

# THE NUCLEUS

April 2018

Vol. XCVI, No.8

## Monthly Meeting

*Esselen Award Meeting at  
Harvard*

*Jennifer A. Doudna to Receive  
2018 Award*

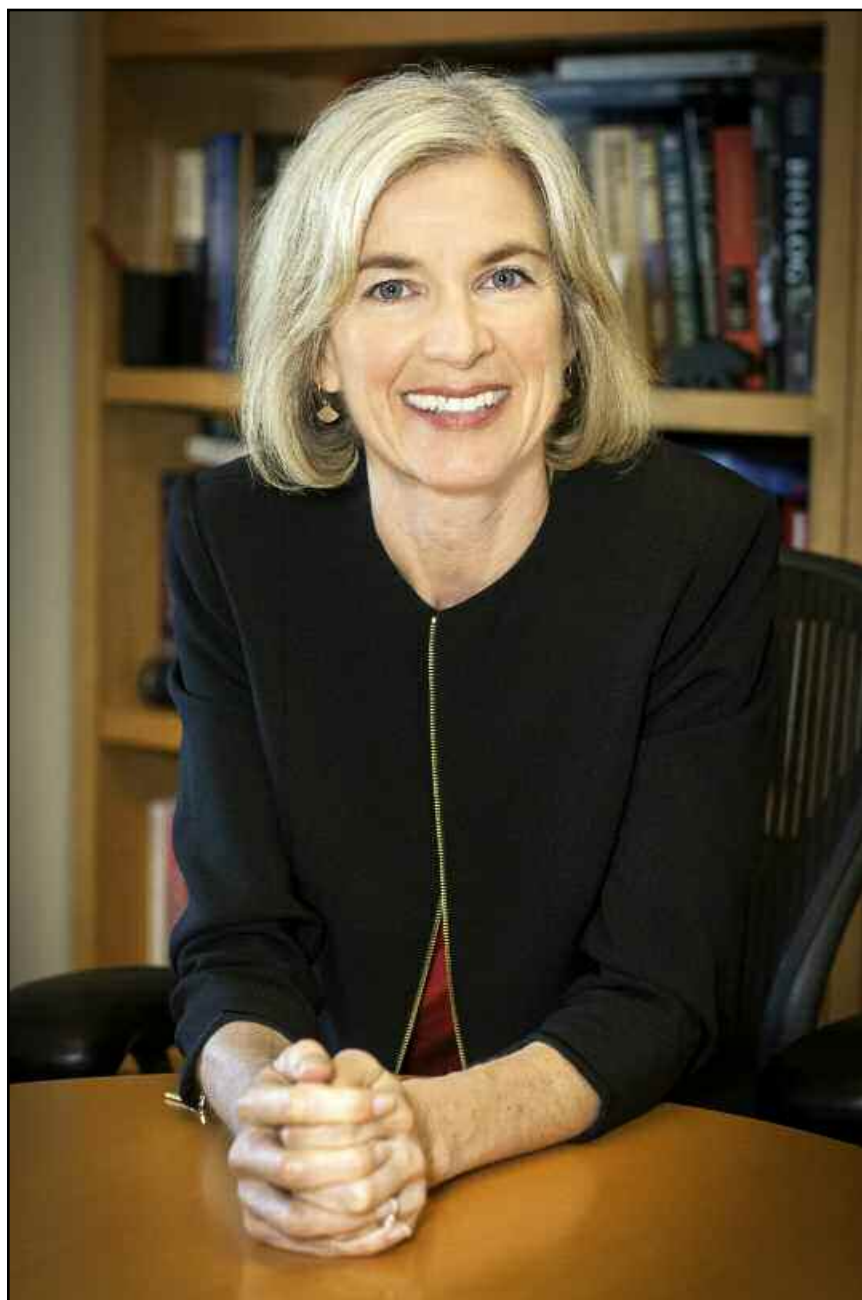
## 2018 NESACS Candidates for Election

## In Memory of Ted Taylor

*By Michael P. Filosa*

## NESACS at Fenway Park

*May 14, 2018, 7:10 pm  
Tickets Available*



# Gustavus John Esselen II

## *A brief history of the Award:*

In 1985 an inquiry was made as to whether the Section would wish to honor another former leader of the Northeastern Section. The Esselen family proposed to donate a sum of money to provide for an award in the memory of Gustavus John Esselen II, Chairman in 1922 and 1923, and a member of the ACS Board of Directors for many years. In 1948, Dr. Esselen received a special award, the James Flack Norris Honor Scroll, "as the person who has done most to advance the interests of the Northeastern Section." A committee consisting of William O. Foye, Truman S. Light, Arthur S. Obermayer, and Myron S. Simon, Section Chairman, met with Esselen's son, Gustavus J. Esselen III, and recommended to the Board of Directors that the Section accept the offer, which it did. The committee and Mr. Esselen agreed that the award should not be in a specific field of chemistry, but instead should have the special purpose of emphasizing the positive values of chemistry to mankind. In light of the climate of the day, with the

disaster of Bhopal on every chemist's mind and the public receiving nothing but negative stories about chemistry from the media, this was to be a small step toward establishing a balance.

Mr. Esselen proposed to add a bronze medal to the monetary award. A prominent sculptor from Newton, Massachusetts, Lloyd Lillie, was selected to prepare the design which was then approved by members of the Esselen family. The fact that Dr. Esselen had done much work in plastics during his career led his son to propose that the bronze medal be imbedded in a block of clear plastic, which was done, to give a very distinctive addition to the ceremonial presentation.

The first presentation of the Gustavus John Esselen Award for Chemistry in the Public Interest was made in 1987 to F. Sherwood Rowland and Mario J. Molina for their work on the chemical processes which were destroying the stratospheric ozone layer, explaining the formation of the Antarctic Ozone Hole. Since then, the award has been given to chemists in several fields of chemistry

and has become a much coveted prize. *-By Myron S. Simon, assisted by Phyllis A. Brauner, Arno Heyn and Arthur S. Obermayer with suggestions from Edward R. Atkinson. "The Last Quarter Century, Part I," The Nucleus, Northeastern Section of the American Chemical Society, Inc., February, 1998, pp 17-18.*

## *A brief biography:*

Gustavus John Esselen, II was born in Roxbury, Massachusetts, June 30, 1888, the son of Gustavus J. and Joanna Blyleven Esselen. All of his higher education was obtained at Harvard University where he was awarded the A.B. (magna cum laude) in chemistry in 1909 and a doctorate in 1912. In that same year he married Henrietta W. Locke who with three children survived him at the time of his death on Oct. 22, 1952.

Until 1921 he was a member of the research staff of General Electric Co. in Lynn and then of Arthur D. Little, Inc. of Cambridge, MA. At the latter firm he was associated with Little and Wallace Murray in the fabrication of a "silk" purse from reconstituted collagen, in turn derived from a sow's ear. In 1930 he founded Gustavus J. Esselen, Inc., which subsequently became Esselen Research Corporation and then, following a merger, Esselen Research Division of United States Testing Co., Inc. During this period he was involved in solving a variety of problems submitted by industrial clients. Among these was the development of anhydride curing agents for epoxy resins and poly(vinylbutyral) as an improved material for safety glass, both of which enjoyed considerable commercial success. More than 40 U.S. patents were issued as a result of his research efforts.

Esselen was a member of the American Chemical Society for 43 years during which time his outstanding services to the society and the profession of chemistry were recognized and honored, not only in his native New England, but throughout the United States. He was twice chairman of the Northeastern Section, ACS (1922-23)

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NORTHEAST STUDENT CHEMISTRY RESEARCH CONFERENCE

YCC  
The Future of Chemistry  
Northwestern Section Young Chemists Conference

(DATE CHANGED)  
SUNDAY, APRIL 15TH, 2018  
NORTHEASTERN UNIVERSITY

KEYNOTE SPEAKER:  
DR. JOHN E. MACOR  
SANDH

FOR UPDATES + REGISTRATION:  
WWW.NSYCC.ORG/NSCRIC

ABSTRACT DEADLINE: WEDNESDAY, MARCH 14TH

FOLLOW US TO STAY UPDATED  
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**Cover:** *Professor Jennifer A. Doudna, University of California at Berkeley, 2018 recipient of the Gustavus J. Esselen Award for Chemistry in the Public Interest. (Photo courtesy of Professor Doudna).*

**Editorial Deadlines:** *Summer-September Issue: July 22, 2018  
October 2018 Issue: August 22, 2018*

## THE NUCLEUS

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# 2018 NESACS Candidates for Election

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Dr. Anna Sromek

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Dr. Bob Lichter

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Dr. June Lum  
Dr. John Neumeyer  
Dr. John Burke

## Nominating Committee (1 year term, 2 elected)

Dr. Michael P. Filosa  
Dr. Sonya Strah-Pleynet

## Norris Committee (4 year term, 2 elected)

Dr. K. M. Abraham  
Dr. Vasiliki Lykourinou  
Dr. Mark Tebbe

**Petition Candidates:** "Any group comprising two per cent or more of the Northeastern Section may nominate candidates....." See NESACS website for details. ◇

# New NESACS Bylaws Allow Electronic Elections

*2018 will be the first electronic NESACS Election – Watch your email!*

Like the National American Chemical Society Elections and the Division of Organic Elections, NESACS will now hold electronic elections. This change needed to be described in the NESACS Bylaws before it could be implemented. The approval of new bylaws at the January Meeting now allows NESACS to move to a more member-friendly and efficient way of holding elections. It is also more cost-effective.

Historically, NESACS has published candidate statements in the May Nucleus which was assembled in a large envelope with a paper ballot and a return envelope. This assemblage was then mailed to each of our 6000 members!

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**ResMed: Residential School on Medicinal Chemistry and Biology in Drug Discovery**  
June 10-15, 2018  
Drew University, Madison, NJ

This graduate level course concentrates on the fundamentals that are useful in drug discovery spanning initial target assay evaluation through clinical development. Case histories of recent successful drug development programs will also be presented. The five-day program covers:

Principles of Med Chem	DMPK
Cheminformatics	Toxicophores
Lead ID & Optimization	GPCRs
Epigenetics	Kinase Inhibitors
Fragment-based Drug Design	Ion Channels
Structure-based Drug Design	Enzyme Inhibitors
Drug-like Properties	Bioisosteres
Protein-Protein Interactions	Preclinical Toxicology
Molecular Modeling	Clinical Development
Antibody-Drug Conjugates	

*Bill Greenlee, Vince Gullo & Ron Doll – Co-organizers*

*Attendees will be staying at the Madison Hotel*

[www.drew.edu/resmed](http://www.drew.edu/resmed)  
e-mail: [resmed@drew.edu](mailto:resmed@drew.edu)  
phone: 973/408-3787; fax: 973/408-3504

## NESACS Sponsors 2017

### Platinum \$5000+

Boston Foundation Esselen Award  
SK Life Science  
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IPG Women Chemists  
Abbvie

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# Monthly Meeting

*The 978<sup>th</sup> Meeting of the Northeastern Section of the American Chemical Society-Esselen Award Meeting*

**Friday, April 27, 2018**

**The Charles Hotel, Cambridge, MA**

Regattabar, One Bennett St., 3rd Floor

**5:00 pm** Social Hour

**6:00 pm** Dinner

**Harvard University, Cambridge, MA**

Mallinckrodt Building, 12 Oxford St

**8:00 pm Award Meeting**

Pfizer Lecture Hall (MB23), ground floor.

Andrew Scholte, NESACS Chair-Elect, presiding

**Welcome and Award History** – Karen Allen,  
Chair, Esselen Award Committee

**Presentation of the Award** - Gustavus J. Esselen, IV

**Introduction of the Award Recipient** – Michael A. Marletta,  
2007 Esselen Award Winner, University of California Berkeley

**Re-writing the Code of Life: The Impacts and Ethics of Genome Editing** – Jennifer A. Doudna, Howard Hughes Medical Institute Investigator; Li Ka-shing Chancellor's Chair in Biomedical and Health Sciences, Professor, Departments of Molecular & Cell Biology and Chemistry at University of California Berkeley; Executive Director, Innovative Genomics Institute

Dinner reservations should be made no later than noon, Friday, April 20. Reservations are to be made using EventBrite services: <https://2018-esselen-nesacs.eventbrite.com>. Select the Gustavus John Esselen Award for Chemistry in the Public Interest and the appropriate ticket package. Members, \$30.00; Non-members, \$35; Retirees, \$20; Students, \$10. Reservations for new members and for additional information, contact the secretary Anna Singer at (781)272-1966 or e-mail at [secretary@nesacs.org](mailto:secretary@nesacs.org). Reservations not cancelled at least 24 hours in advance must be paid.

THE PUBLIC IS INVITED – RESERVATIONS ARE REQUIRED

**Limited Free Parking** available in the Garage at 52 Oxford St. Identify yourself as attending the Esselen/Harvard Chemistry event and the guard will direct you.

**Parking is also available** at the Charles Hotel: For arrival after 5:00PM, self-parking is \$10; valet is \$15. ◇

# Biography

**Jennifer A. Doudna, Ph.D**

As an internationally renowned professor of Chemistry and Molecular and Cell Biology at U.C. Berkeley, Doudna and her colleagues rocked the research world in 2012 by describing a simple way of editing the DNA of any organism using an RNA-guided protein found in bacteria. This technology, called CRISPR-Cas9, has opened the floodgates of possibility for human and non-human applications of gene editing, including assisting researchers in the fight against HIV, sickle cell disease and muscular dystrophy. Doudna is an Investigator with the Howard Hughes Medical Institute and a member of the National Academy of Sciences, the National Academy of Medicine, the National Academy of Inventors and the American Academy of Arts and Sciences. She is also a Foreign Member of the Royal Society, and has received many other honors including the Breakthrough Prize in Life Sciences, the Heineken Prize, the BBVA Foundation Frontiers of Knowledge Award and the Japan Prize. She is the co-author with Sam Sternberg of "A Crack in Creation," a personal account of her research and the societal and ethical implications of gene editing. ◇

# Abstract

***CRISPR Systems: Chemistry and Applications of Gene Editing***

Gene editing with CRISPR technology is transforming agriculture and biomedicine. Understanding the underlying chemical mechanisms of RNA-guided DNA and RNA targeting provides a foundation for both conceptual advances and technology development. I will discuss how bacterial CRISPR adaptive immune systems inspire creation of powerful genome engineering tools, enabling advances in understanding the fundamental chemistry and biology of living systems and paving the way for applications in agriculture and biomedicine. I will also discuss the ethical challenges of some of these applications. ◇

# New Members

*Invitation to attend a meeting*

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

Please call Anna Singer at 781-272-1966 between 9am-6pm, or email: [secretary\(at\)nesacs.org](mailto:secretary(at)nesacs.org) by noon of the first Thursday of the month, letting her know that you are a new member. ◇

# In Memory of Ted Taylor

By Michael P. Filosa

The passing of Ted Taylor is not just the passing of an icon of Organic Chemistry, but the loss of a long-time friend and mentor.

In addition to Ted's well-known consulting activities with Eli Lilly that led to the development of the anti-cancer drug, Alimta, Ted was a long-time consultant to the Polaroid Corporation. He followed Saul Cohen and Nobel Laureates, Robert B. Woodward and Sir Derek H. R. Barton in that role.

Ted had a natural connection to Polaroid. His expertise and that of his students in heterocyclic chemistry was very valuable to Polaroid's organic chemistry efforts.

One of his Ph.D. students, Alan Borrer was the head of Organic Chemistry at the time of my arrival at Polaroid in late 1979. In 1988 John Warner joined Polaroid after receiving his Ph.D. with Ted.

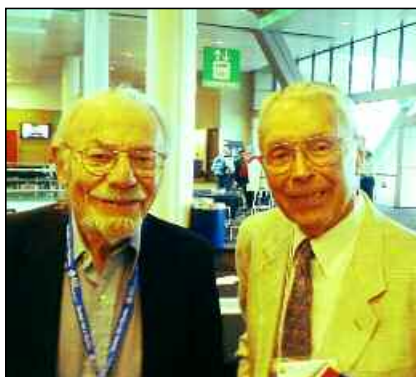
Director of Chemical Research, Lloyd D. Taylor, had a great affinity for Ted, his work, and his students. Lloyd encouraged John to study hydrogen-bonded complexes and use them to solve some of Polaroid's chemical problems. These complexes were the genesis of John's interest in the principles of Green Chemistry.

Around 1991 Ted stopped his consulting relationship with Kodak and became the Organic Chemistry consultant for Polaroid Chemical Research. After a year or two I became the host for his quarterly visits.

Ted loved to stop in Cambridge on his way to Vermont and would stay at the Marriott in Kendall Square. We would meet for dinner at the Legal Sea Foods downstairs. This was one of his favorite places. I think I developed my taste for Cajun-style blue fish at those dinners.

The next morning we often enjoyed the breakfast buffet at the Marriott. We then spent the day discussing Polaroid chemistry.

Steve Telfer would talk about his latest efforts to reinvent imaging with



*Two contemporaries at the 2010 Boston ACS Meeting: (L) Myke Simon, Harvard A.B. 1946, Ph.D. 1949 and (R) Ted Taylor, Cornell A.B. 1946 and Ph.D. 1949. (Photo by Michael Filosa).*

acid-amplifiers or the thermal imaging efforts that led to the invention of ZINK paper and the Opal photo kiosk technology.

We would talk about the dye chemistry and developer chemistry we were working on to support our legacy silver halide imaging products.

This work included the dimethylterephthalamide-hydroquinone complexes developed by John Warner, which solved stability, and solubility issues with several of our preferred hydroquinone developers.

As Polaroid's chemical research effort diminished through the 1990's it became harder to find a full day of topics four times a year. Given Ted's wide-ranging interests and enthusiasm, it was never a problem.

Ted, as much as he could, would tell us about his work leading to Alimta, the toxicity issue encountered in its testing and its solution (addition of folic acid to the treatment), or his experiences as an expert witness at various trials. These included trials in which his own inventions were attacked.

One interesting story I recall is the industrial espionage that happened during his Alimta efforts. New targets were drawn up and were in a briefcase belonging to one of his students. The briefcase was stolen and the structures inside it started appearing in the patents of a foreign competitor.

Another story was the fishpond he attempted to have constructed on his 500-acre property in Woodstock, Vermont. It turned out to be an expensive, but entertaining fiasco except for the

# Historical Notes

*William Klemperer*

October 6, 1927–November 5, 2017  
William Klemperer, Erving Professor of Chemistry Emeritus at Harvard University, died November 5 at the age of 90. Bill was a physical chemist with a primary expertise in molecular spectroscopy.

He was born in New York City. Upon graduation from New Rochelle High School in 1944 he joined the U.S. Navy Air Corps. In 1946 he entered Harvard and majored in Chemistry. At Harvard he met and married his wife, Elizabeth Cole, a Radcliffe student.

Upon receiving his A. B. in 1950, Bill and Elizabeth headed to the University of California, Berkeley where he received his Ph.D. in Physical Chemistry under the direction of George Pimentel. After a semester as an instructor at Berkeley he returned to Harvard as an instructor in July 1954. He moved rapidly up the academic ladder and became a full professor in 1965. Over his career he mentored 67 Ph.D. students, 34 post-doctoral fellows and many undergraduates.

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fish stocked in the failed pond.

Ted was also a passionate golfer. He told us the story of how he was a passionate tennis player until he reached 60. At that point he decided he needed a new sport and that it would be one he could share with his wife. Ted decided that sport was golf and he became a low-handicap golfer.

A number of us would meet Ted on his visits to play golf. I remember one time meeting him at Stow Acres and playing the old South Course. We had extra time so we went to the driving range and spend the end of our session using wedges to aim at the flagsticks.

During our round I had one of the more successful experiences in my mediocre (and limited) golf career. On the 18<sup>th</sup> hole I hit a nice (straight) drive from the elevated tee that carried the pond in the middle of the fairway.

*continued on page 10*

# NESACS at Fenway Park!

Monday, May 14th, 2018 - 7:10 pm

Oakland Athletics vs. Red Sox

Thank you to Doris Lewis for securing our seats in the Grand Stand again this year.



Join us for an evening at Fenway Park for NESACS SummerThing!

Tickets are \$35 each

To purchase tickets, please use our Eventbrite site:

<https://www.eventbrite.com/e/nesacs-summerthing-monday-may-14th-tickets-43023952801>

## Historical Notes

*Continued from page 6*

ates. He became an emeritus professor in 2002.

From 1979-1981 he served as an Assistant Director for the Mathematical and Physical Sciences. He also served as an advisor to NASA and as a consultant to assess experiments related to stratospheric ozone depletion. He received major awards from the American Chemical Society, the American Physical Society and the Royal Chemistry Society.

From the American Chemical Society he received the Irving Langmuir Award (1980), the Peter Debye Award in Physical Chemistry (1994) and the E. Bright Wilson Award in Spectroscopy (2001). He received the Earle K. Plyler Prize for Molecular Spectroscopy from the American Physical Society (1983) and the Faraday Medal and Lectureship from the Royal Society of Chemistry (1995).

Bill was elected a member of the

American Academy of Arts and Sciences (1963) and the National Academy of Sciences (1969).

Bill is survived by his wife and his children, Joyce, Paul and Wendy.

### **Edward C. Taylor, Jr.**

August 3, 1923–November 22, 2017  
Ted Taylor, A. Barton Hepburn Professor of Organic Chemistry, Emeritus, passed away November 22, 2017 at the age of 94 while living at the home of his daughter, Susan Spielman in St. Paul, Minnesota. He was preceded in death in 2014 by his wife of 68 years, Virginia (Crouse) Taylor.

Ted was born in Springfield, Massachusetts on August 3, 1923. He quickly exhausted the chemical offerings of Hamilton College and moved to Cornell University to complete his A. B. and Ph.D. degrees. After receiving his Ph.D. in 1949 he was a Merck Postdoctoral Fellow with Leopold Ruzicka in Zurich, Switzerland.

He joined the faculty of the Univer-

sity of Illinois in 1951 before moving to Princeton in 1954. He was appointed the A. Barton Hepburn Professor of Organic Chemistry in 1966, a position he held until 1997, when he was appointed Emeritus Professor and senior research chemist.

Taylor wrote more than 460 papers and holds 52 U.S. Patents. He is the author or co-editor of 89 books on heterocyclic chemistry and organic synthesis.

Ted is survived by his son, Ned Taylor (Connie) and his daughter Susan Spielman (Rick). He is also survived by 9 grandchildren and 20 great-grandchildren.

### **John J. Giuffrida**

1931–2014

John J. Giuffrida, 82, of Laconia, NH passed away on Sunday afternoon, June 8, 2014 as the result of a tragic accident. His family was with him when he passed.

John was born in Lawrence, Mas-

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# Gustavus John Esselen Award

## Prior Recipients of the Gustavus John Esselen Award

- 1987 - F. Sherwood Rowland, University of California at Irvine, and Mario J. Molina, now at the Massachusetts Institute of Technology. *Discovery of the Influence of Chlorofluorocarbons on the Ozone Layer*.
- 1988 - Alfred P. Wolf and Joanna S. Fowler, Brookhaven National Laboratories, *Chemical Procedures to Make Positron Emission Tomography a Practical Method in Medical Diagnosis*.
- 1989 - Carl Djerassi, Stanford University. *Synthesis and Promotion of the First and Most Common Birth Control Hormone*.
- 1990 - Thomas J. Dougherty, Roswell Park Cancer Institute. *The Development of Photodynamic Therapy for the Treatment of Malignant Disease*.
- 1991 - Jerrold Meinwald and Thomas Eisner, Cornell University. *Chemical Responses in the Insect and Plant World*.
- 1992 - Bruce N. Ames, University of California at Berkeley. *Methods for Detection of Carcinogens and Causes of Aging and Cancer*.
- 1993 - James G. Anderson, Harvard University. *Experimental Methods for Measuring Global Ozone Loss*.
- 1994 - Kary B. Mullis. *The Discovery of Polymerase Chain Reactions (PCR) for the Replication of DNA Molecules*.
- 1995 - Howard J. Schaeffer, Burroughs Wellcome Company. *Nucleosides with Antiviral Activity-The Discovery of Acyclovir (Zovirax®)*.
- 1996 - Roy G. Gordon, Harvard University. *Low Emissivity Glass; Energy Conserving Windows*.
- 1997-Rangaswamy Srinivasan, UVTech Associates. *The Widely Used Laser Methodology of Tiny Focused Ablative Photodecomposition*.
- 1998 - Kyriacos C. Nicolaou, Scripps Research Institute. *Chemical Synthesis and Chemical Biology of Natural Substances*.
- 1999 - Robert S. Langer, Massachusetts Institute of Technology. *The Development of Unique Polymers for Medical Applications*.
- 2000 - William A. Pryor, Louisiana State University. *Vitamin E and the Prevention of Heart Disease*.
- 2001 - Joseph M. DeSimone, University of North Carolina and North Carolina State University. *Green Chemistry for Sustainable Economic Development*.
- 2002 - Ronald Breslow, Columbia University. *Chemistry Lessons from Biology and vice versa*.
- 2003 - Bruce D. Roth, Pfizer Global Research & Development. *The Discovery and Development of Lipitor® (Atorvastatin Calcium)*.
- 2004 - James W. Jorgenson, University of North Carolina. *The Magic of Capillaries in Chemical Separations and Analysis*.
- 2005 - Jean M. J. Fréchet, University of California at Berkeley, *Functional Macromolecules: From Design and Synthesis to Applications*.
- 2006 - Richard D. DiMarchi, University of Indiana, *Chemical Biotechnology as a Means to Optimal Protein Therapeutics*.
- 2007 - Michael A. Marletta, University of California at Berkeley, *Nitric Oxide in Biology: From Discovery to Therapeutics*.
- 2008 - John A. Katzenellenbogen, Swanlund Professor of Chemistry, University of Illinois at Champaign-Urbana, *Estrogens and Estrogen receptors as a Nexus of Chemistry and Biology in Health and Disease*.
- 2009 - Chad A. Mirkin, Director of the International Institute for Nanotechnology, George B. Rathmann Professor of Chemistry, Professor of Biomedical Engineering, Professor of Biological and Chemical Engineering, Professor of Medicine and Professor of Materials Science and Engineering, Northwestern University. *Nanostructures in Chemistry, Biology, and Medicine*.
- 2010 - Stephen L. Buchwald, Camille Dreyfus Professor of Chemistry, Department of Chemistry, Massachusetts Institute of Technology. *Pd- and Cu-Catalyzed Processes for the Synthesis of Pharmaceuticals*.
- 2011 - Arthur J. Nozick, Senior Research Fellow, National Renewable Energy Laboratory and Professor Adjunct, Department of Chemistry and Biochemistry, University of Colorado, Boulder. *Prospects and Novel Approaches for the Low Cost Power Conversion of Solar Photons to Electricity and Solar Fuels*
- 2012 - Bruce Ganem, Franz and Elisabeth Roessler Professor of Chemistry and Stephen H. Weiss Presidential Fellow at Cornell. *Lost (Sometimes) In Translation: Advancing Chemical Discoveries Beyond the Laboratory*
- 2013 - Michael H. Gelb, Harry and Catherine Jayne Bond Endowed Professor of Chemistry and Biochemistry at the University of Washington in Seattle and Frantisek Turecek, Chemistry Department at University of Washington. *The New Generation Chemistry for Newborn Screening*
- 2014 - David R. Walt, Robinson Professor of Chemistry and Howard Hughes Medical Institute Professor, Tufts University. *Microwell Arrays: From Genetic Analysis to Ultra-High Sensitivity Diagnostics*
- 2015 - Eric Jacobsen, Sheldon Emory Professor of Organic Chemistry, Harvard University. *Catalysis: A Frontier at the Center of Chemistry*
- 2016 - Timothy M. Swager, John D. MacArthur Professor of Chemistry, MIT and Director of the Deshpande Center for Technological Innovation, *Chemical/Biological Sensing: Science and Real World Applications*
- 2017 - Neil M. Donahue, Thomas Lord Professor of Chemistry, Chemical Engineering and Engineering and Public Policy, Carnegie-Mellon University. *Atmospheric Ozonolysis: From Collisional Energy Transfer to Particle Physics and Everything in Between*.
- 2018 - Jennifer A. Doudna, Howard Hughes Institute Investigator, Ka-shing Chancellor's Chair in Biomedical and Health Sciences, Professor of Biochemistry, Biophysics and Structural

continued on page 9



## Gustavus Esselen II

*Continued from page 2*

and served as councilor and director of the national organization, during which time he was a member of the ACS Council Policy Committee. His chairmanship of the national ACS meetings held in Boston in 1928 and 1939 was an outstanding service. He was on the advisory boards of I/EC and C&E News, 1946-48. In 1948 he received the James Flack Norris Honor Scroll as "the person who has done most to advance the interests of the Northeastern Section." In 1950 he was made an honorary member of the American Institute of Chemists for his services to the profession of chemistry and chemical engineering. From 1919 to 1951 he was chairman of the American Section of the Society of Chemical Industry. Prior to World War II he was a reserve officer in the U.S. Army's Chemical Warfare Service. During the war he was a committee chairman with the Office of Scientific Research and Development.

Esselen's distinguished contributions to chemistry and chemical engineering were in accordance with the highest ethics of these professions; his recognition of the duties of a professional led to his exertion of a wise and beneficent influence on all the professional societies to which he gave so generously of his time and led to his participation in numerous civic activities in the Boston area. Esselen was a very sensitive person, devoted throughout his life to the fine arts and music. His motto, contained on a tapestry in his office, was a quotation of Richard Wilstätter, "It is our destiny, not to create, but to unveil."

*Adapted from Edward R. Atkinson, in W.D. Miles (Ed.), "American Chemists and Chemical Engineers," American Chemical Society, Washington, DC, 1976, p 147. ◇*

## Esselen Award

*Continued from page 8*

Biology, University of California, Berkeley. *Re-writing the Code of Life: The Impacts and Ethics of Genome Editing* ◇

## NESACS SENIOR CHEMISTS LUNCHEON

Monday, April 30, 2018

Panera Bread 2pm-4pm

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## Electronic Elections

Continued from page 4

This process was inherently inefficient and expensive.

Moreover, very few of our members chose to respond and elections were decided by less than 10 per cent of our membership. In 2017 less than 300 members voted. By switching to electronic elections we hope to get better participation in elections. We will also save many thousands of dollars and save a lot of wasted paper.

For several years we have printed and mailed less than 300 copies of the Nucleus. We intend to eventually move to totally electronic delivery of the Nucleus. It was an anachronism to continue to have to mail 6000 copies of the Nucleus with candidate statements and ballots to our membership simply because of the wording of our bylaws.

The committee led by 2017 Chair Leland Johnson, Jr. that worked hard on revising the NESACS Bylaws deserves a great deal of credit for working with National ACS to expeditiously implement this change.  
MPF ◇

## Ted Taylor

Continued from page 6

My fairway wood left me about 80 yards short of the green on the par 5. I pulled out my sand wedge and the shot I hit was dead on. I was jumping up and down thinking it was going in. I ended up with a 1-foot putt for birdie. I would say it was the best golf hole I ever played and it was with Ted and a direct result of our little game of target practice at the range.

Ted was a remarkable organic chemist. I remember bumping into him in San Francisco at the March 2010 ACS Meeting. Ted was there to receive the Alfred Burger Award in Medicinal Chemistry from the ACS for his work on Alimta. The award was truly an amazing achievement, the foundation of which was his earliest work on the pigments in butterfly wings. By the end of 2010, Alimta stood as the most successful new cancer drug, based on sales, in the history of the pharmaceutical industry.

Ted was an amazing scientist with great charisma. He was an extraordinary role model and friend. I have great memories of my times with Ted and will miss him greatly. ◇

## Historical Notes

Continued from page 7

Massachusetts, on October 19, 1931 and was the son of Giuseppe and Orazio (Faro) Giuffrida.

In 1955 he graduated with honors from Boston College where he received his Bachelor's Degree in Chemistry. In 1957 he married Jacqueline Masuhr of Haverhill, Massachusetts and they went on to have 3 daughters and a son.

John began his career in the chemical industry working for Dow Chemical Company in Midland, MI. He later returned to Massachusetts working for Cabot Corporation. He retired in 1993 as a Regional Sales Manager for Cabot Corporation in Annandale, N.J.

John spent his retirement years in the area he loved most, the Lakes Region of New Hampshire. He had several hobbies including golf and fishing. Throughout his life he was also passionate about cooking and everyone always enjoyed his Italian family recipes. He was also known for his quick wit and good humor.

John is survived by an older sister, his wife, four children and seven grandchildren. ◇

### 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 — Michael Filosa  
NESACS Board of Publications  
Phone - 508-843-9070

Email [filosam@verizon.net](mailto:filosam@verizon.net)

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

A) One    b) Two    c) Many

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

### Have you checked the NESACS website?

Updated frequently

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position postings

Latest meeting and event information

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

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## 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:

<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://chemistry.harvard.edu/calendar/upcoming>  
<http://www.northeastern.edu/cos/chemistry/events-2/>  
<http://chemistry.mit.edu/events/all>  
<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>  
<https://www.wpi.edu/academics/departments/chemistry-biochemistry>

### April 2

Prof. Karen Wooley (Texas A&M)  
Boston University, Metcalf, Rm 113  
4:00 pm

### April 3

Prof. Taekjip Ha (Johns Hopkins)  
MIT, Room 6-120, 4:30 pm  
Prof. David Nicewicz (North Carolina-Chapel Hill)  
Boston College, Merkert 130, 4:00 pm

Prof. Gonghu Li (Univ. of New Hampshire)  
“*Surface Molecular Catalysis for Solar Fuel Research.*”  
Univ. of New Hampshire, Parsons N104  
11:10 am

### April 4

Prof. Jeffery Byers (Boston College)  
Tufts, Pearson, Rm. P106, 12:00 pm  
Prof. T Patrick Holland (Yale)  
“*Nitrogen Fixation using Low-Coordinate Iron Complexes.*”  
MIT, Room 4-370, 4:15 pm  
Prof. Evan Miller (UCal-Berkeley)  
“*Electrophysiology, Unplugged: New Chemical Tools to Watch Cell Physiology.*”  
Boston College, Merkert 130, 4:00 pm

### April 5

Prof. Samie R. Jaffrey (Weill Medical College-Cornell)  
Harvard, Pfizer Lecture Hall, 4:15 pm  
Prof. Paul Chirik (Princeton)  
Dartmouth, Steele, Rm 006, 10:30 am

### April 6

Prof. Carolyn Bertozzi (Stanford)  
Harvard, Pfizer Lecture Hall, 4:15 pm  
Prof. Hicham Fenniri (Northeastern)  
UMass-Lowell, Olney Hall, Rm 218 3:30 pm

### April 7

Prof. Colin Nuckolls (Columbia)  
MIT, TBA

### April 9

Prof. Mike Ward (NYU)  
Brandeis, Gerstenzang 121, 4:00 pm  
Prof. J. Martin Bollinger (Penn State)  
MIT, TBA, 4:00 pm  
Prof. Corinna Schindler (Michigan)  
Boston University, Metcalf, Rm 113 4:00 pm

### April 10

Prof. Steven Corcelli (Notre Dame)  
“*Dynamics and Vibrational Spectroscopy of Molecular Reporters in Ionic Liquids.*”  
Tufts, Pearson, Rm. P106, 4:30 pm  
Prof. J. Martin Bollinger (Pennsylvania State University)  
MIT, TBA, 4:00 pm  
Prof. David Thirumalai (University of Texas)  
MIT, TBA, 4:30 pm  
Prof. Wei Min (Columbia)  
“*Seeing Molecular Vibrations: Chemical Imaging for Biomedicine.*”  
MIT, TBA, 4:30 pm  
Prof. Eric Jacobsen (Harvard)  
“*Anion-Binding Catalysis.*”  
Boston College, Merkert 130, 4:00 pm  
Prof. Caleb Martin (Baylor)  
“*Exploiting the Diverse Chemistry of Boroles to Access Unsaturated Boracycles.*”  
Univ. of New Hampshire, Parsons N104  
11:10 am

### April 11

Prof. Delia Milliron (Texas)  
Harvard, TBA, 4:15 pm  
Prof. Eric Jacobsen (Harvard)  
“*New Stereoselective, Catalytic Fluorination Reactions.*”  
Boston College, Merkert 130, 4:00 pm  
Prof. Amir Mitchell (UMass Medical School)  
WPI, Gateway Park, Rm 1002, 12:00 pm

### April 12

Prof. Eric Jacobsen (Harvard)  
“*Inching toward Perfect Catalysis.*”  
Boston College, Merkert 130, 4:00 pm

### April 13

Prof. Rebekka Klausen (Johns Hopkins)  
Univ. of New Hampshire, Parsons W131 3:00 pm

### April 17

Prof. Joseph Barchi, Jr. (NCI)  
Tufts, Pearson, Rm. P106, 4:30 pm  
Prof. Tomislav Rovis (Columbia)  
Boston College, Merkert 130, 4:00 pm  
Prof. Steven Suib (Univ. of Connecticut)  
Univ. of New Hampshire, Parsons N104  
11:10 am

### April 18

Prof. Michael Rose (Texas)  
MIT, Room 4-370, 4:15 pm

### April 19

Prof. Anna Mapp (Michigan)  
Harvard, Pfizer Lecture Hall, 4:15 pm  
Prof. Matthew Tucker (Nevada-Reno)  
Boston College, Merkert 130, 4:00 pm

### April 20

Prof. Jianmin Gao (Boston College)  
“*Covalent Molecular Recognition via Iminoboronate Chemistry.*”  
UMass-Lowell, Olney Hall, Rm 218 3:30 pm

### April 23

Prof. Chi Nguyen (MIT)  
MIT, Rm 4-270, 4:00 pm  
Prof. Alexei Stuchebrukhov (UCal-Davis)  
Boston University, Metcalf, Rm 113, 4:00 pm

### April 24

Prof. Poul Petersen (Cornell)  
Tufts, Pearson, Rm. P106, 4:30 pm  
Prof. Wei Min (Columbia)  
“*Seeing Molecular Vibrations: Chemical Imaging for Biomedicine.*”  
MIT, TBA, 4:30 pm  
Prof. Patricia Mabrouk (Northeastern)  
“*So You Think Your Laboratory is Running Well? When Did You Last Have a Conversation About Authorship with Your Students?*”  
Univ. of New Hampshire, Parsons N104 11:10 am

### April 25

Prof. Louise Berben (UCal-Davis)  
MIT, Rm 4-370, 4:15 pm

### April 26

Prof. Elizabeth R. Jarvo (UCal-Irvine)  
MIT, Rm 6-120, 4:00 pm  
Prof. Wilson Smith (Delft University)  
Boston College, Merkert 130, 4:00 pm

### April 28

Prof. Stefan Hell (Max-Planck-Institute)  
Harvard, Pfizer Lecture Hall, 5:00 pm

### April 30

Prof. Eric Jacobsen (Harvard)  
Boston University, Metcalf, Rm 113 4:00 pm

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

Xavier Herault, email:  
[xherault@outlook.com](mailto:xherault@outlook.com) ♦