THE
TarHelium

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

Vol 19 No 2 Nov-Dec 1988

SMALL-TO-GIGANTIC TRANSITION METAL CLUSTERS

Prof. Lawrence F. Dahl
Robert E. Rundle Professor of Chemistry
University of Wisconsin-Madison

Tuesday, October 25, 1988
112 Hubbard Chemistry Building
North Carolina Central University
Durham, NC

Lecture
7:30 pm

Social Hour
Immediately following lecture
in the lobby of Hubbard Chemistry Building

ELECTION BALLOT FOR SECTION OFFICERS INSIDE

LAWRENCE F. DAHL

Dr. Dahl earned his B.S. at the University of Louisville and his Ph.D. at Iowa State University in 1956. Following his postdoctoral appointment at the Ames Laboratory -AEC, he became an instructor at the University of Wisconsin at Madison in 1957. He became a full professor in 1964 and was named the R.E. Rundle Professor of Chemistry in 1979. He is married to June Lomnes Dahl, Professor, Department of Pharmacology, University of Wisconsin-Madison Medical School and they have three sons.

Dr. Dahl's outstanding career accomplishments have been recognized and he is the recipient of several prestigious fellowships, including Sloan (1963-65) and Guggenheim (1969-70) and has been elected fellow of the New York Academy of Sciences (1975), and AAAS (1980). National and international lectureships have also been awarded to Dr. Dahl (Sir Ronald Nyholm Lectureship-Royal Society of Chemistry and the P.C. Reilly Lectureship - University of Notre Dame).

He has served as Chairman of the ACS Division of Inorganic Chemistry (1979) and is a former member of the editorial boards of the Journals of Physical Chemistry, Organometallic Chemistry, Coordination Chemistry and Chemical Reviews.

Abstract

This talk will focus on studies in our laboratories involving the synthesis, isolation, spectroscopic-structural characterization, and electrochemical-chemical reactivity patterns of a variety of small-to-gigantic ligand-stabilized metal clusters. Rational syntheses of mixed-metal clusters by metal-fragment insertions across metal-metal multiple-bonded dimers will be presented. This research has given rise to a number of highly unusual trimetal, tetrametal, and pentametal clusters including ones with $\mu 3$-,$\mu 4$-, or $\mu 5$- nitride ligands (formed from nitrosyl bond-scission). Geometric alterations caused by changes in electronic configurations will be illustrated in several metal cluster systems which function as electron-transfer reagents (by gain and/or loss of valence electrons) without breakdown of their metal cluster frameworks. These structural-bonding analyses, which have been pedagogically called experimental quantum mechanics, not only have been utilized in correlating and predicting alterations in metal-core geometries with changes in electronic configurations, but also have proven highly useful in rationalizing the observed variations in physicochemical properties of related metal clusters.

The structural features of certain high-nuclearity platinum, nickel, and nickel-rhodium carbonyl clusters whose metal-core architectures can serve as models for small metallic particles will be discussed. These clusters may also serve as models for the chemisorption of carbon monoxide on metal surfaces. Reactions of several of these clusters with particular main-group reagents have yielded an intriguing array of high-nuclearity mixed (transition metal)-(main group) clusters. Stereochemical-bonding principles and transformation reactions will be exemplified for these species.

statistical model of nuclear reactions and the role of angular momentum. As a postdoctoral fellow at Princeton, he helped construct an electron spectrometer and did research on x-ray photoelectron and Auger electron spectroscopy there and at the University of Oregon where he was visiting assistant professor. This work included studies of the bonding and highly excited vacancy states of inorganic fluorides and noble gas compounds. In North Carolina, he spent six years as research chemist/physicist at the US EPA developing methods for trace analysis of atmospheric particles and gases. He received four Scientific and Technological Achievement Awards from the EPA for original and significant contributions to the literature and in 1983, he received the Silver Medal of the EPA. Since 1983, he has been at the Army Research Office where he is Associate Director of the Division of Chemical and Biological Sciences and manages research in physical chemistry and surface science. He is a member of the American Chemical Society, the American Institute of Physics, and Phi Beta Kappa. He served for three years as chairman of the North Carolina Section Centennial Scholarship Award Committee.

VOTE FOR 1989 OFFICERS

North Carolina Section
American Chemical Society

Please select one candidate for each office by marking the ballot below. Ballots must be postmarked by November 14, 1988 and they should be mailed, in the enclosed envelope to:

Dr. John Myers
Department of Chemistry
P.O. Box 19791
NCCU
Durham, NC 27707

BALLOT VALIDATION IS REQUIRED
To validate your ballot, sign and print your name on the outside of the mailing envelope on the designated lines. Election officials must be able to verify your membership before your ballot can be counted.

Brief biographies, provided by the candidates, are included in this issue of the TarHelium to aid your selection.

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CHAIRMAN-ELECT

Dr. Donald M. Preiss

Dr. Donald (Don) M. Preiss is a Professor of Materials Engineering (Polymer) and an industrial extension specialist at North Carolina State University.

Known for his work in developing and adapting plastics and polymers to new products, he spearheads the plastics extension effort. In addition to planning continuing education programs, he is seeking cooperative applied research within industry and projects for seniors in Material Science and Engineering.

He received a B.S. degree in Chemistry and Math from Willamette (Salem, Oregon) and his M.S. and Ph.D. degrees in Organic Chemistry from the University of Delaware.

After graduating, he spent ten years with the Shell Oil Co. as a Rubber Chemistry and Technology researcher and Technical Services supervisor in Emoryville, California.

Prior to joining NC State, he spent twenty five years with IBM Corporation as a senior engineer and manager of Materials Engineering and Standards Department. He is currently a Director of the American Society for Testing and Materials (ASTM) and is also active in the Society of Plastics Engineering, the Polymer Society of North Carolina and the ACS.

He and his wife Jane live in Raleigh and enjoy the "benefits" of two grown children, namely five grandchildren.

Robert W. Shaw

Robert W. Shaw graduated in Chemistry from Williams College and received his Ph.D. in Physical Chemistry from the University of Washington. His graduate research was in nuclear scattering and reactions, especially the statistical model of nuclear reactions and the role of angular momentum. As a postdoctoral fellow at Princeton, he helped construct an electron spectrometer and did research on x-ray photoelectron and Auger electron spectroscopy there and at the University of Oregon where he was visiting assistant professor. This work included studies of the bonding and highly excited vacancy states of inorganic fluorides and noble gas compounds. In North Carolina, he spent six years as research chemist/physicist at the US EPA developing methods for trace analysis of atmospheric particles and gases. He received four Scientific and Technological Achievement Awards from the EPA for original and significant contributions to the literature and in 1983, he received the Silver Medal of the EPA. Since 1983, he has been at the Army Research Office where he is Associate Director of the Division of Chemical and Biological Sciences and manages research in physical chemistry and surface science. He is a member of the American Chemical Society, the American Institute of Physics, and Phi Beta Kappa. He served for three years as chairman of the North Carolina Section Centennial Scholarship Award Committee.

TREASURER

Joan Bursey

After receiving a B.S. in chemistry at Creighton University, Joan T. Bursey earned her Ph.D. in chemistry at the University of California-Berkeley in 1969. This circumstance provided her with a somewhat unusual collector's item - a Ph.D. diploma signed by Ronald Reagan, who was governor of California at the time. Upon completion of the Ph.D., Joan Bursey accepted a post-doctoral fellowship at the University of North Carolina-Chapel Hill. Her research advisor at UNC, Dr. Maurice Bursey, felt obligated to locate permanent employment for a post-doctoral fellow and went to rather extraordinary lengths in this case. Marrying one's post-doc will provide permanent employment, but it is a solution to the problem of finding a job for post-docs which cannot be used too often. Since both of the Drs. Bursey are mass spectroscopists, there is quite a lot of shop talk in the Bursey household. Joan Bursey worked at the Research Triangle Institute as a mass spectroscopist for fourteen years and has been a Senior Scientist with Radian Corporation for almost 4 years. Besides being the current treasurer, she has taught short courses for the local section of the ACS and served on the nominating committee for several years.

Reginald Shiflett

Reginald Shiflett received his B.S. degree in chemical engineering from the University of Virginia in 1965. He then worked for the DuPont Company as a process engineer and was involved in the pilot plant development of Nomex , the first fiber formed from a wholly aromatic fiber. In 1970, he received his Ph.D. degree in physical chemistry from the University of Virginia and began teaching at Campbellsville College in Kentucky. Dr. Shiflett came to Meredith College in 1978, where he is currently Professor of Chemistry and Department Head. His interests include the electronic structure and spectroscopy of transition metal complexes and the development of classroom demonstrations and laboratory experiments to illustrate important chemical principles. He joined the local section in 1978 and has served on the hospitality, membership and academic/industrial interface committees.

COUNCILOR

Halbert Carmichael

Halbert Carmichael received his B.S. from the University of Tennessee in 1959 and his Ph.D. from the University of California in 1963. Employed in the Department of Chemistry at North Carolina State University since 1964, he is now a Professor. Dr. Carmichael has served as Secretary-Treasurer and Chairman of the NC Section of the ACS and is presently an Alternate Councilor. He was also Registration Chairman for the 1984 Southeastern Regional Meeting of the ACS.

Kathryn MacLeod

Kathryn MacLeod has been a member of the NC Section of the ACS since 1971 and has served on several committees such as nominating and the high school chemistry committee. She has served as secretary, chairman-elect and chairman of the section and was the special programs chairman of the Southeastern Regional ACS meeting in 1984. She holds BSCh and MS degrees from the University of South Carolina and is employed at Mallinckrodt, Inc.

ALTERNATE COUNCILOR

Robert A. Izydore

Dr. Robert A. Izydore received his B.S. degree in chemistry from Pennsylvania State University in 1965 and his Ph.D. degree in organic chemistry from Duquesne University in 1969. He was an instructor at the McKeesport Campus of the Pennsylvania State University and held a postdoctoral appointment at Duke University. He joined the faculty of North Carolina Central University in 1971 where he is now Professor of Chemistry. His research includes studies of the stability and reactions of cis-diacyl diimides and the synthesis of isoxazolidine-3,5-diones, 2,3-benzoxazine-1,4-diones, and other heterocyclic systems as pharmacologically active agents.

Dr. Izydore has served the North Carolina Section for over 15 years. He was Treasurer of the section in 1980-81 and Chairman in 1985. He has served on the budget, hospitality and nominating committees. He is currently Chairman of the NC Section Service Award Committee and a member of the Membership Committee. He regularly attends national meetings of the ACS.

Suzanne T. Purrington

Suzanne T. Purrington received her Ph.D. from Harvard University in 1963. She has been on the faculty at North Carolina State University since 1976 and is an associate professor.

Dr. Purrington has been active in the affairs of the NC Section. She has been secretary-treasurer (1974-5), chairman-elect (1976) Chairman (1977), polymer group secretary (1981-2) and a member of the executive committee (1974-9) and the nominating committee (1979).

EIGHTH ANNUAL RESEARCH TRIANGLE PARK LIQUID CHROMATOGRAPHY SYMPOSIUM

Sponsored by Burroughs Wellcome Company and Waters, Division of Millipore

Burroughs Wellcome Auditorium
Burroughs Wellcome Company, Research Triangle Park, NC

Wednesday, November 2, 1988

8:30-9:25	**Registration**
9:25-9:30	**John Frenz** Burroughs Wellcome Company *Introductory Remarks*
9:30-10:00	**Jonathan Nyce** Eastern Carolina University *Studies on Tumor Cell Drug Resistance at the Sub-Gene Level*
10:00-10:30	**David Klapper** University of North Carolina, Chapel Hill *The 2.6mm Difference-Switching to Microbore Technology in a Protein Chemistry Laboratory*
10:30-11:00	**Michael Cunningham** National Institute of Environmental Health Sciences *Metabolism and Mutagenicity of the Carcinogen-Noncarcinogen*
11:00-11:15	**Break**
11:15-11:45	**Amir H. Rezvani** University of North Carolina, Chapel Hill *Verapamil Alters the Kinetics of Ca2+ Ion Transport in the Hypothalamus of a Conscious Cat*
11:45-12:15	**David P. Aucoin** North Carolina State University *Development of an Analytical Method for Penicillins in Bovine Milk by Liquid Chromatography, Using an Ultra-Violet/Photodiode Array Detector with Concurrent Confirmation by Thermal Spray Mass Spectrometry*

12:15-12:45 **George Vella Waters**
Division of Millipore
Separation of Reducing Oligosaccharides Derived from Glycoproteins on Stable Polymeric HPLC Packings

12:45-1:15 **John Frenz**
Burroughs Wellcome Company
Micropreparative HPLC in Pharmacological Research

1:15-2:30 **Lunch**

2:30-3:00 **Paul F. Agris**
North Carolina State University
Bio-Macromolecular Liquid Chromatography: Yesterday and Today

3:00-3:30 **David Millington**
Duke University
Applications of Continuous Flow HPLC/MS in Metabolic Studies

3:30-4:00 **Willie L. Hinze**
Wake Forest University
New Perspectives in Micellar Liquid Chromatography

4:00-4:30 **James W. Jorgenson**
University of North Carolina, Chapel Hill
Electrophoresis: Problems and Prospects

A registration fee of **$10.00** will be collected at the Symposium, entitling full program participation and lunch. Please contact Cindy Partridge, Waters, 919-469-2501 if you plan to attend.

NATIONAL CHEMISTRY WEEK IS COMING . . . AND WE NEED YOUR HELP . . .

October 29-November 4, 1989 has been designated National Chemistry Week. The section chairman Dr. William Hatfield has asked that volunteers coalesce into a committee to spearhead our local section's efforts for this national event. If there are suggestions for activities for National Chemistry Week and/or you would like to volunteer your time and creative juices, please call Dr. Hatfield (before he calls you...) at 919-966-2297.

UPCOMING MEETINGS OF THE TRIANGLE CHROMATOGRAPHY DISCUSSION GROUP

October 11, 1988	**Dr. Catherine Stacey**, Waters Corporation *Introduction to LC/MS* 7 pm at NCSU Faculty Club
November 15, 1988	**Dr. Lou Sartori**, Waters Corporation Joint meeting with Pharmaceutical Discussion Group *The Use of Process Chromatography to Prepare Pharmaceutical Drug Substances* 7 pm at Glaxo in Zebulon
January 18, 1989	**Dr. Tom Beasley** *Bonded Cyclodextrans as Multi-phase Media for HPLC and SPE* 3 pm at Burroughs-Wellcome, RTP
March 28, 1989	**Dr. Georges Guiochon** 7 pm at NCSU Faculty Club

A two day **HPLC short course** is tentatively scheduled for January 19 and 20, 1989 to be taught by Harold McNair. Day one will provide an introduction to LC and day two will deal with more advanced methods and optimization.

The Sixth Annual Triangle Chromatography Discussion Group Symposium and Instrument Exhibit will be held at the McKimmon Center (NCSU) on May 18, 1989. Speakers planned are Dr. Leslie Ettre, Dr. Phyllis Brown, Dr. Walter Jennings, Dr. Ron Majors, Dr. Nelson Cook and Dr. Bruce Richter. For further information, please contact the secretary of the Triangle Chromatography Discussion Group Dr. James Raymer at 919-541-5924.

CHANGES IN FACES AND TYPEFACES . . .

In our last issue, we announced some format changes for the TarHelium but due to space considerations, did not acknowledge the Herculean efforts of the former editor Hannah Green and her co-editor Allen Jones, both of Burroughs Wellcome. They are and continue to be wonderful resources for this publication and this editor. Thank you both and a gold medal to Dr. Jeff Wilson for continuing in his role as advertising manager and to Dr. William Switzer for publishing our interim meeting reminder and update.

MAKE THAT CHANGE

ARE YOU READY FOR A CHANGE? Whether it is the change after graduation or a career move that you have in mind, the Chemical Career Insights program at the University of North Carolina at Chapel Hill on Nov. 4, 1988 will help you get the information necessary to make that change. In the morning the emphasis will be on the job search, and in the afternoon chemists with nontraditional careers will speak about their unusual pursuits. In the mid-morning, Dr. Margaret Cavanaugh of the ACS Women's Chemists Committee will present the Keynote Address.

Dr. Jayson Vassallo, the ACS Younger Chemist Committee Eastern Roadshow Coordinator, has been overseeing the plans for the UNC program and will give the introduction on Nov. 4th. Vassallo who has previously coordinated two Roadshows said "I would highly recommend that anyone going into the chemical profession give serious consideration to attending. In a rare exposure to various facets of chemistry, students will have a whole symposium of speakers assembled to give them guidance."

This year marks the tenth anniversary of the first Roadshow at UNC. Vassallo is grateful to the UNC chemistry department and the industrial sponsors who have both made another Roadshow at UNC possible and to Jill Rickman (grad. student) and Prof. William Hatfield for their contributions in time and effort for the November 4th event. When seeking a job, you have to expend energy to overcome the barrier of the unknown. Lower that barrier and raise your prospects by using the Chemical Career Insights day at UNC-CH on Nov. 4th as a catalyst in your job search. **Make that Change...**

POST DOCTORAL ASSOCIATE POSITION IN LIQUID CHROMATOGRAPHY NORTH CAROLINA STATE UNIVERSITY

A post-doctoral position is available in the research group of Dr. Khaledi at North Carolina State University effective January 1989.

The position is in the general area of liquid chromatography. Strong background in separation science (especially in chromatography) is required. A good background in any of the following areas such as electrophoresis, bioanalytical chemistry, medicinal chemistry and computers is desirable.

Please send a copy of curriculum vitae (including list of publications and summary of research interests) and two letters of recommendation to:

Dr. Morteza G. Khaledi, Department of Chemistry, Box 8204, NCSU, Raleigh, NC 27695-8204 Phone: 919-737-2943

CHEMICAL CAREER INSIGHTS - 1988

A Chemical career conference for undergraduate and graduate students and their faculty.

Union Auditorium, University of North Carolina, Chapel Hill, NC

Sponsored by the Younger Chemists Committee of the American Chemical Society and the University of North Carolina. Supplemental support provided by area companies.

Friday, November 4, 1988

8:30 **Registration**

9:00 **Jayson C. Vassallo**
Younger Chemists Committee ACS, Air Products and Chemicals, Inc.
Introduction

9:05 **Cynthia Kelly**
Senior Recruiter, Glaxo, Inc.
What Does Industry Look for in a Chemist

9:45 **Eugene Irene**
Chemistry Professor, UNC-CH
Academic vs Industrial Research

10:25 **Break**

10:40 **Margaret Cavanaugh**
Women Chemists Committee ACS, St. Mary's College
Keynote Address – Chemistry: Present and Future

11:30 **Terry Russell**
ACS Office of Professional Services
ACS Employment Services

11:55 **Lunch**

1:30 **Cliff Meloan**
Chemistry Professor, Kansas State
Forensic Chemistry, a Chemical Detective

2:20 **Margaret Day**
Chemical Information Scientist, Burroughs Wellcome
The Chemical Information Scientist

3:00 **Break**

3:15 **Lawrence Slifkin**
Physics Professor, UNC-CH
Scientific Techniques for Evaluation of Art Objects

3:55 **Reed Adle**
Patent Lawyer, Finnegan and Henderson
Patent Law and Chemistry

4:35 **Formal program ends**

Registration fee **$4.00**. A luncheon and two coffee breaks will be provided at no extra charge. To register, complete the coupon below and mail with your check to the address below. Please make check payable to North Carolina Section ACS. Advance registration is recommended; attendance may be limited by lecture hall seating capacity.

MAIL TO:
Jill T. Rickman, CB #3290, Chemistry Deptartment, UNC-CH,
Chapel Hill, NC, 27599-3290

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CHEMICAL CAREER INSIGHTS - 1988

Name _____

Address _____

City/State/Zip _____

School _____

Major _____

Grad Yr _____

Degree _____

NC SECTION / ACS MEETING

Date: Tuesday, November 15
Location: Holiday Inn, Chapel Hill, NC

5:30 **Social Hour**

6:30 **Dinner**
Chinese Sirloin Tips of Beef
(Cost: Members, $14.00, Students, $7.00)

7:30 **Lecture**
Dr. Thomas Whitesides
Eastman Kodak Company
The Inside Story of Color Photography

The dinner cost is $14.00 for members and guests and $7.00 for students. Please make reservations for dinner by telephoning one of the following people by 5:00 pm Monday, November 7; in Chapel Hill, Debbie Edwards, 962-2172; in Durham, Carolyn Bean, 684-2414; in Raleigh, Joyce Dunn, 737-2545; in Fayetteville, Sandra Smith, 486-1000.

DR. THOMAS WHITESIDES

Dr. Thomas Whitesides received his BA from Harvard and his Ph.D. in Chemistry from Stanford University in 1969. He was an Assistant Professor of Chemistry at the University of Wisconsin (1969-76) where his research was principally in the area of transition metal organometallic chemistry.

He has been with Eastman Kodak Company since 1976 where he pursues the areas of organic synthesis, polymer chemistry and physical colloid chemistry of photographic systems. He is presently a member of the Dispersion Technology Laboratory of the Professional and Photofinishing Technology Division.

Abstract

Color has excited the interest of untold generations but it was not until 1666 that Newton showed color to be a property of light itself. There was a further lapse of nearly 200 years before Maxwell demonstrated the basic principle of color photography: a scene may be reproduced by treating all colors simply as a sum of red, green and blue components.

Nearly all modern color photographic processes use images in cyan(blue-green), magenta(blue-red) and yellow, colors complementary to red, green and blue, respectively. Dyes of these hues are formed in individual layers, each only a few micrometers thick, to form the color picture.

The Inside Story of Color Photography will show how this basic principle is combined with silver halide chemistry in a variety of ways to produce transparencies, motion pictures, conventional prints and instant prints which comprise color photography today.

THE NORTH CAROLINA DISTINGUISHED SPEAKER SERIES

Irwin Fridovich
James B. Duke Professor of Biochemistry
Duke University

MOLECULAR OXYGEN:
BIOLOGICAL THREAT - AND DEFENSES

Tuesday, December 13, 1988

Meredith College
3800 Hillsborough St.
Raleigh, NC

Dinner
6 pm
President's Dining Room
Belk Dining Hall

Lecture
7:30 pm
Cate Center Auditorium

Reception to follow lecture

The dinner cost is **$9.00** for members and guests and $4.50 for students. Please make reservations by phoning one of the following people by 5:00 pm, Wednesday, December 7; in Chapel Hill, Debbie Edwards, 962-2172; in Durham, Carolyn Bean, 684-2414; in Raleigh, Joyce Dunn, 737-2545; in Fayetteville, Sandra Smith 486-1000.

DR. IRWIN FRIDOVICH

Professor Fridovich received his B.S. degree from the City College of New York in 1951 and his Ph.D. in Biochemistry in 1955. He has been associated with Duke University since coming there in 1956 as an instructor and is now the James B. Duke Professor of Biochemistry (1976-Present).He has served on several editorial boards (Advances in Free Radicals in Biology and Medicine, Biochimica Biophysica Acta) and is a member of the New York Academy of Sciences.

The excellence of his professional career has been most recently recognized by his being named the Senior Passano Foundation Laureat in 1987. His professional memberships include Phi Beta Kappa, The American Society of Biological Chemists and the American Academy of Arts and Sciences.

ABSTRACT

The existence of unpaired electrons in ground state O_2, and the need for conservation of spin, favors the univalent pathway of reduction. The intermediates encountered on this pathway, O_2-, H_2O_2 and HO. threaten the genetic and structural integrity of aerobic cells and defenses are needed. The first, and best, defense is avoidance and that is provided by the cupro-hemo enzyme cytochrome c oxidase; which manages the tetravalent reduction of O_2 to $2H_2O$ without releasing intermediates. Were all biological oxygen reduction due to cytochrome c oxidase, there would be no problem; but that is not the case. There are both enzymic and spontaneous reductions of O_2 which do proceed by the univalent pathway and other defenses are essential. These are provided by superoxide dismutases, which convert O_2- into O_2 and H_2O_2, and by catalases and peroxidases which deal with the H_2O_2: the catalases by dismuting it to $H_2O + O_2$ and the peroxidases by catalyzing its reduction to H_2O. The physico-chemical character of these enzymes, as well as their mechanisms of action, will be discussed; as will pathologies in which oxygen radicals appear to play a major role.

SOLICITATION OF CANDIDATES

THE GUSTAVUS JOHN ESSELEN AWARD

CHEMISTRY IN THE PUBLIC INTEREST

This award was established by the Northeastern Section of the ACS in 1985.as a memorial to Dr. Esselen, a former outstanding member of the section.

The goal of the award is to perpetuate Dr. Esselen's belief that chemistry is an honorable profession which contributes to the public good. The award will annually recognize a chemist whose scientific and technical work has contributed to the public well-being, and has thereby communicated positive values of the chemical profession. The significance of this work shall have become apparent within the five years preceding nomination and the Awardee shall be a living resident of the US or Canada at the time of the nomination.

The prize will be a bronze medal and a check for $5000. Travel expenses incidental to the conferring of this award will be reimbursed. The award will be given at the April Meeting of the Northeastern section at a location in or near Cambridge, Mass. The Awardee will deliver an address on the subject of the work for which the honor is being conferred, or for work in progress which is also directed to improving the public well-being.

In order to nominate an individual, you must submit seven copies of the following:

1) a biography of the candidate, 2) a description of the work which has been recognized within the last five years as contributing to the public good (please include pertinent technical papers and news articles), and the names of three co-sponsors. This information should be sent to:

Dr. Truman S. Light
Chrmn. Esselen Award Committee
c/o Northeastern Section, ACS
19 Mill Road
Harvard, Ma 01451

Nominations should be postmarked no later than Dec.1, 1988. The Committee will review the nominations and the award recipient will be notified by the first of February. The Committee reserves the right to declare that no candidate meets its standards, and that no award will be given.

The TarHelium is a publication of the NorthCarolina Section of the American Chemical Society. The views expressed herein are not necessarily those of the Section.

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Jeff Wilson, *Advertising Manager*

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3108 Anderson Drive
Raleigh, NC 27609

Text should be on PC disk in WordPerfect, DW-4, RTF, DCA, WordStar, Microsoft Word or ASCII format, or on Macintosh disk in any format.

If you wish to change your membership status or your *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 and Subscription Services
American Chemical Society
P.O. Box 3337
Columbus, Ohio 43210

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