

Dr. Danny Edie Retires in December

After 30 years of dedicated research and academic work, Dr. Danny Dale Edie is retiring from the Chemical and Biomolecular Engineering Department at Clemson University.

After receiving a B.S. in Chemical Engineering from Ohio University in 1965, Dr. Edie proceeded to work for NASA as a Testing and Operations Engineer until 1969, the same year he received an M.S. in Applied Mathematics from the University of Toledo. In 1972, he received a Ph.D. in Chemical Engineering from the University of Virginia and then worked for Celanese Corporation as a Senior Research Engineer. After 3 years with Celanese, Dr. Edie joined the faculty of Clemson's Chemical Engineering Department in 1975.

Dr. Edie served as an Assistant Professor until 1977 when he was promoted to Associate Professor. In 1982, he was again promoted to a full Professor. From 1986 to 1987, Dr. Edie assumed the role of Interim Associate Dean of the College of Engineering. He was appointed the Dow Chemical Professor of Chemical Engineering in 1989.

Dr. Edie accepted the position of Chairman of the Department of Chemical Engineering from 1994 to 1995 and, from 1998 to 2003, he served as the Director of the Center for Advanced Engineering Fibers and Films.

Throughout his academic career, Dr. Edie served as a consultant for E.I. Dupont, Dow Chemical, Hoechst-Celanese, Exxon, Coats and Clark, Kimberly-Clark, Fluor Daniel, and Firestone. He has also lectured at two international universities: Universidade Da Beira Interior, in Covilha, Portugal, and Chungnam National University in Taejon, Korea.



Dr. Edie holds memberships in the American Institute of Chemical Engineers, the American Chemical Society, and the American Carbon Society.

Research has always been a crucial part of Dr. Edie's career. His research interests include composite materials, polymer processing, and rheology.

With over 55 referred journal publications, 120 conference proceedings, and 6 patents, Dr. Edie has made himself a leader in the chemical engineering field.

Dr. Edie has also organized and chaired a number of workshops and conferences throughout his career. Furthermore, Dr. Edie has presented research seminars to graduate students and faculty at a multitude of universities worldwide. He has presented at UVA, Georgia Tech, USC, Auburn, NC State, University of Bath (Bath, UK), and Shinshu University (Nagano, Japan), just to name a few.

While at Clemson, Dr. Edie has graduated 12 doctoral students and 35 masters students. In addition, he has assisted with new course development of courses in polymeric Composite Materials, Polymer Processing, Finite Element Analysis, and Engineering Polymers.

Dr. Edie has also received numerous awards including Clemson Alumni Award for Outstanding Achievement in Research, McQueen Quattlebaum Faculty Achievement Award, and George D. Graffin Lectureship in Carbon Science and Engineering.

Dr. Edie's accomplishments and contributions to Clemson University and the field of chemical engineering are remarkable.

Dr. Edie intends on staying on in the ChBE department as an emeritus faculty member and continue his research.

Note from the Chair

As you can probably tell by reading the articles in this newsletter, much has been going on in the Department so far this year from implementing the Department's name change, to transitioning to the new curriculum, to hiring Prof. Anthony Guiseppi-Elie, to going through ABET accreditation, to having Prof. Edie start the retirement process. However, it is amazing to me how the more things change, the more they remain the same. Chemical Engineering is still reputed to be the hardest major on campus, the seniors still spend seemingly interminable hours on lab and design reports, industrial recruiters still seek avidly to hire our graduates, our students are still successful in graduate and professional schools all across the country, and we still have the hardest working students on campus. Earle Hall is still the center of activity for chemical engineering, but it seems to grow smaller with time as the number of activities in research and education expand.



ABET Visit

From October 9th to October 11th, the Accreditation Board of Engineering and Technology (ABET) visited the Chemical & Biomolecular Engineering Department. Accreditation by ABET is very important to this Department because it guarantees that the current program meets certain standards set forth by industry and the profession as a whole. According to ABET, "graduation from an accredited program signifies adequate preparation for entry into the profession."

The visit served three main purposes: to get an accurate representation of the academic and work environment that cannot be described sufficiently in a written document, to assess strong and weak points of the program, and to examine, in more detail, information that was submitted by the Department.

During the visit, many topics were discussed, but the strengths of the Department were hard to ignore. The visitor specifically noted that the ChBE strengths include an outstanding faculty, high quality undergraduate program, excellent advising and monitoring, good undergraduate labs, diverse experiments, nice classrooms, and a plethora of oral communication opportunities available to students. These strengths provide an outstanding environment for students to develop academically and become better prepared for industry and the profession.

The main issue raised during the ABET visit was that the four program educational objectives that are published on the Department's website, must have input from our four constituencies: current students, alumni, the professional advisory board, and employers of alumni and co-op students. The program objectives are four fundamental goals that all graduates should be able to accomplish within three to five years after graduation. The program objectives currently read:

THE UNDERGRADUATE PROGRAM IN CHEMICAL ENGINEERING INCLUDES A BLEND OF CLASSROOM AND LABORATORY INSTRUCTION TO PREPARE STUDENTS FOR PROFESSIONAL PRACTICE AND LIFELONG LEARNING IN OUR DISCIPLINE. OUR GRADUATES WILL BE ABLE TO SUCCESSFULLY ENGAGE IN CHEMICAL ENGINEERING PRACTICE OR POST-GRADUATE EDUCATION; APPLY THEIR KNOWLEDGE AND USE MODERN CHEMICAL ENGINEERING TOOLS TO DESIGN CHEMICAL PROCESSES AND IDENTIFY, FORMULATE, AND SOLVE CHEMICAL ENGINEERING PROBLEMS; EDUCATE THEMSELVES AS KNOWLEDGE AND TOOLS ADVANCE; AND FUNCTION EFFECTIVELY ON TEAMS, COMMUNICATE EFFECTIVELY, AND SERVE SOCIETY THROUGH THEIR PROFESSIONAL CONTRIBUTIONS.

Although filling out surveys can be sometimes annoying, it is very important that our alumni provide the Department with their input on program goals and outcomes. That way the department can serve the next generation of students as well or better than the previous ones.

For the past 46 years, the Chemical Engineering program at Clemson has been accredited by ABET. Obviously, this commitment to excellence is something that this Department and the university hold very highly. We will be seeking more input from our alumni in the coming year - check future newsletters for more details.

Dr. Guiseppi-Elie to Join Faculty

Dr. Anthony Guiseppi-Elie has been announced as the newest faculty member to join the Chemical & Biomolecular Engineering Department. He will serve as the Dow Chemical Professor, as well as the Director of the Center for Bioelectronics, Biosensors, and Biochips beginning in January 2006. He also serves as the President and Scientific Director of ABTECH Scientific, Inc., a near-patient biomedical diagnostics company in Richmond, Virginia.

Dr. Guiseppi-Elie received his Doctor of Science in materials science and engineering from MIT, his Masters of Science in chemical engineering from the University of Manchester Institute of Science and Technology, and his Bachelor of Science in both Analytical Chemistry and Applied Chemistry from the University of the West Indies.

For over 15 years, Dr. Guiseppi-Elie has worked on intrapreneurial and entrepreneurial industrial research and development before becoming a full professor at Virginia Commonwealth University in 1998. Companies that he has done R&D for include W. R. Grace and Company, Molecular Electronics Corporation, Ohmicron Corporation, and ABTECH Scientific, Inc.

His research interests include bioelectrochemistry and bioelectronic devices, implantable bioactive hydrogels, in vivo biosensors, DNA biochips for biomedical diagnostics and prognostics, and high-throughput DNA/RNA screening and analysis. Dr. Guiseppi-Elie serves as the editor of the Biochips Handbook and also serves on the editorial boards for the *Journal of Bioactive and Compatible Polymers*, *NanoBiotechnology*, and *Your World*. In 1999, he was named the SEAM award recipient for his “pioneering work in taking conducting polymers to bio-applications,” and in 2003, he received the “Pioneers in Biomedical Engineering” Lecture Award from Purdue University. Dr. Guiseppi-Elie was also named a fellow of the American Institute for Medical and Biological Engineering (AIMBE) just this year.

Dr. Guiseppi-Elie will teach courses in material science and engineering, biomolecular engineering, biosensors, and biomedical nanotechnology. The Department of Chemical & Biomolecular Engineering welcomes Dr. Guiseppi-Elie, and his expertise, to Clemson.



ChBE Enrollment Trends

In the last year, the Chemical & Biomolecular Engineering department graduated 10 Ph.D. students, the largest number of all the departments on campus.

This group makes up 8% of all Ph.D. graduates for the entire university. This is the largest number of Ph.D. students to ever have graduated from the ChBE department in one year.



AIChE Shrimp Boil

Beginning in the 1970's, the annual Shrimp and Beer Bust, better known today as the Shrimp Boil, served the purpose of giving Chemical Engineers a reason to get together socially. Although the Shrimp Boil is still a social gathering, it is also a way for students to network with one of the largest privately held textile and chemical manufacturers in the world.

Nowadays, Milliken sponsors this annual AIChE event to begin the recruitment process. Since Milliken ranked 16th in Fortune Magazine's Top 100 Companies to Work for List in 2004, both students and Milliken have a vested interest in this event. Milliken meets great ChBE students and students learn more about employment opportunities at Milliken.

"Milliken has attributed much of its success to a quality process with associate involvement at all levels and its continuous education process, creating an environment that allows every associate to reach his or her full potential." It is a mindset like this that students are drawn to when looking for employment.

In any case, the AIChE Shrimp Boil is an event that many remember fondly.



The Dukes of Earle

This semester, the graduate students formed the first ever ChBE graduate flag football team. Lead by James Eickhoff, the Dukes of Earle had quite a season. Although they were up against mostly undergraduates, their tenacity was apparent. Captain James Eickhoff said, "We started the season believing we would go undefeated, then we learned we were playing flag football, not tackle. We had to struggle against teams that were younger than us; we had to struggle with bringing the team together as a team."

"As our season progressed, we came together as a team, and as our season nears the end, our team changed its point of view. It's not about winning, it's about what you give on the field that counts the most. And our team has given its all to represent the Chemical & Biomolecular Engineering Department," continued Eickhoff.

Playing against teams such as That Lovin Feelin and Bad Company, the Dukes of Earle had to bring everything they had to the field. And they did.



Chemical & Biomolecular Engineering Family Album

AIChE Annual Shrimp Boil

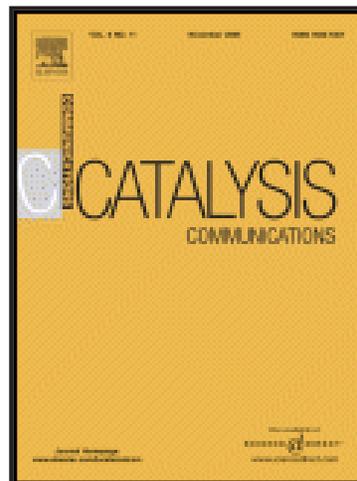


Homecoming Drop-In



Goodwin Named Editor

Dr. James G. Goodwin, Jr. was recently named editor of *Catalysis Communications*, an Elsevier journal. *Catalysis Communications* states that it “aims to provide rapid publication of important short papers across the broad spectrum of catalytic research covering homogeneous, heterogeneous and enzymatic catalysis.” These short papers are referred to as letters; “brief reports of significant, original and timely research results which warrant rapid publication.”



New Center at Clemson

With the hire of Dr. Anthony Guiseppi-Elie, a new center will be brought to Clemson University, the Center for Bioelectronics, Biosensors, and Biochips. It was initially created at Virginia Commonwealth University by Dr. Guiseppi-Elie.

As the center's director, Dr. Guiseppi-Elie says, “the Center for Bioelectronics, Biosensors, and Biochips is a university center for molecular bioanalytics and biometrology that operates as an Industry/University Cooperative Research Center. “ Since Dr. Guiseppi-Elie's primary interests deal with human health, this was an ideal center to start.

The five main areas of research are 1) *in vivo* biosensors - implantable biosensors for trauma monitoring, 2) cell-based sensing, 3) electronic NOSE - for trauma monitoring, 4) brain tumor biochips, and 5) bioelectronic devices and bioelectrochemistry.

According to Dr. Guiseppi-Elie, “the center focuses on the development of platform technologies that are of mutual interest to the industrial consortium members and faculty while providing education and training opportunities for science, technology, engineering, and mathematics oriented high school students, science teachers, undergraduates, graduate students, and post-doctoral trainees.”

If you would like to learn more about the Center for Bioelectronics, Biosensors, and Biochips, please visit <http://www.biochips.org/>.



We're #4 in the Nation

In the October 31st issue of *C&E News*, it was reported that Clemson ranked fourth in schools spending the most on Chemical Engineering R&D. Clemson fell behind only MIT, NC State, and Penn State. Over 11 million dollars were spent in 2003 for Chemical Engineering R&D at Clemson, which was a 33.3% increase from 2002. Clemson has increased its spending 19.6% over the ten year span of the study, from 1993 to 2003.

Please Mail Card Enclosed

The importance of the card enclosed is simply to create an email list to notify alumni of upcoming events and to keep track of where Clemson ChBE alumni are in their careers. If you would prefer not to submit your work email address, submit your personal email address. If you would rather not share an email address, please mail the card back to let us know where you are working. This will help with tracking employers of alumni.



We will not share your email address with the university or any other entity. Although not many emails are sent out, you will always have the option to no longer receive emails from the department.

We look forward to hearing from you!

Clemson University Department of Chemical & Biomolecular Engineering

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The enclosed envelope is provided for your convenience and in order to direct your gift to the appropriate address. If paying by check, please make your check payable to **Clemson University Foundation** and write **ChBE** on the **for** line. Thank you for your support.

Or make a contribution online at <http://www.ces.clemson.edu/chemeng/alumni.html>



Good old Earle Hall...Home to Chemical & Biomolecular Engineering for over 45 years!

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