



The TarHelium

Volume 23, Number 9

Summer 1993

Fall Symposium

Title: Molecular Modeling: Integration Of Theory And Experiment

Dates: October 21-23, 1993

Location: North Carolina Supercomputing Center

The Symposium will combine presentations by local scientists and speakers from outside the Research Triangle area. It will include a poster session and will be accompanied by the software and hardware demonstrations from major vendors. We seek (a) papers that combine theoretical and experimental approaches towards solving common problems, (b) papers, purely theoretical in nature, that accurately reproduce the experiment and predict new experiments or (c) papers, experimental in nature that appeal to theoretical analysis that may further enhance the experiment. For more information about this Symposium please contact Professor Alexander Tropsha, Chairman, Organizing Committee, Laboratory for Molecular Modeling, CB#7360, Beard Hall, School of Pharmacy, UNC-CH, Chapel Hill, NC 27599-7360; (919) 966-2955, e-mail: tropsha@gibbs.oit.unc.edu. If you wish to present a poster, please send a one-page abstract by September 15, 1993 to Dr. Alexander Tropsha.

Corporate Sponsors of Section Conference

The 107th Conference of the Section was held at NCSU on Saturday, April 24. The meeting was well attended and had 97 papers including 69 oral presentations and 28 posters. One of the reasons for the success of this meeting was the generous corporate sponsorship of the meeting. Many thanks to:

BASF Corporation
Burroughs Wellcome Company
Glaxo Inc.

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1998 Southeastern Regional Meeting

The Section is preparing to bid for the 1998 Regional ACS meeting. Five sites have been identified including the McKimmon Center, the North Raleigh Hilton and Raleigh Civic Center, the Durham Civic Center Complex and the Sheraton Imperial. "The front runner location is presently the RTP site," said William L. Switzer, chairman of the Bid Committee. "We are currently trying to decide on a meeting time and preparing to make our bid at the October meeting in Johnson City TN," he said. Other committee members include J. S. Bernstein, H. H. Carmichael, W. E. Hatfield and P. Smith.

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

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Send contributions for *The TarHelium* to the W. L. Switzer, Editor, Chemistry-8204, North Carolina State University, Raleigh NC 27695-8204. Phone: (919) 515-2945. FAX: (919) 515-5079. E-mail via Internet: bill_switzer@ncsu.edu.

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

Voice-mail 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

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Manager, Membership & Subscription Services
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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, August 10, 1993

National ACS meetings:

August 22-27, 1993, Chicago
March 13-18, 1994, San Diego
August 21-26, 1994, Washington
April 2-7, 1995, Anaheim
August 20-25, 1995, Chicago

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.

Report from the March 31 Council Meeting

by Eric C. Bigham, Councilor

President Helen Free will continue to emphasize programs to improve the public's awareness of chemistry, to improve participation in ACS by industrial bachelors and masters level chemists, to encourage children's interest in science, to urge more members to be active in ACS, and to continue international contacts.

President-Elect Ned Heindel is focusing on research funding, reemphasizing teaching, support of basic research, industrial-academic interaction, and sources of financial aid for students. He is also looking at joint programming with sister societies.

Past-President Ernest Eliel continues to push for more research funding and support of basic research. His major efforts have been in education, international activities, government relations, and member relations.

Council: Two existing committees were merged into the Committee on Economic and Professional Affairs, which will foster the ongoing improvement in the economic and professional status of members. A new Society Committee on Chemical Abstracts Service was created to interface with the new, independent CAS board of directors. A joint board-council Committee on Minority Affairs was created to promote greater participation in the chemical sciences by minority groups and encourage activity by minority scientists in the ACS. This new initiative received strong support from the Board of Directors. Membership Affairs Committee (MAC) is studying member recruitment, communication, and especially member retention. MAC, in collaboration with local sections and divisional affairs, will try to determine why 45% of new members resign within 5 years. A resolution was passed that gives 6 months of free ACS membership to people who graduate with a bachelors degree in a chemical science. The Committee on Education will continue to promote participation at the national meeting by undergraduates and will continue to support the USA Today Project. The Local Sections Activity Committee will encourage local sections to support K-12 science education. The allotment to local sections for member recruitment will increase to 10% of dues for new members, 7.5% for national affiliates, and 5% for reinstated members. The first International Chemical Sciences Chapter was chartered in Saudi Arabia. The dues for 1994 were set at \$96, a rise of \$3.

Local Section Undergraduate Scholarships

Five undergraduate research scholarships worth \$750 each were awarded to students in the Section. **Lawrence P. Cogswell, III**, Glastonbury CT will work with Dr. A. L. Crumbliss at Duke University, **Edgar G. Estupiñán**, Raleigh will work with Dr. C. B. Boss at North Carolina State University, **Maria C. Garci**, Durham will work with Dr. R. A. Palmer at Duke University, **Dana B. Lacy**, Greensboro will work with Dr. M. T. Crimmins at the University of North Carolina, Chapel Hill and **Stephen Schneider**, Chapel Hill, will work with Dr. B. W. Erickson at the University of North Carolina, Chapel Hill.

The scholarship committee is: M. Anderson, Enloe HS, B. Freeman, NCSU, R. G. Ghirardelli, ARO, J. W. Hines, RTI, E. A. Vogler, Becton Dickenson and J. L. Chao, IBM, Chair.

NCIC - AIC FOUNDATION 1993 STUDENT AWARDS

The North Carolina Institute Of Chemists held its annual awards Banquet on April 24, 1993 at North Carolina State University. Dr. Thomas J. Meyer, University of North Carolina, Chapel Hill, was the 1993 North Carolina Distinguished Chemist Award Recipient. He gave his acceptance address at the Awards Banquet. At the meeting, the following students from around the State received 1993 Student Awards from the North Carolina Institute of Chemists - American Institute of Chemists Foundation.

Students

Steven W. Tregay
Peter F. Bakes
Melissa N. McKeel
Gregory L. Johnson
Robin K. Rohn
James H. Johnson Jr.
Sanza L. McClendon
Carl A. Foulks, Jr.
Edmund B. Trexler
Pamela Marie Meads
C. Melissa Rushing
Kimberly G. Rehner
B. Gilley Boaz, III
Kathie Anne Fallows
Kazuhiko Fukui
Jason Donald Altom
Betsy Jo Barnes
Amy Burkett
Charles T. Coffey

Colleges

Davidson College
Duke University
East Carolina University
Elizabeth City State University
Elon College
Fayetteville State University
Johnson C. Smith University
NCA&T State University
N.C. State University (Biochemistry)
N.C. State University (Chemistry)
N.C. State University (Textiles)
N.C. Wesleyan College
Pembroke State University
St. Andrews Presbyterian College
UNC at Asheville
UNC at Chapel Hill
UNC at Wilmington
Warren Wilson College
Western Carolina University

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Dr. S. Dexter Squibb
Dr. MauriceBurse
Dr. Louis H. Adcock
Dr. Dean C. Kahl
Dr. Edwin G. Vassian

Local News

Grants and Contracts: From ACS-PRE: **C. K. Schauer**, UNC-CH, "New linear-chain materials with metal-carbonyl cluster repeat units". From Amoco Chemical Company, Air Products Chemical Company and Rohm and Haas Company: **J. M. DeSimone**, UNC-CH, "Matching funds for the NSF Young Investigator Award". From the Air Force Office of Scientific Research: **E. T. Samulski** and **R. C. Jarnagin**, UNC-CH, "Organic polymeric ultra-structures derived from liquid crystalline phases". From DuPont: **J. M. DeSimone**, UNC-CH, "Fluoromonomer polymerization in carbon dioxide". From Glaxo: **D. L. Comins**, NCSU Chemistry, "Studies Toward the Synthesis of Camptothecin". From Martin Marietta Energy Systems, Inc.: **G. L. Glish**, UNC-CH, "Structure determination of gas phase ions". From the National Science Foundation: **A. J. Banks**, NCSU Chemistry, and associates from the Science House and Department of Education, "Team Science", an outreach effort to area secondary schools in 10 rural counties surrounding Wake County, **M. M. Bursey**, UNC-CH, "Summer institutes in analytical chemistry", **L. A. Coury Jr.** and **C. M. Heyer**, Duke Chemistry, "Surface Analysis by Scanning Tunneling Microscopy", **J. M. DeSimone**, UNC-CH, "NSF Young Investigator Award", **S. A. Evans**, UNC-CH, "The control of acyclic stereochemistry employing organophosphorus auxiliaries," **B. O. Fraser-Reid**, Duke Chemistry, "n-Pentenyl Glycosides in Mechanistic and Synthetic Investigations", **W. E. Hatfield**, UNC-CH, "Exchange coupling and phase transitions in novel transition-metal chain compounds", **C. S. Johnson**, UNC-CH, "Studies of chemical rate processes by means of size and charge resolved 2D-NMR", **P. J. Kropp**, UNC-CH, "Surface-mediated electrophil-

ic additions", **T. J. Meyer**, UNC-CH, "Photochemical electron and energy transfer", **R. E. Miller**, UNC-CH, "State-to-state photochemistry and vibrational spectroscopy of molecular complexes", **R. W. Murray**, **E. A. Irene** and **M. N. Silver**, UNC-CH, "Design, characterization and electron hopping properties of thin molecular films", **R. G. Parr**, UNC-CH, "Theoretical investigations of the electronic structure of molecules," **J. L. Templeton**, UNC-CH, "Development of departmental capabilities for the picosecond domain", **N. L. Thompson**, UNC-CH, "Faculty award for women scientists and engineers", **R. M. Wightman**, UNC-CH, "Microvoltammetric electrodes", **R. M. Wightman**, UNC-CH, "Dynamics of in vivo dopamine release". From the National Institutes of Health: **B. O. Fraser-Reid**, Duke Chemistry "Pentenyl Glycosides in Transformations at Anomeric CTR", **Dr. J. D. Otvos**, NCSU Biochemistry, "Analysis of Plasma Lipoproteins by ¹H NMR Spectroscopy", **M. C. Pirrung**, Duke Chemistry, "Molecular Metaphors in Bioorganic Chemistry", **N. A. Porter**, Duke Chemistry, "Free Radicals, Membranes and Enzyme Photoactivation". From NIGMS: **B. W. Erickson**, UNC-CH, "Engineering of nongenetic beta proteins", **G. J. Pielak**, Duke, "Genetic reversion and NMR as probes of protein structure", **T. J. Meyer** and **T. R. Boussie**, UNC-CH, "Systems for photocatalytic cleavage of water", **L. L. Spremulli**, UNC-CH, "Mechanism of protein biosynthesis in chloroplasts". From the National Research Council: **R. P. Buck**, UNC-CH, "Structure determination of gas phase ions". From Neurological Dis & Stroke: **R. M. Wightman**, UNC-CH, "Electroanalysis of Neurotransmitters and Modulators". From the NC Biotechnology Center: **G. G. Hammes**, Duke, "Faculty Recruitment Grant for Dr. Thomas F. Tedder as Professor and Chair in the Department of Immunology", **R. G.**

Carbonell, NCSU Department of Chemical Engineering, "Affinity Purification of Proteins Using Ligands Derived from Peptide Libraries: A Multi-disciplinary, Multi-investigator Research Program" and **T. J. Meyer**, UNC-CH, "Matching Funds for Picosecond Spectroscopy System." From NCCR: **G. J. Pielak**, Duke, "Circular dichroism instrumentation". From NCSU: **E. A. Irene**, UNC-CH, "Development of ultrathin film characterization methodologies". From Office of Energy Research, Oak Ridge Operations: **R. W. Murray**, UNC-CH, "Solid state voltammetry and sensors in gases and other non-ionic media", **J. L. Templeton**, UNC-CH, "Reductive coupling of carbon monoxide to C2 products". From the Office of Naval Research: **K. Bachmann** and co-workers, NCSU Materials Science and Engineering, "The Deposition of Electrooptic Films on Semiconductors", **J. M. DeSimone** and **E. T. Samulski**, UNC-CH, "New thiophene-based materials". From the Packard Foundation: **H. H. Thorp**, UNC-CH, "David and Lucile Packard fellowship for science and engineering". From the Research Triangle Institute: **J. L. Whitten**, NCSU Chemistry, "Theoretical Studies of Oxygen Dosed Carbon Surfaces". From Societe National ELF AQUITAINE: **J. M. DeSimone** and **E. T. Samulski**, UNC-CH, "Synthesis of PTFE end-capped polymers via fluorinated chlorosilanes".

Boron Biologicals Inc.: Boron Biologicals Inc. (BBI) announced that it has signed a research contract and licensing agreement with Guerbet S.A., a French pharmaceutical company. Under the terms of the agreement, BBI will design, synthesize and characterize new contrast media for use in X-ray imaging. Guerbet will provide animal testing and selection for the new compounds. Patents resulting from the compound development effort will be owned jointly by BBI and Guerbet. Guerbet will receive exclusive marketing and distribution rights to these compounds. "The Guerbet agreement gives BBI access to the resources of a major international pharmaceutical company," said Charles R. Krause, BBI president and CEO. "This agreement will help BBI speed the arrival of new diagnostic compounds to the marketplace and to patients."

Burroughs Wellcome: A newly published study supports the conclusion that Mepron(R) brand atovaquone is a beneficial treatment for mild to moderate cases of *Pneumocystis carinii* pneumonia (PCP) in AIDS patients intolerant to standard therapy. Appearing in the May 27 issue of The New England Journal of Medicine, the study reports the results of a clinical trial that compared Mepron with trimethoprim-sulfamethoxazole (TMP-SMX) for treatment of PCP, the most common and often deadly opportunistic infection associated with AIDS. The study was conducted in major medical centers in the United States, Europe and Canada, and compared Mepron to TMP-SMX in 322 patients with mild to moderate PCP. Data from the study showed TMP-SMX to be the more effective of the two drugs in fighting PCP infection. However, its substantial side effects, including vomiting, nausea, fever, rash, liver damage, kidney failure, headache and chills, significantly limited the number of patients who could take TMP-SMX. Conversely, Mepron showed considerable anti-PCP activity while also being tolerated by a much higher percentage of patients.

"The results of this study show that physicians have another useful medication for managing patients with mild to moderate PCP," said Sandra Nusinoff Lehrman, M.D, vice president of infectious disease, immunology and biotechnology at Burroughs Wellcome Co. "The availability of an effective and easily tolerated alternative to TMP-SMX will improve treat-

ment options for PCP in patients with HIV infection." In the double-blind study, led by Dr. Walter Hughes at St. Jude's Children's Research Hospital in Memphis, TN, patients were randomized and given either Mepron or TMP-SMX for 21 days unless lack of response or drug toxicity occurred. Of the 160 PCP patients treated with Mepron, 28 (20 percent) failed to respond, while 10 (7 percent) of the 162 patients in the TMP-SMX group were non-responders. However, only 11 patients (7 percent) in the Mepron group experienced treatment-limiting side effects compared with 33 (20 percent) in the TMP-SMX group.

CIIT: Local Section member, **Dr. Mark A. Carfagna**, was one of two recipients of National Service Awards in 1992. Four other recipients were announced from CIIT for 1993.

Duke: Dr. Michael C. Pirrung, Associate Professor of Chemistry and Science Advisor to Affymax Research Institute in Palo Alto CA, was one of four scientists associated with the Institute to receive the 1993 Distinguished Inventor Award. This award was given for a "biological chip" used in drug discovery and medical diagnostics. The invention provides a tool for synthesizing and screening large numbers of different chemical compounds in specific locations on a microchip. It combines the technology of synthetic chemistry with processes used in the semiconductor industry. Several thousand compounds can be synthesized on a chip 1 centimeter square in the time needed to prepare a single compound by traditional methods. The invention could be important in reducing the high cost of health care.

In other news: For the 1992-93 academic year, Duke Chemistry graduated 33 chemists with bachelors degrees; 25 with BS degrees and 8 with BA degrees. Duke also awarded 3 MS degrees and 10 PhD degrees in Chemistry in 1992/93.

At its May Graduation, Duke Chemistry recognized the following outstanding students: **Peter F. Bakes**, Northvale NJ and **Neal K. Moskowitz**, Randolph NJ were elected to Phi Beta Kappa. The 1993 Undergraduate Award in Analytical Chemistry went to **Guisug G. Nam**, Fayetteville. The Kenneth Gordon Fellowship for Advanced Independent Study was given to **Marie-Laure Novoret**, Alpena MI. The Vista Chemical Scholarship went to **Peter F. Bakes**, Northvale NJ. The Merck Index Award for Scholastic Achievement went to **Neal K. Moskowitz**, Randolph NJ. The NC Section ACS Scholarship was given to **Kimberlee A. Kane-Maguire**, Greenville SC. The Department of Chemistry award was also given to **Kimberlee A. Kane-Maguire**, Greenville SC.

Also from Duke: Chemistry for Executives, the Duke Chemistry Department's annual two-week cram course for chemical industry leaders who lack science training, enrolled an unusually diverse class this year, including participants from nine foreign countries. In addition, eight of this year's class of 35 are women, a large increase from the average of three, said chemistry Professor Richard A. Palmer. "Over-all, there is a trend toward more and more women in senior management positions." Palmer, who currently directs the 19-year-old program, suspects this year's big foreign-based student count may also represent a trend. Just as in the US, perhaps companies abroad are concluding that "the best managers are not necessarily the technical people," he said. The nine foreign students come from Argentina, China, Columbia, Great Britain, Hong Kong, Mexico, Singapore, Switzerland and The Netherlands.

Chemistry for Executives was intended for lawyers, accountants and others who have become promising chemical industry executives despite having little or no formal education in chemistry. A total of 531 have gone through the program since it began in 1975.

This year's class, which convened on May 24, included executives from firms like Amoco, ARCO Chemical, BASF Corp., and Rohm and Haas (the industrial sponsor of the 1993 session.) Like last year, they stayed at the Washington Duke Inn and most are expected to walk to their classes at the Gross Chemical Laboratory. There was little time for golf and tennis. "They are here to learn and they work hard," Palmer said.

During their daily grind of lecture, supplemented by nightly review sessions with Duke graduate students, the student-executives absorb enough chemical information to enable them to talk knowledgeably with their companies' Ph. D. chemists.

Near the course's end, each participant made a brief presentation demonstrating his or her knowledge of a specific chemical and how its used by industry. Though they are all experienced at making oral presentations, "some are really terrified by having to get up and talk on a technical matter," Palmer said.

Top faculty at Duke, North Carolina Central University and Virginian Military Institute teach the course. Amoco's Chemicals' manager of research and development also flies in to lecture on chemical engineering.

Tuition and registration fees for each student totaled \$7,700, enough to provide the chemistry Department's discretionary fund with somewhere between \$75,000 and \$100,000 after all expenses are covered.

Although the course has proved successful, the department still reviews the program each year in an effort to make it work better. For instance, the 1993 lecture schedule was rearranged to include several new videotaped demonstrations of experiment and processes that are difficult to do "live". This year's extra-curricular changes included a Memorial Day pig picking on the Gross chemical lab lawn. But, just like the previous Monday, the executives also had to attend class.

With the help of a \$20,000 grant from the NC Biotechnology Center, Duke is establishing a one-week biotechnology course for business people who have little background in science. Patterned on the successful "Chemistry for Executives" course offered each summer by Duke's Department of Chemistry, the new course called "Biotechnology for Executives," will be targeted at managers, investment bankers, venture capitalists and others involved with biotechnology-oriented businesses, said director Michael C. Pirrung.

Now an associate professor of chemistry at Duke, Pirrung formerly worked at Affymax Research Institute, a Palo Alto CA biotechnology firm. According to Pirrung, the idea for his program evolved when Affymax officials quizzed him about Chemistry for Executives. "That got me thinking that we need an equivalent kind of course that would teach people the basics used in the biotechnology industry: cloning, receptors, ion channels, pharmacology and so forth," Pirrung said. "This is a course to take somebody who has a law degree, or an MBA or a Ph. D. in finance and teach him or her enough about the basic science so they can communicate with key scientists, read the biotechnology company prospectuses and have some sense of what the possibilities are."

Biotechnology for Executives will first be offered in the summer of 1994 at Duke's Leon Levine Science Research Center, he said. The Levine Center, a 341,000 square foot interdisciplinary research and education building is set to open in 1994.

NCSU: During the 1992-93 academic year, NCSU graduated 109 chemists with bachelors degrees; 83 with BA degrees and 26 with BS degrees. NCSU also awarded 1 MC, 6 MS and 13 PhD degrees in Chemistry.

At its 1993 Graduation in May, NCSU Chemistry announced the following awards: The CRC Press Freshman Chemistry Awards were given to **Allen Worth Olmstead**, New Bern and to **Tai Khann Tran**, Greensboro. The 1993 Undergraduate Awards in Analytical Chemistry was given to **Pamela Marie Meads**, Raleigh and **Heather Anne Porter**, Fort Wayne IN. The Merck Index Awards for Scholastic Achievement were given to **Elizabeth Margaret Currin**, Columbus OH, **Melissa Michele Hayworth**, of Salisbury and **Craig Richmond Tewell**, Wilmington. The NC Section of the ACS Scholarship for 1992-1993 went to **Melissa Michele Hayworth**, Salisbury. The 1993 Undergraduate Achievement Award from NCSU Chapter of Phi Lambda Upsilon was given to **Leigh Goodwin** of Plymouth and the Graduate Award was given to **Rima Al-Awar** of Raleigh. The College of Physical and Mathematical Sciences Senior Award for Scholarship Achievement went to **Patrick Steven Sipe**, Perris CA. The Hoechst-Celanese Academic Excellence Undergraduate Award went to **Krista Margaret Andersen**, Rockingham and the Graduate Award went to **Lei Zeng**, Shenyang, Peoples Republic of China.

Patrick Steven Sipe, Perris CA and **Carol Moya Tompkins**, Springfield VA were co-valedictorians for the May 1993 graduation. Both received perfect 4.0 averages.

The Iota Sigma Pi Gladys Anderson Emerson Scholarship for 1993 went to **Elizabeth Margaret Currin**, Columbus OH. This award was the result of a nationwide competition. Elizabeth is a rising senior in the BS Chemistry Program at NCSU.

Also from NCSU: At its 1993 Graduation in May, NCSU Biochemistry announced that 58 students graduated with BS degrees in their program. With the 22 students who graduated in December, this gave 80 biochemistry graduates for the 1992-1993 academic year.

Also from NCSU: The Twenty-second Southeastern Theoretical Chemistry Association Conference was held at the McKimmon Center May 20-22. Hosted by the Department of Chemistry and the College of Physical and Mathematical Sciences, the conference was chaired by H. Yang and J. L. Whitten. Seventy faculty, postdocs, and graduate students from fifteen universities in the southeast presented papers and posters on theoretical research in electronic structure theory, reaction dynamics, computations on chemical systems and other topics. Claude McKinney, special assistant to the chancellor, spoke at the conference banquet on plans for Centennial Campus.

Organon Teknika: Organon Teknika Corporation's new MDA™ 180 is a fully automated analyzer for the coagulation laboratory. The 180 is capable of providing random access testing for clotting, chromogenic and immunoassay procedures. It utilizes automated bar code scanning and provides true positive patient identification. Load lists are unnecessary and stats can always be prioritized. Following patient entry and test selection, all that is required is that the operator place the centrifuged patient sample on the sample track (170 tube

capacity). All other steps are automatic including dilutions where necessary. Safety has been designed into the MDA™ 180. Closed tube sampling minimizes operator exposure to potentially infectious samples. A protective shield surrounds the reagent/probe area to prevent accidental injury. Liquid waste is captured in a sealed, disposable container. The MDA™ 180 is designed for 24 hour-a-day operation. A modem link to Organon Teknika's Technical and Instrument service groups insures timely support while minimizing potential downtime. Because of the MDA™ 180's modular design, laboratory personnel can service key components such as probes, positive displacement syringes and light source.

RTI: ENVIRONMENTAL MEASUREMENTS: RTI has EPA funding to develop, demonstrate and evaluate methods for analysis of environmental samples. EPA also has provided funding for quality assurance support for health effects research and for quality assurance for pollutant monitoring.

From the National Institute of Standards and Technology, RTI has additional funding for proficiency testing of asbestos laboratories. RTI has additional EPA funding for systems and performance audits of acid precipitation collection sites.

From the National Park Service, RTI has additional funding for sulfur dioxide analyses. From the US Fish and Wildlife Service, RTI has additional funding to analyze environmental materials for residues of inorganic contaminants.

PHARMACEUTICALS: For a pharmaceutical company, RTI is conducting a clinical trial for treatment outcomes. Pharmaceutical companies have provided additional funding for a drug trial data coordinating center and for review of case report forms.

The University of Illinois and RTI have additional National Cancer Institute funding for novel strategies for plant-derived anticancer agents.

For the World Health Organization, RTI is synthesizing ¹⁴C-artemisinin and artemether.

For NCI, RTI is conducting ISO-antigenic typing of mouse strains. RTI has additional NCI funding to prepare radiolabeled materials.

SEMICONDUCTORS: The US Navy has provided funding for semiconductor technology development, including heteroepitaxial diamond growth, SiGe p-channel transistor technology, AlGaAs/GaAs complementary heterojunction bipolar transistor technology for millimeter-wave power amplifiers, fabrication and testing of Si-Ge and Si-Ge-C alloy structures, and radiation tolerant composite dielectric materials for advanced wafer-scale MOS processing.

For the US Army, RTI is studying ultra-low resistivity material for monolithically integrated npn and pnp AlGaAs/GaAs heterojunction bipolar transistors.

From the National Renewable Energy Laboratory, RTI has additional funding for cost analysis for photovoltaic manufacturing. NCSU and RTI have additional Sematech funding for advanced single-wafer processing. NCSU and RTI have additional National Science Foundation funding to investigate interfacial reactions in the formation of Si/SiO₂ interfaces by low temperature remote-plasma CVD.

Sphinx Pharmaceuticals: Sphinx Pharmaceuticals Corporation (announced preliminary results of its Phase II clinical trial

of Kynac™ (safingol 2%) Ointment, for the treatment of the signs and symptoms of psoriasis. "Results of the clinical analysis suggest that Kynac has a beneficial pharmacological effect on psoriasis lesions, although the effect is not sufficient to provide clinically meaningful improvement. However, it does suggest that inhibition of PKC is a rational target for treating this skin disorder," commented David P. Ward, MD, Vice President of Clinical Development at Sphinx. "We are continuing to analyze the pharmacological effect of Kynac on psoriasis through a skin penetration study, and are prepared to initiate development of an alternative formulation of safingol for the treatment of psoriasis."

"We value the relationship with Lilly and look forward to continuing our PKC collaboration," stated Clayton I. Duncan, President and CEO of Sphinx. "We also believe that our shareholders will benefit from Sphinx's reacquisition of other commercial rights to the PKC disease targets, as they enhance our internal research efforts and are of significant corporate value for potential opportunities for corporate partnering."

Also Sphinx Pharmaceuticals Corporation announced that the Securities and Exchange Commission had declared effective Sphinx's Registration Statement for the resale of up to 1,984,650 shares of its Common Stock. The Registration Statement registers for resale the 649,977 shares of Sphinx's Common Stock issued to former stockholders of Genesis Pharmaceuticals, Inc. when Sphinx acquired Genesis on March 31, 1993 and the approximately 250,000 shares of Sphinx's Common Stock that may be issued in the future upon exercise of certain warrants issued in the acquisition of Genesis. In addition, 1,084,673 shares of Sphinx's Common Stock held by certain other Sphinx stockholders with contractual registration rights are included in the Registration Statement.

A copy of a Prospectus relating to the offering may be obtained from the Chief Financial Officer of Sphinx Pharmaceuticals Corporation, Two University Place, Post Office Box 52330, Durham, North Carolina 27717.

Also Sphinx Pharmaceuticals Corporation and ICAgen, Inc. (Ion Channel Advances) announced that they have entered into a joint venture agreement to identify and develop proprietary compounds that modulate cellular ion channels. The joint venture will combine Sphinx's molecular diversity program, which anticipates generating large libraries of novel small organic molecules, with ICAgen's proprietary ion channel assay systems. Sphinx's molecular diversity program is a result of the recently completed acquisition of Genesis Pharmaceuticals, Inc. Under the terms of the agreement, Sphinx and ICAgen will share revenues, expenses and profits of the joint venture equally, and a research committee comprised of scientists from Sphinx and ICAgen will direct the development of compounds. ICAgen will receive an exclusive license to screen and test compounds provided by Sphinx for ion channel targets. Sphinx has also made an equity investment and will make additional equity investments in ICAgen.

"This joint venture reflects our strategy of producing large libraries of compounds through our molecular diversity program, testing those compounds in our internal programs, and then collaborating with other biotechnology and pharmaceutical companies to screen our compounds against other targets," said Clayton I. Duncan, President and CEO of Sphinx. "We are pleased to work with ICAgen and their proprietary assays."

UNC: During the 1992-93 academic year, UNC, Chapel Hill graduated 77 chemists—32 with BS degrees and 45 with BA degrees. Of those 18 graduated with honors and 24 with distinction. There were 21 graduating seniors in Phi Beta Kappa including the Phi Beta Kappa president. The Venable Medal went to **Benjamin Wesley Trotter III** from Asheville as the most outstanding senior. The Emmett Gladstone Rand Pre-medical Scholarship went to **Mark Thomas Dransfield** of Greensboro. Undergraduate Research Awards went to: **Benjamin Wesley Trotter III**-Asheville, **Jason Donald Altom**-Oak Ridge TN, **Mark Thomas Dransfield**-Greensboro, **Andria Lee**-Elizabeth City and **Scott Jason Schatzberg**-Tryon. The 1992 Undergraduate Award in Analytical Chemistry went to **Jason Donald Altom**-Oak Ridge TN. ACS NC Section Undergraduate Research Grants went to **Benjamin Wesley Trotter III**-Asheville, **Jason Donald Altom**-Oak Ridge TN and **Mark Thomas Dransfield**-Greensboro. The 1992/93 Yarbrough Undergraduate Research Grants went to **Jason Donald Altom**-Oak Ridge TN and **Hannah Sung-Hyun Kim**-Cleveland OH. The 1993 Senior Class Service Award went to **Karen Ann Abner**, Fayetteville. Who's Who Among American College Natural Science Students, **Bruce Edward Rudish**-Miami FL. The James M. Johnston Undergraduate Studies Scholarships went to **Daniel Ross Briggs**-Lexington and **Hyoseon Linda Lee**-Richmond VA. The College Fellow was **Andrea Lynn Decsi**-Charlotte. The Herbert Worth Jackson Scholars were **Mark Thomas Dransfield**-Greensboro and **Benjamin Wesley Trotter III**-Asheville. The Josephus Daniels Scholarship Medal went to **Gregory Michael Francisco**-St. Louis MO. The Morehead Scholars were **Ibraz Rafiq Bandukwala**-Raleigh, **George Moore Brinson**-Tarboro, **Patrick Russel Burnside**-Hickory and **Tawana Annette Walker**-Merry Hill. The Barry M. Goldwater Scholars were **Sherene Katherine Shakib**-Boca Raton FL and **Benjamin Wesley Trotter III**-Asheville. The PPG Scholar-Interns were **Duane Joel Mauney**-Shelby and **Robert Victor Slone**-Louisville KY. The 1993-94 Churchill Scholar was **Benjamin Wesley Trotter III**-Asheville. Marshals of the Class of 1993 were **Ibraz Rafiq Bandukawala**-Raleigh, **Patrick Russell Burnside**-Hickory, **Adam Samuel Foleck**-Wilmington and **Kristine Lee Willett**-East Wooster OH. The CRC Press Freshman Chemistry Award went to **Jeanne Elise Hendrickson**-Dunwoody GA.

Call for Papers

The Department of Chemistry at ECU in conjunction with the ECU ACS Student Affiliates, the ECU Chemistry Alumni Professional Society and the Eastern North Carolina Section of the ACS present the 1993 Student Meeting in Miniature, November 12, 1993. The keynote speaker is Dr. Herbert C. Brown, recipient of the 1979 Nobel Prize in Chemistry.

In celebration of National Chemistry Week you are invited to participate in the 1993 Meeting in Miniature. The event will provide an opportunity for undergraduate and graduate students to present projects or research in all areas of chemistry. Any student who would like to present a paper or poster session should send an abstract of 150 words or less to the program committee at the address below. Abstracts must be received by September 15, 1993. Notification of acceptance will be given by September 30, 1993. Cash awards will be presented at both the graduate and undergraduate levels.

Meeting in Miniature Committee, East Carolina University, Department of Chemistry, 205 Flanagan, Greenville NC 27858-4353, (919) 757-6711.

Division of History of Chemistry

The National Historic Chemical Landmarks Program (NHCLP) is an initiative sponsored by the ACS Division of the History of Chemistry, in cooperation with the ACS Office of Public Outreach. The purpose of the NHCLP is to increase awareness--among chemical professionals, educators, and the public--of historic chemical and chemical engineering sites, artifacts, and collections, and to encourage their preservation. The program design calls for members of ACS local sections and divisions to identify milestones of our chemical heritage in their cities or regions, to document their importance, and to nominate them for official landmark designation by the NHCLP Advisory Committee. The program will begin with a focus on the United States, but we hope to extend it to international designations in the next few years.

We ask you to consider creating a NHCLP committee in your section and urging your members to participate. Your section's participation in the National Historic Chemical Landmarks Program will enable your members to become involved in a meaningful and edifying effort, and it will help to ensure that your section's special interests are reflected in the historic landmarks chosen. Your participation will also help to increase public understanding of the essential contributions chemists and chemical engineers make to American life.

Jeffrey L. Sturchio, Chair, will answer any questions; he can be reached at (908) 423-3981. You can also contact NHCLP staff liaison Ann Higgins, at the number listed above. Thank you for your support.

Job Information

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.

RTI: In its July 5 listings of current openings at the Research Triangle Institute, the following positions were given: **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. **Chemist I/II** F0411 64A BS/MS in Chemistry/ Biochemistry with experience conducting metabolic studies preferably for the National Toxicology Program. Will assist in chemical disposition studies. **Postdoctoral Chemist** F0409 63A PhD in Organic Chemistry with training in organic synthesis. Will conduct research to synthesize novel organic compounds. **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. **Postdoctoral Chemical Engr.** J0228 96A PhD in Chemical Engineering with research experience in gas-solid catalysis and/or fluid-bed reactors. A background in gas separation is desirable.

Will construct and operate bench-scale desulfurization/ sulfur recovery reactor systems, analyze data and write technical reports and publications. **Postdoctoral Chemist** F0385 60A PhD in Organic Chemistry with synthetic chemistry research experience. Will synthesize phosphonates and protein conjugates with some metabolism and kinetics work possible. **Postdoctoral Chemist** F0393 63A PhD in Organic Chemistry plus experience with organic synthesis. Duties include radio-synthesis. **Postdoctoral Chemist** F0394 63A PhD in Organic Chemistry. Duties include organic synthesis. **Postdoctoral Chemist** F0408 63A PhD in Organic Chemistry with research experience in organic synthesis. Will conduct research to synthesize organic compounds. **Res. Environmental Engineer I** J0242 95A BS/MS in Engineering or Science with minimum of 2 yrs. industrial experience with surface preparation in electronics, aerospace, automotive or related industries; excellent communication skills. Will perform research in surface cleaning, and industrial demonstrations of advanced cleaning processes. **Res. Forensic An. Toxicologist I/II** F0407 64A 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 & other information; determination of lab. cert. status; performance testing & results. **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. **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. **Contact:** Office of Human Resources, Research Triangle Institute, P. O. Box 12194, Research Triangle Park NC 27709-2194, (919) 541-6466.

Biotechnical/Pharmaceutical Job Fair: This Job Fair will be held at the Guest Quarters Suite Hotel, 2515 Meridian Parkway, Durham, NC 27713, Friday, July 23 and Saturday, July 24, 1993. It is hosted by Career Connection, which provides a unique forum in which Biotechnical employers interview in private suites experienced candidates with diversified level of skills in a variety of biotechnical/pharmaceutical areas including: analytical, Biochemistry, Formulation, Medicinal, Oligonucleotide, Organic and Protein Chemistry. Call (800) 967-0020. There is no charge to participants.

New Local Section Members

Dimitra Acheson
Promila K Aghi
Marc W Andersen
Todd Lowery Austell
Richard Earl Austin
Tracey Beine
Anna Marie Belu
Keith Charles Benze
David Christopher Boyles
David E Brainard
David Alan Cairnes
Amy Lynn Casey
Arthur R Clark
Charleen Voeker Clark
David S Cohen
Kevin Paul Constable
William Copulsky
Martin E Cowan
Lorraine L Davis
Wanda Piela Dudek
Susan A Easter
Margery Echelberger
Erika Sue Eichmann
Timothy Fennell
Patrick Flannery
Suzanne Marie Franks
Lynn P Freedman
Ronioe N Garrett
John Glennon
Neil James Gordon
David Marshall Graves
Sandy I Grote
Raghubir Gupta
Sheryl Beth Halio
Steven Edward Hall
Carol Ann Haney

Garry R Harper
Philip Harris
Sean Hollinshead
Lingyan Huang
Edward M Huie
Mohamad-Rami R Jaber
Catherine A Jaynes-
Lukow
Dean Hart Johnston
Michael R Jordan
Melissa J Joseph
Booker Juma
Kimberlee Ann Kane-
Maguire
William R Kelce
Shreyas S Kher
Pravin Lokaya Kotian
Kalpana Krishnaswami
Thomas A Kunkel
Robert Kyles
Estelle L Lebeau
Michael S Leonard
David Colin Lever
Jennifer R Lowe
Michael Lube
Lisa Macy
Ian Magder
Martin Ueffery Maresch
Mark Marten
Glenn E Martin
John Mascho
Edward Joseph Massaro
James Kenneth Mccusker
John K Mcgee
Brenda Kay Memering
James Robert Merritt

Barnabe B Miburo
Renetta Bryant Mills
Thomas J Mitchell
Melissa Jeanne Murray
Zakir Murtaza
Sara Kimberly Nauhaus
Dale R Nesselrodt
James Stewart New
David Nyce
Jesse O'neal
Stacy O'Neill
Sangha Oh
Wadida M Oraby
David Anthony Orzelek
Mark R Paige
Xun Pan
James G Pavlovich
Valeri Gennadievice
Poltavtsev
Alan R Potts
Julie Gunn Puckett
Velupillai Puvanesarauh
Cheng-Guan Michael
Quah
Ian Christdpher Quarmby
Denise Rhodes
John N Richardson
Dawn Elizabeth Wallace
Riegner
Gregory Robertson
Alan R Roman
William Wigmore Rucker
Daniel John Russell
Jayanta Kumar Saha
Manasi Saha Saha
Charles Waldo Sanford

Marvin J Schnall
Kenneth E Schupp Jr
Charles Maxwell
Sharpless
Damian Shea
Clifton J Smith
Judy R Speas
Phaedria Marie St Hilaire
Ricijaro Martin
Stepnowski
Karl David Straub
Shonali Tahiliani
Tommy Glen Thorn Jr
Natalia Yurievna
Tretyakova
Isabelle Marthe Vallin
Shannon Lee Van Hook
William Howard Wadlin
Mark Ian Wagner
Paul Steven Watson
Michael B Wells
Michael White
Azita K Wilson
Bruce G Wilson
Joseph W Wilson
Gregory Worsley
Jim Wydick
Tracie P Wynn
Shi Yang
Qing Ye
Frank Jeffrey Zawacki
Anthony Keith Ziberna
Steven M Zimmerman
Edward Paul Zovinka

