



# The TarHelium

Volume 24, Number 5

January 1994

**CALL FOR PAPERS: 108<sup>th</sup> NC Section Conference - p. 3**

**CALL FOR PAPERS: 11<sup>th</sup> Annual TCDG Symposium and Instrument Exhibit - p. 3**

## **Polymer Discussion Group Meeting**

**Thursday, January 13, 1994**

**William Goddard  
California Institute of Technology**

**"Computational Chemistry:  
Molecular Simulations"**

**North Carolina State University Faculty Club  
4200 Hillsborough St., Raleigh NC**

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, January 11, with Walter Pawlowski (919) 543-2243 (IBM-RTP).

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### *The TarHelium*

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

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**Dated Material - Please Deliver Promptly**

W. L. Switzer, Editor  
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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 first 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: paul@nat.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 February Publication**  
**January 1, 1994**

**National ACS meetings:**

March 13-18, 1994, San Diego  
August 21-26, 1994, Washington  
April 2-7, 1995, Anaheim  
August 20-25, 1995, Chicago  
March 24-29, 1996, Seattle  
August 25-30, 1996, Boston

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### Report on 1993 Symposium

The fall symposium, "Molecular Modeling: Integration of Theory and Experiment", attracted a record number of participants. The Organizing Committee had to stop taking applications due to limited size of the auditorium. The goal of this endeavor was to bring together experimental and theoretical scientists and expose them to each other. There were a total of 172 participants; 56 participants were from industry, 26 from government or nonprofit labs and 90 from academia, including 54 graduate students. More than 50 scientists came from outside the RTP area including two from Mexico, two from England, and one from Austria.

Nine distinguished speakers, both from academia and industry, spoke on the problems of accuracy of molecular simulations. Their topics included protein crystallography, problems of protein folding, *de novo* drug design and rigorous computational chemistry methods. Also there were more than 40 posters.

The Symposium was sponsored by NC Section of the ACS as well as by all major molecular modeling software companies (Tripos, Biosym, Molecular Simulations, Inc. and Molecular Design, Ltd.), the area's major pharmaceutical companies (Burroughs Wellcome Co., Glaxo Inc., and Becton Dickinson & Co.), the NC Biotechnology Center and the MCNC.

### Molecular Modeling Group Formed

At its December meeting, the Executive Committee approved by-laws submitted by the Organizing Committee for the 1993 fall symposium to establish a Triangle Molecular Modeling Discussion Group. Interested scientists are encouraged to contact:

Dr. Alexander Tropsha, Assistant Professor  
Director the Laboratory for Molecular Modeling  
School of Pharmacy, Beard Hall, CB # 7360  
University of North Carolina  
Chapel Hill NC 27599-7360  
Tel. (919) 966-2955; Fax (919) 966-6919  
e-mail: tropsha@gibbs.oit.unc.edu

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Quantitative Technologies

## Awards at the December Meeting

Several awards recipients were recognized at the December meeting who were not listed in the December TarHelium. These included:

1993 ACS Undergraduate Scholarship recipients:

Lawrence P. Cogswell, III, Duke University  
 Edgar G. Estupiñan, North Carolina State University  
 Maria C. Garci, Duke University  
 Dana B. Lacy, University of North Carolina-Chapel Hill  
 Stephen Schneider, University of North Carolina-Chapel Hill

HS Chemistry Teacher Development Award recipients:

Myra Halpin, NC School of Science and Math, Durham  
 Marian Jones, Hoke County High School, Raeford  
 Chuck Roser, NC School of Science and Math, Durham

Project SEED Participants:

Brent Collier	Enloe High School, Raleigh
Mimi Coker	Hillside High School, Durham
Jennifer Davis	Enloe High School, Raleigh
Damon Gooch	Hillside High School, Durham
Mario Johnson	Hillside High School, Durham
Adrienne Perry	Broughton High School, Raleigh
Marsha Ebanks	Riverside High School, Durham
Lakecia Rochelle	Southern High School, Durham

## CALL FOR PAPERS

### 11<sup>th</sup> Annual TCDG Symposium and Instrument Exhibit

The Triangle Chromatography Discussion Group (TCDG) will hold its 11<sup>th</sup> Annual Exhibit, Symposium and Poster Session at the McKimmon Center in Raleigh on Thursday, May 19, 1994. As part of this meeting, the Group will sponsor a poster session. Anyone is invited to participate in the poster session, but for student posters only, prizes will be given. The first prize is \$400 and second prize is \$200. Deadline for receipt of abstracts is Friday, April 1, 1994. The abstract should be no longer than one page. Send the abstract along with title, authors, affiliation and complete address and phone number to:

Dr. Joe Hudson  
 Rhône-Poulenc Ag Company  
 P. O. Box 12014  
 Research Triangle Park NC 27709

Acceptance will be acknowledged no later than April 15, 1994.

### 108<sup>th</sup> NC Section Conference in April

The 108<sup>th</sup> Conference of the North Carolina Section is planned for Saturday, April 16, 1994 at Duke University. Please join us in presenting papers at this meeting. It is run as closely as possible in the format of a national meeting. There is an opportunity to present in either a regular or a poster session. As in past years, we plan to have a meeting favor for those who present and we invite all presenters to be the guest of the Section at a buffet luncheon that follows the meeting. The deadline for receipt of titles is Friday, March 11, 1994. An application form showing the required information is given below. Please feel free, however, to send the information by e-mail, FAX or phone.

## CALL FOR PAPERS

### 108<sup>th</sup> NC Section Conference Saturday, April 16, 1994 Duke University Durham NC

Author(s): \_\_\_\_\_

Position(s): \_\_\_\_\_

Title: \_\_\_\_\_

Phone (senior author): \_\_\_\_\_

e-mail address: \_\_\_\_\_

Presenter: \_\_\_\_\_

Institution: \_\_\_\_\_

Session:

- Analytical       Biochemistry       Chemical Education  
 Inorganic       Organic       Physical  
 Polymer       Other

Other (specify): \_\_\_\_\_

Type of Session:     Regular       Poster       Either

Type of Projector: \_\_\_\_\_

**DEADLINE: Friday, March 11, 1994**

Send application to:

William L. Switzer	Internet: bill_switzer@ncsu.edu
Chemistry-8204	(919) 515-5079 (FAX)
North Carolina State University	(919) 515-2945 (W)
Raleigh NC 27695-8204	(919) 217-9095 (H)

seum's new classroom/labs: Chem Shop, Water Canaries and Let's Experiment.

Museum Director of Education, Georgia Searles said that the event had impact beyond its own walls. "The program linked enthusiastic science professionals in the area with families that don't usually come to the Museum. The idea was to create an atmosphere of success with science for these families. That confidence, and the chance to meet and work with real scientists, can help parents and students feel like science is something they can do."

Research into the factors that contribute to success in academics indicates that confidence level *is* a critical element in achievement. A recent study at the University of Rochester found that academic achievement among black urban adolescents was tied most closely with a student's belief in his or her own academic ability. High grades were connected with confidence in handling assignments, even more than with family income level. In fact, students from lower-income families actually had better grades, on average, than upper-income students.

Families were recruited for Family Science Sunday through the school systems, local black churches, Chapter 1, Edgemont Community Center, ELIMU (based at McDougald Terrace), and PMSA (Parents for Minority Student Achievement).

Local Section Volunteers included: **Margaret Babb** (NC Environmental Health and Natural Resources), **Eric Bigham** (Burroughs Wellcome), **Mike Bishop** (Burroughs Wellcome), **Tisha Cromwell** (Glaxo), **Shanthini Jeyarajah** (NCSSU), **Lynda Jones** (Burroughs Wellcome), **Bill Kopulski** (Retired), **Giselle Limentani** (Glaxo), **Shiyamalie Ruberu** (UNC), **Florence Sumcad** (Glaxo), **Andy Steele** (Glaxo) and **Wendy Wilson** (Burroughs Wellcome)

### Museum Projects Receive Awards

The Howard Hughes Medical Institute announced a grant of \$175,000 to the NC Museum of Life and Science to establish "BioLinks"—a project linked to several of the Museum's exhibits, including "BioTech: the Science Behind Medicine" and "Life in the Physical World," an exhibit opening in 1993 which will explore biomechanics.

BioLinks includes 1) an "Explainer" program through which minority and economically disadvantaged high school students will be hired to work at the Museum, where they will be stationed at the exhibit to give demonstrations and answer visitors' questions, and 2) Saturday Science events with area scientists.

### Opportunities at Oak Ridge

Contact the Editor (see page 2) for information about the following programs available through ORISE: The Oak Ridge Institute for Science and Education:

Faculty Research Opportunities  
 Graduate Student Energy Research Opportunities  
 University/Laboratory Cooperative Program Student Research Participation  
 Student Internships at Oak Ridge National Laboratory and Hazardous Waste Remedial Actions Programs  
 Student Internships at the Pittsburgh Energy Technology Center

### Matrone Lecture at NCSU Biochem

Jan. 20: H. Noller, University of California, Santa Cruz, "RNA Structure and Function"; Lynne Selinka call (919) 515-5802

Beckman Ad

## Report from National Chemistry Week

The Museum of Life and Science in Durham hosted several activities for National Chemistry Week. Events were held not only during the week of November 7, but through out the whole month of November. **Family Science Sunday**, which was held on November 7, attracted 52 adults and 84 children to the special program that 9 ACS volunteers helped to put on. For this event, there were 130 free admissions given to the Museum. **Chem-Lab: Open House with a Chemist**, which was held on November 20, attracted 93 visitors. Three ACS volunteers helped with this event. **Family Science Encounter**, which attracted 52 visitors on November 27, had one ACS volunteer. On November 20 and 26, 153 visitors participated in the **Science-On-A-Cart** program. The Section wishes to thank Erin Keating for organizing this event, the Museum of Life and Science for hosting it and all ACS volunteers for their help.

As part of **Family Science Sunday**, families from Durham, Granville, Wake and Orange Counties mixed with chemists from Glaxo, Burroughs-Wellcome, area universities and agencies at the Museum of Life and Science in Durham. Family Science Sunday was designed to build confidence in learning science from both parents and children as they enjoyed cooperative learning activities. Special workshops were offered in the Mu-

## Job Openings

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

**Burroughs Wellcome:** Job Line at (919) 315-8347.

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

**Glaxo:** Job Line (919) 248-2565

**RTI:** Contact: Research Triangle Institute, Office of Human Resources, PO Box 12194, Research Triangle Park NC 27709-2194. Phone: (919) 541-6466. Analytical Chemist I G0077 76A BA/BS in Chemistry with experience or training in analytical instrumentation. Class 100 clean room and trace metal experience is preferred. Will operate Gas Furnace AA and ICP, prepare samples for instrumental analysis, work with spreadsheets. Analytical Chemist I G0078 76A BA/BS in Chemistry with experience or training in analytical instrumentation. Class 100 clean room and trace metal experience is preferred. Will operate Gas Furnace AA and ICP, prepare samples for instrumental analysis. work with spreadsheet. Chemist I F0415 63A BS in Chemistry with training or experience in organic synthesis. Will synthesize, purify and analyze organic compounds. Chemist I F0431 62A BS/BA in Chemistry with training in organic synthesis. Will synthesize novel organic compounds. Chemist I F0432 62A BS/BA in Chemistry with training in organic synthesis. Will synthesize novel organic compounds. Chemist I/II BS/BA in Chemistry with emphasis in organic chemistry and training or experience in analytical methods. Will conduct studies of the metabolism of drugs and environmental chemicals and analyze biological fluids for these chemicals. Postdoctoral Chemist F0417 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 F0422 63A PhD in Chemistry with research experience in organic synthesis. Will conduct research in the synthesis of organic compounds. Postdoctoral Chemist F0423 63A PhD in Organic Chemistry. Duties include organic synthesis. Postdoctoral Chemist F0424 63A PhD in Organic Chemistry plus experience with organic synthesis. Duties include radiosynthesis. Postdoctoral Chemist F0426 63A PhD in Chemistry with experience in organic synthesis. Will synthesize novel organic compounds. Postdoctoral Chemist F0428 64A PhD in biochemistry, molecular biology or related biological science. Background in biochemistry, enzymology or cell biology is required. Experience with radiolabeled tracer techniques is desired. Will conduct research to develop mechanistic-based assays for anti-cancer agents found in natural products, particularly plants. Postdoctoral Chemist F0429 64A PhD. in organic chemistry with experience or training in organic synthesis. Will conduct research to synthesize novel organic compounds. Postdoctoral Chemist F0430 62A PhD in Organic Chemistry with training in organic synthesis. Will conduct research to synthesize novel organic compounds. Postdoctoral Chemist F0433 60A PhD in Chemistry with training in organic chemistry. Will synthesize haptens and conjugates for catalytic antibody programs. Will involve some analytical (kinetics) work. Quality Assurance Specialist I/II F0425 60D BS/BA in Chemistry/Biology with experience in analytical chemistry, pharmacokinetics, GLP audits and inspections. Will perform audits and inspections of toxicology and analytical chemistry procedures and reports. 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, manage projects, interact with clients.

## HS Chemistry Teacher Newsletter

The newsletter from the High School Committee of the NC ACS was recently sent to high school chemistry teachers in the Section. Highlights from this newsletter include a call for nominees for the High School Chemistry Teacher of the Year for the NC Section. High school chemistry teachers were invited to apply for the Professional Development Awards from the NC Section. The NC Section again is participating in the US National Chemistry Olympiad competition. Participants in 1993 were:

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

The newsletter also announced a standing offer from the NC Section to pay for affiliate membership in the Division of Chemical Education and to offer free affiliate membership in the NC Section. The NC Section also offers free subscriptions to "Speaking of Safety" published by the Laboratory Safety Workshop at Curry College. In 1993 the Section mailed over 200 copies of "Safety in Academic Chemistry Laboratories" to high school chemistry teachers. The committee offered to obtain free copies to any teachers still wanting copies of this publication. The NC School of Science and Math also serves as a repository for laboratory equipment. Contact Larry Knecht (919) 286-3366 x229 or knecht@opus.ncssm.edu if you have equipment to donate or know of schools who need equipment. The NC School of Science and Math also is offering a Rural Science Initiative Program funded by the Kathleen Price and Joseph M. Bryan Foundation. The NC Student Academy of Science sponsors regional and state meetings where students from grades 6-12 can present their research efforts. Contact Myra Halpin, Executive Director, NC Student Academy of Science, North Carolina School of Science and Math, Durham NC 27705, (919) 286-3366. The North Carolina and National Science Olympiads are being organized by Manley Midgett, NC Science and Math Alliance, 410 Oberlin Rd., Raleigh NC 27605, (919) 733-9988.

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Galbraith Ad for Microanalysis

and six-week internships are sought for science, mathematics and vocational teachers. Call the partnership at 733-4745 in Raleigh. Contact the same number for information about the following on-going programs: Scientist-in-the-Classroom (a visitation program coordinated with the science curriculum), Scientist-in-Residence (a program which places a science advisor with one teacher and class), Teacher-in-Industry (a tour of local industry by high school teachers from Chatham County), Project Reality (a grant writing, money saving program) and UTOTES (a series of workshops for elementary school teachers in Chatham County).

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## Area News

**CompuChem:** The environmental laboratory services division of CompuChem, a subsidiary of Roche Biomedical Laboratories, Inc. has been purchased by a group of investors that includes CompuChem senior management. Terms of the sale were not disclosed. The new company, named CompuChem Environmental Corp. will remain at its present Research Triangle Park headquarters and retain all 176 employees. (from the *BT Catalyst*, a publication of the NC Biotechnology Center)

**Duke: Bertram Fraser-Reid**, James B. Duke Professor of Chemistry, will receive the Haworth Memorial Medal in 1995 from the Royal Society of Chemistry in the United Kingdom. The award is considered to be the premier award in carbohydrate chemistry. Fraser-Reid will present a talk on the occasion of receiving the medal during the Society's carbohydrate group meeting in spring 1995

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## Faculty Grants and Contracts

**Genta Inc.:** "Stereoselective Synthesis of Nucleic Acid Analogs", **M. C. Pirrung**, Duke

**National Institute of General Medical Sciences:** "Stereochemical Control in 2+2 Photocycloadditions", **N. A. Porter**, Duke

**NIH:** "Synthesis of Some Optically Active Gelsemium Alkaloids", **S. Baldwin**, Duke; "Progressive Ligation-Mediated PCR Sequencing", **B. R. Shaw**, Duke

**US Army:** "The Spinning of Fibroin from a New Solvent," **S. M. Hudson** and **A. E. Tonelli**, NCSU

**US EPA:** "Characterization of Emissions of Nitrogen Oxides from the Soils of the Southwest US", **V. P. Aneja**, **W. P. Ro-barge**, et al., NCSU; "Fluorescence Lifetime Detection for HPLC of Organic Pollutants", **L. McGown**, Duke; "Quantum Molecular Modeling with Massively Parallel Computers: A Divide and Conquer Approach", **W. Yang**, Duke

## RT Science and Math Partnership

The Research Triangle Scientist-Teacher Partnership (STEP) has been cited by the SouthEastern Regional Vision for Education (SERVE) as one of 21 *Programs of Excellence* in the Southeast. The citation recognizes technology-assisted science education programs in a six-state area. Nearly 100 nominated programs from the region were judged on innovation, effectiveness, transferability and cost as part of SERVE's *Sharing Success* program. The NC Museum of Life and Science administers the "Scientist-in-Residence" program as part of the Research Triangle STEP project.

Conceived and initiated in 1989 by Dr. Denis DuBay of North Carolina State University, the Research Triangle STEP serves six school districts including Durham, Wake, Orange, Chatham and Chapel Hill/Carrboro. It provides training, support and resources to transform science and mathematics instruction into participatory hands-on explorations of nature and technology.

The program places teachers in internships with technology industry during the summer and places university professors, scientists and engineers in the classroom to assist in the development and delivery of hands-on instructional techniques. The Museum's "Scientist-in-Residence" program is a branch of STEP. The program matches a scientist with a teacher for the school year and allows students and teachers a close working relationship with the scientist in the classroom.

In its December newsletter, the Research Triangle Science and Math Partnership requested that organizations volunteer to sponsor summer internships for high school teachers. Two-, four-

**Dr. Fraser-Reid** was also the J. K. N. Jones Visitor for 1993 in the department of chemistry at Queen's University, Kingston Ontario, Canada. He gave two talks on the topic of "Discoveries *En Route* from Carbohydrates to Natural Products." There also was a public lecture on "Reflections of a Chemist Who Happens to be Black, From the Third World and a Frustrated Musician". He also played a noon-day organ recital at St. George's Cathedral in Kingston.

On Thursday, December 9, 1993, **Pelham Wilder Jr.**, University Distinguished Service Professor Emeritus and University Marshal, received the University Medal for Distinguished Meritorious Service at Duke. The Medal was awarded by Duke President Nannerl O. Keohane during Founders' Day Convocation. Wilder, who has been at Duke since he joined the chemistry faculty in 1949, was honored both for his academic contributions and for his work as University Marshal, organizing for many years formal university functions such as commencement and Founders' Day Convocation.

Professor **Linda B. McGown** has been selected as the recipient of the 1994 Gold Medal Award from New York Section of the Society for Applied Spectroscopy. An awards symposium in her honor will be held at the Eastern Analytical Symposium in Fall 1994. After six years on as a faculty member at Oklahoma State University, McGown joined Duke in 1987 as Associate Professor, and was promoted to full Professor in 1991.

**Estes Hills School:** Ms. Joan Bettman, science laboratory specialist in Chapel Hill was named one of three 1993 Science Star Winners announced by SCIENCE: North Carolina. "Joan Bettman is a tireless worker spreading the excitement of science to teachers and students and parents," said one letter of nomination. "The real success of Joan's parent-teacher-student interaction comes from her ability to get parents into the classroom assisting in (and sometimes teaching) a science lab," said another letter of nomination.

**Glaxo:** Derek A. Ross, PhD, has been named vice president of research and development project planning at Glaxo Inc., one of the nation's leading pharmaceutical firms. He joined the company as manager of international planning in September 1988. Prior to joining Glaxo, Ross worked for Syntex Research in Edinburgh, Scotland and Smith Kline & French in the UK. Ross earned a post doctorate degree in biochemistry from Aberdeen University in Scotland. He is a member of the Biochemical Society and the Project Management Institute. A native of Scotland, Ross and his wife, Rhona, have two children and live in Chapel Hill.

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## Spring Graduate Course Offerings

**Duke:** Contact Ms. Earlene Beamon, Director of Graduate Studies Office, at 660-1546 for information about course offerings and registration.

- CHM 300 Basic Statistical Mechanics, 3 units, 10:55 - 12:10 Tu/Thu, MacPhail
- CHM 302 Basic Quantum Mechanics, 3 units, 10:30 - 11:20 MWF, Chesnut
- CHM 306 Principles and Applications in Biophysical and Physical Chemistry, 2-3 units, Time TBA, Shaw
- CHM 310 Electronic Structure and Spectroscopy of Transition Metal Compounds, 2 units, 11:50 - 12:40 MWF, Burk
- CHM 312 Chemistry of the Main Group Elements, 2 units, 9:10-10:00 MWF, Wells
- CHM 314 Advanced Inorganic Reaction Mechanism, 2 units, 10:30-11:20 MWF, Crumbliss, Palmer
- CHM 322 Organic Reactive Intermediates, 3 units, 9:10-10:00 MWF, Pirrung, Negishi
- CHM 330 Separation Science, 2 units, 10:55-12:10 Tu/Thu, Lochmüller
- CHM 334 Electroanalytical Chemistry, 2 units, 10:30-11:20 MWF, Coury
- CHM 336 Analytical Spectroscopy, 2 units, 9:10-10:00 Tu/Thu, McGown

**NCSU:** Contact Dr. Russ Linderman, Director of Graduate Studies, at 515-3616 for information about course offerings and registration.

- CH 503 Advanced Inorganic Chemistry II, 3 credits, 10:15-11:05 MWF, Cornman
- CH 513 Advanced Analytical Chemistry II, 2 credits, 9:10-10:00 MW, Hanck
- CH 514 Electronics Instrumentation Lab, 1 credit, Arrang, Staff

## Duke Symposium Honors Ghirardelli

"CHIRALITY, STEREOCHEMISTRY AND ORGANIZED MEDIA"

A Symposium Honoring Dr. Robert G. Ghirardelli

Sponsored by the Department of Chemistry, Duke University and the United States Army Research Office

Gross Chemistry Laboratory, Duke University

Registration: 1:00 p. m.-2:00 p. m. Lobby of Gross Laboratory  
Contact: Lisa Ehrreich, Conference Services-90841, Duke University, Durham NC 27708; ph: (919) 684-5719; fax: (919) 684-8891; Information: Richard A. Palmer (919) 660-1539  
Fee: \$25 includes box lunch on Saturday. Students, not including lunch, admitted free

Friday, January 21, 1994, Session on Chirality and Stereochemistry, Prof. Richard A. Palmer, Chairman

- 2:00 Professor George Gokel, University of Miami, "Feeble Forces and Flexible Frameworks"
- 3:00 Professor Bertram Fraser-Reid, Duke University, "Carbohydrates to Carbocycles: Strategies for Densely Functionalized Natural Products"
- 4:00 Professor Gary Schuster, University of Illinois, "Photo-resolution of Organic Photoreceptors in Liquid Crystalline Media: Approaches to a Chiroptical Switch"

Saturday, January 22, Session on Organized Media, Dr. Reginald Seiders, Chairman

- 9:00 Professor Robert Moss, Rutgers University, "Iodosobenzoates as Hydrolysis Catalysts"
- 10:00 Professor Warren Ford, Oklahoma State University, "Catalysis by Cationic Latexes"
- 11:00 Professor Fennel Evans, University of Minnesota, "Direct Imaging of Surfaces Used in Surface Forces Apparatus Measurements"
- 12:00 Lunch
- 1:00 Professor David Jaeger, University of Wyoming, "Chiral Cleaveable Surfactants"
- 2:00 Professor Fred Menger, Emory University, "Reactions in Microemulsions"
- 3:00 Panel on Organized Media and Phase Transfer Catalysis, Dr. Richard Ward, Edgewood RD&E Center, Chairman

- CH 523 Advanced Organic Chemistry II, 3 credits, 11:20-12:10 MWF, Comins
- CH 525 Physical Methods of Organic Chemistry, 3 credits, 1:30-2:20 MWF, Van Breeman
- CH 533 Chemical Kinetics, 3 credits, 8:05-8:55 MWF, Carmichael
- CH 537 Quantum Chemistry, 3 credits, 8:05-9:20 TTh, Caves
- CH 595W Special Topics in Aquatic Chemistry, 3 credits, 10:15-11:05 MWF, Goldberg
- CH 611 Analytical Spectroscopy, 3 credits, 1:05-2:20 TTh, Boss
- CH 613 Electrochemistry, 3 credits, TBA Bowden
- CH 695A Advanced Topics in Asymmetric Synthesis, 3 credits, 3:40-5:30 MW, Linderman

**UNC:** Contact the Division of Continuing Education, Continuing Studies at 962-1134 or write: Continuing Studies CB 1020, Friday Center UNC-CH, Chapel Hill NC 27599-1020.

- Chem 122 Physical Chemistry, Polymers, 3 credits, 9:00-9:50 MWF, Samulski
- Chem 123 Intermediate Polymer Chemistry, 3 credits, 11:00-11:50 MWF, Staff
- Chem 130 Introductory Biological Chemistry, 3 credits, 9:30-10:45 TTh, Thompson
- Chem 131 Nucleic Acid Chemistry, 3 credits, 9:00-9:50 MWF, Errede
- Chem 133 Enzyme Mechanisms, 3 credits, 8:00-8:50, MWF, Pielak
- Chem 138 Chem/Metabolic Regulation, 3 credits, 9:30-10:45 TTh, Erickson
- Chem 141 Intermediate Analytical Chemistry, 2 credits, 11:00-11:50, MWF, Buck
- Chem 144 Separations, 2 credits, 8:00-9:15 TTh, Jorgenson
- Chem 145 Electroanalytical Chemistry, 3 credits, 11:00-12:15 TTh, Wightman
- Chem 146 Analytical Spectroscopy I, 3 credits, 9:00-9:50 MWF, Linton
- Chem 152 Electronic Structure, Transition Metal Compounds, 3 credits, 9:00-9:50 MWF, Hatfield
- Chem 153 Physical Methods in Inorganic Chemistry, 3 credits, 9:30-10:45 TTh, Schauer
- Chem 167 Advanced Organic Chemistry II, 2 credits, 10:00-10:50 MWF, Forbes
- Chem 168 Synthetic Organic Chemistry, 3 credits, 8:00-9:15 TTh, Crimmins
- Chem 182 Physical Chemistry II, 3 credits, 8:00-8:50 MWF, Johnson
- Chem 188 Quantum Chemistry, 3 credits, 11:00-11:50 MWF, Parr
- Chem 189 Statistical Mechanics, 3 credits, 8:00-8:50 MWF, Berkowitz
- Chem 192 Electronic Materials Processing, 3 credits, 10:00-10:50 MWF, Irene
- Chem 193 Chemistry and Physics of Surfaces, 3 credits, 9:30-10:45 TTh, Jarnagin
- Chem 265 Applications of Organometallic Compounds in Catalysis and Organic Synthesis, 3 credits, 11:00-11:50 MWF, Brookhart, Templeton, Guest Lecturers

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