

The

Special Edition

TarHelium



A Publication of the North Carolina Section of the American Chemical Society

Vol. 16, No. 8

April, 1986

1986 MEETING-IN-MINIATURE

at

UNC - Chapel Hill

Chapel Hill, NC

April 19, 1986

Date: Saturday, April 19, 1986

Place: Kenan and Venable Halls, UNC - Chapel Hill

Events: Registration 8:20 - 12:00 am
Lobby, Venable Hall

Papers: 8:40 am - 12:30 pm
Venable Hall

Poster Session: Lobby, Kenan Hall

Awards Presentation: 12:30, Venable Hall

Lunch: Pig-Picking, following awards presentation, Kenan Hall
(free to speakers*, \$11.00 for other than speakers and
students; \$5.50 for students)

*Reservations are assumed confirmed for all speakers unless notification is given. For regrets (on the part of speakers) or reservations, please call one of the following by Tuesday, April 15: In Durham, Sue Dickerson at 684-2414; In Chapel Hill, Debbie Edwards at 962-2172; and In Raleigh, Joyce Dunn at 737-2545.

TRIANGLE CHROMATOGRAPHY DISCUSSION GROUP

Meeting Announcement

May 5, 1986

7:00pm

Burroughs Wellcome Auditorium

The TCDG is pleased to present a seminar by

DR. COLIN F. POOLE
Department of Chemistry
Wayne State University

on

"Column Selection and Optimization"

Dr. Colin Poole will discuss a variety of topics of special interest in the development of chromatographic systems for difficult separations.

Dr. Poole is currently serving on the editorial boards of the "Journal of Chromatography" and "Trends in Analytical Chemistry" and is a consulting editor for "Liquid Chromatography" and "HPLC" magazines. He has received the Camille & Henry Dreyfus Award for Newly Appointed Faculty (1980) and the M.S. Tswett Medal (1985) for his innovative work in chromatography. He has authored over 100 papers and co-authored 4 texts, the latest being "Contemporary Practice of Chromatography", in the area of high performance chromatography.

Refreshments will be served following the seminar courtesy of THE ANSPEC COMPANY, INC.

38th SOUTHEASTERN REGIONAL ACS MEETING

November 3-5, 1986

Louisville, Kentucky

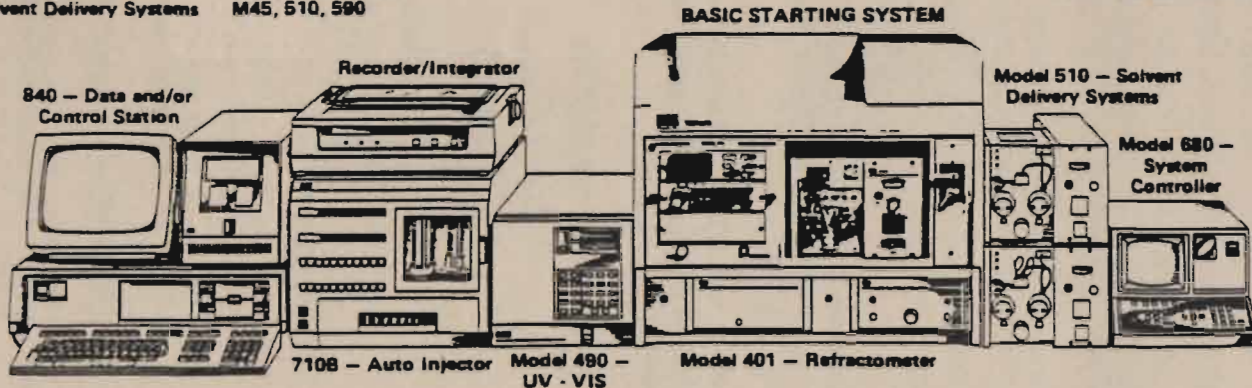
Symposia are being planned on chemical separations, biomedical applications of analytical chemistry, electrocatalysis, heterogeneous catalysis and nuclear magnetic resonance in biology. For information, contact Dr. Dorothy H. Gibson, Chemistry Department, University of Louisville; Louisville, Kentucky, 40292 (502)-588-5977.

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Seminar 2

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Dr. Peter Christiansen, Product Marketing Manager

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Stephen Lammert, Product Specialist

The New Age of Mass Spectrometry: Introducing the New Finnigan MAT TSQ 70

Dr. Gerd Dielmann, Product Line Manager

The New Age of Mass Spectrometry: Finnigan MAT Introduces the New MAT 90

Chapel Hill, North Carolina

Hotel Europa

1 Europe Drive

May 8, 1986

8:30 a.m. – 9:00 a.m.

Registration / Continental Breakfast

9:00 a.m. – 12:30 p.m.

Program

12:30 p.m.

Complimentary Lunch

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PROGRAM

NORTH CAROLINA SECTION



AMERICAN CHEMICAL SOCIETY

Meeting-in-Miniature

April 19, 1986

University of North Carolina
Chapel Hill

PROGRAM

Analytical Chemistry I C. William Anderson, Presiding Venable 223

- 8:40 "Electrochemical Detection of Neutral Compounds in Macroreticular Resins,"
E. D. Ross and R. W. Murray, University of North Carolina - Chapel Hill
- 9:00 "3-Dimensional Elemental Analysis of Solids Using SIMS," S. R. Bryan and
R. W. Linton, Department of Chemistry, University of North Carolina - Chapel
Hill and D. P. Griffis, ERSD, North Carolina State University
- 9:20 "Quantitative FTIR-PAS Determination of $S_xO_y^{-n}$ Species Resulting from the
Reaction of SO_2 with $CaCO_3$ and Related Materials," M. A. Martin and R. A.
Palmer, Duke University
- 9:40 "Quality Assurance Reference Materials for the Analysis of Toxic and
Hazardous Substances in the Environment," J. J. Sykora and J. R. Tuschall,
Jr., Northrop Services, Inc.
- 10:00 "The Effect of Phosphate On Ca Emission In Tandem Flame Spectroscopy,"
A. D. Weiss and C. B. Boss, North Carolina State University
- 10:20 Coffee Break, Lobby Kenan
- 10:40 "A Power Transfer Model for a Highly Efficient, Low Power, Microwave Induced
Plasma," B. A. Burns and C. B. Boss, North Carolina State University
- 11:00 "Energy Transport and Analyte Excitation in an Inductively Coupled Plasma,"
K. R. Reltz and J. W. Olesik, University of North Carolina - Chapel Hill
- 11:20 "Studies on the Effects of an Alternating Magnetic Field Applied to a Direct
Current Plasma," J. S. Gentry and C. B. Boss, North Carolina State
University
- 11:40 "The Effects of Sample Volatility In DCP Emission Spectrometry," A. T. Lynch
and C. B. Boss, North Carolina State University
- 12:00 "Use of a Graphite Furnace for Analyte Atomization into a DCP," B. Buckley
and C. B. Boss, North Carolina State University
- 12:30 Awards Presentations, Venable 210, followed by luncheon

Analytical Chemistry II

James Bernstein, Presiding
Venable 224

- 8:40 "Error Correction In the Classification of Liquid Monosubstituted Benzenes by Pattern Recognition," R. Waggoner, Jr. and W. L. Switzer, North Carolina State University
- 9:00 "Organic Derivatization of Low Molecular Weight Carboxylic Acids from Marine Sediment Pore Waters," J. Hoots, W. L. Switzer, Department of Chemistry and N. E. Blair, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University
- 9:20 "Stable Isotope Measurement of Pore Water Acetate," W. D. Carter, Jr. and N. E. Blair, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University
- 9:40 "Comparison of Mössbauer Spectroscopy and X-ray Diffraction for Analysis of Iron Oxide and Oxyhydroxide Mixtures," D. Amarasriwardena and L. H. Bowen, Department of Chemistry, and S. B. Weed, Department of Soil Science, North Carolina State University
- 10:00 "A Comparison of Methods for Measuring Chromatographic Resolution Using An Exponentially Modified Gaussian Peak Shape Model," H. K. Smith and W. L. Switzer, North Carolina State University and W. P. Wilson, Burroughs Wellcome Company
- 10:20 "Characterization of Peak Skew In Chromatograms Simulated by the Counter Current Distribution Theory," F. J. Blacha, Glaxo, Inc. and W. L. Switzer, North Carolina State University
- 10:40 Coffee Break, Lobby Kenan
- 11:00 "Digital Simulation of Longitudinal Broadening in a Counter Current Extraction," C. Amarasriwardena and W. L. Switzer, North Carolina State University
- 11:20 "Luminescence Studies of a Polymeric, Chemically Bonded Stationary Phase," C. H. Lochmüller and M. T. Kersey, Duke University
- 11:40 "Capillary Zone Electrophoresis of Proteins," D. J. Rose and J. W. Jorgenson, University of North Carolina - Chapel Hill
- 12:00 "Zone Detection In Capillary Zone Electrophoresis," J. S. Green and J. W. Jorgenson, University of North Carolina - Chapel Hill
- 12:30 Awards Presentations, Venable 210, followed by luncheon

Biochemistry Medicinal Chemistry

Harold E. Swaisgood, Presiding
Venable 310

- 9:20 "Application of HPLC Techniques for Analysis of Nucleotides in Predicting Cold Tolerance of Maize Hybrids," L. P. Schell, D. Danehower, J. R. Anderson, Jr. and R. P. Patterson, Department of Crop Science, North Carolina State University
- 9:40 ^{19}F Relaxation Studies of Superoxide Dismutase of Malaria Parasites," P. Abraham, Research Triangle Institute, C. G. Moreland and S. B. Balik, North Carolina State University
- 10:00 "Thermodynamics of the Hydrogen Bonding of the GC Base Pair," N. Gupta, L. D. Williams and B. R. Shaw, Duke University
- 10:20 Coffee Break, Lobby Kenan
- 10:40 ^{31}P In Vivo Surface Coil Analysis of Control and Vanadium-Fed Chick Leg and Breast Muscle," C. T. Burt, B. Chen and C. Hill, National Institute of Environmental Health Sciences and Department of Poultry Science, North Carolina State University
- 11:00 "Preparation and Activity of Carbonic Anhydrase Immobilized on Inorganic Group IV Supports," K. L. McLachlan, J. M. O'Daly, R. W. Henkens and A. L. Crumbliss, Duke University
- 11:20 "Synthesis of Tritium Labelled SCH23390," S. D. Wyrick, D. MacDougald and R. B. Mailman, Division of Medicinal Chemistry, University of North Carolina, Chapel Hill
- 11:40 "Synthesis of Agents Affecting Astrocytic Chloride Influx," S. D. Wyrick, F. T. Smith and A. Grippo, Division of Medicinal Chemistry, University of North Carolina - Chapel Hill
- 12:00 "Derivatives of Amidoximes as Specific MAO-Inhibitors," L. E. Breladdy, M. B. Mehta and H. L. White, Burroughs Wellcome Co.
- 12:30 Awards Presentations, Venable 210, followed by luncheon

Inorganic Chemistry I

Richard A. Palmer, Presiding
Venable 221

- 9.00 "Structure and Magnetic Properties of Cobalt (II) Oxydiacetate Trihydrate," J. H. Helms, B. R. Rohrs, P. Singh, R. Weller, and W. E. Hatfield, University of North Carolina - Chapel Hill

- 9:20 "Magnetization Studies on a Spin-Peierls Copper (II) Complex Chain," **B. R. Rohrs**, J. H. Helms, and W. E. Hatfield, University of North Carolina - Chapel Hill
- 9:40 "Electrochemical and Spectroelectrochemical Characterization of Prussian Blue Films in Aqueous Media," **C. A. Lundgren** and R. W. Murray, University of North Carolina - Chapel Hill
- 10:00 "Electrocatalytic Activation of Dioxygen: An Efficient Model Cytochrom P-450 Epoxidation Cycle," **S. E. Creager**, S. A. Raybuck and R. W. Murray, University of North Carolina - Chapel Hill
- 10:20 Coffee Break, Lobby Kenan
- 10:40 "Oxidation of H_2TPP , $CuTPP$ in Toluene by Voltammetry," **L. Geng** and R. W. Murray, University of North Carolina - Chapel Hill
- 11:00 "Solid State Voltammetry of a Redox-Conducting Polymer," **J. C. Jernigan** and R. W. Murray, University of North Carolina - Chapel Hill
- 11:20 "Chalcopyrites for Solar Energy Conversion," **H. Goslowsky** and K. J. Bachmann, North Carolina State University, and H. J. Lewerenz, Hahn-Meltner-Institut für Kernforschung
- 11:40 "Dual Luminescence from a Ru(II) Complex," **R. L. Blakley**, M. K. DeArmond, D. P. Segers and M. L. Myrick, North Carolina State University
- 12:00 "Circular Polarized Luminescence/Total Luminescence Studies of Lanthanide Complexes of Chiral 15-Crown-5 Macrocycles," **R. C. Carter**, R. G. Ghirardelli and R. A. Palmer, Duke University
- 12:30 Awards Presentations, Venable 210, followed by luncheon

Inorganic Chemistry II **Anton F. Schreiner, Presiding** **Venable 222**

- 11:00 "Addition Reactions of Tungsten Vinylidenes and Acetylides with Electron Poor Alkynes," **S. Gamble**, K. Birdwhistell and J. L. Templeton, University of North Carolina - Chapel Hill
- 11:20 "Synthesis and Characterization of Iron(III)-Specific Chelating Resins," **A. L. Crumbliss**, **J. M. Garrison**, R. Bock, A. Schaaf, C. Bonaventura and J. Bonaventura, Department of Chemistry and Marine Laboratory, Duke University
- 11:40 "The Preparation and Characterization of a Ruthenium Polycyanide Surface Modified Electrode," **S. D. Clymer** and A. L. Crumbliss, Duke University and N. Morosoff, Research Triangle Institute

- 12:00 "Catalyzed and Uncatalyzed Fe(III) Exchange between Polydentate Ligands,"
L. L. Fish and A. L. Crumbliss, Duke University
- 12:30 Awards Presentations, Venable 210, followed by luncheon

Organic Chemistry I

John Meyers, Presiding
Venable 307

- 9:00 "Fluorinated Inhibitors of Juvenile Hormone Esterase," J. Leazer and R. J. Linderman, North Carolina State University
- 9:20 "Selective Fluorination of Silylated Compounds," N. V. Lazaridis, S. T. Purrington, and C. L. Bumgardner, North Carolina State University
- 9:40 "Preparation of α -Fluorothiosulfoxides," J. H. Pittman and S. T. Purrington
North Carolina State University
- 10:00 "7,8-Dihydropurines: Synthesis and Base Mediated Oxidative-Dehydrochlorination of 6-Chloro-7,8-dihydro-9-(4-methylbenzyl)-2-trifluoromethyl-9H-purine," J. A. Linn and J. L. Kelley, Burroughs Wellcome Co.
- 10:20 Coffee Break, Lobby Kenan
- 10:40 "On the Remarkable Acidity of Meldrum's Acid," J. Harrelson and E. M. Arnett, Duke University
- 11:00 "Asymmetric Synthesis of Frontalin," M. Ohwa and E. L. Eliel, University of North Carolina - Chapel Hill
- 11:20 "Mechanism of Asymmetric Synthesis in Oxathianes: Analog Studies," M. T. Alvarez and E. L. Eliel, University of North Carolina - Chapel Hill
- 11:40 "Molecular Mechanics Studies in Tetralin and Hetero- Analogs," E. M. Olefirowicz and E. L. Eliel, University of North Carolina - Chapel Hill
- 12:00 "The Synthesis and Characterization of a Thermotropic and Lyotropic Liquid Crystal: Acetoacetoxypropyl Cellulose," W. P. Pawlowski, R. D. Gilbert, and R. E. Fornes, Department of Textile Chemistry, and S. T. Purrington, Department of Chemistry, North Carolina State University
- 12:30 Awards Presentations, Venable 210, followed by luncheon

Organic Chemistry II

Russell J. Linderman, Presiding
Venable 308

- 9:20 "Organic Lab - Challenges and Successes," G. J. Shaw and G. H. Wahl, Jr., North Carolina State University
- 9:40 "Diels-Alder Chemistry of a Transition Metal Vinyl Substituted Carbene Complex," L. G. Upchurch and M. S. Brookhart, University of North Carolina - Chapel Hill
- 10:00 "Approaches Toward the Total Synthesis of Retigeranic Acid," S. Hobbs and D. Sternbach, Duke University
- 10:20 "Facile Synthesis of a Bicyclic Intermediate for Conversion to Polyquinane Natural Products," S. G. Levine and N. E. Heard, North Carolina State University
- 10:40 Coffee Break, Lobby Kenan
- 11:00 "Regioselective Phosphoranylation and Cyclodehydration of Polyols with Diethoxytriphenylphosphorane," J. W. Kelly and S. A. Evans, Jr., University of North Carolina - Chapel Hill
- 11:20 "Sensitivity of Oxygen-17 NMR Shifts of Cyclic Phosphine Oxides to Steric and Ring Effects," K. Linehan, J. Szewczyk and L. D. Quin, Duke University
- 11:40 "The Interaction of Thiophenylmagnesium Bromide with Ether," K. Lee, L. A. Jones and C. A. Haney, North Carolina State University
- 12:00 " α -Alkoxyorganocuprate Reagents; Preparation and Conjugate Addition Reactions," A. Godfrey and R. J. Linderman, North Carolina State University
- 12:30 Awards Presentations, Venable 210, followed by luncheon

Physical Chemistry

Thomas C. Caves, Presiding
Venable 12-1

- 9:00 "Stable Nuclides-'Up an Atom'," C. Clinard and H. H. Carmichael, North Carolina State University

- 9:20 "Thermochemical Studies of Silica Gel," E. M. Arnett and K. F. Cassidy, Duke University
- 9:40 "Solid State NMR In the Conformational Analysis of Drugs," S. C. J. Sumner and C. G. Moreland, North Carolina State University
- 10:00 "Phase Transitions in Resorcinol", L. Askari and Y. Ebisuzaki, North Carolina State University
- 10:20 "Variations in the Iron Cores of Ferritin and Related Ferric Polymers," A. M. Bryan and L. H. Bowen, Department of Chemistry, and E. C. Theil, Department of Biochemistry, North Carolina State University
- 10:40 Coffee Break, Lobby Kenan
- 11:00 "EPR Study of a Water Soluble, Nitroso-Aromatic Spin Trap," J. S. Robertson and P. Smith, Duke University
- 11:20 "EPR Study of Fumaronitrile-Derived Addition Radicals," W. H. Donovan and P. Smith, Duke University
- 11:40 "Electrocatalytic Estimation of Electron Self Exchange Rates of Highly Oxidizing Methyl Substituted Benzenes and Their Cation Radicals," R. A. Reed and R. W. Murray, University of North Carolina - Chapel Hill
- 12:00 "Structural and Electronic Properties of TCNQ Salts," G. A. Long and M.-H. Whangbo, North Carolina State University
- 12:30 Awards Presentations, Venable 210, followed by luncheon

POSTER SESSION
Division of Graduate / Advanced Research
Carol Mooney, Organizer
Lobby Kenan Hall

- 500 "Characterization of Murine Bone Marrow Stromal Proteoglycans," S. L. Kirby and S. A. Bentley, Department of Pathology, University of North Carolina - Chapel Hill
- 510 "Concentration of Aquatic Organic Matter on Macroreticular Resins," *P. LeCloirec, R. F. Christman and J. D. Johnson, Department of Environmental Science and Engineering, University of North Carolina - Chapel Hill, *Visiting Scholars from ENSCR: Ecole Nationale Supérieure de Chimie, Rennes, France
- 520 "Amino Acids in the Environment: Analysis, Levels, and Evolutions in Water Treatment," *C. LeCloirec, *P. LeCloirec and G. Martin, Department of Environmental Science and Engineering, University of North Carolina - Chapel Hill, *Visiting Scholars from ENSCR: Ecole Nationale Supérieure de Chimie, Rennes, France

- 530 "Enhancement Mechanisms in Tandem Flame Spectrometry," **A. G. Edwards** and **C. B. Boss**, North Carolina State University

12:30 Awards Presentations, Venable 210, followed by luncheon

HONORS POSTER SESSION
Undergraduate Research Division
Carol Mooney, Organizer
Lobby Kenan Hall

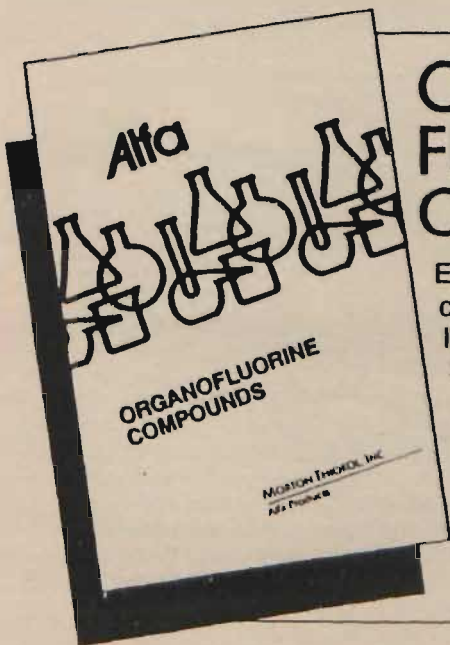
- 400 "Conformational Dynamics of Cyclopentane," **E. M. Carpenter** and **R. MacPhail**, Duke University
- 410 "Photochemistry of Phenyl Thioethers in Solution," **G. D. Harris** and **P. J. Kropp**, University of North Carolina - Chapel Hill
- 420 " Na_2CO_3 as a Promoter in the Reaction between CaCO_3 and SO_2 as Studied by FTIR-PAS," **M. L. Knox** and **R. A. Palmer**, Duke University
- 430 "The Spectroscopic Characterization of Low Energy Sm(III) Electronic States in $\text{Sm}(\text{DBM})_3 \cdot \text{H}_2\text{O}$ and $\text{Na}_3[\text{Sm}(\text{ODA})_3] \cdot 2\text{ClO}_4 \cdot 6\text{H}_2\text{O}$," **C. E. Miller** and **R. A. Palmer**, Duke University
- 440 "Heterogeneous and Homogeneous Acid-Base Heat of Reaction Relationships," **C. M. Fetzer** and **E. M. Arnett**, Duke University
- 450 "Thermochemistry of Adsorption on Kappa Alumina," **G. Bablera** and **E. M. Arnett**, Duke University
- 460 "Fluoride Ion Addition to Phenyl Trifluoromethyl Acetylene," **D. Talton** and **C. B. Bumgardner**, North Carolina State University

12:30 Awards Presentations, Venable 210, followed by luncheon

HONORS POSTER SESSION
High School Division
Carol Mooney, Organizer
Lobby Kenan Hall

- 200 "Effect of Ozone on Gibberellic Acid and Pigments in Tobacco Plants", **S. Kaplan** and **C. Morse**, North Carolina School of Science and Mathematics

- 210 "A Comparison of Animal Serum Proteins by Electrophoresis," D. J. Wrisley and J. Kiplinger, North Carolina School of Science and Mathematics
- 220 "TLC Separations for Use in a Space Shuttle Project," B. Ferguson and C. Morse, North Carolina School of Science and Mathematics
- 230 "Effect of Herbicide on the Formation of Radish Pigments," B. Thacker and C. Morse, North Carolina School of Science and Mathematics
- 240 "Effects of Excess Aluminum on Plants Grown in Acid Environments," M. Burniston and C. Morse, North Carolina School of Science and Mathematics
- 250 "Terpenes in Tree Sap," J. Grunkemeyer and C. Morse, North Carolina School of Science and Mathematics
- 260 "Why is Red Cabbage Pigment a Universal Indicator?," J. Woosley and C. Morse, North Carolina School of Science and Mathematics
- 270 "The Effect of Temperature on the Pigments Involved in the Dark Reaction of Photosynthesis," C. M. Bastla, North Carolina School of Science and Mathematics
- 280 "Interpretation of Infrared Spectra by Translation into Sound Patterns," K. Barger and M. J. Camp and Carolyn Morse, North Carolina School of Science and Mathematics
- 12:30 Awards Presentations, Venable 210, followed by luncheon



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US ARMY RESEARCH OFFICE

Located in rapidly growing Research Triangle Park in North Carolina, the U. S. Army Research Office (ARO) serves as the Army's "window" to the scientific community. Its mission is to develop and assess the Army's research program and to recommend a technology investment strategy.

ARO is the principal agency in the United States engaged in Army-wide support of research in mathematics and in the physical, engineering, atmospheric, terrestrial and biological sciences.

The results of ARO-supported research are published in unclassified professional journals and are available to any user of scientific libraries. The direct benefit to U. S. Army technology occurs through the efficient transfer of that scientific information to development programs.

Key to ARO's mission is its contract program with universities and industry. ARO annually receives hundreds of proposals to conduct research from universities, research institutes and industrial laboratories. ARO supports those proposals which have the most technical merit and relevance to Army needs. The programs are funded through contracts and grants.

Some of the major programs in which ARO supports research include:

- University Research Instrumentation Program - A five-year, \$150 million tri-service program, it is designed to upgrade scientific instrumentation at the participating universities.

- University Research Initiative - A multi-component effort designed to strengthen the capabilities of the universities to perform research and to educate scientific and engineering personnel in key disciplines important to the technologies that underly a strong national defense. This program was initiated in 1986.

- In addition, ARO administers the Scientific Services Program under which federal agencies can request assistance in the solution of specific scientific problems.

- ARO also administers the Army Youth Sciences Activity Program which promotes and honors the achievements of high school students. This program includes the Junior Science and Humanities Symposia, the International Science and Engineering Fair, the Uninitiated Introduction to Engineering Programs, the Research and Engineering Apprentice Program and the mathematics Olympiad.

ARO evolved from the Office of Ordnance Research (OOR) which was established in 1951 and designated the national headquarters

for basic research programs of all the Army's technical services.

There have been many celebrated discoveries supported by OOR/ARO during its history including, in some instances, scientists receiving support being awarded the Nobel Prize. Dr. Charles Townes discovered the laser while working on an ARO-supported contract. Similarly, Drs. James Cooley and John Tukey developed the Fast Fourier Transform. Nobel Laureate Dr. Herbert C. Brown was recognized for his work in Boron chemistry

A modern, two-story brick office building containing 33,000 square feet of space houses ARO's staff of more than 130 permanent employees, 45 of whom are scientific staff holding doctoral degrees.

ARO Chemistry Division members have served the Local Section of the ACS in many ways. Dr. Robert Ghirardelli served as Chairman in 1970 and was responsible for originating and implementing our TarHelium (to replace an outmoded post card system for meeting announcements). Recently, Dr. Bernard Spielvogel served as Chairman in 1984. Other Division members have and continue to serve on various Section Committees.

SPEAKERS BUREAU TO BE ESTABLISHED

The Public Relations Committee is planning to set up a Speakers Bureau consisting of NC Section members who are available for the presentation of lectures in the field of chemistry to audiences in the geographical area served by the NC Section. The audience levels for the lectures may be non-technical to highly technical. Any member interested in participating in the Speakers Bureau is invited to contact the chairman of the Public Relations Committee (Dr. Peter Smith, Paul M. Gross Chemical Laboratory, Department of Chemistry, Duke University, Durham, NC 27706 (telephone number, 919-684-2238)).

50 YEAR MEMBERS RECOGNIZED

Congratulations to Dr. T. S. Ma of Chapel Hill and Dr. Frederick Walte of Pinehurst, for completing 50 years of membership in the ACS.

SPECIAL ANNOUNCEMENT
THE DEPARTMENT OF CHEMISTRY SHORT COURSE PROGRAM
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
APRIL 11 and 12, 1986

- Courses: #1: Hard and Soft Acids (Friday afternoon)
Instructors: Ralph G. Pearson, UC-Santa Barbara
Robert G. Parr, UNC-CH
Max Berkowitz, UNC-CH
Walto Yang, UNC-CH
- #2: Transition Metal Activation of Organic
"Functional" Groups: I. C-C Triple Bonds
II. C-H Single Bonds, (Saturday morning)
Instructors: Joseph L. Templeton, UNC-CH
Maurice S. Brookhart, UNC-CH
- #3: Fundamentals and Applications of Mass Spectrometry
(Friday afternoon and Saturday morning)
Instructors: Tomas Baer, UNC-CH
Maurice M. Bursey, UNC-CH
Tim Cornish, UNC-CH
John L. Holmes, U. of Ottawa
J. Ronald Hass, Triangle Labora-
tories, Inc.

Social Hour and Banquet (Friday, 6:30 pm)

Speaker - Professor Maurice M. Bursey

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For registration information, contact Ms. Debbie Stump, Department of Chemistry, UNC-CH, (919)-962-2172.

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Computers In Spectroscopy April 28-May 1, 1986	<i>Cooper & Ziessow</i> St. Louis MO
NMR Concepts & Operating Techniques May 19-24, 1986..... (Optional Lab Available)	<i>D'Avignon, Ellis & Traficante</i> St. Louis MO
Biological NMR Concepts & Applications May 19-23, 1986..... (Optional Lab Available)	<i>Ackerman, Balaban & Satterlee</i> St. Louis MO
NMR Concepts & Operating Techniques July 14-17, 1986.....	<i>Traficante</i> Cincinnati OH
MRI For Physicians & Medical Personnel Sept. 5-7, 1986.....	<i>Carr, Smith & Traficante</i> Lexington KY
International Course In 2D NMR Sept. 21-27, 1986	<i>Kessler, Traficante & Ziessow</i> West Germany
Solid State NMR Oct. 13-17, 1986..... (Optional Lab Available)	<i>Maciel & Frye</i> Fort Collins CO
NMR Of Polymers, Solutions & Solids Oct. 27-30, 1986	<i>Dixon, Maciel, Schaefer & Stjeskal</i> St. Louis MO
Interpretation Of NMR Spectra Nov. 10-14, 1986	<i>Lichter & Traficante</i> St. Louis MO
NMR For Administrators and Salesmen Dec. 8-10, 1986.....	<i>Grant, Kaufman & Traficante</i> St. Louis MO
EPR Concepts & Operating Techniques Dec. 8-11, 1986	<i>Echegoyen & Kevan</i> Miami FL
New Frontiers In NMR Jan. 21-23, 1987	<i>Pines, Schaefer & Waugh</i> Boston MA
2D NMR For Organic Chemists March 1987..... (Optional Lab Available)	<i>Rodger & Traficante</i> Location: TBA*
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