



THE NUCLEUS

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Candidate for 2021 Chair-Elect Patrick Gordon

2020 NESACS Election

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Building Bonds to Create Future Leaders

2020 Global Women's Breakfast

*By Lori Ferrins, Christine Dunne, Melissa Buskes,
Quillon Simpson*

In Memory of Sir Jack Baldwin

By Michael P. Filosa

COVID-19, Hydroxychloroquine- Friend or Foe?

By Katherine Rubino

Building Bonds to Create Future Leaders

By Lori Ferrins, Christine Dunne, Melissa Buskes, Quillon Simpson



Attendees at the 2020 Boston Global Women's Breakfast. Photo by Dr. Quillon Simpson.

The Global Women's Breakfast (GWB) is an international networking opportunity organized by the International Union of Pure and Applied Chemistry (IUPAC) and that is designed to celebrate the contribution of women to the field of chemistry. Starting in New Zealand and ending in Hawaii, the breakfast events spread around the globe and provide an opportunity to connect with other groups hosting breakfasts at the same time.

The overall purpose of GWB2020 is to establish an on-going virtual network where women in chemistry and related sciences can connect with each other to celebrate their achievements, support their professional aspirations, and develop leadership skills. Held on February 12, 2020, the day after the United Nations Day of Women and Girls in Science, this event is timed so as to maintain the momentum of this day.

The Boston edition of the GWB saw the inclusion of a wide variety of scientists who were eager to participate in the narrative of the day. In 2020, the theme of the breakfast was "Building

Bonds to Create Future Leaders" and we focused on the importance of a strong community that encourages greater diversity in the chemical enterprise. 113 interested chemists, irrespective of career stage (including students), gender, or employment sector, gathered at Merck research labs, and this led to a networking opportunity like no other in the area!

Dr. Fabienne Meyers, Associate Director of IUPAC and Managing Editor of Chemistry International was in attendance and shared her thoughts on the importance of communication in science. In doing so, she highlighted the important role that IUPAC plays in providing a "common language for the communication" of chemistry.

Dr. Bonnie Bertolaet, a long time NESACS member and Executive Director of Science Club for Girls (<https://www.scienceclubforgirls.org/>) attended the breakfast and highlighted the important work that they do. Through the provision of free, experiential hands-on programming, and connecting girls (typically those who are underrepresented by race, family in-

come or are first-generation students) to women STEM mentors, they have found that over 90% of the program participants go on to study at college, and over 50% of those choose a STEM major. A small donation was requested from all attendees and this was donated to Science Club for Girls, in total, we raised \$359.60!

Dr. Anna Sromek the NESACS chair and Dr. Lori Ferrins, the chair of the International Younger Chemists Network (IYCN) both highlighted opportunities to get involved with volunteering at the local and international level.

Finally, Dr. Erin di Mauro shared her thoughts on the importance of networking and seizing opportunities that lead to personal growth. She asked the audience to consider "what opportunities are out there that you aren't aware of?". For Erin, it all started with a poster presentation at an ACS meeting, and the next year she returned to give a talk. It was here that she met Dr. Margaret Chu Moyer and she began building the bonds that would help drive her personal and professional success. Erin's final message was to say goodbye to a fixed mindset with respect to building your network, embrace it as part of your everyday life, and don't just think of it as work. That is really when you will start to create everlasting bonds.

We would like to thank all of the GWB sponsors, NESACS, Merck, the ACS Division of Computing in Chemistry, and the Northeastern University Chemistry Department for their invaluable support. We look forward to seeing the many familiar faces at GWB2021 and welcoming new attendees and supporters of women in chemistry! ◇

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Cover: *Candidates for Chair-Elect for 2021. Carol Mulrooney (L) and Patrick Gordon (R). Photos courtesy of the candidates.*

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In Memory of Sir Jack Baldwin

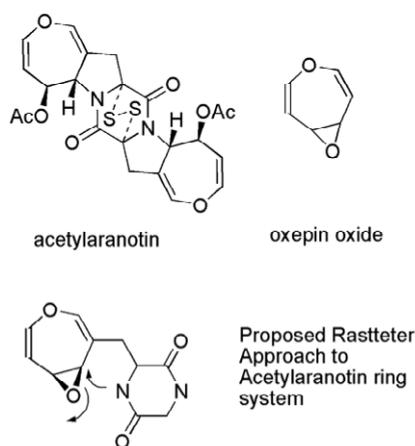
August 8, 1938 to January 4, 2020

By Michael P. Filosa

As an MIT freshman in 1970-71, I took first year organic chemistry, 5.41 and 5.42. We used notes written by Professor Dan Kemp¹ as well as the text book written by Hendrickson, Cram and Hammond. Through rowing, I became acquainted with William Rastetter who was a senior chemistry major and crew jock and he became somewhat of a role model for me. Bill taught a very popular recitation section for 5.42 in the spring of 1971 which I attended. Bill also did an undergraduate project with Jack Baldwin as an MIT senior before he attended Harvard to be a graduate student of R. B. Woodward.²

Woodward's graduate students were expected to develop their own projects. He became interested in the total synthesis of acetylaranotin and a subunit, *sym*-oxepin oxide which provided a possible pathway to the natural product.^{3,4} After an associate professorship at MIT and a successful career at Genentech, Bill became renowned later for founding IDEC Pharmaceuticals in 1986 and was co-inventor of Rituxan, the first monoclonal antibody approved by the FDA for cancer therapy. IDEC merged with Biogen in 2003 and Bill was the Executive Chair of the merged company from 2003-2005.

Like Bill, I majored in Chemistry and spent four years on the lightweight crew team. By the time I was a senior I was attending the very intense problem-solving seminar held by Professor Kemp for a small group of the entering first year graduate students. I had learned about them my sophomore year from my classmate, Virginia Lightner, who was already attending Kemp's seminar while doing undergraduate research in Sid Hecht's laboratory. I was intrigued by the problems she was working on for the seminar. Many of the problems had a great personal history with Professor Kemp going back to his days as a Woodward graduate student



and his time at Harvard. I recall one problem in which he said it helped him get his job at MIT because he managed to impress Professor Büchi with his answer.

Remembering Bill Rastetter's teaching of recitation sections when he was a senior, I asked Professor Kemp and my senior advisor, Professor Fred Greene, if I could teach a recitation section. Professor Baldwin was teaching 5.42 that semester and they sent me to see him. He didn't interview me at all, just welcomed me aboard. Prof. Kemp and Prof. Greene's recommendation was good enough for him.

Attending Kemp's problem-solving seminar and teaching a 5.42 recitation section were two of the best decisions I ever made. However, unlike Bill I did not do undergraduate research with Jack Baldwin. I sought out Barry Sharpless at the beginning of my senior year, but he said he was writing grants and to come back in a month. I should have waited him out but, in my impatience, I instead went to Prof. Greene and did research that year in his laboratory.

I still recall the first class in 5.42 with Prof. Baldwin as the lecturer. He instructed the class, "This class is organized like the Catholic Church. If you

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Covid-19, Hydroxychloroquine-Friend or Foe?

Katie Rubino, Caldwell Intellectual Property, NESACS Board of Publications

This article with its full set of references can be found at [covid-19-hydroxychloroquine-friend-or-foe](#)



Around the world, there are presently 1,696,588 confirmed cases of COVID-19 in 213 countries and territories.[i] Further, some experts predict a second wave of the COVID-19 resurfacing at some point later this year. Under these pressures, scientists are racing against the clock to develop and test a vaccine for the novel coronavirus.

To date, the World Health Organization (WHO) has announced that 3 candidate vaccines are in the clinical evaluation stage and 67 candidate vaccines are in the preclinical evaluation stage of testing.[ii] Candidate vaccines in the clinical evaluation stage are the furthest along in development and are currently being studied in humans to demonstrate safety and efficacy.[iii]

To start, testing of a candidate vaccine begins with preclinical testing. Pre-clinical testing includes the initial testing of the candidate vaccine in animal models to determine safety and toxicity.[iv] Next, a clinical vaccine enters the clinical evaluation stage which is generally broken down into three distinct phases. The first phase usually involves a small number of participants, generally around 100, to determine if a vaccine is safe for humans. The second phase enrolls several hundred participants and aims to evaluate the efficacy of a vaccine against the disease for which it is intended. Typically, phase two can last anywhere from a couple of months to a couple of years. Phase three enrolls the largest number of participants, frequently thousands of people

spread over multiple geographical locations. Phase three aims to determine the effectiveness of a vaccine over a certain period of time, generally a couple of years. Currently, Moderna Therapeutics has a candidate vaccine in phase 1 clinical trials and predicts that a commercially available vaccine will not be available for another 12–18 months.[v]

While waiting for the clinical trials of these candidate vaccines to be conducted, several already existing drug therapies have begun to be touted as gamechangers in the fight against COVID-19. Perhaps the most widely spoken of, hydroxychloroquine, has been proclaimed as a miracle pill. But, what exactly is this compound and are there any intellectual property rights that might affect access and manufacture of this medication?



Hydroxychloroquine was originally developed during World War II to treat malaria and was granted FDA approval in April of 1955.[vi] It was first synthesized in 1946, by adding a hydroxyl group to the anti-malarial drug chloroquine, a derivative of the compound quinine.[vii] After its development, hydroxychloroquine was found to be superior to chloroquine in treating malaria, producing less toxicity and side effects.

Currently, the Food and Drug Administration (FDA) has approved hydroxychloroquine to treat malaria and malaria prophylaxis as well as autoimmune conditions that include lupus erythematosus and rheumatoid arthritis.[viii] Recently, the FDA announced an Emergency Use Authorization (EUA), permitting the use of hydroxy-

chloroquine to treat adults and adolescents who are hospitalized with COVID-19.[ix]

The exact mechanism as to how hydroxychloroquine works against COVID-19 and its FDA approved indications are not precisely known. Chemically, hydroxychloroquine is a weak base and may be effective against the Plasmodium parasites that cause malaria. Hydroxychloroquine may combat these parasites by concentrating in the acid vesicles of the parasites and inhibiting certain enzymes, thus paralyzing the parasite.[x] In the treatment of rheumatoid arthritis, hydroxychloroquine acts as a mild immunosuppressant by inhibiting production of a rheumatoid factor—the autoantibody that causes rheumatoid arthritis within the body.[xi] Side effects from hydroxychloroquine can include hearing loss, retinal disorders, anemia, and cardiac complications. However, the side effect highlighted most heavily in the news is the possibility of a prolonged QT interval, particularly when hydroxychloroquine is administered in combination with the antibiotic azithromycin.[xii]

But, many antimicrobials other than hydroxychloroquine can cause prolonged QT intervals, such as, for example, the antibiotic ciprofloxacin which is commonly administered to patients to take at home for acute urinary tract infections.[xiii] When such antimicrobial agents are given in combination with agents that can prolong a QT interval, there is an additive risk and extra caution and monitoring are recommended.

Nonpharmacologic risk factors can also cause a prolonged QT interval. For example, being of the female gender may increase the risk for a prolonged QT factor, as females have QT intervals on average that are 20 milliseconds greater than males. [xiv] Frequently, doctors and pharmacists help mitigate risk factors for QT interval prolongation

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NESACS 2020 Election

Candidate Statements

Chair-Elect

Carol Mulrooney



Education: B. S. Chemistry, University of Connecticut; M. S. Chemistry, Saint Joseph College; Ph. D. Organic Chemistry, University of Pennsylvania.

Professional Experience: Investigator, Chemistry, GlaxoSmithKline (2019-present); Cheminformatics Scientist, Broad Institute of MIT and Harvard (2016-2019); Senior

Research Scientist, Chemistry & Data Analysis, Preceres LLC (2014-2016); Research Chemist II, Broad Institute (2008-2014); Research Scientist, Polymedix (2005-2007); Graduate Research Assistant, University of Pennsylvania (2000-2005); Scientist II, Boehringer Ingelheim Pharmaceuticals (1993-2000).

NESACS Service: Chair, Women Chemists Committee (2016-present); Councilor (2018-2020).

Memberships: American Chemical Society.

Awards/Honors: ACS Division of Organic Chemistry Graduate Fellowship (2003-2004)

Statement: It is a great honor to be nominated for the position of Chair-elect and I am very excited to have the opportunity to serve our section.

I currently chair the Women Chemists Committee and am proud to serve both the interests of women chemists and of NESACS members overall. The WCC's goals are to inspire women students to pursue careers in STEM, support women chemists' career growth, encourage more women to be active in NESACS, and communicate women scientists' contributions.

In this role I have helped lead many successful events, my first being the panel event hosted at Simmons University called "Stem the Pay Gap". We invited many experts on the issues facing women in chemistry to participate, including members of the government who were involved in writing and implementing the Massachusetts wage gap law. Most recently I have worked with Blueprint Medicines to co-host the Catalyst series of networking events designed to bring the local chemistry community together and highlight the role of women in science.

The WCC is dedicated to supporting activities throughout NESACS in several ways, including collaborations with the Younger Chemists Committee and the Senior Chemists Committee. Our Multi-Generational Mentoring Initiative consisted of panel discussions reaching out to undergraduate and graduate student communities. Since this initiative began, we have

Patrick M. Gordon



Education: B.Sc. University of Guyana (1977); M.Sc. University of New South Wales, Australia (1982); Ph.D., University of Manitoba, Canada (1987)

Professional Experience: Post Doctoral Associate, Kansas State University, (1987-1988); Organix Inc., Woburn, MA (1988-1991); Senior Scientist, Polaroid

Corporation (1991-2001); Arqule Inc. (2001-2002); Polymer Laboratories, (2003-2004); Adjunct Professor Simmons College, Emmanuel College, MCHPS University, (2005 to Present); Cape Cod Community College (2015-2019); Wentworth Institute of Technology (2019-present)

ACS Service: Alternate Councilor (1994-1996, 1997-1999, 2000-2001, 2003-2006; 2018-2020); Councilor (2011-2014); Career consultant (2003 to present); ACS COACHs program (2011-present); Committee of Minority affairs (2012-present); ACS scholars Application review Committee (2019)

NEACS Service: Chair-Elect (2010), Chair (2011), NERM Chair of the Symposium on Cannabinoids, (1989); Centennial Committee Co-Chair (1998); Member, Board of Publications 1999 to 2008; Secretary, Board of Publications, 2000; Chair, Board of Publications, (2002, 2004) Auditor (2016-2020); Councilor (2018-2020)

Statement: Changes are inevitable, but no one could have predicted how a few months would have ushered such a dramatic change as to how business, in general, is done and how teaching must be done now and in the near future. This will undoubtedly affect the preparedness of students entering the STEM disciplines and Chemistry.

The course of many of our lives have been altered in such a way that everything seems so unpredictable; however, the challenge to manage that course provides our local section with opportunities to guide the section to change and adapt in ways that would better serve our membership as we move into a "new normal."

I have been involved with the local section since 1990 and have been a national ACS member since 1979 having joined when I was pursuing my master's degree in Australia! As ACS struggles with membership retention, the local sections can and should advocate on behalf of their local members by being a strong voice for programming that delivers value for the membership participation. That means we should be striving to create opportunities for the younger chemists to be more involved at the councilor and national committee levels.

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NESACS Candidates for Election

For Chair-Elect

Carol Mulrooney
Patrick Gordon

For Treasurer

Ashis Saha

For Trustee

Ruth Tanner
Cathy Costello

For Councilor/Alternate Councilor

Jens Breffke
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Caitlin Mills
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Raj (SB) Rajur
Katie Rubino
Ashis Saha
Michael Singer
Anna W. Sromek
Meredith Ward
Kap-Sun Yeung

For Director at Large

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Dr. James U. Piper
Dr. Ralph T. Scannell

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Lisa Marcauella
Matthias Eberstadt
Anyin Li

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Patricia A. Mabrouk

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

Treasurer

Ashis K Saha

Education: M.Sc. Chemistry IIT Kanpur, India, Ph.D. Chemistry Univ. Michigan, Ann Arbor, Post-doctoral fellow: University of California, Berkeley

Professional Experience: Medicinal Chemist, Vice President Chemistry, Tarveda Therapeutics, Watertown, MA; Co-founder & CSO Dover Lifesciences, Boston. VP, Discovery Research TCG Lifesciences, Boston & Kolkata, India; Executive Director, Predix, Lexington, MA; Director, Praecis, Waltham; Group Leader, Viropharma, Exton, PA; Principal Scientist, Johnson & Johnson (Janssen), Spring House, PA.

Chemistry & NESACS Service: ACS Member since 1983. POCC (Philadelphia Organic Chemistry Club, Univ of Pennsylvania): Chair Elect & Chair 2000-2002. Seminar Committee Chair: Janssen. NESACS: Organizing committee member, Process Chemistry, 2008-10, 2019-. Treasurer, 2017-.

Statement: It is an honor to be an ac-

NESACS Election

Election of Candidates

To provide maximum information and expression of opinion by the candidates for election in 2020, the Nominating Committee prepared this section of the NUCLEUS to help broadly disseminate the information about each candidate. The included statements will also be available for review with the electronic ballot. All candidates were asked to submit biographical material and, with the exception of committee member nominees, position statements. To attain uniformity of format, the biographical data have been rearranged, and, where the text exceeded the allotted space, abbreviated. The 2020 election will be conducted electronically in conformance with 2019 Bylaws of the Northeastern Section. The order of candidates for each office in the election will be determined by lot. Comments regarding the election may be addressed to the Nominating Committee Chair, Andrew Scholte (address on p.3). The deadline for the election will be May 31, 2020. ◇

tive member of the Northeastern Section of the American Chemical Society. As a NESACS alternate Councilor, I had the opportunity to learn the value of member service to the National organization. Serving NESACS as Treasurer, I focused my energy on two areas: 1) efficient online tools for streamlined financial/accounting practices; and 2) improving expense submission, sponsorships and general communication with our members/sponsors. I worked to establish online banking and bookkeeping practices for improved efficiency. Our bookkeeping procedures were improved with my hiring and continued working with a professional bookkeeper. I have helped facilitate fundraising and expense tracking for the major NESACS chemistry symposia. Working with the board and NESACS committee chairs/members I aim to continue delivering practices that are best in class and serve members in most efficient manner. With your support, I would continue my work in NESACS, particularly in the area of finance but also beyond. At the ACS, I would like to serve in the budget and finance committee among a few other areas such as committee of professional training. With your gracious vote, I hope to serve as councilor and treasurer allowing me to contribute with my experience and time. Thank you!

Trustee

Ruth Tanner

Education: B.S., Purdue University; Ph.D., University of Cincinnati (Physical Organic Chemistry)

Professional Experience: Post-doctoral Research Associate, Duke University with Charles Hauser (Deuterium Exchange Reactions, Kinetics); Massachusetts State College at Lowell; Chair, Chemistry Department (1974); University of Massachusetts Lowell, Professor (1978 – 2007); Visiting Scientist, Massachusetts Institute of Technology (Biomaterials and Fabrication Laboratory); Member of Joint Council on Food and Agricultural Sciences (USDA 1979 – 1985); Director, Women in Science and Engineering Program (UMASS Lowell); 1996 – 2006, Professor Emeritus

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University of Massachusetts Lowell (2007 – Present)

ACS Service: Councilor (2010 – present); Membership Affairs Committee (2011-2017); Committee on Economics and Professional Affairs (2017 – present); Advisory Board, American Association of Chemistry Teachers (2013-2017); High School/College Interface Symposium Chemical Education Division, 224th ACS national meeting 2002; On-Site Coordinator, ACS TV Satellite Seminar Series, Teaching Chemistry, University of Massachusetts Lowell (1996 – 1999) NESACS Service: NESACS Chair, (2012); Nominating Committee, Chair (2013); Board of Directors (1996 – Present); Chair, Education Committee including promotion of programs for undergraduate and high school chemistry teachers; sponsorship of symposia at colleges and universities in the Northeastern Section; steering committee for the NESACS-JCF/GDCh Exchange program with Germany (2001 – present), a joint program with the YCC; the ACS Scholars program, the Northeast Undergraduate Day; coordination of student affiliate organizations, Chair of Connections to Chemistry, a program to connect high school chemistry teachers with the CHED resources of the ACS (1997 – 2009); NESACS Trustee (2015- present); Chair, NESACS Board of Trustees (2017 - 2019).

Honors: The John A. Timm Award for Excellence in Teaching Chemistry from the New England Association of chemistry Teachers (2012); Henry A. Hill Award for “meritorious service to the NESACS and to the profession of Chemistry” (2007); Advancement Award from Boston Club for Women in Science and Engineering Program (2000)); Council on Diversity and Pluralism Award (1999); Department of Chemistry Teaching Award (1998)

Statement: The Trustees of NESACS are responsible for the management and growth of the Trust Funds of the Section. They make recommendations to the Board as to the uses of the Funds, in keeping with the wishes of the donors of the funds. Asset management involves the preservation and growth of funds by appropriate investments. The funding for the Sections’ programs, meetings,

awards and activities comes from membership dues, contributions, sponsorships and support from the parent ACS. In addition, the income from the Trust Funds provides funding for specific awards and activities in keeping with their designated objectives. As Trustees, with the advice of our financial investment managers, we need to be progressive, with caution, in seeking opportunities for growth with minimum to moderate risk.

Catherine E. Costello

Catherine E. Costello is William F. Warren Distinguished Professor at Boston University with appointments in Biochemistry, Physiology & Biophysics, and Chemistry. The Center for Biomedical Mass Spectrometry, which she founded and directs, is located on the Medical School campus.

Education: A.B. (Chemistry), Emmanuel College; M.S. and Ph.D. (Organic Chemistry), Georgetown University; Postdoctoral fellow, MIT (Chemistry – Mass Spectrometry).

Professional Experience: Associate Director of MIT Mass Spectrometry Resource >20 y; Professor at BUSM (1994-date). Research interests in determination of structures and functions of biopolymers, with particular emphasis on glycobiology, post-translational modifications of proteins and protein folding disorders, as well as scientific education and fostering of international collaborations. Author/coauthor of 385 scientific papers.

ACS Service: ACS Councilor representing Northeastern Section since 1989. Current advisor of the Senior Chemists Committee and board member of Malta Foundation for Research and Education in the Middle East. Past member and chair of the International Activities Committee; past member of the Constitution and Bylaws, Ethics, and Senior Chemists Committees and numerous ACS award committees. Two terms at ACS-IUPAC representative. Active reviewer for many ACS journals; past special issue editor and editorial board member.

NESACS Service: NESACS Chair (2014); chair-elect (2013); past chair

(2015); Chair of NESACS Bylaws Committee (1997-2017); served multiple terms on Publications, Budget and Nominating Committees.

Relevant Memberships: President of International Mass Spectrometry Foundation (2014-2018). President of Human Proteome Organization (2011-2012) and American Society for Mass Spectrometry (2002-2004). Member ACS, ASMS, AAAS, HUPO, IUPAC. Board member of US-HUPO and Human Proteomics/Glycomics Initiative. Editorial boards of four journals; member of academic and institutional advisory committees in US, Canada and Europe.

Honors: ACS Fellow, ACS Field and Franklin Award, NESACS Henry A. Hill Award, AAAS fellow, Emmanuel College PhD (*h.c.*), ASMS Distinguished Contributions to Mass Spectrometry, IMSF Thomson Medal, HUPO Distinguished Achievement in Proteomics and Distinguished Service Awards. Two annual awards are named in her honor: US-HUPO Lifetime Achievement in Proteomics (established 2019); FeMS Award for Females in Mass Spectrometry (est. 2020).

Statement: I would like to contribute my organizational and management experience with the local and national ACS and other national and international societies, as well as the recruitment and fulfillment of multimillion-dollar research grants and contracts, towards the custody, growth and appropriate utilization of the resources of the Northeastern Section of the ACS. We are fortunate to have a long history as a Local Section and have many types of funds and expertise available. We must make the best possible use of these resources to educate and guide our young and working members, to provide experiences that broaden the expertise of all, to assist those who are seeking employment, and to assure opportunities for continued engagement of our senior members. We also need to inform and involve the general public, the many chemistry-based industries within our district, and ACS members and others in our neighboring areas. As a Trustee, I will be concerned with all of these matters, and with supporting the initiation

of further appropriate activities.

Director-at-Large

John L. Neumeyer

Education: BS Columbia University, 1952; PhD in Medicinal Chemistry, University of Wisconsin in 1961.

Professional Experience: Research Chemist, Ethicon (Division of J&J) 1952-1957; FMC Corp., Senior Research Chemist 1961-1963; Arthur D. Little Inc, Staff Scientist 1963-1969; Professor of Medicinal Chemistry and Chemistry, Northeastern University 1969-1991; Visiting Professor University of Konstanz, Germany 1975-1976; Scientific Director and Chairman, Research Biochemicals International (RBI) 1980-1996; Visiting Professor, University of Groningen, Holland 1997; Director, Medicinal Chemistry Program, McLean Hospital, Harvard Medical School 1996-present.

Honors: ACS Fellow, 2011; Elected to Hall of Fame, ACS Division of Med. Chem., 2008; Henry Hill Award for Outstanding Service to NESACS, 1998; AAAS Fellow, 1984; Fulbright Fellowship, 1975-1976; AAPS Fellow, 1986, Outstanding Educator Award, 2012; Northeastern University Matthews Distinguished Professor, 1980.

ACS Service: Division of Medicinal Chemistry, Councilor, Executive Comm., 1971-1981; Vice Chairman, 1981; Chairman, 1982; Councilor, 1983-1987; Board of Editors, J. Med. Chem., 1974-1995; ACS Board of Publications, 1990-1993.

NESACS Service: Founder and Chair, Medicinal Chemistry Group, 1974-1995; Councilor, 1998-1995; Trustee 1989-1993; Alt. Councilor, 1995-1998; Publication Comm. The Nucleus, 1976-1978, 1985-1987 and Chair, 1986 and 1997.

Statement: Having served the ACS in a variety of positions both nationally and locally over the past 50 years, I am very much aware of the concerns and problems of its members. If elected, I shall continue to devote my time, energy and experience in both industry and academia to further the objectives of the ACS and its members. In particular, I

shall work towards recruiting young and energetic new members to actively participate in the governance of the Northeastern Section.

James U. Piper

Education: B.S. MIT; M.S., Ph.D. Emory University.

Professional Experience: Research appointments at Yale U. 1963-6, MIT 1966-7 and 72-3, Worcester Foundation for Experimental Biology 1979-80. Teaching appointments at New Haven College 1963-6, Simmons College 1966-2002. Currently Emeritus Prof.

NESACS Service: ACS Member since 1960. 1990 and 2016 Hill Award. NESACS Treasurer Sept. 1977-Dec. 2016.

Statement: Having been Treasurer of the Section for 40 years (much too long) I believe I can be a resource of historical information for the Board of Directors. Over the years I have observed a Board of Directors who volunteer many hours in the service of their profession and who oversee an increasingly large quantity of high-quality programs. It would be a pleasure to continue to serve the Section.

Ralph T. Scannell

Education: B.S., 1973, Boston State College (Major: Biology and Minor: Chemistry); M.S., 1978 University of Massachusetts Lowell (Chemistry); Ph.D., 1983, Brandeis University (Organic Chemistry)

Professional Experience: Laboratory Instructor, University of Lowell (1976-1977); Postdoctoral Research Associate, University of Virginia (1983-86); Senior Medicinal Chemist (1987-1990), A.H. Robins Pharmaceuticals; Senior Research and Development Chemist (1990-1992), Ethyl Corporation; Principal Scientist (1992-1994), Associate Director of Medicinal Chemistry (1994-1996), Director of Medicinal Chemistry (1996-1998), Senior Director of Medicinal Chemistry (1998), CytoMed, Inc.; Senior Director of Chemistry (1998-2005), UCB Research, Inc.; Head of Chemistry (2007), Vice President of Chemistry (2007-2008), Amulet Pharmaceuticals; R&D Consult-

ant (2008-Present); Head of Chemistry, Radiation Control Technologies (2011-2012); Vice President of Chemistry and Founder, ETX Pharmaceuticals (2013-2019), Adjunct Associate Professor, M.S. Program in Drug Discovery and Development, Massachusetts College of Pharmacy and Health Sciences (2007-2010); Guest Lecturer, Drug Discovery and Development, Boston College (2015); Guest Lecturer, Drug Discovery and Development, Northeastern University (2009-2015).

NESACS Service: Vice Chair/Programs 2006; Organizing committee, NESACS, IUPAC and RSC-US sponsored Advances in Chemical Sciences Symposium (2007-2010); Director-at-Large, 2009 – 2020; Nominating Committee, 2010; ACS Fellows Nominating Committee, 2012; Canvassing Committee for the Esselen Award, 2013; Alternate Councilor, Northeast Section of the American Chemical Society 2015 – 2017.

Memberships: American Chemical Society (Organic and Medicinal Chemistry Divisions), Northeast Section of the American Chemical Society, Science Advisory Board Member, University of Massachusetts in Boston (2002-2013).

Statement: It is an honor and a privilege to be nominated for Director-at-Large for the Northeastern Section of the American Chemical Society. My extensive experience in industry, where I held several leadership roles, gives me the necessary background to operate efficiently and effectively in the role of Director-at-Large. NESACS performs a critical function in representing the interests of its membership and creating opportunities where members can meet and disseminate information. I am looking forward to participating in these activities, promoting the growth of the organization and serving the interests of its membership.

Nominating Committee

Doris I. Lewis

Education: Tufts University Ph.D. in Chemistry, Duke University, B.S. in Chemistry

Professional Experience: Suffolk

University Professor Emerita; Professor, 1986-2013; Suffolk University Forensic Science Coordinator 2002-07; Chemistry Department Chair, 1995-2004; Associate Professor, 1981-86; Assistant Professor, 1975-81; Newton College Assistant Professor, 1970-75

ACS Service: ACS Committee on Public Relations and Communications 2012-20; ACS Council Policy Committee 2016; Committee on Chemistry and Public Affairs, 2001-11

NESACS Service: Chair, Theodore William Richards Medal Award Committee, 2020; Chair, NESACS Government Relations Committee 2002-present; Chair, Phyllis A. Brauner Memorial Lecture Committee, 2001-present; Section Chair 2000; Faculty Advisor, award-winning Suffolk University student chapter 1976-2013; NESACS James Flack Norris Award Committee 2011-2014, Chair 2014; NESACS Nominating Committee Chair 2001, member 2010, 2012; Board of Publications 1995-98, Chair, 1996-98; National Chemistry Week Committee 2000-present; Summerthing Chair (Red Sox event) 1994-present.

Honors: ACS Fellow 2014; E. Anne Nalley Northeast Region Award for Volunteer Service to the American Chemical Society 2012; NESACS Henry A. Hill Award 2003

Statement: I am honored to be considered as a member of the NESACS Nominating Committee. If elected I pledge to use my years of experience in NESACS including on previous nominating committees to help seek the best candidates from our large and diverse community, and I encourage all NESACS members to join in this important task.

Lisa A. Marcaurelle

Education: B.A. Chemistry 1997, College of the Holy Cross; Ph.D. Chemistry 2001, University of California, Berkeley; Postdoctoral Fellow, Massachusetts Institute of Technology 2001-2002.

Professional Career: Director, Chemistry, GlaxoSmithKline 2018-present; Senior Director, Chemistry, Warp Drive Bio 2016-2018; Vice President,

Discovery Chemistry, H3 Biomedicine 2011-2016; Director, Chemistry, Broad Institute 2007-2011; Lead Senior Scientist/Senior Scientist/Scientist, Infinity Pharmaceuticals 2002-2007.

ACS Service: 2020 Chair, Division of Organic Chemistry (DOC), National Organic Chemistry Symposium Executive Officer, DOC 2017-2019; Member-At-Large, DOC 2015-2017; DOC Communications Committee, Chair, 2015-2017; DOC SURF Committee, Member 2015-2019; DOC Awards Committee, Member 2015; Women Chemists Committee (WCC), Associate Member, 2020; Councilor, Northeastern Section of the ACS (NESACS) 2017-present; NESACS Medicinal Chemistry Symposium Planning Committee, 2015-2016, 2019-present; Board Member of ACS Committee on the Petroleum Research Fund 2015-present; ACS Central Science, Editorial Advisory Board Member, 2015-present; Member of ACS 1996-present (ORGN and MEDI Divisions).

Other Professional Service: Gordon Research Conference on High-Throughput Chemistry & Chemical Biology, Chair 2013, Vice Chair 2011.

Honors and Awards: ACS Women Chemists Committee Rising Star Award 2013; DOC Young Investigator Symposium 2011; ACS DOC Graduate Fellowship 2000; Roche Bioscience Graduate Research Fellowship 1999; American Institute of Chemists Foundation Award 1997; Phi Beta Kappa 1996.

Research Interests: Drug discovery, chemical technologies, chemical biology, high-throughput screening, medicinal chemistry, natural products.

Position statement: I am excited about the possibility of serving on the NESACS Nominating Committee for 2021. My passion for connecting chemists is what continues to inspire me to participate in ACS governance at both a local and national level. I volunteer for the ACS because I am committed to providing chemists with ample opportunities to come together to share science and network. In the Boston area we are fortunate to have a vibrant scientific community which facilitates quality scientific programming. While our events attract many local chemists, I believe

there is an opportunity for even broader engagement. Having worked at various companies in the Boston area for close to 20 years I am optimistic that I could help recruit some new chemists to volunteer for NESACS.

Matthias Eberstadt

(No statement submitted)

Anyin Li

Education: Anyin received his Ph.D. in Analytical Chemistry from Purdue University in 2014, working under the direction of Graham Cooks. Prior to that, he received B.S. in Chemistry from the Beijing Normal University.

Professional Experience: Assistant Professor at the University of New Hampshire (2017-present); Post-Doctoral Fellow at NSF/NASA Center for Chemical Evolution, Georgia Institute of Technology (2015-2017); Visiting Scholar to Indian Institute of Technology Madras, India (2014); Visiting Scholar to University of Liverpool, UK (2013);

Memberships: American Society of Mass Spectrometry (ASMS) since 2008; Greater Boston Mass Spectrometry Discussion Group (GBMSDG); MASSEP separation science discussion group

Statement: Anyin cherishes the opportunities to serve for the first time on the Nominating Committee. I will perform my duties seriously and with passion. Thank you very much for your vote.

Norris Award Committee

George A. O'Doherty

George O'Doherty was born in Kilkenny Ireland in 1966 and received his undergraduate education from RPI with Professor Alan R. Cutler in 1987. After earning his Ph.D. with Professor Leo A. Paquette at OSU in 1993 he pursued postdoctoral studies with first Professor Barry M. Trost at Stanford and the Anthony G.M. Barrett. He began his independent career at University of Minnesota in 1996 and in 2002, he moved to West Virginia University. He moved again in 2010, to Northeastern University where he has risen to the

rank of Professor. His laboratory is interested in the use of asymmetric catalysis for the synthesis and medicinal chemistry study of biological important carbohydrate and natural products. These stereo-divergent asymmetric syntheses enable novel Stereochemical-Structure Activity Relationship (S-SAR) studies of natural structures that nature does not provide. He has served the NESACS as a member of the Norris Awards Committee, since 2016 and served as the committee chair for last two years.

R. Christian (Chris) Moreton

Education: Nottingham, UK, B.Pharm, 1971, Strathclyde, UK, MSc, 1987, Wales – Cardiff, UK, PhD, 1992.

Professional Experience: Torbay Hospital, Torquay, UK, 1971-2, Harker Stagg, London, UK, 1972-3, Pfizer, Sandwich, UK, 1973-80, Sterling Winthrop, Alnwick, UK, 1981-4, ACO Läkemedel, Solna, Sweden, 1984-6, Penwest Pharmaceuticals, Reigate, UK and Patterson, NY, 1992-2001, Genpharm, Toronto, ON, 2001-2, Idenix Pharmaceuticals, Cambridge, MA, 2002-7, FinnBrit Consulting, Waltham, MA, 2007-Present.

NESACS Service: Government Affairs Committee (2009 – Present). Alternate Councilor (2014 – 2015); appointed to fill a vacancy). Norris Award Committee (2016 – 2020).

Relevant Memberships: American Association for the Advancement of Science, American Association of Pharmaceutical Scientists, Parenteral Drug Association, International Society of Pharmaceutical Engineers, Royal Pharmaceutical Society of Great Britain, Royal Society of Chemistry. *ACS Divisions:* Analytical Chemistry, Colloid & Surface Chemistry, Polymeric Materials Science & Engineering.

Position Statement: I would be honored to continue to serve on the Norris Award Committee for NESACS. The Norris Award encourages excellence, commitment and innovation in chemistry teaching, and it is important to continue to get the message that chemistry makes an important contribution to society's progress. If re-elected, I would continue to support the work of the com-

mittee in any way I can.

Christine A. Caputo

Education: B.Sc. Carleton University (2001); M.Sc. McGill University (2004); Ph.D. Western University (2009); NSERC Postdoctoral Fellow, UC Davis with P. Power; Marie-Curie Postdoctoral Fellow, Cambridge University with E. Reisner.

Professional Experience: Assistant Professor, Department of Chemistry, University of New Hampshire, 2015-present.

ACS Service: NH Representative, 2019-present.

Research Interests: Inorganic chemistry, main group chemistry, solar fuels synthesis.

Personal statement: Having recently become involved in NESACS as the NH representative and hosting a Monthly meeting at UNH for the first time in a while, I am excited to have the opportunity to continue to serve as a member of the Norris Award Committee.

Patricia Anne Mabrouk

(See Biography under Councilor/Alternate Councilor)

Statement: I had the pleasure of serving on the Norris Award Committee several years ago (2013-2016) and would very much welcome the opportunity to serve NESACS in this capacity once again. Last time, I learned a lot and wrote a handbook for the Chair of the committee to facilitate the nomination and award process. It was truly a delightful experience, as I had the opportunity to meet some outstanding educators. As a chemical education researcher and a tenured faculty member at a private research university, I believe I bring knowledge and awareness of important developments and contributions that are being made by others working in this discipline and an appreciation for the challenges faced by faculty working in higher education today. I hope you will allow me the privilege of serving on this committee again.

Councilor/Alternate Councilor

Dr. Jens Breffke

Education: Diplom, Physical Chemistry, Humboldt-University of Berlin (2008); Visiting Research Scholar, Universidad de Santiago de Compostela (2006-2007); Ph.D., Physical Chemistry, The Pennsylvania State University (2014); Postdoctoral Fellow, National Institute of Standards and Technology (2014-2017)

Professional Experiences: Application Specialist, Boston Electronics Corporation (2017 – present)

Awards: IUPAC Young Observer, National Academy of Sciences (2017); Global Innovation Award, ACS Office of International Activities (2012 & 2015); Innovative Project Grant, ACS Local Section Activities Committee (2011 & 2015); Seed Grant, ACS Corporation Associates (2011 & 2015); ACS Leadership Development Award (2013); Harry and Catherine Dalalian Travel Fellowship (2009 & 2011); Evonik Industries Thesis Research Scholarship (2008); Leonardo da Vinci II Scholarship, German Academic Exchange Service (DAAD) (2007)

Society Service: Chair, ACS International Activities Committee (IAC) (2018 – present); Associate, ACS IAC (2016); ACS Younger Chemists Committee (YCC) International Presence Working Group Leader (2013-2015); President, PA Centre County Homebrew Club (2012-2014); Member, ACS YCC (2010-2015); Board Member, European Young Chemists Network (EYCN); Chair, JungChemikerForum (JCF), German Chemical Society (GDCh) (2006-2007)

Personal Statement: I moved to the Boston area in 2017 but have been acquainted with NESACS for much longer. As chair of the German Jung-ChemikerForum (JCF) I came in 2007 as part of the German Exchange (GEX) program and I have been an advocate of this program ever since. During my term serving the national Younger Chemists Committee (YCC) I founded a nationwide equivalent program Younger Chemists Crossing Borders (YCCB)

program which is ongoing till this day, with credit always given to NESACS. As chair of the ACS International Activities Committee (IAC) and together with the national YCC we're advocating for the establishment of this exchange program as an ACS Award and funded by the Society, continuing the vision of many NESACS members. I assisted and supported NESACS activities throughout my national committee appointments and hope you will give me the opportunity to represent this great local section also at ACS Council as a NESACS Councilor. Thank you for your vote!

Steve Canham

Education: 2006, B.S. Chemistry, University of Notre Dame; 2012, Ph.D. Organic Chemistry, University of California-Irvine; 2012-2013, post-doc University of California-Berkeley.

Professional Experience: 2013-present, Senior Principal Scientist, Novartis, Cambridge, MA.

ACS Service: 2018-present, NESACS Chemical Biology Chair; 2017-present, Board member, NESACS Chemical Biology in the Hub; 2018, Chair, NESACS Chemical Biology in the Hub; 2019-present, Treasurer, NERM2021; 2015-2017, organizing member, NESACS Process Chemistry Symposium; 2016, Chair/host, NESACS Process Chemistry Symposium; 2014-2019, ACS Corporate Associates; 2008-2017, subcommittee chair, National Younger Chemist Committee; 2004-present, ACS Member.

Honors: 2012-2023, NIH Ruth L Kirschstein NSRA Postdoctoral Fellow; 2012, Best graduate thesis, Department of Chemistry, University of California-Irvine; 2010-2011 Eli Lilly Graduate Fellowship; 2010 Dissertation Fellowship, University of California-Irvine; 2007 Teaching Award, University of California-Irvine; 2006, William Wicherath Outstanding Chemistry Major Award; 2005, Pfizer Summer Undergraduate Research Fellowship; 2004-2005 Patrick Finegan Memorial Research Fellowship.

Statement: I have enjoyed increasing my involvement with NESACS over the

past several years. As a councilor, I will be a voice to represent the >6000 chemists in Boston in front of the national American Chemical Society. I hope to provide a stronger voice of representation for industrial chemists and to champion greater diversity and inclusion within the chemical profession.

Lori Ferrins

Education: B. Med. Chem. (1st class Hons) 2010, LaTrobe University, Australia; Ph.D. Chemistry 2015, Monash Institute of Pharmaceutical Sciences, Australia; Postdoctoral Researcher, Northeastern University 2015-2016.

Professional Career: Research Assistant Professor, Northeastern University, 2017-Present; Associate Research Scientist, Northeastern University, 2016-2017.

ACS Service: NESACS Alternate Councilor, 2020; ACS Younger Chemists Committee (YCC) Taskforce participant, 2019; Member ACS YCC, 2015-present.

Other Profession service: Chair of the International Younger Chemists Network (IYCN) 2019-present; Vice-chair of the IYCN, 2018-2019; Chair of the Public Outreach subcommittee of the IYCN, 2017; Royal Australian Chemical Institute, Medicinal Chemistry and Chemical Biology Student Representative 2013-2014.

Honours and Awards: Young Chemists Crossing Borders Exchange Program Representative to Liverpool, UK, for the Northeast Section of the ACS, Younger Chemists Committee 2018; Awarded Nickel on the Periodic Table of Younger Chemists, 2018; Young Chemists Crossing Borders Exchange Program Representative to Seville, Spain, for the Northeast Section of the ACS, Younger Chemists Committee, 2016; BASF Victorian Young Achiever of the Year for Science and Technology, 2014.

Research Interests: Drug discovery, medicinal chemistry, neglected tropical diseases, infectious diseases

Statement: I am honored to be considered for the position of Councilor of NESACS. I moved to Boston in 2015 and quickly became familiar with NE-

SACS and the programs that it runs. I am passionate about promoting women in chemistry and connecting younger chemists, and it is this that has driven my volunteerism to date. I have been part of the organizing committee for the NESACS-sponsored Boston Global Women's Breakfast for the last two years and this has inspired me to find new ways to work with, and for, NESACS and its members. As a Councilor I will actively work to promote opportunities offered by NESACS, and to recruit new members. Thank you for your consideration, and your vote!

Hicham Fenniri

Education: B.Sc. 1989, M.Sc. 1990, Ph.D. 1994, University of Strasbourg

Professional Experience: Scripps Research Fellow (1994-1997); Assistant Professor, Purdue University (1997-2003); Full Professor (Tenured), University of Alberta (2003-2013); Senior Research Officer and Program Director, National Institute for Nanotechnology (2003-2013); Associate Chair for Graduate Affairs, Northeastern University (2014-2015); Professor (Tenured), Northeastern University (2013-present).

Memberships (selected): American Chemical Society; American Association for the Advancement of Science; Chemical Institute of Canada; Materials Research Society; Fellow of the American Institute of Medical and Biological Engineering.

Editorial Activities (selected): Associate Editor or editorial board member for *Biosensors*, *Nanomaterials*, *Journal of Nanostructure in Chemistry*, *Nanotechnology Reviews*, *Advances in Nano Research*, *International Journal of Nanomedicine*.

Awards, Honors (selected): Xerox UAC Award (2006, 2007, 2008); Canada Foundation for Innovation, Leaders Award (2007); 3M Non-Tenured Faculty Award (2000-2002); Cottrell Teacher Scholar Award (2000-2005); NSF Career Award (1999-2003); Fellow AIMBE. Gave >200 invited lectures at academic, industrial and governmental organizations.

Service (selected): General Chair NERM (2021); Chair NERM Commit-

tee (2019-); NSF Biomaterials (2018), NIH NANO (2017); NCI-CCNE (2015); NIH NIDCR (2015, 2012); NIH BMBI (2012, 2011); co-chair SPIE Symposium on Molecular Machines (2018); co-Organizer European Materials Society symposium U (2014, 2011), symposium G (2013), symposium M (2009); co-Organizer/chair Chemical Society of Canada symposia (2014, 2013, 2010).

Scholarship: my research group's interdisciplinary research program was reported in over 240 peer reviewed publications, 21 patents/patent applications, and over 500 conference presentations.

Statement: I am a chemist, chemical engineer and bioengineer, with a rich cultural heritage spanning three continents. I was immersed in the social fabric and experienced the academic and government laboratory systems in North America, Europe, the Middle East and African regions. I chaired or served on numerous boards, panels, and committees for the evaluation of research programs, research and academic staff, and conference programs, among others. Over the past three years, I had the privilege of serving as NESACS board member, NERM committee chair, organizer of Joint NESACS-Northeastern University lecture series, elected General Chair for NERM 2021, and alternate councilor (2019-2022). As councilor, I intend to put my energy and effort in making NERM2021 a success for our region by engaging industrial partners and expo exhibitors, and developing a high impact cross-disciplinary technical program that address the current academic and industrial needs and challenges of our region. I intend on representing you at the regional and national ACS meetings where I will be advocating for NERM21 and engaging participants, contributors, and future NESACS members. I humbly believe that my experience in the academic and R&D continuum, from program development and implementation, education and outreach to service could further NESACS's vision of inclusion and growth towards sister disciplines and societies. I deeply value the opportunity of becoming an ACS Councilor to be an engine of change and to give back to our

community. For this, I humbly ask for your support and vote. Thank you!

Michael P. Filosa

Education: B. Sc., Massachusetts Institute of Technology (1974), Ph.D., Harvard University, (1980), Babson School of Executive Education (1988).

Honors: Phi Beta Kappa, Phi Lambda Upsilon, Merck Award (1974), Dreyfus Foundation Scholar (1975), NESACS Henry A. Hill Award (2012).

Experience: Polaroid Corporation (1979-2005); Scientist, Group Leader, Senior Manager of Chemistry; ZINK Imaging, Inc.; Senior Manager of Chemistry (2005-2013); Performance Indicator, LLC. Chemistry Manager (2014-2019, Bambu Global, LLC (2019-Present).

NESACS and ACS Service: ACS Member since 1976. Alternate Councilor (1997-1999; 2005-2008), Councilor (2009-2020); Director-at-Large (2017-2019); Editor of the *Nucleus* (2005-present). Board of Publications (2005-Present), Heyn Award Committee (2006-Present). Nominating Committee (2010, 2013, 2016, 2019). Local Organizing Committee for the 2007, 2010, 2013 Boston ACS National Meetings. Committee on Chemical Abstracts Service (CCAS), Associate Member (2010), Full Committee Member (2011-19). Local Section Activities Committee (LSAC), Associated Member (2020).

Statement: As the Editor of *the Nucleus* for the last fifteen years, I have made a major contribution to the local section. Each year involves coordinating the production of nine issues, attendance at Board of Publications meetings as well as monthly Board Meetings. As a consequence of this duty, I am knowledgeable about the operations, history, and activities of the NESACS.

I am also well acquainted with the leaders and many members of our section. Over the last eleven years as a councilor I have worked at supporting the objectives of our section at the ACS National Meetings. I have made it a priority to attend every national meeting in to develop a presence at the national level and ensure a strong NESACS presence at each Council Meeting.

In 2010, I was appointed an associate member of the Committee on Chemical Abstracts Service (CCAS). CAS is one of the most important service/businesses of the ACS.

I believe strongly in supporting the efforts of CAS in a very competitive environment for information services. After my first year as an associate member of CCAS I was appointed to a full term for 2011-13. I was just reappointed to a third term for 2017-2019. For 2020 I will be an associate member of the very active Local Section Activities Committee serving on its Communications Subcommittee.

If re-elected as councilor I hope to further extend my influence at the national level, as well as support the objectives of NESACS locally and nationally. Thank you for considering my candidacy and allowing me to represent you.

Patrick M. Gordon

(See **Biography and Statement under Chair-Elect**)

Mariam N Ismail

Education: B.S. Chemistry, University of Massachusetts (2006); Ph.D. Chemical Engineering, Northeastern University (2011).

Professional Experience: Assistant Professor Tenure-Track, Simmons University (2016-present); Lecturer, Simmons College (2015-2016); Lead Materials Engineer, Viridis 3D (2014-2015); Senior Research & Development Engineer, 1366 Technologies (2011-2014).

NESACS service: Alternate Councilor (2018-present); NESACS Exchange to Germany Program Facilitator (Cologne, 2020; Bremen, 2019); NSCRC Conference Judge (2019 and 2013); NSYCC Career Chair (2009-2010); Lead collaborator from Simmons University with WCC (2016-present);

Memberships: American Chemical Society.

Awards/Honors: Professor of the Year Award (2019); MPAC-hosted event at The White House celebrating Muslim Woman Emerging Leaders in the field of STEM (2014); American Institute of

Chemists Outstanding Graduate Student Award (2011); Recipient of the YCC/NESACS-JCF/GDCh Exchange to Germany Program (2009).

Statement: It has been an honor to volunteer as a NESACS alternate councilor over the past couple of years. Traveling to the National ACS meeting for Council has been an eye-opening experience. It has allowed me to learn much more about the organization and how local sections truly can have an impact on the organization. It has empowered me to continue serving on a local and national level.

As an assistant professor at an all-women's primarily undergraduate institution, it is my goal to help recruit and foster the development of well-rounded female undergraduate scientists. If elected councilor, I will continue this work towards empowering young female scientists in becoming more active within local chapters and pursuing careers in STEM. As councilor, I will also work on fostering collaborations with local and national women-serving STEM organizations and develop programs that will help engage our population at large.

My involvement with NESACS began after being elected a delegate for the 2009 Exchange to Germany Program. Having seen the impact that program had on my professional development, I decided to commit more time to NESACS and give back by providing similar opportunities for others in our field. In 2010, I was elected Career Chair of the NSYCC. During my tenure as Career Chair, I worked on organizing the Northeast Student Chemistry Research Conference (NSCRC) which provides an opportunity for local students to present their research, network, and attend panel discussions. In 2013 and 2019, I served as a judge at that very same conference. In 2016 (to present), I've been serving as the Women's Chemist Committee (WCC) representative for Simmons University where we've collaborated on important panels such as bridging the pay gap for women (in STEM) and careers in STEM.

If elected as Councilor, I will continue working on outreach efforts to involve more chemists, particularly those

from underrepresented groups. I will work towards understanding the needs of our local section, and accurately represent them at the National Meetings. I appreciate your vote for Councilor. Thank you for your support.

Natalie LaFranzo

Biography: Dr. Natalie LaFranzo received her BS in Chemistry from Bradley University in 2007, and her PhD in Chemistry at Washington University in St. Louis in 2013. Her interdisciplinary graduate work was focused on developing and characterizing new surface chemistry using self-assembled monolayers to better understand neurobiology and development. During her graduate career, Natalie worked with multiple biotech start-ups and entrepreneurs as a Project Manager in the student/post-doc run consulting group, The Biotechnology and Life Science Advising (BALSA) Group. As a grad student, Natalie also became involved in ACS, first at the Local Section level, and now as an active National volunteer. Natalie is also one of the founding members of the International Younger Chemists Network (IYCN) and currently serves as a co-chair of the International Society Liaison team.

Professionally, Natalie first joined the team at Cofactor from 2013-2015 as a Project Scientist. In this role, Natalie developed customized experimental design solutions for both DNA and RNA sequencing and analysis projects. Then, as a Product Manager in Horizon Discovery's Diagnostics Division, Natalie developed, launched, and supported a product line of genetically-defined reference standards for oncology researchers to optimize and benchmark their assays. As a member of the regulatory team, she provided guidance on the US regulatory environment, and presented at FDA workshops focused on next-generation sequencing assays. Natalie now applies these same principles to Cofactor's RNA diagnostic development programs, as the Vice President of Market Development. Natalie relocated to Boston in Fall 2019 to open Cofactor's second satellite office in Kendall Square/Cambridge.

Service to St. Louis Local Section: Councilor (2019); Alternate Councilor (2018); Chair Succession (2016-2018); Secretary (2014-2015); Chair, Younger Chemists Committee (2012-2015); Committee Member, Leadership Development Forum (2012-present)

Service to Midwest Region: St. Louis Section representative to the Midwest Regional Board (2016-2018)

Service to National: Chair, Diversity, Inclusion, and Respect Advisory Board (2020-present); Member, Committee on Budget and Finance (2020-present); Career Consultant (2019-present); Associate Member, Committee on Budget and Finance (2019); Member at Large, Division of Professional Relations (2018-present); Chair, Younger Chemists Committee (2016-2018); Member, Task Force on Governance Design (2017); Member, Diversity and Inclusion Advisory Board (2016-2018); Member, Younger Chemists Committee (2015-2018); Associate, Younger Chemists Committee (2013-2015); PROF Younger Chemists Subdivision Chair (2015); Chemical Innovation and Entrepreneurship Council (2014-2016)

Statement: As a younger chemist with a non-academic career path, I am passionate about helping the ACS evolve to reflect the changing face of chemistry. Science is interdisciplinary, international, and in need of creative minds for innovation. My roles within ACS have focused on championing inclusivity, to create a more welcoming home for all that wish to pursue a chemistry-related career. Prior to moving to Boston, I served as Councilor in the St. Louis Section after completing the Chair succession and other leadership roles. I currently serve in roles on a National level within ACS, and the International Younger Chemists Network. I am eager to contribute to NESACS and represent the Section in Council and beyond.

Ray Lam

I received my Ph.D. in Inorganic and Materials Chemistry from the University of Bristol, UK, and did my postdoctoral research at the University of Pittsburgh. Currently I am an Associate

Professor at Massachusetts Maritime Academy.

I first got involved with NESACS as a volunteer at National Chemistry Week (NCW). I have been chairing the NCW committee for the past 4 years, working with our collaborators at the Museum of Science, Boston and Boston Children's Museum to hold our annual events. For my involvement with the NCW events, I was honored to be named a local recipient of the 2020 Outreach Volunteers of the Year award. I am running for Councilor because I would like to be more involved with NESACS and the ACS in general.

Patricia Ann Mabrouk

Education: B.A. 1982 Wellesley; Ph.D. 1988 Massachusetts Institute of Technology

Professional Experience: NIH Post-doctoral Fellowship 1988-1990 Stanford University; Assistant Professor, Northeastern University (1990-1997); Associate Professor, Northeastern University (1997-2004); Associate Dean of Academic & Faculty Affairs for the College of Science, Northeastern University (2011-2015); Professor, Northeastern University (2004-present)

ACS Service: Member since 1988. Associate member of ACS SEED National Committee (2003 – 2004); Councilor (2004-2012); Associate Member of Women Chemists Committee (2006-2009); Associate member of Meetings & Expositions (2009-2010); Associate Member of SOCED (2011-2014); Member, Special Joint Committee revising ACS Academic Professional Guidelines (2012-2014); Chair of ANYL Education Committee (2008 – 2013); Member, ACS National Award Committee (2009-2012); Chair, ACS National Award Committee (2013); Member, ACS ChemLuminary Award Committee (2013-2014); Associate member of ETHX Committee (2015-2016); Member of ACS Division of Chemical Education (CHED) Regional Meetings Committee (2016-2018); Member of ETHX Committee (2017-present)

NESACS Service: ACS SEED Coordinator for NESACS (1998-2010); Member of the Theodore William

Richards ACS Medal Award Committee (1999 – 2005; 2010-2014); Member of James Flack Norris Award Committee (2013-2016); Chair of James Flack Norris Award Committee (2015); Chair of Theodore William Richards ACS Medal Award Committee (2000 – 2004; 2011-2012); Chair-Elect (2005); Chair (2006); Past-Chair (2007); Councilor (2004-present)

Memberships, Honors: NSF CAREER Award (1996-2001); CASE Massachusetts Professor of the Year (2003); Northeastern University Excellence in Teaching Award (2004); Fellow of the American Chemical Society (2011); Sigma Xi; NSTA; NARST; CUR

Statement: Over the past three years, I have had the privilege of representing you on Council and as a member of two committees: ETHX and the CHED Regional Meetings Committee. As a member of ETHX, I co-organized and presided at three symposia “The Ethics of Data Sharing” at the Fall 2018 ACS National Meeting in Boston in CINF, “Ethics in Industry Collaborations that Work” at the Spring 2018 ACS National Meeting in New Orleans in PROF, and “The Write Thing to Do: Ethical Considerations in Authorship & the Assignment of Credit” at the Spring 2017 ACS National Meeting in San Francisco in CINF. I worked with ETHX Chair, Judith Currano, and together in 2019, we published an ACS Symposium series volume based on the 2017 authorship symposium we organized. This past spring, I had the pleasure of speaking in a joint ACS-CUR webinar entitled “Incorporating Authentic Research Experiences into the Chemistry Curriculum,” introducing faculty, new and “old,” to course-based undergraduate research experiences (CUREs). Right now, I am partnering with NSYCC on ethics programming on the theme of “Publishing Your First Paper?” Thank you! I am truly grateful for the myriad opportunities I have had as your representative, and I hope that you feel you have benefited by my service. I deeply value the opportunity that being a Councilor provides me in serving you and the Chemical Enterprise. I would very much like to continue, so once again, I am asking for your vote. Many thanks!

Mary A. Mahaney

Education: B.A. Emmanuel College (1971); M.S. Northeastern University (1973); Dr. rer. nat. University of Constance, Germany (1977); M.B.A. Worcester Polytechnic Institute (1996)

Professional Experience: Haartz Corporation (1999 – present); Polaroid Corporation (1982 - 1998); University of Zurich, Switzerland (1979 - 1981); University of Constance, Germany (1977 - 1979)

NESACS Service: Member since 1977. Continuing Education Committee (1998 - 2008); Richards Medal Committee (2000 – 2004); Alternate Councilor (2005-2007); Board of Publications (2004 – present); Alternate Councilor (2013 – 2017); Norris Award Committee (2014-2018)

Statement: I am deeply committed to the American Chemical Society and in particular our Northeastern Section for over twenty years. I have served on multiple committees. I am currently an Alternate Councilor and serve on the Board of Publications and the Norris Award Committee. I am particularly interested in increasing our membership's participation in community outreach. It is an honor to serve our section. I would appreciate your vote for Councilor.

Daljit S. Matharu

Education: Mchem, Medicinal Chemistry, Nottingham Trent University, UK (1997 - 2001); Ph.D., Organic Chemistry, University of Warwick, UK (2003 - 2007); Postdoctoral Fellow, Princeton University (2007 - 2008); Postdoctoral Fellow, The Pennsylvania State University (2008 - 2010); Postdoctoral Fellow, University of Kansas (2010 - 2014).

Professional Experience: 2020 - present Senior Scientist, ELT Medicinal Chemistry, GlaxoSmithKline, Cambridge, MA; 2019 - 2019 Scientist, Medicinal Chemistry, Alkermes, Waltham, MA; 2016 – 2019; Scientist, Medicinal Chemistry, Ironwood Pharmaceuticals, Cambridge, MA; 2015 - 2016 Research Scientist, Northeastern University, Boston, MA; 2014 – 2015; Research Scientist, Colorado

Center for Drug Discovery, CSU, Fort Collins, CO

Professional Memberships: 2008 – present: American Chemical Society, Medicinal Chemistry and Organic Chemistry Division; 2008 – present: Royal Society of Chemistry (MRSC).

Honors: Teaching Assistant Award obtained at University of Warwick by passing a Further Adult Education Teaching Course (2004). EPSRC Doctoral Training Account Award, University of Warwick (2004 – 2007).

NESACS Service: Alternate Councilor (2018 to present).

Statement: I am honored to be considered for the Councilor position in the upcoming 2020 elections. We are fortunate to have a thriving scientific community in the Boston area and I have been actively engaged with NESACS since I moved here in 2015. I have thoroughly enjoyed fulfilling my obligations as an alternate councilor and recently represented the committee at the Fall ACS conference in San Diego. Attendance at the ChemLuminary Awards afforded me the opportunity to interact with many members at the local and national level, as well as learn more about the immense work being done by ACS's passionate volunteers in the local communities through public outreach.

On a personal note, I have been able to significantly enhance my professional network through attending the many networking events and symposia that are organized by the committee. Attending these NESACS-sponsored events has helped me through each of my career transitions and I am indebted to the section.

If elected as councilor, I will continue to network with our members at monthly meetings and support all initiatives put forth by the board that have a beneficial impact for our section and our members. I will continually strive to advance programs that positively affect change in the local community.

I hope that your affable vote will allow me to serve as councilor with the energy, enthusiasm and dedication that I pursue all endeavours.

Caitlyn Mills

Education: B.S. Chemistry and B.S. Forensic Science, University of New Haven (2012); Ph.D. Chemistry and Chemical Biology, Northeastern University (2018)

Professional Experience: Northeastern University Department of Biotechnology, Part-time Lecturer (2019); The Charles Stark Draper Laboratory, Inc., Biomedical Scientist (2019-present)

Honors/Awards: Northeastern University Graduate Dissertation Completion Fellowship (2018), Young Chemists Crossing Borders Program selected participant (2018, 2016), SciFinder Future Leaders Program selected participant (2017), Younger Chemists Committee Leadership Development Award (2017), Hans Neurath Outstanding Promise Travel Award (2016), Northeastern University Excellence in Graduate Research Award (2016), Outstanding Graduate Poster Award, NSCRC (2014), Congressional Award – bronze, silver, gold medals awarded (2004-2007)

Service to the Chemistry Community (USA and International): Member of the ACS (2012-present); Member of the AAAS (2017-present); International Younger Chemists Network (IYCN) Conference Presence Steering Committee member (2017-2019); Northeastern University Department of Chemistry and Chemical Biology Graduate Student Association Secretary (2013-2014)

NESACS Service: NSYCC Chair-Elect, Chair, and Past Chair (2016-2019); NSYCC Social Chair (2015-2016); Government Affairs Committee member (2017-present); Nominating Committee member (2018); ACS Symposia Co-Chair (2017); NERM Symposia Co-Chair (2016)

Statement: As I begin the next phase of my professional career as a protein biochemist, I am looking to get more involved in NESACS after being involved in NSYCC since the beginning of my PhD tenure. The first conference I presented my research at was the NSCRC in 2014 as a second-year PhD student, where I was awarded the Outstanding Graduate Poster Award. Since then, my love for NSYCC, NESACS, and volunteering in a chemistry society has

grown. After this conference, I started attending more NSYCC events, was elected Social Chair a year later, and eventually would become the NSYCC Chair, thus giving me more insights into NESACS. I quickly became involved in various other committees, and I am now running for a councilor position.

During my time with NSYCC, I had the opportunity to plan social and professional events for younger chemists in the Greater Boston Area including the Annual NSCRC, write funding grants one of which was for a green chemistry symposium that would later go on to win a ChemLuminary Award, gain leadership skills as well as train incoming members of the team, and help with the planning of symposia at national and regional meetings. I also became involved in the Government Affairs Committee where I realized my passion for science policy and began working with Act4Chemistry as well. When I was NSYCC Chair-Elect transitioning to Chair in 2017, I was part of the team working with then ACS President Allison Campbell on a science policy workshop that would be held at the Fall National Meeting that year. Additionally, I had the opportunity to participate in Young Chemists Crossing Borders Programs and travel abroad to attend EuChemS conferences as well as the European Young Chemists Network (EYCN) events. This led to many collaborations in addition to my involvement with the International Younger Chemists Network (IYCN).

All of these experiences have led me to wanting to dive deeper into the NESACS and ACS organizations. If elected councilor, I am excited to learn more about the governance side of ACS and NESACS as well as be a part of the driving force of younger/early career chemists ready to take on the challenges within the organizations. I've had the opportunity to learn from the more senior members of the organizations over the past few years and am ready to be the voice for chemists of our section. Thank you for your time and support.

Carol Mulrooney

(See Biography under Chair-Elect)

Statement: It is a great honor to be nominated for the position of Councilor and I am very excited to have the opportunity to serve our section. Since my undergraduate days with the Student Affiliates of the ACS, I have benefitted from the support of ACS mentors and I am dedicated to participating in and supporting outreach and mentoring among the next generation of scientists.

I currently chair the Women Chemists Committee and am proud to serve both the interests of women chemists and of NESACS members overall. The WCC's goals are to inspire women students to pursue careers in STEM, support women chemists' career growth, encourage more women to be active in NESACS, and communicate women scientists' contributions. The WCC is also dedicated to supporting activities throughout NESACS in several ways, including collaborations with the Younger Chemists Committee and the Senior Chemists Committee. Over the past three years we have held multiple mentoring-themed events ranging from panel discussions to lunches with key scientific leaders. I am currently looking to support and assist in programming that aligns with the ACS All "In" campaign promoting the principles of diversity, inclusion and respect.

If elected, I will continue to follow these principles on the national level, emphasizing the support of diversity and inclusion programming, supporting students pursuing careers in STEM, and encouraging more chemists to be active in the ACS. I am particularly interested in drawing from the experiences of other local sections and national committees to further enhance these activities. Thank you for your support.

Raj Rajur

Education: Ph.D. in Organic/Medicinal Chemistry, Karnataka University, Dharwad, India (1988); Postdoctoral Fellow, University of Texas Southwestern Medical Center, Dallas (1988-1990); and Boston College, Chestnut Hill, MA (1990-1992)

Professional Experience: Instructor, Massachusetts General Hospital, Harvard Medical School, and Shriners Burns Institute (Boston, MA). Adjunct assistant professor, Northeastern University (Boston), Group leader Millipore Corporation (Bedford, MA), Project leader, ArQule, Inc. (Woburn, MA). Founding member and co-chair of Massachusetts Biotechnology Council CRO CMO forum. Presently, Founder, Chairman and CEO CreaGen, Inc. (Woburn, MA), (Founded 2002) and CreaGen Life Science Accelerator (Founded 2013)

ACS/NESACS Service: Chair-Elect NESACS (2020), Program Chair, Medicinal Chemistry Division, NESACS (2003-present); Alternate Councilor, NESACS (2005-present); NESACS Nominating Committee (2008); NESACS election committee (2014), member of Organizing Committee, NESACS, IUPAC and RSC-US-Sponsored Advances in Chemical Sciences Symposium Series (2007-2018). ACS Carrier consultant (2013-present)

Membership/Honors: ACS Organic Chemistry Division, ACS Medicinal Chemistry Division AAAS, and Indian Chemical Society. Reviewer, journal of pharmaceutical sciences (ACS journal), Reviewer, BU ignition award, Listed in Who's Who in Science and Engineering. Invited speaker at several international conferences. Serving on advisory board of many Indian cultural and community organizations.

Statement: It would be an honor to serve as councilor to our local section. As an entrepreneur, scientist, educator and active collaborator I would bring an impressive amount of expertise and leadership to our section.

Scientific impact: I have been serving as the program chair for the medicinal chemistry section of NESACS since 2001. In my tenure as program chair, my mission has been to bring quality drug discovery science to our May, September and December annual symposia. The purpose of bringing good pharmaceutical science to our very active local section audiences is multifaceted. Our territory now houses the biotech hub of the world and has become a location where every multinational pharmaceutical company wants to collaborate,

headquarter or establish a Center of Excellence. We, as a section, need to be exposed to a cross section of the science that is ongoing in the industry. Our meetings are venues for the exchange of ideas between industrial and academic participants. And, most importantly, our meetings are places where students from our many prestigious colleges and universities can network with professionals and learn from the symposia topics that feature cutting edge science.

I am proud to say that I was one of the founding members of Our annual Advances in Chemical sciences symposium and it has become the signature events and attracts more than 250 participants every year.

Since 2001 I have been serving as an Alternate Councilor for our section. I have regularly attended the NESACS monthly meetings and contributed several new ideas and inputs to these meetings. I have also regularly represented NESACS at national ACS meetings and participated in governance meetings.

Moving forward, as councilor, I will continue to support and encourage NESACS meetings that bring topnotch science to our audiences of academic and industrial professionals and students. I also plan on initiating the establishment of the Medicinal Chemistry Prize and also an exchange program with Indian universities similar to the German Exchange program.

Leadership and collaborations: Having worked in the biotech industry for the last 20 years in various leadership positions and having established my own company CreaGen Biosciences in 2001, I recognize the value of networking and collaboration. In 2010 I helped the Massachusetts Biotechnology Council establish a CRO/CMO Forum that represents all the Contract Research Organizations in Massachusetts. As the founding member and co-chair of this division, I have worked with committee members, volunteers, and industry leaders to raise funds and organize annual CRO/CMO symposia. These symposia bring more than 500 companies and leaders under one roof to exchange ideas, establish dialogue and address the needs of the pharmaceutical and biotechnology industries.

If elected, I will bring the same enthusiasm, spirit, top quality programs and collaborative efforts to our locale section. Such programs can help our members participate actively in our monthly meetings and also network with speakers, attendees and decision makers. I would also establish collaborations between Massachusetts Biotechnology Council, Massachusetts Life Science Center and other local life science organizations to expand the collaborations and visibility of NESACS.

Finally, the history of our section is immense and impressive. I hope to add to this legacy if elected. Thank you for your consideration and support.

Katherine Rubino

Education: Northeastern University Bachelor of Sciences (B.S.) Pharmacy Studies; Northeastern University Doctor of Pharmacy (PharmD), Suffolk Law School Juris Doctor (J.D.) Intellectual Property Concentration with Distinction.

Professional Experience: Pharmacy Intern at Biogen-Idec; Pharmacy Intern at Tufts New England Medical Center; Compounding Pharmacist at ACC Apothecary; Adjunct Professor at Massachusetts College of Pharmacy and Health Sciences (MCPHS); Patent Attorney at Caldwell Intellectual Property Law

NESACS Service: Member of Board of Publications (2018-Present); Alternate Councilor (2019-present); NERM 2021 Local Organizing Committee (2020).

ACS Service: Chair-Elect Chemistry and the Law (CHAL) Division (2019); CHAL Member (2018-Present)

Memberships: Massachusetts Bar; District of Columbia (D.C.) Bar; United States Patent and Trademark Office (USPTO); United States Court of Appeals for the Federal Circuit (CAFC); Licensed to practice pharmacy in Massachusetts, Maryland, Washington D.C., Louisiana, Arkansas, and Nevada

Statement: I am honored to be nominated to the position of Councilor for the Northeast Section. I have been an active NESACS member and have had the privilege of serving as an alternate coun-

cilior for the past year. I have volunteered with the board of publications to assist with the publication of The Nucleus each month. Recently, I have been involved with planning NERM 2021 symposium. At the national level, I was recently elected as the chair-elect of the chemistry and the law division, which I have been a member of for the past several years. As a councilor, I will use this experience to continue to foster collaboration between our local section and national ACS. I seek to continue to develop programs at the local section that promote and foster innovation and entrepreneurial endeavors in the chemical arts. I also seek to increase engagement and participation among NESACS members, especially through the support of diverse scientific backgrounds in the chemical field, including engaging and educating other pharmacists' about membership. Thank you for your support!

Ashis Saha

(See biography and statement under treasurer)

Michael Singer

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

Professional Experience: Post-Doctoral Research Associate, Organix Inc. 1991-1994; Senior Scientist, ArQule Inc. 1994-1996; Group Leader, Automated Combinatorial Synthesis, ArQule Inc. 1996-2001; Group Leader, Drug Discovery Research and Development, Sigma-Aldrich, Natick, 2001-2007; New Product R&D Manager, Millipore Sigma (Sigma Aldrich) 2008 – 2018; Production & Development Manager, Millipore Sigma (Sigma Aldrich) 2019 – Present.

NESACS Service: Councilor-NE-SACS 1996-2001, 2005-2019; Alternate Councilor – NESACS 2002-2004, 2020; Board of Directors NESACS 1993-present; Secretary-NESACS 1998-present; Medicinal Chemistry Group (MCG) 1991-2002; MCG Treasurer (1992-1993), Program Chair (1994) Chair (1995-1996).

ACS Service: ACS Joint Board-

Council Committee on Chemical Abstracts Service; Associate member – 2004; Member 2005-2007; Local Section Activities Committee; Associate Member – 2007; Member 2008 – 2012; Meetings and Expositions Committee; Associate Member – 2013; Member 2014 – 2019.

Professional Recognition: ACS Fellow – 2015; Henry Hill Award – 2008

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

Having completed a full rotation on the National Local Section Activities Committee (LSAC) and Meetings and Expositions Committee (M&E) I have gained an understanding of the importance of member involvement and participation at the local and national levels. It is truly amazing the dedicated workforce and resources at the National level to support our local sections. I can bring to the local section an increased understanding about how our annual ACS dues are spent to improve the Chemical Profession.

As your local elected representative to the National ACS Council I would hope that you would contact me with any concerns and issues (Michael.singer@milliporesigma.com) so I may direct them to the appropriate offices of the ACS. With your support and vote I pledge to continue to work as a voice for the local membership

Anna W. Sromek

Education: BS in Chemistry, University of Chicago, 1996; PhD in Organic Chemistry, University of Illinois at Chicago, 2005.

Professional Experience: Associate Chemist, Technical Coatings, 1996-1998; teaching assistant, 1998-2001; postdoctoral researcher, University of

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Illinois at Chicago, 2005-2006; chemist, JCL Bioassay, 2006-2008; NIDA Research Fellow, Alcohol and Drug Abuse Research Center, McLean Hospital, 2008-2010; Instructor in Psychiatry, Harvard Medical School 2010-2016; Medicinal Chemist, Alcohol and Drug Abuse Research Center, McLean Hospital, 2010-2016; Research Fellow/Associated Personnel, Boston Children's Hospital, 2012-present; Assistant Professor of Psychiatry, Harvard Medical School, 2016-present; Associate Director, Medicinal Chemistry Program, McLean Hospital, 2016-present.

ACS Service: Member since 1997; currently member of Organic Division, Medicinal Chemistry Division, and Northeast Section; Committee on Chemistry and Public Affairs, Associate, 2016; Women Chemists Committee, Associate, 2019-present.

NESACS Service: Member as of 2009; member, Esselen Award Committee, 2009-2013; chair, Esselen Award Committee, 2013; Alternate Councilor, 2015-2017; Nominating Committee, 2015-2016; Councilor, 2018-2020; chair-elect, 2019; chair, 2020.

Other professional organizations: Society for Neuroscience, member, 2011-2012, 2015-present; American Association for the Advancement of Science, member, 2011-2013, 2015-present.

Statement: I am honored to be nominated for re-election as a NESACS councilor. I was honored to serve on the Esselen Award Committee, as a Councilor, as a member of the Nominating Committee, and as the chair of NESACS. I wish to continue my service to the ACS and NESACS. If elected, I will continue to serve the Northeast Section faithfully and I will represent the interests of the Northeast Section at the national meetings to the fullest of my abilities. I will actively work to promote chemistry to the general public, and to foster interest and participation of the chemistry community. Thank you for your consideration.

Meredith Ward

Education: B.S., University of Texas at Austin (2016); M.S., University of Massachusetts Boston (2019).

Professional Experience: ProVerde Laboratories, Chemist (2019-present).

ACS Service: Northeastern Section Younger Chemists Committee executive board member since 2018 (Secretary 2018-2019, Chair-Elect 2019-present, Chair beginning June 2020). Organized symposia for 254th and 256th National ACS meetings. Assisted in organization and execution of ChemLuminary Award-winning event (2016). Appointed as interim Alternate Councilor (2020-2021).

Memberships: American Chemical Society (ACS), American Association for the Advancement of Science (AAAS).

Awards: Younger Chemist Leadership Development Award, National YCC, American Chemical Society (2020); Green Chemistry Summer School Award, American Chemical Society (2018); First-Year Graduate Student Fellowship, University of Massachusetts Boston (2016); Austin Chemistry and Biochemistry Authors' Scholarship, University of Texas at Austin (2016); Undergraduate Research Fellowship, University of Texas at Austin (2016); Texas Institute for Discovery Education in Science (TIDES) Summer Research Fellowship, University of Texas at Austin (2015); Texas Excellence in Jobs and Service (TEJAS) Award, University of Texas at Austin (2014-2016); Freshman Research Initiative Undergraduate Research Fellowship, University of Texas at Austin (2013).

Statement: I am honored to be considered for the position of Councilor for NESACS. I have been a member of NESACS since 2016, when I moved to Boston for graduate school, and I have been involved in ACS in varying capacities. I am the current Chair-Elect of NSYCC and will be Chair starting in June 2020, and I have been appointed as an interim Alternate Councilor through 2021. I am eager to discuss the priorities and interests of NESACS with national ACS representatives, especially regard-

ing engagement of the many younger chemists in the Boston area. I also look forward to promoting government affairs within NESACS through collaboration with national ACS and advocate for chemistry careers outside of academia and industry to younger chemists. Thank you for your vote!

Kap-Sun Yeung

Education: B.Sc. (1st Class Honors), The Chinese University of Hong Kong, 1990; Ph.D. University of Cambridge, UK, 1994; Postdoctoral Fellow, Scripps Research Institute, La Jolla, CA, 1995-1996.

Professional Experience: Discovery Chemistry, Bristol-Myers Squibb (joined BMS, Wallingford, CT in 1996; relocated to BMS, Cambridge, MA in November, 2019), current position: Senior Principal Scientist.

ACS Service: Committee on International Activities (Member 2019-2021; Associate Member 2016-2018), IAC Strategic Plan 3.2 Task Force ((Member 2020), The first Asia Pacific International Chapters Conference, Scientific Program Committee (Member 2016-2017); ACS Northeast Regional Meeting (NERM 2013), New Haven, CT (Program Co-Chair, Organizing Committee 2011-2013); New Haven Local Section, Councilor, Board Member (2016-2018), Alternate Councilor, Board Member (2015), Bylaws Update Chair (2016-2018). Organizer/co-organizer for fifteen MEDI Division sessions at ACS National Meetings, including two MEDI-sponsored sessions at EFMC (Germany) and AFMC (South Korea) symposiums (2009 to present).

NESACS Service: Alternate Councilor (2020-2022); NESACS Medicinal Chemistry Committee (Member 2020); NERM 2021 Local Organizing Committee (Participating Member 2020); Organizing Committee Chair, NESACS Medicinal Chemistry Symposium at BMS Cambridge (2019, 2020).

Statement: As a former councilor for the New Haven Section, I led the efforts that successfully updated the 15-year old Bylaws of the Section. I was the program co-chair for the 2013 NERM, a meeting that exceeded expect-

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Chair-Elect

Carol Mulrooney

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held multiple mentoring-themed events ranging from panel discussions to lunches with key scientific leaders.

I have several goals to work toward in the coming year. First, I will suggest ideas toward programming that aligns with the ACS All “In” campaign promoting the principles of diversity, inclusion and respect, and support and assist in events aligned with this campaign. I also intend to support Government Affairs in their work with engaging state and national level politicians, communicating the importance of chemistry to the government. Finally, I will ensure that NESACS has a prominently featured code of conduct that is aligned with the National ACS code of conduct.

I have had the privilege of working with several NESACS Program Chairs over the past few years and benefited greatly from their mentorship; therefore, I am honored and grateful for the nomination to serve in this role. If elected, I will pursue programming for our monthly meetings and other special events that continue the successes of past events. I will invite accomplished speakers from diverse chemistry fields and backgrounds, provide opportunities for the scientific community to engage and network with scientific leaders, and find new ways to encourage more chemists to be active in NESACS. I expect that the next year will bring many challenges. As I write this statement, the COVID-19 epidemic is changing the way we work and communicate and has led to something I never thought would happen, the cancellation of the National ACS Meeting. I suspect that we will have to adapt to a changing environment for months and perhaps years to come, so I am dedicated to exploring ways the chemistry community can adapt to these challenges. Thank you for your support. ◇

Chair-Elect

Patrick M. Gordon

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I continue to be involved with the high schools under the umbrella of the COACHES program that was initiated several years ago by ACS and I am volunteering to be a reader to select candidates for the ACS scholars’ program.

I have also continued my involvement with the German exchange program when possible. I continue to provide volunteer career services to the national ACS members and to the local NES-YCC members.

As a member of the committee of Minority affairs (CMA), I have been a member of the programming sub-committee and, as a consequence, chaired a session on Water quality as part of the Environmental Symposium that was held at the national meeting in Boston 2018. The CMA committee continues its commitment to organizing symposia for future ACS meetings (national or regional) in efforts to seek sponsorship in order to showcase scientists of color who have made significant contributions the advancements of chemistry. Therefore, as a Chair elect and a Councilor, I will endeavor to champion four goals I believe critical for achieving continued success of our section:

- Re-establish the yearly Strategic Planning the section did consistently—something we have not done is about 10 years
- Develop a plan to have younger chemists involved as Board members
- Establish two more Endowments to be administered by NESACS
 - Several years ago, I discussed with some Board members my desire for us establish two other Endowments-1) a Medicinal Chemistry Prize and 2) an Endowment to fund the German exchange program
- Establish a Standing committee for the ACS Fellows program to better

Candidate Statements

Kap-Sun Yeung Continued

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tation in scientific abstracts and meeting attendees. These are two contributions to the New Haven Section that I am particularly proud of. I am also pleased that I was part of an effort in the petition for a Bylaw change to remove certain restrictions on ACS International Chapters, and that was approved in the Council meeting in Boston last year. Being a newcomer to the Northeastern Section, I will look for opportunities where I can help the most to promote the growth of the Section and to connect the members to organizations within and outside of ACS. Through my participation in ACS both at Local and National levels, I believe that in ACS, every opinion counts regardless of one’s personal and professional background, and every volunteer effort is valued no matter it is small or big. I always look for diversity, and encourage you to volunteer in ACS activities. I would be honored to be your councilor to represent your voice in ACS. ◇

fulfill our local section’s complement every election cycle

We, as local section members, all need to give our commitment and service in whatever ways we can to ensure that our local section continues to provide the support and programming needs for its members. It would be a pleasure to continue serving on the board of NESACS and I thank you for your continued support. Finally, I pledge my support to the other candidate if I am not selected as the 2021 Chair elect. ◇

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

Samurdhi Wijesundera, Email: samu.amameth@gmail.com ◇

Covid-19, Hydroxychloroquine

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by ensuring that drug doses of agents causing QT prolongation do not exceed dosing ranges. For example, drug induced arrhythmias often occur at high drug concentrations.[xv] In addition, such medications are frequently prescribed with caution in patients who have underlying cardiac conditions.[xvi]

Currently, there are 440 clinical trials around the world currently studying various agents for the treatment of COVID-19.[xvii] Of those 440 clinical studies, 68 of them are studying the use of hydroxychloroquine.[xviii] Study sites investigating hydroxychloroquine are at various locations, including Germany, South Korea, Canada, Spain, France, Pakistan, Utah, New Jersey, Pennsylvania, and California to name a few.[xix] Many of these studies are evaluating the effectiveness of hydroxychloroquine against other agents including placebo tablets, azithromycin, Tamiflu, zinc, Vitamin D, and Vitamin C, and many other various compounds.[xx]

From an intellectual property perspective, hydroxychloroquine is sold under the brand name Plaquenil, produced by Sanofi.[xxi] Sanofi has pledged to provide millions of doses of Plaquenil for a study of 300,000 patients in France.[xxii] The original patent on the compound is expired, allowing other companies to manufacture generic forms of Plaquenil. Generic manufacturers of generic hydroxychloroquine include Novartis, Teva, and Mylan.[xxiii]

Innovation and interest in hydroxychloroquine has remained high. A search of the USPTO's patent database reveals that over 4,177 patents have issued that include hydroxychloroquine and 8,048 patent applications have published that include hydroxychloroquine.[xxiv][xxv] Through the process of drug repositioning, new methods of treatments can be discovered, utilized, and patented. When a drug is first discovered for its initial use, a patent is generally obtained to cover the chemical compound of the drug. Further, patents that cover methods of treating a disease

In Memory of Sir Jack Baldwin

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have a problem, you first see your clergyman, aka your recitation section leader. If your needs are greater you go to your Bishop, Dr. Viavattene.⁵ However, like the Church you never, ever expect an audience with the Pope." Another time he got a laugh from the class when he said, "Emil Fischer and Sir Robert Robinson are two of the three greatest organic chemists of all time." He intentionally did not name who in his mind was the third greatest organic chemist and left that to our imagination.

That year I also visited grad schools with visits to Columbia and Harvard. My other choice was Stanford, but I did not venture to the West Coast for a visit and their acceptance came in late. I also thought in the spring of 1974 that there was not a compelling reason to go to Stanford as a synthetic chemist in com-

state with the chemical compound may also be filed. After these patents concerning the original compound have expired, new filings pertaining to new methods of treatment or use for the chemical compound can be obtained by others. For example, a search of recent aspirin filings shows patents obtained in the past 5 years that disclose unique methods for preparing aspirin, combining aspirin together in dosage forms with other medications, and stable aspirin preparations.[xxvi] These filings come almost 120 years after the original patent for acetylsalicylic aspirin was first obtained.

While many unanswered questions remain, hydroxychloroquine remains a viable option to help tackle the COVID-19 pandemic. As clinical trials continue to study its effectiveness and place in treatment, use of the medication in larger populations can help resolve lingering issues. We will stay tuned to see how recommended treatments evolve over the coming months as clinical trials continue to tackle some of the most challenging public health questions of our lifetime. ◇

parison to Harvard and Columbia. Professor Kemp's stories about Woodward and Harvard, and Stork and Columbia were enough for me.

That was quite the experience having audiences with Prof. Stork, Breslow, Lippard, and Katz at Columbia and Prof. Woodward, Corey, Doering and James Wuest at Harvard. When I visited, Bill Rastetter took me out to lunch in Harvard Square, and showed me around and described his approach to acetylaranotin and Professor Kishi's shared interest in that molecule. We also talked about his undergraduate project with Jack Baldwin.

I chose Harvard over Columbia and my teaching of 5.42, as well as taking Prof. Kemp's graduate level synthesis course, and Prof. Whiteside's graduate course in Physical Organic chemistry, prepared me exceptionally well as I prepared for my first year as a graduate student. I still take a lot of pride in the fact that Bill Roush and I were the only two first year graduate students who got A's on the organic qualifying exam. I used to tease him that I was sure I got the higher grade. Of course, he was equally certain he got the highest grade.

While I was in grad school, Baldwin published his "Baldwin's Rules" for ring formation which were a huge subject of discussion. His "Rules for Ring Closure" published in Chemical Communications in 1976 is by far his most cited paper with 1509 citations according to a recent search in Chemical Abstracts.⁶ Prof. Baldwin left MIT for Oxford in 1978 but his influence on my chemistry career did not end there.

In October 1979 I started at Polaroid where I would work for the next 26 years, which was followed by 8 years at ZINK Imaging. ZINK was a spinoff of Polaroid's R&D in 2005 after Tom Petters purchased Polaroid from One Equity Partners. One Equity Partners acquired Polaroid in 2002 after the initial bankruptcy, reorganized under Chapter 11 and sold for a nifty profit in 2005 to Petters. For all of those 34 years, one of Jack Baldwin's first Ph.D. students at MIT, Stephen Herchen, was both my esteemed colleague and future supervisor, corporate VP and eventually

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In Memory of Sir Jack Baldwin

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CTO of ZINK Imaging.

Steve had many hilarious stories about his time in Professor Baldwin's laboratory. In one of the stories Jack was taking the group out to a famous restaurant of the day, Maison Robert. Jack managed to get himself thrown out of the establishment before dinner was over. His group was left thinking, "How are we going to pay for this? Are we going to need to wash dishes or something?" The manager basically said, "We've thrown him out before. Enjoy your dinner and we'll settle with him."

In another story, Jack purchased a really hot sports car. His group had a pool as to how fast it would take him to wreck the car. The shortest time anyone chose was 24 hours. Jack wrecked the car that same night on a sharp curve in Memorial Drive where it passes under the Massachusetts Ave. Bridge.

On a more serious scientific note, Jack came back to Boston and delivered a major talk at Harvard around 1995 in one of the big lecture halls in the Science Center. It was a tour de force about his work on penicillin biosynthesis. He gave a spectacular talk about the enzymes that create penicillins and cephalosporins. Jack and his students were able to take many tripeptides, both natural and unnatural, and cyclize them *in vitro* using enzymes like isopenicillin N-synthase (his second most cited work)

into a large number of penicillins and cephalosporins.⁷ When Jack finished his talk he listed the 70+ students who worked on the project in chronological order. One of the first one or two students on the project was Steve Herchen.⁸

Jack had his usual colorful commentary in his incredibly distinctive and much imitated English accent during his presentation. One line I recall with great amusement: "Those of the more hostile persuasion will say this synthesis is backwards! The tripeptide starting material is many dollars per gram and the resulting penicillin is pennies per gram!"

Jack Baldwin blessed the world with much incredible science and a powerful and colorful personality. He directly or indirectly had a great influence on me with his science, his teaching and through his students. The world of science has lost an iconic figure.

¹ Professor Kemp was early in the process of writing his textbook with Frank Vellacio. He thought enolate chemistry was a perfect tool for teaching organic chemistry and the Kemp Notes reflected his pedagogical thinking. In 1970-71 we used Kemp's Notes far more than any organic chemistry textbook of the day, such as Hendrickson, Cram and Hammond's textbook.

² *Use of chiral isopropyl groups in biosynthesis. Synthesis of (2RS,3S)-(4-13C)val*; Baldwin J E; Loliger J; Rastetter W; Neuss N; Huckstep L L; De la Higuera, N.; *JACS* (1973), **95**(11), 3796-7.

³ *sym-oxepin oxide*; Rastetter W. H.; *JACS* (1976), **98**(20), 6350-3.

⁴ Proton magnetic resonance studies of sym-oxepin oxide, Haas Daniel D; Rastetter W. H.; *JACS* (1976), **98**(20), 6353-9.

⁵ Ron Viavattene was a Ph.D. student of Fred Greene who was a head teaching assistant that spring for 5.42. He later went to Polaroid and ZINK Imaging where his physical organic skills were extremely valuable. He also became an exceptional process analytical chemist. Like Steve Herchen, Ron, has been a valued colleague and friend for my entire professional career.

⁶ *Rules for ring closure*; Baldwin, J.E.; *Chemical Communications* (1976), **18**, 734-736.

⁷ *Structure of isopenicillin N synthase complexed with substrate and the mechanism of penicillin formation*; Roach, Peter L; Clifton, Ian J.; Hensgens, Charles M. H.; Shibta, Norio; Schofield, Christopher J.; Hajdu, Janos; Baldwin, Jack E.; *Nature* (London) (1997), **387**, 827-830.

⁸ *Recent biosynthetic studies on beta-lactam antibiotics*; Baldwin, J.E.; Jung, M.; Singh, P.; Wan, T.; Haber, S.; Herchen, S.; Kitchin, J.; Demain, A.L.; Hunt, N.A.; et. al.; *Philosophical Transactions of the Royal Society of London, Series B: Biological Sciences* (1980), **289**, 169-172. ◇

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These include:

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Notices for The Nucleus Calendar of Seminars should be sent to: Samurthi Wijesundera,
Email: samu.amameth@gmail.com ◊

NESACS Annual Election for Officers and Board Members

The annual election for officers and board members of the Northeastern Section of the American Chemical Society (NESACS) will open on Friday, May 1.

All NESACS members will receive a link to vote via electronic ballot via an email from **Survey & Ballots Systems (NESACS Elections Coordinator)** starting on May 1.

The election will be open through Monday, June 1, 2020, 11:59 PM CDT.

You are encouraged to add noreply@directvote.net (NESACS Election Coordinator) to your email 'safe list'.

Questions? Please contact Andrew Scholte:
ascholte@gmail.com



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