Message from the Department Head

These are times of transition for engineering education nationwide. The way that the states and the federal government fund undergraduate and graduate education and research are being closely scrutinized in an effort to provide better and more cost-effective services to students. The department enters this period of uncertainty in a very strong position at both the state and the national levels. We have a proven record of quality education. Our faculty members continue to be recognized as leaders in the development of innovative and effective teaching methods, and the department is routinely ranked as one of the most active in research in the country.

This fall, the latest report of the Committee on Professional Training from the American Chemical Society showed us to be third in the country in the number of BS graduates in chemical engineering. Only Purdue University and the University of Texas graduated more students.

At the same time, the National Research Council ranked our chemical engineering graduate program as 1st in the Southeast (yes - ahead of Georgia Tech!), seventh in the entire country among landgrant institutions, and 25th out of the 93 ranked graduate chemical engineering programs in the US. NC State may not be first in the ACC in football or basketball, but all of us should be rightly happy and proud of our Number 1 ranking in chemical engineering.

Upon my appointment as Department Head of Chemical Engineering in August 1994, I decided to place a significant portion of the effort during the first year of my tenure on three major items that the faculty and students felt needed immediate attention: (1) modernization and upgrading of the undergraduate unit operations laboratory (UO Lab), the undergraduate computer room, the undergraduate student lounge and the faculty lounge in Riddick, (2) long-term improvement in the research infrastructure of the department, including hoods, laboratory equipment and analytical equipment, and (3) improvement of the efficiency and working environment for the secretarial staff to better serve the undergraduate and graduate programs.

With some financial support from the Dean’s Office and the Provost’s Office, and a gift from Procter and Gamble, we purchased equipment for the UO Lab and renovated the computer room in the first floor of Riddick. This allowed us to introduce five new experiments in the laboratory courses, and new computer applications in the transport and design classes. A very generous gift from the Hoechst Celanese Corporation also allowed us to renovate the student lounge and the faculty lounge. In addition, the Vice Chancellor for Research allocated funds to help renovate the polymer laboratories on the third floor. New printers and computers also have helped in making the secretarial staff more productive.

In order to provide additional resources to accomplish the remainder of what needs to be done in the area of infrastructure improvement, a five-year $3 million campaign to renovate our portion of Riddick was launched with the support of the Alumni Industrial Advisory Board and the university administration. In the year 2000, our department will be celebrating its 75th anniversary. At the same time, Riddick Labs will be 50 years old. The funds received during this campaign will allow the department to make improvements that are necessary for us to keep doing the best job possible in the training of undergraduate and graduate students ready to meet the technical challenges of the 21st century.

We are currently pursuing contributions from corporate donors. Your help in this campaign would be greatly appreciated.

The faculty and students in chemical engineering at NC State hope that you will continue to have an active interest in our department. The establishment of the Alumni Industrial Advisory Board, and this newsletter, a few years ago has facilitated the interaction between alumni and the department. We hope that you can come and visit us, perhaps during our annual alumni breakfast in the fall, and that you will write and let us know of your activities. As we approach the next millennium, we would like all of the members of the NC State alumni family to come together to celebrate our accomplishments and to help forge our future.
Greetings from Warren Piver

It has been a great honor and pleasure for me to be the President of the Department of Chemical Engineering Alumni Industrial Advisory Board for the past several years. The Board was begun in 1993 with the purposes to:

1) Serve as a resource group to the NCSU Department of Chemical Engineering;
2) Provide guidance to the Department in establishing its goals and objectives on interactions with alumni, industry and other stakeholders;
3) Advise the Department on technological trends and changes based on the experience of Council members;
4) Advise the Department on attracting external support; and,
5) Advise the Department on possible new opportunities in research and education.

The Board meets twice a year, usually in the spring and fall. Present members, their year of graduation with a B.S. degree and their business affiliation are: Victor Agreda, '72 - Eastman Chemical; Jack Alleavitch, Ph.D.'66 - Dynagel Inc.; Mack Bailey, '68 - Hoechst-Celanese; Norvin Clontz, '65 - Milliken Company; Michael Killian, '68 - Ashland Chemical; Charles Manning, '49 (retired) - Du Pont; Ken McKelvy, '65 - Du Pont; Russ O'Dell, '75 - Hoechst Celanese Corp.; Warren Piver, '65 - National Institutes of Health; Joe Privott, '61 - Novus International; and, Ann Quillian, '85 - Monsanto. Terms of service on the Board are for three years, so even though the Board is presently dominated by men in my age group, future Boards will contain more women and a wider diversity of graduating class representatives.

During the past year, we have been working very closely with the new Department Head, Ruben Carbonell, to initiate a fund-raising campaign to renovate the laboratory space in Riddick. The Department of Chemical Engineering occupied its present location about 50 years ago. Over the years there have been renovations to laboratory facilities, but this is the first time a complete renovation is being undertaken. The projected cost is $3 million, and the time required to complete these renovations is 4 to 5 years. The completion date in 2000 will coincide with the 75th anniversary of the first class to graduate from the Department of Chemical Engineering at NCSU - a grand reason for celebration.

To make it happen, your active participation in these renovations is being solicited. Without doubt, asking for your support is not only a unique situation for an alumni organization but represents an opportunity for a new level of involvement by alumni in the affairs of the Department of Chemical Engineering and, possibly, the affairs of the entire University. No other department on campus has an Advisory Board that is asking its graduates to participate actively in the renovation of its laboratory facilities. In truth, there are not many chemical engineering departments nationwide that even communicate with their alumni - a great loss of valuable follow-up information on what people are doing and what could have been done differently to prepare them for their professional careers.

We as alumni must provide input and guidance to the educational process because it is this process that is the basis for who we are as chemical engineers and who we can become.

The chemical engineering education process at NCSU requires up-to-date facilities, and we as alumni have a unique opportunity to provide facilities with greater flexibility for generations of students who follow us.

---

Carbonell Selected to Head CHE

Dr. Ruben G. Carbonell has succeeded Dr. George W. Roberts as head of the Department of Chemical Engineering. Carbonell has been a member of the NCSU faculty since 1984, after ten years in the chemical engineering department at the University of California, Davis. His main areas of research include the application of transport phenomena and surface science principles to the development of new separation processes for biological molecules, to the design of novel approaches to improve immunodiagnostic assays, and to find improved waste minimization and waste treatment processes. He is co-author of over 120 refereed publications in a wide range of subject areas, he has been an invited speaker at many national and international meetings, and he has served as a consultant to many industrial and national research laboratories.

Professor Carbonell earned a BS degree in chemical engineering from Manhattan College in 1969, and a PhD degree from Princeton University in 1973. He received the North Carolina State University Alumni Outstanding Research Award in 1989, the Maurice Simpson Technical Editor's Award for Excellence in the Field of Contamination Control from the Institute of Environmental Sciences in 1992, the R. J. Reynolds Award for Excellence in Teaching, Research and Extension from the NCSU College of Engineering in 1990, and a University Outstanding Teaching Award in 1991. He was named Hoechst Celanese Professor of Chemical Engineering in 1989. Dr. Roberts is continuing his teaching and research activities in the Department.
Dr. Don Paul (BSChE '61) has been honored as a recipient of the NCSU College of Engineering 1994 Distinguished Engineering Alumnus Award. Don's outstanding career includes positions as a research Chemical Engineer at Chemstrand Research Center, assistant, associate and full professor of chemical engineering at the University of Texas at Austin, Department Chairman of ChE at UT, the T. Brockett Hudson Professorship in Chemical Engineering from 1977 to 1985, and his current position as one of the prestigious Regents Chairs at UT.

Among his numerous accomplishments, the following citations are included in the nomination letter for Don's award:

- Appointment to the National Academy of Engineering in 1988 at age 49.
- Over 300 peer-reviewed publications in the independent fields of polymer blends, fibers, polymer membranes for gas separation applications, barrier materials, and polymer-concrete materials.
- Six teaching awards, including the Society of Plastics Engineers International Award for Outstanding Achievements in Education (1989), and polymer courses taught to approximately 1600 students during his career.
- Supervised the research of more than 40 PhD recipients and, in total, more than 110 MS and PhD graduate students, postdoctoral fellows and visiting scholars. Approximately one dozen of his former students hold faculty positions.
- Editor of Industrial and Engineering Chemistry Research, and editorial board member of five other journals.
- Member and vice-chairman of the Materials Engineering Peer Committee (see Don Paul, page 4)
CHE's Inducted into ΦΒΚ

CHE undergraduates John O’Quinn, Donald W. Pulliam and Steven G. Humphrey are members of the inaugural class of inductees into the NCSU Chapter of Phi Beta Kappa. While candidacy for ΦΒΚ is normally reserved for science and liberal arts majors, these students’ memberships are the result of their participation in the Benjamin Franklin Scholars Program. Students in this dual-degree program earn two bachelor’s degrees over five years: one from the College of Engineering and one from the College of Humanities and Social Sciences.

Felder Recognized for Teaching Excellence

CHE's Dr. Richard Felder has been a pioneer in the national movement to improve undergraduate teaching in engineering courses. The following article describing Felder’s efforts was excerpted from an Innovation Update published by the Division of Undergraduate Education at the National Science Foundation:

Study Tests Effectiveness of New Ways to Teach Engineering

Richard Felder, of North Carolina State University, taught the same engineering students for four years. If that sounds boring, think again. Felder wasn’t just teaching; he was studying his students and their reactions to the use of consistent teaching methods — and he was comparing them to a control group of students. During those four years, Felder collected a huge database of information. With financial support from the Division of Undergraduate Education of the National Science Foundation (DUE/NSF), Felder will continue to develop and publish his findings based on the data.

The same group of students was instructed by Felder in five chemical engineering courses taught in successive semesters, beginning with the introductory course in the first semester of the sophomore year (CHE 205). “The courses incorporated a number of instructional methods that have been shown by educational research to promote effective learning,” Felder explained, “including cooperative [team-based] learning and assignment of open-ended problems in class and homework.”

The objective of the study is to demonstrate that the systematic and repeated use of these methods can have a significant positive effect on student academic performance, retention, problem-solving ability, creativity, and self-confidence. Aside from the success of the whole group, Felder is also looking at the success of specific subsets of the group, such as women, minorities, and students with rural backgrounds.

The instructional methods and the results of the study are being disseminated nationally through journal articles and teaching workshops presented by Felder. Dr. Robert Watson, director of DUE/NSF, stated, “Our goal is to foster large-scale reform in undergraduate education. Our grant holders are the primary agents of this change, and we expect that their projects will advance our country’s technological base and provide all students with excellent instruction in mathematics and science.”

NCSU CHE on the Internet

A large database of information about the Department of Chemical Engineering is available as a Mosaic document on the Internet. The URL for the department’s home page is: http://www.eos.ncsu.edu/coe/departments/che/index.html. The database includes information about courses and curricula, faculty and students, and academic policies and procedures in the department.

Don Paul

-continued from page 3

-te for the NAE, in addition to more than 20 appointments related to service for AIChE, ACS, and SPE.

- Awards since 1980 include The Univ. of Texas Engineering Foundation Faculty Award in 1981 and 1987, the Joe J. King Professional Achievement Award in 1981, the Society of Plastics Engineers Award for Outstanding Achievements in Research in 1982, the American Chemical Society Award in Applied Polymer Science in 1984, the Best Fundamental Paper Award of AIChE in 1984, the AIChE Materials Engineering and Sciences Division Award in 1985, the SPE International Award for Outstanding Achievements in Education in 1989, and the SPE International Award in 1993. Prior to 1980, Professor Paul received 14 awards for his teaching and research activities.
Awards and Honors

The following awards and honors were earned by faculty and students in the department over the past year:

**Faculty:**
- Drs. Peter Kilpatrick and P. K. Lim were promoted to the rank of full professor.
- Rich Felder received the 1994 Corcoran Award from the CHE Division of the ASEE, and he was the NCSU College of Engineering Nomine for the Board of Governors Award at NCSU.
- Benny Freeman was selected to present a lecture in the 17th ACS Polymer Biennium. This meeting, held every two years, is to provide overviews of "cutting edge" research in polymer science by researchers active in the area. Benny was also nominated to participate in the National Academy of Engineering's "Frontiers of Engineering" workshop, and he was the recipient of a 3M Company Nontenured Faculty Grant Award.
- Christine Grant was nominated to receive the NCSU Provost's African-American Professional Development Award.
- Carol Hall received the NCSU Alcoa Foundation Distinguished Engineering Research Award, and she presented the Tulane University's 1994 Newcomb Lectureship for Renowned Women in Chemical Engineering. Carol was also appointed to the Award Committee for the ACS Award in Separations Science and Technology.

**Graduate Students:**
- Steve Beaudoin and Steve Smith were co-recipients of the Schoenborn Award presented annually to the outstanding senior PhD student in the department.
- Steve Beaudoin received the Hoechst Celanese Excellence for Graduate Research Award, and he placed first in the AIChE Students' Poster Paper Competition at the Annual Meeting in St. Louis.
- Kevin A. Frankel received the second place award in the student paper contest sponsored by the Environmental Division of the AIChE. Kevin's paper was titled, "The Oxidation of Methanol and its Partial Oxidation Products Over a Palladium Monolithic 6 Catalyst."
- H.-C. (Vincent) Shin received one of two awards for the best poster presentation at the ACS Triangle Polymers Section annual Student Symposium. Vincent's presentation was titled "Synthesis and Thermal Behavior of a New Soluble Main Chain Nematic Liquid Crystalline Polymer."
- Anuraag Singh received one of two awards for the best oral presentation at the ACS Triangle Polymers Section annual Student Symposium. The Symposium was conducted on May 11, 1995, and Anuraag's presentation was titled "High Performance Polymer Membranes for Separation of Organic Vapors from Air."
- John Wickert received the American Institute of Chemists Foundation Graduate Student Award.

**Undergraduates:**
- Cameron Abrams earned a first place award during the Student Paper Contest at the Southern Regional Meeting of AIChE Student Chapters. The topic of Cam's paper was interfacial synthesis.
- Steven G. Humphrey was one of 10 valedictorians in the May '95 class of 2,273 NCSU bachelor's degree graduates.
- Tyson Mew earned a first place award during the Student Paper Contest at the Southern Regional Meeting of AIChE Student Chapters. The topic of Ty's paper was automobile exhaust catalysts.
- John C. O'Quinn was elected to the office of NCSU Student Body President.
- Jeff Sawdy earned a third place award during the Student Paper Contest at the Southern Regional Meeting of AIChE Student Chapters. The topic of Jeff's paper was hyperthermophylic microorganisms.

---

**CHE Hosts Biotechnology Conference**

The Department of Chemical Engineering at NCSU hosted the 9th Annual Meeting of the Middle Atlantic Biochemical Engineering Consortium at the North Carolina Biotechnology Center on March 10, 1995. This group of 13 universities (NCSU, Duke, UVa, Delaware, Lehigh, Penn, Penn State, Johns Hopkins, UM-College Park, UMBC, Rutgers, Princeton and Drexel) meets each year to provide a forum for new developments in biochemical engineering. One unique aspect of the meeting is that only graduate students are permitted to present their work.

About 100 people attended the meeting including 25 faculty and students from NCSU CHE. From NCSU, Anup Singh made a presentation on his thesis work focusing on a novel immunoassay technique developed in collaboration with his advisors, Drs. Peter Kilpatrick and Ruben Carbonell. Jennifer Goodall and Stuart Thomas from Dr. Steven Peretti's group presented posters on their molecular bioremediation work and Sheryl Halio from Dr. Robert Kelly's group presented a poster on her work on thermophilic proteases.

Next year's meeting will be held at the University of Pennsylvania.
The Thirties
- Charles D. Norlander, Jr. ('36) is retired. Presently residing at Carmel Place in Charlotte, NC, after leaving Olin as Director Quality Control Paper & Film (cellophane).
- James R. Teague ('34) retired from Union Carbide Chemicals and Plastics Engineering at the end of 1982 after 45 1/2 years. Moved to Fort Worth, TX, in 1983 where he became involved with Senior Citizens' problems. The community activity was countywide and was composed of approximately 50 retiree organizations of Tarrant County. Early in 1994, he relocated to Houston, TX, to enjoy more comforts of climate and closer proximity of children and grandchildren.

The Forties
- George W. Bethell ('40) is retiring and turning his business, George Bethell Distributing, over to his son, Craig. He became a distributor to the electroplating industry in 1977 after retiring from the Udylate Company of Detroit.
- Webster Linback, P. E. ('43), retired from the South Carolina Department of Health and Environmental Control in December 1986. The majority of his time was spent in water quality planning with the Bureau of Water Pollution Control. He's now a part-time consultant on coastal resources.

The Fifties
- James I. Morris ('56) retired at the end of May 1994 from Sandoz Chemicals. He also worked for Union Carbide and Fiber Industries during his 38-year career.

The Sixties
- William C. Lawton ('68) was appointed District Court Judge in Wake Co. October 1991 and elected to his first full term November 1992.
- John Earnhardt ('63) was Global Strategy Manager for DuPont's No. 1 business when he retired last year after 30 years. He now operates his own consulting firm specializing in Environmental Management Systems for industry and regulatory agencies. John is interested in connecting with other CHE alumni and promoting a gathering at NCSU during some upcoming events. Call him at (610) 388-7026 in Chadds Ford, PA.
- Allen K. Tothill ('65) is Vice President/General Manager for Sprint in Atlanta. Both he and his wife, Sandy, have 3 children, two of whom are students at Auburn University. His oldest daughter is a graduate of UGA. Bill Garwood (who received the Distinguished Alumnus Award), President of Tennesse Eastman, is one of their outstanding customers.

The Seventies
- Roger H. Lawry ('79) received his MS in Biomedical Engineering at the University of Utah '85. He is currently Marketing Manager for Applied Silicone Corporation, which manufactures silicone raw materials for medical implants.
- Robert "Bob" Stevens ('77) is the SE Regional Director for the US Center for World Mission. Their purpose is to stimulate and encourage a Christian missions movement that will result in church communities being established within each of the remaining 11,000 unreached people groups. They also sponsor the "Perspective" class in cities in the Southeast and are translating this material into Russian. "Perspective" embodies the pioneer mission, vision, and thinking of the world's missiologists.

The Eighties
- James A. Bynum ('83) has been working at Zeneca Pharmaceuticals of Newark, DE, for 7 years as an MFG Shift Supervisor in the Production Department. He is married (for 8 years) and has a 5-year-old son. His wife's name is Lisa, and his son's name is Joshua.
- Gregory W. Cox ('88) is working as an Environmental Engineer at Westvaco Corporation's bleached paperboard mill in Covington, VA. He works with Tom Botkins (B.S. CHE 1973), Environmental Manager, and several other NCSU alumni. His older brother, Bill Cox (B.S. CHE 1984), and "little" brother, Ray Cox (B.S. CHE 1990), are both also NCSU CHE alumni.
- Laura Dwyer ('89) works for DuPont OEM/Fleet Finishes. Debbie Evans also works at DuPont. Laura is still friends with Michelle Rocker at Dupont and Brad Lee at Pharmaceutical Company.
- Lisa Liles Gruber ('82) has returned to work with Shell Oil Company as a computer systems engineer. She worked for Shell after graduation in Louisiana where she met her husband (a Che from the Univ. of Washington). They spent 3 years in Saudi Arabia (1987-1989). Her second career (motherhood) was full-time with 2 sons, now ages 5 and 7, from 1987 until her return to engineering in September.
- Sam Harwell ('82) is Polymerization Manager, Huntsman Chemical Corporation, at the Peru, Illinois Plant.
- Joseph W. Johnson ('89) received a Master of Science Degree in Environmental Engineering from the University of Tennessee (August 1994). He continues to work in the de-inking area of the bath tissue and hand towel mill in Loudon, TN. Co-workers include John Single ('90) and Andrea Nelson ('90).
- Bruce R. Locke ('89) has been recently promoted to Associate Professor of Chemical Engineering with tenure in the Department of Chemical Engineering at Florida A&M and Florida State University. He currently conducts NSF-funded research on the development of new polymeric gel materials for DNA and protein separations and receives U.S. Air Force support for studying pulsed corona electrical discharge reactors for air and water treatment.
- Barbara Ludwig ('89) is currently working in the Paper Product Development Division (specializing in Bounty paper towel development) at Procter and Gamble in Cincinnati, OH. She has been in this role since October 1990.
- Alan Massey is currently working as a process engineer for E. I. Dupont de Nemours in Axis, Alabama.
- Jeff Pittman ('85) is working in the Radiology Department of a hospital, taking a variety of X-rays from head to
feet, performing special procedures such as venograms, arthograms and intravenous pyelograms and assisting the radiologists in fluoroscopy. Also, he is a deacon at Port Royal Baptist Church and participates in the Big Brother and Big Sister program.

- Anne A. Pope ('82) was awarded EPA's highest award, the Gold medal. She was one of six individuals out of a workforce of 18,000 to receive a Gold medal in 1994 for developing a national environmental education program.

- David Saleebey ('80) serves as an instructor at Florence-Darlington Technical College in Florence, SC, and Head of the Chemical Engineering Technology Program there for preparing individuals to work as laboratory, pilot plant, or process technicians.

- Glenn Shoaf ('85) obtained his master's and PhD in CHE from Georgia Tech. Currently Sr. Research CHE at Eastman Chemical Company, developing and scaling emulsion polymer processes.

- Theresa Mooney Snyder ('85) and her husband had a baby girl, Kelly Margaret Snyder, on July 25, 1995. She is now back at work as Area Sales Manager with Betz Process Chemicals in Baton Rouge, LA.

- John Tilley ('86) is a senior Process Engineer at Phillip Morris, U.S.A. He and his wife, Connie, have a four-month-old son, Zachary Blake, born June 4, 1994.

- Karen Rutledge Witherspoon ('84) is a Process Engineer with Lockwood Greene Engineers in Atlanta. She is married to Jere W. (Jay) Witherspoon, Jr., (CHE '82), who works for Great Lakes Chemical Corporation. They recently celebrated the one-year birthday of their daughter, Katherine Ann.

- John P. Wood ('80) is currently serving as manager, Research & Development, Interim Waste Technology Dept., Savannah River Technology Center. He also started his own consulting firm last year, Process Engineering & Analysis Co., Inc. based in Aiken, SC.

The Nineties

- Daniel W. Bradford ('93) is currently in his first year of medical school at UNC-Chapel Hill. He talked to David Lutz ('93), who is also in medical school at East Carolina. He is finding medical school to be extremely challenging.

- A. Caroline Cline ('91) is working for an Environmental Consulting firm as a project manager.

- David Collins ('94) is employed by S. L. Collins Associates (Nationwide Pharmaceutical Search) and has been "head-hunting" since graduation. He enjoys the work as well as the potential for S's. (He's not making the 40K/yr his fellow graduates are enjoying). He specializes in the Pharmaceutical/Biotech industries.

- Jerry M. Floyd ('94) is currently working as a Fiber Process Engineer in the Technical Department at Federal Paperboard Company. He is involved with various projects primarily in the pulp mill. Jeff Cooke ('94) and Kathy Bennett ('91) also work in his group.

- Jeff Harris ('92) is currently working as a startup engineer in Shell Chemical's new Ethylene Oxide/Ethylene Glycol plant. He lives in Baton Rouge along with Joe McFayden and Trip White.

- Michelle Herman ('93) is working as an Environmental Engineer with Ogden Projects, Inc. She keeps in touch with Susan Thompson (Dec. 1993).

- Jeff Kelby ('90) works as a process engineer at the IBM Microelectronics Division's plant in Essex Junction, Vermont. He recently represented the division by presenting at a SEMATECH sponsored workshop on processes used to clean (decontaminate) spare parts and tooling for reuse in semiconductor production chambers. Earlier this year, he travelled to an IBM plant near Paris, France, to consult on their cleaning processes.

- Chris Kochanowicz ('90) is currently an R&D engineer at Milliken Chemical in Spartanburg, SC, working on polymeric colorant technology.

- Mary Anne (Walters) Moore ('92) is currently in her first rotation in International Paper's Technical Management Development Program at their Veracel division in Bethune, SC. She and her husband currently live in nearby Sumter, SC.

- Since graduating from NCSU in 1990, Christian Popa ('90) completed medical school at Uniformed Services University, Bethesda, MD, and is currently doing his internship at Madigan Army Medical Center, Ft. Lewis, WA, as a military physician. He plans on pursuing a residency in anatomical and clinical pathology. He has been married since June 1993. His wife, Denise, is a physical therapist.

- Kristen Popio ('92) is working as a Project Engineer at Reilly Industries, Inc. in Indianapolis, IN.

- Darryl W. Rogers ('90) has been employed since graduation at Dow Chemical as a production engineer in one of the ethylene units located in Plaquemine, LA (outside of Baton Rouge). He frequently is in contact with Paul Peters (B.S. CHE '90), who also works for Dow Chemical in Research & Development for the chlor-alkali unit.

- George R. Wallace ('92) is currently employed by Parker-Hannifin Corporation in the Packing Division which manufactures hydraulic and pneumatic seals. He works in the Polyurethane Research and Development Department where he focuses on developing new materials and designs processes to manufacture those materials. He also evaluates the behavior of new materials in the seal manufacturing operation, and attempts to improve their processing characteristics.

- Harvey "Trip" William White III ('92) recently moved into a process contact engineering assignment for Lubes Extraction plant. He keeps in touch with Carol Sanders, Matt Young, Jeff Harris, and Joe McFayden.

- Mark Wollum ('90) works for the Firestone Synthetic Rubber & Latex Company as a research engineer at the company's pilot plant. After working on the development of thermoforming and injection molding plastics, he's now developing thermoplastic elastomers.

- Carol Bruce Yates ('90) is a Process Engineer at Rayonier Pulp Mill. She is married to Eddie Yates with one daughter, Alexandria. She works with David Rowe (NCSU '92), who is also a Process Engineer.
Alumni Information - Spring 1996

Name _______________________________ Class/Degree _______________________________

Home Address ____________________________

Work Address ____________________________

Tell us about yourself. (What are you currently doing? What other CHE alumni do you work with or hear from? etc.)

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Do you have any photographs, ancient or modern, that would enhance the alumni newsletter?

Please return this form to: Dr. Ruben G. Carbonell
Department of Chemical Engineering
Box 7905
North Carolina State University
Raleigh, NC 27695-7905
FAX: (919) 515-3465

North Carolina State University is committed to equality of educational opportunity and does not discriminate against applicants, students, or employees based on race, color, national origin, religion, sex, age, or handicap. North Carolina State University commits itself to positive action to secure equal opportunity regardless of these characteristics. 3,000 copies of this public document were printed at a cost of $1,295.