering curriculum, recruiting, admissions, advisement, retention and articulation, as well as student clubs, outreach and such activities as open house and commencement.

Dr. Ryan's research activities have been in the areas of polymer science and engineering, plastics processing, rheology and non-Newtonian fluid mechanics. Ryan received his Bachelor's, Master's and Doctoral degrees in Chemical Engineering from McGill University. ■

CBE Department Gets New Web Site

The Department's web site has received a much-needed makeover! The philosophy of the last web site was "We know nothing about web design, so let's make it simple". This time we've had help, from UB's Creative Services Office. They're professionals at web design and implementation, and indeed it shows. The new site is not only more pleasing to look at, but it is better organized and easier to navigate. It also highlights many of the attractive features of the Department, and gives visitors a better sense of the opportunities and activities found here.

When the previous site was launched we made a push to get input from you, our alumni, on a range of issues. We look to you for guidance regarding design and implementation of our educational programs, and we also count on you to provide advice to our undergraduates. With the renewal of our web site, we take this occasion to remind you of how important your input is to us. Visit the site, where you can find pages to:

- give us your feedback about the education you received here. This information is important to our

process of continuous improvement of our degree programs.

- write a paragraph or two about what your job is like. We collect these stories to paint a picture for undergraduates and prospective majors of what it is like to be a chemical engineer.
- tell us of any news you have – anything you want to share with us and your fellow alumni – and we'll post it to the site or include it in the next newsletter.
- send us your ideas or opinions about how to improve the site further.

We hope you enjoy the new site, and look to it as another point of pride to take in your alma mater.

As of press time, the site is almost ready to go live. We expect that it will be up and running at about the time you receive this newsletter, or shortly afterward. You can find us at www.cbe.buffalo.edu. ■

Donald Visco Receives NSF PECASE Award

Dr. Donald P. Visco, Jr. (BS 1992; PhD 1999), has received the prestigious *Presidential Early Career Award for Scientists and Engineers (PECASE)* Award from the National Science Foundation. This award was presented to Don at a White House ceremony in Washington, DC.

Eight federal departments and agencies annually nominate engineers and scientists at the start of their careers whose work shows the greatest promise to benefit the nominating agency's mission. The Department of Energy nominated Don after awarding him the Early Career Scientist and Engineering Award through the National Nuclear Security Administration Office of Defense Programs. Don was one of only 57 recipients nationwide honored for displaying exceptional potential for leadership early in their scientific careers. In conjunction with collaborators from Sandia National Laboratories, Don

has designed the "Signature" molecular descriptor, which describes and quantifies a molecule's structure. According to Don, "Signature is simply a way to encode and describe the local environment of an atom in a molecule so that we can understand its structure." Some of Don's current projects using "Signature" include designing a new refrigerant to replace ozone-depleting ones, and the potential creation of a drug to treat Alzheimer's.

Don is currently an Associate Professor At Tennessee Tech University. To read more about his award, please go to: www.tntech.edu/publicaffairs/rel/visco04.html.

This award is the highest honor bestowed by the U.S. government on early-career scientists and engineers. Congratulations Don! ■

See What You Can Win!

We'd like to try to give our newsletter a little more PIZZAZZ! We thought we'd start by giving it a new, catchy & creative name. But then we thought that since this is YOUR newsletter, YOU should be the one to name it. So we've decided to have a "*Name that Newsletter*" contest!

We even have great prizes for the person who comes up with the winning name. No, it won't be a six-figured salary working in the Trump organization, but this is something that even 'the Donald' doesn't own — a limited-edition Elroy coffee mug!, AND a free lifetime subscription to the department's newsletter. OK, so the newsletter is already free, but can you think of a better way to enjoy reading future issues of the newsletter that YOU named than to be sipping your favorite beverage in your very own Elroy mug?!

I'm sure you're saying to yourself, "*Quick, tell me—how do I enter?*" Well, it's really quite simple. Just email your entries to innes@eng.buffalo.edu (please be sure to type in "Name that Newsletter" in the subject line of the email). All entries will be anonymously submitted to a very special panel of judges who will select the best name. Remember to include your name and full mailing address so that we know where to send your prize. All entries should be received no later than April 1, and you may enter as many times as you'd like. (Decision of the judges is final.)

So, come on now, don't delay. Get those entries in here ASAP!

(*Note:* You may have noticed that Elroy does not appear in this issue. That's because he's quite busy working on his mug.)▪

Alumni News

Gregory Stevenson (BS 1996; MEng 2000). Greg is currently working as a Six Sigma Black Belt at Praxair, Inc., in Tonawanda, while pursuing an MBA degree through the UB School of Management's Executive MBA (EMBA) Program. Greg and his wife, Susan, became proud parents of their first child, Victoria, on November 20, 2003. According to Greg, this has rapidly developed their "domestic engineering" skills! Aside from work and home responsibilities, Greg mentors a student at Holmes Elementary School, and regularly participates as an electric bass-

ist in the music ministry at St. Christopher Church in Tonawanda.

Suddha Talukdar (BS 1998; MS 2000; PhD 2004). Following graduation, Suddha began working as a Senior CAD Engineer at Intel at their Hillsboro, Oregon location. Suddha says that his long association (almost 10 years) with the department was fond and memorable for him. He states, "Graduate school life will always be remembered for the great professors, friends and colleagues that I worked with."▪

Faculty News

Congratulations to **Dr. Mark T. Swihart** on his recent promotion to Associate Professor.▪

* * * *

This newsletter is published to keep in touch with our alumni. We would love to hear from all of you; keep us up-to-date on your current job, research, global location, grants, family status — or anything else you find newsworthy. Provide us with questions, comments, or brainstorm ideas for upcoming issues. See the form on the last page of this newsletter, visit our website at www.cbe.buffalo.edu, or email us. We're waiting to hear from you!

Graduate Research Symposium also Serves as "Homecoming"

Our Annual Graduate Research Symposium was held on October 20, 2004 in the Chemical & Biological Engineering Department.

This event began with a special seminar given by one of our own alumni, **Donald P. Visco, Jr.** Don, Associate Professor in the Chemical Engineering Department at Tennessee Technological University and a recent recipient of the NSF PECASE Award, spoke about "Solving the Inverse-QSAR Problem Using the Signature Molecular Descriptor."

Following the seminar, our own graduate students presented a poster session showcasing their research. Awards for the top three posters went to: First Place—**Georgios Karanikolos** (with P. Alexandridis and T.J. Mountziaris), for a poster entitled, "Template Synthesis of Zero-

and One-Dimensional Semiconductor Nanocrystals," Second Place to **David J. Geer** and **Daniel D. Swartz** (with S.T. Andreadis), for their poster, "Controlled Delivery of Keratinocyte Growth Factor Accelerates Healing of Wounds in Transplanted Engineered Skin," and Third Place to **Di Wu** (with D.A. Kofke) for her poster entitled, "Understanding Phase-Space Overlap in Free Energy Calculations."

All posters presented were very well done, making it difficult for the judges to reach a decision. The event was topped off with a wine and cheese party giving the students, faculty and guests an opportunity to socialize.

Special thanks to Drs. Jeff Errington, Mattheos Koffas, and Manolis Tzanakakis for organizing this event. ■

Moving?

Don't forget to give us your new address so you won't miss an issue.

Name: _____

Degree(s)/Year(s) Graduated: _____

New Address: _____

Mail your address change to: Newsletter
Department of Chemical & Biological Engineering
State University of New York at Buffalo
307 Furnas Hall
Buffalo, NY 14260-4200



University at Buffalo

The State University of New York

Department of Chemical & Biological Engineering
Clifford C. Furnas Hall
Buffalo, NY 14260-4200

Phone: (716) 645-2911
Fax: (716) 645-3822
www.cbe.buffalo.edu

✂

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.cbe.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).

Name: _____

Address: _____

UB CE degree(s) and years: _____

Spouse's Name and Children: _____

News/Comments: _____

Please return to: Alumni News
Department of Chemical & Biological Engineering
University at Buffalo
307 Furnas Hall
Buffalo, NY 14260-4200

Yes, you may print my news in a future issue.
 No, I prefer you don't print any information about me in future issues.