



# The TarHelium

Volume 23, Number 1

September 1992

Thursday, September 10, 1992  
"A Round Periodic Table"

Alton J. Banks, Director of General Chemistry  
North Carolina State University  
NCSU Faculty Club

A CINF Div Award will be presented to Mr. James Heinis, UNC-CH  
5:30 p.m. Social Hour (wine and cheese)  
6:30 p.m. Dinner<sup>†</sup> (members/guests: \$15; students/high school teachers \$7.50)  
7:30 p.m. Award Presentation and Lecture

<sup>†</sup>Please make reservations no later than 4:00 p.m., Thursday, September 8. You may make or cancel reservations at the following locations: In Chapel Hill call Becky Smith, 962-2172; in Durham, Carolyn Bean, 660-1506; in Raleigh, Joyce Dunn, 515-2545; in Fayetteville, Sandra Smith, 486-1571; Internet: bill\_switzer@ncsu.edu

**Abstract:** During the course of chemical history there have been several versions of the Periodic Table--each with incumbent advantages and disadvantages. This lecture will demonstrate The Periodic Table Videodisk, generated by the speaker during a sabbatical with Project SERAPHIM. This video disc contains many images which may be easily used in teaching chemistry at several levels. Applications from many of the elements such as Cerium burning in air, Potassium reacting with acids, and Hydrogen reacting with air will be shown.

**Biography:** Alton J. Banks, a native of Newnan GA, received his undergraduate degree from West Georgia College in Carrollton. He received his Ph.D. from Vanderbilt University after which he taught at Emanuel County Junior College in Swainsboro GA. Alton spent five years at Texas A&M before becoming Director of General Chemistry at Southwest Texas State University. He authored a solutions manual to accompany a text by Kotz & Purcell. Alton co-authored the text, "An Introduction to Chemistry: The Science for Everyone", with J. J. Lagowski. He writes a column for the Journal of Chemical Education entitled, "What's the Use?" In 1991, Alton was named Professor of Chemistry and Director of General Chemistry at NCSU. He continues to develop instructional materials using video-and computer-based techniques, as well as to work in the synthesis of heavy metal antagonists.

**Polymer Group:** Thursday, September 10, 1992. Dr. A. S. Abhiraman, Chemical Engineering Georgia Tech, will speak on "Carbon Fibers". 5:30 p.m. Social Hour, 6:30 p.m. Dinner and 7:30 p.m. Lecture at the NCSU Faculty Club. Reservations: Walter Pawlowski (IBM) 543-2243 by noon September 8.

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

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## Deadline for October Publication Friday, September 11, 1992

*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.

W. L. Switzer, Editor and Advertising Manager  
S. T. Purrington, Assistant Editor

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

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

### Future ACS Programs

**October 15-17:** Bob Voyskner of the Research Triangle Institute is coordinator of the Sixth Annual Symposium of the NC Section: "Frontiers in Mass Spectrometry" that will be held at Duke University.

**November 10:** Gary Martin of Burroughs Wellcome Co. is the speaker. His topic is: "Current NMR Techniques In Molecular Structure Elucidation" for the meeting at Burroughs Wellcome. This meeting is jointly sponsored by the MRS Discussion Group.

### Announcements

**Chairman's Message:** We are looking forward to an outstanding Local Section program this Fall. Dr. Alton Banks who is the Director of General Chemistry at NCSU will be our speaker on September 10 at the NCSU Faculty Club; his topic is "A Round Periodic Table". The Sixth Annual NC/ACS Symposium will be October 15-17 at the Washington Duke Inn and Golf Club; the topic is "Recent Advances in Mass Spectrometry". On November 10, Dr. Gary Martin of BW will be our guest speaker for a joint meeting with the MRS Discussion Group at BW and, in December, we will have our Distinguished Speaker Award meeting at Duke. Bob Morrison who the Chair-elect is already laying plans for the 1993 program. If you have any suggestions please give one of us a call. I am looking forward to a great fall and to seeing some of you at our Local Section Monthly Meetings. Best regards to all--Charlie Moreland

**Nominations for NC Distinguished Speaker:** This award is designed to honor an outstanding North Carolina chemist. The nominee need not be currently from the North Carolina Section, but would be recognized for significant prior contributions to Chemistry in our state. This year the Distinguished Speaker will again present a lecture at our December monthly Section meeting. Please send your nomination along with supporting documentation to Robert W. Morrison, Jr., Ph.D., Burroughs Wellcome Co., 3030 Cornwallis Rd., Research Triangle Park, NC 27709. The deadline for submitting nominations is September 10.

**ACS CINF Division Awards Scholarship:** The Chemical Information Division (CINF) of the American Chemical Society is proud to announce that Mr. James Heinis is one of this years recipients of a \$1000 Scholarship. These national awards are given to deserving students who are currently involved in degree studies in chemical information. Mr. James Heinis is a student at UNC-CH in the School of Information and Library Sciences. He has been working for the past several years in the

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Food Science Department of NCSU. He has an MS degree from the University of Georgia in Food Science (1977) and a BS in Biology and Chemistry from Florida State University, Tallahassee (1975). Presentation of this award will be made at the September 10, 1992 Local Section meeting at the NCSU Faculty Club.

**Local Section Elections:** At the September meeting, the Nominating Committee will nominate the following slate of candidates for Local Section officers. Nominations will be accepted from the floor at this meeting; however, be prepared to submit a biography of the candidate for the ballot which will appear in the October issue of *The TarHelium*.

Chair elect:

Mike Crimmins, UNC-CH  
Elizabeth Theil, NCSU

Treasurer:

Joan Bursey, Radian  
Mirtha Umana, Consultant

Councilor (Elect two):

Eric Bigham, BW  
Jim Chao, IBM  
William F. Little, UNC  
George Wyman, retired, consultant

Alternate Councilor (Elect two):

Avram Gold, UNC-CH  
Jack Preston, RTI  
Suzy Purrington, NCSU  
Malcolm Forbes, UNC-CH

### Area Businesses Support Local Section Conference:

The 106<sup>th</sup> Conference of the North Carolina Section of the ACS in April 1992 received financial support from five area companies. We gratefully wish to acknowledge their support:

BASF Corporation	Burroughs Wellcome Co.
Lord Corporation	Radian Corporation
Rhône-Poulenc AG Company	

### NC Section of the ACS Gives Six Student Awards:

At the same conference, six Undergraduate Research Scholarships were awarded to area students. The award of \$750 was given in the form of a grant to the student's institution. The recipients were:

Jason Altom	UNC-Chapel Hill
Mark Dransfield	UNC-Chapel Hill
Melissa Hayworth	NCSU
Kim Kane-Maguire	Duke University
Brian Scott	Pembroke State University
Benjamin Trotter	UNC-Chapel Hill

**Professional Development Awards Announced:** Also at the same conference, two NC Section Profession Development awards were announced for High School Chemistry Teachers. The 1992 recipients were **Louis Gotlib**, South Granville High School and **Tracy Miller Cheatham**, Southwestern Randolph High School. Gotlib received his award for training of elementary teachers in the area of science education and Cheatham received her award for professional development in chemical education course work.

### Calendar

Aug 31 D. Dixon, Central Research, DuPont, "Numerical Simulation of Molecular Properties for Chemical Industry", NCSU

- Sep 10 A. J. Banks, North Carolina State University, "A Round Periodic Table", ACS, NCSU Faculty Club
- Sep 10 A. S. Abhiraman, Chemical Engineering Georgia Tech, "Carbon Fibers", **Polymer**, NCSU Faculty Club
- Sep 11 C. A. Fierke, Duke University, Department of Biochemistry, "Carbonic Anhydrase: Catalysis and Inhibition", Duke
- Sep 14 R. Shaw, Oak Ridge National Laboratory, "Tunable Diode Laser for Resonance Ionization Mass Spectroscopy", NCSU
- Sep 17 P. Hansma, University of California, Santa Barbara, "Seeing Atoms and Atomic Scale Processes With Scanning Probe Microscopies", 4:00 p.m., Venable 308, UNC-CH (Venable Lecture)
- Sep 18 P. Hansma, University of California, Santa Barbara, "Soft Frontier in Scanning Probe Microscopy", 2:00 p.m., Venable 308, UNC-CH
- Sep 18 R. W. Armstrong, University of California, Los Angeles, "DNA Binding Properties and Synthesis of Antitumor Drugs", Duke
- Sep 25 N. Harvey and P. Rose, Rohm and Haas Co., "Industrial Interviewing Techniques", Duke
- Sep 25 N. J. Turro, Columbia University, "Stereoisomerization as a Probe of Magnetic Effects in Micellar Supercages", 12:00 noon, Venable 308
- Sep 28 P. K. Kilpatrick, Department of Chemical Engineering, North Carolina State University, "Use of Affinity Surfactants in Bioseparations", NCSU

ACS-American Chemical Society monthly meeting

**Polymer**-ACS Polymer Discussion Group

Duke (Chemistry) seminars at 3:30 p.m. Call Carolyn Bean at 660-1506 for information.

NCSU (Chemistry) seminars at 3:30 p.m. Call Joyce Weatherpoon at 515-2548 for information.

UNC-CH (Chemistry) seminars as noted. Call Becky Smith at 962-2172 for information.

## Local News

**Boron Biologicals:** Boron Biologicals Inc. (BBI) of Raleigh received a \$500K grant from the Department of Energy to continue its development of new products to treat skin cancer, brain tumors and other malignancies. BBI is researching the potential of Boron Neutron Capture Therapy (BNCT) to deliver cell-killing radiation to cancerous tumors without harming surrounding normal cells. This grant follows one awarded in 1991 to study an economical method of synthesizing boronophenylalanine (BPA) a compound used in BNCT. "Our earlier studies demonstrated that BBI's method of synthesizing BPA turned out even better than we originally proposed," said Dr. Bernard F. Spielvogel, BBI's founder and president, who was also the Local Section Chairman in 1984. "Eventually, this research will have far-reaching implications on reducing the cost for BNCT cancer treatments." In other news, BBI has signed a distribution agreement with Wako Pure Chemical Industries Ltd. of Osaka, Japan. The agreement gives Wako exclusive rights to sell BBI's proprietary chemical compounds to academic, medical and industrial customers in Japan. "I am pleased that the research done by BBI in DOE's SBIR project has enabled the company to export their commercial compounds to Japan," said Dr. Samuel J. Barish, manager of the U.S. Department of Energy's Small Business Innovation Research (SBIR) program in Washington, which has helped fund BBI's research.

**Burroughs Wellcome:** A potential new weapon in the fight against a common cause of death in AIDS patients is Acuve<sup>l</sup>™ brand atovaquone (566C80). It has been shown to have activity in *Pneumocystis carinii pneumonia* (PCP) and appeared to be well-tolerated in initial clinical studies. It thus may represent an alternative therapy for certain patients with PCP, according to an editorial in the June 1, 1992 issue of the *Annals of Internal Medicine*. The commentary, written by Dr. Walter T. Hughes of the Department of Infectious Diseases at St. Jude Children's Research Hospital in Memphis, reviews the early stages of research on Acuve<sup>l</sup>, an investigational antiparasitic drug being developed by Burroughs Wellcome Co. In other news BW reported that six of its investigational drugs are included in the latest survey of "Orphan Drugs in Development" recently released by the Pharmaceutical Manufacturers Association. Many drugs with "orphan drug" status are in human clinical trials or under review by the FDA. Among the six drugs studied by BW are treatments for severe burns, melanoma, multiple myeloma, hemodialysis and heparin replacement, primary pulmonary hypertension, juvenile laryngeal papillomavirus, pneumocystis carinii pneumonia (PCP) and sickle cell anemia. BW's investment in research and development last year was \$409 million.

**CIIT:** The Chemical Industry Institute of Toxicology (CIIT) announced that **Mr. Mark Yates**, a CIIT Predoctoral Fellow, received the Graduate Student Award for Meritorious Research presented by the Carcinogenesis specialty Section of the Society of Toxicology at the 31<sup>st</sup> Annual Meeting in Seattle. Yates and co-investigators were recognized for work on characterization of DNA adducts from the reaction of cyanoethylene oxide with nucleosides, nucleotides, calf thymus DNA, and oligonucleotides that model mutational target sequences. Mr. Yates is completing work toward a Ph.D. in analytical chemistry at North Carolina State University.

**NCSU: Dr. Robert A. Osteryoung** joined the faculty as Research Professor of Chemistry at NCSU. He was educated at Ohio University and the University of Illinois. From 1954 through 1959 he was on the faculty at Rensselaer Polytechnic Institute and from 1959 to 1968 he worked in industry at Rockwell International in Los Angeles during which time he was also Visiting Associate in Chemistry at the California Institute of Technology. In 1968 he was named Professor and Chairman of the Chemistry Department at Colorado State University. During 1977-78 he served as Program Manager, Air Force Office of Scientific Research, Washington DC. He served as Chairman at Colorado State through 1978 after which he joined the faculty of the State University of New York, Buffalo in 1979. His research interests have included molten salt chemistry, electrochemistry and electroanalytical chemistry with emphasis on pulse voltammetry. He has published over 200 research papers in these areas. His research work over the years has been supported by the (old) Atomic Energy Commission, the ALCOA Foundation, the ACS-PRF Fund, Sandia National Laboratory, the Army Research Office, the Office of Naval Research, the National Science Foundation and the Air Force Office of Scientific Research. His current research support is from the latter two organizations. Dr. Osteryoung has been active in the American Chemical Society and in the Electrochemical Society, serving in a variety of offices in both organizations at the National and Local levels. He currently serves as Associate Editor for electroanalytical chemistry for the ACS Journal *Analytical Chemistry*. In 1978, Dr. Osteryoung received the Colorado ACS Section Award and in 1980 he became a Fellow of the American Association of the Ad-

vancement of Science. He received the Charles N. Reilley Award in Electroanalytical Chemistry of the Society for Electroanalytical Chemistry in 1987. He was elected a Fellow of the Electrochemical Society in 1990 and was the winner of the Schoellkopf Medal of the Western New York Section of the ACS in 1990. In 1991 he was the recipient of the ACS Division of Analytical Chemistry Award in Electrochemistry.

**NCSU:** The Chemistry Department added two new assistant professors: **Dr. Charles R. Cornman** and **Dr. David A. Shultz**. Dr. Cornman is an inorganic chemist who received his B.S. degree in Chemistry from the University of Puget Sound and his Ph.D. from the University of California, Davis. He comes to campus following a post doctoral appointment at the University of Michigan. His research interests include reactions of metalloporphyrins and oxidizing agents with the specific goals of characterizing reactive metal-oxo intermediates and delineating the mechanisms of oxygen activation by these complexes. Dr. Shultz is an organic chemist who received his B.A. in Chemistry from Shippensburg University of Pennsylvania and his Ph.D. from the University of Texas, Austin. He did post doctoral work at the California Institute of Technology. His research goals are to combine physical organic chemistry and material science. Particularly he is interested in the magnetic properties and applications of organic molecular assemblies containing free radicals.

**Organon Teknika:** This spring Organon Teknika released Pedi-BacT™, a new aerobic culture bottle for pediatrics. Pedi-BacT is used with the BacT/Alert® Microbial Detection System. Each vial contains an internal colorimetric sensor that detects CO<sub>2</sub> from microbial growth. It is specially designed for samples from pediatric and other hard-to-draw patients.

**Sphinx Pharmaceuticals:** Durham based Sphinx Pharmaceuticals announced that it has initiated Phase I human trials in the United Kingdom with the Company's lead compound, Kynac™, which is being evaluated for the treatment of psoriasis. A topical ointment, Kynac is designed to inhibit the activity of an intracellular enzyme, call protein kinase C (PKC), which has been demonstrated to mediate key cellular functions such as inflammation and cell proliferation. Psoriasis affects over 2.5 million people in the US.

**UNC-CH and NCSU:** In case you missed the May 18 issue of *C&EN*, UNC-CH tied with MIT and Texas A&M for seventh in the nation graduating 29 doctoral students in 1990-91. They tied for twenty third with Johns Hopkins and the University of Texas, Austin graduating 12 chemists with masters degrees. At the undergraduate level, NCSU ranked fifth in the nation with 73 bachelor degrees awarded and tenth in the nation in certified bachelor degrees with 32 given. UNC-CH ranked sixth in total bachelors degrees with 71 awarded and fourteenth in certified degrees with 27. Scanning the list of universities offering a bachelors degrees in chemical engineering, NCSU appeared to rank fourth in the nation graduating 77 students.

**UNC-CH: Dr. Joseph M. DeSimone**, Assistant Professor in the Department of Chemistry at UNC-CH has received a National Young Investigator award for 1992. DeSimone is one of four recipients nationally selected by the Polymers Program in the Division of Materials Research at NSF. He has been a member of the university faculty in the Department of Chemistry and the Curriculum of Applied Sciences since 1990. His research and teaching expertise is polymer synthesis, an area identified for growth at UNC-CH. The National Young Investigator awards are extremely competitive. They are administered

through the National Science Foundation and carry a \$25,000 grant for each of five years and an additional incentive of up to \$37,500 annually that must be matched by the recipient through collaborations and interactions with corporate and non-governmental agencies. This makes the third similar award received by new faculty in Chemistry at UNC-CH over the past five years. Drs. Nancy Thompson and Cynthia Schauer have previously received Presidential Young Investigator awards.

**UNC-CH: Dr. Gary L. Glish** has joined the faculty as an Associate Professor of Chemistry. Dr. Glish received a B.A. in Chemistry and Economics from Wabash College in 1976 and a Ph.D. from Purdue University in 1980. Previously he was Research Scientist and Group Leader, Organic Mass Spectrometry, Analytical Chemistry Division, Oak Ridge National Laboratory. Dr. Glish's research interest lie in two general areas: the study of gas-phase ion chemistry and the development of instrumentation and techniques in mass spectrometry. In the area of gas-phase ion chemistry, his interests include selective ion/molecule reactions and the dissociations of metal cationized species and multiply charged ions. In the area of instrumentation his interests include development of tandem mass spectrometry techniques. Hybrid mass spectrometers and quadrupole ion traps are two types of spectrometers of interest for development and use.

## Job Information

**RTI:** In its August 3 listings of current openings at the Research Triangle Institute, the following positions were listed: **Analytical Chemist I**, B.S./B.A. Will perform chemical analyses. **Analytical Chemist I/II**, B.S. with 0-5 years of experience. Will perform wet chemistry sample preparation, AA and electrochemistry for inorganic analysis. **Chemist I**, training or experience in analytical methods and instrumentation preferred. Will involve the use of HPLC, GC, UV, NMR, MS, ICP or AA analysis. **Chemist I**, B.S./B.A. Will conduct research into the synthesis of organic compounds. **Chemist I**, B.S./B.A. Will be involved in polymer characterization and drug release studies. **Chemistry I/II**, B.S./B.A. Will conduct studies of the metabolism of drugs and environmental chemicals and analyze biological fluids for these chemicals. **Chemist I/II**, B.S. Experience with MS and GC/HPLC analyses preferred. Will operate MS and assist in the development of chromatographic analyses in metabolism research. **Chemist I/II**, B.A./B.S. with training or experience in modern chromatographic and spectral techniques preferred. Will provide support for toxicity studies, method development, sample analysis, stability studies, bench chemistry and report writing. **Chemist II**, B.S./M.S. Experience in operation and maintenance of quadrupole MS is essential. Experience with HP model #5988/5989 is preferred. Must also have experience with GC and HPLC. Will operate MS and develop chromatographic analyses in metabolism and natural products research. **Chemist III/Res. Chemist I**, B.S./M.S. with 3-5 years experience in NMR or Ph.D. with training in NMR. Will Determine the structure of organic compounds using high field superconducting NMR. **Five** positions listed as **Post Doc Chemist**, Ph.D. in organic chemistry with training in organic synthesis. **Post Doc Chemist**, Ph.D. with training in analytical chemistry and material products. Will conduct studies on disposition and metabolism of toxol. **Contact:** Office of Human Resources, Research Triangle Institute, P.O. Box 12194, Research Triangle Park NC 27709-2194. (919) 541-6466.

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

**Are You Up-to-Date on Copyright Issues?:** A copyright information pamphlet, intended to give a brief overview of copyright, is available from the ACS. The pamphlet includes a definition of copyright and explains the exclusive rights of a copyright owner, the transferability and term of copyright, use of a copyright notice, "fair use", photocopying of copyrighted material, use of software and phonograph records, ACS copyright policy, and reprint permissions and copyright credit. Useful addresses and telephone numbers are provided. To obtain a copy of the pamphlet, send a self-addressed stamped envelope to Copyright Administrator, Publications Division, ACS, 1155 Sixteenth Street, N. W., Washington DC 20036.

**ACS Professional Data Bank:** Finding a job is an enormous task, and there's no easy way to do so. However, the ACS does have a computerized professional data bank which has a cross section of scientific professionals who are seeking employment. This important service makes available information on these individuals to interested employers who seek assistance of the Office of Employment Services for their recruiting needs. The data bank is not confidential, operates on a year-round basis, and is free to ACS members and student affiliates. With over 1000 chemical professionals already in the bank, the ACS is able to offer recruiters top-flight chemists in a wide variety of fields. We made approximately 6000 referrals to scientific employers in 1991. For a modest charge, ACS will ensure confidentiality. The ACS tries to make the job hunting process a little easier for its members and student affiliates whenever possible. Call (800) 227-5558, Press 4, #1, for more information.

### LOOKING FOR A JOB?

ACS offers employment services and professional development programs to all of its members seeking employment. Below is a descriptive list of such programs offered by the Offices of Employment Services and Professional Services.

#### OFFICE OF EMPLOYMENT SERVICES (OES)

- C&EN situations wanted ads placed by employed ACS members and student affiliates are accepted by Centcom, ACS's advertising agency, at 90 cents per word per insertion, no minimum charge. Unemployed ACS members, student affiliates, and retired members may place free situations wanted ads; certain restrictions apply.
- CHEMJOBS USA is a weekly bulletin which contains classified ads seeking the chemical professional from up to 20 newspapers and publications throughout the US. The ads are abstracted into an easy-to-read format. A three-month subscription to this publication costs only \$40.
- National Employment Clearing Houses at National and Regional Meetings give job applicants the opportunity to interview with employer representatives. ACS national meeting registration fees can be waived for UNEMPLOYED ACS members who register as job applicants at NECH at national meetings; waivers of registration fees for unemployed members registering for NECH at regional meetings are left at the discretion of the region. Registration for NECH itself is free at both national and regional meetings.
- The ACS Year-Round professional Data Bank is a computerized data bank which includes a cross-section of scientific professionals who are seeking employment. This important service makes available information on these individuals to interested employers who seek assistance of Employment Services

for their recruiting needs. The data bank is not confidential, operates on a year-round basis, and is free to ACS members and student affiliates. With about 1000 chemical professionals already in the bank, the ACS is able to offer recruiters top-flight chemicals in a wide variety of fields, and will have made about 6000 referrals to scientific employers in 1991.

- ACS Year-Round Confidential Employment Listing Service. This service offers the same service as the ACS Professional Data Bank. However, for a modest charge, ACS members can have confidentiality assured.
- Employers Mailing List is the mailing list used to solicit employers for ACS employment services; it is arranged by state, and can be purchased for a small fee. Use of this mailing list is restricted to personal use only.
- There will be a special resume review section for ACS members unable to attend National & Regional Meeting NECH, beginning in San Francisco. The purpose of this section will be to provide employers with the resumes of ACS members who are looking for jobs, but who are unable to attend the meetings for one reason or the other.

For more information on the above services, call (800) 227-5558, press 4.

#### OFFICE OF PROFESSIONAL SERVICES (OPS)

- Career Consulting Program. Offers career counseling to members of all ages and career stages. Consultants provide assistance with job search strategies, resume and interview preparation, and career advice.
- Career Tutorials. Offered at all national and some regional meetings, presents job search strategies and tools as well as career counseling in small group sessions.
- Resume Forum. Offered at all national and some regional meetings, offers group discussions on resume preparation as well as one-on-one appointments with career consultants.
- Mock Interview Sessions. Offered at all national and some regional meetings, gives the chemist the opportunity to video tape a mock interview and receive feedback from ACS personnel on ways to improve.
- Phone Assistance. Members can call Professional Services or Employment Services to gain information related to all OPS and OES services and data collection, as well as to discuss career questions or concerns.
- Salary Survey. Survey and analysis of salaries of chemists and chemical engineers is conducted annually. This information is published in C&EN and is used for many other written reports and presentations. Many chemists seek information over the phone to assist in career decision making.
- Career Related Literature. ACS produces several publications related to job hunting and career development such as "Coping with Job Loss" and the "Professional Employment Guidelines."
- Presentations. Professional development and employment outlook presentations are available upon request at local section and regional meetings.

For more information on the Professional Services programs call (800) 227-5558 ext. 4432.

**SYMPOSIUM ON RECENT ADVANCES IN  
MASS SPECTROMETRY**  
**Sixth Annual North Carolina Section Conference**  
**American Chemical Society**

**October 15-17, 1992**

**GENERAL INFORMATION**

The Symposium is an excellent way to learn about advances in mass spectrometry. The objective of the conference is to provide an informal ambiance that will promote scientific exchange between mass spectrometrists and biomedical and environmental scientists that are interested in the use of mass spectrometry to solve analytical problems.

The Symposium will be held at the Washington Duke Inn and Golf Club. The Inn is situated on the grounds of Duke University and Offers an 18-hole Robert Trent Jones golf course, an indoor swimming pool and jogging paths. The deadline for registration at the hotel is **September 18, 1992**. Transportation from Raleigh-Durham airport to the Inn can be arranged through LTD Limousine Service at (919) 782-1547 or (800) 432-8008 at a cost of \$20.00 round-trip or by taxi.

Participants are invited to submit a one-page abstract for consideration as a poster presentation. Abstracts should be mailed to George Dubay, P. M. Gross Chemical Laboratory, Duke University, Durham NC 27706 by **September 18, 1992**. Applicants will be notified of a decision about their abstract by October 1, 1992. Dr. Dubay may be reached by phone at (919) 660-1532 or by FAX at (919) 660-1605.

The conference will begin on Thursday evening, October 15 and extend through Saturday, October 17. The conference fee is \$90.00 and includes a wine and cheese party and two luncheons. The deadline for pre-registration is **October 1, 1992**. A fee of \$120 will be charged to participants who register after this date.

**Schedule:**

**Thursday, October 15, 1992**

**7-10 p.m. Welcome Reception at Washington Duke Inn,  
Duke University**

**Poster Session: Friday, October 16 through Saturday,  
October 17**

**Friday, October 16, 1992**

**Session 1. Applications of Mass Spectrometry in Biology  
and Immunology, Daniel Kassel and Arthur  
Mosele, Presiding**

- 8:30 Steve Carr, *Structural Characterization of Glycoproteins by Mass Spectrometry: Identification of Carbohydrates and other Post-translational Modifications of Proteins*
- 9:10 John Stults, *Recent Approaches to the Identification of Post-translational Modifications of Proteins*
- 9:50 Coffee Break
- 10:10 Pat Griffin, *Structural and Mechanistic Studies of Enzymes by Capillary LC/MS*

10:50 Jeff Shabanowitz, *Chemical Communications Between Cells Trying to Overcome a Viral Infection: Deciphering the Coded Messages by Tandem Mass Spectrometry*

11:30 Rob Anderegg, *Probing Secondary Structure of Proteins by Mass Spectrometry*

12:00 Lunch

**Session 2. Clinical Applications of Mass Spectrometry, Dave Millington and George Dubay, Presiding**

1:40 Tom Baillie, *Applications of Tandem Mass Spectrometry to Mechanistic Studies in Toxicology*

2:20 Simon Gaskell, *Mass Spectrometric Techniques for Lipid Mediators*

3:00 Fred Abramson, *New Techniques for Stable Isotope Detection in Metabolic Studies*

3:40 Coffee Break

4:00 John Coutant, *Comparison of LC/MS Techniques for Metabolic Analysis*

4:40 John Roboz, *Mass Spectrometric Diagnosis and Monitoring of Opportunistic Infections*

**Session 3. Environmental Applications of Mass Spectrometry, Robert D. Voyksner and M. Judith Charles, Presiding**

8:30 Ronald A. Hites, *Mass Spectrometry in the Environmental Sciences*

9:10 Leon D. Betowski, *Environmental Applications of LC/MS: EPA's Prospective*

9:50 Coffee Break

10:50 Graham Cooks, *Membrane Introduction Mass Spectrometry for Environmental Analysis*

11:30 Jack Henion, *Analytical Potential of Ion Spray LC/MS and LC/MS/MS for Characterizing Environmental Contaminants*

12:00 Lunch

**Session 4. Environmental Applications of Mass Spectrometry, Gary L. Glish, Presiding**

1:40 Robert D. Voyksner, *Electrospray and an Ion Trap Mass Spectrometer: Its Potentials and Pitfalls*

2:20 David Laude, *High Magnetic Field Electrospray Ionization Source for Fourier Transform Ion Cyclotron Resonance Mass Spectrometry*

3:00 Brian Chait, *New Mass Spectrometric Approaches to the Analysis of Peptides and Proteins*

3:40 Coffee Break

4:00 Robert Cody, *Extreme Solutions for Mass Spectrometry*

4:40 Gary Glish, *Challenges for the Next Generation Quadrupole Ion Trap*