

THE

# Tar Helium



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

Vol. 17, No. 1

September 1986

*The Distinguished North Carolina Chemist Lecture Series*

***Professor Mary Ellen Jones***

*Kenan Professor and Chair*

*Department of Biochemistry and Nutrition*

*University of North Carolina at Chapel Hill*

***De Novo Pyrimidine Biosynthesis in Animals.  
Three Genes; Six Enzyme Activities.***

Wednesday, September 17, 1986  
Burroughs Wellcome Co. Auditorium  
3030 Cornwallis Road  
Research Triangle Park, NC

*Lecture*

7:30 PM

Burroughs Wellcome Co. Auditorium  
No reservations are necessary

*Reception*

8:30 PM

Burroughs Wellcome Co. Dining Room  
Beverages and hors d'oeuvres will be served  
Reservations are required

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Please make a reservation for the reception so that we can be adequately prepared.  
For reservations call by 3:00 PM, Monday, September 15:

Durham — Sue Dickerson (684-2414)

Raleigh — Joyce Dunn (737-2545)

Chapel Hill — Debbie Edwards (962-2172)

To cancel reservations, please call Eric Bigham (248-4338)

**Professor Mary Ellen Jones** — Since the discovery of carbamyl phosphate in 1955 with Leonard Spector and Dr. Fritz Lipmann, Prof. Jones has studied the two enzyme pathways that utilize carbamyl phosphate; namely (1) arginine and urea biosynthesis and (2) de novo biosynthesis of pyrimidines. This North Carolina Distinguished Chemist Lecture presentation will describe work on enzymes involved in the biosynthesis of uridylic acid, the first pyrimidine nucleotide synthesized from simple precursors.

Prof. Jones earned her B.S. degree from the University of Chicago; she earned her Ph.D. in biochemistry from Yale University in 1951. She furthered her professional training as a postdoctoral research fellow with Fritz Lipmann at Massachusetts General Hospital. From 1957 to 1966, Prof. Jones was a faculty member at Brandeis University. Dr. Jones came to UNC in 1967, where she eventually became Professor of Biochemistry and Professor of Zoology. She was Professor of Biochemistry at the University of Southern California, Los Angeles, from 1971 to 1978. In 1978, Dr. Jones returned to UNC as Chair and Professor in the Department of Biochemistry and Nutrition, School of Medicine, and in 1980 she became a Kenan Professor.

Prof. Jones's research interests in enzymology include the mechanism of action of enzymes; metabolite control of enzyme activity; effect of subunit interaction on enzyme activity, regulation, and enzyme conformation; multifunctional proteins. She is also interested in the metabolic pathways leading to pyrimidine, arginine, and urea biosynthesis and in the role of carbonic anhydrase in CO<sub>2</sub> fixation.

Dr. Jones is a member of numerous professional societies. In the ACS, she has been a councilor and chairman of the Biochemistry Division. Currently, she is president of the American Society of Biological Chemists. In 1984, Prof. Jones became a member of the National Academy of Sciences.

Dr. Jones is also a prominent contributor and editor of scientific publications. She has held positions on the editorial boards of *Canadian Journal of Biochemistry*, *Cancer Research*, and *Journal of Biological Chemistry*. She was coeditor of Volume 51 of *Methods in Enzymology*. In addition to the publication of numerous research papers, chapters, and reviews, Prof. Jones has been a frequent speaker at scientific meetings and an invited lecturer at research facilities around the world.

The awards that Dr. Jones has received include: Scholar of the American Cancer Society; Fellow of the American Association for the Advancement of Science, 1972; Wilbur Lucius Cross Medal from the Graduate School at Yale University, 1982; and member of the National Academy of Sciences, 1984.

## NOMINATIONS FOR LOCAL SECTION

### Officers

The Nominations Committee has selected the following North Carolina section members for consideration in the November election:

**Chairman-Elect**

William Hatfield (UNC)

**Councilor**

Ivy Carroll (RTI)

William Little (UNC)

**Treasurer**

Reginald Shiflett (Meredith)

Joan Bursej (Radian)

**Alternate Councilor**

William Gutknecht (RTI)

Robert Izydore (NCCU)

## FUTURE PROGRAMS

**Speaker:** John W. Moore

**Date:** Oct. 22, 1986

**Program:** "The Electronic Chemistry Set: Teaching with Computers"

Moore's talk will keynote a computer in education symposium. See article about symposium in this issue.

**Location:** UNC-CH

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**Speaker:** Clifton E. Melone

**Date:** Nov. 19, 1986

**Program:** "Criminalistics — The Application of Chemistry to Apprehending Criminals"

**Location:** NCCU

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**Speaker:** NC Distinguished Speaker

**Date:** Dec. 9, 1986

**Location:** Meredith College

## STATISTICS SHORT COURSE COMING SOON!

The Education Committee has arranged for Dr. Hale Sweeny and Dr. Gerald Hajian, statisticians from Burroughs Wellcome, to teach a short course on statistics later this fall. These dynamic speakers will emphasize a hands-on approach to solving statistical problems in chemical R&D.

The course will be given this fall in the late afternoons at a Research Triangle Park location. No other information was available at press time, but see your October *TarHelium* for complete details. If you need any information before then, contact Monica Nees, Education Committee chair, at RTI, at 541-5997.



## IMPORTANT COMMITTEE ANNOUNCEMENT!

Volunteer committees do all of the work of the North Carolina Section of the ACS. The information that follows will help you become aware of the many contributions that our section makes to the scientific and educational community here. Committee members are appointed by the chairman of the section. You are welcome to join any of these committees; if you are interested, contact Eric Bigham (248-4338), Burroughs Wellcome Co., 3030 Cornwallis Rd., Research Triangle Park, NC, 27709, or the committee's chairman.

### **High School Chemistry Committee**

*Dr. Larry Knecht*, Chairman, 683-6594, N.C. School of Science and Mathematics, 1912 W. Club Blvd., Durham, NC 27705.

The members of this committee are Ms. Kathryn MacLeod, Dr. Carolyn Morse, Dr. Rufus Owens, and Mr. Philip R. Dail. The High School Committee serves the high school chemistry teachers and students within our section and acts as a liaison between the ACS and those teachers and students. Presently the two most important activities of the committee are the administration of the section's High School Chemistry Teacher Awards and our participation in the International Chemistry Olympiad. The committee publishes a newsletter periodically, which gives notice of meetings, workshops, and other items of interest. Some ideas being developed are the creation of a speakers bureau where section members can make presentations to chemistry classes or serve as resource persons and the creation of an equipment brokerage service that will aid the distribution of unwanted equipment to schools that need it. The committee is interested in any new ideas on ways that the section can support pre-college chemistry education.

### **Program Committee**

*Dr. William Switzer*, Chairman-Elect, 737-2945, Department of Chemistry — Box 8204, N.C. State University, Raleigh, NC 27695-8204.

Dr. John R. Tuschall, Dr. James M. Schooler, Dr. Michael Cory, Dr. Richard D. Gilbert, and Dr. Al L. Crumbliss, along with Dr. Switzer, comprise this committee. The program committee assists the chairman-elect with the selection and planning of the section's regular meetings. By considering the demographics and interests of the members, the committee tries to select meeting topics that will be appealing and useful to the attendees.

### **Nominations Committee**

*Dr. John Myers*, Chairman, 683-6469, Department of Chemistry, North Carolina Central University, Durham, NC 27707.

Committee members are Dr. Richard Palmer, Dr. Colin Pitt, Dr. Ken Hanck, and Dr. Michael Crimmins. This committee has the important function of nominating two candidates for each vacant office for the fall elections. These nominations are published in the September *TarHeiurn*, and nominations are taken from the floor at the September section meeting.

Ballots are included with the October *TarHelium*, and votes are tallied in November.

### **Hospitality Committee**

*Dr. William Switzer*, Chairman-Elect, 737-2945, Department of Chemistry — Box 8204, N.C. State University, Raleigh, NC 27695-8204.

The Hospitality Committee members are Dr. John Myers, Dr. Rich Linton, Mr. Robert Foss, Dr. Reginald Shiflett, Dr. Richard MacPhail, and Dr. Ed Bowden. The Hospitality Committee members make the local arrangements for meals, rooms, and equipment for our section meetings.

### **Membership Committee**

*Dr. Lawrence Bowen*, Chairman, 737-2995, Department of Chemistry, N.C. State University, Raleigh, NC 27650.

Committee members include Dr. George Brine, Dr. Michael Crimmins, Dr. Robert Higgins, Dr. Robert Izydore, Dr. Larry Knecht, Dr. Reginald Shiflett, Dr. Harold Teague, and Dr. Stephen Baldwin. The Membership Committee distributes membership information to prospective new members. The section receives a commission from the ACS for each new member that is recruited. To receive that fee, the words "North Carolina" must be entered in the local section box at the bottom of the application form.

### **Public Communications Committee**

*Dr. Peter Smith*, Chairman, 684-2238, Department of Chemistry, Duke University, Durham, NC 27706.

Dr. James Bernstein, Mr. Hal Laube, and Dr. Charles Lewis are members of the Public Communications Committee. This committee informs the public about the activities of the section and its members. Communicating to the public the good things that chemists in our area do is vitally important. This committee publicizes our regular meetings, announces our award and scholarship winners, and communicates the awards and honors that are won by our members. This committee is setting up a speakers bureau in association with the High School Committee to identify those members who are willing to make presentations to chemistry classes or act as sources of information about their expertise. If you have any information on any of these activities, please contact Dr. Smith.

### **Scholarship Committee**

*Dr. Robert Shaw*, Chairman, 549-0641, Army Research Office, P.O. Box 12211, Research Triangle Park, NC 27709.

The following are members of this committee: Dr. Thomas Goehl, Dr. Edward LaCombe, Dr. Donald M. Preiss, and Dr. Charles Sparacino. This important committee has the difficult but rewarding task of choosing the recipients of our Centennial Scholarship Awards and nominating a student for the ACS Regional Scholarship. Participation on this committee is limited to non academic members.



### **Safety Committee**

*Dr. Bernard Spielvogel*, Chairman, 549-0641, Army Research Office, P.O. Box 12211, Research Triangle Park, NC 27709.

The members of the Safety Committee are Dr. Edward Arnett, Mr. Paul Greer, Dr. Edward Tyczkowski, Dr. George Wahl, Ms. Sarah Alston, and Ms. Barbara Serling. The goals of this committee are to disseminate information on laboratory and chemical safety to members and organizations within our section, and to identify and offer solutions to broader safety issues when these are beyond the scope of our resources. Last year this committee supplied each high school chemistry teacher in our section with an ACS booklet on laboratory safety. They are also discussing ways to facilitate the distribution and consumption of usable but unwanted reagent chemicals.

### **Archives Committee**

*Dr. Maurice Burse*y, Chairman, 962-4403, Department of Chemistry, UNC-CH, Chapel Hill, NC 27514.

The other members of this committee are Dr. Marcus Hobbs and Dr. Halbert Carmichael. This committee is collecting and organizing the records of the section, which will be kept at the chemistry department at UNC. The official documents of the section are submitted periodically to The State of North Carolina Archives in Raleigh.

### **Education Committee**

*Dr. Monica Nees*, Chairman, 541-5997, Research Triangle Institute, Bldg 5, Rm 104, P.O. Box 12194, Research Triangle Park, NC 27709.

The Education Committee includes Dr. Maurice Burse, Dr. Halbert Carmichael, Dr. Andrew Caruso, Dr. Todd Craig, Dr. Michael Rose, and Dr. George Wyman. This group selects and organizes the short courses that our section offers once or twice each year. This program is one of our section's primary educational functions. Any excess revenues that the short courses generate go to fund the Centennial Scholarship.

### **TarHelium Staff**

*Dr. Hannah Green*, Editor, 248-4165, Burroughs Wellcome Co., 3030 Cornwallis Road, Research Triangle Park, NC 27709.

The *TarHelium* staff includes Mr. Allen Jones, Co-Editor, and Dr. Jeff Wilson, Advertising Manager. The *TarHelium* is the hub around which all of our other activities radiate; it is the largest single item in our annual budget. This group receives news items and announcements from the committees and individuals, edits and prepares the *TarHelium* each month, and supervises the printing and mailing of our newsletter. If you are interested in newsletter production, or if you have any newsworthy information or advertising material, please contact a member of the *TarHelium*.

## FILL A STAFF POSITION ON CAPITOL HILL

### *Two ACS Congressional Fellowships Available in 1987*

The American Chemical Society has authorized the extension of the ACS Congressional Fellowship Program, and has allocated funds to support one Fellow who will spend one year working as a special legislative assistant on the staff of a congressional committee or an individual representative.

The Fellowship is designed to provide an opportunity for scientist to gain firsthand knowledge of the operations of the legislative branch of the federal government and to make available an increasing amount of scientific and technical expertise to the government. Also, it is intended to broaden the perspective of both the scientific and governmental communities regarding the value of such scientific-government interaction.

The Fellowship stipend is \$26,000 with the provision that the Fellow can obtain additional support from sources outside the ACS, such as their place of business (i.e. sabbatical or grant). The Society also provides funding for the Fellow's initial travel to Washington.

Actual legislative assignments will depend on the Fellow's background and interests and the available Hill positions. The Fellowship term begins with a three week orientation session in September on Congressional and executive branch operations. Seminars on issues involving science and public policy are held throughout the year. Selected Fellows will be required to report orally at the meetings of the Committee on Chemistry and Public Affairs held in Washington; interim and final written reports on fellowship activities are also required.

ACS members may apply for the Fellowship, which is in its eleventh year, by submitting a resume and a letter of intent and arranging to have two letters of reference sent to:

Ms. Mary L. Wolfe  
Office of Science Policy Analysis  
American Chemical Society  
1155 16th Street, N.W.  
Washington DC 20036

A Prospective Fellow must demonstrate exceptional competence in some area of science; have a broad scientific and technical background; be cognizant of many matters in nonscientific areas; and be articulate, literate and able to work effectively with a wide range of people.

The application deadline is December 1, 1986.

More information can be obtained by phoning Ms. Mary L. Wolfe at (202)872-4384.



## MICROCOMPUTERS IN CHEMISTRY CALL FOR PAPERS

Our local section is sponsoring a special program of microcomputer software demonstrations in October. Contributors are asked to demonstrate microcomputer programs that they have developed for use in chemistry. They are encouraged (but not required) to share their software. The *deadline* for receiving titles is *Friday, October 3, 1986*. Contributions are encouraged from both academic and nonacademic laboratories. Programs may be used in research or chemical education, or they may be utilities that would be of general interest to chemists. Demonstrations will begin at 3:00 pm and last for two hours. All contributors are asked to remain with their computers for the first and last 20 minute periods; during the intermediate intervals, staggered 40 minute periods will be assigned to allow time to examine programs from other contributors. Multiple demonstrations are encouraged, but please submit separate titles for each. Demonstrations will be held in the UNC microcomputing facility in Room 308 Venable Hall.

Following the presentations, Dr. John W. Moore from the NSF Project Seraphim program will speak. The title of his talk is: "The Electronic Chemistry Set: Teaching with Computers." Project Seraphim serves as a clearinghouse for distribution of public domain software for use in chemistry. Other functions include serving as a workshop and training center for teachers and as a research and development center for the use of computers in chemistry.

### EDITORS' NOTE

We would like to recognize William Gutknecht and Carolyn Bilbro for their outstanding contributions to *TarHelium* during their four years as editor and associate editor, respectively. They produced a timely, professional news letter with a limited budget and under restrictive deadlines. That they give up the editorial reins with some regret is proof of their devotion to and interest in the publication and their dedication to our local ACS chapter.



# APPLICATION

Microcomputers in Chemistry  
Wednesday, October 22, 1986  
UNC Chapel Hill

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

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

Presented by: \_\_\_\_\_

Phone: \_\_\_\_\_ : \_\_\_\_\_ of \_\_\_\_\_ presentations

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

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

Program Description (25 words or less):

Type of Computer:

IBM PC: \_\_\_\_\_ APPLE II e: \_\_\_\_\_ 512 Macintosh: \_\_\_\_\_

**Application Deadline**  
**Friday, October 3, 1986**

Mail Application To: William L. Switzer  
Department of Chemistry, Box 8204  
North Carolina State University  
Raleigh, NC 27695-8204

## NEW *TarHelium* STAFF

The *TarHelium* staff has moved down Cornwallis Road from RTI to Burroughs Wellcome Co., and editorial duties are now divided among Hannah Green, editor (248-4165), Allen Jones, co-editor (248-3273) and Jeff Wilson, advertising manager (248-3433). Because of the time requirements of producing *TarHelium*, the new staff is larger. The addition of an advertising manager should lighten the burden of the editor and co editor, and we hope it will allow us to generate more revenue from *TarHelium*.

Changes in the content of our newsletter will be minimal. The method of producing *TarHelium* will change, however. The newsletter will be professionally typeset and formatted, and a professional printer will offset print it. These changes will require that we adhere to strict deadlines; consequently, a news item must be submitted 8 weeks before its intended publication date.

We look forward to the challenges of producing *TarHelium* and hope to maintain the high standards established by its previous editors. Suggestions about how we can better serve the section through this publication are welcome.

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## ACS NATIONAL ELECTIONS

Candidates for 1987 ACS President-Elect are Dr. Robert C. Brasted, Dr. Ernest L. Eliel, and Dr. Gordon L. Nelson. Election ballots will be mailed to all ACS members September 26 and should be returned by October 31.

Dr. Brasted is Professor of Chemistry and Director of the General Chemistry Program at the University of Minnesota. Currently on sabbatical, Dr. Brasted is Guest Professor at the United States Military Academy.

Dr. Eliel is W.R. Kenan Professor of Chemistry at the University of North Carolina at Chapel Hill. He served our North Carolina Section as Councilor from 1975-1984.

Dr. Nelson is Professor and Chairman of the Department of Polymer Science of the University of Southern Mississippi. Prior to joining USM in 1983, Dr. Nelson worked for 12 years in industry.

All three candidates have been active at Section, Division, and National levels of the ACS. And each mentions a need to improve public attitudes toward chemistry and to explain chemistry to non-chemists. Full statements and biographical information will be published in *Chemical and Engineering News*.

*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.*

Hannah Green, *Editor*  
Allen Jones, *Co-Editor*  
Jeff Wilson, *Advertising Manager*

Please direct correspondence to the attention of the editor:

Hannah Green  
Burrughs Wellcome Co.  
3030 Cornwallis Road  
Research Triangle Park, NC 27709

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Manager, Membership and Subscription Services  
American Chemical Society  
PO. Box 3337  
Columbus, Ohio 43210

Changes in membership status also should be submitted to the above address.

Executive Committee:

Eric Bigham, BW, Chairman  
William Switzer, NCSU, Chairman-Elect  
Carolyn Foust, RTI, Secretary  
William Hatfield, UNC, Treasurer  
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