

THE NUCLEUS

November 2014

Vol. XCIII, No. 3

Monthly Meeting

Norris Award to Thomas J. Greenbowe

Arno Heyn Memorial Book Prize to Morton Z. Hoffman

*At Holiday Inn Boston-Brookline
November 6, 2014*

Future of Chemistry Symposium

At Novartis, November 13, 2014

ACS Policy Fellowships

By Kiel LazarSKI

Summary of Governance Issue and Actions

*248th ACS National Meeting,
San Francisco, CA*





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5625	Chemistry and Design of Protein Pharmaceuticals
5628	Spectroscopy of Organic Compounds
5637	Foundations of Spectroscopy
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5660	Analytical Biochemistry
5672	Organic Synthesis II
5676	Bioorganic Chemistry
7247	Advances in Nanomaterials

Additional courses will be offered in the spring semester.

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Cover: *2014 James Flack Norris Award recipient Thomas J. Greenbowe
(Photo courtesy of Professor Greenbowe).*

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Biography

Since 1990, Thomas Greenbowe has been a faculty member in the Department of Chemistry at Iowa State University. He served as the Coordinator of General Chemistry, overseeing a program that serves 3,500 students. Before coming to Iowa, he was an Associate Professor of Chemistry at the University of Massachusetts–Dartmouth, and a high school physics and chemistry teacher in Indiana.

He earned an M.S. and a Ph.D. and from Purdue University under the direction of J. Dudley Herron. He earned an M.S. in physics from Indiana State University, and a B.A. in physics from William Paterson College of New Jersey.

From 1983 to 1990, he was a faculty member in the Department of Chemistry at Southeastern Massachusetts University. He has had two sabbatical leave experiences. One was at the University of Arizona in Tucson and the other at the University of Oregon in Eugene.

Over the past thirty-two years, Thomas Greenbowe has taught 30,000

students and facilitated professional development workshops for 2,500 science teachers and college faculty. He tries to make the time in lecture as interactive as possible, employing group work, multimedia, demonstrations, effective clicker questions, and humor.

For thirty-two years, in Indiana, Massachusetts and Iowa he continued to work with chemistry and science clubs to present safe and instructional chemistry demonstrations and activities to over 12,000 elementary, middle school and high school students, and the general public. In Indiana, Massachusetts and Iowa, he has done radio and TV shows featuring chemistry demonstrations and/or promoting science education.

Thomas Greenbowe has served as a principal investigator for several curriculum and development projects funded by the National Science Foundation and by the U. S. Department of Education. He has been awarded over 5.0 million dollars in external grant support for his projects.

Over the past two years, he and his co-workers have worked to improve the science laboratory experi-

2014 NESACS Sponsors

Company	Contribution Level
Amgen	Platinum
Biogen-Idec	Platinum
Johnson-Matthey	Platinum
SK Life Sciences	Platinum
Strem	Platinum
Nova Biomedical	Gold
Merck	Silver
Celgene	Bronze
Conditas Group	Bronze
Cubist	Bronze
Takeda	Bronze
Vertex	Bronze

Contribution Levels	Donation
Platinum	\$5,000+
Gold	\$3,500-5000
Silver	\$2,000-3,500
Bronze	\$500-2,000

Meeting Hosts (2014)

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Genzyme, A Sanofi Company
Nova Biomedical
Novartis
Pfizer
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ence at ISU through a Howard Hughes Medical Institute grant by implementing guided inquiry in the form of a blended Science Writing Heuristic (SWH) and Process Oriented Guided Inquiry Learning (POGIL) approach.

Over the past forty years, he has facilitated over seventy workshops for science teachers and chemistry faculty in the USA and internationally, including Canada, New Zealand, Croatia, and United Arab Emirates. His chemical education research group's web-based computer simulations are being used by over 2,000 chemical educators and their students around the world.

Over the past ten years, he has served as a Process Oriented Guided Inquiry Learning (POGIL) and Science Writing Heuristic SWH workshop facilitator for chemistry faculty across the USA. He has 30 years experience training chemistry teaching assistants.

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Monthly Meeting

The 945th Meeting of the Northeastern Section of the American Chemical Society

Presentation of the James Flack Norris Award for Outstanding Achievement in Teaching Chemistry to Thomas J. Greenowe, Morrill Professor, Iowa State University

Thursday, November 6, 2014

Holiday Inn Boston-Brookline, 1200 Beacon Street, Brookline, MA 02446

November Board Meeting will be held at the Futures in Chemistry Symposium on November 13

5:30 pm Social Hour

6:30 pm Dinner

7:30 pm Award Meeting: Katherine Lee, NESACS Chair-Elect, Presiding
Presentation of the Arno Heyn Memorial Book Prize to Morton Z. Hoffman
Reflections on James Flack Norris by Ken Mattes, NESACS Archivist
Introduction of the Norris Award Recipient by Michael R. Abraham, The University of Oklahoma
Presentation of the Norris Award to Thomas J. Greenowe by Doris Lewis, Chair, Norris Award Committee
Norris Award Address: *“Providing Opportunities for Students to Understand Chemistry: Guided Inquiry, Computer Simulations, and Active Learning”*

ALL RESERVATIONS ARE REQUIRED BY NOON, THURSDAY, OCTOBER 30

For those who would like to join us for dinner, register using PayPal: <http://acssymposium.com/paypal.html>. Select the pay with credit or debit card option and follow the additional instructions on the page. Cost: Members, \$30; Non-members, \$35; Retirees, \$20; Students, \$10. Dinner reservations not cancelled at least 24 hours in advance must be paid.

If you wish to join us for this meeting and not eat dinner, please register using PayPal: <http://acssymposium.com/paypal.html>. Select, “Seminar only”. The fee is \$1.

New members or those seeking additional information, contact the NESACS administrative secretary, Anna Singer, at secretary@nesacs.org (preferred) or at (781) 272-1966, 9 AM - 6 PM.

THE PUBLIC IS INVITED

Directions to Holiday Inn Boston-Brookline

By Public Transportation: The Holiday Inn Boston-Brookline hotel is conveniently located across from the Green Line “C” St. Paul Street trolley stop.

From the Mass Pike: From US 90E, take Exit 18. Follow Cambridge signs right to Storrow Drive/Kenmore Square exit. Take the immediate right onto Beacon St., and proceed for 2 miles.

From 93 North or South: Take 93 to US 90E, then take Exit 18 as described above.

Parking: Metered parking is available on Beacon Street. Parking is available in the Holiday Inn garage (\$15 maximum). ◇

Abstract

Providing Opportunities for Students to Understand Chemistry: Guided Inquiry, Computer Simulations, and Active Learning

While there is no one best way to teach chemistry for all students, providing students with an active learning environment is one of the key components of effective instruction. Whether or not students learn and remember chemistry content and can use their chemistry knowledge to solve problems depends on many factors. The scholarship and research undertaken by my colleagues, co-workers, and myself has provided evidence that the use of guided-inquiry tutorials coupled with high quality interactive computer simulations and animations in both the laboratory and the classroom helps students learn chemistry. Professor Melanie Cooper’s 2013 James Flack Norris Award presentation addressed an important issue with respect to the college general chemistry course: “The structure of the traditional general chemistry course does not appear to be effective for promoting deep conceptual understanding or an interest and pleasure in learning chemistry.” General chemistry textbooks, traditional lectures, traditional general chemistry laboratories, course examinations and algorithmic end-of-chapter problems now mimicked with on-line homework problems all contribute toward students’ lack of conceptual understanding and lack of problem solving abilities. This presentation will outline active learning instructional activities implemented in general chemistry programs at Iowa State University, Oklahoma State University, the University of Oklahoma, the University of Arizona, and the University of Oregon. Although this talk will focus on topics in general chemistry, the methods can also be applied to upper level science courses.

In order to change the way we teach introductory chemistry laboratory courses and the way in which students interact with chemistry, a blend

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American Association of Chemistry Teachers has launched; first of its kind in the US

WASHINGTON, Sept. 11, 2014 — The American Chemical Society (ACS), the world's largest scientific society, has launched the American Association of Chemistry Teachers (AACT), the first organization of its kind in the U.S. The association is dedicated to improving chemistry education and providing specialized resources to more than 1 million K–12 chemistry and physical science teachers nationwide.

The AACT website, www.teach-chemistry.org, is live, and interested teachers may sign up to become charter members or to receive e-mail updates about the new organization.

Until now, chemistry has been the only scientific field without a national discipline-specific teachers' association. AACT will provide the resources necessary to motivate and empower K–12 chemistry teachers as they seek to inspire the scientists and scientifically literate citizens of tomorrow.

Membership in the new organization is open to all who are interested in chemistry education. AACT has three goals: to serve as a trusted source of curricular and pedagogical resources for K–12 chemistry instruction, to provide opportunities for chemistry teachers to network with each other and the broader ACS community, and to disseminate effective teaching and learning practices at the K–12 levels.

The establishment of AACT

Morton Z. Hoffman to Receive 2014 Heyn Book Prize

Morton Z. Hoffman, Professor Emeritus at Boston University will be presented with the 2014 Arno Heyn Memorial Book Prize at the November Meeting to be held at the Holiday Inn Boston-Brookline on November 6, 2014. The Prize will consist of a book of his choice paired with a bookplate honoring the memory of Arno Heyn.

The Heyn Prize is awarded for significant contributions to NESACS publications such as *the Nucleus*, the NESACS website, or service on the Board of Publications. The prize was created in 2005 to honor the memory of Arno Heyn who was editor of *the Nucleus* from 1988–2004. Besides editing *the Nucleus*, Arno was a NESACS board member and multi-faceted contributor for over 50 years.

A more extensive history of Arno, written by his daughter-in-law, Janice Meisenhelder-Heyn, is available on the NESACS website under awards: <http://www.nesacs.org/awards/heyne/ArnoHeyn.pdf>

Professor Hoffman was a longtime colleague of Arno Heyn at Boston Uni-

comes at a critical time, as enrollment in high school chemistry classes is on the rise. And yet, only 35 percent of high school chemistry teachers have both a bachelor's degree in chemistry and a certification in chemistry.

To help these teachers be better prepared for the challenges they face in the scientific classroom, AACT offers a slew of resources developed by ACS. These include an online periodical, lesson plans, webinars and workshops with Continuing Education units, and videos and other multimedia that will help teach chemistry concepts. ◇

versity. Professor Hoffman has been a prolific contributor, especially in the area of chemical education, to *the Nucleus* for the last dozen years.

Mort has contributed many articles over this time in his role as Features Editor. Many of his photographs have also graced the newsletter. He has been a valued proofreader and advisor to the Editor.

Past recipients of the Heyn Prize are 2005, Mark Spitler and Samuel Kounaves; 2006, Vincent Gale; 2007, Vivian Walworth; 2008, Myron Simon; 2009, Arthur Obermayer; 2010, Donald Rickter; 2011, Harvey C. Steiner; 2012, Karen Piper; 2013, Mindy Levine. ◇

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
NESACS Board of Publications
Phone - 978-369-3735

Email vwalworth@comcast.net



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Special Meeting of NESACS

Future of Chemistry Symposium and Networking Reception and November Board Meeting

Thursday, November 13, 2014

Novartis—NIBR

220 Massachusetts Avenue, Cambridge, MA
Novartis Cafeteria and Auditorium Building

12:30 pm Registration Begins

1:00 pm Symposium Welcome

1:10 pm Symposium, Part One

3:00 pm Coffee Break

3:30 pm Symposium, Part Two

4:30 pm NESACS Board Meeting (location on-site at Novartis TBA)

5:30 pm Networking Reception

Symposium Speakers:

- **Wilhelm Boland**, Max Planck Institute for Chemical Ecology “*Sequestration of Plant-Derived Glucosides by Leaf Beetles; RNAi-Facilitated Screening for Transporters and Transformations*”
- **Mark Murcko**, Entrepreneur, Disruptive Biomedical, former Vertex CTO “*The Accurate Prediction of Binding Free Energies*”
- **Gregg Keaney**, H3 Biomedicine, “*Total Synthesis of 6-Deoxypladienolide D and Assessment of Splicing Inhibitory Activity in a Mutant SF3B1 Cancer Cell Line*”
- **Bridget Wagner**, The Broad Institute and KDAC Therapeutics, “*Small-molecule Approaches to Beta-cell Regeneration and Survival*”
- **Deborah Rothman**, Novartis Institutes of Biomedical Research, “*A Trigger-Based Selectivity Mechanism of Cell Death Identified through Chemical Genetics*”

ALL RESERVATIONS ARE REQUIRED BY 5 PM, THURSDAY, NOVEMBER 6th

Registrations of all types can and should be made online here: <https://future-of-chemistry-2.eventbrite.com>. Please keep in mind that DINNER WILL NOT BE SERVED at this NESACS meeting. There WILL BE an excellent networking reception that will be held on site immediately following the event (and immediately after the NESACS Board Meeting). Board members may attend the NESACS Board Meeting for free, but each board member must still register via Eventbrite to attend the board meeting, the networking reception and symposium. All other attendees must pay the registration fee at the Eventbrite link (above). Early-bird rates are available for the first 100 registrants via the Eventbrite link (above).

For those seeking additional information, contact Leland Johnson, Jr., organizer of this event, by calling 617.304.6474 or by emailing Leland at ljohnson@theconditasgroup.com.

THE PUBLIC IS INVITED—RESERVATIONS ARE REQUIRED

NESACS gratefully acknowledges the generous support from Novartis/NIBR for this event.

Directions to NIBR:

MBTA: Take the 1/CT-1 Albany Street, or the 64, 70, 70A Bus to Sydney and Mass. Ave. The **RED LINE T** stops are Central Square (9 min walk) or Kendall/MIT (12 min walk).

From Google: Driving directions can be found by adding your point of departure, here- <http://bit.ly/1ntmwcU>

Parking/Accessibility: Metered parking is available on the streets near Novartis with a time limit of two hours. For several parking decks and lots available close to Novartis, please follow this link- <http://bit.ly/1AVwDRU>.

Councilor Talking Points and Summary of Governance Issues and Actions

American Chemical Society
248th ACS National Meeting
San Francisco, California
August 10-14, 2014

The following summary is provided to help Councilors report to their local sections and divisions on key actions of the ACS Council and Board of Directors at the 2014 fall national meeting.

Actions of the Council Election Results

The Committee on Nominations and Elections presented to the Council the following slate of candidates for membership on the Committee on Committees beginning in 2015: Spiro D. Alexandratos, Mark A. Benvenuto, Mitchell R.M. Bruce, Judith N. Curran, Jetty L. Duffy-Matzner, Kathleen Gibboney, Helen A. (Bonnie) Lawlor, Zaida Morales-Martinez, Robert A. Pribush, and Patricia A. Redden. By electronic ballot, the Council elected Mitchell R.M. Bruce, Judith N. Curran, Helen A. (Bonnie) Lawlor, Zaida Morales-Martinez, and Robert A. Pribush for the 2015-2017 term.

The Committee on Nominations and Elections presented to the Council the following slate of candidates for membership on the Council Policy Committee beginning in 2015: Lawrence Barton, Dwight W. Chasar, Lynne P. Greenblatt, Martha G. Holomon, Peter C. Jurs, Pamela D. Kistler, Doris I. Lewis, Christopher Masi, Andrea Twiss-Brooks, and Linette M. Watkins. By electronic ballot, the Council elected Lawrence Barton, Lynne P. Greenblatt, Peter C. Jurs, and Linette M. Watkins, for the 2015-2017 term, and Andrea Twiss-Brooks for the remainder of a 2014-2016 term.

The Council Policy Committee presented to the Council the following slate of candidates for membership on the Committee on Nominations and Elections beginning in 2015: Anthony W. Addison, John W. Finley, Lydia E.M. Hines, Roland F. Hirsch, Robert L. Lichter, Mamie W. Moy, Anne T.

O'Brien, Eleanor D. Siebert, Herbert B. Silber, and Ralph A. Wheeler. By electronic ballot, the Council elected Lydia E.M. Hines, Robert L. Lichter, Mamie W. Moy, Anne T. O'Brien, and Eleanor D. Siebert for the 2015-2017 term.

Reports of Elected Committees Nominations and Elections (N&E)

N&E announced the candidates for the fall 2014 ACS national election as follows:

Candidates for President-Elect, 2015

- Peter K. Dorhout, Dean of Arts & Sciences and Professor of Chemistry, Kansas State University, Manhattan, KS
- William A. Lester, Jr., Professor of the Graduate School, Department of Chemistry, University of California, Berkeley, CA
- Donna J. Nelson, Professor, Department of Chemistry and Biochemistry, University of Oklahoma, Norman, OK

Candidates for Directors-at-Large, 2015-2017

- Dawn A. Brooks, Sr. Director, Lilly Research Laboratories, Eli Lilly and Company, Indianapolis, IN
- William F. Carroll, Jr., Vice-President, Occidental Chemical Corporation, Dallas, TX
- Barbara A. Sawrey, Associate Vice Chancellor, Academic Affairs, and Dean of Undergraduate Education, University of California, San Diego, La Jolla, CA
- Ellen B. Stechel, Deputy Director, ASU-LightWorks, Tempe, AZ, Arizona State University

Candidates for District III Director, 2015-2017

- Pat N. Confalone, Confalone Consulting, LLC, (Retired DuPont),

Wilmington, DE

- Anne S. DeMasi, Hazard Communication Manager, Chemtura Corporation, Philadelphia, PA

Candidates for District VI Director, 2015-2017

- Paul W. Jagodzinski, Dean, College of Engineering, Forestry & Natural Sciences, Northern Arizona University, Flagstaff, AZ
- Lee H. Latimer, Consultant, Oakland, CA

Committee on Committees (ConC)

On the recommendation of ConC, Council VOTED to continue the Committee on Patents and Related Matters, subject to concurrence by the Board of Directors, and to continue the Committee on Technician Affairs.

Council Policy (CPC)

CPC announced that the recommendations of its Task Force to Review the Councilor Reimbursement Policy, approved in March 2014, were forwarded to the Society Committee on Budget and Finance and ultimately will go to the Board for action.

At the spring meeting in 2015, CPC will set the divisor for 2016 – 2019. The formula will be based on membership numbers as of December 31, 2014. Official notification of the Councilor divisor and the number of Councilors permitted for Local Sections or Divisions will be sent to Local Sections and Divisions no later than May 1, 2015, as it will affect elections conducted in 2015. CPC will form a small task force on Councilor Divisor Communications to assist staff.

Reports of Society Committees and Committee on Science (Highlights)

Budget and Finance (B&F)

B&F reviewed the Society's 2014

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probable year-end financial projection, which calls for a Net Contribution from operations of \$14.4 million, or \$752,000 higher than the Approved Budget. Total revenues are projected at \$497.2 million. This is \$1.1 million or 0.2% unfavorable to the Approved Budget.

The projected shortfall is primarily driven by lower-than-budgeted electronic services, registration fees, and advertising revenues. Total expenses are projected at \$482.8 million, which is \$1.9 million or 0.4% favorable to the Approved Budget. This variance is the result of lower-than-budgeted expenses across multiple categories, primarily in the Society's information services divisions (CAS and Publications). The Probable 1 projection was developed using May 31 actual financial results. Based on more recent information through July, management believes this projection will be exceeded.

Education (SOCED)

SOCED received an update on the new American Association of Chemistry Teachers (AACT), which is now accepting members and will officially launch September 2, 2014. AACT member benefits include access to curricular resources, such as lesson plans and multimedia; professional development opportunities; a subscription to ChemMatters; and an online member network. SOCED voted to approve revisions to the current policy statements on hands-on laboratory science, science and technology funding, and visa restrictions. The statements will go to the Board of Directors for approval at its December meeting.

Science (ComSci)

ComSci remains focused on three areas: increasing understanding of the emerging frontiers in science, recommending eminent chemical scientists for prestigious external awards, and

developing public policies to advance science in society. ComSci has identified two multidisciplinary areas that hold great promise for fostering innovation and opportunities for chemistry-related scientists: advanced materials and the chemistry of clean and renewable energy. ComSci has also completed four on-demand video interviews with Nobel Laureates and other celebrated scientists, which will be linked with the onsite emerging science forums in 2015.

Reports of Standing Committees (Highlights)

Economic and Professional Affairs (CEPA)

CEPA announced that the unemployment rate for all ACS chemists has dropped from 3.5% in March 2013 to 2.9% as of March 2014. However, the unemployment rate for new chemistry graduates as of August 2013 is considered to be an all-time high of 14.6%. The number is higher when we isolate bachelor's level graduates, for whom the rate is 15.8%.

On the recommendation of CEPA, Council VOTED to approve the Professional Employment Guidelines.

Committee on Meetings and Expositions (M&E)

M&E reported that 11,847 papers were accepted for the 248th National Meeting in San Francisco. As of August 13, total attendance was 15,761. The Exposition had 432 booths with 285 exhibiting companies. The Committee voted to recommend to the Board of Directors the following sites for National Meetings:

- Boston – Fall 2024, 2029, 2031
- San Diego – Spring 2025, 2031, and Fall 2027
- New Orleans – Spring 2027, 2032
- Chicago – Fall 2022

The Committee heard an update on the Meeting Abstracts Programming System (MAPS). The new system will launch August 25 in preparation for the Denver National Meeting. Regional Meetings and specialty conferences will use MAPS starting in January 2015.

M&E has voted to strengthen the current recording policy at National

Meetings by including enforcement language. Failure to follow the policy could result in disciplinary action up to and including expulsion from the meeting.

Divisional Activities (DAC)

DAC is conducting a pilot program with the ACS Presentations on Demand Coordinating Editor regarding a new type of recorded meeting content – three to five-minute videos (ACS POD Shorts) that focus on the most notable aspects of a full-length presentation. DAC voted to fund eight Innovative Project Grants, totaling \$33,750. DAC is also developing a process to more readily permit divisions to benefit from one another's innovations.

The Multidisciplinary Program Planning Group is proposing the following 2018-2019 national meeting themes to the divisions for their consideration:

2018

- Spring – Energy Solutions and the Environment
- Fall – Chemistry – from Bench to Market

2019

- Spring – Chemistry for New Frontiers

Committee on Local Section Activities (LSAC)

LSAC will award 14 Innovative Project Grants (IPG) totaling \$30,033, bringing the 2014 total to 33 IPG awards totaling over \$70,000. LSAC will also be offering grants during the fall to assist local sections with hosting a strategic planning retreat; a Leadership Development System course in their section, and to assist with travel to the 2015 ACS Leadership Institute. National Chemistry Week will be held October 19-25 with the theme, "The Sweet Side of Chemistry: Candy".

On the recommendation of LSAC, the Council VOTED to dissolve the Ocean County Local Section due to inactivity.

Membership Affairs (MAC)

MAC reported that as of June 30, the total ACS membership was 158,869, a net increase of 512 since May of this year. The number of international

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Governance

Continued from page 9

members has grown this year by 312, to almost 25,000. The number of current unpaid members declined in June and is 13% lower than June 2013. As of July 1, automatic renewal (on credit card) became available. The Committee also voted to extend its current test of an introductory membership offer to those who join the Society at non-ACS conferences and events to include the graduate students and potential Regular Members who attend ACS on-Campus events worldwide each year.

Constitution and Bylaws (C&B)

C&B certified bylaws for 10 local sections, one division, and two International Chemical Sciences Chapters since January 1, 2014. C&B has modified the model bylaws for local sections, divisions, and International Chemical Sciences Chapters. The Committees on Local Section Activities, Divisional Activities, and International Activities, respectively, will be asked to review the changes and approve them no later than their Denver (2015) meetings.

Reports of Other Committees (Highlights)

Chemistry and Public Affairs (CCPA)

To celebrate four decades of ACS public policy fellowships, more than 20 former fellows gathered in San Francisco, six of whom spoke about their experiences at a symposium sponsored by CCPA and the Division of Professional Relations. The deadline to apply for the 2015-2016 fellowships is December 31, 2014. More information can be found at www.acs.org/policy/fellow.

Environmental Improvement (CEI)

CEI reported on the outstanding programming that was offered at the San Francisco meeting relating to Chemistry and Global Stewardship. The Committee also assisted the Division of Environmental Chemistry in the observance of their centennial. CEI continues to review existing policy statements to keep them fresh and relevant and to explore emerging areas of

interest where ACS can offer the expertise of its members.

Ethics (ETHX)

Through its subcommittees, ETHX has strengthened its relationship with the National Center for Professional & Research Ethics, which is tied to the Education and Materials Subcommittee action plan to develop resource materials, and is committed to producing a twice-yearly newsletter to showcase current Ethics Committee endeavors. It is seeking to co-sponsor or help embed ethics related content and/or dialog into presentations and symposia.

International Activities (IAC)

At the San Francisco meeting, IAC organized or sponsored seven symposia, convened four soft-skills training sessions for Brazilian young scholars studying in the U.S.A., conducted an experimental networking event for Chinese chemists and allied practitioners, and initiated a ‘soft launch’ of the ACS International Chemical Sciences Chapter in South Korea.

On the recommendation of IAC, Council VOTED to approve the establishment of an International Chemical Sciences Chapter in South Africa. This action requires Board action, too.

Professional Training (CPT)

At this meeting, CPT evaluated 42 periodic reports from currently approved programs, two from programs on probationary status, and one site visit report from a school applying for ACS approval. Four new programs were approved, and one institution was removed from the approved list. The Committee concluded discussion of the guidelines revision and voted provisional approval of the draft document. The draft will be distributed to department chairs of chemistry programs this fall. CPT also approved the final report of a survey on chemical information resources that will be published in the Committee newsletter and website.

Project SEED

This year the Committee awarded 28 Project SEED College Scholarships to 17 female and 11 male alumni from 16 states and Puerto Rico. The Committee also reviewed key issues that impact

Project SEED: issues pertaining to project selection, college scholarship applications, and geographic distribution of the program. To address these impacts, the Committee proposed modifications to the current selection process for research projects, reviewed and approved changes to the Scholarship application, and established a Geographic Expansion Subcommittee. The Committee also established an Ethics Task Force and discussed the implementation of ethics guidelines for Project SEED students as a requirement for all programs.

Public Relations and Communications (CPRC)

The Chemistry Ambassadors observed its fifth anniversary. There are currently more than 10,000 Ambassadors. At this meeting, CPRC launched “Chem-Champs,” an outreach effort still in the pilot stage, as part of the Ambassadors program. Five of our younger members each gave a 3-minute explanation of their research in a way that would engage non-scientists. It appears to be a great follow-up to the encouragement given by Alan Alda at an open Board meeting last year to go forth and make chemistry relevant to the public. CPRC now has a new mission statement: “CPRC supports the ACS goal of improving public understanding and appreciation of chemistry’s contributions to people’s lives.”

Senior Chemists (SCC)

SCC has approved 22 mini-grants of \$300 each to encourage and support the organization of senior groups at the local section level. The SCC newsletter now has the highest “open” rate of all newsletters published by the Society. The Committee co-organized a very successful day-long symposium, “Innovation in International Collaboration,” with the Committee on International Activities and the Division of Professional Relations.

Technician Affairs (CTA)

CTA observed its 50th Anniversary at this meeting with a symposium, “The Role of the Chemical Technician Through the Decades,” cosponsored with the Division of Industrial and

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Governance

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Engineering Chemistry and the Division of the History of Chemistry. CTA also presented three different awards: a Salute to Excellence at the ACS Diversity reception, two K. Michael Shea awards at the CTA anniversary dinner, and the first CTA Chemluminary to the Brazosport Local Section.

Women Chemists (WCC)

WCC sponsored two full-day symposia, “Mom, the Chemistry Professor,” and “Women Leaders of the Global Chemistry Enterprise.” The Committee recognized 10 WCC/Eli Lilly Travel awardees, and the 2014 Overcoming Challenges Award recipient.

The Committee recognized 10 WCC/Eli Lilly Travel Grant Recipients, and the 2014 Overcoming Challenges Award winner. The Committee also acknowledged the Puget Sound Local Section, recipient of the Chemluminary Award for Outstanding Program Aimed at Retaining Women in the Chemical Sciences.

Younger Chemists (YCC)

YCC continues to identify new opportunities for leveraging their social media following (Twitter, Facebook, LinkedIn, and Vine). The Committee has developed partnerships with the ACS Office of Public Affairs to help promote the #ChemChamps program and the highly successful joint effort “Program in a Box” with ACS Webinars. YCC has secured funding for two “Program in a Box” events for 2015. At this meeting, YCC sponsored the symposium “Advances in Small Molecule Approaches to HIV.”

Resolutions

The Council passed several resolutions, including one commending Executive Director and CEO Madeleine Jacobs on the occasion of her upcoming retirement.

Actions of the Board of Directors

The Board’s Executive Session

The Board’s Committees

The Board of Directors received reports from its Committees on Grants and Awards (G&A), Executive Com-

position, and the Society Committee on Budget and Finance (B&F).

On the recommendation of the Committee on Grants and Awards, the Board VOTED to approve Society nominations for the 2015 Perkin Medal and the 2015 nominee for the National Science Board Public Service Award.

On the recommendation of the Committee on Budget and Finance, the Board VOTED to approve an advance member registration fee of \$390 for national meetings held in 2015.

The Board received a briefing and approved several recommendations from its Committee on Executive Compensation. The compensation of the Society’s executive staff receives regular review from the Board.

The Executive Director/Chief Executive Officer’s Report

The Executive Director/CEO and her direct reports updated the Board on the following: a summary of a recent survey measuring ACS employee engagement; the ACS’s global presence and activities; a recommendation on allocating certain investment income from the ACS Endowment Fund to Project SEED; activities and plans of CAS (Chemical Abstracts Service) and the ACS Publications Division; and a report on “Challenges and Opportunities for ACS, 2015-2017.”

As a follow-up to the Publications report, the Board VOTED to appoint or reappoint several editors of Society publications.

The Board was also updated on the American Association of Chemistry Teachers (AACT), a new organization sponsored by the ACS that is officially launching in September. Membership is now open to anyone with an interest in chemistry education. The website is www.teachchemistry.org

Other Society Business

The Board also:

- Held a discussion on strategic questions related to how we can strengthen ACS’s service to chemistry communities and professionals worldwide.
- Received an update on the recruitment process for the Executive Director and CEO position. This

position offers wonderful challenge and opportunity. We have retained Korn Ferry International, a large, globally known firm, to conduct the search, and the position is currently being advertised. We hope to complete the process in time to have a new Executive Director and CEO in place January 1, 2015.

- Received reports from the Presidential Succession on their current and planned activities for the remainder of 2014 and 2015.
- Approved, on the recommendation of its Committee on Professional and Member Relations, a resolution to recognize the contributions of the Organization for the Prohibition of Chemical Weapons (OPCW) in the peaceful application of the chemical sciences to improving people’s lives through the transforming power of chemistry and advancing its broader enterprise and its practitioners for the benefit of Earth and its people.
- Approved, on the recommendation of the Committee on Nomenclature, Terminology, and Symbols, a resolution welcoming the Consultative Committee for Amount of Substance: Metrology in Chemistry (CCQM) to co-locate its fall 2015 Committee meeting at the ACS fall National Meeting in Boston, Massachusetts.

The Board’s Open Session

The Board held a well-attended open session, which featured Sam Kean, author of “The Disappearing Spoon” and “The Violinist’s Thumb,” both of which were national bestsellers named among Amazon “Top 5” science books of the year. His newest book, “The Tale of the Dueling Neurosurgeons,” was recently released and is receiving high acclaim. Mr. Kean’s topic was “The Disappearing Spoon – the wonders of the periodic table.”

Following the presentation, members of the presidential succession and the Executive Director and CEO offered brief reports on their activities. (The officers provided more extensive reports on their activities and/or future plans as part of their reports to the Council.) ◇

ACS Policy Fellowships

By Kiel Lazarski

ACS Policy Fellowships are great opportunities to explore career paths in science advocacy and for chemists to gain skills needed to branch into new careers. The ACS offers two distinct fellowships to help chemists enter the policy arena: the ACS Congressional Fellowship and the ACS Science Policy Fellowship. Fellows jump right into the policy environment and interact with many people of varied backgrounds, giving them a broad perspective on how science impacts society.

An ACS Congressional Fellow has the opportunity to spend a year as a staff member in the office of a Senator, Representative, or Committee. The program has two main objectives: to inform policy-makers on key science-related issues and to educate scientists on the policy process. Chris Avery, an ACS Congressional Fellow from 2011-2012, was selected to work in the office of Senator Christopher Coons (D-DE). After being placed on the Senator's Energy & Environment team, Chris worked on the Master Limited Partnerships Parity Act, a bill that sought to even discrepancies in the tax code between fossil fuels and renewable energy. "It's easy to dismiss how things on the Hill function, and importantly, why they function that way, when one hasn't spent time here to understand it," said Chris.

The ACS Science Policy Fellow is integrated for one to two years with the ACS Office of Public Affairs staff to inform policy-makers about contemporary science issues, to promote recommendations on science policy, and to keep ACS members involved in policy-making. Fellows may pursue a variety of topics, including energy policy, environmental policy, federal affairs, and other critical issues. Fellows can attend Congressional and federal advisory committee meetings, an excellent way to learn about an issue and to witness the beginning of the

Abstract

Continued from page 5

of POGIL (Process-Oriented Guided Inquiry Learning) and SWH (the Science Writing Heuristic) has been implemented in several general chemistry programs. POGIL and SWH are two complementary approaches used in the classroom and laboratory following a three-stage learning cycle and involve active learning and guided inquiry. During the lab, students work in small groups to design an experiment to address a research question. From the lab, students examine a model or pooled data from which they solve problems, identify a trend, and make claims backed up by the collected data and evidence. Group discussions, reflective writing, and, in some cases additional experiments, are used to further develop concepts. Students use an SWH structure for the laboratory notebook.

In large lecture settings, we are piloting web-based instructional materials through the use of before, during and after class activities. Students use a series of computer simulations to collect and analyze data. During class, students work in small groups, using the data generated to complete a guided-inquiry tutorial. I will show features from two of the computer sim-

political discussion surrounding it.

Caroline Trupp Gil, the Assistant Director for Federal Relations in the ACS Office of Public Affairs, manages the ACS policy fellowships. "The single most important skill is communication and being able to apply your science training to situations where you will be the only scientist in the room," Gil said. "Science is going to be one component of multiple factors of any policy challenge."

The application deadline for the 2015-2016 fellowships is December 31, 2014. ACS Fellows receive a stipend, allowances for travel, and health insurance. Find more information and apply online at <http://www.acs.org/content/acs/en/policy/policyfellowships.html>. ◇

ulations designed by John Gelder, Mike Abraham, and myself to be used with a guided-inquiry approach to learning.

Many important challenges facing our world require the combined strengths of different disciplines. At Iowa State University, we revamped introductory laboratory courses in biology, chemistry, geology, and physics by implementing a guided-inquiry approach to teaching and learning. In sophomore level sciences courses we implemented new project-based components where students work in small teams to design and conduct experiments to answer interdisciplinary research questions. To date, approximately 1000 students have completed a sophomore level research module and over 4,000 students have taken a reformed introductory science laboratory course. Such across-the-board reforms are necessary in order to have any impact on students' approach to learning and on increasing their problem solving-abilities. ◇

Biography

Continued from page 4

Greenbowe and his colleagues have published over 50 papers about chemical education issues and research in the *Journal of Chemical Education*, *Journal of Research in Science Teaching*, *Journal of College Science Teaching*, and the *International Journal of Science Education*. Over the past forty years he has presented over 1,000 invited talks at professional meetings.

Greenbowe was elected Chair-elect (2007), Chair (2008), and Immediate Past Chair (2009) of the Division of Chemical Education, American Chemical Society. He was elected Chair of the 2009 Gordon Research Conference on Chemical Education Research and Practice. He served as the General Chair of the (2004) 18th Biennial Conference on Chemical Education. Greenbowe served as a Board of Trustees member (2007 – 2009) of the ACS Division of Chemical Education Examination Institute.

He has served on several ACS
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BUSINESS DIRECTORY

SERVICES

Biography

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General Chemistry Exam committees, including the new Laboratory Practical Exam Committee, served as the Chair of the 1995 ACS General Chemistry Examination, and is currently Co-Chair of the 2015 ACS General Chemistry Conceptual Exam Committee. He served as a member of the College Board, Advance Placement Chemistry Test Development Committee (2007 – 2012). He has served as an AP Chemistry Reader, Table Leader, and Question Leader (2008-2014).

His efforts in assessment of chemistry have directly impacted over 500,000 students. He has served as a reviewer for the Journal of Chemical Education, Journal of Research in Science Teaching, the Journal of Instructional Technology, and the Journal of College Science Teaching. He has served as a reviewer for the National Science Foundation.

Over the past thirty years, Greenbowe has lobbied for, argued for, discussed, legislated, and worked collaboratively to make substantial improvements to the field of chemistry education as a discipline. He has done so in such a manner that benefits all chemistry educators. Greenbowe has worked collaboratively with high school chemistry teachers and college chemistry faculty to provide professional development workshops to improve instructors' understanding of chemistry content and pedagogy.

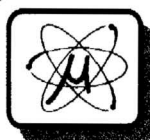
Awards: 2014 American Chemical Society George C. Pimentel Award in Chemical Education; 2013 American Chemical Society Fellow; 2013 American Chemistry Society Midwest Regional Anne McNally Volunteer Award; 2013 Iowa State University Morrill Professor; 2012 Iowa Regents Faculty Excellence Award; 2009 Iowa State University, College of Liberal Arts and Sciences Master Teacher; 2009 Iowa State University, College of Liberal Arts and Sciences Advising Impact Award; 2008

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2003, 2001 ISU Outstanding Faculty Award; 2003 Most Effective Instructor Award; 1996-1997 Miller Fellowship for Teaching Excellence, Iowa State University; 1996 Teaching Excellence Award for Introductory Courses, College of Liberal Arts and Sciences, Iowa State University; 1995 Wilkinson Award for Outstanding Undergraduate Teaching, Department of Chemistry, Iowa State University. ◊

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- www.mboservices.net
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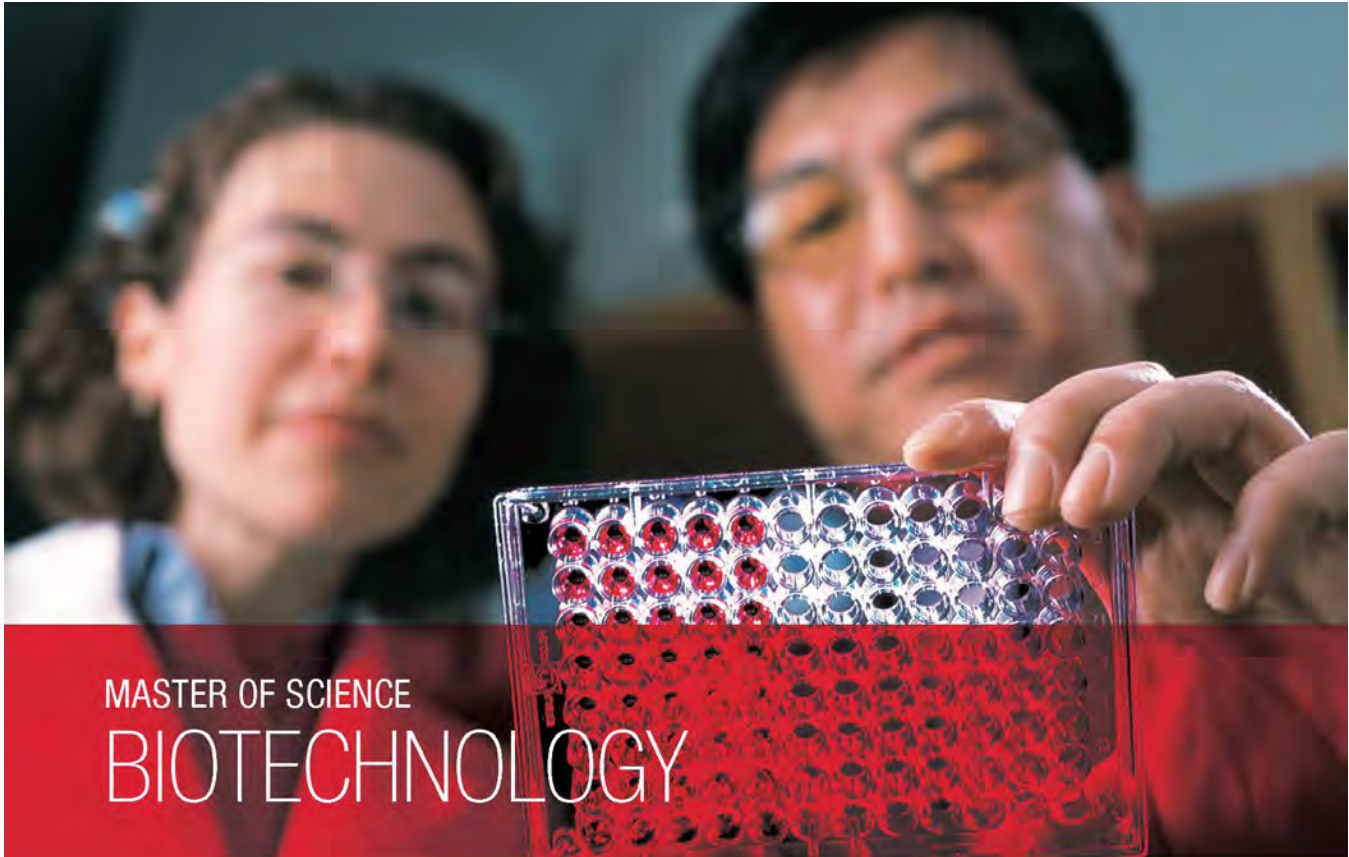
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Calendar

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<http://www.NESACS.org>

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

These include:

<http://www.bc.edu/schools/cas/chemistry/seminars.html>

<http://www.bu.edu/chemistry/seminars/>

<http://www.brandeis.edu/departments/chemistry/events/index.html>

<http://www.chem.harvard.edu/courses/seminars.php>

<http://chemcalendar.mit.edu/index.php>

<http://chem.tufts.edu/seminars.html>

<http://engineering.tufts.edu/chbe/newsEvents/seminarSeries/index.asp>

<http://www.chem.umb.edu>

<http://www.umassd.edu/cas/chemistry/>

<http://www.uml.edu/Sciences/chemistry/Seminars-and-Colloquia.aspx>

<http://www.unh.edu/chemistry/events>

November 3

Prof. Lizbeth Hedstrom (Brandeis)
Boston University, Metcalf, Rm 113
4:00 pm

Prof. Marine Petukhina (Univ. of Albany)
"Charging Buckybowls with Multiple Electronics: Self-Assembly and Metal Binding Patterns"
Brandeis, Gerstenzang 121,
4 pm

Prof. Christopher Cummings (MIT)
Harvard University, Pfizer Lecture Hall,
4:15 pm

November 4

Prof. Hien Nguyen (Univ. of Iowa)
"New Methods and Strategies for the Synthesis of Bioactive Carbohydrate, Amines and Fluorinated Molecules"
Brandeis, Gerstenzang 122, 3:30 pm

Prof. Zachary Ball (Rice Univ.)
"Designing enzyme-like catalysts: A rhodium (II) metalloprotein case study"
Tufts Univ., Pearson, Room P-106, 4:30 pm

Prof. Holly Guevara (Univ. of New Hampshire)
Univ. of New Hampshire, Room N104,
11:10 am

November 5

Prof. Alexander Pines (UC-Berkeley)
"Ups and Downs of Nuclear Spins"
Harvard Univ., Pfizer Lecture Hall 4:15 pm

November 6

Prof. Brooks Pate (Univ. of Virginia)
Harvard Univ., Pfizer Lecture Hall, 4:15 pm

November 10

Prof. Nathaniel Rosi (Univ. of Pittsburg)
Boston Univ., Metcalf, Rm 113, 4:00 pm
Dr. Ravi Nargund (Merck)
Brandeis University, Gerstenzang 121, 4 pm

November 13

Prof. Alec Wodtke (Univ. of Gottingen)
Harvard Univ., MIT Room 5:00 pm

November 17

Prof. Chris Beaudry (Oregon State University)
Boston Univ., Metcalf, Rm 113
4:00 pm

Prof. Nilay Hazari (Yale)
"Mechanism Guided Improvement of Pd(II) Precatalysts for Cross-Coupling"
Brandeis, Gerstenzang 121, 4 pm

Prof. Veronique Gouverneur (Oxford Univ.)
Harvard Univ., Pfizer Lecture Hall, 4:15 pm

November 18

Prof. Christopher Beaudry (Oregon State)
Boston College, Merkert 130
4:00 pm

Prof. Naomi Ginsburg (UC-Berkeley)
Harvard Univ., Pfizer Lecture Hall
1:55 pm

Prof. Kate Carroll (Scripps)
Tufts Univ., Pearson, Room P-106
4:30 pm

Prof. Lea Nyiranshuti (Univ. of New Hampshire)
Univ. of New Hampshire, Room N104,
11:10 am

November 20

Prof. Karl Deisseroth (Stanford)
Harvard Univ., Pfizer Lecture Hall
4:15 PM

November 24

Prof. John Berry (Univ. of Wisconsin)
Boston University, Metcalf, Rm 113
4:00 pm

November 25

Prof. Kyle Rodriguez (Univ. of New Hampshire)
University of New Hampshire, Room N104,
11:10 am

November 26

Prof. Warren Piers (Univ. of Calgary)
Boston College, Merkert 130
4:00 pm

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

Xavier Herault, email: [xherault\(at\)netzero.net](mailto:xherault(at)netzero.net) ◊