Monthly Meeting
Norris Award to David N. Harpp

J.F. Norris and the Award
Biography of J. F. Norris, Origin of the Award

Book Review
“Thieves, Deceivers and Killers” by Wm. Agosta

Communication
An article by D. Lipp
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Cover: David N. Harpp (McGill University), 2004 James Flack Norris Awardee for Excellence in Education.

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The James Flack Norris Award

for Outstanding Achievement in the Teaching of Chemistry

In 1948 the Northeastern Section was a beneficiary of the estate of Anne C. Norris, the widow of James Flack Norris, with an outright gift of $10,000 and the sharing of the residue of her estate in equal parts with M.I.T. “...to perpetuate the memory of my said husband James F. Norris.”

A committee was set up to explore how best to use the money, with Gustavus J. Esselen as one of the prime movers. The decision was announced in January, 1950 that a James Flack Norris Award shall be founded for outstanding achievement in the teaching of chemistry, particularly when demonstrated at college or secondary school levels, rather than shown in research. This approach to memorialize Norris recognized the emphasis he placed on teaching, and the Committee’s feeling that another award for outstanding research would be lost in the crowd.

The early recipients were chosen by a secret committee. But in 1954 the Norris Award Committee was established as one of the elected committees of the Section.

The first presentation was made in May, 1951 at the Harvard Club to George Shannon Forbes, an old friend of Norris, an outstanding teacher at both Harvard and, in retirement, at Northeastern University. Since then the award has been made annually to outstanding teachers at all levels.

The income from the bequest has increased sufficiently to sponsor a second award, the James Flack Norris Award for Physical Organic Chemistry, which is administered by the American Chemical Society and is presented annually at the National ACS Spring Meeting.

The above has been abstracted from accounts written by the late Avery A. Ashdown and by Myron Simon, Archivist.

James Flack Norris

By Avery A. Ashdown, M.I.T.

When James F. Norris began his assistantship in the Chemistry Department of the Massachusetts Institute of Technology in October 1895, he was twenty-four years old and fresh from the doctorate awarded by Johns Hopkins University in June of that year. Born in Baltimore, Maryland, January 20, 1871, he was one of nine children of the Reverend and Mrs. Richard Norris (Methodist). His elementary schooling was at Miss Jennie Gardner’s School for Boys in Georgetown, D. C., where his father was serving as a pastor. Later he attended the Central High School in Washington. While in this school, he was a member of the Drum Corps, High School Cadets. Secondary education completed, he enrolled in Johns Hopkins University in 1889 and remained through years of graduate study, leading to the doctorate in chemistry in 1895.

At what exact age chemistry began to hold his interest is not certain but it must have been before 1892 when he was teaching this subject in the University of Maryland. His final year at J.H.U., 1894-5, was brightened by an appointment as a Fellow (stipend $375, plus tuition). His life-long pursuit of travel in summer, chiefly in Europe, began at this time.

In 1892 he became the official delegate of the students of Johns Hopkins University to the 300th Celebration of the University of Dublin. In the summer of 1894 he worked with the U.S. Coast Survey, stationed at Lynn, Massachusetts. The summer of 1896 saw him, with Henry Fay (M.I.T.), touring England, France, and Germany.

Not only teaching in the University of Maryland, but coaching classes in mathematics and science in his final graduate year at Johns Hopkins had, in a sense, prepared him for a life-long devotion to teaching and research. In his first classes at M.I.T. he was... continued on page 6

1 From The NUCLEUS, 1996 LXXV (3), 4, revised from an earlier version.

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Includes members relocated to the Northeastern Section

Invitation to attend a Section meeting

You are cordially invited to attend one of our upcoming Section meetings as guest of the Section at the social hour and dinner preceding the meeting. Please call Marilou Cashman for a reservation, letting her know that you are a new member.

Directions

Holiday Inn, Newton
399 Grove Street

From I-95/128 Southbound
Take Exit 21B/22 keeping sharp right (“MBTA”) into Grove St. After crossing over Rte. 95/128, The Holiday Inn is the first building on the left. Parking at the rear.
An elevator to the lobby serves all levels.

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Exit 22 to Grove St. The Holiday Inn is immediately on the left.

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Biography

After obtaining a Bachelor’s degree from Middlebury College in 1959, Professor Harpp earned a Master’s at Wesleyan University and then the Ph.D. at the University of North Carolina in 1965. After a postdoctoral period at Cornell University, he joined the Chemistry Department at McGill University in Montreal, Canada in 1966. He was promoted to Associate Professor in 1971, to Full Professor in 1975 and is presently the Sir William C. Macdonald Professor of Chemistry.

He has taught a number of courses during this time with a major emphasis on introductoryorganic chemistry as well as a suite of highly popular courses at McGill entitled “The World of Chemistry” dealing with such subjects as the practical considerations of food, drugs and modern technology including the aspects of the environment. Over 25,000 students have been in his classes and his efforts have resulted in numerous teaching awards from McGill, Canada and the United States. This includes the inaugural Edward Leete Award of the Organic Division of the American Chemical Society for Excellence in Teaching and Research in 1995 as well as an honorary degree from Acadia University in 2000.

He has published nearly 200 research articles in his specialty of organosulfur chemistry as well as over 20 articles on teaching, chronicling experimentation with various visual methods in the classroom, including a novel lecture retrieval technique whereby students can access lectures at any time, including synchronized sound and slides. He lives in St. Lambert, Quebec with his wife who is a professional artist. He has two daughters who also teach. One is a high school English and Drama instructor in Pasadena, California and the other is a faculty member in the Department of Geology at Colgate University in Hamilton, New York.

Abstract

This lecture will summarize some aspects of over 37 years of teaching chemistry at McGill University where large classes have usually been part of the teaching regimen. A summary of a number of innovations to help the medicine go down will be outlined in this talk, culminating in the creation of The McGill Office for Science and Society, having programs and courses for students and the general public on important aspects of chemistry from food to forensic science to plastics. A summary of the most recent development of providing lectures fully online (visuals with synchronized sound) will be given.
James Flack Norris

Continued from page 4

associated with James Mason Crafts (of the Friedel and Crafts reaction) and gave a course in organic preparations. The next year he added a series of lectures on the history of chemistry. In 1899 he gave the brief course in organic chemistry and became associated with Arthur Amos Noyes in the search for new organic preparations and reactions. The year 1900 saw him advanced to the rank of assistant professor of organic chemistry and engaged to Anne Bent Chamberlin, a student at the Museum of Fine Arts in Boston.

On February fourth, 1902, Anne and he were married in St. John’s Church, Washington, D.C., where her parents made their home while she was a student at the Museum. Henry Fay, also a young professor at M.I.T. and a close friend, was best man at the wedding. The new Norris family took up residence at 124 Anawan Avenue, West Roxbury (Boston), near the home of Professor Frank H. Thorp of M.I.T., already working on his “Outlines of Industrial Chemistry,” a text book for students, destined to be widely used. (First edition; October 1898, the third edition, in 1916, in collaboration with Warren K. Lewis, Professor of Chemical Engineering at M.I.T.)


In 1900, advancement to Assistant Professor of Organic Chemistry at M.I.T. gave him a larger position in the chemistry department. In spite of this favorable development, his official connection with M.I.T. was interrupted in 1904 by appointment to Professor of Chemistry at Simmons College, organized in Boston in 1899 and destined to be known, for a time, as the M.I.T. for women students. Through eleven years he devoted himself to building up the chemistry department at Simmons. While at Simmons he took a sabbatical leave in 1910 to study physical chemistry with Professor Fritz Haber in the Technische Hochschule at Karlsruhe in Baden, Germany. With Mrs. Norris he took up living quarters in a pension in Karlsruhe. Dr. Norris always took great satisfaction from this phase of his post-doctoral experience. He found, increasingly, that the physical chemical points of view he gained, gave him new insight into organic chemistry. The year was not all laboratory work. Dr. and Mrs. Norris passed a winter vacation in Berlin and Dresden. In the spring recess they traveled in Italy. During the summer of 1911, three of Dr. Norris’ sisters joined them for a grand tour, including Paris, Holland, England, and Scotland.

Came the year 1915, Dr. Norris resigned his position at Simmons to accept the professorship of chemistry in Vanderbilt University in Nashville, Tennessee. Association with this outstanding university in the Southland, although very rewarding, was to be for only one year.

In June, 1916, he was asked to return to M.I.T. where, in October, he became Professor of General Chemistry. When he left Vanderbilt, students and staff combined to present him with a silver cigarette case, bearing the inscription “Sunny Jim.” This appella-
JAMES FLACK NORRIS

Continued from page 6

tion he accepted with great pleasure. In fact, all of his associates, both at that time and thereafter, recognized his new name as most descriptive of his general disposition and character.

By the autumn of 1916, World War I, increasing in fury in Western Europe for two years, had been building up a condition of deep concern for the United States. In October 1917, Dr. Norris was granted leave of absence from M.I.T. for one year, to “render special service to the government in the present emergency.” He worked first on gas problems at the Bureau of Mines in Washington, D. C. Later he was in charge of “Offence Chemical Research” at the Bureau. Early in 1918 he was appointed Lieutenant Colonel, Chemical Warfare Service, U.S. Army. His headquarters were in London. In 1919 he was appointed to the Interallied Gas Conference. Finally, (1919) Dr. Norris was in charge of investigating the manufacture of war gases in the German chemical plants. His final war service was with the American University at Beaunne, France. Honorably discharged from the service in July 1919, he returned to Boston to resume duties at M.I.T.

This renewed association with M.I.T. was to be enjoyed for twenty-one years, until his death on August 3, 1940. He remarked of his position as Professor of Organic Chemistry, that it was the kind of job he had wanted all his life. Graduate students came from far and wide to work with him on researches leading to advanced degrees.

Dr. Norris’ service to chemistry broadened with his association with M.I.T. He was an early chairman of the Northeastern Section (1904). All of his life he remained very loyal to his home section. In 1924 he became chairman of the Section on Chemistry and Chemical Technology of the National Research Council in Washington, D.C. He was granted a leave of absence from M.I.T. for this work. However, he was in Boston two days each week and thus able to keep in contact with his graduate students. In 1925 he was made an Honorary Member of the Royal Institution of Great Britain. In the same year he was elected President of the American Chemical Society, a position he held for a second term. For three years, 1925-1928, he was Vice President of the International Union of Pure and Applied Chemistry. Eventually, association with the Union took him on several trips abroad, to Rumania in 1925, to Warsaw in 1927, to Lucerne, Switzerland, in 1936, and to Rome, Italy, in 1938. His long term as a Director of the national American Chemical Society ended in 1934 with a testimonial luncheon in New York.

Two other activities were also in this period. First came the address on “Chemistry in National Defense” before the Institute of Politics at Williamstown, Massachusetts, in August 1926. Second, in June, 1928, he was chosen a member of the educational delegation to the USSR, of which John Dewey of Columbia was chairman.

From early years, Dr. Norris was asked to be a special lecturer on organic chemistry at schools at several different colleges. The first of these lecture-ships was at Simmons College in 1903. Next came Harvard for two years, 1912 to 1913. Among his students at Harvard was Louis P. Hammett, who, inspired by Dr. Norris, became the founder of physical organic chemistry in America. In 1913 he lectured on organic chemistry at Clark University in Worcester, Massachusetts. He had three periods of extended association with Bowdoin College, at Brunswick, Maine. This was the college of Hawthorne, Longfellow and President Franklin Pierce. In January, 1925, and again in 1929 and 1931 Dr. Norris was named visiting professor at Bowdoin. The college conferred on him her honorary Sc.D. in 1925.

A very important part of the life of Professor and Mrs. Norris was the several summers they passed at North Bridgton on Long Lake in western Maine. There they built a house in 1906 after plans drawn by Professor Harry W. Gardner of the Department of Architecture at M.I.T. They named their summer home “Good Cheer.” The center of social life of their home was the “porch” where, often, there were record dances in the evening. Dr. Norris had a den for study and writing, detached from the main house, where he worked every morning, writing on his books. After lunch he swam in the lake with companions and in the evening mingled with guests on the porch.

Dr. and Mrs. Norris were patrons of art galleries both in the United States and in Europe. Dr. Norris was an ardent movie fan and a devoted follower of Sir Harry W. Lauder, Scottish comedian and entertainer for half a century. Many people, still living [that was in 1965!], will recall such Harry Lauder songs as “I Love a Lassie,” “Roamin’ in the Gloamin’” “and “It’s Nice to Get Up in the Mornin’ but its Nicer to Lie in My Baid.’

Many honors came to Dr. Norris. He was elected to the Society of the Sigma XI, Phi Beta Kappa and Alpha Chi Sigma, the professional chemical fraternity. He was a member of the American Academy of Arts and Sciences, the National Academy of Sciences and a fellow of the American Association for the Advancement of Science. He held honorary membership in the Chemical Society of Rumania and in the Royal Institution of Great Britain. He was elected vice-president of the American Academy of Arts and Sciences in 1936. He was Chairman of the Faculty of M.I.T. 1937-1939. Dr. Norris was very proud of the award of the Medal of the Institute of Chemists, conferred on him in May, 1937. In accepting the award he wrote to Dr. M. L. Crossley of the Institute of Chemists.

“I appreciate very much the high honor and will be much pleased to accept the Medal. I was gratified to learn that the award was made for both teaching and research. So far as I know, the Medal, awarded by your Institute, is the only one in which emphasis is placed on a man’s influence, as a teacher, on young men entering into the profession of the continued on page 8
The troubled situation in Europe in 1939, fomented by Hitler, argued against a walking tour in Germany, or Austria or Switzerland. Instead, Professor and Mrs. Norris toured Hawaii, California and Northwestern United States in June of that year.

The next summer, June 1940, the development of a cataract in his right eye necessitated surgery which was successful. However, his troubles were not over. On July 1, 1940, phlebitis set in. On July 18th he was back in the Phillips House of the Massachusetts General Hospital for blood transfusions. In spite of all the resources of the hospital, his condition worsened steadily. He died on August 3, 1940, half way through his seventieth year.

Funeral services were held at Mt. Auburn Cemetery, on August fifth, in Cambridge, Massachusetts, where his grave is in the Norris lot. The day was bright and full of sunshine as if to capture some of the “Good Cheer” of the North Bridgton home and of the encouragement Dr. Norris had given his students and colleagues and friends over many years.

The original article was accompanied by eight pages of photographs and a listing of 41 students who received doctoral or master’s degrees for work under his guidance.
Celebrating National Chemistry Week
12th Annual Northeast Regional Undergraduate Day
Saturday, November 1, 2003
Hosted by the Department of Chemistry, Boston University, and Chemia
Sponsored by the Northeastern Section of the American Chemical Society

9:00 Registration (Metcalf Science Center, 590 Commonwealth Avenue, Boston)

9:30 Welcoming Remarks
Professor John Snyder, Associate Chair, Chemistry Department, Boston University
Professor Morton Hoffman, Immediate Past-Chair, Northeastern Section
Penny Lancaster, President, Chemia (ACS Student Affiliates Chapter at B.U.)

9:45 Keynote Address: Professor Thomas Pochapsky, Brandeis University: Metalloproteins and Metalloenzymes.

10:30 Coffee break

10:45 Research Talk and Seminar (choose one)
Professor Sarah E. O’Connor, Massachusetts Institute of Technology: The Biosynthesis of Natural Products
Dr. Scot Pounds, Perkin-Elmer: Shortening the Pipeline: Bringing Drugs to Market When Time Is Money

11:30 Workshop and Seminar (choose one)
Professor Alex Golger, Boston University: Demonstrations in Chemistry to Fascinate Kids
Professor Scott Schaus, Boston University: Choosing a Graduate School

12:00 Résumé Review and Graduate School/Industry Fair
Dr. Frank Wagner, Strem Chemicals: Preparing Your Résumé
Graduate School and Industry Fair (12:00–1:30 p.m.)

12:30 Lunch

1:30 Technical Talk and Seminar (choose one)
Professor Sean Elliott, Boston University: Moving Electrons through Proteins
Dr. Aaron Beeler, Boston University, CMLD: Parallel Synthesis and Chemical Library Development (includes a tour of the B.U. Center for Chemical Methodology and Library Development)

2:15 Student Affiliates Workshop
Professor Anthony Fernandez, Merrimack College: Resuscitating a Shallow–Breathing Student Affiliates Chapter

3:00 Adjournment

There will be a $5 registration fee to cover partially the cost of lunch, which will be provided, and workshop materials.

If you would like more information, or if your school or company would like to send a representative to the Graduate School and Industry Fair, please contact Kevin Burgoyne at 617–353–2503; fax: 617–353–6466; e-mail: burgoyne@chem.bu.edu). ◇

Councilor Reports
Council Meeting of September 10, 2003, New York, NY

Reports have been received from 11 of the 12 Councilors/Alternates present at the meeting.

Few items required votes by the Council, principally the approval of a name change of the Coastal Empire Section (Georgia) to Coastal Georgia Section, and approval of a petition to charter the Hungarian International Chemical Sciences Chapter. Both were approved. In addition, the registration fee for the National ACS Meetings in 2004 of $ 285 was approved.

In other actions, Thomas Gilbert was reelected to the Nominations and Elections Committee for a second 3-year term, and Dorothy Phillips was reelected to a second 3-year term to the Committee on Committees.

tion, Subcommittee on Scientific Freedom and Human Rights of the Internat’l Activities Committee, two subcommittees of the Division of Chemical Education. Doris Lewis: Comm. On Chemistry and Public Affairs. Arlene W. Light: CEPA. Tru-

Another item of interest: On the possible merger of the American Institute of Chemical Engineers (AIChE) with the ACS: Members who have comments are urged to contact one of the ACS Directors.

Catherine Costello was recognized for 15 years of service on the Council. ◇
ACS SHORT COURSE

Designed to improve the skills and marketability of practicing B.S., M.S., and Ph.D. chemists.
The NESACS Committee on Continuing Education is pleased to sponsor this newly updated National ACS Two-Day Short Course, at a registration fee less than half of that charged at National ACS Meetings.

Statistical Analysis of Laboratory Data

This Short Course is designed for scientists, engineers, technicians, laboratory managers, R&D managers, manufacturing and production managers and others who need to understand traditional and modern methods of data analysis. This course assumes no previous knowledge of statistics and is aimed at both beginning and experienced workers. Participants should bring a hand-held calculator to the course.

DATES and TIME: Thursday, Nov. 20, 2003; 8:00 a.m. – 4:00 p.m.
and Friday, Nov. 21, 2003; 8:30 a.m. – 5:00 p.m.
PLACE: 450 Dodge Hall, Northeastern University, 360 Huntington Ave., Boston, MA

PROGRAM AGENDA:

| Describing Variability with the Standard Deviation | One-Way Analysis of Variance (ANOVA) |
| Characteristics of Measurement Uncertainty | Detecting and Rejecting Outliers |
| Uncertainties of Parameter Estimates | Sensitivity, Selectivity, and Limit of Detection |
| Pooling Estimates of Variability | Nonparametric Statistical Methods |
| Confidence Intervals on the Population Mean | Least Squares for Model Fitting |
| Confidence Intervals on the Population Standard Deviation | Diagnostic Tests for Judging the Adequacy of a Model |
| Introduction to Statistical Inference | Evaluating Measurement Processes with Control Charts |
| An Overview of t-Tests | Detecting Instability of a Measurement Process |
| Specification Testing | Methods of Transfer and Validation – Youden Plots, Ruggedness Testing |
| The F-Test | |
| Understanding Statistical Hypothesis Tests | |

INSTRUCTORS:

Stanley N. Deming, Professor Emeritus of Analytical Chemistry at the University of Houston and the President of Statistical Designs.

Stephen L. Morgan, Professor of Analytical Chemistry at the University of South Carolina. Drs. Morgan and Deming have combined to teach more than 400 highly-rated short courses in experimental design, optimization, statistical methods of data treatment, and analytical chemical methods development.

PRE-REGISTRATION REQUIRED – Registration Fees:

| ACS Members if received before Nov. 4 | $500.00; after Nov. 4 | $575.00 |
| Non-ACS Members if received before Nov. 4 | $600.00; after Nov. 4 | $675.00 |

There will be a limited number of scholarships for unemployed ACS Members on a space-available basis.
Parking Fee: about $14.00/day
University cafeterias will be available for lunches.

For further information contact: Prof. Alfred Viola at (617) 373 2809

Registration form for Short Course: Statistical Analysis of Laboratory Data. Nov. 20 – 21, 2003

Name: _____________________________ Business Affiliation: _____________________________
Mailing Address: _____________________________ Telephone: _____________________________
Mail with remittance to: Prof. Alfred Viola, Chair
(Please make checks payable to NESACS. 
Sorry, we cannot accept credit cards or purchase orders.)

Prof. Alfred Viola, Chair
NESACS Committee on Cont. Ed.
Department of Chemistry
Northeastern University
Boston, MA 02115
Book Review

Thieves, Deceivers and Killers: Tales of Chemistry In Nature

Reviewed by Dennis J. Sardella
Department of Chemistry, Boston College

The award-winning science writer K.C. Cole, in her 1985 book of essays entitled Sympathetic Vibrations: Reflections on Physics as a Way of Life, wrote of electromagnetic radiation: "The pupil is a tiny porthole in a sea of radiation. In a universe alight with images, we are mostly in the dark ... I know that these signals are there, in the room with me, because if I flip on the radio or television I will suddenly be able to see or hear them -- in the same way that visions suddenly appear before me the minute I open my eyes. If I had still other kinds of detectors ... I could pick up still other kinds of signals. Yet we walk through this dense web of radiant information without being in the least aware of its existence."

With some slight modifications, such as the substitution of "receptor" for "pupil" and "chemical signals" for "radiation", Cole’s passage might well serve as an introduction to Thieves, Deceivers and Killers, which is a popular introduction to the topic of chemical ecology, the study of the various ways in which organisms use chemical signals as means of communication, attack and defense. The past several decades have seen the intensive development of chemical ecology, something that would have been virtually impossible without the availability of analytical methods capable of detecting, separating and analyzing the minuscule amounts of compound produced by insects and microorganisms. Thieves, Deceivers and Killers describes a wide range of examples by which many remarkably simple compounds are used by plants and animals to influence the behavior of other organisms for purposes as diverse as seed dispersal, pollination, feeding, camouflage and hunting. Some compounds act alone, sending a single "one-word" signal, while others operate in concert, like words modifying one another to form a phrase.

For instance, the second chapter describes the stratagems by which some plants induce ants to disperse their seeds by attaching to them a small packet (called an elaiosome) containing oleic acid and linoleic acid. The oleic acid, a decomposition product of dead ants, functions as a recognition signal, inducing ants to pick up the seed and carry it, as they would carry a dead ant out of the nest. However, the linoleic acid modifies this behavior, because it acts as a feeding signal, inducing the ant instead to carry the seed to the nest. Seeds are thus transported considerable distances from their plants, and placed underground, where they are protected from birds, and in an environment conducive to germination.

Chapter three ("Getting Pollinated") surveys some of the ingenious devices plants use to regulate the behavior of insects needed to pollinate them, a particularly intricate example being that of the cardboard palm, which contains both pollen cones (male) and seed cones (female). Weevils carry out transportation of pollen from pollen to seed cones. As the pollen ripens, starch and lipid are metabolized, generating heat, which volatilizes 1,3-octadiene and linalool. The odors of the two compounds attract weevils, which nest in the pollen cone, mate and lay their eggs. The weevil larvae feed on the cone, mature, and migrate to nearby seed cones in search of nesting sites, carrying pollen with them. However, the adults are prevented from nesting in the seed cones by the presence of β-methylaminoalanine, a neurotoxin and repellent, lingering only long enough to deposit their pollen and move on.

Photochemistry makes an appearance in the behavior of the dragon fish, a deep-water predator that uses bioluminescence to locate its prey. Unlike nearly all other deep-water fish whose bioluminescence is blue, the dragon fish generates red light (making it invisible to its prey, whose optic nerves are sensitive to the residual blue light that predominates at great depths). Intriguingly, the red light of the dragon fish is generated by a red chlorophyll-like bacterial pigment ingested through the food chain. Excitation of the red pigment is then transferred to the dragon fish’s blue pigments, and the resulting blue signal is processed normally by the fish’s brain, eliminating the need for a second red-light processing pathway.

Later chapters focus on the behavior of flies, mosquitoes, and parasitic wasps, and the book culminates with a description of the intricate network of interactions linking white oaks, whitetailed deer, gypsy moths, white-footed mice and deer ticks, the balance among which controls the incidence of Lyme disease.

Overall, I found Thieves, Deceivers and Killers to be fascinating reading -- a bit slow-moving at the outset, when Agosta has to provide some basic background material necessary for the relatively scientific uninformed general reader, but rather boring for a scientist (who might want to skim over, or possibly even skip, the first chapter), but picking up and moving at a brisk and enjoyable pace through the balance of the book.

It transported me in spirit back to the days of my youth, to my immersion in the television programs devoted to exploring the behavior of the world of living organisms. However, unlike the then-current descriptive science, which had to largely content itself with the what of behavior, Agosta can draw on the results of several decades of research in chemical ecology to elucidate the absorbing details of many of the hows -- the story of the ways in which relatively simple, volatile or sol...
uble molecules provide a network of communications between organisms, leading to the formation of symbiotic relationships, and even in some cases raising the almost philosophical question of whether two physically distinct entities are in fact different organisms.
or should be considered a single organism.

Agosta has a clean and fluid writing style and I found myself reading through the book at almost the same rate I would read a novel, and with the same sense of disappointment at coming to the end. For the reader who does want to go further, Agosta has obligingly provided an appendix with suggestions for further reading, most at the level of *Scientific American* articles or other popular books.

I do have a couple of quibbles about *Thieves, Deceivers and Killers*, neither touching the substance of the book, but rather its appearance. First, for some reason there are no photos in the book, the only illustrations (the book’s term) being artists’ renderings in a kind of grayscale that is often not very illuminating, and that often left me feeling rather remote from the reality being described. I would have much preferred to see photos or photomicrographs, and find it hard to imagine that suitable ones could not have been located, or what motivated the decision to eschew them in favor of the drawings. (Color would have been a nice addition, as well.) Second (and this obviously betrays my professional prejudices), there is not one chemical formula in the entire book, which I found odd considering its subject matter and subtitle. Notwithstanding Stephen Hawking’s comment in *A Brief History of Time* of having been warned that each equation in a popular book reduces its readership by 50%, I do not think it would have seriously undermined the book’s appeal to have included a few simple structural formulas, if only to illustrate how remarkably simple many of the chemical signals are (acetaldehyde, carbon dioxide, dodecane, and 2-methyl-2-butanol, to cite a few examples). That said, however, I thoroughly enjoyed reading *Thieves, Deceivers and Killers*, and can recommend it as a fascinating introduction to the subject of chemical ecology for the nonspecialist. Like the person Cole referred to in *Sympathetic Vibrations*, whose sensory apparatus is unable to pick up the majority of electromagnetic signals around them, I cannot smell or see the vast majority of molecular signals that suffice the milieu in which I move (doubtless including many that affect my own likes, dislikes, and behavior). Nonetheless, Agosta’s book has at the very least increased my awareness of that lack, my appreciation for the intricacy of the chemical signals that underlie everything that we do.
Board of Directors

NOTE: Board Meetings are held on the monthly meeting day at 4:30 p.m. Section members are invited to attend.

Notes of the Meeting of May 8, 2003.

Officers’ Reports:

Chair: The Long-Range Planning Meeting will be held in June.

Beginning in 2004 the Section will have 14 Councilors and 14 Alternates, an increase of 2 each. Therefore the 2003-05 term will have 5 each, the additional positions to be filled from the runners-up in the 2002 election. The 2002-2004 term will remain the same at 4 each.

It was MOVED to elect 5 Councilors and 5 Alternate Councilors from the slate of the 2003 election, in order of the vote count. PASSED.

Chair-Elect: There are 120 sign-ups for tonight’s dinner. The September meeting is to be held September 18 to avoid conflict with the National ACS meeting. Speaker and location to be announced later.

Treasurer: The April 2003 Treasurer’s report was presented and ACCEPTED.

Standing Committees:

Bd. Of Publications: A. Heyn reported that the NUCLEUS is still on budget.

Membership: Letters were sent to 118 new members and 10 responses were received to the new members’ questionnaire.

Nominations: M. Hoffman presented the following slate from which two Board Members are to be elected to serve on the Nominating Committee in 2004: E.J. Billo, T.B. Frigo, M.J. Hearn, D.I. Lewis. The Board elected M. Hearn and D. Lewis by paper ballot.

Chemistry Education: R. Tanner via written report stated that the 5th Annual Northeast Student Chemistry Research Conference (NSCRC) was held at Boston University on April 26. There were 44 poster presentations, 12 of which were by undergraduates. Also, three undergraduate and three graduate students gave oral presentations.

The Phyllis A. Brauner Undergraduate Book Award was given to Christopher Crafts (Merrimack College). Cathy Brauner and her daughter Hyacinth, her niece Julie and her son Remy attended the award presentation.

27 applications from 11 colleges and universities in the section were received for the 2003 Norris/Richards Undergraduate Summer Research Scholarships. Four scholarships were awarded to: Rozalina Grubina (Harvard), Pasha Mirazimi (Boston College), Kristin Felice (Stonehill College), and Travis Pribyusauskas (Bridgewater State College).

High School Subcommittee: Steve Lantos reported that over 100 students participated in the annual Avery Ashdown Examination Contest under the oversight of Prof. Jennifer Canefield (Simmons). The U.S. National Chemistry Olympiad was held April 26, with 23 students from the Section participating. Last year the Section’s participants had three of the top 20 scores in this highly competitive examination.

Local Arrangements: One new member will attend tonight’s dinner.

Other Committees:

Business Liaison: D. Yesair reported that a new solicitation letter is being developed.

Continuing Education: A. Viola reported that the May 19&20 Short Course has received 14 paid registrations and 10 or 11 inquiries from unemployed members for scholarships.

Younger Chemists: L. Wolf stated that the 5th NSCRC event attracted about 80 participants. The best undergraduate oral presentation was by Ivan V. Korendovych (Tufts) and the best presentation by a graduate student was by Karen M. Miller, MIT. The best undergraduate poster presentations were by Andrew B. Dykstra (Boston University) and John Beierle (Boston College). Six of the 12 participants in this year’s exchange with the GDCh Jungchemikerforum presented a slide show of the trip.

The keynote address was to be delivered by Prof. Lieber, who unfortunately became ill the day before. In his place, Post-Doctoral Deli Wang gave the address on Nanowires as Building Blocks for Nanoscale Science and Technology.

NERM: H. Mayne reported that the next NERM is to be June 15-18, 2003 in Saratoga Springs, NY.

Medicinal Chemistry: P. Nagafuji reported that the next meeting will be held during the week of October 6 at the MIT Faculty Club, with J. Tally...
Communication

By Dana Lipp*

The challenge to science communicators is to overcome the reader’s reluctance to bother to read what we have written.

There is no shortage of communication methods, but have we improved in our ability to communicate? Perhaps, ironically, the proliferation of all these fast, efficient methods discourages us from spending the time needed to construct a well-phrased message or to listen to others.

As scientists, we must effectively communicate our results not only to coworkers and those in the field, but also to those outside the discipline.

Recognizing the importance of this, Curt Supplee, Director of the Office of Legislative and Public Affairs at the National Science Foundation presented a seminar at the fall ACS National Meeting in NYC entitled How To Talk To the Public About What You Do. This presentation drew heavily upon Science and Engineering Indicators, 2002 published by the NSF.

Since one in four stories in the media deals with some aspect of science, everyone’s life is in some way affected by science. Respondents in a NSF study claimed that television (44%), magazines (16%), newspapers (16%) and the internet (9%) are among the top resources they use as sources for science. When seeking specific information, however, the internet leads at 44% followed by books (24%) and magazines (8%).

Surveys conducted during the last 20 years have indicated 90% of US adults are very, or moderately interested in new scientific discoveries, inventions and technologies. Over this same period, a consistent 70% felt that the benefits of scientific research outweigh harmful results. However, very few feel even moderately well informed and most said they didn’t know a lot about science and technology, or the nature of scientific inquiry. As might be expected, the understanding of scientific inquiry steadily improves with education, from a low of 10% with no high school degree, to a high of 55% with a graduate degree.

The public is clearly interested in science and technology, but doesn’t know much about it.

About 40% of the public has consistently expressed confidence in the scientific community, only slightly less than the confidence expressed in medicine.

We must communicate our enthusiasm and interest about our work to the media and general public, but the challenge is to present the work we know so well, effectively, i.e. to explain why it is important.

Craft your message, keep it brief, and edit ruthlessly. Communication involves 1) information, 2) building interest or provide context, and 3) educating the audience. In a short article, it may be difficult to do all three, so focus on the first two items and add what education you can without turning off the reader.

Take the time needed to focus and simplify the message. Memorize your talk, don’t ‘wing it’. Prepare.

Despite reliance on the written and spoken word, most communication is visual. Employ imagery to your advantage; even the most carefully written message can be made much more effective by the use of carefully chosen visuals. Good images can be a...
The following is an actual question given on a University of Washington chemistry mid-term. The answer by one student was so “profound” that the professor shared it with colleagues, via the Internet, which is, of course, why we now have the pleasure of enjoying it as well.

**Bonus Question:** Is Hell exothermic (gives off heat) or endothermic (absorbs heat)?

Most of the students wrote proofs of their beliefs using Boyle’s Law (gas cools off when it expands and heats up when it is compressed) or some variant.

One student, however, wrote the following:

“First, we need to know how the mass of Hell is changing in time. So we need to know the rate that souls are moving into Hell and the rate they are leaving. I think that we can safely assume that once a soul gets to Hell, it will not leave. Therefore, no souls are leaving.

As for how many souls are entering Hell, let’s look at the different religions that exist in the world today. Most of these religions state that if you are not a member of their religion, you will go to Hell.

Since there is more than one of these religions and since people do not belong to more than one religion, we can project that all souls go to Hell.

With birth and death rates as they are, we can expect the number of souls in Hell to increase exponentially.

Now, we look at the rate of change of the volume in Hell because Boyle’s Law states that in order for the temperature and pressure in Hell to stay the same, the volume of Hell has to expand proportionately as souls are added.

Continued on page 16
This gives two possibilities:

1) If Hell is expanding at a slower rate than the rate at which souls enter Hell, then the temperature and pressure in Hell will increase until all Hell breaks loose.

2) If Hell is expanding at a rate faster than the increase of souls in Hell, then the temperature and pressure will drop until Hell freezes over.

So which is it?

If we accept the postulate given to me by Teresa during my Freshman year, “....that it will be a cold day in Hell before I sleep with you”,

and take into account the fact that I still have not succeeded in having an affair with her, then #2 above cannot be true, and thus I am sure that Hell is exothermic and will not freeze over.”

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The Nucleus November 2003  19
**Calendar**

**Check the NESACS Homepage for late additions:**

[http://www.NESACS.org](http://www.NESACS.org)

Note also the Chemistry Department web pages for travel directions and updates. For example:

- [http://www.chem.harvard.edu/events/](http://www.chem.harvard.edu/events/)
- [http://www.umassd.edu](http://www.umassd.edu)
- [http://www.dartmouth.edu/~chem/](http://www.dartmouth.edu/~chem/)

### Nov 6
- **Prof. Peter Wipf** (Univ. of Pittsburgh)  
  “New Applications of Zirconocenes”  
  UNH, Parsons Iddles Auditorium Room L103, 11:10 am
- **Prof. Andrea Liu** (UCLA)  
  “Effective Temperatures in Driven Systems near Jamming”  
  Harvard Univ, Pfizer Lecture Hall, Mallinckrodt Lab, 12 Oxford St., Cambridge, 4:00 pm

### Nov 10
- **Prof. William A. Eaton** (NIH)  
  “Protein Folding Dynamics”  
  Brandeis Univ., Edison Lecks Building, Gerstenzang 122, 3:45 pm
- **Prof. Michael Huang** (New Jersey Institute of Technology)  
  “Flow Induced Phase Transitions in Block Copolymer/Homopolymer Blends”  
  Tufts Univ., Chem. & Biol. Engineering, Room 136, Science and Technology Center, 4 Colby Street, Medford, 11:50 am

### Nov 11
- **Prof. Huw M. L. Davies** (SUNY at Buffalo)  
  “Applications of Catalytic Asymmetric C-H Activation in Organic Synthesis”  
  Boston College, Merkert 130, 4:00 pm
- **Prof. Marcy Waters** (Univ. of North Carolina)  
  “Structure and Function of Designed Peptides”  
  Boston College, Merkert 130, 4:00 pm

### Nov 12
- **Prof. Robert J. Hamer** (Univ. of Wisconsin)  
  Harvard/MIT Physical Chemistry Seminar  
  Harvard Univ., Pfizer Lecture Hall, Mallinckrodt Lab, 5:00 pm
- **Prof. Robert Langer** (MIT)  
  Sukant Tripathy Memorial Lecture  
  Tufts Univ., Chem. & Biol. Engineering, Room 136, Science and Technology Center, 4 Colby Street, Medford, 11:50 am

### Nov 13
- **Prof. Amir H. Hoveyda** (Boston College)  
  “Practical Catalytic Enantioselective Synthesis”  
  Abbott Bioresearch Center (100 Research Drive, Worcester)  
  9:30 am; Contact Heather Davis, 508-688-8085 (heather.davis@abbott.com)
- **Prof. Jennifer Swift** (Georgetown Univ.)  
  “A Chemical Approach to Crystal Deposition Disease”  
  Brandeis Univ., Edison Lecks Building, Gerstenzang 122, 3:45 pm
- **Prof. Per Ahlberg** (Goteborg Univ., Sweden)  
  “Unravelment of the Basis of Catalytic Stereoselective Deprotonations”  
  Harvard Univ, Pfizer Lecture Hall, Mallinckrodt Lab, 12 Oxford St., Cambridge, 4:15 – 5:30 pm

### Nov 18
- **Dr. Cherrie R. Kagan** (IBM T. J. Watson Research Center)  
  Physical Chemistry “Molecular Materials and Devices”  
  MIT, Room 4-237, 4:00 pm
- **Prof. Joe Bruno** (Wesleyan Univ.)  
  “Synthetic and Thermodynamic Studies with Metal-Ketene Complexes”  
  UNH, Parsons Iddles Auditorium Room L103, 11:10 am

### Nov 19
- **Prof. Robert Linhardt** (Rensselaer Polytechnic Institute)  
  “Heparin Glycobiology”  
  The Boston Glycobiology Discussion Group, MIT Faculty Club, 50 Memorial Drive (top floor), 6:00 pm  
  Reservations are required; contact Kathryn Newburg  
  781-642-0025 kathryn.newburg@umassmed.edu
- **Prof. Alan Goldman** (Rutgers Univ.)  
  Harvard/MIT Inorganic Chem  
  “Alkane Dehydrogenation Catalyzed by Pincer-Ligated Iridium Complexes”  
  MIT, Room 6-120, 4:00 pm
- **Prof. Herschel A. Rabitz** (Princeton Univ.)  
  Joint Harvard-BU-MIT Theoretical Chemistry  
  “Shaped Laser Pulses as Adaptive Reagents”  
  MIT, Rm 36-112, 3:00 pm

### Nov 20
- **Prof. Jesse Lee** (Jack) Beauchamp (Calif. Institute of Technology)  
  “Exploding Nanodroplets: Applications to Studies of Ion Formation and Solvation, Chemistry of Molecular Clusters, and Frontier Studies in Proteomics”  
  Harvard Univ, Pfizer Lecture Hall, Mallinckrodt Lab, 12 Oxford St., Cambridge, 4:00 pm
- **Prof. Nitash P. Balsara** (Univ. of California, Berkeley)  
  Polymer Seminar Series  
  Univ. Mass. Lowell, Olney 218, 3:30 pm

### Nov 24
- **Prof. Kara Bren** (Univ. of Rochester)  
  “NMR Studies of Heme Protein Dynamics”  
  Brandeis Univ., Edison Lecks Building, Gerstenzang 122, 3:45 pm
- **Dr. Amiram Bar-Ilan** (Sud Chemie-Prototech, Inc., Air Purification)  
  “Catalyst Challenges in Diesel Exhaust Treatment”  
  Tufts Univ., Chem. & Biol. Engineering, Room 136, Science and Technology Center, 4 Colby Street, Medford, 11:50 am

### Nov 25
- **Prof. Kenneth Eisenstat** (Columbia Univ.)  
  “Molecules at Liquid Surfaces”  
  Tufts Univ., Pearson Chemistry Building, 62 Talbot Ave., Medford, Room P-106, 4:30 pm

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