



THE CHEMICAL ENGINEERING MAJOR

A Newsletter for Alumni and Friends of Chemical Engineering

Winter 2001

Volume 14, Number 1

Message From the Chair

In the last issue, we asked readers to give us their opinion on issues raised by speakers on the subject of the Future of Chemical Engineering at the most recent meeting of the Academy of Chemical Engineers. Many of you did. Here are some comments.

“In reference to “What in the world are chemical engineers doing?”, I believe that a vibrant core is essential. An engineer must understand the fundamentals. A child, with the right computer program can do engineering by pushing the right keys. An engineer needs to be observant, curious and able to understand how things work, so that he or she can make desired processes work.”

“In the latest alum letter, Dr. Dadyburjor asked what could be done differently within the ChE curricula. At DuPont, we have recently begun to use Six-Sigma techniques to make improvements in our manufacturing and work processes. I believe that this methodology is very powerful and that ChE grads coming into the work force well-trained in this would have a great advantage and be in demand. The Six-Sigma methods are very practical and well-proven to be very effective in the workplace.”

Jean Cropley, a long-time friend of the Department, and in whose honor Union Carbide Corporation sponsored one of the two “named” seminars of the department, sent a long email, abridged below:

“I enjoyed your recent edition of The Chemical Engineering Major, and especially your Message from the Chair. I particularly agree with your goal of keeping vibrant the core of chemical engineering and actively encouraging the specializations on the periphery.

“You may be interested in extracts from a letter I wrote to Ed Cussler in 1993, when he was President of AIChE and I was Chair of its Research Committee. He had just (informally) proposed some

West Virginia University

College of Engineering and Mineral Resources

revisions to the undergraduate chemical engineering curriculum that I disagreed with. My views were (and are) that an engineering education should prepare the student for a career of ~40 years or so by making it easy for him to assimilate new technologies as they arise. Here, in part, is what I wrote to him:

“ ‘In your comments to me, you have suggested that subjects like stoichiometry, transport phenomena (at least with currently available texts), and chemical thermodynamics be dropped from the curriculum in order to make room for technology courses like process safety and waste management. In effect, you advocate dropping course work in the fundamental disciplines that distinguish chemical engineering from other professions in order to embrace two technology subjects (as examples) that are of current importance and interest in industrial practice.

“ ‘I submit that it is critically important that universities give the highest priority to teaching those subjects at the undergraduate level that will give the student the greatest possible background in chemical engineering fundamentals, including precisely those subjects you would drop. It is difficult to see how an effective course could be developed in process safety, for example, if the professor could not assume a prior knowledge of these fundamentals. How could a student judge or calculate the probability of two-phase flow through a relief valve if he had little or no knowledge of fluid dynamics? How could he determine the potential heat release of a runaway reaction if he knew nothing about heats of reaction, kinetics, and any chemical equilibria that might limit the runaway? How could he work capably with a vapor-cloud dispersion model if he lacked the mathematical and computer skills to understand and use it wisely?

“ ‘I am no stranger either to process safety or environmental concerns, having spent most of my 40 years in the profession in hazardous process R/D, including several years in both the Bhopal and Seadrift ethylene oxide explosion investigations. ... Throughout most of my career, it has been critically important to be able to read and assimilate rapidly the relevant literature and internal reports for a new project. Invariably, it has meant falling back on fundamentals in order to learn new technology rapidly.

“ ‘My observation has been that well-educated engineers – that is, those with good groundings in mathematics and the fundamental disciplines of chemical engineering – can perform well within six months in almost any kind of new industrial assignment. Technology that is new to them – like current industrial practice in process safety

Department News

– can be learned as well or better on the job or in short courses as in the university at the undergraduate level. It is far more difficult to learn the fundamentals on the job. ...

“ ‘ I’m not against teaching technology in the undergraduate curriculum. The new engineer does need to graduate with a certain balance between fundamentals and technology that permits him or her to relate easily to a new job, whatever it may be. But it’s a matter of priorities – and I would tip the scales very heavily in favor of fundamentals at the expense of job-related technology, if something has to be left out.

“ ‘ Most of us took some courses as undergraduates that rapidly became obsolete and represented wasted time in our education. These should be weeded out at any review of the undergraduate curriculum. The following examples suggest that many technology courses become obsolete within an incredibly short time, measured against a working lifetime: ...

“ ‘In 1952, I studied ore beneficiation for the better part of a semester. We spent a lot of time on rock-crushers, particularly the Dodge and Blake Jaw Crushers. Hougen and Watson had brought out their trilogy several years before, but we studied rock crushing instead. Our time would have been better occupied with Hougen and Watson. ...

“ ‘My point is that we should aim to teach students to survive over a 40-year career by providing them with course work in fundamentals that will outlive current fads in education. If they have good backgrounds in mathematics and statistics, physics, chemistry, biology and biochemistry, transport phenomena, reaction kinetics and thermodynamics, and some derivative courses such as basic and special separations, reaction engineering, fluid dynamics, and catalysis and materials science, they will be well-equipped to perform well in any of the many industries served by chemical engineers. They will be able to assimilate the technology of almost any new job easily and rapidly. Further, they will be well-equipped to enter graduate school in any of the many disciplines of chemical engineering as well as medicine, environmental science and engineering, materials science and engineering, aerospace engineering, and so on.’

“Ed ultimately agreed with me and never formally proposed his changes to the Education and Accreditation Committee.”

If we receive additional responses, or responses to these, we will include them in our next newsletter before closing correspondence on this subject.

Galli Laboratory Recognition Ceremony

On October 4, 2001, we had over one hundred people in attendance for the Recognition Ceremony for the Alfred F. Galli Laboratory. The undergraduate Unit Operations Laboratory has been renamed for Professor Galli in honor of his contributions for over forty years. Provost Lang, Dean Cilento and department chair Dr. Dadyburjor spoke, as did Dr. J.E. Mitchell, President of the Academy of Chemical Engineers, and senior student Jason Gaspar. Taken with the spirit of things, the provost committed \$100,000 to the project.

Union Carbide Corporation Bannister Distinguished Lecture

On October 19, 2001, Dr. Madan M. Bhasin of Dow Chemical Company presented the Union Carbide R. Richard Bannister Distinguished Seminar entitled “Importance of Surface Science and Fundamental Studies in Heterogeneous Catalysis.” Dr. Bhasin is currently a Scientist with the Dow Chemical Company. Previously he was a Corporate Fellow with Union Carbide. Dr. Bhasin earned a B.Sc. degree in chemistry from the University of Delhi in 1958, and a Ph.D. degree in physical chemistry from the University of Notre Dame in 1963.

Dr. Bhasin has authored or co-authored approximately 20 publications in refereed journals, and holds 17 US Patents. He was co-editor of the book “Methane and Alkane Conversion Chemistry” published by Plenum Press in 1995. He has served as Chair of the I&EC Division of the American Chemical Society.

Dr. Bhasin received the 1995 Eugene J. Houdry Award in Applied Catalysis from the North American Catalysis Society. That same year, he received the Scientific Achievement Award from the ACS Kanawha Valley Section in West Virginia. In 1999, he received the ACS Award in Industrial Chemistry for his role in the development of nine generations of epoxidation catalysts used in the production of ethylene oxide and ethylene glycol, while working at Union Carbide’s Industrial Chemicals Group in South Charleston. AT the AIChE Annual Meeting held November 4-9, 2001 in Reno, Dr. Bhasin received the Institute’s Award for Industrial Practice. ¶ Union Carbide R. Richard Bannister Distinguished Seminar Series was established in 1994 to honor Richard Bannister’s distinguished association with the department and the university and is funded by Union Carbide Corporation.

Dow Donations to Galli Laboratory

Word has just been received that the Dow Chemical Company has pledged \$500,000 for the renovation of the Galli Laboratory. More in the next newsletter.

College News

CEMR Development Officer Leaving

Kathleen J. DuBois, the College's Development Officer, recently announced her intention to resign and start her own consulting company. In her five years at CEMR, Kathleen revamped development operations and made a positive impression for the college everywhere she went and with whoever she interacted. She will be missed!

University News

Personnel Changes

Shannon Sheehan joined us in August as Assistant Director of Technology Transfer. He's had a lot on his plate recently, as George Harker, his Director, resigned shortly thereafter, to take over the operation at Georgia Tech. A successor to George is expected to be named by early 2002. F. Scott Rotruck, Associate Provost in the Extension Service, left to join Consol's Government Operations. Scott and George had been of great help in the department's Carbon Program. David Satterfield, previously Chief of Staff to President Hardesty, was recently selected to head the State Office of Economic Development. Dave was a leader of Governor Wise's transition team and had served temporarily as Chief of Staff in the early days of the Wise administration.

Student News

9th Annual Chemical Engineering Graduate Student Symposium

Dr. Stiller accompanied several graduate students to the Symposium, held this year at the University of Cincinnati. Ku-shaari Ku-Zilati and Hiteshkumar Rana presented their research, while Manish Bhole, Long Han, Feng Song and Vivek Vasudevan observed.

Scholarships Announced

The following scholarships have been awarded for the 2001-2002 academic year:

Melinda Barr ('02), Lester Kincaid
Amanda Bowermaster ('02), Lester Kincaid
Dawn Chapman ('03), Georgia Nash Memorial
Christopher Clark ('03), James Wimer Memorial
Scott Cottrill ('03), Union Carbide/Dow
Timothy Daniel ('04), Freshman Academy
Ashley Delancy ('03), James Wimer Memorial
Carrie Donall ('02), Union Carbide/Dow
Beth Durst ('03), Lester Kincaid
Jeremy Glisson ('02), Lester Kincaid
Timothy Hall ('03), Anonymous
Curtis Heintzman ('04), Lorraine and Robert E. Pyle
Jason Hissam ('03), Anonymous
Adam Hoalcraft ('03), Union Carbide/Dow
Jerrod Houser ('02), Lester Kincaid
S. Chad Kanick ('02), Albert J. Monack
Maria Lynch ('02), Lester Kincaid
Steven Markovich ('03), Union Carbide/Dow
Mary Metzger ('02), Albert J. Monack
Jason Porter ('02), Lester Kincaid
Natalie Sanders ('04), Freshman Academy
Ryan Slopek ('03), Union Carbide/Dow
J. Christopher Taylor ('02), Georgia Nash Memorial
Christine Thomson ('02), Union Carbide/Dow
Craig Travis ('04), Freshman Academy
Aaron Wine ('02), Lester Kincaid
Christine Wisenburg ('03), Lester Kincaid

The College of Engineering and Mineral Resources awarded the WV Engineering, Science, and Technology scholarships. One hundred and twenty four scholarships have been awarded to WVU's students. Only four of them went to other majors. Incoming engineering freshmen received 75 awards, incoming pre computer science students received 9 awards and the rest of the awards went to the upperclassmen. The following upperclassmen in Chemical Engineering were recipients of this scholarship:

Timothy Daniel ('04)
Gregory Hackett ('04)
Natalie Sanders ('04)

James Sims ('04)
Craig Travis ('04)
Michael Velez ('04)
Aaron Wine ('02)

Undergraduate Students at AIChE Annual Meeting

The Student Chapter received Honorable Mention, and Dr. Cilento was declared an Honor Roll Advisor for the year 2000-2001. Five undergraduates ventured to Reno for the Annual Meeting – Matthew Cooper, Jennifer Leeson, Brian Sizemore, Christine Thomson, and Aaron Wine. Jen was the sole surviving member of Design Group Beta which had won the ChemE Car Competition during Regionals last March; she, assisted by Brian, tuned up the car and the poster for entry in the finals, scheduled for the Sunday of the meeting. Unfortunately, airport security thought differently, and confiscated electrodes for the cell from Brian's unlocked checked-in bag, without telling him. On Saturday, there was a mad rush to find replacements, but to no avail. Resigned to entering only the poster competition, Jen found at that time that Tri-State University had a spare zinc plate, which they graciously gave her. Jen spent the hours before the runoff cutting plate and twisting wires (soldering didn't work). We're pleased to report that the efforts paid off and the car did actually run, even though electrical contacts gave way in mid-course. Dr. Dadyburjor declared this a moral victory over the terrorists and took all the undergraduates out to dinner at the Steakhouse. Unfortunately, he didn't know that it was the most expensive restaurant in the Hilton. Fortunately, dinner was after the Institute's main reception, so the damage was attenuated somewhat.

Academy News

Plans are well underway for the next annual Academy of Chemical Engineers meeting and banquet on April 26, 2002. Academy nomination of several new members is currently underway. The Academy was formed to recognize and honor WVU ChE alumni who have had distinguished careers. New members must have graduated at least fifteen years before they are considered eligible for election. If you know of alumni deserving such recognition, please let us know. Your input is appreciated.

In a Pentagon ceremony on November 5, Robert H. "Doc" Foglesong ('68B, '69M, '71D) was sworn in as vice chief of staff, Headquarters U.S. Air Force, Washington, DC. Shortly before that, he was promoted to (four-star) general. As vice chief, he presides

over the Air Staff and serves as a member of the Joint Chiefs of Staff Joint Requirements Oversight Council. His aviation career includes more than 3,800 flying hours. He has been a commander five times. Recently, he served as commander, US Southern Command Air Forces, and most recently as deputy chief of staff for air and space operations at Headquarters US Air Force. He was inducted into our Academy of Chemical Engineers in 1997. We were pleased to show him around the department during his visit to campus this past September.

Alumni News

It was officially announced at the American Institute of Chemical Engineers Meeting in Reno that Diane Dorland ('85D) was elected Vice-President of the national organization for 2001-02. She ascends to the Presidency automatically for 2002-03. Dr. Dorland is currently Dean of Engineering at Rowan University in Glassboro, NJ, and served previously as department chair at the University of Minnesota - Duluth. In a featured article on her as "ChE Educator" in the Winter 2001 issue of *Chemical Engineering Education*, her cohorts David Bernemann ('85M) and Philip Kneisl ('89M) told tales of her during her WVU days. (Now, if only the authors had asked Professor Stiller!)

Sports

New football coach Rich Rodriguez's team has not been as quick off the hash marks as fans would have wished. Of course, injuries to critical players at important times have not helped. At this point, a bowl game is out of the question, but the Pitt game is yet to be played, so there may be something with which to salvage the season. Let's see how things go next year with a new batch of recruits.

Reminders

For those who have sent contributions to the Department this past year, **OUR MANY THANKS!** These funds are used to support many undergraduate and graduate activities, and to help enhance the overall academic and learning environments in the Department. Your support is greatly appreciated.

Please remember to designate your tax deductible gifts for use by the Department. The best way for contributing to support of WVU Chemical Engineering is to write your check out to the WVU Foundation and designate it for use by Chemical Engineering on the memo line. Also, please check with your company -- many will provide matching gifts.

In Memoriam

John G. (Jack) Crawford, age 72, passed away on August 6, 2001, at his residence, after an extended illness. He was born March 17, 1929, in Morgantown, WV. Jack received his B.S. in Chemical Engineering from WVU in 1951. He retired in January 1997, after 43 years of continuous service with the Goodyear/Lockheed Martin Uranium Enrichment Plant. Mr. Crawford's daughter, Ms. Marianne Freed, requested that donations be made to the department in lieu of flowers.

This Newsletter is published twice yearly to keep our alumni and friends informed of departmental news and ongoing activities. For additional information, visit our Home Page on the World Wide Web [Http://www.cemr.wvu.edu/?wwwche/](http://www.cemr.wvu.edu/?wwwche/)

Our WEB page continues to receive the most inquiries in CEMR. We continue to make it more informative and useful to our visitors. Let us know your thoughts and comments, and drop us a line.



Class Notes

1941

Richard N. Eggleton (BS) is retired and resides in San Clemente, CA. Dick was in Morgantown in August, for the first time since graduation.

1950

Mike G. Collins (BS, MS '66) retired on April 30, 2001 from Dow Chemical/Union Carbide after 50 years and 11 months of combined service. Mike resides in Victoria, TX.

1951

Richard L. Rice (BS) is retired, but currently employed by his wife and grandchildren. Richard and family reside in Morgantown, WV. Richard also has an AB degree ('51) in Geology.

1964

Joseph A. Marcinek (BS) retired from Mobil in conjunction with Exxon/Mobil merger. Joe was with Mobil for 36 years, his entire career.

1965

David E. Sheets (BS) is retired and resides in Barnwell, SC.

1968

Larry Fletcher (BS) recently retired from DuPont after more than 33 years of service in various technical and management positions in Texas, WV and Delaware. Prior to retirement, Larry was the Global Safety, Occupational Health and Environmental Manager for DuPont Crop Protection Products. Larry and his wife Trudy reside in Newark, DE. They have two children and three grandchildren.

1972

Jeffrey T. Woods (BS) is a Quality Assurance Manager for Kraton Polymers USA and resides in Vienna, WV.

1978

Thomas Beer (BS) coordinates manufacturing technology upgrades and operational modifications in Clorox Company's Solids Plants, making brands such as Kingsford Charcoal and Match-Light instant lighting briquets. Tom resides in Kennesaw, GA.

Shih-Shang (Steve) Lui (MS) is a Project Manager for Javan & Walter, Inc. He is responsible for the Baltimore branch office's operations. Javan & Walter provides full engineering services to the chemical, pharmaceutical, power, and industrial companies in the Northeast region. Steve lives in Ellicott City, Maryland with his wife Lily and two sons, Michael and Eric.

1981

Edward Sullivan (BS) is employed by DuPont and tells many of the younger engineers who work for him about the lessons that Prof. Galli imparted upon him those many, many years ago. Ed resides in Victoria, TX.

1982

Alan Shirey (BS) is a Lead Environmental Engineer for the Army Corps of Engineers and resides in Charleston, SC.

1986

David Velegol, Jr. (BS) is a Project Manager for Chester Engineers. David resides in Follansbee, WV. He also obtained his law degree from Duquesne University School of Law.

1988

James Price (BS) is a Plant Superintendent for Praxair, Inc. in Sulphur, LA. Jim and his wife, Cheri and two children reside in Lake Charles, LA.

1989

Rhonda (Radcliff) Mullenger (BS) is a Distributor Territory Manager for Exxon Mobil Lubricants & Petroleum Specialties in Mountain View, CA.

1991

Pravin Khandare (MS, PhD '95) is an Associate with A.T. Kearney. Pravin and wife are the proud parents of a son born June 28th, Malhar. Malhar also has a sister and they reside in Scotch Plains, NJ.

1992

Walter Hart (PhD) joined the Engineered Films and Laminates business at Dow after Dow acquired Union Carbide. Walt and family reside in Midland, MI.

Joanne (Fry) Logston (BS) is a Senior Design Engineer I for

PPG Industries and recently relocated to Lake Charles, LA.

1993

Suzanne (Campbell) Mazzella (BS) took a leave of absence from her engineering career after her second son was born. Suzanne gave birth to a third child in February. Suzanne and family reside in Blacksburg, VA.

Michael Riley (BS) is a Research Scientist for Innogy Technology, Inc. and resides in Raleigh, NC.

Parvinder Walia (MS, PhD '98) is employed by The Dow Chemical Company in the Engineering Sciences Polymer Processing Division and resides in Midland, MI.

1994

Raymond Patrick Johnson (BS) recently accepted a job as a Senior Process Engineer with International Specialty Products in Columbus, OH.

John S. Lanham (BS) graduated from WVU College of Law in May 2001 and is an Associate for the law firm of Young Morgan & Cann in Clarksburg, WV. John and wife Amy reside in Bridgeport, WV.

1995

John M. Sinsel (BS) recently changed positions and now works for Concurrent Technologies Corporation in Gaithersburg, MD. John still performs environmental consulting services for DOD, DOE, and EPA. John resides in Frederick, MD.

1996

Debbie (Bertugli) West (BS) was married November 4, 2000. Debbie will graduate from Syracuse University in December 2001 with an MBA degree. Debbie is currently a senior process engineer for Osram Sylvania Products. Debbie resides in Ulster, PA.

1997

Robert M. Taylor (BS, MS '99) is a General Engineer for the U.S. Nuclear Regulatory Commission in Washington, DC.

1998

Jason Jeffrey (BS) is a Field Support Engineer for Westinghouse Savannah River Company and resides in Warrenton, SC.

1999

Amanda Black (BS) is an Environmental Engineer for URS Corporation. Amanda married Chuck Baumgarner on June 17, 2000 and they reside in Pittsburgh, PA.

2000

Jeffrey Shields was promoted to First Line Shift-Supervisor for the ZYTEL business at DuPont's Washington Works in June 2001. Jeff resides in Mineral Wells, WV.

2001

Neeraj Pugalia (MS) just received his M.S. degree in Chemical Engineering and has returned to India to begin his job search.



Alumni Update Page
December 2001

PLEASE WRITE TO US! We want to know where life has taken you since you left West Virginia University. Complete and return this form with your news and comments. Also, pass this Newsletter on, or let us know of any alumni who are not receiving The Major.

Send to: Department of Chemical Engineering, West Virginia University, 403 ESB, PO Box 6102, Morgantown, WV 26506-6102.

Http://www.cemr.wvu.edu/~wwwche/

Name _____
Degree(s) _____ Year _____
Home Address _____
City _____ State _____ Zip _____
Home phone _____ Business phone _____

E-mail: _____

Employer: _____
Position Title: _____
Firm Address: _____
City _____ State _____ Zip _____

Preferred Mailing Address: Home _____ Work _____

Brief News of Professional and Family Activities for Future Newsletters:

Suggestions/Comments:

FOLD

From _____

Place
Stamp
Here

DR DADY DADYBURJOR
DEPARTMENT OF CHEMICAL ENGINEERING
WEST VIRGINIA UNIVERSITY
PO BOX 6102
MORGANTOWN WV 26506-6102