



# The TarHelium

Volume 24, Number 1

September 1993

**Polymer Group Meeting  
Thursday, September 9, 1993  
S. A. Kahn, North Carolina State University  
"Rheology of UV Cross-Linked Polymers"- p. 2**

**ACS Local Section Meeting and Nominations  
Saturday, September 18, 1993  
Family Outing and Pig Picking at Museum of Life and Science - p. 3**

**MS Discussion Group Meeting  
Thursday, September 23, 1993  
Corporate Sponsors Night - p. 3**

*The TarHelium*

c/o William L. Switzer, Editor  
Department of Chemistry-8204  
North Carolina State University  
Raleigh NC 27695-8204

NON PROFIT ORG.  
U.S. POSTAGE  
PAID  
RALEIGH NC  
PERMIT NO. 491

Executive Committee:

R. W. Morrison, Jr. (BW), Chair  
M. T. Crimmins (UNC), Chair Elect  
M. T. Riebe (Glaxo), Secretary  
J. T. Bursey (Radian), Treasurer  
W. L. Switzer (NCSU), Editor  
E. C. Bigham (BW), Councilor '93  
W. F. Little (UNC), Councilor '93  
R. A. Palmer (Duke), Councilor '92  
J. L. Chao (IBM), Councilor '91  
J. Preston (RTI), Alternate Councilor '93  
S. T. Purrington (NCSU), Alternate Councilor '93  
D. D. Sternbach (Glaxo), Alternate Councilor '92  
P. Smith (Duke), Alternate Councilor '91  
C. G. Moreland (NCSU), Past Chairman '92  
J. L. Chao (IBM), Past Chairman '91  
D. M. Preiss (NCSU-Ret.), Past Chairman '90  
M. M. Bursey (UNC), *Ex Officio*  
E. L. Eliel (UNC), *Ex Officio*  
S. C. Brown (Glaxo), MRSDG, *Ex Officio*  
C. A. Haney (NCSU), MSDG, *Ex Officio*  
J. Preston (RTI), PDG, *Ex Officio*  
J. H. Raymer (RTI), TCDG, *Ex Officio*

**Dated Material - Please Deliver Promptly**

W. L. Switzer, Editor  
S. T. Purrington, Assistant Editor  
P. A. Flowers, Advertising

*The TarHelium* is a publication of the North Carolina Section of the American Chemical Society. The views expressed herein are not necessarily those of the Section. Public lectures and seminars as well as announcements of interest to the ACS membership will be listed as deemed appropriate by the editor and as space permits. Short commentaries or contributed articles will also be considered. Also, we are happy to publicize, free of charge, any job openings for chemists. (We also accept paid advertisements for more extensive recruiting announcements.) The **Deadline** for each publication is usually the end of the first week of the month prior to publication.

Contributions for *The TarHelium*: Send to the W. L. Switzer, Editor, Chemistry-8204, North Carolina State University, Raleigh NC 27695-8204. Phone: (919) 515-2945, Fax: (919) 515-5079 and Internet: bill\_switzer@ncsu.edu.

**Advertising:** All nine issues of the *TarHelium* will accept advertising. The cost is: \$25 per column-inch based on a 3.5 inch width; two-inch minimum. There is a 10% discount for advertising in four or more issues in a publication year which runs from September through April plus one issue in the summer. Contact Paul Flowers, Advertising Manager, Department of Physical Science, Pembroke State University, Pembroke NC 28372, Phone: (919) 521-6247 Fax: (919) 521-6649 and Internet: paf@pembvax1.pembroke.edu.

Donations to the NC Section of the ACS help sustain Local Section activities. All contributions are tax deductible and greatly appreciated.

**Voicemail Information Line:** (919) 541-7183 in the RTP

10-General ACS  
11-Polymer Discussion Group  
52-NMR Discussion Group  
53-Mass Spectrometry Discussion Group  
54-Triangle Chromatography Discussion Group

If you wish to change your membership status or *The TarHelium* mailing address, please submit your new address along with your old address in the form of a recent *C&EN* or *TarHelium* address label to:

Manager, Membership & Subscription Services  
American Chemical Society  
P. O. Box 3337  
Columbus, OH 43210

If you wish to receive announcements of Local Section ACS events by electronic mail, please submit your e-mail address to the Internet address given above for the Editor.

**Deadline for September Publication**  
**Friday, September 10, 1993**

**National ACS meetings:**

March 13-18, 1994, San Diego  
August 21-26, 1994, Washington  
April 2-7, 1995, Anaheim  
August 20-25, 1995, Chicago

## INDEX TO ADVERTISERS

Galbraith Laboratories - p. 2, 5  
Huffman Laboratories, Inc. - p. 3  
Micron Inc. - p. 4  
Tudor Scientific Glass Company, Inc. - p. 7

**Polymer Group Meeting**  
**Thursday, September 9, 1993**  
**North Carolina State University Faculty Club**  
**4200 Hillsborough St.**

**Saad A. Khan**  
**Department of Chemical Engineering**  
**North Carolina State University**

**"Rheology of UV Cross-Linked Polymers"**

5:30 p. m. Social Hour  
6:30 p. m. Dinner<sup>†</sup> (members-guests: \$15; students \$8)  
7:30 p. m. Lecture

<sup>†</sup>Reservations by noon, Tuesday, September 7, with Walter Pawlowski (919) 543-2243 (IBM-RTP).

### Abstract

Ultraviolet radiation cross-linked polymeric systems are used extensively in various applications, ranging from optical fiber coatings to adhesives and inks. An understanding of the gelatin process and evolution of the mechanical properties are critical for the application of these systems. In the first part of the talk, I will describe a new *in situ* technique that allows monitoring the gelatin of photosensitive materials through dynamic rheological measurements. The degree of cross-linking is precisely controlled so as to observe the material behavior as it transforms from the pre- to the post-gel state through the critical gel state. In the second part, I will relate the changes in viscoelastic properties to the extent of reaction using differential photocalorimetry. Finally, the effect of shear on gelatin will be addressed and a mechanism relating rheology to the microstructure will be presented.

Galbraith Ad for Microanalysis

## ACS Local Section Meeting Outing to the Museum of Life and Science Nominations for Local Section Offices

**Saturday, September 18, 1993**  
**Museum Of Life and Science**  
**433 Murray Avenue, Durham**

- 1:00 p. m.- 5:00 p. m.  
Museum Self Guided Tour (\$2 paid at door)
- 3:30 p. m. Pig Picking<sup>†</sup> (members-guests: \$8; students and high school teachers \$4)
- 4:00 p. m. Business Meeting (Erin Keating of the Museum Staff will be available to talk about help needed with National Chemistry Week immediately after the meeting. See next column.)

The Museum visit does not have special tours planned. The Museum admission, which is a discount fee, should be paid at the door. The pig picking, which will be held at the special events area behind the aerospace exhibit on the Museum grounds, is catered by Bullocks Barbecue. It will include pork barbecue, fried chicken, vegetarian lasagna and three vegetables. Reservations are required and the charge will be collected at the event. At 4:00 the nominating committee will give its report (see Local Section Elections below).

<sup>†</sup>Reservations are not required for the Museum tour, but are required for the pig picking. In Chapel Hill call Becky Smith, 962-2172; in Durham, Bonnie Turner, 660-1506; in Raleigh, Joyce Dunn, 515-2355; in Fayetteville, Sandra Smith, 486-1571; or by e-mail at Internet: bill\_switzer@ncsu.edu

## MS Discussion Group Meeting

**Thursday, September 23, 1993**  
**Gross Chemical Laboratory, Duke**

### Corporate Sponsors Night

7:00 p. m. Refreshments and Informal Discussions

Reservations are not needed. Call Don Chace, Duke, 684-2036 or Carol Haney, NCSU, 515-6279 for information.

Huffman Ad for Microanalysis

## Upcoming TCDG Meetings

The Triangle Chromatography Discussion Group plans its first meeting of the program year for October 14 at the NCSU Faculty Club. The speaker will be Dr. Linda S. Sheldon on indoor air quality. The dinner reservations must be made by October 8. Detail will appear in the next *TarHelium*. To receive a direct mailing of the announcement, call John Hines at (919) 541-6647 to be added to the mail list.

The TCDG has already set the date for its spring symposium and instrument exhibit. The 11<sup>th</sup> Annual Triangle Chromatography Symposium and Instrument Exhibit will be held on Thursday, May 19th, 1994 at the Jane S. McKimmon Center, NCSU, Raleigh.

## Local Section Elections

The Nominating Committee will submit the follow names for nomination at the September 18, Local Section meeting at the Museum of Life and Science in Durham.

Chair-Elect: Maurice Balik, NCSU  
Michael Riebe, Glaxo

Secretary: Carol Haney, NCSU  
Reginald Shiflett, Meredith

Councilor: James Chao, IBM

Alternate Councilor: Peter Smith, Duke  
Malcolm Forbes, UNC-CH

Nominations will be accepted from the floor, but please get prior approval of the candidate and have a biographical sketch in hand at the meeting to give to the Editor for preparing the ballot.

John Wasson, Advanced Materials, Jack Preston RTI, Charles Boss NCSU; William E. Hatfield, UNC-CH

## Help with National Chemistry Week

The ACS and the Museum of Life and Science will be sponsoring National Chemistry Week events throughout the month of November. We are looking for volunteers who would like to share their enthusiasm for chemistry through these events. There are a variety of ways in which you could become involved.

November 7 is Family Science Day at the Museum. Chemists are needed to lead forty-five minute informative hands-on chemistry activities. This program is designed to reach approximately 400 disadvantaged individuals. A second event, Family Science Encounters, will be held on November 27. Leaders are needed for 30 minute "WonderScience" workshops for groups of 20. Training and material for both of these events will be provided. There will be an orientation and training workshop on October 30 from 1:00-2:30 p.m.

For those of you who are interested in less structured activities, the "ChemLab: Open House With a Chemist" will be held on November 20. The Museum's ChemLab will be open to the public and we hope that some of you will be willing to talk informally with visitors about your jobs as chemists.

Other opportunities during the month include demonstrations on the museum floor and Science-On-A-Cart. If you would like to participate or would like more information regarding any of these opportunities please call Erin Keating at 220-5429 x367.

Erin will also be available immediately after the business meeting at the Local Section Meeting, Saturday, September 18, 1993.

## Report on Chemistry Graduates

The August 9, 1993 issue of *C&E News* reported that UNC-CH ranked 10<sup>th</sup> in the nation for graduating undergraduate chemists in 1992, the most recent year of the survey. NCSU placed in a three-way tie for 12<sup>th</sup> place. UNC-CH graduated 29 students with certified bachelor's degrees and 30 with uncertified degrees for a total of 59 graduates. NCSU graduated 18 students with certified degrees and 36 without for a total of 44. Other schools listed from the section included Duke with 9 certified graduates and 21 uncertified graduates and NCCU with 2 certified graduates and 7 uncertified. Of the 601 schools reported in the survey, 8435 bachelor's degrees were awarded; a total of 152 came from schools in the North Carolina Section.

With 25 Ph. D. degrees awarded, UNC-CH placed in a two-way tie for 23<sup>rd</sup> for this degree. Neither Duke nor NCSU were ranked, but they graduated 14 and 10 students, respectively, with the Ph. D. At the Masters level, Duke graduated 2 students, NCSU - 5 and UNC-CH - 10.

In Chemical Engineering, NCSU graduated 67 students at the bachelor's level which was eight in the nation. They graduated 7 students with M. S. degrees and 9 with Ph. D. degrees.

Micron Ad must be rescaled to fit

## Chao Elected TCESS Treasurer

Jim Chao, IBM, and 1991 Local Section Chairman was elected treasurer of TCESS, the Triangle Council of Engineering and Science Societies. TCESS provides the voice mail service described in the inside cover. This service gives 24 hour phone access to a Local Section activities.

## NCSU Schedules Open House

Open House '93 will take place on Saturday, September 18 from 9 a. m. until 1 p. m. Colleges and student groups will set up displays in Reynolds Coliseum. The College of Physical and Mathematical Science, which includes chemistry, will have special demonstrations on the first floor of Dabney Hall during this time. The Dabney Hall activities will include Physics, Math, and Statistics as well as Marine, Earth and Atmospheric Sciences. The Chemical Engineering Department will also have displays set up in Ridick Hall Room 113.

## Faculty Grants and Contracts

**ACS-PRF:** "Electroreduction of Carbon Dioxide in Molten Alkylammonium Salts", Paul A. Flowers, PSU; "Paramagnetic Discotic Liquid Crystals", David A. Shultz, NCSU

**Burroughs Wellcome Company:** "Electrochemical Reduction of Perrhenate Using Chaperone Ligands," H. Holden Thorp, UNC-CH

**Glaxo:** "RF Plasma-Induced Surface Modifications of Elastomers", C. Maurice Balik, NCSU

**National Science Foundation:** "Protein Monolayer Electrochemistry", Edmund F. Bowden, NCSU; "REU Supplement--The Control of Acyclic Stereochemistry Employing Organophosphorus Auxiliaries," Slayton A. Evans, UNC-CH; "Weak Electronic Couplings in Biradicals and Radical Pairs: Through-Bond, Through-Space and Through-Solvent," Malcolm D. E. Forbes, UNC-CH; "Chemistry of Metal Oxo Complexes and Oxidation Mechanisms," Thomas J. Meyer, UNC-CH; "Presidential Young Investigator--New Linear Chain Compounds with Metal Carbonyl Repeat Units," Cynthia K. Schauer, UNC-CH; "Enantioselective Reactions of Coordinated Ligands," Joseph L. Templeton, UNC-CH; "REU Supplement--Dynamics of *In Vivo* Dopamine Release," R. Mark Wightman, UNC-CH.

**NC Biotechnology Center:** "Immobilized Metal Ion Affinity Gel Electrophoresis", Leonard D. Holmes, PSU; "Genetically Tailored Polypeptides," Edward T. Samulski, UNC-CH.

**NC Department of Environment, Health & Natural Resources:** "Vertical Sampling and Analysis of Speciated Hydrocarbons and Carbonyls in Urban NC for Ozone Control", V. P. Aneja, NCSU

**Office of Naval Research:** "Synthesis and Characterization of New Low-Dimensional Transition Metal Complex Conductors," William E. Hatfield, UNC-CH; "Catecholamine Secretion from Single Cells," R. Mark Wightman, UNC-CH

**PHS-NIH:** "Synthesis and Synthetic Utility of 1-Acyldihydropyridines", D. L. Comins, NCSU; "Synthesis of Furanone Containing Natural Products", R. J. Linderman, NCSU

**US Department of Energy:** "Band Electronic Structures and Crystal Packing Force of ET Salts", Mike H. Whangbo, NCSU

## Chemistry Olympiad

Although only five high schools participated in the Local Section Exam, 88 students competed in April for a chance to qualify for the International Chemistry Olympiad (IChO). The NC Section of the ACS announced the names of nine outstanding high school chemistry students who were selected to compete for positions on the National team. These students are:

Brent Sumerline, Garner Senior High School, Garner  
 Michael Scott Nutt, Garner Senior High School, Garner  
 Edwin J. Amerson, Sanderson High School, Raleigh  
 Sam Barron, Enloe High School, Raleigh  
 Kyler England, Enloe High School, Raleigh  
 Elena Franklin, NC School of Science and Math, Durham  
 John Christopher Anderson, NC School of Science and Math, Durham  
 Roger Lindsjo, Chapel Hill High School, Chapel Hill  
 Sandy Alexander, Chapel Hill High School, Chapel Hill

These students were among more than eleven hundred students who took the national exam in April to qualify them to be member of the US National Chemistry Olympiad team that competed in the 25<sup>th</sup> Chemistry Olympiad in Perugia, Italy July 11-22. Twenty students were identified and underwent intensive training at the US Air Force Academy in Colorado Springs in June. Only the top four were chosen to represent the US in IChO competition. Although none of these student qualified to advance to the Colorado group, they are all to be congratulated.

The IChO involved a series of theoretical exams, laboratory exercises and other activities aimed at identifying the best chemistry students from participating nations around the world. This was the tenth year of US participation. Last year the US team earned one gold, two silver and one bronze medal and placed fourth out of 33 participating nations.

### Galbraith Ad for Glassware Repair

## Local News

**BASF:** In June, BASF personnel began moving into their new Southeast Regional Headquarters in Charlotte. The headquarters are located on a 12.3 acre tract in the Morrocroft section of South Park in Charlotte.

**Boron Biologicals, Inc.:** BBI started work on a new \$500,000 research contract from the US Department of Energy (DOE) to develop new anti-cancer drug compounds. BBI also received two \$50,000 contracts from the National Institutes of Health (NIH) in May to study and develop new boronated anti-tumor drug substances.

In business news, BBI has named Charles R. Krause president and chief executive officer and Todd C. Bishop as chief financial officer. The appointments help position the company for its next commercial push. "Chuck Krause's medical industry experience and business know-how will help guide us through BBI's next stage of development," said Dr. Bernard F. Spielvogel, founder and chairman of the Raleigh Biotechnology firm. "With Chuck Krause and Todd Bishop, we have a strong business management team to go with our solid scientific team. We're beginning a concerted effort to commercialize our proprietary technology and create boronated compounds to help people." Dr. Spielvogel, an internationally known boron chemist, previously held the CEO position. He will now concentrate on research and on developing new compounds and drug substances as BBI's lead scientist.

**Duke:** Linda B. McGown was named the 1994 award recipient of the New York Section of the Society for Applied Spectroscopy Gold Medal Award. This award was established in 1952 by the New York Section of the Society for Applied Spectroscopy to recognize outstanding achievements in spectroscopy.

**Dr. Eric Toone** reported that the 48<sup>th</sup> Calorimetry Conference was held in the Chemistry Department July 18-23. The conference included participants from industry, government and academia and included both domestic and international speakers.

**NCSU:** Dr. William L. Miller, Biochemistry, was one of four faculty members named William Neal Reynolds professors, one of the highest honors awarded to faculty in the College of Agriculture and Life Sciences. The Distinguished Reynolds Professorship Fund was established in 1950 to honor the most outstanding scholars and teachers in the College of Agriculture and Life Sciences. There are 18 active Reynolds professors at NCSU, including the newly named professors. Forty-four faculty have shared the honor since the professorships were created. Miller was recognized for his work in the reproductive system specifically the effect that steroid hormones have on genetic regulation of the reproductive system.

In an effort to provide rural high school students the same quality of chemistry and physics programs that are available to their peers in urban areas, NCSU is launching a special program combining teacher education and interactive computer equipment. Called Team Science, the project is a joint effort of the College of Physical and Mathematical Sciences and the College of Education and Psychology. The program began this summer by providing a training workshop in the latest computer technologies to 15 chemistry and physics teachers from nine high schools in Northeastern NC. The program encourages cooperation and networking among the schools. During the school year a master teacher from NCSU will take high-tech computer and laboratory equipment to each school. Coordinators of the program are Dr. John Park, Math and Sci. Ed.; Dr. David Haase, Director of The Science House at NCSU and Dr. Alton Banks, Chemistry. Administered through The Science House, the program is funded by a grant from NSF (reported in the July 93*TarHelium*) and by the Camille and Henry Dreyfus Foundation.

Dr. William L. Switzer, Physical and Mathematical Science, and Dr. Charles Tomasino, Textiles, received 1992-93 Outstanding Extension Service Awards. The awards recognize faculty and staff for superior performance in extension work.

George H. Wahl, Jr., Professor of Chemistry and Director of Organic Laboratories at North Carolina State University, has been selected as Chair elect for 1994 of the ACS Division of Chemical Health and Safety. He will automatically ascend to Chair of the Division in 1995. George who has long served as Chair of Safety Committees for the Department, University and Local Section, is also a coauthor of the ACS book "Developing a Chemical Hygiene Plan". He is on the Editorial Board of the Divisional newsletter "CHASNotes", soon to become a "magazine". He is a frequent consultant to academia and industry on safety and environmental issues. He also serves on the national ACS joint Board-Council Committee on Chemical Safety, and chairs the subcommittee on New Facilities.

**Organon Teknika-Cappel:** A 96-page catalog provides both listing and descriptions for the immunochemicals and specialty products available from the company. It now includes an index of all antibody products by specificity and all specialty products by name, source and application. There are new table of suggested product dilutions in tissue staining, immunoblotting and immunoassays. Product preparation, specifications, storage and uses are provided for most product groups. The catalog features expanded lines of monoclonal antibodies, affinity purified antibodies, conjugated antibodies and kits. Contact: Norman Poludniak, Product Manager, (919) 620-2152 in Durham.

**Sphinx Pharmaceuticals:** Sphinx Pharmaceuticals Corporation announced that it has reached an agreement with Eli Lilly & Company to restructure their research and development collaboration on the protein kinase C (PKC) family of intracellular enzymes. PKC has been demonstrated to be a mediator in key cellular functions including inflammation and cell proliferation. Under the amended agreement, Sphinx will reacquire from Lilly the rights to commercialize products based on PKC regulators discovered by Sphinx in the fields of cardiovascular diseases, central nervous system disorders and inflammatory disorders, and Lilly will retain commercialization rights for PKC regulators for diabetes and the complications of diabetes. Sphinx and Lilly will continue close scientific collaboration centered around PKC research. The collaboration encompasses complementary research in molecular and cellular biology, compound and natural product screening, and medicinal chemistry targeted toward the development of PKC active therapeutic agents. Under the new terms of the agreement, Lilly will provide annual funding of \$2.3 million through September 1995, compared with previous annual funding of \$3.3 million.

Also researchers at Sphinx have discovered a novel compound named balanol, as reported in the July 14, 1993 issue of the *J. Am. Chem. Soc.* Balanol is a naturally occurring metabolite of the fungus *Verticillium balanoides*, collected from pine needle litter in North Carolina forests. The compound has been demonstrated in preclinical studies to block directly the activity of PKC.

In business news from the company, Sphinx announced a streamlining of operations that will reduce the Company's planned fiscal 1994 operational expenditures by approximately \$8 million. The restructuring is a reflection of both the difficult financing environment currently facing early stage biotechnology companies and a strategic decision by Sphinx to focus on the Company's core strengths in the area of Drug discovery. The plan calls for a 29% reduction in staff and will shift many of the expenditures of drug development from a fixed cost to a more variable cost basis.

Also Sphinx reported that for the fiscal year ending June 30, it had revenues of \$3.5 million and a net loss of \$25.8 million or \$2.12 per share. These results compare with revenues of \$2.4 million and a next loss of \$11.8 million in fiscal 1992.

**UNC-CH:** Dr. Joseph M. DeSimone, assistant professor of chemistry at the University of North Carolina at Chapel Hill has been named one of thirty Presidential Faculty Fellows for 1993. The award - the most prestigious available to young science faculty at American Universities - goes to researchers who have demonstrated excellence both in scientific or engineering research and in teaching. Each award carries a grant from the National Science Foundation of \$100,000 a year for up to five years. President Clinton will present the awards at a special White House ceremony later this year.

Linda L. Spremulli, Edouard Morot-Sir professor and director of graduate studies in the Department of Chemistry, has been named interim vice chancellor for graduate studies and research. "Dr. Spremulli exemplifies the strong teaching and research skills necessary for this position," said Chancellor Paul Hardin. "She has a firm knowledge of the sciences and at the same time is constantly recognized by her students for her outstanding teaching ability." Spremulli, who has received the Katherine Carmichael Teaching Award and a 1992 Tanner Award for Excellence in Undergraduate Teaching, will oversee the Graduate School and the University's research efforts.

The Department of Chemistry welcomed the 1993 ChemCom Teacher Training Workshop supported by the American Chemical Society. This course was hosted by Professor Joseph M. DeSimone at the University of North Carolina at Chapel Hill, on August 7-11. ChemCom is short for Chemistry in the Community which is a year-long chemistry course designed primarily for college-bound high school students who plan to pursue careers in fields other than science. The workshop emphasizes the impact of chemistry on society by addressing chemistry-related technological issues that are relevant to our community and society. Students learn chemical facts and concepts as they need them to understand the societal issues addressed in the course. The Department of Chemistry at the University of North Carolina at Chapel Hill is one of the eleven universities that hosted this program across the United States.

James W. Jorgenson received the American Chemical Society Award in Chromatography, sponsored by Supelco, Inc., at the Spring ACS meeting in Denver, Colorado. The award was presented to Professor Jorgenson "for his fundamental contributions to the development of high-performance capillary electrophoresis, and for development of chromatographic instrumentation permitting analysis at the level of single cells." The award was presented to Professor Jorgenson by Dr. Stuart Bush of the Rohm and Haas Company (parent company of Supelco). Dr. Bush is a former student of Professor Jorgenson's, and earned his doctorate at UNC-CH in 1984.

## Science and Mathematics Partnership

Concerned about the science and mathematics education of our children? *You can help.* Fill out the attached registration form and join the Research Triangle Science and Mathematics Partnership. Join *over 800* of your fellow scientists, engineers, health professionals and others with a technical background to help teachers bring the excitement of discovery and invention into school classrooms.

Volunteers from area companies, professional societies and clubs have joined teachers and educators in the Triangle area to help our students understand science, mathematics, medicine and engineering at work in their community. Our goals include fostering among elementary and secondary students positive perceptions of scientists, engineers and health professionals and the work they do.

The Science and Mathematics Partnership, now in its fourth year, began in 1989 with 300 registered volunteers visiting 49 Wake County elementary schools throughout the year. In 1991-92 volunteers visited 1,090 classrooms throughout the Triangle resulting in 27,300 student-scientist interactions. The Partnership now includes elementary and middle schools in Chapel Hill/Carrboro, Chatham, Durham, Orange, Granville and Wake County schools. Partnership staff operate out of the North Carolina Science and Mathematics Alliance (Raleigh 733-4745 or (800) 972-0429), the North Carolina Museum of Life and Science (Durham, 220-5551), and the UNC Center for Math and Science Education (Chapel Hill, 966-5922), providing local contacts to teachers and volunteers throughout the Triangle.

Your participation can take several forms, and you can control how much time you give. Volunteers can make classroom visits in which they present hands-on activities and experiments, become a Scientist-in-Residence and assist one teacher and class for a school year, help with science Olympiads or mathematics festivals, or provide individual or small group mentoring. The Partnership plans to expand into the following additional activities: minorities and your women programs, open-ended and "hands-on" test items, school support teams to assist teachers, science and mathematics classroom kits, summer internships for teachers in industry or on-campus, and parent and community involvement programs. If you would like to receive information about these programs, or might like to participate in one or more, please indicate which programs on the bottom of your registration form.

With over 800 volunteers to call on, we will take no for an answer if you just can't answer a particular request, but if you don't fill out the registration form and send it in, we won't be able to call and ask for your help! On behalf of the future scientists, engineers, doctors, technicians and informed citizens in North Carolina, thanks for your interest and support.

## Organic Chemistry on Cable TV

Enrollment is open at NCSU Chemistry for CH 221, Organic Chemistry I, which will be offered on Raleigh Cablevision in the Fall. This is an opportunity to earn credit for our regular Sophomore/Junior level course in Organic Chemistry by coming to campus only once a week for lab. Interested individuals should call Dr. George Wahl at NCSU (919) 515-2941 for details.

## Area Seminar Calendar

- Aug 30 J. D. Otvos, North Carolina State University, "NMR as an Improved Method of Quantifying Blood Lipoprotein Cholesterol Levels: the Good, the Bad and the Ugly", NCSU
  - Aug 31 H. Toriumi, University of Tokyo, "One- and Two-Dimensional FT-IR Time-Resolved Spectroscopy of Liquid Crystals", Duke
  - Sep 3 J. A. Marshall, University of South Carolina, "Synthesis of Some Bridged Furan Natural Products", Duke
  - Sep 9 S. A. Kahn, North Carolina State University, "Rheology of UV-Cross-Linked Polymers", Polymer
  - Sep 10 P. Feldman, Glaxo Research Institute, "Organic Chemistry Aiding Basic Biological Research: Biosynthesis of Mammalian-Derived Nitric Oxide", Duke
  - Sep 13 B. Pettitt, University of Houston, "Solvent Induced Structures of Biomolecules", NCSU
  - Sep 17 R. L. McCreery, Ohio State University, "Structure and Electrochemical Reactivity of Carbon Surfaces: Why Burn Things to Make Electricity?", Duke
  - Sep 18 Tour and Pig Picking at the Museum of Life and Science in Durham, 1:00-5:00, ACS
  - Sep 20 W. Farneth, Experimental Station CR&D, DuPont, "Understanding Acidity in Zeolites", NCSU
  - Sep 23 Corporate Sponsors Night, Duke Chemistry, 7:30 p. m., MS
  - Sep 24 H. M. L. Davies, Wake Forest University, "New Strategies in Asymmetric Synthesis", Duke
  - Sep 27 M. Platz, Ohio State, "TBA", NCSU
- ACS-American Chemical Society monthly meeting-see p. 2  
 Polymer-ACS Polymer Discussion Group, at 7:30 p. m., NCSU Faculty Club. Call Walter Pawlowski (919) 543-2243 (IBM-RTP) and see p. 2  
 MS-Mass Spectrometry Discussion Group. Call Don Chace, Duke 684-2036 or Carol Haney NCSU 515-6279  
 Duke (Chemistry) seminars at 3:30 p.m. Call Bonnie Turner at 660-1506.  
 NCSU (Chemistry) seminars at 3:30 p.m. Call Joyce Weather-  
 spoon at 515-2548.  
 UNC-CH (Chemistry) seminars as noted. Call Becky Smith at 962-2172.

Tudor Ad for Glassware

## Free Galbraith Offer

Galbraith Laboratories, Inc., a worldwide provider of analytical services, has announced availability of a free (in reasonable quantities), notebook-size color periodic table. This chart is designed to be a useful reference tool for laboratories and classrooms, as well as offices. A free color wall chart version (17" x 22") of the Galbraith periodic table continues to be available.

To request a chart or other information, contact:

Galbraith Laboratories, Inc.  
PO Box 51610  
Knoxville TN 37950-1610  
Tel: (615) 546-1335

## Area Jobs

All job announcements are broadcast immediately upon receipt to the e-mail distribution list. If you wish to be included send you address to: bill\_switzer@ncsu.edu.

**Burroughs Wellcome:** For information on job opportunities with Burroughs Wellcome Co., call our Job Information Line at (919) 315-8347.

**EPA-RTP:** Job line (919) 541-3014. Updated every Friday.

**Liggett Group Inc.:** Human Resources Department, Liggett Group Inc., PO Box 1886, Durham NC 27702. Senior Scientist; Analytical Research Department, Minimum BS in Chemistry required with 10 years experience in chemical analysis, advanced degrees in Chemistry also considered. Duties include chemical analysis of tobacco and tobacco smoke by GC/MS/IR and HPLC.

**RTI:** Contact: Research Triangle Institute, Office of Human Resources, PO Box 12194, Research Triangle Park NC 27709-2194. Phone: (919) 541-6466. Chemist I/II F0416 G4A BS/BA in Chemistry with training or experience in HPLC/GC. Will provide analytical chemistry support for toxicity studies: chemical characterization, methods development, dosage formulation and analysis. Will also perform data analysis and report writing. (GC) Env. Eng./Sci. III-Res. Env. Eng./Sci. I J0247 94A BS/MS in Engineering or Environmental Science with 3-6 yrs. relevant experience in pollution prevention and waste minimization studies and in chemical and industrial process. Good communication skills are essential. Should be experienced in computer spreadsheets and database management. Must be able to travel to industrial facilities. (GC) Postdoctoral Chemical Engineer J0246 96A PhD in Chemical Engineering with laboratory experience in gas-solid catalysis, analysis (GC,TGA) and kinetic modeling. Will conduct research in catalytic oxidation, NOx control and adsorption processes: carry out kinetic modeling and economic studies. (GC) Analytical Chemist I/II/III G0073 70A BS/BA or MS in Chemistry with experience in trace metal analysis. Experience in clean room techniques and operation of graphite furnace AA or ASV preferred. Experience with GLP's helpful. Will perform research and analysis in inorganic analytical chemistry and methods development for graphite furnace AA and ASV. (GC) Chem. Eng./Env. Eng./Env. Sci. II/III J0245 94A BS/MS in Engineering/Environmental Science with good written/oral communication skills essential. Experience with computer spreadsheet and database mgmt. and in pollution prevention/waste mgmt. and the ability to travel to industrial facilities required. Will conduct environmental research tasks assigned by and under the supervision of project leader. (GC) Chemist

I F0415 63A BS in Chemistry with training or experience in organic synthesis. Will synthesize, purify and analyze organic compounds. (GC) Engineer I J0241 95A BS/BA in engineering or science. Experience in ventilation and chemistry desirable. Should have training or experience in organic analysis and generation of test atmosphere. (GC) For. An. Tox. III/Res. For. An. Tox. I F0414 G4A BS/BA in Chemistry or related discipline with at least 1-2 yrs. experience in the review and certification of GC/MS and immunoassay data, QC procedures and chain of custody. Will review laboratory inspection reports, SOP's, data, remedial action submissions, assist in determining laboratory status and other duties as required. (GC) Postdoctoral Chemist (Term) F0393 63A PhD in Organic Chemistry plus experience with organic synthesis. Duties include radiosynthesis. (Term) (GC) Postdoctoral Chemist (Term) F0394 63A PhD in Organic Chemistry. Duties include organic synthesis. (Term) (GC) Postdoctoral Chemist (Term) F0408 63A PhD in Organic Chemistry with research experience in organic synthesis. Will conduct research to synthesize organic compounds. (GC) Postdoctoral Chemist (Term) F0409 63A PhD in Organic Chemistry with training in organic synthesis. Will conduct research to synthesize novel organic compounds. (Term) (GC) Res. Analytical Chemist II/III G0071 72A PhD in Analytical Chemistry with 2-5 years of experience in analytical/environmental chemistry. Experience conducting independent research programs should have good communication and management skills. Develop independent research programs, write proposals and grants, manage projects, interact with clients. (GC) Res. Forensic An. Toxicologist I/II F0407 G4A PhD or equivalent in Chem., Toxicology, Pharm. or related discipline with experience in the technical direction of a forensic urine drug testing laboratory or as an inspector of FUD laboratories. Must have excellent communication skills. Will review laboratory applications, inspection reports; SOP's; laboratory data 6 other information; determination of lab. cert. status; performance testing & results. (GC) Res. Pharmacokineticist I/II F0412 64A PhD in appropriate discipline and experience in the pharmacokinetic modeling of xenobiotics. Applicants should have a thorough understanding of computer modeling programs such as ADAPTII, NONMRM, NLIN and PCNONLIN and experience in the statistical analysis of experimental data. (GC) Res. Nat. Prod. Sci. III/Sr. NPS I/II/III F0413 60A PhD with experience in the isolation and structure determination of natural products. (Experience in synthesis and testing of natural products will be considered). Will be responsible for leading natural products research programs; writing successful grant/contract proposals; managing research projects and supervising laboratory staff. (GC) Research Chemist I/II F0410 66A PhD in Polymer Chemistry with 3-5 years of postdoctoral research experience in polymer chemistry or material science. Will be responsible for developing R&D proposals to generate external funding and to carry out funded research in the area of polymer science. (GC)

**Tudor Scientific Glass Company:** Tudor Scientific Glass Co. Inc. seeks a representative for our scientific glassware manufacturing and repair services. Tudor repairs and fabricates scientific glassware apparatus for chemical, environmental and research laboratories. Representative must work with clients from industry, university and government groups. Background in chemistry or laboratory sales experience preferred. For further information contact Teresa Hampton at Tudor Scientific Glass Co., Inc. 555 Edgfield Rd. Belvedere SC 29841. (803) 279-4666.