

THE NUCLEUS

May 2007

Vol. LXXXV, No. 9



Monthly Meeting

Education Night, Presentation of Awards and Steve Jones of Sepracor speaks on the "Interplay of Chemistry and Biology"

Esselen Award Address Med Chem Symposium

By Prof. Michael A. Marletta

2007 NESACS Election

Candidate Statements

Lead Optimization Strategies

Lead Optimization Strategies

Lyman C Newell Grants

for the

NEACT Summer Conference

“THE WONDERS OF GLASS”

August 6—9, 2007

**St. Joseph’s College,
West Hartford, CT**

The Northeastern Section of the American Chemical Society is again offering four Lyman C. Newell Grants for the New England Association of Chemistry Teachers’ 69th Annual Summer Conference

http://neact.org/summer_conference.html.

The total fees for Monday evening through Thursday morning, including registration, room and board, banquets and socials, are expected to be from about \$300 to \$325. Each Newell Grant will be for \$225, paid to the NEACT Summer Conference Registrar/Treasurer.

While preference will be given to teachers who are new to teaching or returning to teaching, the awards are open to all secondary school chemistry teachers. Applicants need not be members of the Northeastern Section of the American Chemical Society or of NEACT. The application for the Newell Grants is available on the website of the Northeastern Section at <<http://www.nesacs.org>>.

Applications for the grants are due by May 18, 2007, and all applicants will be notified of the results by e-mail on May 25, 2007.

The Lyman C. Newell Grants commemorate a former chair of the Northeastern Section who was a distinguished chemist, teacher, and historian of chemistry. For many years he was chair of the Chemistry Department at Boston University. Lyman Newell served as the first president of NEACT from 1889 to 1900 and expressed a continuing interest in training chemistry students throughout his long career. His efforts are continued by grants that bear his name. Mail your completed application to the address below.

Dr. Ruth Tanner
Education Committee Chair, NESACS
Telephone: (978) 934-3662
e-mail: [Ruth.Tanner\(at\)uml.edu](mailto:Ruth.Tanner(at)uml.edu)
University of Massachusetts Lowell
Chemistry Department, Olney Hall
1 University Avenue, Lowell, MA 01854
ATTN: Newell Grant Committee ◇

4th Annual

Women Chemists Committee
and Northeastern Section

Golf Tournament

(held in conjunction with the 234th
National ACS meeting in Boston, MA)

All proceeds from this tournament
support WCC and NESACS programs

August 22, 2007

Golf - 2 pm

Buffet Dinner - 7 pm

Awards - 8 pm

**Brookline Golf Club
at Putterham Meadows**

Cost: \$100 per golfer

Or \$400 per foursome

Your entry fee covers:

Best ball scramble, greens fee, cart, prizes (including longest drive for men and women, closest to the pin, and first, second, and third places), and dinner after golf (burgers, hot dogs, salads, etc.).

Bus transportation will be available for a nominal charge.

**Hole Sponsorships are available
at several levels:**

\$2500 Boron

\$2000 Osmium

\$1500 Sulfur

\$1000 Tritium

\$500 Oxygen

\$300 Nitrogen

For reservations send your check to:

Marilou Cashman
23 Cottage Street, Natick, MA 01760
[Mcash0953\(at\)aol.com](mailto:Mcash0953(at)aol.com)

Please include all golfers’ names and e-mail addresses.

The Northeastern Section of the American Chemical Society, Inc.

Office: Marilou Cashman, 23 Cottage St., Natick, MA 01360. 1-800-872-2054 (Voice or FAX) or 508-653-6329.

e-mail: mcash0953(at)aol.com

Any Section business may be conducted via the business office above.

NESACS Homepage:

<http://www.NESACS.org>

Sathish Rangarajan, Webmaster

ACS Hotline, Washington, D.C.:

1-800-227-5558

Officers 2007

Chair:

Mukund Chorghade

14 Carlson Circle, Natick, MA 01360

508-651-7809 and 308-3891

Chorghade(at)comcast.net

Chair-Elect:

Marietta Swartz

Chemistry Department, Umass-Boston

Boston, MA 02125

617-287-6146; marietta.swartz(at)umb.edu

Immediate Past Chair:

Patricia Mabrouk

Chemistry Department, Northeastern University

Boston, MA 02115

613-373-2845; p.mabrouk(at)neu.edu

Secretary:

Michael Singer

Sigma-Aldrich

3 Strathmore Rd., Natick, MA 01360

508-651-8151X291; msinger(at)sial.com

Treasurer:

James Piper

19 Mill Rd., Harvard, MA 01451

978-456-3155; piper28(at)attglobal.net

Auditor:

Anthony Rosner

Archivist:

Myron S. Simon

20 Somerset Rd.

Newton, MA 02465; 617-332-5273

Romysimon(at)mindspring.com

Trustees:

Joseph A. Lima, Esther A. H. Hopkins,

Michael E. Strem

Councilors

Term Ends 12/31/2007

Thomas R. Gilbert

Michael J. Hearn

Michael Singer

Pamela Nagafuji

Term Ends 12/31/2008

Doris I. Lewis

Morton Z. Hoffman

Christine Jaworek-Lopes

Mary Burgess

Donald O. Rickter

Term Ends 12/31/2009

Catherine Costello

Patricia Mabrouk

Michaeline F. Chen

Dorothy J. Phillips

Amy Tapper

Alternate Councilors

Arlene W. Light

Timothy B. Frigo

Mary Mahaney

Mark Froimowitz

Patrick M. Gordon

Michael P. Filosa

Lawrence Scott

Liming Shao

S.B. Rajur

Julia H. Miwa

Alfred Viola

Jerry P. Jasinski

Eva B. Binnun

Barney Grubbs

All Chairs of standing Committees, the editor of THE NUCLEUS, and the Trustees of Section Funds are members of the Board of Directors. Any Councilor of the American Chemical Society residing within the section area is an ex officio member of the Board of Directors.



Contents

Announcements 2

Lyman C. Newell Grants, NESACS Golf Tournament

Esselen Award Address 4

"Nitric Oxide in Biology: From Discovery to Therapeutics"

By Prof. Michael A. Marletta

Monthly Meeting 5

Education Night at Northeastern University, Dr. Steve Jones of Sepracor

Speaks on "The Interplay of Chemistry and Biology"

Andrew Weinberg Memorial Lecture 6

Malcolm Smith, MD, Ph.D. speaks at Dana-Farber Cancer Institute

Call for Volunteers 7

Volunteers needed for Boston National ACS Meeting

Summerthing 2007 8

Medicinal Chemistry Symposium 9

Lead Optimization Strategies at Emmanuel College

2007 NESACS Election 10

Candidate Statements

Cover: *Not all chemists want to be photographed in a coat and tie. May speaker, Dr. Steve Jones of Sepracor with some of his toys (Picture courtesy of Steve Jones)*

Deadlines: *Summer 2007 Issue: June 15, 2007*

September 2007 Issue: July 13, 2007

THE NUCLEUS

The Nucleus is distributed to the members of the Northeastern Section of the American Chemical Society, to the secretaries of the Local Sections, and to editors of all local A.C.S. Section publications. Forms close for advertising on the 1st of the month of the preceding issue. Text must be received by the editor six weeks before the date of issue.

Editor: Michael P. Filosa, Ph.D., editor, ZINK Imaging LLC, 1265 Main Street, Waltham, MA 02451 Email: Michael.Filosa(at)zink.com; Tel: 781-386-8479.

Associate Editors: Myron S. Simon, 20 Somerset Rd., W. Newton, MA 02465, Tel: 617-332-5273
Nancy Simons, Analytical Chemist, Corporate R&D, Boston Scientific Corp., 1 Boston Scientific Place A4, Natick, MA 01360-1537. Email: Nancy.Simons(at)bsci.com; Tel. 508-650-8603; Fax 508-647-2329
Sheila E Rodman, Konarka Technologies Inc., 116 John St. Suite 12, Lowell, MA 01852 email: srodman(at)konarka.com tel 978-569-1414

Board of Publications: Vivian K. Walworth (Chair), Mary Mahaney, David Cunningham

Business Manager: Karen Piper, 19 Mill Rd., Harvard, MA 01451, Tel: 978-456-8622

Advertising Manager: Vincent J. Gale, P.O. Box 1150, Marshfield, MA 02050,

Tel: 781-837-0424; FAX: 781-837-1453

Contributing Editors: Morton Hoffman, Feature Editor; Dennis Sardella, Book Reviews

Calendar Coordinator: Sheila Rodman, email: srodman(at)konarka.com

Photographers: Morton Z. Hoffman and James Phillips

Proofreaders: Donald O. Rickter, Myron S. Simon, Vivian K. Walworth, E. Joseph Billo

Webpage: Webmaster: Sathish Rangarajan, sathish.rangan2(at)gmail.com

Copyright 2007, Northeastern Section of the American Chemical Society, Inc.

Esselen Award Address

Nitric Oxide in Biology: From Discovery to Therapeutics

Michael A. Marletta, Ph.D.

Aldo DeBenedictis Distinguished Professor of Chemistry, Department of Chemistry

Professor of Biochemistry and Molecular Biology, Department of Molecular & Cell Biology

University of California, Berkeley

Professor of Cellular & Molecular Pharmacology, University of California, San Francisco

Faculty Scientist, Lawrence Berkeley National Laboratory

Nitric oxide (NO) is now firmly established as a vital mediator in mammalian biochemistry. The principal discoveries that led to the current thinking clustered in the middle 1980's, though, as with most major discoveries, earlier findings pointed the way and were, in hindsight, important. The early discoveries and subsequent hypotheses concerning NO action in human biology were greeted with a high degree of skepticism. This skepticism focused on how a highly diffusible, toxic gas could be used in the context suggested.

What were the discoveries that led to the conclusion that NO was a key player in biological processes? In fact, there were three parallel lines of investigation that pointed the way. Cardiovascular pharmacologists were engaged in a long, and only somewhat productive, search for endogenous factors that dilated blood vessels, later termed EDRF (endothelium-derived relaxing factor). Once localized to the endothelial cells, several groups sought to determine the nature of EDRF. Indeed it was shown to be NO. NO caused blood vessel dilation by increasing cyclicGMP. Another line of study that was focused on the endogenous formation of carcinogenic N-nitrosamines led to studies on mammalian synthesis of nitrate. These studies showed that nitrate was derived from cells that were immunostimulated to kill tumor cells, and the pathway that led to nitrate was intimately involved in the killing process. NO decomposes in aerobic, aqueous solution to nitrate, so in sorting out this pathway, it became clear that NO was being used

by the immune system as a killing agent. Lastly, studies in neuronal signaling in the brain had focused increases in cyclicGMP. Could it be that NO brought about this increase just like it did in blood vessels? That answer turned out to be yes.

NO mediates blood vessel relaxation, complex aspects of myocardial function, perfusion and function of all major organs, synaptic plasticity in the brain, platelet aggregation, skin function, and numerous other physiological processes, by targeting and activating the soluble isoform of guanylate cyclase (sGC). This enzyme converts GTP to cyclicGMP. NO is formed by the enzyme nitric oxide synthase (NOS). Because NO signaling has a prominent role throughout the vasculature in regulating blood flow, and in the perfusion and function of many organs and tissues, dysregulation of NO signaling contributes to various diseases, ranging from heart disease, hypertension and stroke to gastrointestinal distress, erectile dysfunction and neurodegeneration, among others. The impact of NO on human health and disease has already been felt. Treatment of septic shock with NOS inhibitors, the use of NO in ICU's to treat pulmonary hypertension, phosphodiesterase inhibitors in the treatment of male impotence (Viagra®), and the use of nitrovasodilators such as nitroglycerin for the treatment of angina pectoris are four therapies worthwhile of mention. Isoform selective inhibition of NOS is being investigated for treatment of rheumatoid arthritis and other chronic inflammatory diseases. The full extent of NO in

Corporate Patrons and Golf Iridium

Astra Zeneca R&D Boston

Genzyme Drug Discovery & Dev

Hovione

IBM

IRIX Pharmaceuticals

Johnson-Matthey Pharma Solutions

Lyophilization Service of New England

Merck

Phasex Corporation

Sepracor

Strem Chemicals, Inc.

Zone Enterprises

Corporate Sponsors and Golf Rhodium

Aerodyne Research, Inc.

Cambridge Isotope Laboratories

Cambridge Major Laboratories

New England Biolabs, Inc.

Pfizer

Sigma-RBI

Shasun Pharma Solutions

Donors and Golf Tungsten

Consulting Resources Corp.

Dishman Pharmaceuticals

and Chemicals Limited

Houghton Chemical Company

Organix, Inc.

Vertex

human biology is yet to be fully appreciated. Suffice it to say that manipulation of NO function in human biology will continue to have significant impact on human health and disease.

To expand further, NO plays two central roles in mammalian physiology. The first is the action of NO as a signaling agent. In this context NO acts in a paracrine fashion where one cell generates NO via a constitutive isoform of nitric oxide synthase (NOS) and an adjacent cell contains a receptor for this newly synthesized NO, the soluble isoform of guanylate cyclase (sGC). As mentioned above, NO signaling controls blood vessel dilation (more generally smooth muscle relaxation) and is involved in cell-to-cell signaling in the central nervous system. The rapid diffusibility of NO would seem to be a positive factor in signaling, whereas the toxicity would not. In any event, using NO in such a way would require tight control over synthesis and a selective and very sensitive receptor.

Continued on page 20

Monthly Meeting

The 879th Meeting of the Northeastern Section of the American Chemical Society

Education Night

Thursday, May 10, 2007

Northeastern University,
360 Huntington Avenue, Boston, MA

2:30 pm Career Services Presentations and Resume Reviews, Mukund Chorghade (NESACS Chair), Megan Driscoll and Jennifer Sass (PharmaLogics Recruiting)

4:00 pm NESACS Board Meeting

5:15 pm Reception - (Raytheon Amphitheater)

6:00 pm Dinner

7:00 pm Award Meeting, Dr. Mukund Chorghade, NESACS Chair, presiding
Address: *The Interplay of Chemistry and Biology*- Dr. Steve Jones, Sepracor, Inc., Marlborough, MA

7:45 pm Presentation of Awards

Philip L. Levins Memorial Prize
James Flack Norris/Theodore William Richards Awards
Undergraduate Research Fellowships
Undergraduate Grants-in-Aid
Undergraduate Research Symposium
Project SEED Students
Excellence in Teaching at the Secondary School Level
Induction of New Members into *Aula Laudis*
Avery A. Ashdown Chemistry Examination Awardees
Simmons College Prize

Dinner reservations should be made no later than noon, Friday, May 4th. Please call or fax Marilou Cashman at (800) 872-2054 or e-mail at MCash0953(at)aol.com. Reservations not cancelled at least 24 hours in advance must be paid. Members, \$30.00; Non-members, \$35; Retirees, \$20; Students, \$10.

THE PUBLIC IS INVITED

Public transportation is strongly suggested. Take the Green Line E train to the Northeastern stop, or the Orange Line to the Ruggles stop. Follow signs to the boardroom or ballroom from there. Or, take the Orange Line to the Mass Ave stop and go up the stairs at the west end of the platform, go through the turnstile and turn right onto the pedestrian overpass. Then make a left at the bottom of the stairs near the Gainsborough Parking Garage. Visit: <http://www.campusmap.neu.edu> for a map of the Northeastern University Campus. A limited amount of parking will be allotted in the Gainsborough Parking Garage. Please contact Marilou Cashman for a parking pass if necessary. Anyone who needs special services or transportation, please call Marilou Cashman a few days in advance so that suitable arrangements can be made.

Abstract

The topic of my talk will be the interplay of chemistry and biology. There are many areas in biology; however, two of them (biochemistry and pharmacology) are most impacted by, and dependent upon, chemistry. Biochemistry was essentially founded by chemists who wished to understand chemical processes in living organisms. Pharmacology is the study of the effects of chemicals upon living organisms. I'll briefly trace, by several examples, the invaluable contributions of chemistry to each of these areas. I'm sure that many of the high school and college-level chemistry majors at this meeting are interested in where the future of chemistry could take them in the fields of biochemistry and pharmacology. I will give my best guess of where these fields will be going in the near future and what the contributions of chemists will be to this progress. ◇

Biography

Steve Jones' academic career started at Western Illinois University, where he was a chemistry major. His senior year project involved isolating and studying sodium and potassium ATPase. This work influenced him to continue in biochemistry. He moved to the chemistry department at the University of Nebraska to study membrane transport under Dr. George Vidaver, who was a leader in the study of amino acid transporters. His dissertation work involved the solubilization and reconstitution of the glycine transporter. From there he moved first briefly to the University of Colorado Health Sciences Center and then on to Harvard University with his postdoctoral mentor, Dr. R. L. Erikson. In the Erikson lab he studied kinases, protein tyrosine phosphatases, and their substrates that were associated with normal and abnormal (cancerous) control of cell growth. Part of his time during this period was spent as a guest scientist at Biogen in Cambridge. Early on in his

Continued on page 6

The 11th Annual Andrew H. Weinberg Memorial Lecture

This annual event highlights the achievements and focuses on the development of new strategies for the treatment of cancer patients

Malcolm Smith, MD, PhD

“Picking Winners; Selecting the Right Molecularly Targeted Agents for the Right Childhood Cancers”

Monday, May 14, 2007, 4:00 pm

The Smith Family Room, D 1620
Dana-Farber Cancer Institute
44 Binney Street, Boston, MA 02115

For more information, please contact Jill LaCoursiere
at 617-632-3971 or jill_lacoursiere@dfci.harvard.edu

Biography

Continued from page 5

career he was advised to stay away from either immunology or endocrinology, as they were both hopelessly complex. So, with this advice in mind, he immediately moved into immunology. He entered the pharmaceutical industry by joining a small company in Denver, Cortech, that was involved in pulmonary medicine and immunology. In collaboration with scientists at Johns Hopkins University and the National Jewish Hospital in Denver, he studied

signaling mechanisms in B and T lymphocytes. In addition to these basic mechanism studies his lab defined the epitopes on several allergens involved in asthma and provided the basic biology portion of the company's project to address what was then called ARDS – adult respiratory distress syndrome. From Cortech, Steve moved east to Sepracor in Marlborough, MA. Steve's group worked on the HIV and Hepatitis C proteases as drug targets in the early days at Sepracor. A major focus of Sepracor is respiratory medicine, and his group continues to be active in

this area. A new focus for his group is CNS diseases, most especially schizophrenia, and most of his research group now works in this area. A number of high school students have done science fair projects in his labs over the years. Such projects have included: cloning of a portion of the HIV protease gene, studies to count bacteria in water samples, the determination of the antibacterial susceptibility of different bacteria, and the quantitation of caffeine in various coffees and energy drinks by LC-MS. ◇

The Andrew H. Weinberg Symposium

Few events can generate emotional turmoil in parents the way learning that their child has been diagnosed with cancer does. Despite major improvements in cancer treatments over the last few decades, cancer is still one of the most common causes of childhood death. Unlike many adult cancers, which are frequently associated with smoking or other exposures, the reason for most childhood cancer remains a mystery. In 1993, one family learned of the anguish of having a child diagnosed with rhabdomyosarcoma, a rare form of muscle tumor. In spite of aggressive attempts at cure, Andrew H. Weinberg passed away, shortly before his 3rd birthday.

The tragedy faced by the Weinberg family is relived daily around the world. While children remain innocent victims of this disease, there is still insufficient effort made to identify the cause or treatment of childhood cancer. Because children make up a small portion of cancer victims when compared to adults, little effort is exerted to address their specific issues or problems. As such, only two drugs have been approved for use in pediatric cancer patients since 1979 and only 16 drugs have been approved over the last 50 years.

The Dana-Farber Cancer Institute and Children's Hospital have been leaders in the fight against childhood cancer dating back to the 1940's when Dr. Farber achieved the first remission in childhood cancer. That commitment to identifying active agents that will impact on childhood cancer continues to this day.

With the generous support of family and friends, as well as the Medicinal Chemical Group, the Northeastern section of the American Chemical Society, and the Dana Farber Cancer Institute, a fund was created in 1994, and was endowed in 2001. The Andrew H. Weinberg Memorial Endowment Fund is dedicated to bringing researchers together from the field of

chemotherapy development with those in the medical community helping foster an environment for synergy and new approaches for cancer research.

The success of the Weinberg Symposium is evidenced by the large and enthusiastic turnout for past speakers.

Previous speakers have included:

Edward M. Kennedy
Ken Bair, PhD
Richard Klausner, MD
Bruce Chabner, MD
David Parkinson, MD
Nicholas Dean, PhD
Charles Pratt, MD, PhD
Judah Folkman, MD
Daniel Von Hoff, MD
Peter Ho, MD, PhD
Steven Weitman, MD, PhD
John Hohnecker, MD
David Kessler, MD
Leroy Hood, MD, PhD
Stephen H. Friend, MD, PhD
Peter Houghton, PhD ◇

Call for Volunteers

Boston National ACS Meeting

The National ACS meeting will be held in Boston from August 19-23, 2007. The Northeastern Section will host the meeting. The Hospitality Center, General Interest Program and Student Personnel, along with volunteer workers, are being organized for the meeting. The Hospitality Center will need volunteers to provide information on points of interest, transportation, restaurants, etc. The center will be open from approximately 9am to 5pm daily. Hours for volunteers are flexible. More information on the scheduling will be forthcoming.

For more information, please contact the following:

Hospitality—Mary Burgess
617-522-9165 mbrburgess(at)aol.com

General Chairperson—
(Planning Committee) - Robert Lichter
Rlichter(at)MerrimakLLC.com ◇

STOP WASTING \$\$\$ on vacuum pumps!!

Rebuilding is smart.

A new pump costs **four times** what rebuilding costs.

Rebuilding is easy.

Just call 978 667 2393 for service second-to-none.

Mass-Vac does the job right.

- Factory trained technicians.
- Rebuilt and new pumps in stock.
- No-hassle parts and labor guarantee.
- Complete line of filtration and trap systems.

Because a really old, really healthy vacuum pump is a beautiful thing!



Mass-Vac, Inc.

247 Rangeway Road • PO Box 359 • North Billerica, MA 01862
978 667 2393 Fax 978 671 0014 sales@massvac.com www.massvac.com

Summer-Thing 2007

Lowell Spinners Baseball
Saturday, July 14, 2007

5:00 pm

Join your NESACS friends and their families as we travel to LaLecheur Park in Lowell, MA to watch the Lowell Spinners (BOS) take on the Auburn Doubledays (TOR) in a Class A baseball game. The game will be on Saturday July 14th, 2007 at 5:00 pm.

Following the game, stick around to play catch on the field and watch a feature presentation on the state-of-the-art video board. Tickets are limited and will be available on a first come, first ticketed basis. Cost will be \$10.00 per ticket.

For directions to LaLecheur Park, see the Lowell Spinners Website at www.Lowellspinners.com.

For reservations, please call Marilou Cashman at the NESACS office at 1-800-872-2054 or (508) 653-6329 or e-mail to [mcash0953\(at\)aol.com](mailto:mcash0953(at)aol.com). ◇

The Nucleus Newsletter special edition

American Chemical Society's
National Meeting in August

Why advertise in this issue?

Companies, Universities and Hospitals do so because it is the lowest cost method of reaching this highly select audience of Chemists and Biochemists. Promote products and services, University course offerings and Recruitment outreach.

The August issue will be distributed to 17,500 ACS members. Their estimated purchasing power is \$165,000,000.

These members are representatives of more than 2000 companies.

Some are looking for vendors
Some are looking for jobs

Want more information? Email our advertising representative at:
vincegale@mboseervices.net

Symposium Speakers

Prof. L. V. G. Naragund
Green Chemistry: Synthesis of Small Molecules by Microwave Technique

Microwave-assisted synthesis in Lead optimization studies will be presented

Dr. Nargund is the founder of Nargund Research Foundation and now serving as the principal of Nargund College of Pharmacy. He received his Ph.D. from Karnataka University Dharwad, India in synthetic organic chemistry. He has published over 50 peer-reviewed articles in national and international journals.

Neal Green
Inhibitors of Tpl2 Kinase and TNF Production: Selectivity and In Vivo Antiinflammatory Activity of Novel 8-substituted-4-anilino-6-aminoquinoline-3-carbonitriles

Tpl2 (Cot/MAP3K8) is a serine/threonine kinase in the MAP3K family directly upstream of MEK. Recent studies using Tpl2 knockout mice have indicated an important role for Tpl2 in the LPS-induced production of TNF and other pro-inflammatory cytokines involved in such diseases as rheumatoid arthritis. Initial 4-anilino-6-aminoquinoline-3-carbonitrile leads showed poor selectivity for Tpl2 over EGFR kinase. Using molecular modeling and crystallographic data of the EGFR kinase domain of with and without an EGFR kinase-specific 4-anilinoquinazoline inhibitor (Erlotinib, Tarceva™), we hypothesized that we could diminish the inhibition of EGFR kinase by substitution at the C-8 position of our 4-anilino-6-aminoquinoline-3-carbonitrile leads. The 8-substituted-4-anilino-6-aminoquinoline-3-carbonitriles were prepared from the appropriate 2-substituted-4-nitroanilines. Modifications to the C-6 and C-8 positions led to the identification of compounds with increased inhibition of TNF release from LPS-stimulated rat and human blood and these analogs were also highly selective for Tpl2 kinase over EGFR kinase. Further structure-activity based modifications led to the identifi-

cation of 8-bromo-4-(3-chloro-4-fluorophenylamino)-6-[(1-methyl-1H-imidazol-4-yl)methylamino]quinoline-3-carbonitrile which demonstrated in vitro as well as in vivo efficacy in inhibition of LPS-induced TNF production.

Neal Green, Senior Scientist at Wyeth Pharmaceuticals, received a B.S. in medicinal chemistry and graduated cum laude from SUNY Buffalo, and earned his Ph.D. from Rensselaer Polytechnic Institute. In 1993, he was awarded a fellowship from the NIH to study Novel Lactonization Methodologies and Total Synthesis of Rhizoxin. In 1994 Dr.Green joined Genetics Institute as staff scientist. Currently he is leading a chemistry team at Wyeth Research in Cambridge, MA. Dr. Green's research interests are in the areas of TNF signal transduction pathways and inhibition of T-cell co-stimulation.

Horst Hemmerle
Use of Relevant Chemical Diversity in Drug Discovery

Lilly developed a number of strategies to address Lead Generation for Drug Discovery. Knowledge-based enrichment of the compound collection combined with target family focused informatics allowed them to dramatically increase screening efficiencies.

Horst Hemmerle studied Bioorganic Chemistry in Germany and joined the pharma division of Hoechst AG (later part of Aventis) in 1990 as a research scientist in the metabolic disorders group. In 1996 he continued his career as a head of medicinal chemistry at Hoechst-Marion-Roussel in Frankfurt.

Dr. Hemmerle joined Lilly in 2001 as a head of medicinal chemistry. He played a critical role in fostering lead generation as a critical step in the drug discovery process. During the first 3 years he had completely re-engineered Lilly's strategy for rebuilding the Lilly compound collection with a focus on knowledge-based design and quality. Under his leadership and vision, the Platform Library Sciences has grown

Continued on page 20

Medicinal Chemistry Symposium



Lead Optimization Strategies

Organized by the Medicinal Chemistry Group
of the Northeastern Section, American Chemical Society

Thursday - May 17, 2007

Emmanuel College, 400 The Fenway, Boston, MA 02115

3.00 pm Refreshments

3.15 pm **Welcome**

*Raj (SB) Rajur, Program Chair, CreaGen Biosciences, Inc,
Woburn, MA*

3.20 pm **Introductory Remarks**

Norton Peet, International R&D Consultant, North Andover, MA

3.30 pm **“Green Chemistry: Synthesis of Small Molecules by Microwave Technique”**

*Prof. L.V. G Nargund, Nargund Research Foundation, Nargund
College of Pharmacy, Bangalore, India*

4.15 pm **“Inhibitors of Tpl2 Kinase and TNF Production: Selectivity and In Vivo Anti-inflammatory Activity of Novel 8-Substituted-4-anilino-6-aminoquinoline-3-carbonitriles”**

Neal Green, Wyeth Research, Cambridge, MA

5.00 pm **“Lead Optimization of Orally Bioavailable Drugs”**

Mark T. Goulet, Merck Research Laboratories, Boston, MA

5.45 pm Social Hour

6.30 pm Dinner

7.45 pm **“Use of Relevant Chemical Diversity in Drug Discovery”**

*Horst Hemmerle, Discovery Chemistry, Eli Lilly and Co.
Indianapolis, IN*

Dinner reservations should be made no later than 12:00 noon on Thursday, May 10, 2007. If you prefer to pay at the door, please contact Marilou Cashman at (800) 872-2054 or (508) 653-6329 or mcash0953(at)aol.com. Reservations not canceled at least 24 hours in advance must be paid. Members, \$28.00; Non-members, \$30.00; Retirees, \$15.00; Students, \$10.00. Anyone who needs handicapped services/transportation, please call a few days in advance so that suitable arrangements can be made.

THE PUBLIC IS INVITED

For directions to Emmanuel College go to their website: <http://www.emmanuel.edu/contact/directions.asp> Detailed directions are available for travel by car, MBTA Green Line Train or various MBTA buses. ◇

NESACS Election

Election of Candidates

In the interest of providing maximum information and expression of opinion by the candidates for election in 2006, the Nominating Committee has prepared this section of the NUCLEUS for mailing concurrently with the ballots. All candidates were asked to submit biographical material and, with the exception of committee member nominees, position statements. To attain uniformity of format, the biographical data have been rearranged, and, where the text exceeded the allotted space, abbreviated. The statements have been reproduced without change. An official ballot, along with a ballot envelope and return envelope have been provided. The election and balloting are being carried out in conformance with Article VIII of the Constitution of the Northeastern Section. The order of candidates for each office on the ballot will be determined by lot. Comments regarding the election may be addressed to the Nominating Committee Chair, Dr. Patricia Mabrouk (address on p.3).

The ballot must be received by May 31, 2007. ◇

New Members

Invitation to attend a meeting

You are cordially invited to attend one of our upcoming Section meetings as a guest of the Section at the social hour and dinner preceding the meeting.

Please call Marilou Cashman at 800-872-2054, 508-653-6329 or: Mcash(at)aol.com by noon of the first Thursday of the month, letting her know that you are a new member. ◇



NESACS Election

Election of Candidates 2007

Chair-Elect

E. Joseph Billo



Photo; Gary Gilbert/Boston College

Education and Experience: B.Sc. (1961), M.Sc. (1963), Ph.D. (1967), McMaster University; Postdoctoral Research Associate, Purdue University (1967-1969); Assistant Professor (1969-1974), Associate Professor (1974-2006), Department of Chemistry, Boston College; retired; consultant and author.

Northeastern Section ACS Activities: Member of ACS since 1969. Chemical Education Committee (1974-76, 1978-86, chairman 1982-86); Organizer of the Under graduate Research Symposium (1974-1976, 1978-1984); Nominating Committee (1981, 1991, 1993, 1994, 2002, 2006); James Flack Norris Award Committee (1985-88, chairman 1987); Esselen Award Committee (2001-05, chairman 2004); Alternate Councilor (1987-1995); Councilor (1996-1998); Budget Committee (1989-1991); Chairman-Elect and Program Chairman (1989); Section Chairman (1990); Continuing Education Committee (1990-present); Board of Publications (1994-2001, chairman 1996, 1998, 1999, 2000); 1990 National Meeting Committee Chairman, 1998 National Meeting Committee Chairman; Director-at-Large (1999-2001).

Statement: I have been active in Northeastern Section activities since 1973 and served as chair of the section in 1990. Why am I a candidate for chair again? Apparently the Nominating Committee couldn't find anyone else who was willing to appear on the ballot. Having been on the Nominating Committee several times in the past, I know how difficult it is to find people to agree to be candidates for elected positions. And therein lies the problem for our section: it's a large, well-run operation, but the same few dedicated people fill the elected and non-elected positions year after year. Our section needs a transfusion of new blood. Consequently, the primary task that I plan to tackle during my term as chair - man (as I write this in early March, I am the only candidate) will be to get more NESACS members involved in the operations of the section.

Our section currently has about 5000 members, yet less than 50 attend most of the monthly meetings. What can be done to attract greater numbers of members to these meetings? As program chairman, I will endeavor to stimulate attendance at monthly meetings by scheduling programs of wider general interest. Symposia, professional development programs and workshops have been successful in the past and often attract area chemists who are not members of the ACS. We should plan to schedule at least one of these each year. Encouraging and assisting the formation of subsections or interest groups, like the very active Medicinal Chemistry Group, is another way to involve more people in the Section. We need to find ways to foster greater involvement of members, both old and new, in the affairs of the section. I urge you to attend our meetings, volunteer to work on a committee, run for office – in short, get involved.

Secretary

Michael Singer

Education: B.S., State University of New York at Stony Brook (1986) ; M.S., Brandeis University (1988) ; Ph.D., Brandeis University (1993)

Professional Experience: Post-Doctoral Research Associate, Organix Inc. 1991-1994 ; Senior Scientist, ArQule Inc. 1994-1996 ; Group Leader, Automated Combinatorial Synthesis, ArQule Inc. 1996-2001; Group Leader, Drug Discovery Research and Development, Sigma-Aldrich, 2001-present

NESACS Service: Secretary-NESACS 1998-present; Councilor-NESACS 1996-2001, 2005-present; Alternate Councilor – NESACS 2002-2004; Board of Directors NESACS 1993-present; Medicinal Chemistry Group (MCG) 1991-2000; MCG Treasurer (1992-1993), Program Chair (1994) Chair (1995-1996)

ACS Service: ACS Joint Board-Council Committee on Chemical Abstracts Service ; Associate member 2004; Member 2005-2007; ACS Local Section Activities 2007

Statement: The traditional role of Secretary has been one of limited visibility. This was to take the minutes of the monthly meeting of the Board of Directors and to report back to the Board of Directors. During my tenure as Secretary for the NESACS, I have been able to increase the visibility of the Section Secretary and increase the efficiency of the position of Secretary. The biggest improvement is in communication by utilizing both E-mail and the section website (www.nesacs.org). As our website continues to undergo its upgrade, I intend to continue to work with the NESACS Webmaster to make the minutes of the NESACS Board of Directors available immediately after their approval by the Board. This empowers our membership to be aware of the current issues facing our section.

I have also instituted a process to collect and distribute written reports prior to the NESACS Board meetings. This enables our section committee chairs to submit a written report

instead of an oral report at the monthly meetings. This improves the efficiency of the monthly meetings by allowing the committee chairs to provide a more detailed report than can be given orally and permits more time for discussion during the monthly meetings. This also permits more accurate documentation and the creation of a permanent record (archive) for future use by NESACS members.

As with any volunteer organization, the organization is only as strong as the membership and those volunteer members that actively participate in the planning and execution of the various events. The strength of the NESACS lies in its membership. For the membership to be strong, communication is critical. With your support for another term as Secretary for the NESACS I will strive to increase the flow of communication between all facets of our section membership.

Trustee

Esther A. H. Hopkins

Retired from the position of Chief Bureau Counsel for the Bureau of Administrative Services to the Massachusetts Department of Environmental Protection

ACS Service: (past and present) Member and Secretary, Women Chemists Committee; Member and Secretary, Committee on Constitution and Bylaws; Member and Secretary, Committee on Committees; Chair, Committee on Professional Relations; Member, Committee on Nominations and Elections; Member, Council Policy Committee; Associate, Membership Affairs; Associate, Committee on Environmental Improvement

NESACS Service: (past and present) - Chair of Section (1983); Program Chair, (1982); Board of Directors, Trustee; Committee member of: Public Affairs, Awards, Long-range Planning, Budget, Program, Committee on Amending the Constitution and Bylaws (past-chair), Phyllis A. Brauner Memorial Lecture Committee.

NESACS Award: Henry Hill Award

for Outstanding Service to the Section, (1993)

Other: Currently serve as a member of the School Committee for the South Middlesex Regional Vocational Technical School in Framingham, Trustee of Boston University,

Board of Visitors for the Boston University School of Medicine, and on the Advisory Committee of the Metrowest Medical Center

Statement: I see the role of the Trustees as: Guiding and monitoring the investment of the endowment funds of the Section in responsible and growing areas; reserving a portion of the yield of these funds to increasing the corpus of the Trusts, considering not only the future programs and awards of the Section but also the effects of inflation on their basic value; Recommending the spending of the unreserved portion of the yield to further the aims of the donors of the funds who gave them into the keeping of the Section, and the aims of the American Chemical Society. I have a conserving philosophy relative to the funds of this non-profit organization and a sense of responsibility to the persons who have

made these funds available to us. I have a need to bring alive the programs and goals of the Section when matching the vigor of our members with financial resources that allows that to happen. I ask for your vote so that I may continue.

Councilor/ Alternate Councilor

Mukund S. Chorghade

Education: B.Sc. 1971; M. Sc. 1973 (1st Class Honors) University of Poona, India; Ph.D. (Organic Chemistry), 1982, Georgetown University

Professional Experience: Research Fellow, National Chemical Laboratory (1973-74); Instructor, Georgetown University (1981-82); Postdoctoral Research Assoc., University of Virginia (1982-84); Postdoctoral Research Fellow, Harvard University (1984-85); Senior Research Chemist (1985-89); Project Leader (1989-90), Dow Chemical Co.; Research Scientist/Assistant Director, College de France, Paris and Universite Louis Pasteur (1990-91);

We Focus on Doing Chemistry!

- FDA Inspected
- cGMP Synthesis
- Controlled Substances
- Custom Synthesis
- Small Lots Manufacturing
- Polymer Chemistry
- Process Development

Chemo Dynamics, LP

Contact: S. N. Bharathi, Ph.D.
3 Crossman Road South
Sayreville, NJ 08872
Phone: (732)721-4700
Fax: (731)721-6835
www.chemodynamics.com
E-Mail: info@chemodynamics.com

Project Manager, Abbott Laboratories, Pharmaceutical Research (1991-95); Senior Director, Chemical Sciences Research & Development, CytoMed, Inc. (1997-98); President, CP Consulting, Chorghade Enterprises (1995 to present); Visiting Scholar, University of British Columbia, University of Chicago, Northwestern University, Caltech, Cambridge University; Vice President, Pharmaceutical Development Sciences, Geltex Pharmaceuticals / Genzyme, (2000 to 2003); President and Chief Scientific Officer, Pharmaceutical Sciences Division, D & O Pharmachem (2003-present), CSO & CTO, THINQ Pharma (2006-), Founder and CTO, Ascent Therapeutics (2006-), Director, MS Program in Drug Discovery and Development, Mass. College Of Pharmacy (2006-)

ACS Service: Member since 1982. Chair, Brazosport Section (1990); Organic Division, member; Chairman, Symposium on Industrial Chem., Great Lakes Meeting, May, 1997; Visiting Speakers Program (1999 to present); Department of Career Services Consultant (2000 to present); Member, International Activities Committee (2003-present)

NESACS Service: Board of Directors (1997-), Public Services Committee, Chair; Professional Services Committee, member and chair (2005-); Public Affairs Committee; Public Relations Committee, Interim Editor, The Nucleus (2004), NESACS Chair-elect (2006), Chair (2007-)

Memberships, Honors: Maharashtra Academy of Sciences (Elected Fellow); Andhra Pradesh Academy of Sciences (Elected Fellow) IUPAC; Royal Society of Chemistry (Elected Fellow); New York Academy of Sciences; American Institute of Chemists (Elected Fellow); AAAS; Sigma Xi; Indian Society of Bio-Organic Chemists; IUPAC Commission on Biotechnology, Medicinal Chemistry, New Technologies and Special Topics, Titular member, Division of Chemistry and Human Health; 20th IUPAC Conference on the Chemistry of Natural Products, Chicago, 1996; Chair, Scientific Programs Comm., on Advisory

Board for Organic Process Research and Development, *Chimica Oggi*; Member, Committees on Advanced Professional Thinking, International Activities and Technology, American Institute of Chemists. Awarded "Diamond Jubilee Fellowship", Univ. Dept. of Chemical Technology, Mumbai, India, Awarded "B.D. Tilak Distinguished Visiting Fellowship", University of Bombay, India. Awarded "Bharat Gourav" Award, Government of India. "Alkyl Amines Padma Bhushan Prof. B.D. Tilak Chemcon 2002 Distinguished Speaker Award". Listed in American Men and Women of Science, Who's Who in Science and Engineering Invited speaker at numerous international conferences

Statement: It is a singular honor and privilege to have been nominated to the position of Councilor / Alternate Councilor for the Northeastern Section.

It will be my endeavor to effectively represent the Northeastern section effectively in the National Council. The issues confronting the Chemical Enterprise in the USA and the ACS are complex and demand creative solutions. I will spare no effort in ensuring that the voice of our electorate is heard and that the council determines effective policies for all our members. My extensive experience in NESACS and National ACS governance has given me the necessary background to effectively represent the section

David Cunningham

Education: Yale University, New Haven, CT, Postdoctoral Research, 2001; University of Rhode Island, Kingston, RI, Ph.D., Chemistry, 1999; Boston University, Boston, MA, B.A., Chemistry (ACS), 1984.

Professional Experience: University of Massachusetts at Lowell, Lowell, MA, Adjunct Professor; Merrimack College, North Andover, MA, Adjunct Professor; Mass Bay Community College, Wellesley, MA, Adjunct Professor, Northeastern University, Boston, MA, NSF-funded Research Experiences for Teachers program; Boston University, Boston, MA, Instructor; Brattleboro Union High School, Brat-

tleboro, VT, Teacher.

ACS Service: ACS member for 18 years; Journal of Chemical Education reviewer for print, video and electronic publications for 5 years.

NESACS Service: Current Board of Publications voting member; Norris Flack Speaker's Bureau member; Assistant Webmaster.

Position Statement: My mission as councilor will be to understand and represent the interests of our sections members in an effective, professional and thoughtful manner, while promoting innovation and growth. Through effective communication with section members, prospective members, and educational and industrial leaders we can build a productive and influential ACS, while honoring the diverse needs and desires of our members.

I will apply my strengths as an active listener, communicator, and mission-focused team builder to grow and promote our section at the national level, and our society as a whole. Our section can be an example of innovation applied to support education, government, and industry. I will apply my knowledge of technology, and my curiosity of developing technologies to lead our society into the future. The future of chemistry is fundamentally intertwined with other sciences and technologies. I will apply my experience in interdisciplinary sciences to support integrated scientific education, research, and industry. Chemistry is the central science. Multidisciplinary science is the frontier of research. I will lead the ACS into this future with a firm understanding of the importance of sound chemistry as a unifying theme. I want to support the section and the society as a councilor. Your vote will make a difference.

Vote for me to be heard, for innovation, and to support the preeminence of the American Chemical Society as the leading scientific professional organization in the world.

Timothy B. Frigo

Education: B.A. (Chemistry), Lawrence University (1982); Ph.D. (Organic Chemistry), University of

Wisconsin-Madison (1988)

Professional Experience: Post-Doctoral Research Assoc., Massachusetts Institute of Technology (1988-90); Post-Doctoral Research Assoc., Boston University Medical Center (1990-92); Senior Scientist, Advanced Magnetics, Inc. (1992-2006); Associate Research Director, Advanced Magnetics, Inc., (2007-present)

ACS Service: Member since 1982.

NESACS Service: Chair-elect, Chair, Past-chair succession (2000-2002); Alternate Councilor (2002-2007); Medicinal Chemistry Group Program Chair, Chair (1999-2004)

Statement: I am honored to be nominated for the office of councilor of NESACS. I have been involved with the ACS at the local level since 2000, and have found it to be a generally rewarding experience, through new relationships, and new ideas about how chemistry can positively impact our lives. By serving as councilor I wish to continue my involvement with the local section to help further their goal of impacting the region for the chemical sciences in a positive way. I also pledge to represent our Section at the national level through attendance at national ACS meetings and participation in local Section board meetings and activities. Thank you for your vote.

Mark Froimowitz

Education: B.S. Chemistry, Brooklyn College, 1968; Ph.D. Physical Chemistry, New York University, 1972.

Professional Experience: Post-doctoral fellowship, Brandeis University, 1972-73; postdoctoral fellowship, New England Medical Center Hospitals, 1973-74; applications analyst, Massachusetts Institute of Technology, Cambridge, 1974-76; Instructor, University of Lowell, 1976-77; Assistant Biochemist, McLean Hospital, 1977-86; Research Associate in Psychiatry (Psychobiology), Harvard Medical School, 1977-79; Instructor, Department of Psychiatry (Psychobiology), Harvard Medical School, 1979-87; Lecturer, Department of Chemistry, Tufts University, 1986; Associate Biochemist,

McLean Hospital, Belmont, MA, 1987-93; Assistant Professor, Department of Psychiatry (Molecular Pharmacology), Harvard Medical School, 1988-93; Senior Scientist, Molecular Design, Pharm-Eco Laboratories, 1994-98; Scientific Fellow, Pharm-Eco Laboratories, 1998-02; Research Professor of Chemistry, Massachusetts College of Pharmacy and Health Sciences, 2002-

Memberships and Honors: American Association for the Advancement of Science, 1972-; American Chemical Society, 1978-; Quantum Chemistry Program Exchange, 1978-; Medicinal Chemistry Group of the Northeastern Section of the American Chemical Society, 1978-; International QSAR Society, 1993-; Society for Neuroscience, 1994-; Boston Area Neuroscience, 1998-; The College of Problems in Drug Dependence, 2005-

Research Interests: Molecular modeling using molecular mechanical and quantum mechanical methods; conformational analysis using experimental and theoretical methods; and the design and synthesis of pharmacological compounds with dopamine and

opioid activities. About 60 publications and 7 issued patents

ACS Service: Secretary-Treasurer, Medicinal Chemistry Group of the NEACS, 1981-82; Program Chairman, Medicinal Chemistry Group of the NEACS, 1990; Chairman, Medicinal Chemistry Group of the NEACS, 1991.

Thomas R. Gilbert

Education: Clarkson College of Technology, B.S., (1968); Massachusetts Institute of Technology, Ph.D., (1971).

Current Position: Associate Professor of Chemistry and Education, Northeastern University.

Service in ACS: (National) Council Committee on Meetings and Expositions (M&E), (1995-2000); Chair of Sub-Committee on Site Selection, (1997-99); Chair of M&E, (2000); Council Committee on Nominations and Elections (N&E), (2001-06), Task Force on Election Procedures, Chair, (2002-04); Vice-Chair of N&E, (2004-06); Council Policy Committee (2007-); (Divisional): 46th Annual Summer Symposium on Analytical



Eastern Scientific

301 Winter Street
Hanover MA 02339

781-826-3456

Vacuum Pump Problems?

Eastern Scientific
specializes in the repair and
precision rebuilding of all
makes of mechanical
vacuum pumps.

*Free pick-up & delivery
Restrictions apply*



Chemistry, Co-Chair Organizing Committee, (1993); (Northeastern Section): Alternate Councilor, (1987–89); Program Chair, (1987); Chair, (1988); Nominations Committee Chair, (1989); Councilor, (1990–2004); NERM–23, General Chair, (1993); Centennial Celebration, Program Chair, (1998).

Position Statement: As any incumbent should, I'm running on my record. A Councilor's job is more than voting on action items as they come up at Council meetings. It's about being involved in crafting those items before they're voted on. To do that a Councilor needs to be a leader of an appointed (such as M&E) or an elected (e.g., N&E) Council committee. As my service record shows, I have taken on those leadership roles. I've chaired committees, sub-committees and task forces that, for example, selected the sites for national ACS meetings, put the finances of those meetings in order, developed slates of candidates for ACS president, and developed electronic balloting procedures for national, sectional and divisional elections that will facilitate participation and decrease cost. What's next? The ACS needs to do an even better job of serving its members more cost effectively. Information technology gives us the ability to customize the delivery of services to meet individual member's needs. ACS could provide its members access to the results of research or information on career planning and professional development that most directly benefits each of them. Designing and implementing such an individualized access system will take planning and effective leadership. Our section has a fine tradition of providing the ACS with effective leaders. I seek your support in carrying on that tradition.

Robert L. Lichter

Born: 1941

Academic Record: Harvard University, A.B. cum laude, 1962; University of Wisconsin, Ph.D., 1967.

Honors: Fellow, American Association for the Advancement of Science, 1995; Fellow, Association for Women in Science, 2004; American Council on

Education Leadership Training Fellowship, 1983; National Science Foundation Science Faculty Professional Development Award, 1981; National Research Council Travel Awards, 1975, 1977; National Institutes of Health Postdoctoral Fellowship, 1967-68; National Institutes of Health Predoctoral Fellowships, 1962-66. Professional Positions (for past ten years): Principal and Co-founder, Merrimack Consultants, LLC, 2002 to date; Executive Director, The Camille and Henry Dreyfus Foundation, Inc., 1989-02.

Service in ACS National Offices: Committee on Science, 1996-03, Committee Associate, 1996, Consultant, 2003; Committee on Minority Affairs, 1997-06, Committee Associate, 1997-98, ACS Scholars Program Subcommittee, 1998-present; Committee on Budget and Finance, 2004-present, Committee Associate, 2003, Subcommittee on Program Funding Requests, 2004-present, B&F Advisory Committee, 2005-2006; Advisory Board, Chemical & Engineering News, 1998-06; Chair, ACS Board of Directors ad hoc Implementation Project on Minorities in Academia, 2003-06; Canvassing Committee, ACS Award for Research in an Undergraduate Institution, 1997-99, Chair, 1999; Graduate Education Advisory Board, 2002-2006; ACS Board Task Force on Percy Julian, 2006-present Service in ACS Offices: Member ACS since 1962. **Northeastern Section:** Chair, NESACS Planning Committee for Fall 2007 National ACS Meeting, 2006-present; Chair, NESACS ACS Scholars Committee; Georgia Section: Chair-Elect, 2004; Chair, 2005. **North Jersey Section:** Analytical NMR Topical Group, Chair, 1982-83. Member: American Association for the Advancement of Science; Association for Women in Science, ACS Divisions: Organic Chemistry; Chemical Education.

Related Activities: American Association for the Advancement of Science, Section on Chemistry: Chair-Elect, 2000-01, Chair, 2001-02, Retiring Chair, 2002-03, Secretary, 2004-08; Association for Women in Science: member, AWIS Fellows Selection Committee, 2006; Sigma Xi:

Public Understanding of Science Committee, 2004-2005; New York Academy of Sciences: Committee on Science Education, 1991-95, Vice Chair, 1993-94, Chair, 1994-95; National Conferences on Undergraduate Research: Board of Governors, 1992-98, Chair, 1994-96; Gordon Research Conference on Innovations in College Chemistry Teaching (now called Chemical Education Research and Practice): Vice Chair, June 1999, Chair, January 2001; National Research Council Chemical Sciences Roundtable: 1996-2000, Steering Committee, 1996-99; NSF Committee on Equal Opportunities in Science and Engineering: member, 2003-08, Vice Chair, 2004, Chair, 2005; NSF Advisory Committee on Environmental Research and Education: member, 2003-06; NSF Advisory Committee on GPRA Performance Assessment: member, 2006-present; NSF Committee of Visitors, National STEM Digital Library, 2005; New York Hall of Science: member, Board of Trustees Advisory Council, 1994-96, 1998-2002; member or chair of >15 external advisory or visiting committees on behalf of academic institutions, the National Science Foundation, and other organizations; member of >20 review panels for NSF, National Institutes of Health, National Research Council; Magnetic Resonance in Chemistry, editorial board, 1983-87; Concepts in Magnetic Resonance, Editor, 1989-94; State University of New York at Stony Brook, Vice Provost for Research and Graduate Studies, 1986-89; Research Corporation, Program Officer, 1983-86; Sandoz Pharmaceutical, Exxon Research and Engineering Co., Visiting Scientist, 1981-82; Experimental NMR Conferences, Inc., Executive Committee, 1979-85, Treasurer, 1981-85; Hunter College of the City University of New York, Chemistry Department, Assistant Professor, Associate Professor, Professor, 1970-83, Department Chair, 1977-82; California Institute of Technology, Research Associate, 1968-70; Technische Hochschule Braunschweig, Germany, NIH Postdoctoral Fellow, 1967-68; Research publications: 38 research

articles, three monographs, one book chapter; Other publications: many articles and book chapters on education and policy.

Statement: I am honored to be nominated for NESACS ACS Councilor. The Council is the voice of the membership in ACS governance, whose multi-dimensional diversity and views significantly shape ACS priorities as it strives to serve its membership and the profession ever better.

One of the oldest and largest Local Sections, in a location whose intellectual and professional strength is exceeded by none, NESACS deserves a leadership role in ACS. As an active ACS member for ca. 44 years, and a participant in numerous ACS committees and other national activities detailed on my biographical sketch, I understand very well how ACS functions.

My overarching approach to doing business is that collaborations leverage accomplishment, exploit strengths, and allow the broadest array of talent to advance our profession. Examples include collaborations among the different sectors of the chemical enterprise; collaborations among students, faculty members, and administrators; collaboration between Local Sections and the national operation; and collaborations between ACS and other national and international organizations.

Creating, identifying, and engaging the most talented individuals, and advancing them into positions of leadership within ACS continues to be my prime objective. That is why I have been active in the ACS Committee on Minority Affairs and, since joining NESACS, begun working with the ACS Scholars in the NESACS region. I have also been involved with COACH, the Committee for the Advancement of Women Chemists.

I am also convinced that chemistry professionals can be the best advocates for our profession, and therefore need to develop better communications skills, not only toward scientific colleagues, but also toward the several components of the general public. Currently, I am a member of the advisory committee to the ACS Office of Com-

munications Strategic Plan, which will result in a more comprehensive approach to enabling members to hone these skills.

Developing the next generation of chemists is of paramount importance to all of us. My own experience, that of others, and some research evidence reinforces the notion that student participation in actual research at the earliest possible stages is one of the most effective ways to attract new people into the chemical sciences. I want to work toward having ACS create or at least facilitate these opportunities for pre-college students, undergraduates in two- and four-year colleges, and middle and high school teachers. Available evidence suggests that students whose teachers participate in research do better in science than those of teachers who do not.

Finally, although the chemical workforce and its leadership comprise people at all degree levels, advanced degrees are still required for many positions. Because graduate (especially doctoral) education is more than research training, graduate students need to learn a variety of skills, includ-

ing those in management, communication, and business, if they are going to exploit the array of career opportunities open to them and eventually move into leadership positions. ACS has a leadership role to play in this arena.

For all these reasons, and more, I look forward to serving you as a Councilor, and welcome your support.

Pamela M. Nagafuji

Education: University of California, San Diego, B.S. (1989); Purdue University, Ph.D. (1997)

Professional Experience: Cytel, LaJolla, CA (1989-1991); Johnson Matthey Pharma Services, Devens, MA (1998-2001); Daiamed, Cambridge, MA (2001-2005); MCPHS, Boston, MA (2006); Suffolk University, Boston, MA (2006); Creagen, Woburn, MA (2005-present).

NESACS Service: Medicinal Chemistry Group Program Chair (2001) and Chairperson (2002-2004). NESACS Alternate Councilor and Councilor (2005-2007). National ACS Committee on Science, Associate (2007).

Member: ACS since 1989.

Statement: I have represented the



iQsynthesis
INNOVATION | QUALITY

Custom Synthesis Services
iQsynthesis, formerly Gateway Chemical Technology, provides customized chemical synthesis at milligram to kilogram quantities.

- Active Pharmaceutical Ingredients
- Analytical Reference Standards
- Precursors and Intermediates
- Degradants and Metabolites
- Agrochemicals
- Bio-organic Molecules
- Chiral Synthesis
- Combinational Platforms
- Process Development

iQsynthesis
11810 Borman Drive
St. Louis, MO 63146
314-991-1857
1-800-506-9892
www.iqsynthesis.com
info@iqsynthesis.com

Medicinal Chemistry Group and NESACS chemists involved in the pharmaceutical and biotechnology industry at the monthly board meetings. The NESACS Medicinal Chemistry Group has provided a technical forum for area scientists to present research accomplishments. In this capacity the group has provided NESACS chemists with a vehicle for professional collaborations, for membership involvement in the section, and for professional development. I support all such ACS activities that encourage positive public visibility and recognition of chemists with an emphasis on those which highlight outstanding technical achievement. Recently, I have become an associate member of the national ACS Committee on Science. Through this capacity, and if re-elected as a NESACS councilor, I will help to advance programs that encourage interdisciplinary research, career development, and public scientific recognition of our section's chemists. Providing resources that reflect the needs of the membership demographics will induce membership growth and participation. By working towards these goals I hope to help evolve new programs and services, and to continue my involvement on national ACS committees to ensure our members receive value from our organization.

Eriks Rozners

Education: Chemical Engineer 1990, Ph.D. 1993, Riga Technical University, Riga, Latvia.

Professional Experience: Postdoctoral Research Associate, Stockholm University (1994-1996) and Karolinska Institute (1996-1997), Stockholm, Sweden, University of Wisconsin, Madison (1997-1999) and University of Michigan (1999-2000); Assistant Professor, Northeastern University (2001 – present).

Statement: I am very honored by the nomination for the position of NESACS councilor. As a relatively new member of ACS, I am looking forward to get involved in NESACS activities and serve the local community of

chemists. If elected, I will be happy to represent the Northeastern Section in the National Council. As an ACS member I have focused on providing mentoring and research experiences in chemistry for a broad range of undergraduate students of different majors. I believe it is important to popularize chemistry among young professionals and to expand the collaborations across the disciplines. I look forward serving these ideas as a councilor and ask for your support and vote.

Michael Singer

Education: B.S., State University of New York at Stony Brook (1986); M.S., Brandeis University (1988); Ph.D., Brandeis University (1993)

Professional Experience: Postdoctoral Research Associate, Organix Inc. 1991-1994; Senior Scientist, ArQule Inc. 1994-1996; Group Leader, Automated Combinatorial Synthesis, ArQule Inc. 1996-2001; Group Leader, Drug Discovery Research and Development, Sigma-Aldrich, 2001-present.

NESACS Service: Secretary-NESACS 1998-present; Councilor-NESACS 1996-2001, 2005-present; Alternate Councilor – NESACS 2002-2004; Board of Directors NESACS 1993-present; Medicinal Chemistry Group (MCG) 1991-2000; MCG Treasurer (1992-1993), Program Chair (1994) Chair (1995-1996)

ACS Service: ACS Joint Board-Council Committee on Chemical Abstracts Service; Associate member 2004; Member 2005-2007; ACS Local Section Activities 2007

Statement: The Northeastern Section of the American Chemical Society has over 6000 members. Our collective voice needs to be heard. During my tenure as Councilor and Alternate Councilor for the NESACS I have had the opportunity to bring that voice directly to the attention of the national officers and staff of the American Chemical Society. Maintaining open communication between the local and national officers of the ACS is critical to the growth of our professional organization. I am currently an associate member to the ACS Local Section

Activities Committee where I hope to bring my experience as a member of the Northeastern Section to the national level. In return, learn the best practices of other local sections and being them back home, to our section, with an eye towards new programs and opportunities for our section members. I am also on the Committee of Chemical Abstract Services (CCAS). As your local elected representative to the National ACS Council I would hope that you would send any concerns and issues to me so I may direct them to the appropriate offices of the ACS. With your support and vote I pledge to continue to work as a voice for the local membership.

Director-at-Large

Laila Dafik

(withdrawn)

Stephen Lantos

Education: B.S., University of Michigan (1984); M.A., Tufts University (1988), Graduate level chemistry coursework at Hope College, Holland MI and Manhattan College, New York, NY.

Professional Experience: Chemistry Teacher, Brookline High School (past 22 years).

Honors: Northeastern Section's *Aula Laudis* Award for Excellence in HS Chemistry Teaching (1991); National Science Foundation grant for summer study; Newell Grant for summer study; Teacher of the Year Award (2002), presented by NEST (Network of Educators in Science and Technology) Caverly Award, Brookline Teacher of the Year (2003), Richards Teaching Award, NESACS (2004), Japan Memorial Fulbright Fund for study in Japan, 2006.

Statement: I have been very active in education and leadership roles both regionally and nationally since joining the ACS in 1990, and feel that I share greatly with both local and nationwide committees. As author of the annual Avery Ashdown high school chemistry exam since 1990 and Chairperson, HS

Education Committee, NESACS since 1996, I've delegated the administration of this section-wide exam with success. My role on the NESACS Board of Directors concerns high school programs throughout the section. More recently, I have served as Coordinator for the United States National Chemistry Olympiad (USNCO) to the section and organized the High School Day Program at the National Meeting in Boston 2002 and will again for Boston 2007 Meeting. I currently serve as Chair of the Laboratory Practical Task Force with the responsibility of designing and writing the lab portion of the USNCO each year. I served in an elected position as Alternate Councilor, NESACS, 1997-1999, attending national meetings and education committees. It would be my honor to serve as Director-At-Large and hope you'll consider my experience, involvement, and dedication to NESACS with your vote. Thank you. As an educator, I care deeply about chemical education and awareness. If elected, I will continue to be active and involved in chemical education within the Section and look to increase our participation and involvement at the national level.

Nominating Committee

David Cunningham

Education: Yale University, New Haven, CT, Postdoctoral Research, 2001; University of Rhode Island, Kingston, RI, Ph.D., Chemistry, 1999; Boston University, Boston, MA, B.A., Chemistry (ACS), 1984.

Professional Experience: University of Massachusetts at Lowell, Lowell, MA, Adjunct Professor; Merrimack College, North Andover, MA, Adjunct Professor; Mass Bay Community College, Wellesley, MA, Adjunct Professor, Northeastern University, Boston, MA, NSF-funded Research Experiences for Teachers program; Boston University, Boston, MA, Instructor; Brattleboro Union High School, Brattleboro, VT, Teacher.

ACS Service: ACS member for 18 years; Journal of Chemical Education

reviewer for print, video and electronic publications for 5 years.

NESACS Service: Current Board of Publications voting member; Norris Flack Speaker's Bureau member; Assistant Webmaster.

Jerry P. Jasinski

Education and Honors: B.A., M.S.T., University of New Hampshire (1964, 1968); M.N.S., Worcester Polytechnic Institute (1968); Ph.D., University of Wyoming (1974); 1st Recipient of the Keene State College Award for Faculty Distinction in Research and Scholarship (2001).

Professional Experience: Keene State College: Assistant Professor (1978-83), Associate Professor (1983-89), Professor (1989-), Chair, Department of Chemistry, (1999-). University of Virginia: Post Doctoral Research Associate (1974-75). Los Alamos Scientific Laboratory: AWU Pre-Doctoral Research Associate (1973-74), High School Chemistry/Physics Teacher (1964-70, 1975-78). American Institute of Chemists (AIC-Board of Directors 1999-01; 2007-09): (New England Institute of Chemists, NEIC, Treasurer, 1988-). Over 120 papers in chemical research journals.

Research and Interests: Physical-Inorganic Chemistry; Synthesis and X-ray crystallography of laser dye molecules and transition metal thiosemicarbazones. Co-developer of a web-based tutorial entitled "Symmetry and Space Groups". Introduction of Process Oriented Guided Inquiry Learning (POGIL) techniques into the chemistry curriculum.

ACS Service: Member since 1970. Member of INOR division. NESACS: Nominating Committee (2000-01), Alternate Councilor (2007-2009).

Memberships: American Chemical Society (ACS), American Crystallography Association (ACA), New England Institute of Chemists (NEIC), Council for Undergraduate Research (CUR), New England Association of Chemistry Teachers (NEACT).

Statement: Since joining the ACS in 1970, I have had only limited opportunity to serve while enjoying the many

benefits offered. My experience at the undergraduate level in both teaching and research should serve as a catalyst and refreshing viewpoint as a member of the nominating committee if elected. As a prior member of the nominating committee (2000-01) I would hope to continue to bring my expertise in this area to the section and provide added leadership to this important committee of the Northeastern Section of the American Chemical Society.

Pamela M. Nagafuji

Education: University of California, San Diego, B.S. (1989); Purdue University, Ph.D. (1997)

Professional Experience: Cytel, LaJolla, CA (1989-1991); Johnson Matthey Pharma Services, Devens, MA (1998-2001); Daiamed, Cambridge, MA (2001-2005); MCPHS, Boston, MA (2006); Suffolk University, Boston, MA (2006); Creagen, Woburn, MA (2005-present).

NESACS Service: Medicinal Chemistry Group Program Chair (2001) and Chairperson (2002-2004). NESACS Alternate Councilor and Councilor (2005-2007). National ACS Committee on Science, Associate (2007).

Member: ACS since 1989.

Dorothy J. Phillips

Academic Record: Vanderbilt University, B.A., 1967; University of Cincinnati, Ph.D., 1974.

Honors: Northeastern Section Henry A. Hill Award, 2006; Unsung Heroine Award, Vanderbilt University, 2006; Nashville Section of ACS Salute to Excellence Award, 2004; Honored by TTT Mentor Program of Cambridge, MA, "Minority Role Models in Science, Mathematics, Technology and Engineering", 2004-05; Sigma Xi; Distinguished Alumni, University of Cincinnati, awarded by both McMickens College of Arts and Sciences and Center for Women Studies.

Professional Positions: (past 10 years): Waters Corporation, 1984 to date; Director, Strategic Marketing, 2006; Director, Clinical Marketing, 2004-06; Director New Business

Development, 2003-04; Director, Strategic Program Management, 2000-02; Brand Manager, 1997-99.

Service in ACS National Offices: Committee on Divisional Activities, 2007; Committee on Committees, 2001-06, Secretary, 2003-04, Industrial Pipeline Sub-Committee Chair, 2005-06; Committee on International Activities, Committee Associate, 1998; Committee on Membership Affairs, 1997-00, Committee Associate, 1996.

Service in ACS Offices: Member ACS since 1973. Northeastern Section: Councilor, 1995 to date; Chair, 1993; Chair-Elect and Program Chair, 1992; Project SEED, Committee Chair, 1994-95; Nominating Committee, Chair, 1994; Centennial Celebration, Co-chair, 1998; Fundraising Committee, Chair, 2004-07.

Member: The American Society of Mass Spectrometry; American Association of Pharmaceutical Scientists; National Organization for the Professional Advancement of Black Chemists and Chemical Engineers; ACS Divisions: Agrochemicals; Analytical Chemistry and Biological Chemistry.

Related Activities: Candidate, Director-at-Large for the ACS Board, 2006 and Director District I, 2003; Established Waters' sponsorship of the Division of Analytical Chemistry Distinguished Service Award; Spear-headed Waters sponsorship of the Frank H. Field and Joe L. Franklin Award for Outstanding Achievements in Mass Spectrometry and the ACS Award in Separation Science and Technology; Delegate with the People to People Ambassador Program to China in 1990 and 2004; Approximately 70 publications and presentations in the field of analytical chemistry with a focus on HPLC.

Esselen Award Committee

Charles E. Kolb

S.B. Chemistry, MIT; MA, Ph.D., Physical Chemistry, Princeton U.

President/CEO Aerodyne Research, Inc., Billerica, MA 1985-present.

NESACS Activities: Chair-elect

(1990), Chair (1991), Trustee (1994-1996), Richards Medal Committee (member, 1998-2004, chair, 2005-2006), Henry A. Hill Memorial Award, 2005.

National ACS Activities: Committee on Environmental Improvement (associate 2001-2002, member 2003-2004, vice-chair 2005, chair 2006-) and Award for Creative Advances in Environmental Science and Technology (1997)

Sean (Xiangjun) Lu

Education: B.S., Medicinal Chemistry, Beijing Medical University, 1985; Ph.D., Bio-organic Chemistry, University of Utah, 1992; Postdoctoral Research Associate, Brown University, 1992-94

Professional Experience: Senior Synthesis Chemist, RBI, 1994-97; Senior Scientist, Sigma-RBI, 1998-2000; Team Leader, Sigma-Aldrich Natick 2001-present

Arthur S. Obermayer

Dr. Arthur S. Obermayer received his BA in chemistry from Swarthmore College and his Ph.D. in chemistry from MIT in 1956. He is president of Moleculon Research Corp., a company he founded in 1961 and which maintained chemical R&D facilities in Cambridge through 1988. He also was president of its operational pharmaceutical spin-off, Moleculon Bio-Tech, Inc., from its start in 1982 to its sale in 1988. He was chairman of the NESACS in 1982 and on its board of trustees from 1984 to 1986 (including its chair). In February 1985, he suggested to Gustav Esselen III that he sponsor an award in memory of his father for chemistry in the public interest, and subsequently helped formulate the Esselen Awards, and was chair of the first Esselen Award committee. He initiated the NESACS website in 1996 and was its first webmaster.

When he originally suggested an award for chemistry in the public interest, his hope was that the awards would show the world the important contributions of chemistry to society. As a member of the Committee, he

would emphasize strengthening communications with the general news media so the awards would receive more extensive news coverage. Dr. Obermayer is currently on the Board of Overseers of WBUR and on the Advisory Board of the MIT Museum.

Alfred Viola

Education: BA, MA, Johns Hopkins University; Ph.D., University of Maryland.

Professional Experience: Boston University, Research Associate, 1955-57; Northeastern University: 1957-62 Asst. Prof., 1963-68 Assoc. Prof., Professor 1968-97, Prof. Emeritus 1997-present; Visiting Professor University of Munich, Germany, 1977, and Monash University, Melbourne, Australia, 1984; Visiting Scholar, Wellesley College, 1992-.

Northeastern Section: Alternate Councilor 1963-68, Councilor 1986-88, Alternate Councilor 1990-97, Councilor 1998-2000, Alternate Councilor 2001-present; Norris Award Selection Committee 1979-86 (Chair 1981 and 1985); Continuing Education Committee 1989-present, (Co-Chair 1989, Chair 1990-present); Nominating Committee 1998. Henry A. Hill Award (1996) for Distinguished Service to the Northeastern Section

Richards Medal Committee

Peter A. Jacobi

(No statement submitted)

Barry L. Karger

Barry L. Karger received his B.S. in Chemistry from MIT in 1960 and his Ph.D. in Analytical Chemistry from Cornell University in 1963. In 1963, he was appointed an Assistant Professor of Chemistry at Northeastern University, Boston, MA, attaining Full Professorship in 1972. In 1973, he founded the Institute of Chemical Analysis, Applications and Forensic Science. In 1983, the name was changed to the Barnett Institute of Chemical and Biological Analysis with a generous endowment gift from Lou

Barnett and his family. The Institute, a leading international bioanalytical research center, now has a major focus in proteomics. Prof. Karger has been the Director of the Institute since its inception. In 1985, through a generous gift of Jim and Faith Waters, Professor Karger was appointed the first holder of the James L. Waters Chair in Analytical Chemistry. Professor Karger has been an active researcher with over 300 publications in the field of separation science, with particular emphasis in liquid chromatography and capillary electrophoresis. He also is the holder of 35 patents in these fields, a number of which have been commercialized. With Lloyd Snyder and Csaba Horvath, he is the co-author of *An Introduction to Separation Science*, the leading graduate textbook in the field for a number of years. He has trained more than 150 students at the Ph.D. and postdoctoral levels. Research interests have focused on bioanalysis, including the development of HPLC and high performance DNA separation. His laboratory developed polymer matrices that were used for DNA sequencing in the Human Genome Project. His recent interest is in the development of new technologies for proteomics, especially trace level LC/MS analysis of proteins in biological matrices. At present, he has a major focus on cancer biomarker discovery in blood and tissue. These efforts involve LC/MS and global generation of monoclonal antibodies.

Dr. Karger has received numerous honors, including 3 American Chemical Society National Awards (Chromatography–1982, Analytical Chemistry–1990, and Separation Science–1998), and international awards – AJP Martin Medal (England, 1991) and Halasz Medal (Germany, 2003) and the Michael Widmer Award (Switzerland, 2004).

Daniel G. Nocera

Daniel G. Nocera is the W. M. Keck Professor of Energy at the Massachusetts Institute of Technology and he is widely recognized as a leading researcher in renewable energy at the

molecular level. Nocera studies the basic mechanisms of energy conversion in biology and chemistry with primary focus in recent years on the photogeneration of hydrogen and oxygen from water. Nocera's research in energy conversion has been featured on the nationally broadcast television programs, *ABC Nightline* and *PBS NOVA* in the US and *Explora* in Europe and radio shows such as *NPR*. He developed the pilot that was used to begin the new PBS science program *ScienceNow* and his *PBS NOVA* show was nominated for a 2006 Emmy Award. Nocera has been awarded the Italgas Prize (2005), the IAPS Award (2006) and the Burghausen Prize (2007) for his studies in renewable energy.

Nocera (born 3 July 1957) received his early education at Rutgers University where he was a Henry Rutgers Scholar, obtaining a B.S. degree in 1979 with Highest Honors. He moved to Pasadena, California where he began research on the electron transfer reactions of biological and inorganic systems with Professor Harry Gray at the California Institute of Technology. After earning his Ph.D. degree in 1984, he went to East Lansing, Michigan to take up a faculty appointment at Michigan State University. He joined the faculty of the Massachusetts Institute of Technology as a Professor of Chemistry in 1997. Nocera has supervised 85 Ph.D. graduate and postdoctoral students, published 225 papers, given over 400 invited talks and 22 named lectureships. Nocera has worked with the Presidents of five universities to set up energy initiatives at their institutions.

Dagmar Ringe

Harold and Bernice Davis Professor in Aging and Neuro-degenerative Disease, Department of Biochemistry and Department of Chemistry and Rosentiel Basic Medical Sciences Research Center, Brandeis University; Adjunct Professor, Department of Neurology and Center for Neurologic Diseases, Brigham & Women's Hospital and Harvard Medical School; Associate Member, Tufts-NEMC Cancer Center

Professor Ringe's research interests range from structural studies of enzyme mechanisms to the basis of molecular recognition to the biochemistry of neurodegenerative diseases. She has made important contributions in the areas of bioinformatics and rational drug design. Her primary research tools are: protein X-ray crystallography, computational biophysics, site-directed mutagenesis, organic synthesis and enzyme kinetics. She invented the method of solvent mapping of protein binding surfaces that has been adopted in the pharmaceutical industry, and was one of the first scientists to develop structural enzymology.

Dr. Ringe received her Bachelor's Degree in Chemistry from Barnard and her Ph.D. with George Hein from Boston University. After postdoctoral training with Hans Zachau in Munich, she worked in synthetic organic chemistry with Professor John Sheehan at MIT. While teaching at MIT she returned to bio-chemical research. In 1990 she was appointed Associate Professor in the Departments of Biochemistry and Chemistry at Brandeis University; promoted to full Professor in 1995. In 2006 she was given the Harold and Bernice Davis Professorship in Aging and Neurodegenerative Disease.

She has received numerous awards, including the Margaret Oakley Dayhoff Award of the Biophysical Society; a Guggenheim Foundation Fellowship; together with Professor Gregory Petsko an award from the McKnight Endowment for Neuroscience and the Abram L. Sachar Award at Brandeis University. She is a Fellow of the American Association for the Advancement of Science and has received an Alexander von Humboldt Research Prize.

Dr. Ringe is a co-founder of ArQule, Inc. of Woburn, Massachusetts, and has served on the boards of several biotechnology companies, including Thrasos Pharmaceuticals Inc. She has served on the Board of Directors of the Gordon Research Conferences and the Boston Biomedical Research Foundation. She is a member of the editorial board of *The Biophysical Journal*. ◇

Esselen Address

Continued from page 4

In the second role NO occupies a pivotal function in the host response to infection where a number of stimuli, including *E. coli* lipopolysaccharide, an inducible NOS isoform (iNOS) is expressed leading to extended NO synthesis at the site of infection or inflammation. The diffusibility and toxic properties of NO seem to make it well suited to this task.

The simplest functional model in signaling involves free diffusion of NO to the target cell. Although carriers such as hemoglobin have been proposed, considerable evidence against this idea has developed. S-Nitrosothiols have also been hypothesized as semi-stable carriers of NO, though key *in vivo* relevance is still being accumulated. In an immune response, NO is generated at the site of infection capitalizing on its indiscriminate reactivity and corresponding toxicity. Although NO may have initially seemed an odd choice as a piece to the chemical killing/stasis machinery, the immune system formation of superoxide, HOOH, HOCl and other toxic reactive species has been known for many years. The use of NO (and the resulting OONO/HOONO from the reaction of NO and superoxide) of these reactive species simply adds to the diversity of the reactive chemical composition of the environment at the site of inflammation.

Biological signaling with NO requires tight control over biosynthesis and signaling targets that can "sense" NO at non-toxic (very low) concentrations. sGC contains a ferrous heme cofactor that is responsible for binding NO. Once bound, catalysis by sGC commences leading to the formation cyclicGMP from GTP. Turning off sGC and hydrolysis of cyclicGMP by specific phosphodiesterases (PDEs) leads to termination of the signal. Viagra® acts through the (partially) selective action on PDE type V. Interaction with other PDEs is partly responsible for negative side effects of Viagra®. There are now several new drugs that were developed to have greater specificity toward PDE type V.

Symposium Speakers

Continued from page 8

to be a global activity involving the coordination of internal science as well as an extended network of external collaborators and vendors. The impact of this initiative is being realized across multiple new target discovery efforts. Dr. Hemmerle has also been instrumental in bringing new paradigms for

Despite having avid affinity for NO, the ferrous heme in sGC does not bind O_2 . Since the ferrous heme in sGC is like that in the globins, it is not obvious how this ligand discrimination against O_2 takes place. This molecular engineering of the heme in sGC would be required in order to sense NO against a much higher concentration of O_2 . Homologs of the sGC NO sensing domain have now been found in prokaryotes. Some these domains appear to be acting as NO sensors while others sensors for O_2 . Structural, biochemical and biophysical studies have now brought about a molecular explanation for the ligand discrimination against O_2 in sGC.

Functional studies on the sGC homologs, termed H-NOX proteins (Heme-Nitric oxide/Oxygen) have led to new thoughts regarding gas sensing and pathogen resistance to immune-derived NO. Current research is directed towards the hypotheses that prokaryotes have evolved sensing signaling systems using H-NOX domains that serve to signal changes in growth conditions, sense O_2 in obligate anaerobes, and to sense and detoxify NO generated by an immune response. Lastly, structural analyses have provided an approach to look for O_2 -regulated sGCs. Indeed they have been found to exist and the function of these novel sGCs is currently under study.

NO is indeed firmly established as an important cell signaling agent. New findings continue to outline novel actions and functions. Deconvoluting NO action is not easy but as it is further sorted out, it is expected that there will be continued impact on understanding and treating human disease. ◇

medicinal chemistry automation and computational drug discovery to Lilly. Since 2003 he has been leading as a Director the broader discovery technology function first for the lead generation phase and since 2005 throughout the entire discovery phase to clinical candidate.

Mark T. Goulet *Lead Optimization of Orally Bioavailable Drugs*

Lead optimization is fundamentally an application of the scientific method within the realm of compound design-for-function. In addition to synthetic chemists, this process involves scientists who can measure relevant compound properties and an informatics system in which to store data and aid in the assimilation of new SAR knowledge. Most of the properties being optimized in this process relate to the individual drug molecule and its interaction with protein targets and off-targets. Understanding the metabolic fate of compounds within the liver is often vital to the discovery of an orally bioavailable and safe drug. This presentation describes two recent drug discovery programs at Merck Research Laboratories and the key role that understanding metabolic fate played in their success.

Mark Goulet, Executive Director of Drug Design & Optimization at Merck Research Laboratories in Boston, Massachusetts, received a B.S. degree in Chemistry from the University of Michigan and a Ph.D. in Chemistry from Yale University. He joined Merck at the Rahway, New Jersey, site in 1987 and in 2004 moved to Boston at the opening of this research facility. During his career, Dr. Goulet has headed medicinal chemistry teams working to develop new therapies for organ transplant rejection, endometriosis, obesity and atherosclerosis. Current interests include the discovery of breakthrough medicines for the treatment of cancer and Alzheimer's disease. ◇

www.nesacs.org/news
News You Can Use

BUSINESS DIRECTORY

SERVICES



DESERT ANALYTICS
Laboratory

- CHNOSP
- Halogens
- Metals by AA/ICP
- Ion Chromatography
- Coal / Petroleum
- Trace Analysis

SERVING THE FIELDS OF:
 ☐ ACADEMIC RESEARCH ☐ PHARMACEUTICALS ☐ MINING
 ☐ ELECTRONICS ☐ ENGINEERING ☐ ENERGY


WWW.DESERTANALYTICS.COM



DESERT ANALYTICS
245 S. PLUMER, #24
TUCSON, AZ 85719
520.623.3381
MAIL@DESERTANALYTICS.COM

**ANALYSIS FOR THE
CHEMICAL ELEMENTS**

SERVICES



ProXyChem
PROTEIN CRYSTALLOGRAPHY

Protein Crystal Services
ProXyChem™ provides cost effective and timely crystallographic structure determination services using state-of-the-art synchrotron facilities and a highly experienced team of scientists. Our ever-expanding portfolio of catalog proteins is one of the most extensive in the industry, allowing for the rapid structure determination of ligands bound to their target proteins.

Catalog Proteins include

AurA	GSK3β	PTP1b
CK2α	KDR	FDE4B, 4D, 5A
CDK4	JNK 1, 2, 3	PPARα, γ
Erk2	MAPKAP2	Cathepsin B

Future Catalog Proteins include
 p38α, γ CDK5, 6, 7 MEK1, 2
 cMET PDK1 Tie2

Other proteins available upon re request
 For information about our full portfolio of catalog proteins visit our website at www.proxychem.com

PHONE 1-617-395-4266
E-MAIL info@proxychem.com

SERVICES



• Exact Mass LC-MS
 • Exact Mass MS/MS
 • Unique SigmaFit™ Isotopic Analysis at 15,000 (FWHM) Resolution

Put the highest specs available on the bench in your lab!

Whether it's for metabolomics, synthesis products, or proteomics.

Call today to schedule a demonstration.
 978-663-3660 X1149

**Unique power™ for discovery:
3 Dimensions of Exact Mass—the New microOTOF-Q!**

LC-MS/MS Confidence

BRUKER DALTONICS

www.bdal.com
 See our website for worldwide sales and service contacts.

VOLUNTEERS

Reporters needed to cover ACSNES monthly meeting lectures

Phone for more details
 Myke S. Simon
 Nucleus Associate Editor
 Tel: 617-332-5273

TELL OUR ADVERTISERS

Membership surveys show that you want more articles in our newsletter. If you tell our advertisers that you saw their ad here, they will provide more financial support and this will allow us to add more articles.

Your one-stop source to career-related links in the Chemical Sciences

WWW.NESACS.ORG/CAREERS



PolyOrg, Inc.
 Chemical Solutions for the Life Science Industry

- Custom Organic Synthesis
- Process Development
- Contract R & D
- Pharmaceutical Intermediates
- Medicinal Chemistry Support
- Biotechnology Specialty Reagents
- Solid Support Reactions
- Process Validation
- Gram to Multi-Kilogram Synthesis



PolyOrg Inc.
 10 Powers Street, Leominster, MA 01453
 Phone: 978-466-7978 1-866-PolyOrg
 Fax: 978-466-8084 info@polyorginc.com
www.polyorginc.com

Waters

More Information in Less Time



The Waters® ACQUITY Ultra Performance LC™ (UPLC™) system combines unique instrumentation capabilities, column chemistries and data processing tools to provide chemical analysis methods with superior sensitivity, resolution and sample throughput.

Learn more about the evolution of liquid chromatography at:
www.waters.com/n1

BUSINESS DIRECTORY

SERVICES

Elemental Analysis

CHNOS ash
ICP · AA · ICP/MS
TOC · TOX · BTU
Problem Solving

HUFFMAN

LABORATORIES, INC.
Quality Analytical Services Since 1936
Phone (303) 278-4455
FAX (303) 278-7012
chemistry@huffmanlabs.com
www.huffmanlabs.com

NMR Service 500MHz

*Mass

*Elemental Analysis

NuMega Resonance Labs

Tel: (858) 793-6057

CUSTOM MANUFACTURING SOLUTIONS

FDC compliant toll and custom Chemicals serving the Biotech and Biochemical research and Manufacturing community

- Local Source
- Dependable Quality
- Recently expanded capacity and staff
- Support quart to multi-pallet quantities.

Rowley Biochemical, Inc.

www.rowleybio.com
Tel: 978-739-4883 Fax: 978-739-5640
email: customerservice@rowleybio.com



Scientific glassblowers serving New England for over 40 years

Solving your Pyrex or Quartz glassware needs from custom fabrication to repairs

www.finkenbeiner.com

SERVICES

SCHWARZKOPF Microanalytical Laboratory

Elemental & Trace Analysis
Organics, Inorganics
Organometallics
Metals by AA & Graphic Furnace
Functional Grps. - Mol. Wt.
Calorimetry
Total S. F. Halogens TOX
Coneg Testing Custom Analysis
56-19 37th Ave. Woodside, N.Y. 11377
(718) 429-6248

schwarzkopfmicro@aol.com

LABORATORY EQUIPMENT

Bought Sold Exchanged
MAY SPECIAL

Parr 5102 low pressure stirred reactor with 450ml glass vessel

Call for Details
American Instrument Exchange, Inc.
1023 Western Ave., Haverhill, MA 01832
TEL: 978-521-2221 FAX: 978-521-8822
www.americaninstrument.com
E-Mail: info@americaninstrument.com

Front Run OrganX, Inc.

Custom Synthesis & Process Chemistry

WHEN QUALITY MATTERS

High Purity, Scalable Solutions to Challenging Organic Synthesis

Starting Materials to Pre-clinical
Single to Multi-Step mg to Kgm

98% min. purity

Phone 978-356-7133 Fax 978-356-7449

Email Fronrun@Sprynet.com
www.FrontRunOrg.com

SERVICES

Preclinic DMPK

LCMS, MSn, Mass analysis with ESI/APCI/Maldi-TOF/NanoSpray

www.HT-LABS.com

info@HT-Labs.com (858)677-9432



micron inc.

Analytical Services

Complete Materials Characterization

Morphology Chemistry Structure

3815 LANCASTER PIKE, WILMINGTON DE.19805
PHONE 302 - 998 - 1184, FAX 302 - 998 - 1836

MICRONANALYTICAL@COMPUSERVE.COM
WWW.MICRONANALYTICAL.COM

STATISTICAL QC:



Onsite inspection looming ?

Failed your inorganic PT ?

Dealing with deficiencies ?

We can help!

Laboratory Compliance Services, Inc.
978-235-2075 labcompliance@verizon.net

Achieve Your Goals in Organic Chemistry

We deliver *On time, On cost, and On target.*

For Excellence in Organic Chemistry

Come to Organix Inc. for:

- Contract research and development
- Custom synthesis (milligram to kilogram) in all areas of organic and medicinal chemistry
- ¹H NMR and ¹³C NMR Spectra
- Structural Interpretation
- LC/MS Services

ORGANIX Inc.

Phone: (781) 932.4142

Fax: (781) 933.6695

Email: organix@organixinc.com

www.organixinc.com



DuPont Analytical Solutions

From rapid, routine testing to complex problem-solving. One of the world's largest, and most diverse analytical laboratories, with the experience to solve your analytical challenges in :

Electronic Materials • Personal Care • Catalysis • Coatings, Pigments, and Adhesives
Specialty Chemicals • Films and Packaging • Pharmaceuticals • Plastics • Fibers • Textiles

DuPont Analytical Solutions
P.O. Box 80302
Wilmington, DE 19880-0302
Phone: (302) 695-1018

e-mail: DASolutions@usa.dupont.com
web: http://analyticalsolutions.dupont.com
FAX: (302) 695-1717

Contact us for all your analytical needs.



BUSINESS DIRECTORY

SERVICES



NEW ERA ENTERPRISES, INC.
NMR-IR/FTIR-UV-VIS-FL
sampling supplies & accessories

Three major catalogs / pricing to view
 and download from
www.newera-spectro.com

One source for Spectroscopic
 Sampling Supplies
 CAGE Code: 44ME9
 DUNS: 556785657

1-800-821-4667 cs@newera-spectro.com

SERVICES

Chemical Analysis Services



CHEMIR
Analytical Services

- Materials Identification
- Deformulation
- Polymer Analysis & Testing
- Failure Analysis
- Consulting Services

ISO 9001
 Certified

800.659.7659
www.chemir.com

CAREER SERVICES

NESACS VOLUNTEERING

**We need several
 volunteers to
 help with
 Nucleus activities**

No experience needed

**Just a willingness
 to learn and
 a sense of humor**

For further information contact
 Vivian Walworth
 Phone-978-369-3735
 Fax-978-369-7306
 Email vwalworth@comcast.net



PCI
 Synthesis Inc.

Serving the greater Boston/
 Cambridge area and beyond.

**Your local source for cGMP
 manufacturing and custom synthesis**

PCI Synthesis has an experienced
 team of professionals whose goal is to
 ensure 100% on time delivery and
 marketplace success for our customers

**Please visit us at
 BIO 2007, May 6-9
 at the Mass Pavillion**

PCI Synthesis

R&D **Headquarters:**
 88 Jackson Rd. 9 Opportunity Way
 Devens, MA 01434 Newburyport, MA 01950
 PH: 978-772-2111 PH: 978-462-5555
 Fax: 978-862-0036 Fax: 978-465-2057

**e-mail: info@pcisynthesis.com
<http://www.pcisynthesis.com>**

PROMOTE YOUR PRODUCTS AND SERVICES • ADVERTISE IN THE NUCLEUS

The Nucleus readership is greater
 Massachusetts's largest source for chemical
 and biochemical buyers. *The Nucleus*
 reaches more than 7,000 readers each
 month. It has been estimated that these
 buyers annually purchase more than
 \$3,500,000 of:

- EQUIPMENT
- SUPPLIES
- CONSULTING SERVICES

Placing an advertisement in *The Nucleus* is
 the lowest cost method of reaching this select
 audience.

**For further information and other
 options for promoting your company's
 products and services visit:
www.mboservices.net**

Index of Advertisers

Am. Instrument Exchange.....	22
Bruker Daltronics, Inc.....	21
Chemir Analytical Services.....	23
Chemo Dynamics LP.....	11
Desert Analytics Laboratory.....	21
DuPont Analytical Solutions.....	22
Eastern Scientific Co.....	13
G. Finkenbeiner, Inc.....	22
Front Run OrganX, Inc.....	22
HT Laboratories, Inc.....	22
Huffman Laboratories, Inc.....	22
IQSynthesis.....	15
Laboratory Compliance Services.....	22
Mass-Vac, Inc.....	7
Micron Inc.....	22
New Era Enterprises, Inc.....	23
NuMega Resonance Labs.....	22
Organix, Inc.....	22
PCI Synthesis.....	23
PolyOrg Inc.....	21
ProXyChem.....	21
Robertson Microlit Labs.....	23
Rowley Biochemical, Inc.....	22
Schwarzkopf Microanalytical.....	22
Waters Corporation.....	21

Rapid Results • Quality • Accuracy • Competitive Pricing



Robertson Microlit Laboratories

- Elemental CHN, S, X, Analysis - *same-day service*
- Metals by ICP-OES, ICP-MS, A/A
- FTIR, UV/VIS Spectroscopy
- Ion Chromatography
- Bioavailability
- Polarimetry
- DSC
- KF Aquametry, Titrimetry

P. O. Box 927 • 29 Samson Avenue • Madison, NJ 07940
 Tel: (973) 966-6668 • Fax (973) 966-0136

www.robertson-microlit.com • [email:results@robertsonmicrolit.com](mailto:results@robertsonmicrolit.com)

FDA Inspected

2006-07 Harold A. Iddles Lecture Series
"Opals and Nanotechnology"
Univ. of New Hampshire, Iddles L103
4:10 pm

May 3

Prof. Mary J. Wirth (BIO5 Biotechnology
Institute, Univ. Arizona)
2006-07 Harold A. Iddles Lecture Series
"Silica Colloidal Crystals for Separations and
Spectroscopy of Proteins"
Univ. of New Hampshire, Iddles L103
11:10 am

Bern Kohler (Ohio State University)
"Ultrafast Excited-state Dynamics in DNA:
From Single Bases to the Double Helix"
Harvard Univ. Pfizer Lecture Hall
5:00 pm

Janine Cossy (ESPCI, Paris) and Sarah
O'Connor (MIT)
Sponsored by Organic Syntheses, Inc.
Titles: TBA
MIT 6-120
4:00-6:00 pm

May 5

13th Boston Regional Inorganic Chemistry
(BRIC) Meeting
Speakers include:
Rachel N. Austin, Bates College
Howard H. Patterson, University of Maine at
Orono
Dean E. Wilcox, Dartmouth College
University of New Hampshire, Durham, NH
9:30 am to 3:30 pm

May 8

Prof. Victor Batista (Yale Univ.)
"Modeling Photo-induced Reaction Dynamics
and Coherent Control: from Small Molecules to
Sensitized Semiconductors"
Boston College, Merkert 130
4:00 pm

May 10

Emily Carter (Princeton)
"Understanding Materials Failure Across Length
Scales"
Harvard Univ. Pfizer Lecture Hall
4:00 pm
Roeland J. M. Nolte (University of Nijmegen)
Merck-Karl Pfister Lectures in Organic
Chemistry: 2007
TBA
MIT, Rm. 6-120
4:00 - 6:00 pm

May 11

Roeland J. M. Nolte (University of Nijmegen)
Merck-Karl Pfister Lectures in Organic
Chemistry: 2007
"TBA"
MIT, Rm. 6-120
4:00 - 6:00 pm

May 14

Dr. Malcolm Smith (Assoc Branch Chief,
Pediatrics: Cancer Therapy Evaluation Program,
NCI)
"Picking Winners- Selecting the Right
Molecularly Targeted Agents for the Right
Childhood Cancers"
11th Annual Andrew H. Weinberg Symposium
Dana-Farber Cancer Institute; The Smith Family
Room (Room D1620)
44 Binney Street, Boston, MA 02115.
4:00 pm

Expose Yourself This Summer

Did you know 17,000 copies of the
Summer Nucleus will be printed and
10,000 will be handed out to atten-
dees at the Boston National ACS
Meeting to be held in August 2007.

If you would like to submit an article
or book review for the Summer Issue
contact the Editor of the Nucleus,
Michael Filosa at
michael.filosa(at)zink.com.

**The editorial deadline for the
Summer Issue is June 15, 2007.**

To advertise in this issue contact the
Nucleus Advertising Manager, Vince
Gale at www.mboservices.net.

May 16

William J. Evans (Univ. California, Irvine)
"The Importance of Questioning Scientific
Assumptions: Some Lessons from f Element
Chemistry"
MIT Rm.6-120
4:00 pm

May 31

Kei Takeda (Hiroshima University)
TBA
MIT, 4-270
4:00 pm

Notices for the Nucleus Calendar should be sent to:

Sheila E Rodman
250 Kennedy Drive
Unit #403, Malden, MA 02148.
E-MAIL: [serodman\(at\)hotmail.com](mailto:serodman(at)hotmail.com)

Calendar

Check the NESACS Homepage
for late additions:
<http://www.NESACS.org>

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

These include:

<http://chemserv.bc.edu/seminar.html>
<http://www.bu.edu/chemistry/events/>
<http://www.chem.brandeis.edu/colloquium.shtml>
<http://www-chem.harvard.edu/events/>
<http://web.mit.edu/chemistry/>
www.chem.neu.edu/web/calendar/index.html
<http://chem.tufts.edu/seminars.html> [CHEM.]
<http://ase.tufts.edu/chemical/seminar.htm>
[CHEM. ENGG.]
<http://www.chem.umb.edu/>
www.umassd.edu/cas/chemistry/seminars.cfm
www.uml.edu/Dept/Chemistry/speakers.html
<http://www.unh.edu/chemistry/seminars.html>

May 1

Prof. Phil S. Baran (The Scripps Research
Institute)
"The Catalytic Cycle of Discovery in Total
Synthesis"
Boston College, Merkert 130
4:00 pm

May 2

Prof. Janine Cossy (Ecole Supérieure de
Physique et Chimie Industrielles de la Ville de
Paris (ESPCI))
"Chemoselective Reactions: Towards the
Synthesis of Biologically Active Natural
Products"
Boston College, Merkert 130
4:00 pm

Prof. Mary J. Wirth, (BIO5 Biotechnology
Institute; Univ. Arizona)