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NESACS

# THE NUCLEUS

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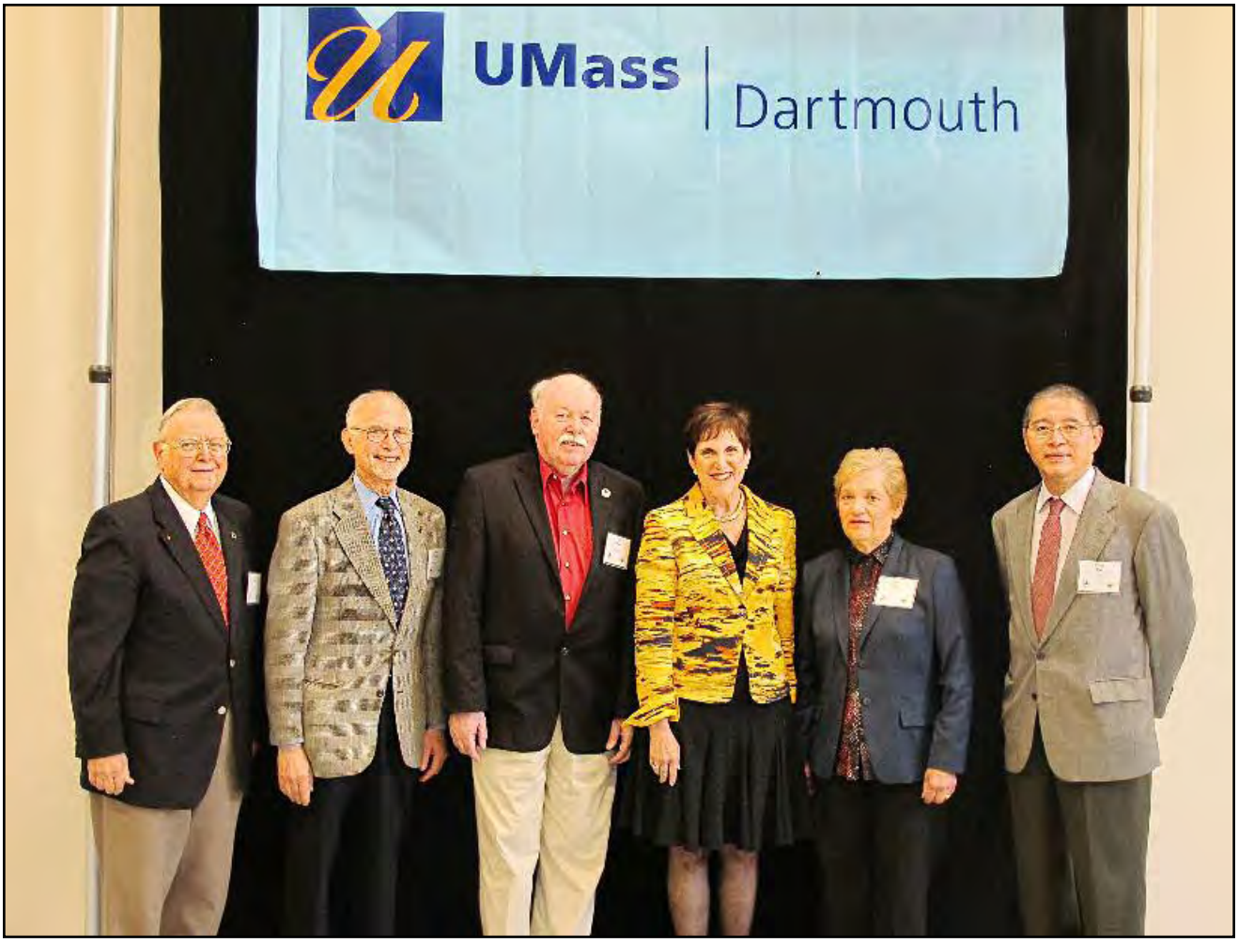


## Monthly Meeting

*A Medicinal Chemistry Symposium at Genzyme/Sanofi in Waltham*

## Summer Scholar Report

*Asymmetric Mannich Reactions via Pseudoephenamine Glycinamide Enolization. By Claire S. Harmange, Ian B. Seiple, Robin J. Sussman, Andrew G. Myers*

## Photos and Reports from NERM

*By Morton Z. Hoffman*

## NAS Biographical Memoirs

*By Michael Filosa*

# Report from New Haven: Meeting of the Board of Directors of NERACS

Morton Z. Hoffman, NESACS Representative to the NERACS Board [hoffman@bu.edu]

The Board of Directors of the Northeast Region of the ACS, Inc. (NERACS) met on Saturday, October 26, 2013, in the Omni New Haven Hotel on the occasion of the Northeast Regional Meeting (NERM 2013). The NERACS Board consists of its Chair (Julianne Smist, Springfield College), Vice Chair (Richard Cobb, Eastman Kodak, retired), Secretary (Christopher Masi, Westfield State University), Treasurer (Wayne Jones, SUNY Binghamton), and representatives from the following local sections: Binghamton, Central Massachusetts, Central New York, Connecticut Valley, Cornell, Corning, Eastern New York, Green Mountain, Maine, Mid-Hudson, New Haven, Northeastern, Northern New York, Penn-York, Rhode Island, Rochester, Western Connecticut, Western New York.

In addition to executive officers Smist, Cobb, and Masi, the following local section representatives were present at the meeting: Willem Leenstra (Green Mountain), Mark Zell (Rhode Island), Akiko Fillinger (Cornell), Richard Hartmann (Rochester), Mitchell Bruce (Maine), Kenneth White and Jefferson Chin (New Haven), Morton Hoffman (Northeastern). Also in attendance were Thomas Gilbert (ACS District I Director) and Michelle Stevenson (ACS staff liaison to NERM).

The Board elected Richard Cobb and Willem Leenstra as Chair and Vice Chair, respectively, for two-year terms (2014-15). It voted by acclamation its appreciation for the service Julianne Smist provided as Chair for six years from the time of the incorporation of NERACS. The terms for the current Secretary and Treasurer run through 2014.

It was announced that the assets in the NERACS Treasury are close to $50,000; when they reach that level, discussions will take place concerning the long-term use of those funds. At the present time, any income above expenditure for a NERM is shared in a 40/60 ratio between NERACS and the hosting local section.

*Doris Lewis (Suffolk University), flanked by Marinda Wu (ACS President) at left and Julie Smist (NERACS Chair), receiving the 2013 E. Ann Nalley Northeast Region Award for Volunteer Service to the ACS.*

*Sharon Palmer (Amherst Regional High School), flanked by Marinda Wu (ACS President) at left and Julie Smist (NERACS Chair), receiving the 2013 Division of Chemical Education Northeast Region Award for Excellence in High School Teaching.*

*(Photos by M. Z. Hoffman)*

Cobb expressed concern about the paucity of nominations for the region awards that are presented at NERM; in fact, some awards cannot be given because the number of nominations does not reach the stipulated minimum. He asked the representatives of the local sections to urge their officers and members to be active in the nomination process. Inasmuch as there will be no NERM in 2014, there is now ample time for nominations to be generated for the 2015 cycle of the following Northeast Region awards: Achievements in the Chemical Sciences, Excellence in High School Teaching, Volunteer Service to the ACS, Advancing Diversity in the Chemical Sciences.

It was reported that as of that morning, more than 850 registrations had been received for NERM 2013; over 480 oral and poster presentations were included in the program. There were 140 undergraduate research posters, four high school student posters, and 27 exhibitors at the meeting. Although the room quota had not been met at the Omni Hotel, which will result in some penalty, overall the financial balance sheet for the meeting should be in positive territory.

NERM 2015 will be held at Ithaca College, June 10-13, with Akiko Fill-

*continued on page 12*

**CAREER DEVELOPMENT**

Being an active participant in NESACS activities will enable you to network with major institutions and corporations in our area and can open up new career opportunities.

The NESACS Board of Publications, which is responsible for both the *Nucleus* newsletter and the NESACS website, is looking to increase its activities in this arena.

We would like to expand our capabilities for keeping our membership informed on what is happening in our field and how to adapt to changing times and new technologies.

You can help us do that. All we ask of you is a few hours a month and a smile.

Call or email to see what opportunities are available.

contact -- Vivian Walworth
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**Cover:** *Pictured at the first SE-MA NESACS area event held at UMass - Dartmouth on October 3, 2013 from L-R are Morton Hoffman, Robert Lichter, Jack Driscoll, Madeleine Jacobs, Ruth Tanner and Liming Shao. (Photo courtesy of M. Z. Hoffman)*

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# NESACS SE-MA Area Event

***at UMass Dartmouth – October 3, 2013***

**By Morton Z. Hoffman**

*Emmanuel Ojadi with MadeleineJacobs*

Approximately 80 people came to the University of Massachusetts Dartmouth (UMD) on Thursday, October 3, to hear Madeleine Jacobs, ACS Executive Director and CEO, speak on "Everything You Always Wanted to Know about ACS, But Were Afraid to Ask" at the first Southeastern Massachusetts (SE-MA) area event organized by the Subsection Task Force (STF). Among those attending were former and current NESACS members from industry and academia, nonmember chemists and teachers from the area, representatives from the Rhode Island Local Section, and guests. The meeting also attracted a significant number of UMD faculty and students.

*MadeleineJacobs meets with UMD Students*

The purpose of the meeting was to begin the process of exploring the feasibility of establishing subsections within NESACS to help connect and engage members in areas that are remote from our Boston/Cambridge and environs core in which almost all the Section's activities take place, specifically, SE-MA (Barnstable, Bristol, Dukes, Nantucket, and Plymouth Counties) and New Hampshire (NH). At the present time, STF has the following membership: Morton Hoffman (Boston University), Ruth Tanner (University of Massachusetts Lowell), Robert Lichter (Merrimack Consultants), Jack Driscoll and Jennifer Maclachlan (PID Analyzers), Robert Howard (Weeset Advisors), Jerry Jasinski (Keene State College) and Gary Weisman (University of New Hampshire).

The meeting began with a reception with light refreshments that was sponsored by the UMD Department of Chemistry and Biochemistry, which is chaired by Emmanuel Ojadi; he and Liming Shao, NESACS Chair, gave welcoming remarks, and Provost Mohammad Karim brought greetings from the administration of the University. Jack Driscoll then spoke about the purpose of the event, described the many activities that NESACS has sponsored and cosponsored in SE-MA over the past several years, and provided a blueprint for the future.

Robert Lichter introduced Ms. Jacobs, who spoke about the vision ("Improving people's lives through the

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# Monthly Meeting

***The 936th Meeting of the Northeastern Section of the American Chemical Society***

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

**Sponsored by Sanofi**

**Symposium**

***Innovative Treatments for Unmet Medical Needs***

**December 12, 2013**

**Genzyme Corporation/Sanofi**
**153 Second Avenue, Waltham Massachusetts 02451**
***Northeastern Conference Room***

| | |
|---|---|
| 3:00 pm | Refreshments |
| 3:15 pm | Welcome<br>**Raj (SB) Rajur**, Program Chair, CreaGen Biosciences, Inc., Woburn, MA |
| 3:20 pm | Introductory Remarks<br>**Norton P. Peet**, Director of Chemistry, Microbiotix, Worcester, MA |
| 3:30 pm | **Barry Toure**, Novartis Institute for Biomedical Research, Boston |
| 4:15 pm | John Williams, Senior Scientist, Microbiotix, Inc., Worcester, MA<br>"*Novel Inhibitors of the Pseudomonas Type Three Secretion System*" |
| 5:00 pm | **TBA** |
| 6:00 pm | Social Hour |
| 6:45 pm | Dinner |
| 7:45 pm | Keynote Presentation<br>Introduction: **David Aldous**, Head of Boston LGCR, Sanofi, Waltham, MA<br>Speaker:<br>**Zhongli Gao,** Genzyme-Sanofi, Waltham, MA<br>*A Winding Journey of Medicinal Chemistry toward the Discovery of a Potent, Selective, and Orally Bio-available Histamine H3 Receptor Antagonist for Cognitive Impairment: From a Biological Concept to a Development Candidate* |

**YOU MUST REGISTER IN ADVANCE, BUT THERE IS NO REGISTRATION FEE TO ATTEND THE SYMPOSIUM; DINNER RESERVATIONS ARE REQUIRED.**

**THE PUBLIC IS INVITED**

Dinner reservations should be made no later than noon, Thursday, December 5th, 2013. Reservations are to be made using PayPal: http://acssymposium.com/paypal.html. Select pay with credit or debit card option and follow the additional instructions on the page. Members, $30; Non-members, $35; Retirees, $20; Students, $10. Reservations for new members and for additional information, contact the secretary, Anna Singer, at (781) 272-1966 between 9am and 6pm or e-mail at secretary@nesacs.org. Reservations not cancelled at least 24 hours in advance must be paid.

# Abstract

**Title:** *A Winding Journey of Medicinal Chemistry toward the Discovery of a Potent, Selective, and Orally Bioavailable Histamine H3 Receptor Antagonist for Cognitive Impairment: From a Biological Concept to a Development Candidate*

Cognitive impairment or deficit is an inclusive term to describe any characteristic that acts as a barrier to the cognition process. More than 16 million people in the United States are living with cognitive impairment. Currently, no cognitive impairment drugs or other treatments are specifically approved by the Food and Drug Administration (FDA), although physicians sometimes prescribe cholinesterase inhibitors. These, however, aren't recommended for routine treatment because they don't appear to provide lasting benefit. H3 receptor (H3R), a pre-synaptic GαI/O protein-coupled auto-receptor, is widely expressed in the mammalian brain, particularly in areas involved in cognitive processes and arousal, such as the cerebral cortex, hippocampus, basal ganglia, and hypothalamus. Blockade of H3R with selective antagonists/ inverse agonists is hypothesized to increase the synthesis and release of histamine and other neurotransmitters involved in alert and cognitive functions. We are interested in discovery

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## Directions to Genzyme-Sanofi

**From North or South 95/Rt 128 South.**
Take Exit 27B/Winter Street. Follow the signs for Second Avenue (stay in right lane). Take a right after the Embassy Suites Hotel onto Second Avenue. Go past Costco on the right
At ADP take a right between ADP garage and ADP offices. (There is a sign directing you to Genzyme). Proceed about 100 feet. Genzyme will be on the right.

Link to directions:
http://www.genzyme.com/~/media/Files/GenzymeCorp/PDF/directions_waltham.pdf ◇

# Report from New Haven: NERM 2013

Morton Z. Hoffman, Chair, NERM Committee [hoffman@bu.edu]

The New Haven Local Section hosted the ACS Northeast Regional Meeting (NERM 2013) on October 23-26 at the Omni New Haven Hotel. With more than 850 registrants making over 480 oral and poster presentations (including 140 undergraduate research posters, and four high-school student posters) as well as 27 exhibitors, the meeting was an exciting professional event with ACS President Marinda Wu and Immediate Past President Bassam Shakhashiri in attendance. Forty-three separate sessions, spanning a broad spectrum of the chemical sciences, were packed into three days of programming. The full program is available online at <http://nerm2013.sites.acs.org/>.

One of the sessions was the NESACS-sponsored symposium, "International Chemistry Connections," which was organized by Heidi Teng and Morton Hoffman in celebration of the 13th annual exchange between the NESACS Younger Chemists Committee (NSYCC) and the *Jungchemikerforum* (JCF) of the German Chemical Society (GDCh). Twelve graduate students and two accompanying persons from Germany traveled to New Haven for NERM after spending the previous four days in Boston as guests of NESACS, partaking in academic and industrial site visits as well as cultural and social events.

The following were members of the German delegation: Prof. Dr. Alfred Flint (University of Rostock), Dr. Elisabeth Kapatsina (GDCh), Anna Hofmann (University of Würzburg), Torsten John (University of Leipzig), Susanne Leubner (Technical University Dresden), Martin Lichtenthaler (University of Freiburg), Mike Neumann (University of Potsdam), Wilma Neumann (University of Leipzig), Tanja Scholz (RWTH Aachen University), Denise Schütz (University of Frankfurt), Andreas Seitz (University of Regensburg), Peter Sponholz (University of Rostock), Christian Weinberger (University of Paderborn), Stefan Zajonc (Karlsruhe University of Education).

*Classic New England*

The members of the NESACS German Exchange Steering Committee who attended NERM were Morton Hoffman (Boston University), Jackie O'Neil (Alkermes, Inc.), Michael Strem (Strem Chemicals), Ruth Tanner (University of Massachusetts Lowell), and Heidi Teng (Sigma-Aldrich Fine Chemicals). Jens Breffke (Pennsylvania State University), who was a member of the German Exchange to Boston for the ACS National Meeting in August 2007, provided important linguistic and cultural insights.

The schedule of the symposium, which was held on October 25, was as follows:

1:30-1:40 p.m. Opening Remarks – *Morton Hoffman*

1:40-2:00 p.m. Partners for Progress and Prosperity – *Marinda Wu*

2:00-2:20 p.m. Chemistry in Germany: Educational and Research Opportunities – *Elisabeth Kapatsina*

2:20-2:40 p.m. Northeastern Section Younger Chemists Committee: Connecting Chemists Domestically and Abroad – *Heidi Teng*

2:40-3:00 p.m. JCF: The Connection between School Education, Academia, and Industry – *Anna Hofmann*

*Michelle Stevenson (ACS), staff liaison to NERM, with Jefferson Chin (Bristol-Myers Squibb), General Co-Chair of NERM.*

3:00-3:10 p.m. Intermission

3:10-3:30 p.m. Problem with Teaching Chemistry at High Schools in Germany – *Alfred Flint*

3:30-3:50 p.m. Growing a Small Chemical Business Internationally – *Michael Strem*

3:50-4:10 p.m. Personal Impact and How to Measure It – *Jens Breffke*

4:10-4:30 p.m. International Chemistry Reflections – *Morton Hoffman*

4:30-4:35 p.m. Concluding Remarks – *Morton Hoffman* and *Heidi Teng*

The graduate student members of the German delegation also made presentations in the technical sessions:

- Specific immobilization of biomolecules on surfaces for intelligent materials (physical chemistry) – *Torsten John*
- Highly structured and high surface b-SiC from plant material (inorganic chemistry) – *Mike Neumann*
- Ordered mesoporous carbon materials from novel molten precursors containing nitrogen (nanoscience); Formation mechanism of ordered mesoporous $Al_2O_3$: Relation between mesoscopic order and crystallinity (poster) – *Christian Weinberger*

*continued on page 13*

# National Academy of Sciences - Biographical Memoirs

http://www.nasonline.org/publications/biographical-memoirs/online-collection.html

By Michael P. Filosa

While searching for a photo of James Flack Norris (1871-1940) for the November *Nucleus,* I came across his biographical memoir on the website of the National Academy of Sciences (NAS). This memoir was written by John D. Roberts and was presented to the Academy in 1974, a scant(!) 34 years after his death.

The NAS was founded in 1863 by 50 of the most prominent scientists in the United States, and its initial charter was signed by Abraham Lincoln. It is a tradition that each of its members be memorialized in a memoir to the Academy written by a peer (or two).

These memoirs are a treasure trove of the history of science. The sole weakness is that they are posthumous and not necessarily, very timely. However, they are quite thorough and a good overview of the scientists, complete with a detailed listing of their major works.

During my school years, I was always intrigued with stories about great scientists. Dan Kemp would talk extensively about his thesis advisor, R. B. Woodward, and his works. Those stories about Woodward (1917-1979) and also Gilbert Stork were very influential in my decision to pursue synthetic organic chemistry as a career.

Woodward's memoir was written by Elkan Blout (with assistance from Frank Westheimer) and was published in 2001, a "scant" 22 years after his death.

The memoirs are often glowing: *"Robert Burns Woodward was the preeminent organic chemist of the twentieth century. This opinion is shared by his colleagues, students and by other distinguished chemists."*

Blout includes lengthy commentaries from Sir Derek Barton, Roald Hoffman and Albert Eschenmoser in the memoir. He concludes with his own insights and observations from their long friendship.

Woodward and James Conant were influenced at Harvard by E. P. Kohler (1865-1938). Kohler's memoir was written by James Conant in 1952. Conant in turn was memorialized by his student Paul D. Bartlett. Bartlett was an immensely influential physical organic chemist. His memoir was written by Frank Westheimer and begins: *"Paul Bartlett was one of the great chemists of the twentieth century. His research and teaching were in the area of physical-organic chemistry, and he dominated that field for perhaps four decades. He wasn't old enough to be among the earliest practitioners; that honor is shared among Arthur Lapworth, A. Hantzsch, C. K. Ingold, and L. P. Hammett. But Bartlett created a school of physical-organic chemistry that sparked a revolution in the way organic chemistry is taught and practiced throughout the world."*

If the history of Harvard's great chemists and the development of Harvard chemistry are not your interest, you can read the memoirs of A. C. Cope, John Sheehan or George Buchi of M.I.T. Sheehan's memoir was written by E. J. Corey and John D. Roberts. You can also read the memoir of William Barton Rogers, founder of M.I.T., or the memoir of Vannevar Bush, written by Jerome Wiesner.

Edwin Land's memoir was written by his biographer, Victor K. McElheny. The memoir is a far more succinct summary of Land's life than the book.

The best way to find a memoir is to use the search engine. I became intrigued with who was the first female member of the NAS. The search engine did not provide a way to find this person, but Google gave me a quick answer, Florence Rena Sabin (1871-1953), inducted into the Academy in 1925. Her memoir is a fascinating one and well worth reading. Another is the memoir for Margaret Mead.

Florence Rena Sabin was born in Central City, Colorado. Her father abandoned the idea of a medical career to become a mining engineer, leaving the family farm in Vermont for Colorado in 1860, where he married a school teacher from Blackhawk, Colorado in 1868. Florence's mother died when she was young and she and her sister were sent back east to live with their uncle and grandparents in Illinois and Vermont. Florence ultimately attended Smith College with her sister. There she developed her interest in science.

Florence initially taught school in Denver and then was an assistant in zoology at Smith before working at the Marine Biological Laboratories in Woods Hole. However, her ultimate ambition, once she had saved some money, was to attend Johns Hopkins Medical School, which was founded in 1893 with the stipulation by its benefactors that women should be admitted as well as men.

Florence became a protégé of Dr. Franklin Paine Mall, the school's first Professor of Anatomy. She flourished under the guidance of Dr. Mall and his philosophy of education. Her independent work won much acclaim and she was appointed in 1917 Professor of Histology, the first woman to obtain a full professorship in the Johns Hopkins Medical School.

Other non-chemistry memoirs of note is the glowing memoir written about Louis Agassiz, one of the 50 founding members of the NAS. I was also fascinated to find the memoirs for the two protagonists of the "Dinosaur Wars:" Edward Drinker Cope and Othniel Charles Marsh. Their biographers do not shy away from their vicious competition.

*continued on page 12*

# Summer Scholar Report

## *Asymmetric Mannich Reactions via Pseudoephenamine Glycinamide Enolization*

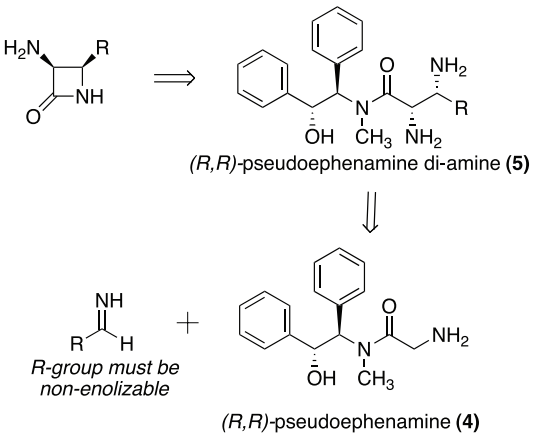
Claire S. Harmange*, Ian B. Seiple, Robin J. Sussman, Andrew G. Myers
Department of Chemistry and Chemical Biology, Harvard University

Since the discovery of penicillin G (**1**, Fig. 1) nearly 75 years ago, β-lactams are some of the most widely prescribed antibiotics in the United States and around the world. Rapidly increasing resistance to β-lactams is threatening the limited arsenal of antibiotics available to physicians, and the lack of innovation and momentum in the field of antibiotic development has caused the drug pipeline to virtually dry out. Significant research in the practical and variable synthesis of antibiotics playing a central role in the battle against resistant bacteria.[Ia,b]

The β-lactam's characteristic four-membered ring exerts its antibacterial effect by interfering with bacterial cell wall synthesis. In binding to the bacteria's β-lactam-binding enzymes called PBPs (penicillin-binding proteins), the drug inhibits cell wall synthesis, eventually leading to cell death. Resistance mechanisms include: changes in one or more of the PBPs, which decreases the drug's ability to bind to the target bacteria; changes in cell wall porins, which prevent penetration of the antibiotic;[i] and finally, bacterial production of β-lactamases, which deactivates the antibiotic before it can reach its target.[ii]

The discovery of nocardicins (**2**, Fig. 1) in 1976, as well as others, prompted new interest in the pharmaceutical potential of monocyclic β-lactams, which has motivated chemists to develop a variety of routes to these compounds.[ii] Most notable among these is Aztreonam (**3**, Fig. 1), which represents the only fully synthetic monobactam to be developed as a commercial drug in the United States.[i] Developments in the synthesis of monocyclic β-lactams have included cyclization of amino acids,[v] [2+2] cycloaddition of ketenes and imines,[v] ester enolate-imine condensations,[vi] and others.[vi] Asymmetric enolate-imine condensations have been reported using *(S,S)*-pseudoephedrine[i] and chiral oxazolidinones;[x] however, these syntheses lack amino functionality at the C-3 position important to monocylic β-lactams activity. Using chemistry developed by the Myers group with pseudoephenamine glycinamide, this project aims to synthesize αβ-diamino acids, which are precursors to monocyclic β-lactam candidates.

**Figure 2**: Retrosynthetic analysis of the target monocyclic β-lactam




The Myers group has shown that stereocontrolled synthesis of *syn*-β-hydroxy-α-amino acids can be achieved via direct aldolization of pseudoephenamine glycinamide.[xi] Analoguous enolization of pseudoephenamine glycinamide **(4)** followed by the trapping an imine electrophile was expected to deliver a diastereoselective Mannich reaction and produce the desired diamine **(5)** β-lactam precursor (Fig. 2).

Initial challenges in the project involved the choice of electrophile. Trimethylsilyl-benzaldimine was at first selected for its lability and consequent potential for simultaneous cyclization the β-lactam and cleavage of the auxiliary upon formation of the Mannich adduct. Several attempts to effect a Mannich coupling with TMS-imine were unsuccessful, leading instead to the transimination product (**6**, Scheme 1). By switching to Boc-imines, successful Mannich coupling was achieved. Boc-*p*-toluelbenzaldimine yielded a 95% yield of major diastereomer showing promise for a highly diastereoselective reaction (**6**, Scheme 2). Absolute determination of the product's stereochemistry remains to be determined via X-ray crystollography. The success of the Boc-imine electrophile indicates potential for the synthesis

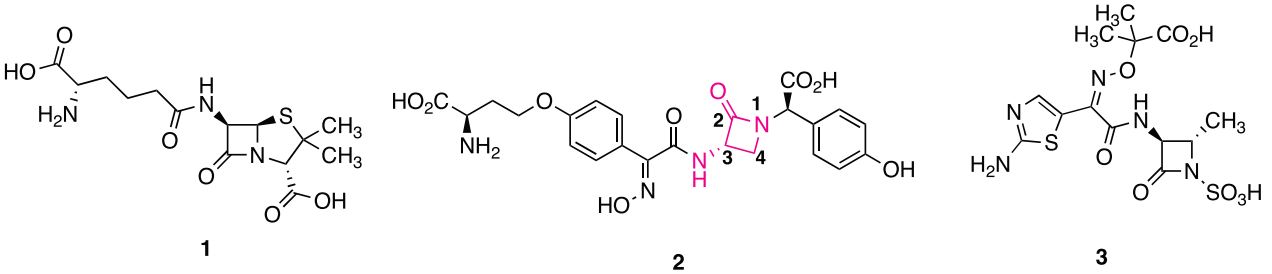
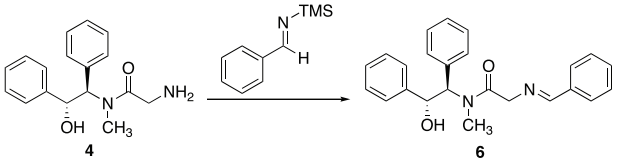


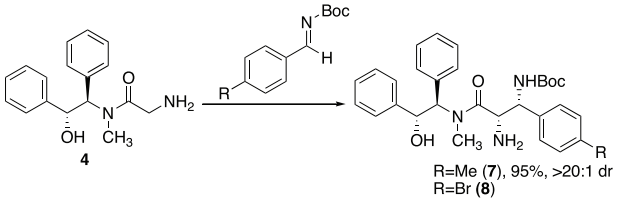

**Figure 1**: β-lactam antibiotics. Structures of (**1**) penicillin G, (**2**) nocardicin A, and (**3**) aztreonam.

of a variety of other Mannich adducts from a variety of Boc-imines. To date, Boc-*p*-bromobenzaldimine[xii] has also been successfully used as a Mannich substrate (**8**, Scheme 2).

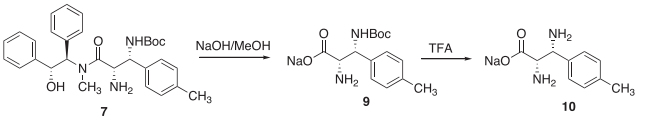
Completing the β-lactam synthesis required removal of




**Scheme 1**: Initial experiments with TMS-imine gave transimination product (**5**).




**Scheme 2**: Successful *(R,R)*-Pseudoephenamine directed Mannich reactions.




**Scheme 3**: Synthesis of the α,β–diamino acid β-lactam precursor

the auxiliary and deprotection of the Boc group to yield the corresponding alpha,β-diamino acid. Auxiliary cleavage in basic conditions gave the water-soluble carboxylate diamine (**9**, Scheme 3). Boc deprotection in TFA proceeded cleanly (**10**); however, subsequent cyclization attempts using Mukaiyama's reagent have yielded inconsistent results. Difficulty purifying the water-soluble cyclization substrate as well as the water sensitive nature of the cyclization may explain the unsuccessful results. Recent success in cleavage of the Boc group with the substrate still attached to the auxiliary offers the possibility of a cleaner cyclization route. Continued work on this project will involve further exploration of cleavage methods and cyclization pathways as well as diversification of possible Mannich adducts with a variety of imine electrophiles.

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[*] C. S. H acknowledges the ACS for its financial support through the NESACS Norris-Richards Research Scholarship.


# Sukant Tripathy Annual Memorial Symposium

**Friday, December 6, 2013**
**8 a.m. to 4:30 p.m.**
**UMass Lowell Inn and Conference Center, 55 Warren St., Lowell, MA 01854**

Directions can be found in the ICC's website: http://www.acc-umlinnandconferencecenter.com/maps-directions.

The program includes talks by invited speakers and poster presentations.

**Speakers:**

E. Bryan Coughlin, University of MA Amherst
Alan Dalton, University of Surrey, U.K.
Jeremiah Johnson, MIT
Changshu Kuo, National Cheng Kung University, Taiwan
Ramanathan Nagarajan, U.S. Army NSRDEC
Prakash Rai, University of MA Lowell
TBA

**Registration:** Pre-Registration (FREE) is required by November 29, 2013 to Michele_Vercellin@uml.edu or 978-934-3695. Lunch and refreshments will be provided (so accurate count is required). Please request vegetarian luncheon if preferred. ◇

# Photos from the German Exchange at NERM

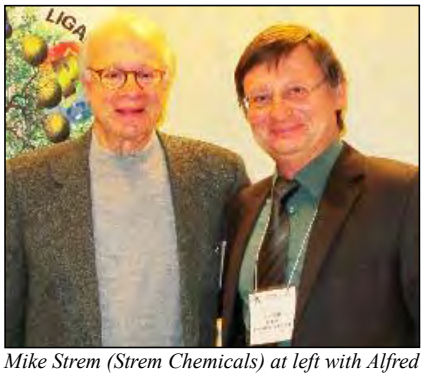
Photos by Morton Z. Hoffman

*Marinda Wu chatting with members of the German delegation after the symposium: (l-r) Jens Breffke, Wilma Neumann, Torsten John, Susanne Leubner, Tanja Scholz, Martin Lichtenthaler, Andreas Seitz, Elisabeth Kapatsina. In background: Mike Neumann, Christian Weinberger.*

*Members of the German delegation and NESACS German Exchange Steering Committee with Marinda Wu (ACS President), at center, after the symposium: (l-r) Denise Schütz, Wilma Neumann, Torsten John, Jackie O'Neil, Mike Strem, Ruth Tanner, Jens Breffke, Heidi Teng, Morton Hoffman, Anna Hofmann, Peter Sponholz, Martin Lichtenthaler, Mike Neumann, Christian Weinberger, Susanne Leubner, Stefan Zajonc, Tanja Scholz, Andreas Seitz, Elisabeth Kapatsina, Alfred Flint.*

*(l-r) Morton Hoffman (Boston University), Elisabeth Kapatsina (German Chemical Society), Mike Strem (Strem Chemicals).*

*Members of the German delegation and the NESACS Steering Committee with friends at the NERM dinner. (l-r) Seated: Rajeev Chorghade, Jackie O'Neil, Martin Lichtenthaler, Elisabeth Kapatsina, Andreas Seitz, Keeve Gurkin; standing: Peter Sponholz, Alfred Flint, Tanja Scholz, Jens Breffke, Susanne Leubner, Stefan Zajonc, Anna Hofmann, Denise Schütz, Heidi Teng, Mike Neumann, Christian Weinberger, Wilma Neumann, Torsten John.*



*Mike Strem (Strem Chemicals) at left with Alfred Flint (University of Rostock) at the Strem Chemicals exhibitor booth.*

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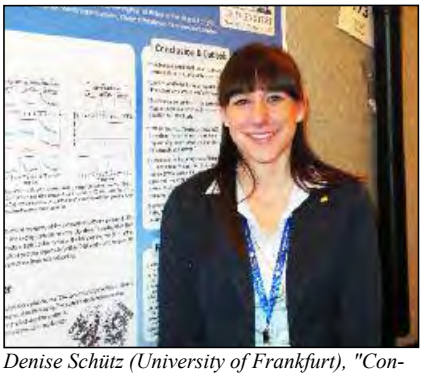
## German Exchange

*Continued from page 10*



*Denise Schütz (University of Frankfurt), "Conformational Flexibility of Toc34 Homodimer Studied by PELDOR."*

*Mike Neumann and Wilma Neumann discuss Anna Hofmann's poster with her.*

*(l-r) Seated: Anna Hofmann, Jackie O'Neil, Wilma Neumann; standing: Peter Sponholz, Andreas Seitz*

*Mike Strem (Strem Chemicals) at left with Jens Breffke (Pennsylvania State University).*

*(l-r) Susanne Leubner, Heidi Teng, Tanja Scholz*

# NESACS Archives Have Moved

The NESACS Archives were moved from their location of many years in the basement of the Regis College Library to a new temporary location at Sigma-Aldrich Corporation in Natick, MA. **A more permanent long-term storage location is desired.**

NESACS expresses great appreciation to Regis College for allowing NESACS to store its archives in its library. NESACS is further appreciative of Michael Singer and Sigma-Aldrich for making storage space available while a more permanent solution is sought. ◇

**Q. Exactly, how many awards and scholarships does NESACS sponsor?**

**A) One b) Two c) Many**

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## Biographical Memoirs

*Continued from page 7*

I was disappointed that Stephen Jay Gould's memoir has not been written. His book "Wonderful Life" about all the strange and wonderful fossilized creatures discovered in the Burgess Shale is one of my favorites.

The nuclear physicists involved with the creation of the atomic bomb are well represented in the memoirs. Most recently the Philip Morrison and Edward Teller memoirs were published to join that of J. Robert Oppenheimer.

Albert Einstein is there along with Thomas Edison. It is interesting to note that Edison was not inducted until 1927 when he was 80 years old. I guess having a record number of US Patents was not sufficient for membership to the Academy until the sheer volume and economic impact overwhelmed the selectors. Notably, his memoir was published in 1932 only a year after his death.

There is an iPad application that makes accessing the memoirs very simple. You will immediately see a tab listing of eighteen of the most recently published memoirs. This tab is followed by a "featured" tab which is currently honoring NAS Nobel Laureates such as Hans Bethe, Bruce Merrifield, and Theodore William Richards.

I highly recommend these memoirs as an informative and inspirational window into the lives of these great scientists. The NAS membership includes a rich selection of the most influential scientists of the last 150 years. These biographical memoirs are a treasure. ◇

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## NESACS SE-MA Event

*Continued from page 4*

*Provost Karim*

transforming power of chemistry") and mission ("Advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people") of the ACS, the structure of the Society (local sections, technical divisions, committees, publications, staff, and volunteers), and its core values (passion for chemistry in the broadest sense, focus on members, professionalism, diversity and inclusion). She then explored in detail the current strategic plan:

- *Provide information*: Be the most authoritative, comprehensive, and indispensable provider of chemistry-related information;
- *Advance members careers*: Empower an inclusive community of members, with networks, opportunities, resources and skills to thrive in the global economy;
- *Improve education*: Foster the development of the most innovative, relevant, and effective chemistry education in the world;
- *Communicate chemistry's value*: Communicate chemistry's vital role in addressing the world's challenges to the public and policymakers.

After a question and answer period, the attendees mingled and spoke with Ms. Jacobs while enjoying a reception of heavy hors d'oeuvres provided by Jeannette Riley, Dean of the UMD College of Arts and Sciences.

Earlier in the day, Ms. Jacobs met with members of the faculty and students in the Department of Chemistry and Biochemistry, toured the research and teaching laboratories, and participated in the inauguration of the new 400-MHz NMR facility.

Plans are now being developed for further events in SE-MA and an inaugural one in NH during 2014. Modest funds to support the program into the next year were received by NESACS as an innovative project grant from the ACS Local Sections Activities Committee (LSAC). A survey of the attendees at the October 3rd event indicated a strong interest in future activities in SE-MA and a willingness of many to become actively involved. ◇

## NERACS Report

*Continued from page 2*

inger of that institution as the General Chair. The Binghamton Section is expected to submit a bid to host NERM 2016 to celebrate its 75th anniversary. The Central New York and Rochester Sections have made separate expressions of interest for NERM 2017. NERM 2018 is currently open; the Rhode Island Section will explore the option for an October meeting that year in Providence or Newport, perhaps in connection with the Southeastern Massachusetts area of NESACS.

The next meeting of the NERACS Board will be at a 2014 National ACS meeting, probably in San Francisco in August. ◇

## Abstract

*Continued from page 5*

and development of a novel, potent, selective, and orally and CNS-penetrable H3R antagonist/ inverse agonist for treatment of cognitive impairment associated with AD and Schizophrenia. This presentation will describe our medicinal chemistry efforts towards this goal, beginning with biological concept through HTS and finally DC selection. ◇

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## NERM 2013 Report

*Continued from page 6*

- Hydrogen production and storage for a sustainable energy economy (organometallic chemistry and catalysis) – *Peter Sponholz*
- Research-experiencing learning in the student-based project "Make Science!" (chemical education) – *Stefan Zajonc*
- Applied gallium(I) chemistry: Synthesis of highly reactive polyisobutylene (organometallic chemistry and catalysis) – *Martin Lichtenthaler*
- COX inhibitors with caraboranes as pharmacophore (medicinal chemistry) – *Wilma Neumann*
- Synthesis, structure, and magnetic properties of tin-substituted iron nitrides $Sn_xFe_{4-x}N$ (poster) – *Tanja Scholz*
- Novel phosphorous-carbon cages (poster) – *Andreas Seitz*
- Synthesis and evaluation of mannose derivatives as *Pseudomonas aeruginosa* lectin LacB antagonists (poster) – *Anna Hofmann*
- Influence of the surface ligand density on the optical properties of semiconductor nanocrystals (nanoscience) – *Susanne Leubner*
- Conformational flexibility of Toc34 Homodimer studied by PELDOR (poster) – *Denise Schütz*

Accommodations at the Omni Hotel and registration at NERM, which included participation in the welcome reception, social mixer, keynote dinner with Donna Nelson (University of Oklahoma), and awards dinner with Marinda Wu, were provided for the German delegation by NESACS. A global innovation grant of $4,000 from the ACS International Activities Committee partially covered those expenses.

Attendees at the keynote dinner had the opportunity to hear Prof. Nelson describe her activities as scientific advisor to the popular television program, *Breaking Bad*, and to meet her personally. Honored at the awards dinner was Sharon Palmer, a chemistry teacher at Amherst (MA) Regional High School, who received the 2013 ACS Division of Chemical Education Northeast Region Award for Excellence in High School Teaching.

Closer to home, also honored at the awards dinner was Doris Lewis (Suffolk University), who received the 2013 E. Ann Nalley Northeast Region Award for Volunteer Service to the ACS for her activities with the multi-award-winning student chapter at her institution, with NESACS as section chair, leader in the creation of *Connections to Chemistry* and the Phyllis A. Brauner Memorial Lectures, and chair of the Government Affairs Committee, and at the national level with the ACS Committee on Chemistry and Public Affairs and the Committee on Public Relations and Communications.

There will be no Northeast Regional Meeting in 2014. The next NERM will be held in Ithaca, NY, on June 10-13, 2015, on the campus of Ithaca College; Akiko Fillinger of that institution will serve as the General Chair. The plenary speaker will be Esther Takeuchi (SUNY Stony Brook), who received the 2013 E.V. Murphree Award in Industrial and Engineering Chemistry from the ACS for her innovative work on advanced battery power sources. ◇

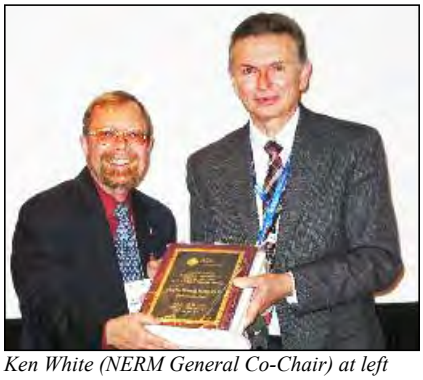
# Photos from the Northeast Regional Meeting

October 23-26, 2013, New Haven, Connecticut
Photos by Morton Z. Hoffman

*Donna Nelson (University of Oklahoma), scientific advisor for Breaking Bad, at left with Ruth Tanner (University of Massachusetts Lowell), NESACS Immediate Past Chair.*

*(l-r) Sandy Hoffman, Marinda Wu (ACS President), Doris Lewis (Suffolk University), Kathleen Schulz (ACS Director-at-Large), Julie Smist (NERACS Chair), Dorothy Phillips (NESACS Councilor).*

*Mukund Chorghade (Thinq Pharma) with his wife, Veena, and son Rajeev (Carnegie Mellon University).*



*Ken White (NERM General Co-Chair) at left receiving a plaque of recognition from Tom Gilbert (ACS District I Director).*

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- We are expanding Nucleus and NESACS web site coverage of activities.

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# A Plea for Local Section Dues

When you receive your dues bill from National ACS it will include an item for Northeastern LS Voluntary Dues of $22. Every member of ACS who lives in New Hampshire or eastern Massachusetts is automatically a member of the Northeastern Section (NESACS). These dues are voluntary, and about half of our 6500 members choose not to pay them.

As Treasurer of NESACS, I would like to urge all members to pay these dues and support the Section activities, even if you do not regularly attend NESACS meetings. Dues constitute the major source of discretionary income to the Section. While most awards programs are supported by Trust funds, your dues and contributions fund activities such as those of the Education Committee, National Chemistry Week, Younger Chemists, and Project SEED, all of which benefit the general chemical community.

Non-payment of Local Section dues has no effect on the individual member. ACS does not permit us to discriminate between members who pay dues and those who do not, so, for example, the Nucleus is sent to all members by mail or electronically. Members for whom dues are non-deductible might prefer to send a contribution to NESACS, since contributions to the Section are tax deductible. Checks payable to NESACS can be sent to the Treasurer at 19 Mill Rd., Harvard, MA 01451 or to the administrative secretary.

Your support of the Section is greatly appreciated, and the Board of Directors conscientiously strives to see that all Section activities advance the chemical enterprise.

-Jim Piper, NESACS Treasurer ◇

# Calendar

## Check the NESACS home page for late Calendar additions: http://www.NESACS.org

**Note also the Chemistry Department web pages for travel directions and updates.**
These include:
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### Dec 02
Prof. Jeffrey Long (U.C. Berkeley)
Harvard University, Pfizer Hall
4:15 pm

### Dec 03
Prof. Bing Xu (Brandeis University)
"Exploring Molecular Nanomaterials in Cellular Environments"
Tufts U., Pearson P-106, 4:30 pm

Prof/ Yan Jessie Zhangm (U. of Texas-Austin)
Boston College, Merkert 130
4:00 pm

Prof. Jonathan Rochford (UMass-Boston)
U. New Hampshire, Room N104 (L103)
11:10 am

### Dec 04
Prof. Joel Rosenthal (U. of Delaware)
UMass Dartmouth, Dion Building-Rm 115
4:00 pm

### Dec 05
Prof. Sanjay Mathur, (U. of Cologne)
Boston College, Merkert 130 4:00 pm

### Dec 06
Sukant Tripathy Memorial Symposium 2013
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### Dec 09
Prof. Joseph Sadighi, (Georgia Tech)
"Small Clusters of Group 11 Metals Supported By N-Heterocyclic Carbenes"
Brandeis, Gerstenzang 121
4:00 pm

Prof. Eun Suk Kim (Brown University)
Boston University, Metcalf Rm 113 4:00 pm

### Dec 11
Physical Chemistry Seminar
Prof. John Tully (Yale University)
MIT, Rm 4-231
4:00 pm

### Dec 18
Physical Chemistry Seminar
Prof. Adam Willard (MIT)
Boston University, Metcalf Rm SCI512
2:00 pm

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