

# THE NUCLEUS

September 2009

Vol. LXXXVIII, No. 1



## Monthly Meeting

*A Medicinal Chemistry Symposium  
Recent Developments in Neurodegenerative  
Diseases*

## Nominations

*Richards Medal Award, Esselen Award*

## Sustainability IS the Eye of the Storm

*By Stefan G. Koenig, Ph.D.*

## Philip Le Quesne Retirement Symposium

*May 21, 2009*



# Northeastern

U N I V E R S I T Y

## EVENING GRADUATE PROGRAM IN CHEMISTRY

The Original Part-Time Evening Graduate Program  
in New England

*Take courses to:*

- keep up-to-date
- improve professional qualifications
- apply toward part-time Master's program

*All courses meet for a two-and-a-half hour period one evening per week and carry three semester-hours of graduate credit toward the 30 semester-hour requirement for a coursework M.S. degree*

**Courses are taught by Full-time Faculty in their area of expertise**

GRADUATE CLASSES OFFERED FALL SEMESTER  
(Classes begin September 9, 2009)

Principles of Mass Spectrometry  
Principles and Analysis of Carbohydrates **(NEW)**  
Drug Discovery and Development **(NEW)**  
Materials Chemistry of Renewable Energy **(NEW)**  
Analytical Separations  
Organic Synthesis 1  
Mechanistic and Physical Organic Chemistry  
Thermodynamics  
Chemical Biology for Chemists  
Electroanalytical Chemistry  
Principles of Solid State Chemistry

**Students new to the program must have completed an application for admission.**

**For more information on graduate programs, see [www.chem.neu.edu](http://www.chem.neu.edu)**

For additional information contact: Jean Harris  
Department of Chemistry & Chemical Biology  
Tel: (617) 373-2824  
[H.Harris@neu.edu](mailto:H.Harris@neu.edu)

**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>

David Cunningham, Webmaster

ACS Hotline, Washington, D.C.:

1-800-227-5558

**Officers 2009**

*Chair:*

Dr. E. Joseph Billo

13 Shattuck Street

Natick, MA 01760

508-653-3074, joseph.billo(at)verizon.net

*Chair-Elect:*

John McKew

Wyeth Research

200 Cambridge Park Drive

Cambridge, MA 02140

*Immediate Past Chair:*

Marietta Schwartz

Chemistry Department, UMass-Boston

Boston, MA 02125

617-287-6146; marietta.schwartz(at)umb.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**

**Alternate Councilors**

*Term Ends 12/31/2009*

Catherine Costello

Patricia Mabrouk

Michaeline F. Chen

Dorothy J. Phillips

Amy Tapper

Julia H. Miwa

Alfred Viola

Jerry P. Jasinski

Eva B. Chenail

Marietta Schwartz

*Term Ends 12/31/2010*

Thomas R. Gilbert

Pamela Nagafuji

Robert Lichter

Michael Singer

Timothy B. Frigo

Mark Froimowitz

David Cunningham

Mukund Chorghade

*Term Ends 12/31/2011*

Doris I. Lewis

Mary Burgess

Morton Z. Hoffman

Michael P. Filosa

Kathi Brown

C. Jaworek-Lopes

Patrick M. Gordon

Lawrence Scott

Donald Rickter

Liming Shao

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

**Sustainability IS the Eye of the Storm** \_\_\_\_\_ **4**  
*By Stefan G. Koenig, Ph.D.*

**Monthly Meeting** \_\_\_\_\_ **5**  
*Medicinal Chemistry Symposium*  
*Recent Developments in Neurodegenerative Diseases*

**Nominations** \_\_\_\_\_ **6,7**  
*Richards Medal Award, Gustavus J. Esselen Award*

**Announcements** \_\_\_\_\_ **6,7**  
*Grants-in-Aid to Undergraduates and Call for Papers for the Undergraduate Research Poster Session, 239th National ACS Meeting, San Francisco, CA, March 21-25, 2010.*

**National Chemistry Week Events** \_\_\_\_\_ **8**

**Advances in Chemical Sciences Symposium** \_\_\_\_\_ **9**

**NERM Announcement** \_\_\_\_\_ **10**

**Professor Philip Le Quesne Retirement** \_\_\_\_\_ **11**

**September Historical Events in Chemistry** \_\_\_\_\_ **13**  
*By Leopold May*

**NESACS Members Named ACS Fellows** \_\_\_\_\_ **14**

**Connections to Chemistry 2009** \_\_\_\_\_ **16**  
*A Preliminary Announcement*

**Cover:** *With a score of 58 the winning Genzyme team from the 5th Annual NESACS Golf Tournament, held July 14, 2009 at Wedgewood Pines Country Club. (L to R) Henry Darnell, John Green, Ben Green, and Dominic Cammarata. Harry Mandeville (second to last on the R) is presenting. Photo by Amy Tapper.*

**Deadlines:** *November 2009 Issue: September 15, 2009*  
*December 2009 Issue: October 15, 2009*

## THE NUCLEUS

*The Nucleus is published monthly, except June and August, by the Northeastern Section of the American Chemical Society, Inc. 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., ZINK Imaging, Inc., 16 Crosby Drive, Building 4G, Bedford, MA 01730 Email: Michael.filosa(at)zink.com; Tel: 508-843-9070

*Associate Editors:* Myron S. Simon, 20 Somerset Rd., W. Newton, MA 02465, Tel: 617-332-5273, Sheila E Rodman, Konarka Technologies, Inc., 116 John St. Suite 12, Lowell, MA 01852 Email: srodman(at)konarka.com tel 978-569-1414, Mindy Levine, 516-697-9688 (c), 617-258-6536(w), mindy.levine(at)gmail.com

*Assistant Editors:* Stefan G. Koenig, Sonia Taktak

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

*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, Email: Manager-vincegale@mboservices.net; Tel: 781-837-0424

*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, Vivian K. Walworth, Mindy Levine

*Webmaster:* David Cunningham, webmaster(at)nesacs.org

Copyright 2009, Northeastern Section of the American Chemical Society, Inc.

# Sustainability IS the Eye of the Storm

by Stefan G. Koenig, Ph.D.

With our current economic atmosphere, there are many who wonder how one could afford to continue pursuing “green” practices. Is it not too expensive to dedicate resources to a luxury, they ask? Well, in fact, it appears most organizations have recognized that as the political environment changes along with the planet’s climate, green is no longer a luxury. Instead, these institutions are calmly adopting “sustainable” practices, and doing so for the long-term. As a case in point, the month of June saw the 13<sup>th</sup> installment of the Green Chemistry and Engineering Conference, this time a short distance away from Washington DC, at the University of Maryland. The meeting, taking place in the middle of a deep recession, was a thriving success with over 400 attendees, 180 presentations, and two keynote speakers.

The conference started with a Student Workshop on Monday, June 22,

2009, a day which also celebrated this year’s U.S. EPA Presidential Green Chemistry Challenge Awards (<http://www.epa.gov/greenchemistry/pubs/pgcc/past.html>). All the winners presented their research at the meeting, perfectly underlining this year’s theme of “Innovating for the Future: Progress on the Grand Challenges in the Chemical Enterprise.” In all, seven different tracks – each centered around one of the Grand Challenges – were explored over the next three days, including: a) the transformation of Green Chemistry and Engineering; b) metrics, particularly Life Cycle Analysis (LCA); c) toxicology and environmental effects; d) renewable energy; e) the design and optimization of processes; f) management and prevention of greenhouse gases; and g) incorporating Green Chemistry and Engineering into science education.

Both keynote speakers called for

## Corporate Patrons (\$2000+)

Abbott Bioresearch  
Genzyme  
Lyophilization Service of New England  
Merck  
Schering Corporation  
Sepracor  
Serono Reproductive Institute  
Vertex Pharmaceuticals  
Wyeth Pharmaceuticals

## Patrons (\$1000-\$1999)

Aptuit  
Broad Institute  
Creagen Biosciences  
Estate of Wallace Gleekman  
Irix Pharmaceuticals  
PCI Synthesis  
Shasun USA  
Sirtris Pharmaceuticals  
Strem Chemicals

## Donors (\$300-\$999)

Cambridge-Major Laboratories  
Medicilon Inc  
Organix  
Peptech Corp  
SAPA-NE

scientists to take into consideration the environmental fate of modern chemical products and recall that in our ecosystem, “everything is connected.” In a forum open to the public, Jean-Michel Cousteau, (son of the illustrious French marine conservationist and Founder and President of the Ocean Futures Society (<http://www.oceanfutures.org/>)), suggested that humans should learn to live off the dividends of the planet’s resources and not consume or destroy them. Similarly, Len Sauers, Ph.D., Vice-President for Global Sustainability of Proctor & Gamble Company (<http://www.pg.com/>), expounded on the business opportunities inherent in sustainability and P&G’s efforts to use a science-based approach to make green innovation products.

Also at the meeting, the ACS Green Chemistry Institute considered starting up a Chemical Suppliers Roundtable to address issues in a pre-competitive or noncompetitive space, similar to the established and success-

*continued on page 16*

When you are looking for a partner to outsource your discovery research, the choice is clear. Embrace the potentials of CreaGen. The best team around in medicinal chemistry. CreaGen discovery research services include:

- FTE based • collaboration based • project based

We function as an exclusive or an extended medicinal chemistry department for virtual, start-up, biotech and pharmaceutical companies.

Call 781-938-1122 or email [rrajur@creagenbio.com](mailto:rrajur@creagenbio.com) to explore CreaGen's capabilities and expertise.

**CREAGEN**  
BIOSCIENCES, Inc.  
[www.creagenbio.com](http://www.creagenbio.com)

R1c1ccc(cc1C2=CN(R2)O2)N3CCCCN3R3

# Monthly Meeting

The 898<sup>th</sup> Meeting of the Northeastern Section of the American Chemical Society

Joint Meeting: Northeastern Section, ACS and the Medicinal Chemistry Group

## Symposium

### Recent Developments in Neurodegenerative Disease

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

Thursday – September 10, 2009

Marriott Hotel, One Burlington Mall Road, Burlington, MA

3:00 pm Refreshments

3:15 pm Welcome

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

3:20 pm Introductory Remarks

Norton P. Peet, Director of Chemistry, Microbiotix, Worcester, MA

3:30 pm Development of Drugs to Treat Cognitive Disorders

Alan P. Kaplan, Director of Medicinal Chemistry,  
Helicon Therapeutics San Diego, CA

4:15 pm Epigenetic Regulation of Memory Formation in Health and Disease

Li-Huei Tsai, Director, Picower Institute for Learning and  
Memory, Department of Brain and Cognitive Sciences,  
Massachusetts Institute of Technology, Cambridge, MA

5:00 pm Optimization of the *In Vivo* Activity of Potent, Notch-Sparing  
gamma-Secretase Inhibitors

Boyd L. Harrison, Sr. Director of Chemical Sciences,  
Wyeth Research, Princeton, NJ

5:45 pm Social Hour

6:30 pm Dinner

7:45 pm Targeting A $\beta$ 42 for Alzheimer's Disease Therapy

Mark A. Findeis, Co-Founder and Senior Vice President of Research,  
Satori Pharmaceuticals, Cambridge, MA

Dinner reservations should be made **no later than 12:00 noon on Thursday, September 3<sup>rd</sup>, 2009**. Please contact Marilou Cashman at (800) 872-2054 or (508) 653-6329 or mcash0953@aol.com. Reservations not canceled at least 24 hours in advance must be paid. Anyone who needs handicapped services/transportation, please call a few days in advance so that suitable arrangements can be made. **Payment is made at the door by cash or check (no credit cards). Members, \$28.00; Non-members, \$30.00; Retirees, \$18.00; Students, \$10.00.**

Directions to the Burlington Marriott

Please use MapQuest to reach the hotel: Marriott Hotel is located at One Burlington Mall Road, Burlington, MA.

**THE PUBLIC IS INVITED**

# Abstracts & Biographies

Alan P. Kaplan

*“Development of Drugs to Treat Cognitive Disorders”*

**Abstract:** In recent years, the search for treatments for cognitive and memory dysfunction has garnered increased interest from drug discovery companies, both big and small. The need for such drugs will only be exacerbated as the baby-boom generation gets older. At this time, the options available to treat memory impairment are inadequate, with a limited number of drugs that, at best, slow the progression of memory decline. HT-0712, a phosphodiesterase IV inhibitor, represents a novel class of drug that shows promise as a potential treatment for cognitive dysfunction due to age, disease or brain injury. *In vivo* studies with HT-0712 suggest that its use could be efficacious for a number of potential clinical applications, including stroke, traumatic brain injury (TBI), age associated memory impairment (AAMI) and Rubenstein-Taybi Syndrome (RTS).

**Alan Kaplan** joined Helicon as Director of Chemistry in 2003 and is responsible for both the drug discovery and drug development activities. Prior to joining Helicon, Dr. Kaplan spent eight years at ArQule, helping the company establish its high-throughput medicinal chemistry technologies. While at ArQule, Dr. Kaplan worked closely with ArQule's pharmaceutical and biotech partners on a number of drug programs, eventually becoming Senior Director of Lead Optimization Chemistry. Dr. Kaplan pursued postdoctoral training at Harvard University after receiving his Ph.D. in 1991 from the University of California at Berkeley and a B.A. in 1986 from Northwestern University.

Li-Huei Tsai

*“Epigenetic regulation of memory formation in health and disease”*

**Abstract:** Neurodegenerative diseases of the central nervous system are often

*continued on page 6*

## Abstracts & Bios

Continued from page 5

associated with impaired learning and memory, eventually leading to dementia. Currently, effective therapeutic strategies for restoring cognition in these patients are lacking. We have been exploring strategies that facilitate re-establishment of learning ability and access to long-term memories. The CK-p25 transgenic mice previously created in this lab allow temporally and spatially restricted induction of neuronal loss and learning/memory impairment which serves as an ideal model for testing therapeutic strategies. Chromatin modifications, especially histone-tail acetylation, have been implicated in memory formation. Increased histone-tail acetylation induced by inhibitors of histone deacetylases (HDACis) facilitates learning and memory in wild type mice as well as in mouse models of Rubinstein-Taybi syndrome, a developmental brain disorder. We found that increased histone acetylation as a result of HDACi treatment reinstated learning behavior and re-established access to long-term memories after significant brain atrophy and neuronal loss had already occurred in the CK-p25 mice. Moreover, increased histone acetylation by HDACi induced sprouting of dendrites and an increased number of synapses. That is, long-lasting changes of neural circuits which may underlie its beneficial effects on cognition. Currently, all available HDACis target multiple histone deacetylases. Identification of the histone deacetylase family member(s) specifically involved in memory formation will help elucidate the mechanism(s) by which chromatin remodeling regulates memory and allow the development of potent and selective HDACi useful for clinical applications.

**Dr. Li-Huei Tsai** received her P.h.D degree from the University of Texas Southwestern Medical Center at Dallas. She then did her postdoctoral training at Ed Harlow's Cold Spring Harbor laboratory and Massachusetts General Hospital. She joined the faculty in the Department of Pathology at

## Call for Papers

*Undergraduate Research Poster Session*

**239th National Meeting of the American Chemical Society  
San Francisco, California  
March 21-25, 2010**

The ACS invites undergraduate students to submit abstracts of their research papers for presentation at the Undergraduate Research Poster Session (URPS), which will be part of the extensive programming for undergraduates at this national meeting. Submit your abstract electronically by **October 19, 2009** (11:59 pm EST) to [www.acs.org/meetings](http://www.acs.org/meetings). Click on the CHED division and then select the URPS site that is appropriate to the subject of your paper. Please follow the directions carefully.

**For further information, contact:**

Nancy Bakowski  
ACS Student Affiliates Program  
1155 Sixteenth Street, NW  
Washington, DC 20036  
Tel: (800) 227-5558, ext. 6166  
e-mail: [SAprogram@acs.org](mailto:SAprogram@acs.org) ◇

---

Harvard Medical School in 1994 and was named an investigator of Howard Hughes Medical Institute in 1997. In 2006, she was appointed Professor in the Department of Brain and Cognitive Sciences, and joined the Picower Institute for Learning and Memory at MIT. Presently she is serving as the director of this center. She is a recipient of the Rita Allen Foundation Scholarship, a Klingenstein Fellowship for Neurosciences, and a Promising Investigator Award from Metropolitan Life Foundation.

In addition, Li-Huei has authored or co-authored more than 85 publications; she has given a number of invited presentations in universities and at national and international symposia. She also serves on the editorial boards of *NeuroSignals*, *Neuron*, the

## Nominations

*Richards Medal Award*

Nominations are invited for the 2010 Theodore William Richards Medal Award for conspicuous achievement in any area of chemistry. The Northeastern Section of the American Chemical Society awards the Richards Medal, honoring America's first chemistry Nobel laureate and initially presented in 1932, every two years.

The medal was last presented in 2008 to Professor Robert Bergman of the University of California at Berkeley. The next presentation will be made in March of 2010.

A nomination package consists of a brief curriculum vitae, a list of up to twenty citations for key publications, and a clear and concise nomination letter outlining the nominee's "conspicuous achievements in chemistry." These materials **must** be submitted electronically in a single Adobe® PDF format file to:

Professor Roy G. Gordon  
Department of Chemistry  
and Chemical Biology  
Harvard University  
12 Oxford Street  
Cambridge, MA 02138  
[gordon@chemistry.harvard.edu](mailto:gordon@chemistry.harvard.edu)

Nominations must be received by **November 1, 2009**. Nominators are responsible for confirming receipt of their e-mail nomination package.

For additional information contact: Roy G. Gordon, phone: 617-495-4017; fax: 617-495-4723; email: [gordon@chemistry.harvard.edu](mailto:gordon@chemistry.harvard.edu) ◇

---

*Journal of Neuroscience* and on the founding editorial board of *American Journal of Translational Research*. She is Ad hoc reviewer for: *Cell*, *Neuron*, *Nature*, *Science*, *Nature Cell Biology*, *Nature Neuroscience*, *Nature Genetics*, *Journal of Neuroscience*, *Molecular and Cellular Biology*, *Journal of Neurochemistry*, *New England Journal of Medicine*, *Cell Growth and Differentiation*, *Proceedings of National Academy of Sciences USA*, and *Molecular Biology of the Cell*.

Continued on page 13

# Announcement Nominations

## *Grants-in-Aid to Undergraduates to Attend the 239th ACS National Meeting in San Francisco, California March 21-25, 2010*

The Northeastern Section of the American Chemical Society (NESACS) will provide *Grants-in Aid* of \$350 to each of four undergraduates to attend the 239th ACS National Meeting in San Francisco, California and to present a paper at the Undergraduate Research Poster Session in the Division of Chemical Education. The institutions of the successful applicants are expected to match the award.

**Eligibility:** Applications will be accepted from students at colleges and universities within the Northeastern Section of the ACS. The undergraduate student must be a chemistry, biochemistry, chemical engineering, or molecular biology major in good standing with at least junior status, and must be currently engaged in undergraduate research.

**Application:** Application forms may be obtained from the NESACS web site at <http://www.nesacs.org>. The deadline for *receipt* of completed applications by Professor Ruth Tanner, the Chair of the Education Committee, is October 9, 2009. Completed applications are to be sent to:

Professor Ruth Tanner  
University of Massachusetts Lowell  
Department of Chemistry,  
Olney Hall  
1 University Avenue  
Lowell, MA 01854-5047  
Phone: (978) 934-3662  
Fax: (978) 934-3013  
e-mail: [Ruth\\_Tanner@uml.edu](mailto:Ruth_Tanner@uml.edu)

**Notification:** Applicants will be notified of the results by e-mail on October 13, 2009. The deadline for electronic submission of abstracts to the American Chemical Society in Washington, D.C. is October 19, 2009 (11:59 pm EST). ◇

## *Gustavus John Esselen Award for Chemistry in the Public Interest*

The Northeastern Section (NESACS) is inviting nominations for its prestigious Gustavus John Esselen Award for Chemistry in the Public Interest. This award is given annually to a chemical scientist whose scientific and technical work has contributed to the public well-being and has thereby communicated the positive values of the chemical profession. The significance of this work should have become apparent within the five years preceding nomination. The awardee shall be a living resident of the United States or Canada at the time of the nomination.

There is no limitation to the field of chemistry. The selection committee focuses on the general public recognition of the work, as well as its scientific/technical significance.

The award consists of a bronze medal and the sum of \$5,000. Travel expenses incidental to the conferring of the award will be reimbursed. The

award will be presented at the April meeting of the Section. The Awardee is expected to deliver an address related to the work for which the honor is conferred.

Nominations shall include the names of two co-sponsors, a biography of the nominee, a description of the work which has been recognized as communicating the positive values of the chemical profession, along with copies of pertinent articles and popular news and feature articles indicative of public interest. Joint nominations are acceptable. Further information is available at [www.nesacs.org](http://www.nesacs.org).

**Nominations are due October 15, 2009.**

Award recipients will be notified by February 1, 2010.

*Nominations shall be directed to:*  
Dr. Charles E. Kolb, c/o Karen Piper  
19 Mill Rd., Harvard, MA 01451.

*Inquiries may be made to Charles Kolb, Tel. (978) 663-9500; e-mail: [kolb@aerodyne.com](mailto:kolb@aerodyne.com) or Karen Piper: Tel. (978) 456-8622 e-mail: [piper28\(at\)attglobal.net](mailto:piper28(at)attglobal.net) ◇*



## 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*





# National Chemistry Week Events

Celebrating

Chemistry – It's Elemental! October 18 - 24, 2009

## October 18, 2009 – Museum of Science Boston

- *Phyllis A. Brauner Memorial Lecture by Dr. Bassam Shakhshiri*

Dr. Bassam Shakhshiri is a Professor of Chemistry at the University of Wisconsin-Madison and is the William T. Evjue Distinguished Chair for the Wisconsin Idea. Professor Shakhshiri has captivated audiences with his scientific demonstrations at a variety of locations including Boston's Museum of Science, the National Academy of Sciences and the Smithsonian's National Air and Space Museum in Washington.

Taking place in Cahners Theatre (2<sup>nd</sup> floor, Blue Wing) at 1:00 pm and 4:00 pm.

\* Admission to the museum is required for the 1 pm show but not the 4 pm show if entering the Museum after 3:30 pm. Free tickets to Dr. Shakhshiri's show will be available on a first come, first serve basis. Tickets are available via advance reservation. To reserve tickets, please contact Marilou Cashman either via email [mcash0953@aol.com](mailto:mcash0953@aol.com) (preferred) or by phone 1-800-872-2054 before October 14, 2009. Tickets will be available for pick-up in the lobby of the museum at the ACS table.

- *Kicking off National Chemistry Week 2009 festivities*

Join us in a variety of hands-on activities related to the yearly theme. Taking place from 1:00 pm - 5:00 pm on October 18, 2009 throughout the Museum.

## October 24, 2009 – Boston Children's Museum

From 11 am – 4 pm, NCW volunteers will be on-hand throughout the museum to perform demonstrations and assist in hands-on activities related to the yearly theme.

## September 1 – October 15, 2009

K-12 students participate in the **NCW poster competition**. Visit [www.nesacs.org](http://www.nesacs.org) and [http://portal.acs.org/portal/acs/corg/content?nfpb=true&pageLabel=PP\\_ARTICLEMAIN&node\\_id=1055&use\\_sec=false](http://portal.acs.org/portal/acs/corg/content?nfpb=true&pageLabel=PP_ARTICLEMAIN&node_id=1055&use_sec=false) for more information.

## October 1 – 31, 2009

Grades 1-12 may participate in the **puzzle contest**. See [www.nesacs.org](http://www.nesacs.org) or the October 2009 issue of the Nucleus for the puzzles and contest information.



American Chemical Society  
Local Section



*Inaugural Symposium*  
**Advances in Chemical Sciences**  
**“Bench to Pilot Plant” Symposium**

**sponsored by NESACS and RSC-US**

**Royal Sonesta Hotel**  
**Cambridge, MA**  
**[www.sonesta.com/boston](http://www.sonesta.com/boston)**  
**October 23, 2009**  
**9:00 am**

This day-long scientific conference will focus on:  
Process R&D Chemistry    Organic Synthesis    New Synthetic Methodology

Eminent scientists from industry and academia will deliver plenary lectures.

Confirmed Lecturers include:

Joel Hawkins, Pfizer  
Dean Toste, UC Berkeley  
Skip Volante, Merck  
Bob Norrie, AMRI  
Sheila Magil, BioProcess Technology Consultants  
Karl Hansen, Amgen

The symposium will be followed by a networking reception and vendor exhibition.  
For more information please visit [www.acssymposium.com](http://www.acssymposium.com)

**Symposium registration fee: \$ 50.00**

**Attendance is Limited – Advanced Registration is REQUIRED**

Please send your full contact information along with your check for \$50 made payable to  
NESACS to:

Marilou Cashman  
Administrative Secretary, NESACS  
23 Cottage Street  
Natick, MA 01760  
(508)653-6329

For additional details, please contact any member of the Symposium's Organizing Committee.

[Luigi\\_Anzalone@vrtx.com](mailto:Luigi_Anzalone@vrtx.com)

[RKramss@yahoo.com](mailto:RKramss@yahoo.com)

[RRajur@creagenbio.com](mailto:RRajur@creagenbio.com)

[Chorghade@comcast.net](mailto:Chorghade@comcast.net)

[KLee@wyeth.com](mailto:KLee@wyeth.com)

[ASaha@chembiotek.com](mailto:ASaha@chembiotek.com)

[Ken.Drew@cambrex.com](mailto:Ken.Drew@cambrex.com)

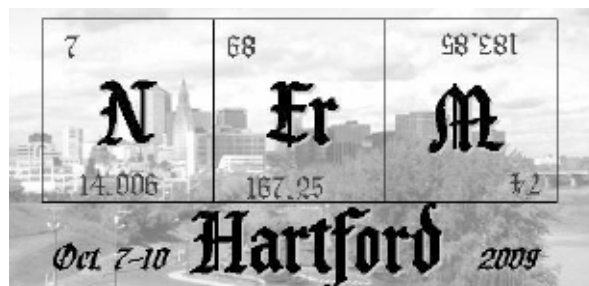
[JMckew@Wyeth.com](mailto:JMckew@Wyeth.com)

[Donald.Walker@biogenidec.com](mailto:Donald.Walker@biogenidec.com)

[Srinivasa.Karra@EMDSerono.com](mailto:Srinivasa.Karra@EMDSerono.com)

[Leslie.McQuire@Novartis.com](mailto:Leslie.McQuire@Novartis.com)

# American Chemical Society Northeast Regional Meeting



The Connecticut Valley Section of the ACS will host the 36<sup>th</sup> Northeast Regional Meeting (NERM 2009) in Hartford, Connecticut, on Wednesday-Saturday, October 7-10, at the Hartford Hilton Hotel. The deadline for the submission of abstracts is September 1. In addition to the technical talks, there will be career workshops, a whole day devoted to high school teachers at the Connecticut Science Center, and a Banquet on Friday evening, October 9, at which Awards in High School Teaching, Volunteer Service, Advancing Diversity, Industrial Innovation, and Achievement in the Chemical Sciences will be presented.

Planned symposia include:

Advances in Cleaner, Greener Synthesis  
Advances in Organic Methodology  
Biological Mass Spectrometry  
Biotech in the Northeast  
Persistent Organics in the Environment  
Polar Science and Climate Change  
Polymer Chemistry for Nanocomposites  
Porphyrins and Related Macrocycles  
Promoting Chemistry in the Internet Age  
Environmental Chemistry  
General Papers  
General Posters  
Science Courses for Non-Majors

Learner Centered Chemistry Courses  
Nanomaterials: Applications  
Nanotechnology: Synthesis, Characterization  
Optical Spectroscopy  
Chemical Biology  
Chemistry in Everyday Life  
Colloidal and Macromolecular Interactions  
Cope Scholar Award Symposia  
Recent Developments in Medicinal Chemistry  
Science Outreach  
Surprises in Spectroscopy  
Synthetic Organic Methods Across the Border  
Topics in Analytical Research

For more information, go to:

<http://membership.acs.org/n/nerm/>

# Professor Philip Le Quesne retires from Northeastern University

A symposium and reception were held on May 21, 2009 to honor the retirement of Professor Philip Le Quesne. The event featured addresses by three leaders in the field of organic chemistry, including Professor Samuel J. Danishefsky of The Memorial Sloan-Kettering Cancer Center and Columbia University, Professor James M. Cook from the University of Wisconsin-Milwaukee, a former student of Dr. Le Quesne, and Dr. John A. Beutler of The National Cancer Institute, a former postdoctoral student of Prof. Le Quesne. Dr. Danishefsky presented a plaque to Professor Le Quesne from the organic chemistry community which honored his contributions to the field.

Professor Le Quesne retires after 3 decades as Professor of Chemistry and Medicinal Chemistry at Northeastern University. He served as Chair of the Chemistry Department (now Department of Chemistry and Chemical Biology) from 1980 – 1987 and as Interim

Provost for Research and Graduate Education from 1991 – 1992. From 1993 – 1996 he also was Associate Director for Operations at Northeastern's Barnett Institute.

His professional recognitions include the Robert D. Klein Lectureship at NU for 1985 which honored his professional accomplishments in the field of Natural Products Chemistry, documented by over 100 publications in professional journals; in addition, he has co-edited three volumes of studies in this field.

Dr. Le Quesne has been a mentor to over 20 doctoral students and many more MS and undergraduate research students, both at the University of Michigan and at Northeastern. He has been a host to many visiting scientists and post-doctoral fellows.

A native of New Zealand, Dr. Le Quesne holds degrees from the University of Auckland. He did his post-doctoral work at the Dyson Perrins



(from left to right) Professor James M. Cook, University of Wisconsin-Milwaukee, Professor Samuel J. Danishefsky, The Memorial Sloan-Kettering Cancer Center and Columbia University, Professor Philip Le Quesne, Northeastern University, and John A. Beutler, Associate Scientist at The National Cancer Institute

Photograph credit: Roger Kautz

Laboratory, Oxford University, and the University of British Columbia, Vancouver, before he accepted a faculty position at the University of Michigan.

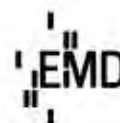
Continued on page 16

[www.emdchemicals.com/analytcs](http://www.emdchemicals.com/analytcs)

Does EMD know anything about ACS Reagents?

You might say we're  
in tune with your needs.  
EMD offers a diverse range  
of ACS products that perform.  
The quality of our solvents  
plays second fiddle to no one.

That's what's in it for you. EMD Chemicals





**ACS**  
Chemistry for Life™

Office of Professional Education

**Register Today** for these ACS ProSpectives conferences, designed for industry scientists, with an emphasis on ideas and information you can immediately apply to your work.



**INVEST  
IN YOURSELF**

- ▶ **STAY CURRENT** - the latest knowledge, ideas, and information in your field
- ▶ **RENEW YOUR TECHNICAL SKILLS** - gain new insights and information
- ▶ **EXPAND YOUR NETWORK** - meet and connect with other professionals

**Tactical Approaches to the Challenge of Drug Failure**

**October 4-6, 2009**

Philadelphia, PA • Crown Plaza Philadelphia Downtown

**Process Chemistry in the Pharmaceutical Industry  
with Special Emphasis on Continuous Manufacturing**

**November 2-4, 2009**

Durham, NC • Sheraton Imperial Hotel & Convention Center

**Register now at [www.proed.acs.org](http://www.proed.acs.org)**

**Advanced Registration and Group Discounts are available.**

**American Chemical Society**

**[www.proed.acs.org](http://www.proed.acs.org)**

## Abstracts & Bios

Continued from page 6

### Boyd L. Harrison, “Optimization of the *In Vivo* activity of Potent, Notch-sparing gamma-Secretase Inhibitors”

**Abstract:** Alzheimer’s disease (AD) is among the most devastating human disease for which there is still no highly effective treatment. Currently available AD therapies provide only symptomatic treatment. The proposed causative role for Abeta40 and Abeta42 in the pathophysiology of AD has provided a rational strategy for the design of potential disease-modifying anti-AD drugs (DMAADs). By blocking the synthesis of these putative pathogenic peptides, it is hoped that the progression of AD will be slowed or prevented. We have focused our efforts on inhibition of gamma secretase, the final enzyme in the biosynthesis of Abeta40 and Abeta42 from APP. A caveat with this approach is that selectivity of gamma secretase inhibition of APP processing is required due to the importance of other gamma secretase substrates such as Notch in important physiological processes such as G.I. cell renewal. We have previously reported on the discovery of the Notch-sparing gamma secretase inhibitors (GSIs) that showed limited oral bioavailability in Tg 2576 mice due to rapid *in vivo* metabolism. By identifying and blocking the sites of metabolism. of these leads, we have designed and synthesized novel GSIs with potent, oral *in vivo* activity that also retain Notch-sparing selectivity. The evolution of this series of compounds will be discussed.

Boyd Harrison received a Ph.D. in organic chemistry from Rice University in 1971. Following a short tenure at DuPont working in the Jackson Laboratories, he returned to Rice in 1972 where he completed an NSF postdoctoral fellowship/lectureship in the laboratories of the late R. V. Stevens working on the total synthesis of vitamin B-12. In 1974, Boyd joined the R&D division of Merrell-National Labs (now Sanofi-Aventis) in Cincinnati

Continued on page 14

# September Historical Events In Chemistry

by Leopold May,  
The Catholic University of America, Washington, DC

### September 1, 1909

One hundred years ago on this date, Rohm & Haas Co. was founded.

### September 2, 1853

One hundred years ago, Wilhelm Ostwald was awarded the Nobel Prize in Chemistry in recognition of his work on catalysis and for his investigations into the fundamental principles governing chemical equilibria and rates of reaction. He researched affinity, mass action, theories of solutions, and conductivity (Ostwald’s Law of dilution & conductivity) and was born on this date.

### September 7, 1854

Paul Vielle invented a smokeless powder, Poudre B, from gelatinized nitrocellulose mixed with alcohol and ether. He was born on this date.

### September 9, 1929

Westinghouse Laboratories announced the discovery of Konel, a cobalt-nickel alloy, on this day.

### September 10, 1892

Arthur H. Compton, who received the Nobel Prize in 1927 for his research on cosmic rays and x-rays, was born on this date.

### September 11, 1894

Carl S. Marvel, who did research in organic chemistry and polymer synthesis, was born on this day.

### September 13, 1937

Polaroid Corporation was incorporated on this day.

### September 14, 1698

Charles F. de Cisternay DuFay, who discovered positive and negative

electricity and repulsion between like charges was born on this day. He also did research on phosphorescence and double refraction.

### September 17, 1901

Peter Cooper Hewitt obtained a patent for the mercury vapor lamp on this day.

### September 22, 1791

Michael Faraday was born on this day. He discovered electromagnetic induction, specific inductive capacity, rotation of plane-polarized light in a magnetic field and liquefied chlorine and other gases.

### September 22, 1909

One hundred years ago on this date, the first liquid chlorine was shipped in the US by Electro-Bleaching Gas Co., Niagara Falls, NY,

### September 24, 1905

Fifty years ago, Severo Ochoa and Arthur Kornberg shared the Nobel Prize in Physiology or Medicine for their discovery of the mechanisms in the biological synthesis of ribonucleic acid and deoxyribonucleic acid. Severo Ochoa was born on this date and researched enzymatic processes in biological oxidation and synthesis and the transfer of energy.

### September 29, 1915

Gencorp incorporated as General Rubber Mfg. on this day.

### September 30, 1802

Antoine J. Balard, who was born on this date, discovered bromine in seawater in 1826, hypochlorous acid, and chlorine monoxide.

Additional historical events can be found at Dr. May’s website, at <http://faculty.cua.edu/may/ChemistryCalendar.htm> or the “This Week in Chemical History” at the ACS website: <http://www.acs.org/whatischemistry>. ◇



# NESACS Members Named 2009 ACS Fellows

Eight members of NESACS were named ACS Fellows among the inaugural group of 162 in recognition of their outstanding achievements in, and contributions to, science the profession, and the Society. A ceremony to recognize the Fellows was held on Monday, August 17, in Washington, DC, during the ACS National Meeting. Each Fellow received a lapel pin and a certificate.

Unlike ACS national awards, the honored Fellows designation goes to those who have distinguished themselves in multiple areas, including promoting the science and the profession, and service to the ACS. Ultimately, the body of Fellows is intended to reach approximately 1-2% of ACS membership. Included in the program's design is the provision that all 15 living Priestley Medalists are among the first class of Fellows.

The criteria for the award state that excellence in science and the pro-

fession could be achieved in basic or applied research; distinguished accomplishment in teaching or education; or demonstrated leadership or managerial excellence in an organization within the chemical sciences. Outstanding service to the ACS could include, but is not limited to, governance on a divisional, local, regional, and/or national level; publications such as editor, assistant, or associate editor; meetings through organization of symposia or major presentations; involvement in National Chemistry Week, Chemists Celebrate Earth Day, environmental efforts, and similar outreach activities or public communication by press, radio, TV or electronic media.

## 2009 ACS Fellows:

Charles L. Cooney (Massachusetts Institute of Technology), Robert L. Lichter (Merrimack Consultants), Elias J. Corey (Harvard University), Charles M. Lieber (Harvard University), Mor-

## Abstracts & Bios

*Continued from page 13*

nati, Ohio as a medicinal chemist. He remained there for 23 years working in the areas of beta-lactam antibiotics, anti-inflammatory compounds, and anti-ischemic (anti-stroke) compounds - three compounds from his laboratory in these research areas advanced to the clinical evaluation stage. During this period, he rose through the ranks to a Senior Group Leader position.

Boyd joined Wyeth Discovery Research in January 1997 as an Associate Director of Medicinal Chemistry in the Chemical Sciences group. He rose to Senior Director of Discovery Medicinal Chemistry in the Chemical Sciences department at Wyeth, where he directed the efforts of >25 medicinal chemists, developing novel therapeutics for depression/anxiety, schizophre-

*Continued on page 15*

ton Z. Hoffman (Boston University), Dietmar Seyferth (Massachusetts Institute of Technology), Charles E. Kolb (Aerodyne Research), and George M. Whitesides (Harvard University). ◇

[www.caslab.com](http://www.caslab.com)

An Employee-Owned Company

*Trusted technical expertise.*



3860 S. Palo Verde Road, Suite 102, Tucson, AZ 85714 | 520.573.1061 | [tucsonlab@caslab.com](mailto:tucsonlab@caslab.com)

### Our Tucson Laboratory provides professional Micro-Elemental and Fuel Testing Services

- CHNOS - Combustion / TC / IR Detection
- Carbon & Sulfur - High Temperature Combustion / IR Detection
- Halogen & Sulfur - Oxygen Bomb & Flask Combustion / IC or ISE Detection
- Metals - Total Acid Dissolution, Fusions, ICP-OES, ICP/MS, AAS
- Fuel Analysis - Proximate, Ultimate and BTU Content
- Air Sensitive & Hygroscopic Samples - Nitrogen Dry Box

Contact Columbia Analytical for a full list of capabilities.

 **Columbia  
Analytical Services™**

Same day to 4-6 day rush services available.

Serving the fields of:  
Academic Research  
Biotech  
Chemicals  
Cosmetics  
Electronics  
Energy  
Manufacturing  
Mining  
Environmental  
Pharmaceuticals

## Abstracts & Bios

Continued from page 14

nia, Alzheimer's disease, cognition enhancement, and neuropathic pain. In the recent past, his group has provided the initial design, synthesis, and medicinal chemistry support in placing ten compounds onto development track. Of these, SCA-136 (schizophrenia), GSI-953 (Alzheimer's Disease), and VRA-175 (neuropathic pain) are currently in active clinical evaluation.

Early in 2009, Boyd became head of the Compound Properties Group (CPG), a diverse research group of 21 scientists providing pharmaceutical properties and physical chemical characterization on all requested compounds from the therapeutic areas of Wyeth Discovery. Using a variety of "high throughput" and individual compound property assays, CPG collaborates with project teams and leaders on the selection and optimization of hits, leads, and advanced compounds with respect to their compound property space. Ultimately, the CPG is committed to assisting Medicinal Chemistry in the optimization of compound Structural Property Relationships (SPR), allowing the advancement of the most efficacious, safest and "drug-like" compounds.

In addition, Boyd is an inventor on >40 granted US patents and US patent applications and has authored or co-authored 56 external publications. He has given a number of invited presentations in universities and at national symposia.

### Mark A. Findeis

#### *"Targeting A $\beta$ 42 for Alzheimer's Disease therapy"*

**Abstract:** An expanding body of research has elucidated the central role of amyloid precursor protein (APP) processing and amyloid beta peptide (A $\beta$ ) production in the risk, onset, and progression of Alzheimer's disease (AD), the most common form of dementia. Ongoing research is establishing a greater level of detail for our understanding of the normal functions of APP, its proteolysis products, and the mechanisms by which this process-

ing occurs. The importance of this processing machinery in normal cellular function, such as Notch processing, has revealed specific concerns about targeting APP processing for therapeutic purposes. Aspects of AD that are now well studied include direct and indirect genetic and other risk factors for AD, APP processing, and A $\beta$  production. Emerging from these studies is the particular importance of the long form of A $\beta$ , A $\beta$ 42. Elevated A $\beta$ 42 levels, particularly the elevation of the ratio of A $\beta$ 42 to the shorter major form A $\beta$ 40, have been identified as important early events in the pathogenesis of AD. The specific pathological importance of A $\beta$ 42 has drawn attention to seeking drugs that will selectively lower the levels of this peptide through reduced production or increased clearance while allowing normal protein processing to remain substantially intact.

**Mark A. Findeis** is Co-Founder and Senior Vice President of Research of Satori Pharmaceuticals Incorporated, a neuroscience company focused on the discovery and development of innovative disease-modifying therapies for

Alzheimer's disease and other neurodegenerative disorders. He has over twenty years of experience in research and development. After his postdoctoral work he was on the faculty at Harvard Medical School. He then helped to start TargeTech Incorporated, a company that uses receptor-mediated delivery for gene therapy, antisense therapy and targeted drug delivery. After the acquisition of TargeTech by The Immune Response Corporation, he joined Praecis Pharmaceuticals. As Director of Chemistry at Praecis, he co-directed the discovery program that resulted in the beta-amyloid aggregation antagonist Apan<sup>TM</sup> for the treatment of Alzheimer's disease. While at Praecis, he also supported the development program of Plenaxis<sup>TM</sup>, an LHRH antagonist that gained FDA approval for the treatment of prostate cancer. Dr. Findeis also managed chemistry for a diverse range of discovery programs at Praecis in the areas of inflammation, cancer, and metabolic diseases. Mark received his academic training at the Massachusetts Institute of Technology, Harvard University, and Rockefeller University.  $\diamond$



**Vacuum Inlet Traps**  
Because vacuum pumps don't grow on trees.

**Oil Filtration Systems**  
Because a really old, really healthy vacuum pump is a beautiful thing.

**Oil Mist Eliminators**  
Because no one wants to eat oily mist.

**MV PRODUCTS**  
A Division of 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

# Connections To Chemistry 2009

## A Preliminary Announcement

The Northeastern Section of the American Chemical Society (NESACS) and the Education Committee of the Northeastern Section invite high school chemistry teachers to a program at **Burlington High School (Burlington, MA) on Wednesday, October 14<sup>th</sup>, 3:30 – 8:00 PM**. This program will help connect high school teachers with the numerous education resources that are available from the American Chemical Society. Four simultaneous hands-on workshops will illustrate these resources:

- Using POGIL (Process Oriented Guided Inquiry Learning) in the high school classroom, a classroom and laboratory technique that seeks to simultaneously teach content and key process skills
- Laboratory activities and experiments from USNCO practicals
- A program for the National Chemistry Week theme, *Chemistry—It's Elemental*.
- Laboratory experiments for becoming more familiar with radioactivity

### Program

- 3:30 – 4:00 Registration and Refreshments
- 4:00 – 4:25 Welcome and Overview
- 4:30 – 6:10 Workshops
- 6:15 – 8:00 Dinner and Keynote  
Address by Dr. Bruce Bursten, Past-President, ACS
- **The deadline for registration is Friday, October 9<sup>th</sup>**. The registration fee is \$18.00 and is non-refundable after October 5<sup>th</sup>. Workshop and program-related materials, dinner, a one-year subscription to *ChemMatters*, and a certificate for three hours of Professional Development will be provided to all workshop participants.
  - The detailed program and registration form can be obtained from the

## Sustainability IS

Continued from page 4

ful Pharmaceutical and Formulators programs. The benefits of such an assembly might include furthering sustainability concepts, forging collaborations, providing tools for assessment and improvement, as well as benchmarking across the industry.

Overall, the conference focused a serious light on all things sustainable, doing an admirable job of “uniting chemistry and engineering to the benefit of business and the environment.” The confluence of commercial interests and ecological advocacy comes at a time when the planet and its nations’ economies are off-balance. Harvesting new opportunities in sustainability from the crisis appears to be one of the few bright spots with both grand challenges and the potential for large improvements. This just may be what gets us out of the malaise and back on the road to continuing prosperity. ◇

## Philip Le Quesne

Continued from page 11

from which he moved to Northeastern in 1973.

Phil Le Quesne has been a much admired lecturer in organic chemistry undergraduate and graduate courses, and seminars. Throughout his career, he has combined classical scholarship with path-breaking research. Examples of the latter are his syntheses of indole alkaloids and studies on the antineoplastic activity and cytotoxicity of flavones, isoflavones, and flavonones.

His stature in the chemical community was recognized by his recent participation in the production of a NOVA Documentary about an African-American chemist: “Forgotten Genius: The Percy Julian Story,” which won a Science Journalism Award from the American Association for the Advancement of Science. ◇

NESACS Web site <<http://www.nesacs.org>> under *Connections to Chemistry 2009*.

- For additional information, contact Dr. Ruth Tanner, Chair, Education Committee, NESACS: 978-934-3662 or [Ruth\\_Tanner@uml.edu](mailto:Ruth_Tanner@uml.edu) ◇

Nicalai USA 

### COSMOSIL HPLC Columns

- Since 1979

**New Phases Now Available!**

**HILIC (Triazole bonded)**  
- Unique stationary phase for highly polar compounds

**piNAP (Naphthylethyl group bonded)**  
- Enhanced  $\pi-\pi$  interactions for unsaturated compounds

**Cholester (Cholesteryl group bonded)**  
- New stationary phase for structural isomers



Nicalai USA, Inc. 8640 Lusk Blvd., Suite A200 San Diego CA 92121  
Tel: 858-404-0403 Email: [info@nicalaiusa.com](mailto:info@nicalaiusa.com)  
[www.nicalaiusa.com](http://www.nicalaiusa.com)



### MORE HORSEPOWER

Cambrex has the ability to quickly move your project to the finish line. With cGMP facilities in the USA and Europe, we can provide quality & value-added manufacturing of your APIs.

Cambrex has been helping companies succeed in the pharmaceutical world for over 25 years so give us a call.

Phone: 617-515-0975  
E-mail: [nesales@cambrex.com](mailto:nesales@cambrex.com)



Innovation. Experience. Performance.  
<http://www.cambrex.com>



# BUSINESS DIRECTORY

## SERVICES

### Elemental Analysis

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

### HUFFMAN

LABORATORIES, INC.  
Quality Analytical Services Since 1926!  
Phone: (303) 278-4455  
FAX: (303) 278-7012  
chemistry@huffmanlabs.com  
www.huffmanlabs.com



### Preclinic DMPK

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

[www.HT-LABS.com](http://www.HT-LABS.com)

[info@HT-Labs.com](mailto:info@HT-Labs.com) (858)677-9432

### NMR - IR/FTIR - UV/VIS/FL Sampling supplies & accessories

See our full catalogs / current pricing at

[www.newera-spectro.com](http://www.newera-spectro.com)

CAGE Code: 44ME9  
DUNS: 556785657



### 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*
- *<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectra*
- *Structural Interpretation*
- *LC/MS Services*

**ORGANIX**  
Inc.

Phone: (781) 932.4142

Fax: (781) 933.6695

Email: [organix@organixinc.com](mailto:organix@organixinc.com)

[www.organixinc.com](http://www.organixinc.com)

## SERVICES

### LABORATORY EQUIPMENT

Bought • Sold • Exchanged

### SEPTEMBER SPECIAL

Despatch LCC1-51NV-3 inert atmosphere,  
programmable, clean process, 5.1 cu. ft. oven  
with HEPA air, stainless interior and 260C  
maximum temperature.

Call for Details

American Instrument Exchange, Inc.  
1023 Western Ave., Haverhill, MA 01832  
TEL: 978-521-2221 FAX: 978-521-8822  
[www.americaninstrument.com](http://www.americaninstrument.com)  
E-Mail: [info@americaninstrument.com](mailto: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 [FrontRun@Sprynet.com](mailto:FrontRun@Sprynet.com)  
[www.FrontRunOrg.com](http://www.FrontRunOrg.com)

## SERVICES



Scientific  
glassblowers  
serving  
New England  
for over 40 years

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

[www.finkenbeiner.com](http://www.finkenbeiner.com)

Arendt & Assoc. IP Group

*Registered Patent Attorneys*

- Global Patent Protection
- Licensing
- Controlling Patent Costs

(978)897-8400 or (978)807-5270  
Suite 111 at Interlake 495, Southborough, MA

[jarendt@arendtpatentlaw.com](mailto:jarendt@arendtpatentlaw.com)

### NMR Service 500MHz

\*Mass

\*Elemental Analysis

**NuMega Resonance Labs**

[numegalabs.com](http://numegalabs.com) P- 858-793-6057



### Micron Analytical Services

COMPLETE MATERIALS CHARACTERIZATION  
MORPHOLOGY CHEMISTRY STRUCTURE

SEM/EDXA • EPA/WDXA • XRD XRF • ESCA • AUGER • FTIR • DSC/TGA

Registered with FDA • DEA GMP/GLP Compliant

3815 Lancaster Pike Wilmington DE. 19805

E-Mail [micronanalytical@compuserve.com](mailto:micronanalytical@compuserve.com)

Voice 302-998-1184, Fax 302-998-1836

Web Page: [www.micronanalytical.com](http://www.micronanalytical.com)



### Robertson Microlit Laboratories

*Where speed and accuracy are elemental*

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 melting point

KF Aquametry, Titrimetry

P.O. Box 927 - 29 Samson Ave. - Madison, NJ 07940 - 973.966.6668 - F 973.966.0136

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

**Rapid Results • Quality • Accuracy • Competitive Pricing**

# BUSINESS DIRECTORY

## SERVICES



**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-Poly-002  
Fax: 978-466-8084 info@polyorginc.com  
www.polyorginc.com

## SERVICES

# Productivity Machine

VACUUBRAND® VARIO™ vacuum systems are self-regulating, ending tedious oversight, test runs and programming. Processes finish faster; samples don't bump. Unmatched productivity for rotary evaporation of complex mixtures.



PC3001  
VARIO™

Five Decades of  
Vacuum Innovation  
www.vacuubrand.net  
888-882-6730

## CAREER SERVICES

### SEARCHING FOR THAT SPECIAL JOB?

There are many companies and organizations searching for chemical and biochemical personnel to fill important jobs in their organizations.

- Companies for laboratory and management positions
- Universities & Colleges for teaching positions and laboratory personnel
- Hospitals for technical and research personnel

There are several web sites that may help you search for these open positions.

- [www.mboservices.net](http://www.mboservices.net)
- [www.nesacs.org](http://www.nesacs.org)

THE FUTURE OF LIQUID CHROMATOGRAPHY IS ACQUITY UPLC



Waters ACQUITY UltraPerformance LC® (UPLC®) provides more information, increases laboratory throughput, and can enhance your lab's existing MS technologies.

Learn more about the UPLC advantage at:  
[www.waters.com/uplc](http://www.waters.com/uplc)

**Waters**  
THE SCIENCE OF WHAT'S POSSIBLE.™

### WOULD YOU BELIEVE?

- Our Section (NESACS) is the largest in the ACS.
- We have more volunteers than any other Section.
- We have more activities than any other Section.
- The Nucleus has been voted at several ACS National meetings to be the best Section newsletter.
- We are expanding Nucleus and NESACS web site coverage of activities.

#### The Following positions are open

1. Photo Journalists
2. Book Reviewers
3. Corporate and Local news reporters
4. Copy Editors
5. Volunteer Coordinator

If you would like to be active in this vibrant organization, please contact Board of Publications member Vivian Walworth  
[vwalworth@comcast.net](mailto:vwalworth@comcast.net)

No experience needed  
Just a willingness to participate  
and a sense of humor

### Index of Advertisers

Am. Instrument Exchange .....	17
Arendt & Associates IP Group	17
ACS ProSpectives .....	12
Cambrex Corporation .....	16
Columbia Analytical Services	14
CreaGen Biosciences .....	4
Eastern Scientific Co. ....	7
EMD Chemicals .....	11
G. Finkenbeiner, Inc. ....	17
Front Run OrganX, Inc. ....	17
HT Laboratories, Inc. ....	17
Huffman Laboratories, Inc. ....	17
Mass-Vac, Inc. ....	15
Micron Inc. ....	17
Nacalai USA, Inc. ....	16
New Era Enterprises, Inc. ....	17
Northeastern University .....	2, 19
NuMega Resonance Labs .....	17
Organix, Inc. ....	17
PCI Synthesis .....	20
PolyOrg Inc. ....	18
Robertson Microlit Labs. ....	17
Vacuubrand, Inc. ....	18
Waters Corporation .....	18



# Northeastern

U N I V E R S I T Y

## **EVENING GRADUATE PROGRAM IN CHEMISTRY**

The Original Part-Time Evening Graduate Program  
in New England

*Take courses to:*

- *keep up-to-date*
- *improve professional qualifications*
- *apply toward part-time Master's program*

*All courses meet for a two-and-a-half hour period one evening per week and carry three semester-hours of graduate credit toward the 30 semester-hour requirement for a coursework M.S. degree*

**Courses are taught by Full-time Faculty in their area of expertise**

GRADUATE CLASSES OFFERED FALL SEMESTER  
(Classes begin September 9, 2009)

Principles of Mass Spectrometry  
Principles and Analysis of Carbohydrates **(NEW)**  
Drug Discovery and Development **(NEW)**  
Materials Chemistry of Renewable Energy **(NEW)**  
Analytical Separations  
Organic Synthesis 1  
Mechanistic and Physical Organic Chemistry  
Thermodynamics  
Chemical Biology for Chemists  
Electroanalytical Chemistry  
Principles of Solid State Chemistry

**Students new to the program must have completed an application for admission.**

**For more information on graduate programs, see [www.chem.neu.edu](http://www.chem.neu.edu)**

For additional information contact: Jean Harris  
Department of Chemistry & Chemical Biology  
Tel: (617) 373-2824  
[H.Harris@neu.edu](mailto:H.Harris@neu.edu)

19 Mill Road  
Harvard, MA 01451

THE  
**NUCLEUS**

NONPROFIT ORG.  
U.S. POSTAGE PAID  
NORTHEASTERN  
SECTION  
AMERICAN CHEMICAL  
SOCIETY



**DISCOVER IT HERE. MAKE IT HERE.**

YOUR LOCAL SOURCE for  
cGMP Manufacturing and Custom Synthesis  
*Serving the greater Boston/Cambridge area and beyond.*

 **PCI Synthesis** **978-463-4845**

HEADQUARTERS: 9 Opportunity Way • Newburyport, MA 01950  
R&D: 8 Jackson Road • Devens, MA 01434

[www.pcisynthesis.com](http://www.pcisynthesis.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://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](http://www.umassd.edu/cas/chemistry/seminars.cfm)  
[www.uml.edu/Dept/Chemistry/speakers.html](http://www.uml.edu/Dept/Chemistry/speakers.html)  
<http://www.unh.edu/chemistry/seminars.html>

### Sep 08

Shawn Burdette (University of Connecticut)  
"Controlling Zn<sup>2+</sup> concentrations with photoreactive chelators"  
UNH, Iddles Room L103  
11:10 AM

### Sep 11

Wyeth Lecture in Organic Chemistry:  
Andreas Pfaltz  
(University of Basel)  
TBA  
MIT, 6-120  
4:00 PM

### Sep 14, 15 and 17

Wilson Ho (U. Cal., Irvine)  
Arthur D. Little Lecture  
MIT, 6-120  
5:00 PM

### Sep 16

Prof. Scott E. Denmark (Univ. Illinois, Urbana/Champaign)  
"Lewis Base Activation of Lewis Acids: On Beyond Silicon"  
Boston College, Merkert 130  
4:00 PM

Dr. Martin Case (University of Vermont)  
TBA  
UMass Dartmouth,  
Building Group II, Room 114 4:00 PM

### Sep 22

Alessandro Cunsolo (Argonne National Lab.)  
"The intriguing dynamic behavior of water unveiled by high-frequency inelastic spectroscopies"  
MIT 4-231  
4:00 PM

### Sep. 23

Dr. Jin Xu (U.Mass. Lowell)  
TBA  
UMass Dartmouth, Building Group II,  
Room 114  
4:00 PM

### Sep 24

Richard Saykally (U. Cal., Berkeley)  
"pH of the Liquid Water Surface: Selective Adsorption of the Hydronium and Hydroxide"  
Harvard, Pfizer Lecture Hall  
4:00 pm to 5:00 pm

Prof. Stephen F. Martin (Univ. of Texas, Austin)  
LaMattina Lecture  
TBA  
Univ. New Hampshire, Iddles,  
Rm L103  
11:10 AM

### Sep 29

Prof. Li Deng (Brandeis)  
TBA  
4:00 PM, Merkert 130

**Looking for seminars  
in the Boston area?**

Check out the  
**NESACS Calendar**

[www.nesacs.org/seminars](http://www.nesacs.org/seminars)

### Sep 30

Dr. Theodore Betley (Harvard University)  
"TBA"  
UMass Dartmouth, Building Group II,  
Room 114  
4:00 PM

### Sep 30 & Oct 01

Dr. Raoul Kopelman (The University of Michigan)  
Iddles Lecture Series  
Sep 30: Afternoon TBA  
Oct 01: 11:10  
Univ. New Hampshire, Iddles,  
Rm L103

**Notices for The Nucleus  
Calendar of Seminars should be  
sent to:**

Sheila E Rodman  
Konarka Technologies, Inc.  
116 John St. Suite 12  
Lowell, MA 01852  
email: [srodman\(at\)konarka.com](mailto:srodman(at)konarka.com) ♦