

The

TarHelium



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

Vol. 16 No. 4

December, 1985

The North Carolina Section
of the American Chemical Society

Presents

The North Carolina
Distinguished Chemist Lecture Series

Featuring

DR. GERTRUDE ELION
Burroughs-Wellcome Company

Tuesday, December 10, 1985
Meredith College, Raleigh, North Carolina
(A map of the campus is provided on Page 3)

Dinner: 6:00 p.m., President's Dining Room,
Belk Dining Hall

Lecture: 7:30 p.m., Cate Center

Reception: 8:30 p.m., Cate Center

Please note that the program format is somewhat different from our usual schedule. For reservations, please call by December 6: In Durham--Sue Dickerson at 684-2414; In Raleigh--Joyce Dunn at 737-2545; and In Chapel Hill--Debbie Stump at 962-2172.

NORTH CAROLINA DISTINGUISHED CHEMIST LECTURER

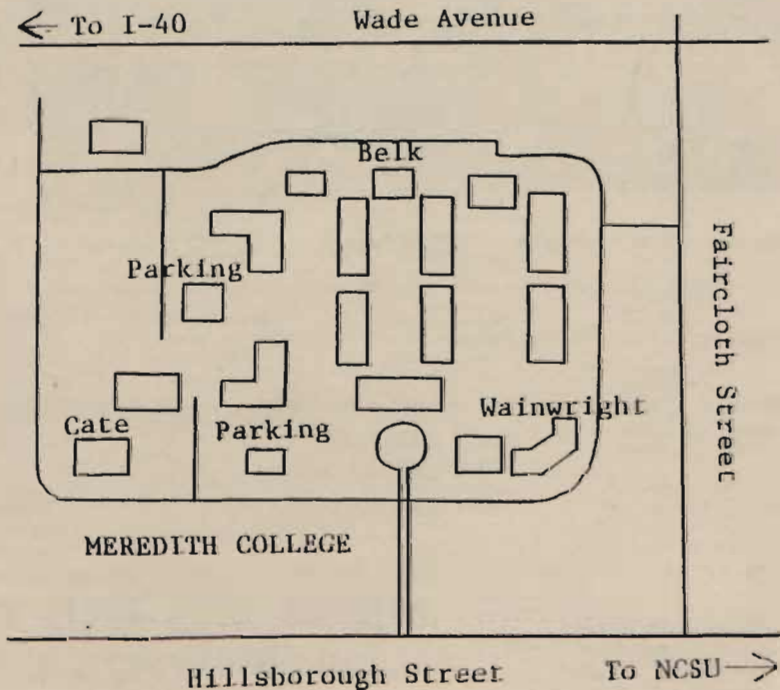
GERTRUDE B. ELION, a native New Yorker, received an A.B. degree (summa cum laude) from Hunter College in 1937. Following several laboratory positions as a Research Assistant in Biochemistry and Organic Chemistry, she attended New York University and received an M.S. degree in 1941. She taught chemistry and physics in the New York secondary schools for two years before returning to research first as a food analyst and then as an organic chemist. In 1944, she joined the staff of the Wellcome Research Laboratories, successively holding the positions of Research Chemist, Assistant to the Associate Research Director, and Assistant to the Research Director (Chemotherapy). In 1967, she became Head of the Department of Experimental Therapy, retiring from this position in 1983. She remains, nevertheless, at the Wellcome Research Laboratories as a Scientist Emeritus and Consultant.

Her work in the chemistry and pharmacology of purines and purine analogs has received wide recognition. She played a key role in the development of the antileukemic drugs 6-mercaptopurine and thioguanine, azathioprine for prevention of kidney transplant rejection, allopurinol for the treatment of gout and hyperuricemia and the anti-herpetic agent, acyclovir. She holds three honorary Doctorate degrees from George Washington University, Brown University and the University of Michigan. Dr. Elion is a member of many scientific societies, including the American Chemical Society, the Chemical Society, American Society of Biological Chemists, American Society of Pharmacology and Experimental Therapy, American Association for Cancer Research and the American Society of Hematology. In 1983-1984, she served as President of the American Association of Cancer Research. Among her honors are the Garvan Medal of the American Chemical Society (1968), the President's Medal of Hunter College (1970), the Judd Award (1983) and the Cain Award (1984). Dr. Elion has served on a number of Advisory Committees for the National Cancer Institute, World Health Organization, American Cancer Society, Leukemia Society, and serves as an Associate Editor for Cancer Research. She has over 250 scientific publications. Currently, Dr. Elion is a Research Professor of Pharmacology and Medicine at Duke University and an Adjunct Professor of Pharmacology at the University of North Carolina in Chapel Hill. In 1984, she was appointed by President Reagan to the National Cancer Advisory Board.

The Purine Path to Selective Chemotherapy

Abstract

Studies of the structure-activity relationships and metabolic fate of the antileukemic agent, 6-mercaptopurine, led to the synthesis of azathioprine, an immunosuppressive agent which prevents the rejection of transplanted kidneys, and to the development of the xanthine oxidase inhibitor, allopurinol, for the treatment of gout. A purine nucleoside analog, allopurinol riboside, which acts as an antileishmanial agent, has revealed exploitable differences in the biochemical pathways of the host and the parasite. The acyclic analog of deoxyguanosine, acyclovir, is a selective inhibitor of herpesvirus replication because of its activation by a virus-specified enzyme. Thus, purine antimetabolites have been a source of a variety of important chemotherapeutic agents and have served as tools for the expansion of biochemical knowledge.



CALL FOR PAPERS

Great Lakes Regional Meeting

The Milwaukee Section invites you to participate in the 20th Great Lakes Regional Meeting, to be held at Marquette University, June 2-4, 1986 in Milwaukee, Wisconsin.

Symposia will be conducted in the following areas:

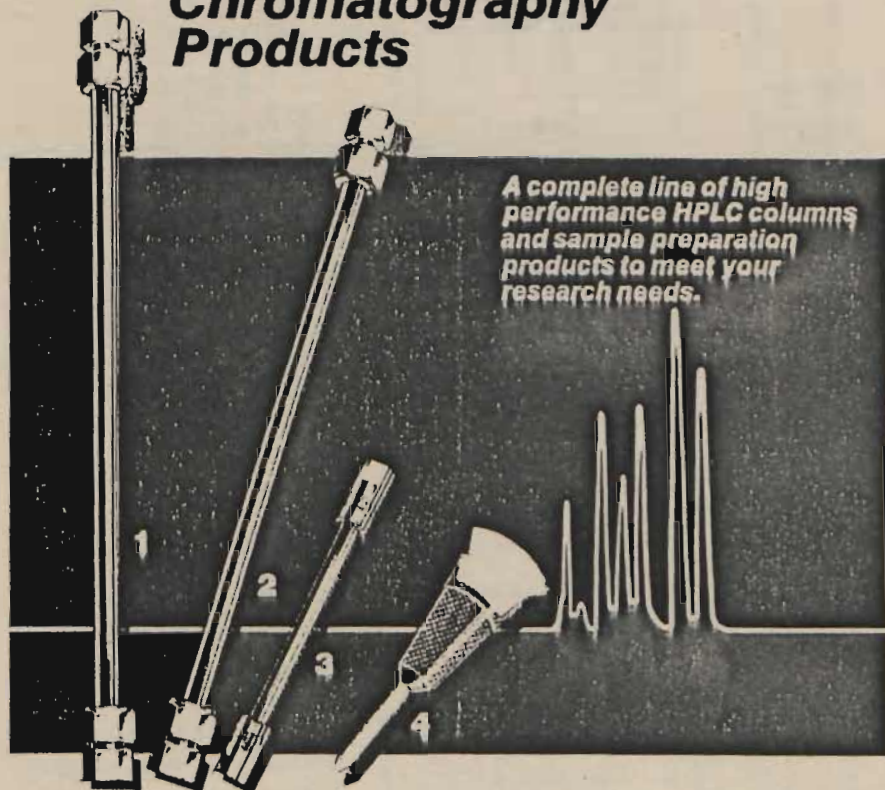
- Teaching of Chemistry to Minority/Disadvantaged/Central City Students.
- Applications of Genetic Engineering in the Biotechnology Industry.
- Effects of Structure on the Properties of Polymers. • Toxic Rain.
- Biomedical Applications of Magnetic Resonance. • Metal-Based Drugs.
- Stereocontrol in Organic Synthetic Reactions. • Bioinorganic Chemistry.
- New Instrumental Analytical Techniques. • Chemical Crystallography.
- New Uses of Computers in chemistry. • Fat Transport and Metabolism.
- Computers in Chemical Education. • Surface Chemistry and Catalysis

Papers are solicited for the general sessions in the areas of Analytical, Physical, Organic, Inorganic and Medicinal Chemistries as well as Chemical Education, Chemical Engineering and Biochemistry. Abstracts typed on ACS abstract forms should be sent in duplicate to program chairman, **E. Alexander Hill**, Dept. of Chem., Univ. of Wisconsin-Milwaukee, Milwaukee, WI, 53201, (414-963-4256). Deadline for receipt is **Feb. 15, 1986**.

NORTH CAROLINA SECTION FUTURE MEETINGS

Date	Place	Contact	Topic
January	No Meeting		
February 17-21	Undecided	Larry Knecht, 683-6078; Carolyn Morse, 683-6079	High School Chemistry
March 17-21	NCCU	John Myers, 683-6469	Raymond Scott: HPLC
April 19	UNC	Richard Linton, 962-2303	Meeting in Miniature

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POLYMER GROUP
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Schedule for Remainder of 1985-86 Program

Meeting Date	Speaker	Topic
December 12	Dr. David Ollis NC State Univ.	"Microbial Production of Exo- and Endo- Polysaccharides"
January 9	Dr. William Karous University of Texas	"Gas Sorption and Di- lution of Polymers at High Pressures"
February 13	Dr. Bruce Frushour Monsanto	"Advances In the Ther- mal Analysis of Poly- mers"
March 13	Frank Cotton FNC Associates	"Controlling Processes for the Molding of Polymers"
April 15 (Third Tuesday)	Dr. Jim Lyerla IBM	"Studies of Polymer Dynamics by High Reso- lution NMR"
May 8	Dr. William Krigbaum Duke University	To Be Announced

All meetings are on the second Thursday of the month at NC State University Faculty Club, unless noted otherwise in the monthly mailing announcement. For additional details, please contact Dr. J. Ray Kirby (Program Chairman) at IBM (543-8043).

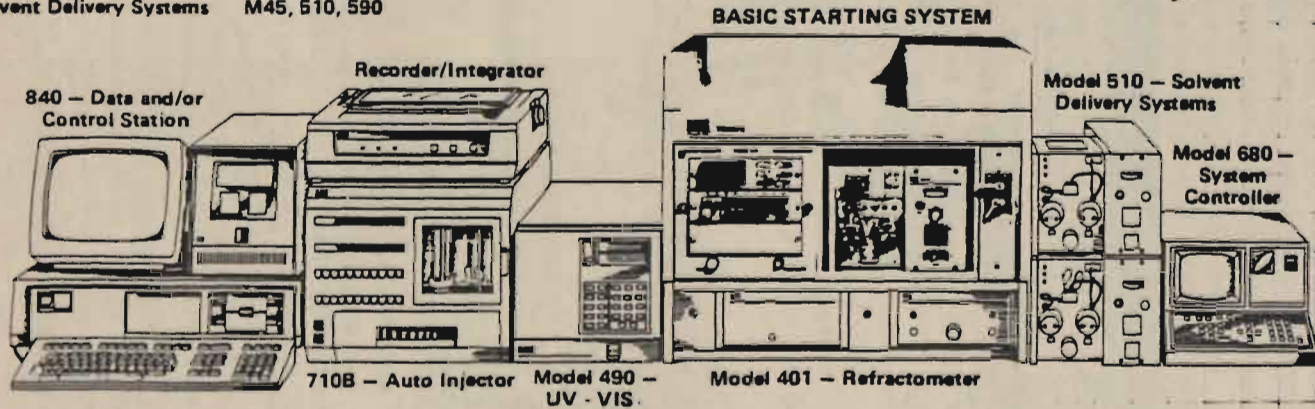
Social Hour: 5:30 p.m.
 Buffet Dinner: 6:30 p.m.
 (reservations, please)
 Speaker: 7:30 p.m.

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NEWS FROM CHEMICAL ABSTRACTS SERVICE

Two search aids designed to help users form more precise queries for searching the CA File in CAS ONLINE are now available from Chemical Abstracts Service. They are the CA Headings Lists and Qualified Substances In the CA File.

The first, a new edition of the CA Headings Lists, enables users to find in one place Chemical Abstracts subject index headings and cross references for the 9th, 10th, and 11th collective index periods (1972-1986). The Headings List cross-refers natural language terms to valid Chemical Abstracts index headings and correlates index headings from the three collective indexes. Indexing notes explain how the headings are used. This aid can be used to determine which controlled-vocabulary index terms should be included in queries for searching the CA File on CAS ONLINE or CA SEARCH.

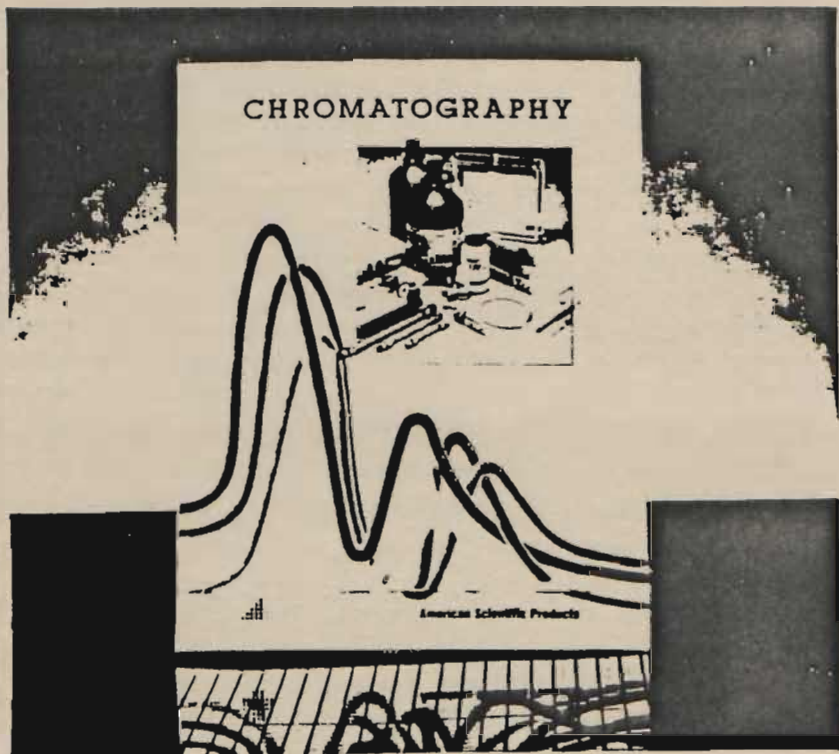
The CA Headings Lists is printed in two books: the General Subjects list and the Plants and Animals list. It updates and replaces a previous edition in microform. Copies are available for \$40 from:

Customer Services
Chemical Abstracts Service
P.O. Box 3012
Columbus, Ohio 43210.

The second search aid, Qualified Substances In the CA File, was designed for advanced searchers who may wish to link CAS Registry Numbers for any of about 600 frequently indexed substances to controlled-vocabulary qualifiers in searches of the CA File. The seven standard qualifiers used in the CA File are: Analysis, biological studies, occurrence, preparation, properties, reactions, and uses and miscellaneous. The search aid lists CAS Registry Numbers and 8th and 9th collective index names for substances to which qualifiers may be linked. A short introduction gives some examples of how to use this aid. Qualified Substances In the CA File is available at no charge from CAS.

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CHEMISTRY AT THE RESEARCH TRIANGLE INSTITUTE*

Chemical studies at the Research Triangle Institute (RTI) occur principally in three different units. These are Chemistry and Life Sciences under the direction of Vice-President C. Edgar Cook, Analytical and Chemical Sciences, under Vice-President Edo D. Pellizzari and Environmental Sciences and Engineering, under Vice-President James B. Tommerdahl.

Within the Chemistry and Life Sciences unit, F. Ivy Carroll directs the Center for Organic and Medicinal Chemistry. Studies performed in this center include synthesis of drugs, their metabolites, dyes, steroids, alkaloids, prostaglandins, natural products and other organic compounds. Compounds labeled with carbon-14, carbon-13, tritium, deuterium and iodine-125 have been prepared. Separation and structural analysis are major activities of the center. Instrumental techniques used in this effort include GC/MS, HPLC/MS, GC/FTIR, TGA/MS and NMR with capacity for sensing a large number of different nuclei. Finally, drug design and development for cancer chemotherapy, cancer prophylaxis, antiparasitics, contraceptives, radiation protectives, and others take place.

A second center within Chemistry and Life Sciences is the Center for Bioorganic Chemistry, under Dr. Cook. Studies performed encompass the measurement of xenobiotic compounds, including drugs in blood and other biofluids; the synthesis of specific immunogens and radiolabeled ligands; isolation and identification of natural products for chemotherapeutic potential; and synthesis of food additives, such as improved artificial sweeteners.

Jerry H. Reel directs another center, Life Sciences and Toxicology. Areas of study in this center include cellular and genetic toxicology and mutagenesis, teratology and neurobehavioral toxicology and reproductive endocrinology.

The fourth center within Chemistry and Life Sciences is the Center for Physical Sciences, directed by Colin G. Pitt. This center focuses largely on polymer research. Polymer coatings which are corrosion resistant, antistatic, antifouling, conductive, or blood compatible have been studied. Of special interest recently has been the development of polymers for controlled delivery of human drugs. Also in this center is a materials science research facility, with capabilities in transmission and scanning electron microscopy and electron probe x-ray elemental analysis.

(Chemistry at the Research Triangle Institute--continued)

The Analytical and Chemical Sciences unit focuses on the development and application of methods for analysis of complex mixtures such as sludges, sediments, water, biological media and biota. Studies of indoor air pollution have been a major effort in recent times. The measurement of environmental pollutants in food, human tissue, breath and biological fluids has been performed and exposure, body-burden and dosage relationships and inferences have been established. Surface analysis is still another area of study, including the study of the morphology, topography and chemical nature of corrosion.

Most chemical studies within the Environmental Sciences and Engineering unit take place in the Center of Environmental Measurements, directed by C. E. Decker. These include studies of atmospheric interactions of chemical species, acid rain studies, sampling and analysis of hazardous wastes, development of hazardous waste management plans and development and evaluation of solid, liquid and gaseous analytical reference materials. Two other areas of effort in this center are hydrogeological studies of groundwater problems and industrial hygiene studies of occupational and non-occupational environments.

* RTI performs interdisciplinary research in the physical, chemical, life, engineering, environmental, statistical, social, and policy sciences under contract to clients in business, industry and government. RTI, which is entirely self-supporting from contract revenues, was established in 1958 as a freestanding corporate entity to be the focal point for growth in the new Research Triangle Park. Presently RTI employs a regular staff of 1000, and occupies 391,000 square feet in 15 different laboratory and office buildings in the Park.

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Please direct correspondence to the attention of the editor:

William Gutknecht
Environmental Chemistry Department
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