Announcement of nominations for Union Officers and Science Board and Executive Board Members

This file contains details on the nominees for Vice President, Secretary General, the six Elected Members of the Executive Board and the up to five Elected Members of the Science Board. For each position, the nominees are listed alphabetically. For readability, each nominee's entry starts on a new page.

VICE PRESIDENT

- Lidia Armelao
- Mary Garson
- Zhigang Shuai

Lidia Armelao

Expected Contribution:
The Union is facing new challenges after over one hundred years of history of great commitment and success that have made IUPAC the most authoritative international body in Chemistry. IUPAC is also called to propose timely solutions and give trustworthy responses to the urgent needs and severe issues taking place at global level.
In recent years, the consideration of the role that Chemical Sciences have in promoting the transition towards a more just and equitable society and a sustainable world has importantly and positively changed.
IUPAC has firmly responded to this global challenge by adopting modern rules and by opening to a full integration that involves all its members and institutions. he process of renewing the statute and rules of the Union has just begun, and in close collaboration with the IUPAC Board and the President my main commitment will be to work hard to renew the Union in the regulations governing its multifaceted activities as well as to apply these changes to all its operational structures in order to make IUPAC an example of a streamlined, inclusive, modern and efficient body. IUPAC should be able to have an effective and pragmatic dialogue with scientific societies, international organizations, decision makers and important companies. In the role as Vice-President, I will be dedicated to achieving these goals.

Short Biographical Sketch
Degree in Chemistry cum laude (1990), Master in Glass Engineering (1991) and PhD in Chemical Sciences (1994) from Padova University (Italy). Post-doc fellow in Paris (UPMC, 1995) and visiting scientist in Canada (University of Western Ontario, 2005–2011). Researcher and Research Director at the National

Research Council of Italy (CNR, 1996–2015), full professor of Inorganic Chemistry at Padova University (since 2016), director of the CNR Institute of Condensed Matter Chemistry and Energy Technologies (ICMATE, 2014– 2020, 140 staff in four different sites), presently director of the CNR Department of Chemical Sciences and Materials Technologies (DSCTM, 11 research Institutes distributed on the whole country, ca. 1000 staff). Member of the Inorganic Chemistry Division of IUPAC since 2014, as National Representative, Titular Member, Vice-President and President (2022-). National representative for Italy at IUPAC since 2019. Governmental expert in the CapTech Materials and Structures at the European Defense Agency, and component of the Scientific Commission of the Italian Chemical Society (2019–2022). She regularly teaches fundamental and specialistic courses in Chemistry at Padova University and she is member of the board of directors for the PhD course in Molecular Sciences. She has also been invited by the European Commission Directorate General for Translation to deliver a course on the chemical nomenclature for interpreters. She is strongly committed in networking activities for the promotion of scientific cooperation and higher education, and in scientific dissemination activities for the valorization of Chemical Sciences and their applications. She has been awarded the EniChem Thesis Prize (1990), the Ugo Croatto Prize (1995) and the IUPAC distinguished Woman in Chemistry or Chemical Engineering (2023). Member elected of Istituto Veneto di Scienze, Lettere ed Arti, Venezia, Italy. Publications include ca. 240 papers on international scientific journals (H = 41, Scopus) and ca. 40 invited lectures at national and international conferences. During the scientific and professional career, she has combined intense research activity with institutional and managerial roles that, with increasing commitment and frequency, she has been appointed to accomplish at national and international level. As a researcher, she has obtained original results, among which significant are those related to the study and applications of molecular systems and luminescent materials. In the roles of institutional responsibility, she has been very motivated to promote the role of Chemical Sciences as a discipline and fundamental tool for the protection of health and the environment, for a sustainable and fair social and economic development.

CV

Lidia Armelao (b. 1965)

PRESENT POSITION

10/2020 – to date. Director of the Department of Chemical Sciences and Materials Technologies (DSCTM) National Research Council of Italy (CNR) (scientific cooperation, development and fostering, promotion of education, research management, technological innovation, international networking and general representation of the national scientific policy; 11 research institutes, staff of ca. 1000 personnel units distributed in 35 branches in different sites). The National Research Council of Italy is composed of 88 Research Institutes organized in 7 Departments representing the different thematic areas (Chemistry and Materials, Physics, Medicine, Environment, Engineering, Human Sciences, Agri-Food).

EDUCATION and FORMATION

- 1984 – 1990. Degree in Industrial Chemistry cum laude - University of Padova
- 1991. Master in Glass Engineering - University of Padova
- 1991 – 1994. PhD in Chemical Sciences - University of Padova
- 2015. Full Professor of Inorganic Chemistry - University of Padova

FORMER POSITIONS

- 2014 – 2020. Director of the Institute of Condensed Matter Chemistry and Technologies for Energy (ICMATE) of the National Research Council of Italy (CNR) (scientific development and

networking, promotion of education, research management and innovation; staff ca. 140 units distributed in 4 branches in different sites).

- 2015 – 2017. President of the CNR Research Area in Padova (technical management and scientific networking; 8 research institutes and ca. 350 personnel units)
- 2002 – 2013. Deputy Director of the Institute Molecular Sciences and Technologies (ISTM) of the National Research Council of Italy (CNR) – Padova (scientific coordination; staff ca. 14 units in one site)
- 2007 – 2016. Research Director (I level) at the National Research Council of Italy
- 2001 – 2007. Senior Researcher (II level) at the National Research Council of Italy
- 1996 – 2001. Researcher (III level) at the National Research Council of Italy

VISITING POSITIONS

- 1995. Research Fellow. University Pierre et Marie Curie (UPMC) – Paris, France
- 2005 – 2008, Visiting Scientist. The University of Western Ontario, Canada, Canadian Light
- 2011 (3m/y). Source, Argonne Photon Source, Synchrotron Radiation Center.

POSITIONS in SCIENTIFIC INSTITUTIONS and WORKING GROUPS

- 2023 – to date. Member (appointed) of board of directors of the National Biodiversity Future Center, Italian Recovery and Resilience Plan, Ministry of Research.
- 2023 – to date. Member (appointed) of the national working group on Critical Raw Materials, Ministry of Enterprises and Made in Italy.
- 2022 – to date. President (elected) of the Inorganic Chemistry Division, IUPAC.
- 2021 – to date. Member (appointed) of board of directors, Ri.MED Foundation, Presidency of the Council of Ministers, Italy.
- 2020 – to date. Member (appointed) of the Scientific Commission of the Italian Chemical Society.
- 2019 – to date. National Representative for Italy at IUPAC.
- 2017 – to date. Governmental Expert at the European Defense Agency in the CapTech Materials, Brussels, EDA.
- 2016 – 2019. Titular Member (elected) in the Inorganic Chemistry Division, IUPAC.
- 2017 – to date. Member (appointed) of the board of directors of RIBES-NEST innovation network, Veneto Region, Italy.
- 2016 – 2017. Associate Member (appointed) of the Committee on Chemical Education, IUPAC.
- 2015 – to date. Member (appointed) of the Steering Committee for scientific research, technological development and innovation, Veneto Region, Italy.
- 2014 – 2016. National Representative in the Inorganic Chemistry Division, IUPAC.
- 2009 – 2012. Member (appointed) of Scientific Council, Italian Consortium for the Science and Technology of Materials, INSTM, Florence, Italy.
- 1998 – 2002. Member (elected) of Scientific Council, CNR Laboratory for the Study of Stability and Reactivity of Coordination Compounds (CSSRCC), Padova, Italy.

RESEARCH PROJECTS

Scientific coordinator and unit chair of more than 15 national and international research projects funded by the European Defense Agency, Italian Space Agency (ASI), Ministry for Research MUR (PRIN, FIRB, FISR), Ministry for Economic Development MISE, Ministry for Ecological Transition MITE, National Research Council (PF, PS), Veneto Region (POR/FESR).

The scientific projects deal with the design, synthesis and reactivity of molecular compounds and metallosupramolecular systems, and with the realization materials from chemical synthesis in the form of layers, surfaces and nanostructures, and with the study of the correlations between composition, structure and functional properties. In order to fully implement the cycle that goes from the design to the realization of functional molecular- and nano-systems, various laboratory and synchrotron advanced analytical techniques have been adopted.
She is also committed in IUPAC funded projects dealing with fundamental aspects of chemistry and with chemical education (e.g. Effective teaching tools and methods to learn about e-waste, Toward a comprehensive definition of valence, IUPAC100 Periodic Table Challenge).
SCIENTIFIC ACTIVITY
The scientific interests concern the area of inorganic chemistry, of molecular systems and materials, and it is documented by more than 230 papers on international ISI journals (H = 41, ca. 7630 citations, Scopus), 3 book chapters, more than 250 communications, including invited lectures and keynotes, at national and international conferences.
The scientific interests have been expanded over the years and have progressively ranged from the soft chemical synthesis of nanomaterials and functional surfaces to the self-assembly of innovative metallosupramolecular systems, to focus in more recent years in the fields of sustainability and new renewable energies. For example, the different research activities conducted on molecular systems and materials aim at the development of new more efficient and selective catalysts, more powerful and specific luminescent sensors, innovative high efficiency luminescent systems, new materials for storage and production of energy, also from renewable sources.
The activity in the field of technologically advanced materials and molecular systems has allowed to start prestigious international collaborations that have enhanced an increasingly pragmatic vision of research aimed at addressing some of the most pressing global problems affecting our society: the energy crisis and the depletion of non-renewable resources, in first place.
Among the current research activities very strategic are those connected to the development of some classes of molecular systems and innovative materials endowed with peculiar light emission - complexes of lanthanoid ions, metal-supramolecular architectures and inorganic materials containing rare earth ions - which allow to realize highly luminescent systems for applications in lighting and displays, diagnostic imaging in nanomedicine and luminescent solar concentrators (LSC).
In close connection with the research activities, she has regularly carried out specialized courses in Chemistry, mainly at Padua University and the Catholic University of the Sacred Heart (Milan). She has carried out teaching activities in Chemistry in national and international PhD courses. She has supervised the scientific activities related to the development of master's degree theses (over 30) and doctoral theses (over 10) in Chemical Sciences and Materials Science, also in collaboration with international Universities.
She has also been invited by the European Commission Directorate General for Translation to deliver a course on the chemical nomenclature for interpreters. Component of the Board of Directors of the PhD course in Molecular Sciences at Padova University and of the Academic Board of the national PhD course in Photoinduced processes and technologies.
OTHER ACTIVITIES
She is strongly committed in networking activities for the promotion of scientific cooperation, research policy and higher education. She has been invited as panelist at national and international forums such as the OECD Global Science Forum (Research funding: looking beyond the Covid 19 crisis, 2021) and the

Italian French Forum (The challenges of sustainability in the academic and research environment: a French-Italian joint response, 2021). She has been invited as advisory board member to draft a strategic report on plastics sustainability (The circularity of plastics: industrial opportunities, innovation and economic and employment effects in Italy, The European House - Ambrosetti, 2022). She has strengthened the collaboration of CNR with Federchimica, which associates over 1400 chemical companies and industries, and with the Italian Interuniversity Consortium of Science and Technology of Materials (INSTM). which associates over 50 universities involved in chemistry research and related applications. She was twice nominated member of the joint commission for the renewal of the framework cooperation agreement between the University of Padua and the National Research Council of Italy.
Member of expert evaluators panels and review committees for national and international commissions and research projects funded by European Commission, Natural Sciences and Engineering Research Council of Canada NSERC, European Science Foundation ESF, Italian Ministry for Research MUR, Italian Ministry for Economic Development MISE, The Netherlands Research Council NWO.
Invited keynote and plenary lecturer to more than 40 national and international conferences (e.g. Materials and Circular Economy, Accademia dei Lincei – 2023, 44th International Conference on Coordination Chemistry – 2022, XXVII Conference of the Italian Chemical Society – 2021, Synchrotron Radiation for Materials Analysis – 102nd Canadian Chemistry Conference – 2019, 2nd Symposium on Organic and Inorganic Chemistry, Southern Africa – 2018, 99th Canadian Chemistry Conference – 2016).
Component of the scientific board of national and international conferences (e.g. EnerChem2 (2020); International Conference on Hydrogen Production (ICH2P-2021); SPIE Photonic Europe, Fiber Lasers and Glass Photonics: Materials through Applications (2022); Avogadro Colloquia (2022)).
AWARDS and HONORS

- EniChem Prize for the best Master Thesis in Chemistry (1990).
- Ugo Croatto Prize for Young Researchers (1995).
- IUPAC Award for Distinguished Women in Chemistry or Chemical Engineering (2023).
- Member elected of Istituto Veneto di Scienze, Lettere ed Arti in Venezia, Italy (2021).
- DISSEMINATION ACTIVITY
- She is committed in scientific dissemination activities for the valorization of Chemical Sciences and their applications through information media, radio and television broadcasts:
    - Rai Radio 1 Menabò – One hundred years of CNR (2022)
    - IUPAC Global Women Breakfast (2022)
    - RAI Scuola Nautilus – The Periodic Table of the elements (2019)
    - Rai News24 Futuro24 – The High-Tech projects at CNR (2019)
    - Il Bo Live – Behind the Periodic Table: 118 tales of goblins, places, asteroids and nationalisms (2019)
    - RAI Scuola Memex – The places of Science: Padova (2017)
    - La Lettura, Corriere della Sera – A new element named Primo Levi (2016)

April 14th, 2023

Mary Garson

Expected Contribution:
The mission of IUPAC can be summarized as "…providing scientific expertise and developing essential tools relating to chemical knowledge for the benefit of humankind". A set of six core values further guides IUPAC in its relationship with stakeholders.
With >20 years' experience in the Union, including both as a Division President and Elected Bureau Member, I am deeply familiar with the scientific work on symbols, nomenclature, measurements, standards, and terminology. IUPAC also deals with global chemical issues of societal impact, and there is immense value flowing from the contributions of many individual volunteers, staff, and stakeholders to these topics. During the COVID pandemic, much of the core scientific work, as well as networking and educational activities, were impacted. In 2024, IUPAC will introduce a new governance structure in which the President-elect will act as Chair of the Science Board as part of their executive role. Against this background, the contributions made by the incoming President-elect would include:
1. Developing strategic initiatives on emerging issues in the chemical sciences: The goal for IUPAC must be to generate projects that focus on issues of strategic importance to chemistry. Pertinent to this is the annual selection of the Ten Top Emerging Technologies in Chemistry, as well as recent discussion on new research themes in the chemical sciences. We need to better align our project activities with these emerging scientific trends as well as the big picture global themes of sustainability, big data, artificial intelligence, safety and risk management. The project system, first implemented in 2001, has been successful in many ways, but has become workload-intensive while some individual projects have not received adequate evaluation or performance review. We must work cooperatively as a Union to revitalize the project system, its scientific focus, and its evaluation. This requires us to optimize the Division/Standing Committee structure and ensure that it is fit for purpose.
2. Embracing the younger generation: The future of chemistry lies in the actions and activities of the next generation of talented and creative researchers and educators. IUPAC must extend its interactions with early career groups, including the energetic International Young Chemists Network (IYCN). We need to strengthen the contributions of these groups to our scientific work. Recent Global Women's Breakfast (GWB) events reveal the enthusiasm of many young chemists, of all genders, for the work of IUPAC.
3. Increasing the global reach of IUPAC: Since 2019, ~100 countries have participated in GWB events worldwide, while players from >135 countries/territories took the Periodic Table Challenge during 2020. We must facilitate networking interactions that enhance the diversity of IUPAC and its membership. IUPAC should continue encouraging F2F and online symposia or workshop activities that allow wider participation by the global chemistry community.
4. Revitalizing IUPAC finances: During the pandemic, a decrease in project proposal activity and meeting cancellations eased some of IUPAC's financial concerns, but recent global events and widespread

inflation have now triggered new financial pressures. The Union must reach out, inform stakeholders, and develop stronger partnerships with current and future NAOs, associated organizations, the chemical industry and academia.
IUPAC has always appealed to me as a collegial scientific "family". For the last 100 years, IUPAC has guided the global chemistry community to scientific consensus and well-defined terminology. My experience and accomplishments, both within and external to IUPAC, have well positioned me for a leadership role within the Union. I have nominated for the Vice-President/President-Elect position so that I could lead delivery of solutions to the many challenges that face us in the first decade of our second century. I ask for your support so that I can work together with all of you to add value to the global network of IUPAC, and best resource its exceptional and unique scientific work.

Short Biographical Sketch:
My involvement with IUPAC began in 1994 when I facilitated a bid for Australia to host the General Assembly and Scientific Congress in Brisbane. I was the Executive Secretary of the Organizing Committee which successfully delivered these combined meetings in 2001.
In the current biennium, I am the inaugural Chair of the Committee for Ethics, Diversity, Equity and Inclusions (CEDEI), and involved in writing policy documents, project proposals, and planning sessions on EDI topics. Between 2018-2021, I was an elected Member of the IUPAC Bureau, and as a member of the Evaluation Committee, I assessed the project system. I joined Division III (organic & biomolecular) as a Titular Member (2006-2007), then as Secretary, and Division President for the 2014-2015 biennium. Within the Division, a focus has been on facilitating communication and decision-making. I have been an Associate Member of the Committee for Chemistry Education, and have contributed to projects in both Division III and in CCE. I have organized international meetings on behalf of Division III.
In 2011, I created the global breakfast event Women Sharing a Chemical Moment in Time for the International Year of Chemistry (IYC), in which 40 countries networked with each other through social media. I introduced a video item on this global initiative at the IYC Opening Ceremony in Paris.
Between 2016-2019, I was co-chair (with Dr Laura McConnell) of the IUPAC100 Management Committee to celebrate the centenary of IUPAC. We scripted a commemorative piece on IUPAC for the 50th GA/47th WCC in Paris. Key initiatives included (i) IUPAC Stories; (ii) Periodic Table of Younger Chemists; (iii) Periodic Table Challenge; (iv) Global Women's Breakfast.
I am co-leader of the project task group Creation of IUPAC Global Women's Breakfast (GWB) Series and a Global Network in Support of Eliminating the Gender Gap in the Chemical Sciences. In 2023, our network hosted ~390 events in ~75 countries, while over 100 different countries have participated in GWB events since 2019. When surveyed, ~60% of respondents "indicated an increased attention to diversity issues in their organization."
Other leadership roles include Chair of the International Relations Committee of the Royal Australian Chemical Institute (1996-2004). I am currently a member of the National Committee for Chemistry; this committee reports to the Australian Academy of Science, NAO to IUPAC. I was Chair of the Board of Australian Science Innovations (2002-2005), a premier provider of challenging science programs, and which oversees Australia's participation in international science Olympiads. I led a government-industry-academia partnership organizing the 15th International Biology Olympiad.
I have worked in the UK, Italy, USA and Australia, and been an active participant in international research collaborations, meetings and workshops, particularly in the Asia-Pacific region, for >30 years.

CV

Emeritus Professor Mary J Garson AM

Personal Details

Full name: Mary Jean GARSON

Citizenship: Dual Australian/British nationality

Contact details: +61-402-715-893 (Ph); m.garson@uq.edu.au (Email); @MMaryGarsonae (Twitter)

Academic Record and Qualifications

• PhD, University of Cambridge UK, 1977, *The Biosynthesis of Polyketides* (with Prof J Staunton).

• MA (1978) and BA (Hons) University of Cambridge UK (1974, natural science tripos, part II chemistry).

Professional Experience

• Professor of Chemistry, School of Chemistry and Molecular Biosciences (SCMB), The University of Queensland, 2006- 2020; (Emeritus Professor 2021-).

• Deputy Head of School (SCMB), The University of Queensland, 2005-2009.

• Earlier positions at The University of Queensland: Associate Professor (1998-2005)/Senior Lecturer (1992-1997)/Lecturer (1990-1991).

• Earlier positions at The University of Wollongong: Senior Lecturer (1990)/Lecturer in chemistry (1986-1989).

• Queen Elizabeth II Research Fellow, James Cook University of North Queensland, 1983-1986.

• Medicinal chemist, Smith Kline and French Research Ltd, Welwyn UK, 1981-1983.

Awards and Fellowships (selection only)

• Member (AM), The Order of Australia, for significant service to education and to women in science, 2019.

• Royal Society of Chemistry Australasian lectureship, 2018 (by invitation).

• Excellence in Leadership award, The University of Queensland, 2018.

• Inaugural recipient, Margaret Sheil "Women in Chemistry" leadership award of RACI, 2017.

• Named as one of the "*175 Faces of Chemistry*" by the Royal Society of Chemistry, UK, 2014.

• Distinguished Woman in Chemistry or Chemical Engineering award of IUPAC, 2013.

• Fellow of the Royal Society of Chemistry (RSC) elected 2013.

• Leighton Memorial Medal of the Royal Australian Chemical Institute, awarded for distinguished service to the Institute in the broadest sense, 2011.

• Inducted into *Everyday Women, Extraordinary Lives* tribute gallery, QLD government initiative, 2011.

• National citation for contributions to Royal Australian Chemical Institute, 2001.

• Fellow of the Royal Australian Chemical Institute (RACI), elected 1993.

• Queen Elizabeth II Research Fellowship (James Cook University of North Queensland), 1983-1986.

• College Research Fellowship, Murray Edwards College (New Hall) Cambridge UK, 1978-1981.

• Overseas Research Fellowship, Royal Society of London, Rome 1977-1978.

• UK postgraduate scholarship (Science Research Council; 1974-1977) & Bathurst scholarship (Newnham College, 1976-1977) held at the University of Cambridge.

Professional Service (Professional Societies/NGOs)

International Union of Pure and Applied Chemistry (IUPAC)

• Inaugural Chair, Committee for Ethics, Diversity, Equity and Inclusion (CEDEI), 2022-2023.

• Elected Member, IUPAC Bureau for 2018-2019 and 2020-2021.

• Chair, IUPAC100 Management Committee reporting to the IUPAC Bureau, 2016-2019.

• President of Division III (organic and biomolecular), and member of IUPAC Bureau, 2014-2015.

• Titular Member (Division III), 2006-2017 (including as Secretary (2008-2011), Division Vice-President (2012-2013), Division President (2014-2015) and Past President (2016-2017); evaluation of project proposals; Associate member of Committee for Chemical Education (CCE) (2008-2012, 2016-2017).

• Member, Australian delegation to the Council meetings of the IUPAC General Assembly, 1999-2023.

• Co-convenor, *IUPAC Global Women's Breakfast Network,* 2019-current; ~100 countries have participated at least once in this annual event since 2019.

• Chair, selection panel for the 2023 *Distinguished Women in Chemistry/Chemical Engineering* awards.

• Creator and international convenor *Women Sharing a Chemical Moment in Time*, global networking activity (2011); video presentation at Opening Ceremony of the International Year of Chemistry at UNESCO Paris.

• Co-chair, Organizing Committee, 27th International Symposium on the Chemistry of Natural Products/7th International Conference on Biodiversity, 2011.

• Executive Secretary organizing the IUPAC General Assembly, Brisbane, 2001; Member of Organizing Committee, IUPAC World Chemistry Congress, Brisbane, 2001.

Royal Australian Chemical Institute (RACI) and National Committee for Chemistry

• Chair, International Relations Committee RACI, 1996-2004.

• Member, National Committee for Chemistry (Australian Academy of Sciences, NAO to IUPAC), 2023-2025, and previously 1996-2004.

• President, Queensland branch and member of Full Council of RACI, 1996-1997; committee member (1991-1999) and secretary (1994-1995) of Queensland-RACI; committee member (1991-1997), Chemical Education Group of Queensland-RACI; committee member, Wollongong section, NSW-RACI, 1987-1989; organiser, RACI titration competition, Wollongong section, NSW-RACI, 1987-1989.

Australian Science Innovations (= Australian Science Olympiads)

• Chair of Board, Australian Science Innovations/Rio Tinto Australian Science Olympiads, 2002-2005; member of Board, Rio Tinto Australian Science Olympiads, 2000-2002; accompanied competition teams to 4th Asian Physics Olympiad (2003) and 14th International Biology Olympiad (Belarus, 2003); hosted official visits involving industry partnership dinners and public lectures.

• Chair, Organizing Committee 15th International Biology Olympiad (Brisbane, July 2004), a government-academic-industry partnership.

UNESCO regional network for the Chemistry of Natural Products in SE Asia

• National point of contact representative (NPCR) for Australia (1996-2003); member, Australian delegation to the World Conference on Science (UNESCO), Budapest, 1999.

Other Professional Contributions (selection only)

• Co-chair, CHEMBIOTEC symposium (World Chemistry Congress, Italy, August 2007; with Professor F. Nicotra); member, organizing committees, 13th Int. Conference on Metabolomics (2017); Australia-New Zealand Magnetic Resonance meeting (2017); 17th Int. Biotechnology Symposium (2016); Australian Coral Reef Society meeting (1997); 15th divisional meeting in organic chemistry, RACI (1991).

• Membership of International Advisory Boards: 17th IBS (2016), ICOS (2014, 2016); World Chemistry Congresses (2013, 2015); ISCNP/ICOB (2002-2018); MaNaPro (2004, 2007); ASOMPS (2003-2020).

• Member, panel reviewing the teaching of chemistry at Victoria University of Wellington, NZ (2016).

• Advocacy and mentoring for Women in Science, including: presentation to Ministerial Advisory Committee for Queensland Women (1998); discussion leader, RACI Heads of Department of Chemistry meetings (1995, 1997) and at career advancement workshops (1995, 1996, 2009); invited speaker, Conference on Status of Women in Universities, (1995); opinion articles, radio interviews, talks (1994-present); co-organiser "Women in Organic Chemistry" symposium RACI, Perth (2018.)

• Advocacy on biodiversity issues, including: plenary speaker, Biobusiness conference (1998); presenter, UNESCO-funded workshop, Kuala Lumpur (1996); media forum on biodiversity, Sydney (1995); Round Table sessions in Asian Symposia on Medicinal Plants, Spices & Other Natural Products (1994, 1998, 2003); expert witness to Commonwealth-State working group *Access to Biodiversity* (1994).

Research Contributions (ORCID 0000-0001-8670-1075)

• >200 original research publications, reviews and book chapters in international quality peer-reviewed journals.

• Plenary (15) and invited (45) lecture presentations at international meetings in chemistry or marine science; invitations to Gordon research conferences include short talks (2); main lectures (2); discussion leader (2); invited or plenary speaker at regional or national meetings in marine science, biodiversity and biobusiness.

• Research funding (Australia Research Council, etc.) totaling >$5M(AUD).

• Member, editorial boards ACS Omega (2016-), J. Nat. Prod. (2014-), Phytochemistry (2008-2019), Comp. Biochem. Physiol. (1994-1995); expert assessor for >20 journals and for grant agencies.

Teaching and Mentoring Contributions

• Research supervision of 32 PhD or MSc candidates, 21 Honours students; mentoring of 6 postdoctoral fellows and 22 international visiting scholars; undergraduate teaching in organic chemistry (UQ: 1990-2020; UoW (1986-1990) and in field-based marine chemical ecology (UQ).

• Regional workshops on marine natural products (Thailand 2007, 1999, Malaysia 2001, Brazil 1999).

• Member of award-winning UQ first year chemistry teaching team – winner of Australian Awards for University Teaching Award for Programs that Enhance Learning (APEL, 2017).

Other

• The marine flatworm Maritigrella marygarsonae is named in honour of Prof. Garson.

• A special issue of the Journal of Natural Products (ACS) in honour of Prof. Garson's research contributions is due for publication in March 2023.

Zhigang Shuai

Expected Contribution:
Prof. Shuai has a strong background and longtime service in IUPAC. He has served as Chairman for a number of influential international conferences including the International Congress of Quantum Chemistry (2015, Beijing). He is the vice President of the International Academy of Quantum Molecular Science, a prestigious learnt international organization. He has been responsible for the international affair for the Chinese Chemical Society since 2006. Especially, he has been an active member for the IUPAC Organizational Structure Review Group and committee member for the annual selection of IUPAC top 10 chemical technology. He was elected to the Executive Committee by the Bureau in 2021. With his academic impact and experience in academic organization management, Prof. Shuai will devote himself to the design of IUPAC's future development route, to deepen the cooperation between IUPAC and the chemistry community, and to help to enhance IUPAC's international influences for the developing world. China is an important country, especially for the chemical industry. Global challenges in energy, resources, environment and climate can only be solved through international cooperation. It is expected that China's active participation in international affairs will bring new opportunities to the world with Chinese wisdom of five-thousands years civilization. The Chinese Chemical Society, along with the 100,000 members, strongly supports Prof. Zhigang Shuai to run for the Vice President of IUPAC.

Short Biographical Sketch:
Zhigang Shuai received PhD in 1989 from Fudan University, Shanghai. Then he went to work as a postdoc and research associate in the University of Mons, Belgium. In 2000, he became a Professor in the Institute of Chemistry of the Chinese Academy of Sciences. He moved to Tsinghua University in 2008 as a Changjiang Scholar Chair Professor. And since 2022, he has worked as a Presidential Chair Professor in the Chinese University of Hong Kong, Shenzhen.
He has been working on developing computational method to modelling and understanding the excited state structure and dynamics. He has published more than 440 papers in scientific journals, with more than 31000 google citations (google H-index 98). He has been elected to the International Academy of Quantum Molecular Science in 2008 and elected to be the vice president in 2018; Fellow of the Royal Society of Chemistry; Foreign Member of the Academia Europaea; Foreign Member of the Royal Academy of Belgium. He is an Honorary Member of the Physical Society of Uzbekistan. He was the recipient of the Chinese Chemical Society – AkzoNobel Chemical Science Award (2012), the French Chemical Society Prix Franco-Chinois (2018), and the First-Class Award of Beijing Municipal Natural Science Prize (2020).
He served as Deputy-Secretary General of the Chinese Chemical Society for 2006-2017. Then, he was elected as the Vice President of the Chinese Chemical Society in 2018 and re-elected in 2022. For 2010-2017, he was a National Representative for IUPAC CCE. For 2018-2019, he served as AM in Division I. Then for 2020-2023, he served as TM for Division I. He was elected to the Bureau and then to the Executive Committee by the IUPAC Council in 2021. He has served in the IUPAC Organizational Structure

Review Group in 2020. He is also a member of IUPAC evaluation committee. He delivered a plenary lecture for the IYC launch ceremony in UNESCO on “Chemistry and Civilization”.

CV:

PERSONAL DATA

Family name: Shuai
First name: Zhigang
Sex: Male
Marital Status: Married to Shunan Ma (gave birth to two sons: Quentin b.1996, Pierre b. 2000)
Birth Place: Yanshan County, Jiangxi Province, China
Birth Date: Aug. 27, 1962
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The Chinese University of Hong Kong, Shenzhen
518172 Guangdong, People’s Republic of China
Nationality: Chinese
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EDUCATION

- 1983 Bachelor Degree, Department of Physics, Zhongshan University, Guangzhou, China
- 1986 Master of Science Degree, Department of Physics, Jinan University, Guangzhou, China
- 1989 Ph. D. , Department of Physics, Fudan University, Shanghai, China

PROFESSIONAL EXPERIENCES

- 1989, 7 – 1990,3: Research Fellow, Department of Physics, Fudan University, Shanghai
- 1990,3 – 2001, 12 Postdoctor and Senior Research Scientist, Service de Chimie des Matériaux Nouveaux (Jean-Luc Brédas Lab), Université de Mons-Hainaut, Place du Parc 20, 7000 Mons, Belgium
- 2002,1 – 2008,4: Full Professor, Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, 100190 Beijing, China
- 2008,5 – present Changjiang Chair Professor, Department of Chemistry, Tsinghua University, 100084 Beijing, China
- 2022, 7 – present X. Q. Deng Presidential Chair Professor, School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, 518172 Guangdong, China

HONORS

- 2004 Hundred-Talent Program top 20% Award of the Chinese Academy of Sciences
- 2004 Outstanding Young Scientist Award (National Natural Science Foundation of China)
- 2008 Changjiang Scholarship Professor (Ministry of Education of China)
- 2008 Member, International Academy of Quantum Molecular Science (France)
- 2009 Fellow, Royal Society of Chemistry (UK)
- 2011 Foreign Member, Academia Euporeae (London)
- 2012 Chinese Chemical Society – AkzoNobel Chemical Science Award
- 2013 Member Associé, Royal Academy of Belgium (Brussels)
- 2014 National Excellent Scientist Award (China Association of Science and Technology)
- 2017 Scientif Board of World Association of Theoretical and Computational Chemists
- 2018 French Chemical Society Prix Franco-Chinois
- 2020 First Class Natural Science Award of the Beijing Municipal Government

EDITORIAL SERVICES

Associate Editor: Acta Chimica Sinica (CCS) 2012- Present
Deputy Editor: Research – A Science Partner Journal, 2021 - Present
Editorial Board Member of: National Science Review, J. Mater. Chem. C, Theor. Chem. Acc., Sci China Chem., Progress in Chemistry, Science Bulletin, Adv. Theor. Simul, Chem J of Chin Univ.
Advisory (Editorial) Board Member of: Chem. Asian J., Nanoscale, Chem. Phys. Lett., WIRES Comput. Mol. Sci., Nanoscale Advances
SOCIAL SERVICES

- 2019-2026: Vice President of the Chinese Chemical Society
- 2018-2023: Vice President of the International Academy of Quantum Molecular Science
- 2007-2018: (3 terms) Deputy-Secretary General of the Chinese Chemical Society (CCS)
- 2011-2022: elected Member of the Executive Council of CCS
- 2007-Present: Member of the Theoretical Chemistry Committee of CCS
- 2015-2018: Chairman of the Theoretical Chemistry Committee of CCS
- 2002-2022: Member of the Organic Solids Committee of CCS
- 2017-2022: member of the Physical Organic Chemistry Committee of CCS
- 2002 – Present: Member of the Academic Committee for the Institute of Chemistry of the Chinese Academy of Sciences, Beijing
- 2008 – Present: Member of the Academic Committee of the Ministry of Education Key Laboratory of Mesoscopic Chemistry, Nanjing University
- 2008 – Present: Member of the Academic Committee of the Department of Chemistry, Tsinghua University
- 2009 – Present: Member of the Academic Committee of the State Key Laboratory of the Physical Chemistry of Solid Surface, Xiamen University
- 2016 – Present: Member of the Academic Committee of the Ministry of Education Kay Laboratory of Organosilicon Chemistry and Materials Technology, Hangzhou Normal University.
- IUPAC services
- 2005: Organizer of the “Computer in Chemistry” session for the IUPAC Congress
- 2010 – 2017: National Representative for Committee of Chemistry Education
- 2018 -- 2019: Associate Member for Division I
- 2020 -- 2023: Titular Member for Division I
- 2021 – Present : Bureau Member
- 2021 – Present : Executive Member
- 2021 – Present : Evaluation Committee Member
- 2020: IUPAC Organization Structure Review Group Member
- 2021 - Present: IUPAC Top 10 chemical technologies selection committee
- 2022 – Present: 2023 World Chemistry Leader Meeting Coordinator

SELECTED PUBLICATIONS:
Total publications: 442
Total google citations: 31000 (google h-index=97)
1. Zhigang Shuai, David Beljonne, Robert J. Silbey, Jean-Luc Brédas, Singlet and triplet formation rates in conjugated polymer light-emitting diodes, Phys Rev Lett 2000, 84, 131-134.
2. Qian Peng, Yuanping Yi, Zhigang Shuai*, Jiushu Shao, Excited State Radiationless Decay Process with Duschinsky Rotation Effect: Formalism and Implementation, The Journal of Chemical Physics 2007, 126 (11), 114302.
3. Qian Peng, Yuanping Yi, Zhigang Shuai*, Jiushu Shao, Toward Quantitative Prediction of Molecular Fluorescence Quantum Efficiency: Role of Duschinsky Rotation, Journal of the American Chemical Society 2007, 129 (30), 9333-9339.

4. Meng-Qiu Long, Ling Tang, Dong Wang, Linjun Wang, Zhigang Shuai*, Theoretical Predictions of Size-Dependent Carrier Mobility and Polarity in Graphene, Journal of the American Chemical Society, 2009, 131 (49), 17728-17729.
5. Guangjun Nan, Xiaodi Yang, Linjun Wang, Zhigang Shuai*, Yi Zhao, Nuclear Tunneling Effects of Charge Transport in Rubrene, Tetracene, and Pentacene, Physical Review B, 2009, 79 (11), 115203.
6. Mengqiu Long, Ling Tang, Dong Wang, Yuliang Li, Zhigang Shuai*, Electronic Structure and Carrier Mobility in Graphdiyne Sheet and Nanoribbons: Theoretical Predictions, ACS Nano 2011, 5(4), 2593-2600
7. Zhigang Shuai*, Linjun Wang, Qikai Li, Evaluation of Charge Mobility in Organic Materials: From Localized to Delocalized Descriptions at a First-Principles Level, Adv. Mater. 2011, 23(9), 1145-1153.
8. Hua Geng, Qian Peng, Linjun Wang, Haijiao Li, Yi Liao, Zhiying Ma, Zhigang Shuai*, Toward Quantitative Prediction of Charge Mobility in Organic Semiconductors: Tunneling Enabled Hopping Model, Advanced Materials, 2012, 24 (26), 3568-3572.
9. Zhigang Shuai*, Qian Peng*, Excited States Structure and Processes: Understanding Organic Light-Emitting Diodes at the Molecular Level, Physics Reports, 2014, 537 (4), 123-156.
10. Zhigang Shuai*, Dong Wang, Qian Peng, Hua Geng, Computational Evaluation of Optoelectronic Properties for Organic/Carbon Materials, Accounts of Chemical Research, 2014, 47 (11), 3301-3309.
11. Qian Peng, Yingli Niu, Qinghua Shi, Xing Gao, Zhigang Shuai*, Correlation Function Formalism for Triplet Excited State Decay: Combined Spin-orbit and Non-adiabatic Couplings, J. Chem. Theory Comput. 2013, 9(2), 1132-1143
12. Hua Geng, Xiaoyan Zheng, Zhigang Shuai*, Lingyun Zhu, Yuanping Yi*, Understanding the Charge Transport and Polarities in Organic Donor–Acceptor Mixed-Stack Crystals: Molecular Insights from the Super-Exchange Couplings, Advanced Materials, 2015, 27 (8), 1443-1449.
13. Wen Shi, Tianqi Zhao, Jinyang Xi, Dong Wang*, Zhigang Shuai*, Unravelling Doping Effects on Pedot at the Molecular Level: From Geometry to Thermoelectric Transport Properties, Journal of the American Chemical Society, 2015, 137 (40), 12929-12938.
14. Jiajun Ren, Zhigang Shuai*, Garnet Kin-Lic Chan*, Time-dependent density matrix renormalization group algorithms for nearly exact absorption and fluorescence spectra of molecular aggregates at both zero and finite temperature. J. Chem Theor. Comput. 2018, 14, 5027-5039.
15. Huili Ma, Qian Peng*, Zhongfu An, Wei Huang, Zhigang Shuai*, Efficient and long-lived room temperature organic phosphorescence: theoretical descriptors for molecular design, J. Am. Chem. Soc. 2019, 141, 1010-1015.
16. Qi Ou, Qian Peng, Zhigang Shuai*, Computational screen-out strategy for electrically pumped organic laser materials. Nature Commun. 2020, 11, 4485~1-10.
17. Qi Ou, Yihan Shao, and Zhigang Shuai*, Enhanced Reverse Intersystem Crossing Promoted by Triplet Exciton–Photon Coupling. J. Am. Chem. Soc., 2021, 143, 17786-17792.
18. Yuanheng Wang, Jiajun Ren, Weitang Li, and Zhigang Shuai*, Hybrid Quantum-Classical Boson Sampling Algorithm for Molecular Vibrationally Resolved Electronic Spectroscopy with Duschinsky Rotation and Anharmonicity. J. Phys. Chem. Lett., 2022, 13, 6391−6399
19. Jiajun Ren*, Weitang Li, Tong Jiang, Yuanheng Wang, Zhigang Shuai*, Time-dependent density matrix renormalization group method for quantum dynamics in complex systems. WIREs Comput Mol Sci., 2022, e1614
20. Haibo Ma, Ulrich Schollwoeck, Zhigang Shuai, “Density Matrix Renormalization Group (DMRG)-based Approaches in Computational Chemistry”, Elsevier (Amsterdam, 2022), ISBN: 978-0-323-85694-2

SECRETARY GENERAL

- Christine Luscombe
- Zoltan Mester

Christine Luscombe

Expected Contribution:

I became involved with IUPAC in 2012 when I attended my first Polymer Division, Subcommittee of Polymer Terminology, Subcommittee of Polymer Education meetings. At this meeting, I was struck by the dedication that researchers from all over the world showed in their work for IUPAC, and became quickly involved in a number of projects. I became the Secretary of the Subcommittee of Polymer Terminology in 2014, the Vice President of the Polymer Division in 2016, and I have been serving as the Polymer Division President since 2020. Since joining Bureau, I have served on the Evaluation Committee and I am currently serving as the Chair of the Division Presidents and Standing Committee Chairs. Over the years, I have become very familiar with how IUPAC operates and how the project system works as well.

IUPAC is currently undergoing many changes including having a new Treasurer and new Executive Director. We will soon have a new Secretary General, President, and Vice President. All of these changes are occurring while we put the new IUPAC structure in place. My immediate goal is to work closely with the new leadership and our stakeholders to ensure that the transition can go as smoothly as it can. After this, I will work with the leadership and stakeholders to ensure that IUPAC operates efficiently maintaining good relationships with our global partners. I believe that my experiences within IUPAC and my personal experiences of having worked in the UK, US, and Japan places me in a good position to achieve these goals.

Short Biographical Sketch:

Christine Luscombe grew up in Kobe, Japan. After receiving her Bachelor's degree in Natural Sciences from the University of Cambridge in 2000, she worked with Profs. Andrew Holmes and Wilhelm Huck in the Melville Laboratory of Polymer Synthesis at the University of Cambridge where her research focused on surface modifications using supercritical carbon dioxide for her PhD. She received the Syngenta Award for best organic chemistry project for her PhD. In January 2004, she joined the group of Prof. Jean Fréchet at UC Berkeley for her post-doctoral studies where she began her research on semiconducting

polymers for organic photovoltaics. She was the recipient of the Lindemann Fellowship and the Trinity College Junior Research Fellowship (University of Cambridge) for her post-doctoral studies.
In September 2006, she joined the Materials Science and Engineering Department at the University of Washington, Seattle. She received a number of young faculty awards including the NSF CAREER Award, DARPA Young Faculty Award, as well as the Sloan Research Fellowship. Her current research focuses on the synthesis of semiconducting polymers for organic electronics and has published >140 papers in this area of research. She joined the Okinawa Institute of Technology in 2021.
She is currently serving on the Editorial Advisory Boards for a number of journals including Chemical Reviews, Polymer International, Advanced Electronic Materials, ACS Applied Polymer Materials, Journal of Applied Physics, and Advanced Functional Materials. She is an Associate Editor for Macromolecules, is serving on the IUPAC Polymer Education and Polymer Terminology Subcommittees, and is the President of the IUPAC Polymer Division. She has been serving as the Chair of the Division Presidents and Standing Committee Chairs for the 2022-2023 biennium.

CV:

CHRISTINE K. LUSCOMBE
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1919-1 Tancha, Onna-son Email: christine.luscombe@oist.jp
Okinawa, 904-0495 Japan https://groups.oist.jp/picpu

EDUCATIONAL HISTORY

• University of Cambridge, Cambridge, UK; PhD, Chemistry, 2005
• University of Cambridge, Cambridge, UK; MA, Chemistry, 2003
• University of Cambridge, Cambridge, UK; BA, MSci (Hons), Natural Sciences (chemistry), 2000

EMPLOYMENT HISTORY

• Macromolecules, American Chemical Society; Associate Editor 2019-
• Journal of Materials Chemistry A, Royal Society of Chemistry; London, UK; Associate Editor 2013-2018
• Department of Chemistry, University of Washington, Seattle, WA, USA; Adjunct Associate Professor 2013-2017, Adjunct Professor 2017-2020, Professor 2020-2021
• Materials Science and Engineering Department, University of Washington, Seattle, WA, USA; Assistant Professor 2006-2011, Associate Professor 2011-2017, Robert J. Campbell Professor 2017-2021, Interim Chair 2020-2021
• Department of Chemistry, UC Berkeley, CA, USA; Post-doctoral Researcher, Lindemann Fellow and Trinity College (University of Cambridge) Junior Research Fellow, 2004-2006
• Department of Chemistry, University of Cambridge, Cambridge, UK; Graduate Research Assistant, 2000-2003
• Oakland Innovation and Information Services, Cambridge, UK; Scientific Interpreter, 2001-2003
• Department of Chemistry, Cambridge, UK; Undergraduate Research Assistant, 1999-2000
• Sharp Laboratories of Europe Ltd., Oxford, UK; Summer Undergraduate Intern, 1998
• Department of Chemistry, University of Michigan, Ann Arbor, MI, USA, 1997

RECENT AWARDS AND HONORS

Outstanding Reviewer for Chemical Science, 2021
Outstanding Reviewer for Energy and Environmental Science, 2021
Elected member of Washington State Academy of Sciences, 2020
Visiting Professor, 2019, University of Kyoto
UW College of Engineering Faculty Award: Research, 2019
Top 1% Reviewer for Chemistry of Materials, 2018
UW Undergraduate Research Mentor Award, 2017

Society of Synthetic Organic Chemistry of Japan Lecture Award, 2017
Outstanding Reviewer for Materials Horizons, 2016, Royal Society of Chemistry
Fellow of the Royal Society of Chemistry, 2016, Royal Society of Chemistry
Chemistry of Materials Reviewer Award, 2015, American Chemical Society
Robert J. Campbell Professorship, 2015, University of Washington
Kavli Fellow, 2015, The National Academy of Sciences
Visiting Professor, 2014, Catalyst Research Center, Hokkaido University
Visiting Professor, 2013-2015, Kyoto Institute of Technology
Faculty of the Year Award, 2013, MSE Department, University of Washington
Sigma-Aldrich Lecturer, 2012, IUPAC World Polymer Congress
Arab-American Frontiers Fellow, 2012, The National Academies
Kavli Fellow, 2011, The National Academy of Sciences
Junior Faculty Innovator Award, 2010, College of Engineering, University of Washington
Sloan Research Fellowship, 2010, Sloan Foundation
DARPA Young Faculty Award, 2008, DARPA
NSF CAREER Award, 2008, NSF

RESEARCH INTERESTS

• Synthesis and applications of pi-conjugated semiconducting polymers for organic field effect transistors and organic photovoltaics
• Development of more environmentally benign methods to synthesize pi-conjugated semiconducting polymers
• Study of living polymerization methods for the synthesis of pi-conjugated semiconducting polymers

SCIENTIFIC OUTCOMES

>140 publications in peer-reviewed journals (h-index 49); ca 100 invited lectures at international conferences, ca 110 invited lectures at universities; ca 9500 citations; 6 patents

TOP 20 MOST CITED PAPERS AS INDEPENDENT RESEARCHER AND CORRESPONDING AUTHOR

1. Mazzio, K.; Luscombe, C. K. "The Future of Organic Photovoltaics" *Chem. Soc. Rev.*, **2015**, *44*, 78.
2. Okamoto, K.; Zhang, J.; Housekeeper, J.; Marder, S.; Luscombe, C. K. "C–H Arylation Reaction: Atom Efficient, and Greener Syntheses of π-conjugated Small- and Macromolecules for Organic Electronic Materials" *Macromolecules*, **2013**, *46*, 8059.
3. Bronstein, H. A.; Luscombe, C. K. "Externally initiated regioregular P3HT with controlled molecular weight and narrow polydispersity." *J. Am. Chem. Soc.*, **2009**, *131*, 12894.
4. Holliday, S.; Li, Y.; Luscombe, C. K. "Recent Advances in High Performance Donor-Acceptor Polymers for Organic Photovoltaics" *Prog. Polym. Sci.*, **2017**, *70*, 34.
5. Okamoto, K.; Luscombe, C. K. “Controlled polymerizations for the synthesis of semiconducting conjugated polymers” *Polym. Chem.* **2011**, *2*, 2424. In top 10 list of most read articles in June 2011 and July 2011.
6. Durban, M. M.; Kazarinoff, P. D.; Luscombe, C. K. “Synthesis and characterization of thiophene-containing naphthalene diimide n-type copolymers for OFET applications.” *Macromolecules*, **2010**, *43*, 6348.
7. Bull, T. A.; Pingree, L. S.; Jenekhe, S. A.; Ginger, D. S.; Luscombe, C. K. "The role of mesoscopic PCBM crystallites in solvent vapor annealed copolymer solar cells." *ACS Nano*, **2009**, *3*, 627.
8. Durban, M. M.; Kazarinoff, P. D.; Segawa, Y.; Luscombe, C. K. "Synthesis and characterization of solution-processible ladderized n-type naphthalene bisimide co-polymers for OFET applications" *Macromolecules*, **2011**, *44*, 4721.
9. Doubina, N; Ho, A.; Jen, A. K. Y.; Luscombe, C. K. "Effect of initiators on the Kumada catalyst transfer polycondensation reaction." *Macromolecules*, **2009**, *42*, 7670.

10. Suraru, S.-L.; Lee, J. A.; Luscombe, C. K. "C-H arylation in the synthesis of pi-conjugated polymer" *ACS Macro Lett.*, **2016**, *5*, 724.
11. Okamoto, K.; Housekeeper, J.; Michael, F. E.; Luscombe, C. K. "Thiophene based hyperbranched polymers with tunable branching using direct arylation methods" *Poly. Chem.*, **2013**, *4*, 3499.
12. Onorato, J.; Pakhnyuk, V.; Luscombe, C. K. "Structure and design of polymers for durable, stretchable organic electronics" *Polym. J.*, **2017**, *49*, 41.
13. Li, Y.; Zhang, X.; Zhang, Y.; Dong, R.; Luscombe, C. K. "Review on the role of polymers in luminescent solar concentrators" *J. Polym. Sci. A*, **2019**, *57*, 201.
14. Yang, P.; Yuan, M.; Zeigler, D. F.; Watkins, S. E.; Lee, J. A.; Luscombe, C. K. "Influence of fluorine substituents on the film dielectric constant and open-circuit voltage in organic photovoltaics" *J. Mater. Chem. C.,* **2014**, *2*, 3278. Article for 2014 J. Mater. Chem. C. Emerging Investigators Issue.
15. Doubina, N. V.; Jenkins, J. L.; Paniagua, S; Mazzio, K. A.; MacDonald, G. A.; Jen, A. K. Y.; Armstrong, N. R.; Marder, S. R.; Luscombe, C. K. "Surface-initiated synthesis of poly(3-methylthiophene) from indium tin oxide and its electrochemical properties" *Langmuir*, **2012**, *28*, 1900.
16. Mazzio, K.; Rice, A. H.; Durban, M. M.; Luscombe, C. K. " Effect of regioregularity on charge transport and structural and excitonic coherence in poly (3-hexylthiophene) nanowires" *J. Phys. Chem. C*, **2015**, *119*, 14911.
17. Boyd, S.; Jen, A. K. Y.; Luscombe, C. K. "Steric stabilization effects in Ni-catalyzed regioregular poly(3-hexylthiophene) synthesis." *Macromolecules*, **2009**, *42*, 9387.
18. Rice, A. H.; Giridharagopal, R.; Zheng, S. X.; Ohuchi, F. S.; Ginger, D. S.; Luscombe, C. K. "Controlling Vertical Morphology within the Active Layer of Organic Photovoltaics Using Poly(3-hexylthiophene) Nanowires and Phenyl-C61-butyric Acid Methyl Ester" *ACS Nano*, **2011**, *5*, 3132.
19. Li, Y.; Tatum, W. K.; Onorato, J. W.; Zhang, Y.; Luscombe, C. K. "Low elastic modulus and high charge mobility of low-crystallinity indacenothiophene-based semiconducting polymers for potential applications in stretchable electronics" *Macromolecules*, **2018**, *56*, 6352.
20. Yuan, M. J.; Okamoto, K.; Bronstein, H. A.; Luscombe, C. K. "Constructing regioregular star poly(3-hexylthiophene) via externally initiated Kumada catalyst-transfer polycondensation" *ACS Macro Letters*, **2012**, *1*, 392.

REPRESENTATIVE SERVICE ACTIVITIES

NATIONAL/INTERNATIONAL SERVICE

- Board member for Society of Polymer Science, Japan 2022-
- President for IUPAC Polymer Division 2020-
- Vice President for IUPAC Polymer Division 2016-2019
- Secretary for IUPAC Polymer Terminology Committee 2014-2015
- IUPAC Polymer Education Sub-Committee 2013-
- Editorial Advisory Board for ACS Applied Materials and Interfaces 2017-
- Editorial Advisory Board for Journal of Applied Physics (APS) 2016-
- Editorial Advisory Board for ACS Macro Letters and Macromolecules (ACS) 2013-2015
- Editorial Advisory Board for Polymer International (Wiley) 2014-
- International Advisory Board for Advanced Electronic Materials (Wiley) 2014-
- Editorial Advisory Board for Advanced Functional Materials (Wiley) 2019-
- Editorial Advisory Board for Annual Reviews of Materials Research 2019-

OTHER LEADERSHIP ROLES

- Chair of Faculty Council/Assembly at OIST (2022-)
- Interim Chair of Materials Science and Engineering Department, UW (2020-2021)
- Co-Director and Executive Director for Education and Outreach for NSF MRSEC at UW (2017-2021)
- Director of the Molecular Engineering PhD program, UW (2016-2020)

• Associate Director for the Molecular Engineering and Sciences Institute, UW (2016-2020)
• Director of NSF REU program at UW (2014-2021)
• Director of Materials Science and Engineering PhD program, UW (2011-2018)
• Director of ALVA/NSF REM program aimed at providing research opportunities for high school students who are URMs and are from underprivileged backgrounds (2011-2019)

Zoltán Mester

Expected Contribution:

Diplomacy

Dr Mester is a seasoned science leader with significant experience operating in the international governmental and NGO science space. Dr. Mester is well positioned to drive IUPAC's membership expansion efforts in South America, Africa and Asia which is key to the long-term sustainability of the Union. Additionally, expanding and formalizing the Union's relationships with science based UN organizations which are users of chemical knowledge/data, is also of interest of him.

Leadership

Dr. Mester has a deep understanding of the operation of the Union having served in just about every role available over the past 20 years from NR to Division president, and most recently as an elected Bureau member. He has worked with many key IUPAC products, including evaluated data, publications, nomenclature, provision of chemical science advice the other international organizations, color books, digitalization etc., making him particularly well-suited to support further development of these products.

He is passionate about contributing to the re-imagining the organizational framework of the Union to better support large, complex, multidisciplinary endeavours, the world currently faces. Dr. Mester will also bring years of governance experience from multilateral international settings and significant, hands on, managerial and supervisory experience from his day job which are key attributes to the Secretary General role.

Dr. Mester also brings full support from his organization the Research Council of Canada, the Canadian NAO, to have the necessary bandwidth to effectively fulfill the Secretary General role.

Short Biographical Sketch

Dr. Zoltán Mester is principal researcher at National Research Council of Canada and adjunct professor at Queen's University where over the last 20 years he has led chemical measurement science, metrology and standardization activities. Dr. Mester conducts research in analytical chemistry of metal species and stable isotopes.

Between 2010 and 2021 he represented Canada at the Consultative Committee for Amount of Substance of Metre Convention (CCQM) which is responsible for the upkeep of the chemists' SI unit, the mole. His efforts at CCQM resulted in new program on stable isotope measurement standards developed in close collaboration with the Atomic Weights Commission of the Union.

Over the years he served in leadership roles in the Cooperation on International Traceability in Analytical Chemistry (CITAC - vice chair), International Organization for Standardization (ISO REMCO - convenor of working group 18) and a number of other governmental and non-governmental organizations related to chemistry and standardisation.

He has been with IUPAC for the better part of two decades serving in increasingly complex roles at the Analytical Chemistry Division, starting from NR, associate, titular member, secretary, vice president, president and in the past two years as an elected member of the Bureau. Under his leadership the Analytical Chemistry division has executed a major strategic planning exercise resulting in a better corporate alignment and organizational structure and in the creation of an Early Career Subcommittee, improving young analytical chemists' access to the Union and the establishment of IUPAC Analytical Chemistry Medal award, the first senior international award of the discipline. He has also championed a major international effort on assessing state of analytical chemistry education and curriculum world-wide to support the development of the discipline and chemical measurement science in general.
For more than a decade he has been leading the international engagement of the Union in the area of metrology in chemistry resulting in IUPAC's leadership in the recent redefinition of the mole and the new SI. As a result of this effort a Memorandum of Understanding was signed between IUPAC and the executive body of the Metre Convention providing the Union formal input to revision of the SI units of measurements and to metrological standardization in general.
Over his career Dr. Mester has published over 240 peer reviewed papers, 4 book chapters and edited a book on sample preparation. His papers have been cited more than 10,000 times. Over the years he gave numerous keynote and plenary presentations at various conferences and he lectures regularly at universities and research institutions around world.

CV:

Zoltán Mester

1. AREA(S) OF RESEARCH

Metrology in chemistry; Mass spectrometry; Trace element speciation

2. EMPLOYMENT HISTORY

1999–present, Principal Researcher, Chemical Metrology, National Research Council Canada

3. EDUCATION

Postdoctoral Fellow 1999, University of Waterloo, Waterloo, Canada
Ph.D. 1998, Department of Chemistry, Univ. of Hort. and Food Industry, Budapest, Hungary
M.Sc. 1994, Department of Food Chemistry, Univ. of Hort. and Food Industry, Budapest, Hungary

4. NATIONAL AND INTERNATIONAL OUTREACH, COMMITTEES

2022-present: **elected member of IUPAC Bureau**
2003–present: International Union for Pure and Applied Chemistry (IUPAC) Analytical Chemistry division. Various roles, including **President (2018-2021),** Vice president, Secretary, titular member
https://iupac.org/who-we-are/divisions/division-details/?body_code=500
2010–2021: Metre Convention, Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM), **Canadian delegate**
https://www.bipm.org/en/committees/cc/ccqm/
2010–present: CCQM working groups (strategic planning, biology, key comparisons), **founder and current Chair of Isotope Ratio Working Group**
https://www.bipm.org/en/committees/cc/wg/irwg.html
2017–present: Joint Committee for Guides in Metrology, **Lead delegate** of IUPAC
https://www.iso.org/sites/JCGM/JCGM-introduction.htm
2013–2022: Inter-American Metrology System; Chemistry working group, **National representative**
https://sim-metrologia.org/about-us/structure/technical-committee/chemistry/
2013–present: Canadian Mirror Committee of ISO Committee on Reference Materials, founder and current **Chair** and **Convenor** of the working group on inorganic purities;

https://www.iso.org/committee/55002.html
2020-present: **Vice Chair** of Cooperation on International Traceability in Analytical Chemistry (CITAC) http://www.citac.cc/

5. SCHOLARLY AND PROFESSIONAL ACTIVITIES

2021–present: Green Analytical Chemistry, Editorial Board, Elsevier
2018–present: Accreditation and Quality Assurance, International Advisory Board, Springer Nature
2016–present: Journal of Pure and Applied Chemistry, Editorial Board, De Gruyter
2010–2012: Spectrochimica Acta B, Review Editor, Elsevier
2012–2016: Analytica Chimica Acta, Editorial Board, Elsevier
2012–present: Technical assessor auditor/ peer-reviewer of various scientific organizations in Japan, Hong Kong, Colombia, Czech Republic, Australia, Croatia, Mexico, Uruguay, Canada
2005–present: Offer courses in Canada and internationally on metrology in chemistry and serve as an adjunct professor at Queen's University in Canada.
2018: Championed strategic collaboration S and T relations and MOU between Thailand Ministry of Science and Technology and National Research Council of Canada.
2019: Championed formalization of relationships and the signing of MOU between the International Bureau of Weights and Measures (established by the Metre Treaty) and the International Union of Pure and Applied Chemistry

6. SUPERVISION AND TRAINING OF HQPs

Hired, supervised 20+ staff scientists over 15 years. His research team has been attracting talent from all over the world. Dr. Mester's lab has been hosting 5-10 visiting scientists, postdocs and graduate students annually, from 20+ countries.

7. MAJOR PROJECTS AND GRANTS

DATE	Value	ROLE	PARTNERS	TITLE
2015–2018	$700K project, -$6M CRM inventory created	PI	Canadian Nuclear Safety Commission and 30 international partners	Reference Material (CRM) development of Nuclear Forensics
2011–2017	$10M+ overall project $0.7M Canadian project	Canadian PI	Physikalisch-Technische Bundesanstalt, Germany National Institute of Standards and Technology, US National Metrology Institute of Japan, Japan National Institute of Metrology, China	Ultra-high precision determination of atomic weight of silicon for redefinition of the kilogram and mole
2011–2012	$50K	PI	National Science Library, DataCite Canada	Create NRC Chemical Metrology Digital Collection in the Federal Science Library.

2005–2018	$3M	PI	Canadian Safety and Security Program Chemical, Biological, Radiological-Nuclear and Explosives (CBRNE) Research and Technology Initiative	Four consecutive projects on chemical detection in the CBRNE space
2010–present	$5.5M since 2010 in research contracts	PI	Partners from 50+ countries, from industry, governments and academia	Support national and international measurement comparability via the provision of reference materials and calibrations
2010–present	$8M revenue in research and service contracts	PI	80+ companies and research organizations annually.	Glow discharge mass spectrometry (supporting microelectronics, high tech manufacturing, aerospace industries)
2005–present	$5.7M	PI	Various internal and external funding bodies	Major instrument grants contributing to the creation of the most diverse mass spectrometry research facility in Canada

8. PUBLICATIONS AND INTELLECTUAL PROPERTY SUMMARY

PUBLICATION TYPE	**CAREER TOTAL**
Patents	7
Other IP outputs (trade secrets, etc.)	6
Peer-reviewed publications (journals and conference proceedings)	238
Books and book chapters	5
Standards, guides	1

EXECUTIVE BOARD

- Hemda Garelick (UK)
- Richard Hartshorn (New Zealand)
- Bonnie Lawlor (USA)
- Christine Luscombe (Japan)
- Zoltan Mester (Canada)
- Gloria Ukalina Obuzor (Nigeria)
- Bipul Saha (India)
- Zhigang Shuai (China/Beijing)
- Miroslav Štěpánek (Czech Republic)
- Pietro Tundo (Italy)

Hemda Garelick (UK)

Expected Contribution:

I have a long and productive involvement in IUPAC as both a Division Member involved in many projects and Officer (Secretary, President and Past-President) of Division VI 'Chemistry and the Environment'. I am an elected and active member of the IUPAC Bureau since 2016 and also sit on the IUPAC Project Committee. I consider encouraging and mentoring young scientists as a very important part of my role in IUAPC and have been undertaking this through my involvement in project work and the World Chemistry Leadership Meetings.

If elected to the IUPAC Executive Board, I plan to work towards the achievement of increased interdivisional/inter-committee collaboration and ensure that interdisciplinary work together with pure discipline work is further developed.

I hope to work to further support the development of cross organisational collaborations with other scientific, socio/political bodies and industry.

I would work towards increasing the membership of IUPAC by attracting new NAOs and other affiliated organisations (e.g. in Industry), Young Chemist networks (e.g. IYCN) as well as affiliated individual members with the aim of sustaining a diverse organisation active in all continents.

All the above will have to be followed through engagement and collaboration with the Science Board, the Divisions and the Committees

Short Biographical Sketch:

Hemda Garelick is a Professor of Environmental Science and Public Health Education at Middlesex University, UK.

She has a long-term interest in public health, with particular focuses on health and hygiene aspects of water and sanitation systems. She has led research in the areas of water pollution control, environmental chemistry and microbiology. This involves the investigation of health aspects, fate, sampling and analysis methods of chemical and of microbial pollution, antibiotic resistant microorganisms, and certain chemical pollutants such as arsenic and microplastics in the environment and in food, as well as the effect of chemicals from sources such as E-waste.

Her research work and her involvement in IUPAC highlighted the need for professionals in the fields of environmental and public health to understand, confront and tackle complexity and work across boundaries. She therefore has worked with different organisations such as OPCW and different countries both in Europe and beyond such as Bangladesh, India, Kazakhstan (Whom she encouraged and supported through the process of becoming an IUPAC NAO), Nigeria, Russia and Thailand. She considers working across boundaries' and promoting interdisciplinary collaboration crucial to the implementation of the UNSDG. As part of her work at the University she has also developed and established a programme of Masters and Doctorates in Professional Studies (MProf/DProf), equivalent to MPhil/ PhD designed to address the needs of professional at the work place.

CV:

HEMDA GARELICK (PROFESSOR OF ENVIRONMENTAL SCIENCE AND PUBLIC HEALTH EDUCATION)
Department of Natural Sciences, Faculty of Science & Technology,
Middlesex University
h.garelick@mdx.ac.uk; hgarelick@gmail.com
ORCID: https://orcid.org/0000-0003-4568-2300
https://iupac.org/member/hemda-garelick/

Education

• PhD, London University,. Thesis titled 'Studies on the growth and attenuation of hepatitis A virus in cell culture'. Developed a vaccine for Hep A as part of the project.
• MSc (with distinction), School of Applied Science, Hebrew University, Jerusalem, Israel, in Human Environmental Studies.
• BSc (Hons), Chemistry. Technion, Israel Institute of Technology, Haifa, Israel.

Membership of Professional Bodies & Learned Societies

• Fellow of the Royal Society of Chemistry
• Member of The American Chemical Society
• • Fellow the Higher Education Academy
• • Member of the London Freshwater Group

IUPAC related activities

• Past President IUPAC Chemistry and the Environment Division VI 2022-2024
• President of the IUPAC Chemistry and the Environment Division 2020- 2022
• Secretary of the IUPAC Chemistry and the Environment Division 2014-2020
• Elected member of the Bureau IUPAC: 2016-to-date
• Member of the IUPAC Bureau Project Committee
• Member of the IUPAC-RSC National Committee
• Member of the UK delegation to the IUPAC council:2010- to date

• Member/chair of the organising committees of Div VI led symposia in 6 IUPAC Congresses (Glasgow (2009), Puerto Rico (2011), Istanbul (2013), Sao Paulo (2017), Paris (2019), Montreal 2021)
• Member/co-chair of organising committees of 2 WCLM events (Busan 2015, Sao Paulo 2017)
• Chair of the organising committee of the IUPAC Div VI symposium "The Environment, Health and Food Safety Impact of Microplastics" at the APCE-CECE-ITP-IUPAC 2022 Angkor Wat, Nov. 6~10, 2022.
• Member of the IUPAC Global Women's Breakfast Organising Committee
• Member of the Selection Committee for the Distinguished Women in Chemistry/Chemical Engineering Awards. (2022-2023)
• Chair of the Subcommittee on Chemistry of Environmental Compartments -Division of Chemistry and the Environment. IUPAC: 2008-2014
• Division representative on the Committee on Chemistry Education (CCE) and the Committee of Chemistry and Industry (COCI)
• Active in over 20 IUPAC projects

Selected External Research Related Activities

• Associate editor: Frontiers in Microbiology, section Antimicrobials, Resistance and Chemotherapy 2019-
• A member of the of the editorial board of *Work Based Learning e-Journal* ISSN 2044-7868 *http://wblearning-ejournal.com*
• Invited referee : The Portuguese Foundation for Science and Technology (FCT) : 2013-2014
• A Panel Member for the Research Council of Norway. *2009-2012*
Panel: *Responsive Mode Projects in Environment and Development (FRIMUF)*

Research Leadership, supervision, Teaching and Assessment

o Research Degree Coordinator 2011-2022
o Leader of Specialist Pathway in Masters and Doctorates in Professional Studies (M/DProf) In the Schools of Science and Technology and Health and Education, Middlesex University (2002-2022)
o Completions: 15 PhD, 2MProf, 17 DProf;
o Current supervision: (3 PhD, 5 DProf)
o Examinations: (8 at Doctoral level, numerous at Master level, chairing numerous examination panels)
o Supervised to completion over 80 MSc projects
o Initiator and Chair of the organising committee of the University Research Students Summer Conference, where all research students presented their work to fellow students and academic colleagues (2008-2019)
o Leadership of programmes and modules (e.g. MSc Programme- 'Water Pollution Control', MSC module- 'Monitoring and Control of Pollution')
o External examiner: (External examiner for MSC in Radioecology at the University of Life Science, Oslo, Norway; University of Plymouth, School of Earth Ocean and Environmental Science. BSc Environmental Science 2005- 2009; University of Central Lancashire. BSc Environmental Science. 2001-2006; London School of Hygiene and Tropical Medicine. MSc Infectious Diseases. Distance Learning. 1999-2003)

Selected EU funded projects

o Fatta-Kassinos et al (2014) .Working Group N°5: Wastewater Reuse. Screening campaign of selected antibiotic resistance determinants and mobile genetic elements (AR/MGE) in WWTPs in Europe .
o Fatta-Kassinos et al (2014) .COST Action ES1403. NEW AND EMERGING CHALLENGES AND OPPORTUNITIES IN WASTEWATER REUSE (NEREUS) .
o Lundy L, Garelick H, Jones H and Kapas A (2012). Integrating Water cycle management: building capability, capacity and impact in Education and Business (I-WEB). EU- EACEA TEMPUS IV- Joint Projects / Structural Measures.

o Georgiadou E, Garelick H, Jones H (2009-2012). TEMPUS action 159311-TEMPUS-2009-1-IT-TEMPUS-JPCR. “Network for Master training in technologies of water resources management” (NETWATER)
o Berendock et al (2008-2012). COST Action TD0803 "Detecting Evolutionary Hot Spots of Antibiotic Resistances in Europe (DARE)" http://www.cost-dare.eu/.
o Garelick H and Priest N ENEN II. (2006-2008). Consolidation of European Nuclear Education, Training and Knowledge management. EU Sixth Framework Programme.
o Priest N. and Garelick H. SEMIRAD II. (2004-2008). Hazards presented by radionuclide deposits NATO - Science for Peace programme
o Priest N. and Garelick H. (2003 -2006) EURAC ‘Securing European Radiological Protection and Radioecology Competence to meet the Future Needs of Stakeholders’. European Commission. EURATOM

Membership in IUPAC projects teams

Completed

2021-008-1-600 Development of four Environmental Chemistry and Sustainability symposia for the ‘Chemistry for Sustainability’ thematic programme in 48th World Chemistry Congress, Montreal, 2021
2020-019-4-050 Examples of the introduction of sustainable development as well as green industrial processes for Secondary School Chemistry and Introductory Chemistry
2018-026-2-600 Development of a Technical Symposium on ‘Innovative Chemistry for Environmental Enhancement’ for Theme 3 ‘Chemistry for the Environment’ at the 47th IUPAC World Chemistry Congress, Paris, 2019
2018-022-3-020 Building Broader and Deeper Links Between OPCW and IUPAC
2017-018-3-600 Regional Cooperation and Sustainable Water Management of Transboundary Water Workshop
2016-035-1-600 Environmental Chemistry - Development of Three Technical Symposia at the 46th IUPAC Congress, Sao Paulo 2017
2017-004-1-600 Water and Environmental Analysis - a Symposium part of HPLC 2017
2016-024-2-020 Planning and coordination of global activities for the celebration of IUPAC100 in 2019-
2016-032-2-020 IUPAC's role in developing interdisciplinary/ collaborative work in the Chemistry community and beyond - the focus for the 2017 WCLM *chair*
2015-004-1-020 IUPAC's contribution to achieving the new UN Sustainable Development Goals -- the focus for the 2015 WCLM 2012-034-1-600 Environmental Chemistry, Green and Sustainable Chemistry - *chair*
2011-060-1-600 Consideration of bioavailability of metals/metal compounds in the aquatic environment
2009-048-1-600 Guidance for substance-related environmental monitoring strategies regarding soil and surface water
2008-003-3-600 Regional Drinking Water Quality Assessment in the Near East (Palestinian Authority, Jordan, and Israel) - An Overview and Perspective
2003-017-2-600 Remediation technologies for the removal of arsenic from water and wastewater- *chair*
630-18-93 Minimal requirements for reporting analytical data for environmental samples (revised title)

In progress

2022-014-1-600 Gold Book Update of Terms for Chemistry and the Environment
2021-027-2-600 The global scenario and challenges of radioactive waste in the marine environment
2021-028-3-600 Minimising Environmental Impacts of Tyre and Road Wear Particles
2021-012-2-400 Personal Protective Equipment Disposal for the Future
2020-020-2-600 Enhancing capabilities for the mitigation of chemical risk: the dissemination of the Emergency Response Guidebook in Russian-speaking countries
2020-016-3-020 The Gender Gap in Chemistry – Building on the ISC Gender Gap Project

2020-010-2-020 Creation of IUPAC Global Women's Breakfast Series and a Global Network in Support of Eliminating the Gender Gap in the Chemical Sciences
2019-026-2-600 The Environment, Health and Food Safety Impact of Microplastics
2019-029-1-600 Per and polyfluroalkyl substances (PFASs) in the environment: Information for emerging economies on PFASs analyses in environmental media and their impacts on human health
2019-011-1-022 Building Broader and Deeper Links Between Strategic Approach to International Chemicals Management (SAICM) and IUPAC
2018-013-2-600 Bioavailability of Endocrine Substances in Aquatic Ecosystems
2017-040-1-700 Chemistry in the classroom
2017-035-2-600 Human Health Risk Consideration of Nano-enabled Pesticides for Industry and Regulators
2014-031-3-600 The environmental and health challenges of e-waste and its management: an emerging 21st century global concern

Selected Publications

Over 100 outputs including publications and conference presentations, edited books and book chapters
The list below is since 2018

o Amabogha, Obed Nadari, Diane Purchase, ***Garelick, Hemda*** and Jones, Huw (2023) Combining phytoremediation with bioenergy production: developing a multi-criteria decision matrix for plant species selection. Environmental Science and Pollution Research . ISSN 0944-1344 [Article] (Published online first) (doi:10.1007/s11356-022-24944-z)

o Leonardo Pantoja Munoz , Alejandra Gonzalez Baez, Deena McKinney Diane Purchase, Huw Jones and ***Hemda Garelick**** (2023). From Macroplastics to Nanoplastics: The Presence of Plastic Particles in Personal Hygiene Products and Their Possible Impact on the Environment and on Human Health. Special Issue Quadruple Conference on Instrumental Analytical Chemistry: APCE-CECE-ITP-IUPAC 2022, Angkor Wat, Cambodia. Proceedings of APCE-CECE-ITP-IUPAC 2022by František Foret ,*,Doo Soo Chung ,Jana Lavická 1,Jan Přikryl,Haengdo Lee , andIveta Drobníková Separations 2023, 10(2), 109; https://doi.org/10.3390/separations10020109 .

o Dasgupta, Dipsikha, Majumder, Santanu, Adhikari, Jishnu, Ghosh, Pinaki, Purchase, Diane, ***Garelick, Hemda*** , Debsarkar, Anupam and Chatterjee, Debashis (2022) Environmental impact of e-waste management in Indian microscale informal sectors. Environmental Science and Pollution Research . ISSN 0944-1344 [Article] (Published online first) (doi:10.1007/s11356-022-23700-7).

o Gonzalez Baez, Alejandra, Pantoja Munoz, Leonardo, ***Garelick, Hemda*** and Purchase, Diane (2022) Characterization of industrially pre-treated waste printed circuit boards for the potential recovery of rare earth elements. Environmental Technology and Innovation, 27 , 102481. ISSN 2352-1864 [Article] (doi:10.1016/j.eti.2022.102481)

o 4. Oluwadipe, Saeed, ***Garelick, Hemda***, McCarthy, Simon and Purchase, Diane (2022) A critical review of household recycling barriers in the United Kingdom. Waste Management and Research, 40 (7) . pp. 905-918. ISSN 0734-242X [Article] (doi:10.1177/0734242X211060619)

o Pantoja Munoz, Leonardo, Gonzalez Baez, Alejandra, Purchase, Diane, Jones, Huw and ***Garelick, Hemda*** (2022) Release of microplastic fibres and fragmentation to billions of nanoplastics from period products: preliminary assessment of potential health implications. Environmental Science: Nano, 9 (2) . pp. 606-620. ISSN 2051-8153 [Article] (doi:10.1039/d1en00755f)

o Kah, Melanie ORCID logo, Johnston, Linda J. ORCID logo, Kookana, Rai S. ORCID logo, Bruce, Wendy, Haase, Andrea ORCID logo, Ritz, Vera, Dinglasan, Jordan, Doak, Shareen, ***Garelick, Hemda*** and Gubala, Vladimir (2021) Comprehensive framework for human health risk assessment of nanopesticides. Nature Nanotechnology, 16 (9) . pp. 955-964. ISSN 1748-3387 [Article] (doi:10.1038/s41565-021-00964-7)

o Victor Castro Gutierrez, Francis Hassard, Milan Vu, Rodrigo Leitao, Beata Burczynska, Dirk Wildeboer, Isobel Stanton, Shadi Rahimzadeh, Gianluca Baio, ***Hemda Garelick*** , Jan Hofman, Barbara Kasprzyk-Hordern, Rachel Kwiatkowska, Azeem Majeed 9§, Sally Priest 2§, Jasmine Grimsley 10, Lian Lundy 2, Andrew C Singer, Mariachiara Di Cesare (2021). Monitoring occurrence of SARS-CoV-2 in school populations: a wastewater rbased approach. doi: https://doi.org/10.1101/2021.03.25.21254231
o Osemeke, Cynthia, Wen, Xuesong, ***Garelick, Hemda*** and Appiah, Sandra S. (2021) α-Mangostin and Doxorubicin Combination Synergistically Inhibited Cell Growth, Induced Cell Apoptosis with Increased Bak Protein and Decreased FLT3-ITD Phosphorylation in AML MOLM-13 Cell Line. Clinical Oncology and Research, 4 (8) . pp. 1-10. ISSN 2613-4942 [Article] (doi:10.31487/j.COR.2021.08.12)
o Sully, Rachel E., ***Garelick, Hemda***, Loizidou, Eriketi, Podoleanu, Adrian G. and Gubala, Vladimir (2021) Nanoparticle-infused-biodegradable-microneedles as drug-delivery systems: preparation and characterisation. Materials Advances, 2 (16) . pp. 5432-5442. ISSN 2633-5409 [Article] (doi:10.1039/D1MA00135C)
o Sully, Rachel E., Moore, Colin J., ***Garelick, Hemda***, Loizidou, Eriketi, Podoleanu, Adrian G. and Gubala, Vladimir (2021) Nanomedicines and microneedles: a guide to their analysis and application. Analytical Methods, 13 (30) . pp. 3326-3347. ISSN 1759-9660 [Article] (doi:10.1039/d1ay00954k)
o Roberto B.M. Marano, Telma Fernandes, Celia M. Manaic, Olga Nunes, Donald Morrison,Thomas U. Berendonk, Norbert Kreuzinger, Tanel Tenson, Gianluca Corno,Despo Fatta-Kassinos, Christophe Merlinj, ..., Marco Guidaz,Helmut Burgmann, Karin Beck, ***Hemda Garelick***, ... Manika Choudhury, Leonardo P. Munoz, Stela Krizanovic, Gianluca Brunetti,Ayella Maile-Moskowitz, Connor Brown, Eddie Cytryn, (2020). A global multinational survey of cefotaxime-resistant coliforms in urban wastewater treatment plants. Environment International 144 (2020) 106035 https://doi.org/10.1016/j.envint.2020.106035 .
o Gonzalez Baez, Alejandra, Pantoja Munoz, Leonardo, ***Garelick, Hemda*** and Purchase, Diane (2021) Waste printed circuit boards (WPCBs) as a potential source for the recovery of rare earth elements through bioleaching. In: 17th International Conference on Environmental Science and Technology CEST2021, 01-04 Sep 2021, Athens, Greece. . [Conference or Workshop Item] Full text restricted.
o Gonzalez Baez, Alejandra, Pantoja Munoz, Leonardo, ***Garelick, Hemda*** and Purchase, Diane ORCID logo (2021) A bioleaching approach for the recovery of rare earth elements (REE) from waste printed circuit boards (WPCBs). In: IUPAC 48th World Chemistry Congress, 13-20 Aug 2021, Montreal, Canada. . [Conference or Workshop Item]
o Diane Purchase*, Golnoush Abbasi, Lieselot Bisschop, Debashish Chatterjee, Christian Ekberg, Mikhail Ermolin, Petr Fedotov, ***Hemda Garelick,*** Khadijah Isimekhai, Nadia G. Kandile, Mari Lundstrom, AvtarMatharu, Bradley W. Miller, Antonio Pineda, Oluseun E. Popoola, Teodora Retegan, Heinz Ruedel, Angela Serpe, Yehuda Sheva, Kiran R. Surati, Fiona Walsh, Benjamin P. Wilson and Ming Hung Wong (2020). Global occurrence, chemical properties, and ecological impacts of e-wastes (IUPAC Technical Report). Pure Appl. Chem. 2020; 92(11): 1733–1767. https://doi.org/10.1515/pac-2019-0502
o Wilkinson, Kate, Dafoulas, George, ***Garelick, Hemda*** and Huyck, Christian R. (2020) Are quiz-games an effective revision tool in Anatomical Sciences for Higher Education and what do students think of them? British Journal of Educational Technology, 51 (3) . pp. 761-777. ISSN 0007-1013 [Article] (doi:10.1111/bjet.12883) Full text not available.
o Cacace, Damiano, Fatta-Kassinos, Despo, Manaia, Celia M., Cytryn, Eddie, Kreuzinger, Norbert, Rizzo, Luigi, Karaolia, Popi, Schwartz, Thomas, Alexander, Johannes, Merlin, Christophe, ***Garelick, Hemda*** , et al (2019) Antibiotic resistance genes in treated wastewater and in the receiving water bodies: a pan-European survey of urban settings. Water Research, 162 . pp. 320-330. ISSN 1879-2448 (doi:10.1016/j.watres.2019.06.039)
o Plume, Ruth, Page, Alan and ***Garelick, Hemda*** (2018) Responding to the risk of reducing resources: development of a framework for future change programmes in environmental health services.

International Journal of Disaster Risk Reduction, 31 . pp. 30-36. ISSN 2212-4209 (doi:10.1016/j.ijdrr.2018.04.013)

o Pantoja Munoz, Leonardo, Gonzalez Baez, Alejandra, McKinney, Deena and ***Garelick, Hemda*** (2018) Characterisation of “flushable” and “non-flushable” commercial wet wipes using microRaman, FTIR spectroscopy and fluorescence microscopy: to flush or not to flush. Environmental Science and Pollution Research, 25 (20). pp. 20268-20279. ISSN 0944-1344 (doi:10.1007/s11356-018-2400-9)

o Onatade, Raliat, Appiah, Sandra S. , Stephens, Martin and ***Garelick, Hemda*** (2018) Evidence for the outcomes and impact of clinical pharmacy: context of UK hospital pharmacy practice. European Journal of Hospital Pharmacy, 25 (e1). e21-e28. ISSN 2047-9956 (doi:10.1136/ejhpharm-2017-001303)

o Chan, Wai Kit, Wildeboer, Dirk, ***Garelick, Hemda*** and Purchase, Diane (2018) Competition of As and other Group 15 elements for surface binding sites of an extremophilic Acidomyces acidophilus isolated from a historical tin mining site. Extremophiles, 22 (5). pp. 795-809. ISSN 1431-0651 (doi:10.1007/s00792-018-1039-2)

Richard Hartshorn (New Zealand)

Expected Contribution:
IUPAC is in a period of significant change, following an organisational review and subsequent Council approval of a new governance structure. IUPAC also has a new Executive Director, and will have a new Secretary General. Professor Hartshorn has extensive experience in governance and management of IUPAC activities, eight years experience as Secretary General, and four years as a Division President. He also has a deep understanding of the IUPAC Statutes and By-Laws, and much experience of their practical application. His election to the Executive Board would provide IUPAC with a significant resource to deploy in support of its new leaders.

Short Biographical Sketch:
Professor Hartshorn is currently a Professor of Chemistry in the School of Physical and Chemical Sciences of the University of Canterbury, Christchurch, New Zealand. He is a Fellow of the Royal Australian Chemical Institute and a Fellow of the New Zealand Institute of Chemistry. He is now in his eighth year as Secretary General of IUPAC (2016-2023), and hopes to return to activity in Division VIII, where he has been Division President (2010-2013), and has a long history of work in chemical nomenclature, dating back to co-authorship of the 2005 Red Book.
His research group works in the area of applying the coordination chemistry of dinuclear and heterodinuclear systems to problems in biological chemistry, and he has a long-standing interest in nomenclature and new ways of systematically naming and representing chemical compounds. He has been heavily involved in school and community education, through establishment of a science outreach program at UC, membership of the Trust Board for the National Science-Technology Roadshow (https://www.roadshow.org/index.php), and for many years was a Board member of Science Alive! (https://www.sciencealive.co.nz/).
Professor Hartshorn was a New Zealand U19 cricket representative and is a qualified cricket coach.

CV:
Richard Michael Hartshorn
School of Physical and Chemical Sciences
University of Canterbury
Private Bag 4800
Christchurch, New Zealand
ph (64-3) 3695157

Current Position

Professor of Chemistry
School of Physical and Chemical Sciences | *Te Kura Matū*,
University of Canterbury | *Te Whare Wānanga o Waitaha*

International Leadership Roles

• Secretary General, International Union of Pure and Applied Chemistry (IUPAC: http://www.iupac.org/) (2016-2023)

• Executive Committee of CODATA (http://www.codata.org/) (2018-2023)

• Elected member of IUPAC Bureau (2014-2017)

• International Chemical Identifier (InChI) Trust Board (2013-present)

• President, IUPAC Division of Chemical Nomenclature and Structure Representation (2010-2013); Past President (2014-2015)

• IUPAC Committee on Chemistry Education (2006-2015)

Local and National

• National Science-Technology Roadshow Trust Board (http://www.roadshow.org/) (2007-present), Chair (2011-2020)

• Chair, ChemEd 09 Chemistry Teachers' Conference

• Chair, IC 08, RACI/NZIC Inorganic Chemistry Conference

• Rutherford's Den Trust Board (http://www.rutherfordsden.org.nz/) Deputy Chair (2011-2013), Chair (2014-15)

• Science Alive! Trust Board (2007-2018) (http://www.sciencealive.co.nz/)

Departmental and UC (selected)

• International Dean for College of Science (2019-2022)

• Deputy Head of School of Physical and Chemical Sciences (2018)

• Deputy Head of Department of Chemistry (2008-2009 and 2014-2017)

• Deputy Head of Department of Physics and Astronomy (2015-2017)

• Director of Undergraduate Studies in Chemistry (2010-2015)

• Safety Officer (2004-2009 and 2018-present)

• Coordinator Biochemistry Programme (2004-2007)

Professional Memberships

Member Royal Australian Chemical Institute (1986 -)
Fellow Royal Australian Chemical Institute (2003 -)
Member New Zealand Institute of Chemistry (2001 -)
Fellow New Zealand Institute of Chemistry (2017 -)

Honours

NZIC sciPAD Denis Hogan Chemical Education Award (2019)
University of Canterbury Teaching Medal (2009)
University of Canterbury Teaching Award (2002)
New Zealand Institute of Chemistry Student Essay Prize (1985)
New Zealand Universities Senior Scholarship (1985)
New Zealand U19 Cricket Representative (1983-84)
New Zealand Universities Junior Scholarship (1982)
Deans Scholar (Christchurch Boys' High School) (1982)

Research and Scholarship:

Nomenclature: development, codification and education in chemical nomenclature

Photoactivated Cytotoxins: synthesis and study of molecules that will release a cytotoxin when triggered with light – a new approach to cancer treatment
Bioinorganic chemistry: the study of the reactivity of small biological molecules (amino acids and peptides) when they are coordinated to metal ions
Photochemistry: mechanistic studies on UV induced reactions of chelated amino acids, peptides and related molecules.
Coordination chemistry: synthesis of new polydentate ligands and their metal complexes.
Stereochemistry: the stereochemical consequences of wrapping polydentate ligands around metal ions (and the related problems of enumerating and distinguishing between possible isomers).
Research Supervision:
Ph.D. supervision: 12 supervised to completion; one currently being supervised
M.Sc. supervision: six supervised to completion
B.Sc.(Hons) supervision: six completed; six B.E.(Hons) projects completed
Summer research projects: eight summer scholarship projects arranged and supervised (seven with Ravensdown Fertiliser Coop. and one with AgResearch Ltd)
Teaching:
Over 25 years of experience at 100-400 levels
Specialisation: inorganic chemistry and bioinorganic chemistry (in both Chemistry and Biochemistry programmes)
Excellent teaching evaluations: well above College of Science mean scores in all categories
Mentoring: mentored four staff as part of the UC mentoring scheme, others in the Department, and numerous school teachers
Selected Nomenclature Publications – Prof. Richard M. Hartshorn
Books:
N. G. Connelly, T. Damhus, R. M. Hartshorn, A. T. Hutton, “Nomenclature of Inorganic Chemistry”, Royal Society of Chemistry, ISBN 0-85404-438-8. 2005, 366 pages.
Translations: H. Ogino, T. Iwamoto, M. Okazaki, T. Saito, and M. Nakahara, Nomenclature of Inorganic Chemistry, Recommendations of IUPAC 2005 Tokyo Kagaku Dozin Co., Ltd. 2010 [ISBN 978-4-8079-0727-4] (in Japanese) C. Balarew (editor), with P. Bonchev, P. Peshev, V. Dimitrov, B. Alexiev, D. Todorovski, N. Trendafilova, I. Dukov, Academic Publishing House "Professor Marin Drinov", 2009, 412 p.[ISBN 978-954-322-330-5] (in Bulgarian) P. Fodor-Csányi, Gy. Horányi, T. Kiss and L. Simándi, Szervetlen kémiai nevezéktan, a IUPAC 2005, évi szabályai, Akadémiai Kiadó, Budapest, 2008, 407 pp [ISBN 978-963-05-8559-0] (in Hungarian). MA Ciriano and PR Polo, Nomencatura de Química Inorgánica, recommendaciones de la IUPAC de 2005, Prensas Universitarias de Zaragoza, 2007 [ISBN 978-84-7733-905-2] (in Spanish) R.B. Faria, O.A. Serra (Brazil), J. Cardoso (Cape Verde), J.A.L. Costa, M.H. Garcia, R.T. Henriques, B.J. Herold, M.C.F. Magalhães, J. Marçaio, O. Pellegrino (Portugal), Nomenclatura de Química Inorgânica, recomendações da IUPAC de 2005, Ist-Press, Tecnico Ulisboa, 2017 [ISBN 978-989-8481-59-7] (in Portuguese) J. Vinklárek and D. Sedmidubský, Názvosloví anorganické chemie podle IUPAC doporučení 2005, Vysoká škola chemicko-technologická v Praze, Prague, Czech Republic, 2018. [ISBN 978-80-7080-998-3] (in Czech)
G.J. Leigh, H.A. Favre, R.M. Hartshorn, A.T. Hutton, M. Hess, M.A. Beckett, G.P. Moss, T. Damhus, A.D. McNaught S.R., Heller, J. Brecher, K-H Hellwich, “Principles of Chemical Nomenclature: A Guide to IUPAC Recommendations, 2011 Edition”, Royal Society of Chemistry, Cambridge, ISBN 978-1-84973-007-5, 242 pages.
Book Chapter:
E. Mansfield, R. M. Hartshorn, A. Atkinson, “Nanomaterial Recommendations from the International Union of Pure and Applied Chemistry”, In E. Mansfield, D. L. Kaiser, D. Fujita, & M. Van de Voorde (Eds.),

Metrology, Standardization and Industrial Innovations of Nanomaterials (pp. 299-305). John Wiley & Sons, 2017.

Refereed Publications:

1. R. M. Hartshorn, D. A. House, "A simple method for identifying and distinguishing between the diastereoisomers that result from wrapping polydentate ligands around octahedral metal ions." *J. Chem. Soc., Dalton Trans.*, 1998, 2577–2588.

2. J. Brecher, K. N. Degtyarenko, H, Gottlieb, R. M. Hartshorn, G. P. Moss, P. Murray-Rust, J. Nyitrai, W. Powell, A. Smith, S. Stein, K. Taylor, W. Town, A. Williams, A. Yerin, "Graphical Representation of Stereochemical Configuration", *Pure Appl. Chem*., 2006, 78(10), 1897-1970.

3. R. M. Hartshorn, E. Hey-Hawkins, R. Kalio, G. J. Leigh, "Representation of Configuration in Coordination Polyhedra and the Extension of Current methodology to Coordination Numbers Greater than Six", *Pure Appl. Chem*., 2007, 79(10), 1779-1999.

4. J. Brecher, K. N. Degtyarenko, H, Gottlieb, R. M. Hartshorn, K.-H. Hellwich, J. Kahovec, G. P. Moss, A. McNaught, J. Nyitrai, W. Powell, A. Smith, K. Taylor, W. Town, A. Williams, A. Yerin, "Graphical Representation Standards for Chemical Structure Diagrams", *Pure Appl. Chem*., 2008, 80(2), 277-410.

5. M. A. Brimble, D. StC. Black, R. Hartshorn, A. P. Rauter, C-K. Sha, and L. K. Sydnes, "Rules for abbreviation of protecting groups (IUPAC Technical Report)", *Pure Appl. Chem.*, 2013, 85(1), 307-313.

6. R. M. Hartshorn, K.-H. Hellwich, A. Yerin, T. Damhus, and A. T. Hutton, "Brief Guide to the Nomenclature of Inorganic Chemistry", *Pure Appl. Chem.*, 2015, 87(9-10), 1039-1049, http://dx.doi.org/10.1515/pac-2014-0718. Republished in: *Chemistry International*, 2015, 37(5-6), 37-40; *Chemistry in New Zealand*, 2015, 79(4), 187-190. Translated into: Danish, Dutch, Galician, Spanish, Basque, French

7. R. M. Hartshorn and A. Yerin, "The Past, Present, and Future in the Nomenclature and Structure Representation of Inorganic Compounds", *Dalton Trans.*, 2019, 48, 9422-9430, https://doi.org/10.1039/C9DT00352E.

8. K.-H. Hellwich, R. M. Hartshorn, A. Yerin, T. Damhus, and A. T. Hutton, "Brief Guide to the Nomenclature of Organic Chemistry", *Pure Appl. Chem.*, 2020: 92(3), 527–539, https://doi.org/10.1515/pac-2019-0104.

9. A. J. Dijkstra, K.-H. Hellwich, R. M. Hartshorn, J. Reedijk and E. Szabo, "End-of-line hyphenation of chemical names (IUPAC Recommendations 2020)", *Pure Appl. Chem.,* 2021: 93(1), 47-68, https://doi.org/10.1515/pac-2019-1005.

10. E. C. Constable, R. M. Hartshorn, and C. E. Constable, "1,10 -Biisoquinolines—Neglected Ligands in the Heterocyclic Diimine Family That Provoke Stereochemical Reflections", *Molecules*, 2021, **26**(6), 1584-1609, https://doi.org/10.3390/molecules26061584.

Bonnie Lawlor (USA)

Expected Contribution

The call for nominations to serve on IUPAC's Executive Committee states that IUPAC is seeking motivated candidates with "experience in directing the affairs of a non-profit organization whose work is done primarily by volunteers. Although prior knowledge and experience of IUPAC's structures and modus operandi would be beneficial, IUPAC welcomes nominations from candidates with governance experience in other organizations." My skills and experience meet both criteria.

First, with regards to experience in directing the affairs of a non-profit organization whose work is done primarily by volunteers, from 2002 to 2014 I served as the Executive Director of the National Federation of Advanced Information Services (NFAIS: see https://en.wikipedia.org/wiki/National_Federation_of_Advanced_Information_Services). This was a U.S.-based non-profit institutional membership organization for global publishers and technology providers across all market sectors that supported the information needs/activities of professionals across a spectrum of scholarly and research disciplines. With a staff of three, we had to rely on volunteers to accomplish our goals of providing publications, conferences, workshops, etc., so I am acutely aware of the challenges of recruiting, retaining, and motivating/engaging volunteers. During my tenure I was responsible for re-positioning the organization to match the evolving changes in scientific and scholarly publishing as well as developing new products and services and a new dues structure. My hands-on non-profit experience can provide the requisite expertise that can help IUPAC navigate its own organizational and financial challenges. Ongoing non-profit experience includes 1) serving as a Trustee (1990 to present) for the Chemical Association Trust (CSA), an internationally-recognized, UK-registered charity which offers grants to young scientists researching on the storage, processing, and retrieval of chemical structures, reactions. and compounds; and 2) serving as a Board Member (2006 to present) for the Philosophers Information Center, the non-profit publisher of the Philosopher's Index.

Second, with regards to IUPAC itself I have been an active volunteer for more than a decade, serving in a variety of capacities as noted in my brief biography above which I will not repeat here. I have experience navigating IUPAC, although the organization is not without surprises no matter how long one is involved! The strengths that I bring to the table are on the business side of things and one significant strength is my thirty-plus years in publishing. Why? Because IUPAC's revenue from its publications and databases is absolutely essential to the ongoing sustainability of the organization. I have experience in the development, sales, and marketing of information products and services; in the drafting of licenses and contracts with publishers; and in the establishment of strong publisher and customer relations. These skills will be of value in the current strategic review of Pure and Applied Chemistry and in the development of a new direction for Chemistry International. Also, throughout my career I was very

fortunate to add diverse business experiences (through trial and error!) to my portfolio, both academically (via an MBA) and hands-on at every level of the corporate ladder. The lessons learned and skills gained along the way (not without trial and error!) can also benefit IUPAC as it builds and navigates the future with its new infrastructure. Finally, I think that I have proven over the past decade or so with IUPAC that I am not afraid to get my hands dirty and to work tirelessly to meet our objectives.
In closing, my volunteering with IUPAC has been an exceedingly positive experience – especially with regards to the friendships made along the way. If nominated (and ultimately elected) I welcome the opportunity to serve IUPAC in yet another capacity.

Short Biographical Sketch
Bonnie Lawlor, retired, spent her entire career in STM publishing, beginning as a chemical indexer at the Institute for Scientific Information (ISI, now Clarivate) ultimately becoming Executive Vice President, Database Publishing (see: garfield.library.upenn.edu/essays/v15p280y1992-93.pdf). She later served as Senior Vice President/General Manager of ProQuest's Library Division (1996-1998), and as Executive Director of the National Federation of Advanced Information Services (NFAIS 2002-2014).
Lawlor has been active in IUPAC since 2010, and has held the following roles:

- Vice Chair, U.S. National Committee for IUPAC 2020 - present
- Chair, CPCDS Subcommittee on Publications 2020 - present
- Chair, Blockchain White Paper Task Force 2020 - present
- Member, Chemistry International Editorial Board 2016 - present
- Member, Top Ten Emerging Technologies in Chemistry Initiative 2018 - present
- Co-Chair, Working Group on Communications 2022 - present
- Member 2021 & 2023 WCLM Planning Committees 2019 - present
- Member, Executive Director and interim PAC Editor Search Committees 2022
- Member, PAC Strategic Review Committee 2022 - present
- Member, IUPAC Bureau 2014 - 2019
- Member, Committee on Printed and Electronic Publications (CPEP now CPCDS) 2010 - 2014
- Chair, Committee on Publications and Cheminformatics Data Standards (CPCDS) 2014 - 2019
- Lead for Development of new IUPAC website 2014 - 2016

Lawlor is also active in the American Chemical Society (ACS) as a Councilor for the Division of Chemical Information (CINF) and a member of the ACS Committee on Budget and Finance. She also serves on the Boards of the Chemical Structure Association Trust and the Philosopher's Information Center. She is both an ACS Fellow and an NFAIS Honorary Fellow.
Lawlor earned a B.S. in Chemistry from Chestnut Hill College (Philadelphia), an M.S. in chemistry from St. Joseph's University (Philadelphia), and an MBA from the Wharton School, (University of Pennsylvania).

CV:
BONNIE LAWLOR
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Radnor, PA 19087
Phone: (610)-293-0207
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Professional Summary

Currently retired. An information professional having more than thirty years of diverse managerial experience in content development and publishing. Most recently have had twelve years' experience in managing a non-profit professional association providing strategic information to publishers of scientific and scholarly resources. Management responsibilities have spanned from the technical supervision of local and off-shore editorial and data processing staff to the overall management of more than 250 employees, including an international sales force with offices in the United Kingdom and Japan, information science professionals, scientists, product developers, marketing staff, editorial personnel, copyright/intellectual property rights experts, content aggregators and licensors. Major strengths include the ability to develop and implement strategic plans to meet organizational goals, and the ability to create a work environment and team atmosphere that facilitates the attainment of those objectives. A highly self-motivated, results-oriented professional with skills and expertise in:

- General Management
- Non-profit Management
- Electronic Publishing
- Strategic Planning
- Financial Analysis
- New Product/Services Development
- Sales/Marketing of Electronic Information
- Information Policy & Copyright

Education

- MBA Update Program, INSEAD, Fontainebleau, France
- MBA, the Wharton School, University of Pennsylvania, Philadelphia, PA
- M.S. Chemistry, St. Joseph's University, Philadelphia, PA
- B.S. Chemistry, Chestnut Hill College, Philadelphia, PA

Professional Experience

2002 – 2014: National Federation of Advanced Information Services (NFAIS), Philadelphia, PA

Non-Profit Professional Association for the Information Industry

Executive Director

Responsible for re-positioning the organization to match the evolving changes in scientific and scholarly publishing - including the development of new products and services and a new dues structure. After joining increased membership by 50%, increased annual conference attendance by 53%, and increased reserves from a negative balance to slightly more than the value of nine month's operating expenses.

1998 – 2002: Chescot Publishing, Inc., Radnor, PA

Consulting firm specializing in electronic publishing.

President/CEO

Responsible for working primarily with publishers in the migration of their print products to electronic format, and in the acquisition/development of new electronic databases. Created customized in-house tools for the development of business plans/models for electronic publishing initiatives.

1996-1998: ProQuest Information & Learning (formerly UMI), Ann Arbor, MI

Publishing firm providing long-term access (electronic, microform, print) to periodicals, newspapers, and books for the academic, public, corporate, government, and school library markets. Publishes, distributes, and preserves the majority of the world's doctoral dissertations.

Senior Vice-President and General Manager, Academic and Corporate Library Division

Responsible for the development, editorial content, and sales/marketing of all products sold into the academic, corporate, government, and public library markets, initially in the U.S. and ultimately world-

wide. Developed five-year plan for the digitization of the microform vault as the basis for the development of unique new reference databases. Increased direct online sales from $300K in 1995 to $6.2 million in 1997 through the introduction of new products and innovative pricing models. Expanded the dissertation program to include electronic submissions, and launched *Digital Dissertations* in 1997 to provide the world's first large-scale electronic dissertation database. Tripled academic market penetration between 1996 and 1998 through focused sales efforts and an award-winning advertising campaign.

1995-1996: Advanced Research Technologies (ART), Rosemont, PA

Founded in 1991, ART was an internationally-recognized developer of end-user custom information applications for both private and public networks.

Chief Executive Officer

Responsible for operations, marketing, and strategic planning for ART's business growth. Developed initial corporate business plan that resulted in a world-wide customer base, including major corporations and systems providers. Organization was acquired by Telebase in 1996 in order to obtain a state-of-the art technology base for their information services.

1967-1995: Thomson Reuters IP & Science (Formerly Institute for Scientific Information (ISI)), Philadelphia, PA

A publisher of print and electronic information tools for the worldwide scholarly research community, having annual revenues of $70 million, 750 employees, and subsidiaries in Ireland, Scotland, and California. A division of Toronto-based Thomson Corporation.

***Executive Vice-President, Database Publishing Division* (1989 – 1995)**

Responsible for new product development, production, editorial content, and sales/marketing of all of ISI's print and electronic products and services. Managed intellectual property/copyright issues and relations with primary publishers, as well as all content licensing agreements with customers and suppliers. Participated in all content acquisitions, and was a key member of the Thomson acquisition team that successfully purchased the Information Access Company (IAC) in 1994 – Thomson's second largest acquisition as of that date. Developed a strategic business plan for electronic content development that resulted in the incorporation of abstracts in ISI's science and social science products, and ultimately resulted in the release of 20 new electronic products and services over a 3-year period. Lead the development of ISI's Electronic Library Pilot Project, and developed the initial plan for the creation of the Web of Science. The Division consisted of more than 250 employees, with revenues in excess of $70 million.

Professional Activities

Chemical Structure Association Trust 1990 - present

- Board of Trustees 1990 - present
- Chair, Grants Committee 2002 - present
- Secretary 2002 - present

American Chemical Society 1976 - present

- Committee on Committees 2012 - 2017
- Council Policy Committee 2006 - 2012
- Nominations and Elections Committee 2000 - 2006
- Budget and Finance Committee (Full Member) 2018 - present
- Budget and Finance Committee (Associate) 2000 - 2003
- Councilor, Division of Chemical Information 1992 - present
- Presidential Task Force on Council Electronic Communication 2001
- Chair, Committee on Divisional Activities 1997 – 1999
- Advisory Board for Industry Relations 1997 – 1999

- Chair, Committee on Copyrights 1990 – 1998
- Board Task Force on Technical Programming 1998
- Liaison, American Association for the Advancement of *Science*, Section T (AAAS) 1986 - 1995
- ACS Books Advisory Board 1991 - 1994
- Chair, Division of Chemical Information (CINF) 1989
- Secretary, CINF 1984 - 1987
- Long range Planning Committee, CINF 1983 - 1985
- Editor, *Chemical Information Bulletin* 1977 - 1983
- Founding member, Philadelphia Chemical Information Topical Group 1980 - 1982
- Program Committee, CINF 1976 - 1978

International Union of Pure and Applied Chemistry (IUPAC) 2010 - present

- Vice Chair, U.S. National Committee for IUPAC 2020 - present
- Chair, Blockchain White Paper Task Force 2020 - present
- Chair, CPCDS Subcommittee on Publications 2020 - present
- Member, *Chemistry International* Editorial Board 2016 - present
- Member, Top Ten Emerging Technologies in
- Chemistry Initiative 2017 - present
- Co-Chair, Working Group on Communications 2022 - present
- Member 2021 & 2023 WCLM Planning Committees 2019 - present
- Member, Executive Director Search Committee 2022
- Member, Interim *PAC* Editor Search Committee 2022
- Co-chair, CPCDS Task Force to Leverage
- IUPAC Assets 2023
- Member of IUPAC Bureau (unelected member) 2014 - 2019
- Committee on Printed and Electronic Publications
- Data Standards (CPEP now CPCDS) 2010 - 2014
- Chair, Committee on Publications and
- Cheminformatics Data Standards (CPCDS) 2014 - 2019
- Lead for Website Development 2014 - 2016

American Institute of Chemists, Philadelphia Chapter 1981 – 1982

- Secretary 1981 - 1982

National Federation of Abstracting and Information Services (NFAIS) 1987 - 2014

- Executive Director 2002 - 2014
- President 1989
- Vice Chair, Information Policy Committee 2001-2002
- Chair, Information Policy Committee 1991-2001
- Editorial Advisory Board, NFAIS Yearbook 1991-1994
- CD-ROM Mandatory Deposit Task Force 1991-1993
- Co-Chair, gateway Guidelines Task Force 1988
- Committee Chair, EASYNET Advisory Group 1985 - 1986
- National Conference Planning Committee 1986, 1988

American Society for Information Science & Technology (ASIS&T) 1991 - 1998

- Board of Directors 1996-1998
- Chair, Program Advisory Board 1998
- Chair, Delaware Valley Chapter 1994
- Secretary, Delaware Valley Chapter 1992-1994

LYRASIS (formerly PALINET - Pennsylvania Library Network) 1989 - 2014

- Board of Directors 1989 - 1994, 2002 - 2014
- Executive Committee 1989 - 1994, 2004 - 2008
- Finance Committee 1989 - 1994, 2002 - 2014
- Secretary/Treasurer 1992 - 1993, 2004 - 2007

Philosopher's Information Center 2006 - present

- Member, Board of Directors 2006 - present
- Compensation Committee 2006 - present

Other Organizations 1990 - present

- Member, Union League of Philadelphia 1990 - present
- Free Library of Philadelphia Technology Council 2012 - 2013
- Alumni Board, Wharton Executive MBA Program 1990 - 1992

Honors

Appreciation of Service Award, IUPAC, 2019; Division of Chemical Information, ACS - Lifetime Service Award, 2014; Honorary Fellow, NFAIS, 2014; Fellow of the American Chemical Society, 2013; Division of Chemical Information, ACS - Meritorious Service Award, 2006; National Federation of Advanced Information Services - Service Award, 1999; American Society for Information Science Achievement Award, 1996; Alpha Epsilon Sigma Honor Society

Other Activities:

Have presented numerous papers and organized/chaired symposia at national and international conferences. Have published articles and authored chapters on information-related topics in journals, newsletters, and books. Mentored female high school students for STM careers.

Christine Luscombe (Japan)

Expected Contribution:

I became involved with IUPAC in 2012 when I attended my first Polymer Division, Subcommittee of Polymer Terminology, Subcommittee of Polymer Education meetings. At this meeting, I was struck by the dedication that researchers from all over the world showed in their work for IUPAC, and became quickly involved in a number of projects. I became the Secretary of the Subcommittee of Polymer Terminology in 2014, the Vice President of the Polymer Division in 2016, and I have been serving as the Polymer Division President since 2020. Since joining Bureau, I have served on the Evaluation Committee and I am currently serving as the Chair of the Division Presidents and Standing Committee Chairs. Over the years, I have become very familiar with how IUPAC operates and how the project system works as well.

IUPAC is currently undergoing many changes including having a new Treasurer and new Executive Director. We will soon have a new Secretary General, President, and Vice President. All of these changes are occurring while we put the new IUPAC structure in place. My immediate goal is to work closely with the new leadership and our stakeholders to ensure that the transition can go as smoothly as it can. After this, I will work with the leadership and stakeholders to ensure that IUPAC operates efficiently maintaining good relationships with our global partners. I believe that my experiences within IUPAC and my personal experiences of having worked in the UK, US, and Japan places me in a good position to achieve these goals.

Short Biographical Sketch:

Christine Luscombe grew up in Kobe, Japan. After receiving her Bachelor's degree in Natural Sciences from the University of Cambridge in 2000, she worked with Profs. Andrew Holmes and Wilhelm Huck in the Melville Laboratory of Polymer Synthesis at the University of Cambridge where her research focused on surface modifications using supercritical carbon dioxide for her PhD. She received the Syngenta Award for best organic chemistry project for her PhD. In January 2004, she joined the group of Prof. Jean Fréchet at UC Berkeley for her post-doctoral studies where she began her research on semiconducting polymers for organic photovoltaics. She was the recipient of the Lindemann Fellowship and the Trinity College Junior Research Fellowship (University of Cambridge) for her post-doctoral studies.

In September 2006, she joined the Materials Science and Engineering Department at the University of Washington, Seattle. She received a number of young faculty awards including the NSF CAREER Award, DARPA Young Faculty Award, as well as the Sloan Research Fellowship. Her current research focuses on

the synthesis of semiconducting polymers for organic electronics and has published >140 papers in this area of research. She joined the Okinawa Institute of Technology in 2021.
She is currently serving on the Editorial Advisory Boards for a number of journals including Chemical Reviews, Polymer International, Advanced Electronic Materials, ACS Applied Polymer Materials, Journal of Applied Physics, and Advanced Functional Materials. She is an Associate Editor for Macromolecules, is serving on the IUPAC Polymer Education and Polymer Terminology Subcommittees, and is the President of the IUPAC Polymer Division. She has been serving as the Chair of the Division Presidents and Standing Committee Chairs for the 2022-2023 biennium.

CV:

CHRISTINE K. LUSCOMBE
Okinawa Institute of Science and Technology
1919-1 Tancha, Onna-son Email: christine.luscombe@oist.jp
Okinawa, 904-0495 Japan https://groups.oist.jp/picpu

EDUCATIONAL HISTORY

• University of Cambridge, Cambridge, UK; PhD, Chemistry, 2005
• University of Cambridge, Cambridge, UK; MA, Chemistry, 2003
• University of Cambridge, Cambridge, UK; BA, MSci (Hons), Natural Sciences (chemistry), 2000

EMPLOYMENT HISTORY

• Macromolecules, American Chemical Society; Associate Editor 2019-
• Journal of Materials Chemistry A, Royal Society of Chemistry; London, UK; Associate Editor 2013-2018
• Department of Chemistry, University of Washington, Seattle, WA, USA; Adjunct Associate Professor 2013-2017, Adjunct Professor 2017-2020, Professor 2020-2021
• Materials Science and Engineering Department, University of Washington, Seattle, WA, USA; Assistant Professor 2006-2011, Associate Professor 2011-2017, Robert J. Campbell Professor 2017-2021, Interim Chair 2020-2021
• Department of Chemistry, UC Berkeley, CA, USA; Post-doctoral Researcher, Lindemann Fellow and Trinity College (University of Cambridge) Junior Research Fellow, 2004-2006
• Department of Chemistry, University of Cambridge, Cambridge, UK; Graduate Research Assistant, 2000-2003
• Oakland Innovation and Information Services, Cambridge, UK; Scientific Interpreter, 2001-2003
• Department of Chemistry, Cambridge, UK; Undergraduate Research Assistant, 1999-2000
• Sharp Laboratories of Europe Ltd., Oxford, UK; Summer Undergraduate Intern, 1998
• Department of Chemistry, University of Michigan, Ann Arbor, MI, USA, 1997

RECENT AWARDS AND HONORS

Outstanding Reviewer for Chemical Science, 2021
Outstanding Reviewer for Energy and Environmental Science, 2021
Elected member of Washington State Academy of Sciences, 2020
Visiting Professor, 2019, University of Kyoto
UW College of Engineering Faculty Award: Research, 2019
Top 1% Reviewer for Chemistry of Materials, 2018
UW Undergraduate Research Mentor Award, 2017
Society of Synthetic Organic Chemistry of Japan Lecture Award, 2017
Outstanding Reviewer for Materials Horizons, 2016, Royal Society of Chemistry
Fellow of the Royal Society of Chemistry, 2016, Royal Society of Chemistry
Chemistry of Materials Reviewer Award, 2015, American Chemical Society
Robert J. Campbell Professorship, 2015, University of Washington

Kavli Fellow, 2015, The National Academy of Sciences
Visiting Professor, 2014, Catalyst Research Center, Hokkaido University
Visiting Professor, 2013-2015, Kyoto Institute of Technology
Faculty of the Year Award, 2013, MSE Department, University of Washington
Sigma-Aldrich Lecturer, 2012, IUPAC World Polymer Congress
Arab-American Frontiers Fellow, 2012, The National Academies
Kavli Fellow, 2011, The National Academy of Sciences
Junior Faculty Innovator Award, 2010, College of Engineering, University of Washington
Sloan Research Fellowship, 2010, Sloan Foundation
DARPA Young Faculty Award, 2008, DARPA
NSF CAREER Award, 2008, NSF

RESEARCH INTERESTS

• Synthesis and applications of pi-conjugated semiconducting polymers for organic field effect transistors and organic photovoltaics
• Development of more environmentally benign methods to synthesize pi-conjugated semiconducting polymers
• Study of living polymerization methods for the synthesis of pi-conjugated semiconducting polymers

SCIENTIFIC OUTCOMES

>140 publications in peer-reviewed journals (h-index 49); ca 100 invited lectures at international conferences, ca 110 invited lectures at universities; ca 9500 citations; 6 patents

TOP 20 MOST CITED PAPERS AS INDEPENDENT RESEARCHER AND CORRESPONDING AUTHOR

1. Mazzio, K.; Luscombe, C. K. "The Future of Organic Photovoltaics" *Chem. Soc. Rev.*, **2015**, *44*, 78.
2. Okamoto, K.; Zhang, J.; Housekeeper, J.; Marder, S.; Luscombe, C. K. "C–H Arylation Reaction: Atom Efficient, and Greener Syntheses of π-conjugated Small- and Macromolecules for Organic Electronic Materials" *Macromolecules*, **2013**, *46*, 8059.
3. Bronstein, H. A.; Luscombe, C. K. "Externally initiated regioregular P3HT with controlled molecular weight and narrow polydispersity." *J. Am. Chem. Soc.*, **2009**, *131*, 12894.
4. Holliday, S.; Li, Y.; Luscombe, C. K. "Recent Advances in High Performance Donor-Acceptor Polymers for Organic Photovoltaics" *Prog. Polym. Sci.*, **2017**, *70*, 34.
5. Okamoto, K.; Luscombe, C. K. “Controlled polymerizations for the synthesis of semiconducting conjugated polymers” *Polym. Chem.* **2011**, *2*, 2424. In top 10 list of most read articles in June 2011 and July 2011.
6. Durban, M. M.; Kazarinoff, P. D.; Luscombe, C. K. “Synthesis and characterization of thiophene-containing naphthalene diimide n-type copolymers for OFET applications.” *Macromolecules*, **2010**, *43*, 6348.
7. Bull, T. A.; Pingree, L. S.; Jenekhe, S. A.; Ginger, D. S.; Luscombe, C. K. "The role of mesoscopic PCBM crystallites in solvent vapor annealed copolymer solar cells." *ACS Nano*, **2009**, *3*, 627.
8. Durban, M. M.; Kazarinoff, P. D.; Segawa, Y.; Luscombe, C. K. "Synthesis and characterization of solution-processible ladderized n-type naphthalene bisimide co-polymers for OFET applications" *Macromolecules*, **2011**, *44*, 4721.
9. Doubina, N; Ho, A.; Jen, A. K. Y.; Luscombe, C. K. "Effect of initiators on the Kumada catalyst transfer polycondensation reaction." *Macromolecules*, **2009**, *42*, 7670.
10. Suraru, S.-L.; Lee, J. A.; Luscombe, C. K. "C-H arylation in the synthesis of pi-conjugated polymer" *ACS Macro Lett.*, **2016**, *5*, 724.
11. Okamoto, K.; Housekeeper, J.; Michael, F. E.; Luscombe, C. K. "Thiophene based hyperbranched polymers with tunable branching using direct arylation methods" *Poly. Chem.*, **2013**, *4*, 3499.

12. Onorato, J.; Pakhnyuk, V.; Luscombe, C. K. “Structure and design of polymers for durable, stretchable organic electronics” *Polym. J.*, **2017**, *49*, 41.
13. Li, Y.; Zhang, X.; Zhang, Y.; Dong, R.; Luscombe, C. K. "Review on the role of polymers in luminescent solar concentrators" *J. Polym. Sci. A*, **2019**, *57*, 201.
14. Yang, P.; Yuan, M.; Zeigler, D. F.; Watkins, S. E.; Lee, J. A.; Luscombe, C. K. "Influence of fluorine substituents on the film dielectric constant and open-circuit voltage in organic photovoltaics" *J. Mater. Chem. C.,* **2014**, *2*, 3278. Article for 2014 J. Mater. Chem. C. Emerging Investigators Issue.
15. Doubina, N. V.; Jenkins, J. L.; Paniagua, S; Mazzio, K. A.; MacDonald, G. A.; Jen, A. K. Y.; Armstrong, N. R.; Marder, S. R.; Luscombe, C. K. "Surface-initiated synthesis of poly(3-methylthiophene) from indium tin oxide and its electrochemical properties" *Langmuir*, **2012**, *28*, 1900.
16. Mazzio, K.; Rice, A. H.; Durban, M. M.; Luscombe, C. K. " Effect of regioregularity on charge transport and structural and excitonic coherence in poly (3-hexylthiophene) nanowires" *J. Phys. Chem. C*, **2015**, *119*, 14911.
17. Boyd, S.; Jen, A. K. Y.; Luscombe, C. K. "Steric stabilization effects in Ni-catalyzed regioregular poly(3-hexylthiophene) synthesis." *Macromolecules*, **2009**, *42*, 9387.
18. Rice, A. H.; Giridharagopal, R.; Zheng, S. X.; Ohuchi, F. S.; Ginger, D. S.; Luscombe, C. K. "Controlling Vertical Morphology within the Active Layer of Organic Photovoltaics Using Poly(3-hexylthiophene) Nanowires and Phenyl-C61-butyric Acid Methyl Ester" *ACS Nano*, **2011**, *5*, 3132.
19. Li, Y.; Tatum, W. K.; Onorato, J. W.; Zhang, Y.; Luscombe, C. K. “Low elastic modulus and high charge mobility of low-crystallinity indacenothiophene-based semiconducting polymers for potential applications in stretchable electronics” *Macromolecules*, **2018**, *56*, 6352.
20. Yuan, M. J.; Okamoto, K.; Bronstein, H. A.; Luscombe, C. K. "Constructing regioregular star poly(3-hexylthiophene) via externally initiated Kumada catalyst-transfer polycondensation" *ACS Macro Letters*, **2012**, *1*, 392.

REPRESENTATIVE SERVICE ACTIVITIES

NATIONAL/INTERNATIONAL SERVICE

- Board member for Society of Polymer Science, Japan 2022-
- President for IUPAC Polymer Division 2020-
- Vice President for IUPAC Polymer Division 2016-2019
- Secretary for IUPAC Polymer Terminology Committee 2014-2015
- IUPAC Polymer Education Sub-Committee 2013-
- Editorial Advisory Board for ACS Applied Materials and Interfaces 2017-
- Editorial Advisory Board for Journal of Applied Physics (APS) 2016-
- Editorial Advisory Board for ACS Macro Letters and Macromolecules (ACS) 2013-2015
- Editorial Advisory Board for Polymer International (Wiley) 2014-
- International Advisory Board for Advanced Electronic Materials (Wiley) 2014-
- Editorial Advisory Board for Advanced Functional Materials (Wiley) 2019-
- Editorial Advisory Board for Annual Reviews of Materials Research 2019-

OTHER LEADERSHIP ROLES

- Chair of Faculty Council/Assembly at OIST (2022-)
- Interim Chair of Materials Science and Engineering Department, UW (2020-2021)
- Co-Director and Executive Director for Education and Outreach for NSF MRSEC at UW (2017-2021)
- Director of the Molecular Engineering PhD program, UW (2016-2020)
- Associate Director for the Molecular Engineering and Sciences Institute, UW (2016-2020)
- Director of NSF REU program at UW (2014-2021)
- Director of Materials Science and Engineering PhD program, UW (2011-2018)
- Director of ALVA/NSF REM program aimed at providing research opportunities for high school

students who are URMs and are from underprivileged backgrounds (2011-2019)

Zoltán Mester (Canada)

Expected Contribution:

Diplomacy

Dr Mester is a seasoned science leader with significant experience operating in the international governmental and NGO science space. Dr. Mester is well positioned to drive IUPAC's membership expansion efforts in South America, Africa and Asia which is key to the long-term sustainability of the Union. Additionally, expanding and formalizing the Union's relationships with science based UN organizations which are users of chemical knowledge/data, is also of interest of him.

Leadership

Dr. Mester has a deep understanding of the operation of the Union having served in just about every role available over the past 20 years from NR to Division president, and most recently as an elected Bureau member. He has worked with many key IUPAC products, including evaluated data, publications, nomenclature, provision of chemical science advice the other international organizations, color books, digitalization etc., making him particularly well-suited to support further development of these products.

He is passionate about contributing to the re-imagining the organizational framework of the Union to better support large, complex, multidisciplinary endeavours, the world currently faces. Dr. Mester will also bring years of governance experience from multilateral international settings and significant, hands on, managerial and supervisory experience from his day job which are key attributes to the Secretary General role.

Dr. Mester also brings full support from his organization the Research Council of Canada, the Canadian NAO, to have the necessary bandwidth to effectively fulfill the Secretary General role.

Short Biographical Sketch

Dr. Zoltán Mester is principal researcher at National Research Council of Canada and adjunct professor at Queen's University where over the last 20 years he has led chemical measurement science, metrology and standardization activities. Dr. Mester conducts research in analytical chemistry of metal species and stable isotopes.

Between 2010 and 2021 he represented Canada at the Consultative Committee for Amount of Substance of Metre Convention (CCQM) which is responsible for the upkeep of the chemists' SI unit, the mole. His efforts at CCQM resulted in new program on stable isotope measurement standards developed in close collaboration with the Atomic Weights Commission of the Union.

Over the years he served in leadership roles in the Cooperation on International Traceability in Analytical Chemistry (CITAC - vice chair), International Organization for Standardization (ISO REMCO - convenor of working group 18) and a number of other governmental and non-governmental organizations related to chemistry and standardisation.

He has been with IUPAC for the better part of two decades serving in increasingly complex roles at the Analytical Chemistry Division, starting from NR, associate, titular member, secretary, vice president, president and in the past two years as an elected member of the Bureau. Under his leadership the Analytical Chemistry division has executed a major strategic planning exercise resulting in a better corporate alignment and organizational structure and in the creation of an Early Career Subcommittee, improving young analytical chemists' access to the Union and the establishment of IUPAC Analytical Chemistry Medal award, the first senior international award of the discipline. He has also championed a major international effort on assessing state of analytical chemistry education and curriculum world-wide to support the development of the discipline and chemical measurement science in general.
For more than a decade he has been leading the international engagement of the Union in the area of metrology in chemistry resulting in IUPAC's leadership in the recent redefinition of the mole and the new SI. As a result of this effort a Memorandum of Understanding was signed between IUPAC and the executive body of the Metre Convention providing the Union formal input to revision of the SI units of measurements and to metrological standardization in general.
Over his career Dr. Mester has published over 240 peer reviewed papers, 4 book chapters and edited a book on sample preparation. His papers have been cited more than 10,000 times. Over the years he gave numerous keynote and plenary presentations at various conferences and he lectures regularly at universities and research institutions around world.

CV:

Zoltán Mester

1. AREA(S) OF RESEARCH

Metrology in chemistry; Mass spectrometry; Trace element speciation

2. EMPLOYMENT HISTORY

1999–present, Principal Researcher, Chemical Metrology, National Research Council Canada

3. EDUCATION

Postdoctoral Fellow 1999, University of Waterloo, Waterloo, Canada
Ph.D. 1998, Department of Chemistry, Univ. of Hort. and Food Industry, Budapest, Hungary
M.Sc. 1994, Department of Food Chemistry, Univ. of Hort. and Food Industry, Budapest, Hungary

4. NATIONAL AND INTERNATIONAL OUTREACH, COMMITTEES

2022-present: **elected member of IUPAC Bureau**
2003–present: International Union for Pure and Applied Chemistry (IUPAC) Analytical Chemistry division. Various roles, including **President (2018-2021),** Vice president, Secretary, titular member
https://iupac.org/who-we-are/divisions/division-details/?body_code=500
2010–2021: Metre Convention, Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM), **Canadian delegate**
https://www.bipm.org/en/committees/cc/ccqm/
2010–present: CCQM working groups (strategic planning, biology, key comparisons), **founder and current Chair of Isotope Ratio Working Group**
https://www.bipm.org/en/committees/cc/wg/irwg.html
2017–present: Joint Committee for Guides in Metrology, **Lead delegate** of IUPAC
https://www.iso.org/sites/JCGM/JCGM-introduction.htm
2013–2022: Inter-American Metrology System; Chemistry working group, **National representative**
https://sim-metrologia.org/about-us/structure/technical-committee/chemistry/
2013–present: Canadian Mirror Committee of ISO Committee on Reference Materials, founder and current **Chair** and **Convenor** of the working group on inorganic purities;

https://www.iso.org/committee/55002.html
2020-present: **Vice Chair** of Cooperation on International Traceability in Analytical Chemistry (CITAC) http://www.citac.cc/

5. SCHOLARLY AND PROFESSIONAL ACTIVITIES

2021–present: Green Analytical Chemistry, Editorial Board, Elsevier
2018–present: Accreditation and Quality Assurance, International Advisory Board, Springer Nature
2016–present: Journal of Pure and Applied Chemistry, Editorial Board, De Gruyter
2010–2012: Spectrochimica Acta B, Review Editor, Elsevier
2012–2016: Analytica Chimica Acta, Editorial Board, Elsevier
2012–present: Technical assessor auditor/ peer-reviewer of various scientific organizations in Japan, Hong Kong, Colombia, Czech Republic, Australia, Croatia, Mexico, Uruguay, Canada
2005–present: Offer courses in Canada and internationally on metrology in chemistry and serve as an adjunct professor at Queen's University in Canada.
2018: Championed strategic collaboration S and T relations and MOU between Thailand Ministry of Science and Technology and National Research Council of Canada.
2019: Championed formalization of relationships and the signing of MOU between the International Bureau of Weights and Measures (established by the Metre Treaty) and the International Union of Pure and Applied Chemistry

6. SUPERVISION AND TRAINING OF HQPs

Hired, supervised 20+ staff scientists over 15 years. His research team has been attracting talent from all over the world. Dr. Mester's lab has been hosting 5-10 visiting scientists, postdocs and graduate students annually, from 20+ countries.

7. MAJOR PROJECTS AND GRANTS

DATE	Value	ROLE	PARTNERS	TITLE
2015–2018	$700K project, -$6M CRM inventory created	PI	Canadian Nuclear Safety Commission and 30 international partners	Reference Material (CRM) development of Nuclear Forensics
2011–2017	$10M+ overall project $0.7M Canadian project	Canadian PI	Physikalisch-Technische Bundesanstalt, Germany National Institute of Standards and Technology, US National Metrology Institute of Japan, Japan National Institute of Metrology, China	Ultra-high precision determination of atomic weight of silicon for redefinition of the kilogram and mole
2011–2012	$50K	PI	National Science Library, DataCite Canada	Create NRC Chemical Metrology Digital Collection in the Federal Science Library.

2005–2018	$3M	PI	Canadian Safety and Security Program Chemical, Biological, Radiological-Nuclear and Explosives (CBRNE) Research and Technology Initiative	Four consecutive projects on chemical detection in the CBRNE space
2010–present	$5.5M since 2010 in research contracts	PI	Partners from 50+ countries, from industry, governments and academia	Support national and international measurement comparability via the provision of reference materials and calibrations
2010–present	$8M revenue in research and service contracts	PI	80+ companies and research organizations annually.	Glow discharge mass spectrometry (supporting microelectronics, high tech manufacturing, aerospace industries)
2005–present	$5.7M	PI	Various internal and external funding bodies	Major instrument grants contributing to the creation of the most diverse mass spectrometry research facility in Canada

8. PUBLICATIONS AND INTELLECTUAL PROPERTY SUMMARY

PUBLICATION TYPE	**CAREER TOTAL**
Patents	7
Other IP outputs (trade secrets, etc.)	6
Peer-reviewed publications (journals and conference proceedings)	238
Books and book chapters	5
Standards, guides	1

Gloria Ukalina Obuzor

Expected Contribution:
My skills and knowledge in collaborative planning which can be used with the Divisions and Standing Committees for execution of all interactions and joint activities. As President of FASC, I will take IUPAC to ALL African Societies of Chemistry.

Short Biographical Sketch:
Gloria Ukalina Obuzor is a Prof. of Organic Chemistry (2012) from Nigeria who obtained her Ph.D. in 1998 in organic synthesis (organometallics) at University of Manchester Institute of Science and Technology (UMIST), now Manchester of University, under the tutelage of Dr. B. L. Booth with emphasis on the synthesis of new cyclopentadienyl and indenyl transition metal complexes. Her research areas are organic synthesis, green chemistry, phytochemistry (where the rich fauna of Nigeria is explored for nutraceutical) and education in chemical safety. She organized Chemical Security Awareness Workshop in the six geopolitical zones of Nigeria with a grant from CRDF Global of USA. She has three patents, co-authored six books, several publications in National and International Journals. She is an oenologist, has passion for product development and she is the proud producer of Ukalina Fruit Wines (White and Red - produced from locally available fruits). Her mantra is "EVERY CHEMICAL EQUATION IS A POTENTIAL INDUSTRY" and exemplified it by using this equation ($C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$) to convert local fruits to fruit wine. She is currently exploring the conversion of waste to wealth and the production of bitters by fermentation. She is a visiting Scholar at the World Bank Center of Excellence of the University of Port Harcourt, a Grant Assessor and a Professorial External Assessor to several Universities within and outside Nigeria. She has mentored over 100 secondary school girls in STEM. She is the first female President of Chemical Society of Nigeria (CSN) in its forty years of existence (2014-2017), the Rivers State Coordinator of Organization for Women in Science for Developing World (2010-2019), and the current President of Federation of African Societies of Chemistry (FASC). Her significant contributions to IUPAC are: introduction in 2015 (when she was CSN President) of Women in Chemistry (WIC) to CSN with a National coordinator (whom she met in IUPAC-Busan) and making WIC a Division in each Chapter (37) of CSN with its own coordinator; hence the successful large numbers of organized "Global Women Breakfast" in Nigeria since 2016; Chairman, A Symposium on Stimulating Chemistry in Emerging Economies, 48th World Chemistry Congress, Montreal, Canada, 2021; member, Division VI (2017 – 2019, Chemistry and the Environment); member, Committee on Chemistry Education (2019 – current); a Bureau member of IUPAC (2019-2023) and LOC chairman for (ACRICE-4) in Lagos, Nigeria 2019. She has attended IUPAC Congress and General Assembly 2015 – 2021.

CV:
MY STRENGTH: I am a scholarly person with tract records and academic credentials quitecapable of attracting and inspiring quality Academics into any University, higher Institution ororganization. I am a

level-headed person with pleasant personality and high regard forintellectual activities and constituted authorities. My considerable administrative qualities ofequity and transparency will enable me relate well with people, irrespective of social, racial,religious or tribal leanings.

PERSONAL DATA

NAME: GLORIA UKALINA OBUZOR (nee IDEOZU)

DATE OF BIRTH: 22ND APRIL 1954

PLACE OF BIRTH: AHOADA TOWN, AHOADA EAST LGA,R/S.

NATIONALITY: NIGERIAN

STATE OF ORIGN: RIVERS STATE

SEX: FEMALE

MARITAL STATUS: MARRIED WITH SIX CHILDREN

RELIGION: CHRISTIAN

CONTACT ADDRESS: DEPARTMENT OF PURE & INDUSTRIALCHEMISTRY UNIVERSITY OF PORTHARCOURT, P.M.B. 5323, PORTHARCOURT, RIVERS STATE, NIGERIA

E-MAIL: lalinaters@yahoo.com

Tel.: +234-8033383549

EDUCATIONAL INSTITUTIONS ATTENED WITH DATES.

1. 1992–1998. University of Manchester Institute of Science & Technology (UMIST), Manchester, UK.
2. 1987-1989. University of Port Harcourt, Port Harcourt, Rivers State, Nigeria.
3. 1975–1979. University of the District of Columbia (UDC), Washington, D. C., USA.
4. 1974. State Department of Education, Maryland, USA.
5. 1969–1973. Holy Rosary Secondary School, Port Harcourt, Rivers State.
6. 1960-1966. St. Michael Primary School, Rumuomasi, Rivers State.

QUALIFICATIONS/CERTIFICATES OBTAINED WITH DATE

1. 1998. Ph. D (UMIST), Organic Chemistry-Organometallics
2. 1989. M. Sc. (UPH), Polymer Chemistry
3. 1979. B. Sc. (UDC), Chemistry
4. 1974. Maryland High School Diploma
5. 1973. West African School Certificate
6. 1966. First School Leaving Certificate

WORKING EXPERIENCE WITH DATE

1. 2012-date. Professor of Chemistry
2. 2005-2012. Senior Lecturer
3. 1999-2005. Lecturer 1, University of Port Harcourt
4. 1990-1999. Lecturer 11, University of Port Harcourt
5. 1993-1996. Demonstrator (UMIST), UK
6. 1983-1990. Assistant Lecturer, University of Port Harcourt
7. 1982-1983. Graduate Assistant, University of Port Harcourt
8. 1981-1982. National Youth Service Corps (NYSC), University of Port Harcourt
9. 1973, Practical Demonstrator (UDC)

SCHOLARSHIP /HONOURS WITH DATES

1. 2002 Award as Best Meeting Attendee in CSN Rivers /Bayelsa Chapter
2. 1992–1997 Commonwealth Scholarship

3. 1977 Academic Achievement – Honour Roll, UDC (One-Year State Fees)
4. 1975–1979 Rivers State Govt. Scholarship
5. 1969–1973 SPDC scholarship

THESIS

(a) Synthesis of new cyclopentadienyl and indenyl transition metal complexes (Ph. DThesis, 1998)
(b). Ripening profile of Musa paradisiaca (M. Sc. Dissertation, 1988)
(c). Trimethyltin and its derivatives (B. Sc. Project, 1979)

She has co-authored six books, has several publications and three patents as below.

1. Production of geopolymers decorative products using kaolin and spent fluid catalyticcracking catalyst, 2020. Miss E. A. Odieka, Dr. M. C. Onojake and Prof. G. U.Obuzor.
2. Ukalina wine, 2020. Prof. G. U. Obuzor.
3. Polymer Modified Interlocking Blocks (PMIB), 2021. Ledor Dumene Victor, BaritureOptimise Martins and Prof. G. U. Obuzor

She is a Professor of Chemistry (2012), a visiting Scholar at the World Bank Center ofExcellence of the University of Port Harcourt since 2021 and has mentored over 100 secondaryschool girls. She is the first female President of Chemical Society of Nigeria (CSN) in its fortyyears of existence (2014-2017) who introduced Women in Chemistry (WIC) in Nigeria with anational coordinator and made WIC a Division in each Chapter of CSN with its owncoordinator; hence the successful large numbers of organized “Global Women Breakfast” inNigeria. She was the Rivers State Coordinator of Organization for Women in Science forDeveloping World (2010-2019); member, Division VI (2017 – 2019 Chemistry and theEnvironment); member, Committee on Chemistry Education (2019 – current); a Bureaumember of International Union of Pure and Applied Chemistry (2019-2023), and the currentPresident of Federation of African Societies of Chemistry (FASC). An active supporter of EarlyCareer Chemists. She attended in 2019, 50th IUPAC General Assembly and 46th IUPAC WorldChemical Congress, Paris, France; in 2017, 49th IUPAC General Assembly and 46th IUPACWorld Chemical Congress, Sao Paulo, Brazil; and in 2015, 48th IUPAC General Assembly and45th IUPAC World Chemical Congress, Busan, South Korea. In 2019, she attended AfricanConference on Research in Chemistry Education (ACRICE-3), Setif, Algeria and was the LOCfor (ACRICE-4) in Lagos, Nigeria.

PROFESSIONAL MEMBERSHIP AND SERVICES

1. 2023 – Current. President, Federation of African Chemical Societies (FASC)
2 2019 - 2024, Member of Bureau, International Union of Pure and AppliedChemistry.
3. 2017 -2019, National representative Member, International Union of Pure andApplied Chemistry (IUPAC), Chemistry and Environment (Division VI).
4. 2017, Member, International Committee, American Chemical Society
5. 2017-current. Member, Royal Society of Chemistry
6. 2017 – 2023, Vice-President, Federation of African Chemical Societies (FASC)
7. 2014 – 2017. President, Chemical Society of Nigeria
8. 2011 - current, Member, American Chemical Society
9. 2010-2019. Chairman, Organization for Women in Science for the DevelopingWorld (OWSD) Uniport Chapter Meeting.
10. 2011-2014. National Vice-President, Chemical Society of Nigeria (CSN).
11. 2011-current. Member, Institute Chartered Chemist of Nigeria (ICCON)
12. 2007, Fellow, Chemical Society of Nigeria (FCSN).
13. 2005-2014. Chairman, Awards and Educational Committee of the ChemicalSociety of Nigeria (CSN)

14. 2003-2007. Chairman, Chemical Society of Nigeria (CSN) Rivers/BayelsaStates
15. 2001-2005. National Treasurer, Chemical Society of Nigeria (CSN).
16. 2001-current. Member of Council of the Chemical Society of Nigeria (CSN)
17. 1991, Life – Member of the Chemical Society of Nigeria (CSN).
18. 1988-current. Member, Chemical Society of Nigeria (CSN)
19. 1982-current. Member, Third World Organization of Women in Science(TWOS) (now called) Organization for Women in Science for the DevelopingWorld (OWSW).

HOBBIES

Travelling, reading, listening to music, dancing and window shopping.

REFEREES

1. Prof. M. Horsfall, Jr
Department of Pure & Industrial Chemistry
University of Port Harcourt, Port Harcourt, Rivers State
2. Dr. N. C. Ngobiri
Department of Pure & Industrial Chemistry
University of Port Harcourt, Port Harcourt, Rivers State
3. Prof. K. Okorosie-Orubite
Department of Pure & Industrial Chemistry
University of Port Harcourt, Port Harcourt, Rivers State

Bipul Saha (India)

Expected Contribution:

As in previous years of my association with IUPAC, I will devote significant part of my time to promote IUPAC activities. I will continue my deep involvement in IUPAC projects . I have contributed in a major way for the success of IYPT, IUPAC 100, GWB. Using my contacts with editors, I will continue to publicise these events in Chemistry magazines and journals. I will contribute scientifically in my areas of specialization for IUPAC Projects (I carried out research with Nobel Laureate Professor Derek Barton). I have been member of different Divisions and Committees including COCI, CHEMRAWN, Division VI, ICGCSD and has good understanding of IUPAC Operation as a whole. I am confident of making significant contribution to IUPAC.

Short Biographical Sketch:

Dr. B. Saha is currently (a) IUPAC Bureau Member (b) Secretary of COCI (c) Member of Division VI, Project Committee and CHEMRAWN. Dr. Saha is also associated with important IUPAC projects as Task Group Co-Chair and Team member. He has strong connection with chemical industries and Associations.

Dr. Saha has been promoting IUPAC activities extensively. After COVID-19 pandemic, he has delivered speeches in the following program: (a) OPCW-IUPAC Workshop on "Artificial Intelligence Assisted Chemistry", The Hague, June 16 and 17, 2022 (b) APCE-CECE-ITP-IUPAC Conference, Angkor Wat, November 6-10,2022 (Topic: A brief history of IUPAC) (c) IUPAC COCI AGM, Tashkent, November 26 and 27, 2022 (Cooperation with Ujbekistan Government and Chemical Industry) (d) IYBSSD events.

Prior to pandemic, he organized large number of program to celebrate "IUPAC Centenary" and " IYPT2019" which were globally acknowledged. He developed cooperation between IUPAC and Industry Associations like Indian Chemical Council, FICCI and Indian Chemical Society. He has organized "GWB" events in India which was highest for a single country. Earlier, Dr. Saha actively participated and delivered speech at: (a) IUPAC World Chemistry Congress in 2019, 2017, 2015 (b) IYPT, Tokyo, 2019 (f) IUPAC International Congress of Pesticide Chemistry, San Francisco, 2014 – Discussion Leader. (News of these events have been covered in Chemical magazines).

A webinar was organized was organized in honour of Dr. B. Saha in December 2021 in "Eminent Personality Webinar" in which top level professionals spoke about his contribution (https://www.youtube.com/watch?v=cjrfu4325M4).

Dr. Saha has been Chairman and Invited speaker in various International and National seminars such as: (a) American Chemical Society's International Workshop to develop "Global Code of Ethics for Chemists", Kuala Lumpur (b) Chairman, Crop World India etc.

Dr. Saha has been Visiting Professor in IIT and other reputed Institutes. He carried out research with Nobel Laureate Professor Derek Barton. He has been member of the editorial advisory board of

American Chemical Society's "ACS Agricultural Science and Technology Journal", "Agri Business Global, USA", "Farm Chemicals International, USA" and editor of "Indian Society for Environmental Science & Technology Newsletter". He was awarded Homi Bhabha Gold Medal in a function where Prime Minister of India was present. Currently, he is Dean of SGI Business School, Hyderabad

Dr. Bipul Behari Saha has more than 35 years experience in chemical industry. He was Director – R&D of L.R. Research Lab, NACL Industries Limited, India. Prior to this, he was (a) Director in Gharda Chemicals (b) President (Technical) of Vinati Organics (c) VP- Lalbhai (d) General Manager, Monsanto and (e) Manager –R&D & QA, Pfizer.. He has developed strong relationship with Chemical Industry.

CV:

Name: Dr. Bipul Behari Saha

Qualification: M.Sc (Gold Medalist), Ph.D (Chemistry), Ph.D (Management)

Industrial experience:

(a) Director – R&D, NACL Industries Limited (formerly known as Nagarjuna Agrichem Limited-highly reputed chemical)

(b) Director of Gharda Chemicals (well known crop protection chemicals company)

(c) President (Technical) of Vinati Organics, (highly respected specialty chemicals company)

(d) Vice President of ASPL belonging to Lalbhai Group (well known specialty chemicals company)

(e) General Manager in multinational company Monsanto

(f) Manager – R&D & QA in multinational company Pfizer

(g) Scientific Officer – BARC, I have made significant contribution to Indian Chemical Industry for last 35 years and have been awarded "Homi Bhabha Gold Medal" by BARC in a program in which Prime Minister was present.

Academic:

I did post-doctoral research with Nobel Laureate Professor D.H.R. Barton. I was also selected by Nobel Laureate Professor E. J. Corey of Harvard University. I have taught in M.Sc (Chemistry) course of North Bengal University and have conducted Development Program for chemical industry professionals. I was also Visiting Faculty in Indian Institute of Technology (SJMSOM) and other Institutes. I have been invited to deliver speech in many parts of the world. Currently I am Dean of Sagar Group of Institutions.

I am in the editorial advisory board of "ACS Agricultural Science and Technology Journal". I was editor of "Indian Society for Environmental Science & Technology Newsletter" and Editorial Advisory Board Member of "Farm Chemicals International, USA", "Agri Business Global, USA" and "Carbohydrate Newsletter". I was also Principal Investigator and member of the steering committee of Government of India sponsored "New Millennium Indian Technology Leadership Initiative Project" and have been awarded North Bengal University Gold Medal and S.N. Bhattacharya Medal.

IUPAC Activities:

I have been deeply involved in many IUPAC activities. Currently, I am:

(a) Elected Bureau Member of IUPAC, 2020-23.

(b) Secretary and Titular Member of Committee of Chemistry and Industry (COCI), 2022-23.

(c) Associate member of IUPAC Division VI (Chemistry and the Environment), 2022-23.

(d) Member of Project Committee and CHEMRAWN, 2022-23

(e) Earlier, I was (i) member of IUPAC Inter-Divisional Committee on Green Chemistry for Sustainable Development, 2018-19 (ii) National Representative of India in IUPAC Division VI (Chemistry and the Environment), 2018-19 (iii) Associate member of COCI, 2016-17.

(f) I have been very active in organizing "Global Women's Breakfast" events in India. In last 3 years, India ranked no 1 for one year and No. 2 for another year in the numbers of GWB events organized globally.

(g) I am mentor for organizing IYBSSD events in India.

I am also associated with few important IUPAC projects. This includes:

(a) Systems Thinking in Chemistry for Sustainability: Toward 2020 and Beyond (STCS 2030+): Task Group Co-Chair.
(b) Examples of the introduction of sustainable development as well as green industrial processes for Secondary School Chemistry and Introductory Chemistry: Task Group Co-Chair.
(c) Assessment of Contribution of IUPAC projects to the achievement of UN17SDGs.
(d) PFASs in the environment: Information for emerging economies on PFASs analyses.
(e) Harmonizing Carbon Sequestration Measurements
(f) Chemistry Entrepreneurship, Task Group Co-Chair. Project proposal submitted.
(g) Safety Training Program in Asia, Project proposal under preparation
In addition, I am member of
(a) Crop Protection Sub-Committee of Division VI
(b) Member of IUPAC Project Committee, 2022-23.
A webinar was organized was organized in honour of Dr. B. Saha in December 2021 in "Eminent Personality Webinar" in which top level professionals spoke about his contribution (https://www.youtube.com/watch?v=cjrfu4325M4).
IUPAC and Indian Chemical Associations
I have been successful to build cooperation between IUPAC and Indian Chemical Society, Federation of Indian Chamber of Commerce & Industry (FICCI) and Indian Chemical Council (India's largest and most respected organization for chemical professionals).
Speeches in IUPAC Meetings and Conferences
Some of the IUPAC Meetings and Conferences in which I have actively participated and delivered speech are:
(a) IUPAC-OPCW workshop on "Artificial Intelligence Assisted Chemistry", The Hague, 16 and 17 June, 2022, Topic of speech: "Artificial intelligence in Agriculture and Agricultural Chemistry".
(b) IUPAC COCI AGM and meeting with Ujbekistan Chemical Society, Tashkent, November 26 and 27, 2022, Topics: IUPAC Projects, GWB2023, IYBSSD, Collaboration of COCI with other organizations, Safety Training Program in Asia
(c) Closing ceremony of IYPT, Tokyo, 2019.
(d) IUPAC General Assembly, COCI and Division VI Meetings, Paris, 2019.
(e) IUPAC International Congress of Pesticide Chemistry, Belgium, 2019.
(f) IUPAC COCI Meeting, Bratislava, 2018.
(g) IUPAC Division of Chemistry and Environment Meeting, Rome, 2018.
(h) IUPAC ICGCSD Meeting, Rome, 2018.
(i) IUPAC General Assembly and World Congress of Chemistry, Sao Paulo, 2017.
(j) IUPAC Workshop on "Chemical Industry and Sustainable Development", Beijing, 2016.
(k) IUPAC World Congress of Chemistry, Busan, 2015.
(l) IUPAC International Congress of Pesticide Chemistry, San Francisco, 2014 – Discussion Leader of the Session "Developing Global Leaders of Crop Protection Chemistry in 21st Century. News of all these Conferences and meetings have been extensively covered in "Chemical Weekly" and "Chemical Industry Digest".
Selection of Speeches in International & National Conferences and Publications:
(a) A Brief History of IUPAC, APCE-CECE-ITP-IUPAC Conference, Angkor Wat, November 6-10, 2022.
(b) Status of Microplastics in India, APCE-CECE-ITP-IUPAC Conference, Angkor Wat, November 6-10, 2022.
(c) Best Practices of Promoting Women Scientists in Indian organizations, Global Women's Breakfast, 2022, 2021 and 2020
(d) Best Practices of Promoting Women Scientists, National Conference on "Women led Science,

Technology and Innovation", Hyderabad, India, 2019, Invited Speaker.
(e) Status of Bioproducts in India, International Conference on "Biofertilizers and Biopesticides", Taiwan, August 2018, International Expert and Resource Person.
(f) Code of Ethics for Chemists, Indian Science Congress, 2017, Tirupati, Invited Speaker.
(g) Status of Biocontrol Industry, Biocontrol Asia, Bangkok, 2017, Invited speaker .
(h) Big Data in Chemical Industry, IUPAC World Congress, Sao Paulo, 2017.
(i) Invited by American Chemical Society to participate in an International Workshop to develop "Global Code of Ethics for Chemists", Kuala Lumpur, 2016.
(j) R&D in NACL Industries, International Conference in Synthetic Organic Chemistry, Pune, 2016.
(k) Status of Agrochemical Industry in India, Agrochemex, Vietnam, 2015, Invited Speaker.
(l) Impact of Climate Change on Agriculture and Food Security, International Congress of Pesticide Chemistry, San Francisco, 2014.
(m) Development Trends in Agrochemical Industry, CCPS, Shanghai, 2012, Invited Speaker.
(n) Status of R&D in Agrochemical Industry, Crop World Global London, 2011, invited Speaker.
(o) Competitive Strategies for Indian Companies, Crop World India 2012, Mumbai, Chairman.
(p) Crop World India 2011, Hyderabad, Chairman .
(q) Artificial Intelligence Assisted Chemistry, Chemical Industry Digest, June 27, 2022. https://chemindigest.com/artificial-intelligence-ai-assisted-chemistry/
(r) Jane E. Wissinger, Aurelia Visa, Bipul B. Saha, Stephen A. Matlin, Peter G. Mahaffy, Klaus Kummerer, Sarah Cornell (2021), Integrating Sustainability into Learning in Chemistry, Editorial published in American Chemical Society's "ACS Journal of Chemical Education", J. Chem. Edu., 2021, 98, 1061-1063
(s) T. Siva Sankara Babu, B. Saha and others, Synthesis and Antimicrobial Activity of 1- Aryl-4-(arylimino)-6-iminohexahydro-1,3,5-triazine-2-thione derivatives, Russian Journal of General Chemistry, 2019, Vol 89, No 4, pp 824-830.
(t) T. Siva Sankara Babu, B. Saha and others, An easy, efficient PTC-Mediated synthesis of 2-substituted-6-chloroquinoxalines and antibacterial activity, Rasayan J. Chem., 2020, 13(2), 1037-1041.
(u) B. Saha, Report on the Closing Ceremony of the International Year of the Periodic Table, Chemical News, January 2020, pp 70-72.
(v) B. Saha and Jaychandra Reddy N, 150th Anniversary of Periodic Table and Mendeleev, Chemical Industry Digest Annual, January 2019, pp 84-88.
(w) Bipul B. Saha and NJC Reddy, 150th Anniversary of Periodic Table and Mendeleev, Chemical News, 2019, pp 26-29.
(x) Bipul B. Saha, Report of IUPAC Workshop on "Green Chemistry" held in Rome, 2019, Pestology, 2019, Vol. XLIII No. 3, pp 18-20.
(y) Bipul B. Saha, Report on "3rd International Conference on Biofertlizers and Biopesticides" in Taipei, Pestology, 2018, Vol. XLII, No. 9, September 2018, pp 13-16

Zhigang Shuai (China/Beijing)

Expected Contribution:
Prof. Shuai has a strong background in international and IUPAC affairs. He has served as Chairman for a number of influential international conferences including the International Congress of Quantum Chemistry (2015, Beijing). He has been responsible for the international affair for the Chinese Chemical Society since 2006. Especially, he has been an active member for the IUPAC Organizational Structure Review Group. In addition, he was elected to the Executive Committee by the Bureau in 2021. IUPAC will work under the new structure. It is thus important to have Prof. Shuai in the coming new EC since he is familiar with both the existing EC and the new structure.

Short Biographical Sketch:
Zhigang Shuai received PhD in 1989 from Fudan University, Shanghai. Then he went to work as a postdoc and research associate in the University of Mons, Belgium. In 2000, he became a Professor in the Institute of Chemistry of the Chinese Academy of Sciences. He moved to Tsinghua University in 2008 as a Changjiang Scholar Chair Professor. And since 2022, he has worked as a Presidential Chair Professor in the Chinese University of Hong Kong, Shenzhen.
He has been working on developing computational method to modelling and understanding the excited state structure and dynamics. He has published more than 440 papers in scientific journals, with more than 31000 google citations (google H-index 98). He has been elected to the International Academy of Quantum Molecular Science in 2008 and elected to be the vice president in 2018; Fellow of the Royal Society of Chemistry; Foreign Member of the Academia Europaea; Foreign Member of the Royal Academy of Belgium. He is an Honorary Member of the Physical Society of Uzbekistan. He was the recipient of the Chinese Chemical Society – AkzoNobel Chemical Science Award (2012), the French Chemical Society Prix Franco-Chinois (2018), and the First-Class Award of Beijing Municipal Natural Science Prize (2020).
He served as Deputy-Secretary General of the Chinese Chemical Society for 2006-2017. Then, he was elected as the Vice President of the Chinese Chemical Society in 2018 and re-elected in 2022. For 2010-2017, he was a National Representative for IUPAC CCE. For 2018-2019, he served as AM in Division I. Then for 2020-2023, he served as TM for Division I. He was elected to the Bureau and then to the Executive Committee by the IUPAC Council in 2021. He has served in the IUPAC Organizational Structure Review Group in 2020. He is also a member of IUPAC evaluation committee. He delivered a plenary lecture for the IYC launch ceremony in UNESCO on “Chemistry and Civilization”.

CV:
PERSONAL DATA
Family name: Shuai
First name: Zhigang
Sex: Male
Marital Status: Married to Shunan Ma (gave birth to two sons: Quentin b.1996, Pierre b. 2000)

Birth Place: Yanshan County, Jiangxi Province, China
Birth Date: Aug. 27, 1962
Address: School of Science and Engineering
The Chinese University of Hong Kong, Shenzhen
518172 Guangdong, People's Republic of China
Nationality: Chinese
e-mail address: shuaizhigang@cuhk.edu.cn
mobile phone: +86-13511070668
http: www.shuaigroup.net

EDUCATION

- 1983 Bachelor Degree, Department of Physics, Zhongshan University, Guangzhou, China
- 1986 Master of Science Degree, Department of Physics, Jinan University, Guangzhou, China
- 1989 Ph. D. , Department of Physics, Fudan University, Shanghai, China

PROFESSIONAL EXPERIENCES

- 1989, 7 – 1990,3: Research Fellow, Department of Physics, Fudan University, Shanghai
- 1990,3 – 2001, 12 Postdoctor and Senior Research Scientist, Service de Chimie des Matériaux Nouveaux (Jean-Luc Brédas Lab), Université de Mons-Hainaut, Place du Parc 20, 7000 Mons, Belgium
- 2002,1 – 2008,4: Full Professor, Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, 100190 Beijing, China
- 2008,5 – present Changjiang Chair Professor, Department of Chemistry, Tsinghua University, 100084 Beijing, China
- 2022, 7 – present X. Q. Deng Presidential Chair Professor, School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, 518172 Guangdong, China

HONORS

- 2004 Hundred-Talent Program top 20% Award of the Chinese Academy of Sciences
- 2004 Outstanding Young Scientist Award (National Natural Science Foundation of China)
- 2008 Changjiang Scholarship Professor (Ministry of Education of China)
- 2008 Member, International Academy of Quantum Molecular Science (France)
- 2009 Fellow, Royal Society of Chemistry (UK)
- 2011 Foreign Member, Academia Euporeae (London)
- 2012 Chinese Chemical Society – AkzoNobel Chemical Science Award
- 2013 Member Associé, Royal Academy of Belgium (Brussels)
- 2014 National Excellent Scientist Award (China Association of Science and Technology)
- 2017 Scientif Board of World Association of Theoretical and Computational Chemists
- 2018 French Chemical Society Prix Franco-Chinois
- 2020 First Class Natural Science Award of the Beijing Municipal Government

EDITORIAL SERVICES

Associate Editor: Acta Chimica Sinica (CCS) 2012- Present
Deputy Editor: Research – A Science Partner Journal, 2021 - Present
Editorial Board Member of: National Science Review, J. Mater. Chem. C, Theor. Chem. Acc., Sci China Chem., Progress in Chemistry, Science Bulletin, Adv. Theor. Simul, Chem J of Chin Univ.
Advisory (Editorial) Board Member of: Chem. Asian J., Nanoscale, Chem. Phys. Lett., WIRES Comput. Mol. Sci., Nanoscale Advances

SOCIAL SERVICES

- 2019-2026: Vice President of the Chinese Chemical Society
- 2018-2023: Vice President of the International Academy of Quantum Molecular Science

- 2007-2018: (3 terms) Deputy-Secretary General of the Chinese Chemical Society (CCS)
- 2011-2022: elected Member of the Executive Council of CCS
- 2007-Present: Member of the Theoretical Chemistry Committee of CCS
- 2015-2018: Chairman of the Theoretical Chemistry Committee of CCS
- 2002-2022: Member of the Organic Solids Committee of CCS
- 2017-2022: member of the Physical Organic Chemistry Committee of CCS
- 2002 – Present: Member of the Academic Committee for the Institute of Chemistry of the Chinese Academy of Sciences, Beijing
- 2008 – Present: Member of the Academic Committee of the Ministry of Education Key Laboratory of Mesoscopic Chemistry, Nanjing University
- 2008 – Present: Member of the Academic Committee of the Department of Chemistry, Tsinghua University
- 2009 – Present: Member of the Academic Committee of the State Key Laboratory of the Physical Chemistry of Solid Surface, Xiamen University
- 2016 – Present: Member of the Academic Committee of the Ministry of Education Kay Laboratory of Organosilicon Chemistry and Materials Technology, Hangzhou Normal University.
- IUPAC services
- 2005: Organizer of the “Computer in Chemistry” session for the IUPAC Congress
- 2010 – 2017: National Representative for Committee of Chemistry Education
- 2018 -- 2019: Associate Member for Division I
- 2020 -- 2023: Titular Member for Division I
- 2021 – Present : Bureau Member
- 2021 – Present : Executive Member
- 2021 – Present : Evaluation Committee Member
- 2020: IUPAC Organization Structure Review Group Member
- 2021 - Present: IUPAC Top 10 chemical technologies selection committee
- 2022 – Present: 2023 World Chemistry Leader Meeting Coordinator

SELECTED PUBLICATIONS:
Total publications: 442
Total google citations: 31000 (google h-index=97)

1. Zhigang Shuai, David Beljonne, Robert J. Silbey, Jean-Luc Brédas, Singlet and triplet formation rates in conjugated polymer light-emitting diodes, Phys Rev Lett 2000, 84, 131-134.
2. Qian Peng, Yuanping Yi, Zhigang Shuai*, Jiushu Shao, Excited State Radiationless Decay Process with Duschinsky Rotation Effect: Formalism and Implementation, The Journal of Chemical Physics 2007, 126 (11), 114302.
3. Qian Peng, Yuanping Yi, Zhigang Shuai*, Jiushu Shao, Toward Quantitative Prediction of Molecular Fluorescence Quantum Efficiency: Role of Duschinsky Rotation, Journal of the American Chemical Society 2007, 129 (30), 9333-9339.
4. Meng-Qiu Long, Ling Tang, Dong Wang, Linjun Wang, Zhigang Shuai*, Theoretical Predictions of Size-Dependent Carrier Mobility and Polarity in Graphene, Journal of the American Chemical Society, 2009, 131 (49), 17728-17729.
5. Guangjun Nan, Xiaodi Yang, Linjun Wang, Zhigang Shuai*, Yi Zhao, Nuclear Tunneling Effects of Charge Transport in Rubrene, Tetracene, and Pentacene, Physical Review B, 2009, 79 (11), 115203.
6. Mengqiu Long, Ling Tang, Dong Wang, Yuliang Li, Zhigang Shuai*, Electronic Structure and Carrier Mobility in Graphdiyne Sheet and Nanoribbons: Theoretical Predictions, ACS Nano 2011, 5(4), 2593-2600

7. Zhigang Shuai*, Linjun Wang, Qikai Li, Evaluation of Charge Mobility in Organic Materials: From Localized to Delocalized Descriptions at a First-Principles Level, Adv. Mater. 2011, 23(9), 1145-1153.
8. Hua Geng, Qian Peng, Linjun Wang, Haijiao Li, Yi Liao, Zhiying Ma, Zhigang Shuai*, Toward Quantitative Prediction of Charge Mobility in Organic Semiconductors: Tunneling Enabled Hopping Model, Advanced Materials, 2012, 24 (26), 3568-3572.
9. Zhigang Shuai*, Qian Peng*, Excited States Structure and Processes: Understanding Organic Light-Emitting Diodes at the Molecular Level, Physics Reports, 2014, 537 (4), 123-156.
10. Zhigang Shuai*, Dong Wang, Qian Peng, Hua Geng, Computational Evaluation of Optoelectronic Properties for Organic/Carbon Materials, Accounts of Chemical Research, 2014, 47 (11), 3301-3309.
11. Qian Peng, Yingli Niu, Qinghua Shi, Xing Gao, Zhigang Shuai*, Correlation Function Formalism for Triplet Excited State Decay: Combined Spin-orbit and Non-adiabatic Couplings, J. Chem. Theory Comput. 2013, 9(2), 1132-1143
12. Hua Geng, Xiaoyan Zheng, Zhigang Shuai*, Lingyun Zhu, Yuanping Yi*, Understanding the Charge Transport and Polarities in Organic Donor–Acceptor Mixed-Stack Crystals: Molecular Insights from the Super-Exchange Couplings, Advanced Materials, 2015, 27 (8), 1443-1449.
13. Wen Shi, Tianqi Zhao, Jinyang Xi, Dong Wang*, Zhigang Shuai*, Unravelling Doping Effects on Pedot at the Molecular Level: From Geometry to Thermoelectric Transport Properties, Journal of the American Chemical Society, 2015, 137 (40), 12929-12938.
14. Jiajun Ren, Zhigang Shuai*, Garnet Kin-Lic Chan*, Time-dependent density matrix renormalization group algorithms for nearly exact absorption and fluorescence spectra of molecular aggregates at both zero and finite temperature. J. Chem Theor. Comput. 2018, 14, 5027-5039.
15. Huili Ma, Qian Peng*, Zhongfu An, Wei Huang, Zhigang Shuai*, Efficient and long-lived room temperature organic phosphorescence: theoretical descriptors for molecular design, J. Am. Chem. Soc. 2019, 141, 1010-1015.
16. Qi Ou, Qian Peng, Zhigang Shuai*, Computational screen-out strategy for electrically pumped organic laser materials. Nature Commun. 2020, 11, 4485~1-10.
17. Qi Ou, Yihan Shao, and Zhigang Shuai*, Enhanced Reverse Intersystem Crossing Promoted by Triplet Exciton–Photon Coupling. J. Am. Chem. Soc., 2021, 143, 17786-17792.
18. Yuanheng Wang, Jiajun Ren, Weitang Li, and Zhigang Shuai*, Hybrid Quantum-Classical Boson Sampling Algorithm for Molecular Vibrationally Resolved Electronic Spectroscopy with Duschinsky Rotation and Anharmonicity. J. Phys. Chem. Lett., 2022, 13, 6391−6399
19. Jiajun Ren*, Weitang Li, Tong Jiang, Yuanheng Wang, Zhigang Shuai*, Time-dependent density matrix renormalization group method for quantum dynamics in complex systems. WIREs Comput Mol Sci., 2022, e1614
20. Haibo Ma, Ulrich Schollwoeck, Zhigang Shuai, “Density Matrix Renormalization Group (DMRG)-based Approaches in Computational Chemistry”, Elsevier (Amsterdam, 2022), ISBN: 978-0-323-85694-2

Miroslav Štěpánek (Czech Republic)

Expected Contribution:
Development of the terminology physical chemistry and colloid chemistry, molecular spectroscopy and methodology of research in these fields of science. Participation in elaborations of IUPAC Technical Reports in these and related fields including interdisciplinary projects.

Short Biographical Sketch:
The nominee is a full professor at the Department of Physical and Macromolecular Chemistry at the Faculty of Science of the Charles University in Prague. His research interests are focused on the association behavior of block copolymers in selective solvents, as well as on experimental methods for the studies of the block copolymer self-assembly, mainly scattering techniques and fluorescence spectroscopy.

CV:
Prof. RNDr. Miroslav Štěpánek, Ph.D.
Born: Prague, February 9, 1973
Current Position: Associate Professor, Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague
Education and Academic Degree:
1991–1996: Undergraduate studies: Physical Chemistry, Faculty of Science, Charles University, Prague, Czech Republic
1996–2000: Ph.D. study with Prof. K. Procházka at the Faculty of Science, Charles University. Thesis titled "Block Copolymer Micelles in Aqueous Media: Fluorometric and Light Scattering Studies of the Shell Behavior".
2004: RNDr., Physical Chemistry
2013: Associate Professor of macromolecular chemistry at the Charles University in Prague. Habilitation thesis titled "Self-assembly of Amphiphilic Block Copolymers in Solution"
2022: Full Professor of macromolecular chemistry at the Charles University in Prague.

Professional Experience:
1996–1999: General University Hospital in Prague, analytical chemist
1999: Guest Researcher at the Uppsala University (the group of Prof. W. Brown) – 3 months
2001–2013: Researcher at the Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague
2013–2022: Associate Professor at the Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague
Since 2022: Full Professor at the Department of Physical and Macromolecular Chemistry, Faculty of

Science, Charles University in Prague
Research interests:
- Association of block copolymers in solution
- Polyelectrolytes
- Application of scattering and microscopic techniques for studies of associating polymer systems

Publications:
82 papers in journals with IF
H-index: 24 (1180 citations, without self-citations)
ResearcherID: D-3831-2013, ORCID: 0000-0002-7636-7234
Research projects:
- "Association and interactions of block polyelectrolytes in aqueous solutions", Czech Science Foundation, P203/02/D048 (2002–2005), postdoctoral grant
- "DNA Condensation: Monte-Carlo simulations, light scattering and fluorescence correlation spectroscopy in vivo and in vitro", Grant Agency of the Academy of Sciences of the Czech Republic IAA400400621 (2006–2010), co-principal investigator
- "Nanoparticles based on hydrophilic block polyelectrolyte complexes with ionic surfactants", Czech Science Foundation P208/10/0353 (2010–2012), principal investigator
- "Stabilization of superparamagnetic nanoparticles in aqueous solutions by means of amphiphilic and hydrophilic block copolymers", Czech Science Foundation 14-11516S (2014–2016), principal investigator

Student Supervising:
4 Ph.D., 7 Master and 4 Bachelor students defended their theses
Currently supervising 2 Ph.D. students and 1 Master student
List of Selected Publications since 2017:
(1) Fanova, A; Hoffmann, I; Prevost, S; Tosner, Z; Stepanek, M. Insight into the Structure of a Comb Copolymer-Surfactant Coacervate from Dynamic Measurements by DOSY NMR and Neutron Spin Echo Spectroscopy. Macromolecules 2022, 55, 6191–6199.
(2) Fanova, A; Davidovich, I; Talmon, Y; Skandalis, A; Pispas, S; Stepanek, M. Modification of the Co-assembly Behavior of Double-Hydrophilic Block Polyelectrolytes by Hydrophobic Terminal Groups: Ordered Nanostructures with Interpolyelectrolyte Complex Domains. ACS Appl. Polym. Mater. 2021, 3, 1956–1963.
(3) Fanova, A; Janata, M; Filippov, SK; Slouf, M; Netopilik, M; Mariani, A; Stepanek, M. Evolution of Structure in a Comb Copolymer-Surfactant Coacervate. Macromolecules 2019, 52, 6303–6310.
(4) Murmiliuk, A; Kosovan, P; Janata, M; Prochazka, K; Uhlik, F; Stepanek, M. Local pH and Effective pK of a Polyelectrolyte Chain: Two Names for One Quantity? ACS Macro Lett. 2018, 10, 1243–1247.
(5) Fanova, A; Sindelka, K; Uchman, M; Limpouchova, Z; Filippov, SK; Pispas, S; Prochazka, K; Stepanek, M. Coassembly of Poly(N-isopropylacrylamide) with Dodecyl and Carboxyl Terminal Groups with Cationic Surfactant: Critical Comparison of Experimental and Simulation Data. Macromolecules 2018, 51, 7295–7308.
(6) Skvarla, J; Raya, RK; Uchman, M; Zednik, J; Prochazka, K; Garamus, VM; Meristoudi, A; Pispas, S; Stepanek, M. Thermoresponsive behavior of poly(N-isopropylacrylamide)s with dodecyl and carboxyl terminal groups in aqueous solution: pH-dependent cloud point temperature. Colloid Polym. Sci. 2017, 295, 1343–1349.

Pietro Tundo (Italy)

Expected Contribution:

Based on the facts and the relevant knowledge reported in my CV, foremost, IUPAC's activities, scientific background, experience in management within International Organizations (e. g. OECD, OPCW, UNESCO, EuChems, UNEP, ISC3) and Italian Organizations such as Interuniversity Consortium "Chemistry for the Environment" (INCA) and Green Sciences for Sustainable Development Foundation (GSSD), I would like to propose my application for being a member of the Executive Board.

The motivation for my application is the desire to put my long experience in research in advanced organic chemistry and management at the service of IUPAC in this period of crucial transition. My rich experience accumulated over years would serve as a valuable contribution to the long-term vision of IUPAC's future. After accurately pondering on the current difficult world situation, I arrived at the conclusion that it is time to get a precise understanding of the changes and it is a duty for all of us, in tight collaboration with the Science Board, to contribute to the reputation of IUPAC, as its independent scientific background would deserve.

In order to strengthen IUPAC's voice in the global scientific community, I would first advocate for internal management directed toward a more balanced and inclusive structure where different opinions can be considered. Secondly, a re-accreditation of the importance of IUPAC among the International Bodies would be fundamental, more important now than ever since sustainable development might seem a profitable issue and not a challenge as it actually is.

For achieving these ambitious goals, if elected I will work for:

1. suggesting and promoting the high-quality level of the Projects, in collaboration with the Science Board, and following the suggestions of NAOs for an increased cooperation between the two.
2. an increase in the number of personnel dedicated to the IUPAC management, supporting, and promoting the professionality already existing.
3. an increase of the Volunteers' visibility affiliated with IUPAC, who actually are the scientific resources that should be valorized, also as a useful point of connection with the NAOs and the Science Board.

I am aware of the global challenges that it needs to be faced, but I also believe that Sciences and Chemistry in particular, are beyond politics and nationalities boundaries. IUPAC should strongly affirm the independence and inclusivity of Science by offering to outstanding scientists a common ground to work together on Projects, and allowing them to create firm international connections.. These Projects should focus on the relevance of Chemistry for sustainable development, including those aimed at Education.

Short Biographical Sketch:

Pietro R. Tundo is Professor of Organic Chemistry; retired in 2016.
Secretary of IUPAC Interdivisional Committee on Green Chemistry for Sustainable Development
President of the Foundation "Green Sciences for Sustainable Development"
Research Senior Associate at Institute for the Chemistry of Organometallic Compounds (ICCOM), National Research Council of Italy (CNR), Florence, Italy.
ORCID: https://orcid.org/0000-0002-8167-356X Researcher ID: F-7871-2015 Publications: https://www.unive.it/data/persone/5591778/pubb_anno h index 54

- He is author of about 400 scientific publications, 40 patents and about 20 books dealing with organic synthesis with low environmental impact and with their reaction mechanism.
- Tundo coordinated many research projects (Italian Ministry of Research and EU, NATO, Dow, ICI, Roquette).
- Holder of the Unesco Chair on Green Chemistry (Chair of UNTWIN N.o 731).
- Tundo was President of IUPAC Division Organic and Biomolecular Chemistry (biennium 2007-2009).
- He was Chair (2018-2021) of UPAC Interdivisional Committee on Green Chemistry for Sustainable Development
- Currently, he is Secretary of IUPAC Interdivisional Committee on Green Chemistry for Sustainable Development.
- Pietro Tundo is the Founder of the IUPAC International Conferences Series on Green Chemistry (Dresden 2008, Ottawa 2010, Foz de Guanzu 2012, Durban 2014, Venice 2016, Moscow 2017, Bangkok 2018, Athens 2022). Next one to be held in Beijing in 2024.
- Founder and the Director of the 14 editions (1998 – 2022) of the Summer Schools on Green Chemistry (Venezia, Italy), sponsored by the EU, UNESCO, OPCW, PhosAgro, Sasol, Yale Un. USA, Nottingham Un. UK, NATO, and IUPAC. The 15th Edition of the Green Chemistry Postgraduate Summer School will take place in Venice from 2nd to 7th July 2023.

CV:

Pietro Tundo
By February 25th, 2023
Personal Information
Date of birth October 16th, 1945, Italian; address Via Istria 29 - 30174 Venezia (Italy)
Researcher ID F-7871-2015, ORCID: https://orcid.org/0000-0002-8167-356X
http://www.unive.it/data/persone/5591778
Education and History of Employment
• 1969: Degree on Chemistry, University of Bologna (Italy), 1st class honors.
• 1972 - 1986: Università degli Studi di Torino (Italy). Assistant and then Associate Professor.
• 1986 - 1989: Università degli Studi di Messina (Italy). Full Professor.
• 1989 - 2017: Ca' Foscari University of Venice (Italy). Full Professor of Organic Chemistry. Now retired.
• 2016 - present: Senior Associate Professor at the Institute for the Organometallic Compounds, CNR. Florence.
• In the years 1979 - 1983: Guest researcher at T&M University, College Station (Texas), Syracuse University (New York) and Clarkson College of Technology, Potsdam (New York).
Scientific Leader Profile
Professor Tundo is a scientist with a high international profile. He published 400 Papers and 40 Patents,

one single-Author book, about 20 Edited books: h-index 54 since 1985, 6195 citations (ISI). http://www.unive.it/data/persone/5591778/pubb_tipo. He has made substantial improvement in a number of fields of chemistry. He invented a continuous-flow system based on phase-transfer catalysis (Gas-Liquid Phase Transfer-Catalysis, GL-PTC) which is currently used in industry for the manufacturing of aryl ethers and other fine chemicals. The many fields of research the Nominee has learnt and produced results on: supramolecular chemistry, phase-transfer catalysis, continuous-flow processes, polymerized vesicles, photo-induced processes, artificial photosynthesis, catalysis and zeolites, detoxification methods, hydrodehalogenation reactions, green chemistry and industrial processes. In the last 20 years his researches are directed toward carbonate chemistry: dialkyl carbonates, no more synthetized from phosgene, are inherently safe compounds for green syntheses and sustainable applications; the Nominee is the foremost academic researcher having published the greatest number of scientific papers in this field. A selection of the reaction pathways reported for the first time by the Nominee is:

- The of mono-methylation of CH2 acidic compounds: this reaction led to patents in Europe, USA, and Japan and concerns the production of anti-inflammatory drugs such as ibuprofen, ketoprofen, naproxen;
- New pathways and cyclisation reactions based on organic carbonates for fine chemicals (now utilized by ICI, Givaudan, for fragrances synthesis;)
- New reaction pathways for the synthesis of cyclic urethanes (1,3-oxazinan-2-ones).
- How to domesticate war chemistry: macrocyclic aza-ethers and a new family of polymers from mustard carbonates (no more vesicant compounds).
- Intertwined BAl2 BAc2 reactions mechanisms among Carbonates and Esters.

Prof. Tundo has directed and coordinated many research collaborations with industry; Enichem, ICI, Givaudan, Dow, Croda, Roquette, etc., Italian and EU scientific and educational Projects.

Membership of Advisory and Editorial Boards of International Journals

Below a selection is reported.

• 2000 - 2013: Int. Ed. Board- RSC, Green Chemistry.
• 2007 - 2015: Int. Advisory Board ChemSusChem, Wiley 2014.
• 2014: Editor in Chief (with John Andraos) of the new Series of Book “Green Syntheses”, CRC Press.
• Co-Editor in Chief of the Series of Books “Green Chemistry and Sustainable Technology”, Springer.
• 2006 - 2010: Director of the bimonthly magazine for Secondary Schools “Green. La Scienza al Servizio dell’Uomo e dell’Ambiente”.
• INCA Green Chemistry Series (volumes I-XI): a book series on the research and applications of Green Chemistry in different countries, Italy, Africa, Russia, Argentina; three volumes dedicated to the lectures of the Green Chemistry Summer Schools. A few volumes of the INCA series were sponsored by IUPAC, INTAS, Wiley and Springer.
• Member of the Editorial Advisory Board of Pure and Applied Chemistry.

Honours

• 1982: American Chemical Society, Kendall Award (with Janos Fendler) for his synthesis of polymerized vesicles.
• 1992: Federchimica (Italian association of chemical industries). Award on “An Intelligent Future" for his sole-author book: Continuous flow methods in organic synthesis (1991), Ellis Horwood Ltd.

Institutional Responsibilities, Commission of Trust, Membership of Scientific Societies Founder, Chair or Leader

• Professor Tundo has founded in 1993 and directed the Interuniversity Consortium “Chimica per l’Ambiente” (Chemistry for the Environment), INCA, embodying 31 Italian Universities. The Laboratory of INCA at Marghera-Venice and other seven INCA Laboratories in Italy (Palermo, Catania, Napoli, Lecce, Bari, Cengio, Cagliari). Over the years 1998 - 2007 INCA was assessed three times by CHEPS (Center for Higher Education Policy Studies) University of Twente NL. INCA’s activities were evaluated by CIVR

(Italian Ministry of Research) suggesting that INCA had the scientific leadership in Italy in the area of "Science and technologies for the sustainable development and governance". The average budget of INCA per year was about 6,5 millions €.
• 2005-2010: He founded the bimonthly science magazine Green, La Scienza al servizio dell'uomo e dell'ambiente, distributed in Italian scientific high schools (25.000 copies every issue) and, upon agreement with the Italian Ministry of Education, the related "Premio Green Scuola".
• 2003: He launched and carried the first Italian course entirely dedicated to women, aiming to strengthen their career advancement on sustainable chemistry in the university. 25 Young researches attended and concluded their experience with an internship abroad.
• May 2009: organization of the "Festival della Chimica Verde", which was held in Lecce (Italy).
• 2005 - 2015: Chairman of MEGREC (Mediterranean Green Chemistry Network). This voluntary association of Green Chemistry Institutions of Mediterranean Countries (Egypt, Italy, Morocco, Tunisia, Algeria, Serbia, Greece and Spain) http://virgo.unive.it/megrec/ was founded in Belgrade on 2005 and represented the UNESCO UNITWIN No. 731. The latter was based at Ca' Foscari; in cooperation with MEGREC, this UNITWIN promoted and managed many research and educational projects directed forward sustainability with many Conferences and Workshops.
• 2018 - 2023: Coordinator of UNESCO "Green Chemistry Excellence from Baltic Sea to Mediterranean Sea and Beyond" UNITWIN.
• 2000 . 2021: Founder and Chairman of the Working Group on "Green and Sustainable Chemistry" of EuCheMS, the European Association for Chemical and Molecular Sciences, which was upgraded in 2015 into the current EuCheMS Division on Green and Sustainable Chemistry.
• 1998: The Nominee established the first Green Chemistry Postgraduate Summer School in the world, which brought innovating in science education and has provided more than one thousands of students with a solid foundation in green chemistry (contributions to Goal 4 Quality Education). The first 10 Summer Schools were supported by INCA and EU. Subsequent 11th - 14th Editions were endorsed by IUPAC. The 15th Edition of the Summer School will held next Summer in Venice, Italy - https://www.greenchemistry.school/. Their Motto is: Sustainability through green chemistry. The Summer Schools stand out for their interdisciplinarity, not just in the selection of teachers and students (carefully selected in order to have high level classes able to understand the importance of sustainability) but also for the main topics discussed (chemistry, biology, medicine, engineering, physics).
• 2006: Professor Tundo established the biannual series of IUPAC International Conferences on Green Chemistry (https://en.wikipedia.org/wiki/International_Conference_on_Green_Chemistry), the first if which was held in Dresden (2006) and then in Moscow, Ottawa, Foz de Guazu, Durban, Venice, Moscow, Bangkok (2019) and Athens (2022): Next one to be held in Beijing, China (2024).

SCIENCE BOARD

- Eva Åkesson (Sweden)
- David Berkowitz (USA)
- Pierre Braunstein (France
- Amanda Forster (USA)
- Alejandra Palermo (UK)
- Peter Schreiner (Germany)
- Chi-Huey Wong (China/Taipei)
- Jihong Yu (China/Beijing)

Eva Åkesson (Sweden)

Expected Contribution:
I have a genuine engagement in science and education. As secretary, vice chair and liaison officer in the Committee on chemistry education (CCE) within IUPAC, I got the opportunity to become acquainted with the whole breath of activities within IUPAC. If elected to the science board, I will bring with me an understanding of the role of chemistry in society and the importance of education when addressing the future challenges for humankind together with the public's appreciation of chemistry. With experience holding leading positions at both Lund and Uppsala University, I have a long experience of leadership. I also have extensive international experience leading networks and collaborations.

Short Biographical Sketch:
Eva Åkesson is currently professor of chemical physics and senior advisor at Lund University, Sweden. Eva Åkesson served as vice-chancellor of Uppsala University, Sweden, 2012-2020. After undergraduate and doctoral studies at Umeå University 1989, and a postdoc at the University of Minnesota, she was selected in 1996 by the Swedish Research Council as senior researcher in photochemical reaction mechanisms and joined the staff of Lund University. From 2003 to 2008 she was vicerector at Lund University, with special responsibility for undergraduate education and internationalisation. From 2009 to 2011 she was Deputy Vice- Chancellor.
Eva Åkesson has served on numerous boards, including the board of CSN (the Central Board for Student Aid), Kristianstad University, the Swedish Institute, and Council of the University of Tartu, Estonia. She is a member of the board of Chalmers, Sweden. She has served as titular member, secretary and deputy chair of the IUPAC Committee on Chemistry Education, and currently the chair of the Chemical Society in Lund. She chaired the international expert panels for evaluating leadership and governance of

education at Helsinki University in 2008, evaluation of Aalto School of Science in 2011 and the QQI institutional review of University College Dublin, Ireland in 2019, and University of Eastern Finland 2022. A former chair of the Matariki Network of Universities and the Southern African–Nordic Centre (SANORD), and vice-chair of the Guild of European Research-Intensive Universities.
In 2015 she received an honorary doctorate from the University of Edinburgh. In 2018 she was awarded H.M. The King's Medal of the 12th size with the ribbon of the Order of the Seraphim for "exemplary work in Swedish higher education" and in 2019 she received the Skytte Medal of the University of Tartu in recognition of her contributions to international cooperation.

CV:

NAME: EVA Barbro Helen ÅKESSON
Contact information: Nissestigen 6, 26971 Förslöv, Sweden | +46(0)70 3000 645
eva.akesson@science.lu.se

Present employment:

Professor Chemical Physics, Lund University, Sweden Senior advisor, Lund University, Sweden

Research:

Eva Åkesson has primarily pursued research in femtochemistry – a field that makes use of ultrafast spectroscopy to follow chemical reactions and dynamics on the timescale on which chemical bonds are formed and broken. She has studied isomerisations, dissociation reactions and electron transfers. Her research has also addressed energy conversion in artificial systems for solar cells. A special interest in her research has been the study of various ways in which the surroundings (solvents) can influence and change these reactions and dynamics.

Work experience and main appointments:

2023 – Senior Advisor to the university management, Lund University, Sweden
2012 – 2020 Vice-chancellor/president, Uppsala University, Sweden
2011 – Professor Chemical Physics, Lund University, Sweden
2009 – 2011 Deputy Vice-chancellor, Lund University, Sweden
2003 – 2008 Assistant Vice-chancellor/vice rector, Lund University, Sweden
2000 – 2010 Associate professor Chemical Physics, Lund University, Sweden
2000 – 2003 Director of studies, Chemistry department, Lund University, Sweden
1996 – 2000 Researcher Chemical Physics, Lund University, Sweden
1995 – 1996 Weland Technics, Sales manager, Sweden
1991 – 1994 Research assistant Dept. of Physical Chemistry, University of Umeå, Sweden
1989 – 1991 Post-doctor Dept. of Chemistry, University of Minnesota, USA
1985 – 1989 PhD student and Teacher assistant, Dept. of Physical Chemistry, University of Umeå,

Education:

ETP, Excellent teaching practice 2005, Lund university, Sweden
Docent 1999, Lund university, Sweden
PhD (physical chemistry): 1989, University of Umeå, Sweden
Bachelor of Science: 1984, University of Umeå, Sweden
High school certificate: 1980, Ängelholms gymnasieskola, Sweden

Assignments within Lund and Uppsala University, Sweden:

2012 – 2020 Member of the University Board, Uppsala University
2012 – 2020 Member of the board, Rikssalsstiftelsen
2012 – 2020 Member of the board, Akademiförvaltningen, stiftelsestyrelsen/foundation
2012 – 2020 Chair Stiftelsen/foundation UBBO

2012 – 2020 Member of the board Skytteanska stiftelsen/foundation
2011 Chair LLC board (Lund Laser Centre) Lund University
2009 – 2011 Chair Library board, Lund University
2009 – 2011 Chair Interpol, (Policy group for internationalisation) Lund University
2006 – 2011 Chair Lund University's Development council for Quality assurance and pedagogic development Lund University
2003 – 2006 Chair Lund University's Quality council, Lund University
2003 – 2006 Chair Lärande Lund, Lund University
2003 – 2006 Chair Lund University's Bologna group, Lund University
2003 – 2011 Chair Lund University's Recruitment council, Lund University
2001 Member of the board CITU, Lund University
1997- 2000 Deputy member board Lund Laser Centre, Lund University

Assignments - Sweden:

2021 – Member board Chalmers University, Sweden
2021 – Chair Chemical Association Lund
2017 – 2019 Member Registerdatarådet
2016 – 2018 Chair Göran Gustafsson foundation
2016 – 2020 Member board GD föreningen
2015 – 2017 Member IVAs styrgrupp Utsiktsplats forskning
2015 – 2020 Inspector Europaskolan Stängnäs, Sweden
2012 – 2020 Member Länsstyrelsens insynsråd
2012 – 2014 Chair Göran Gustafsson foundation
2008 Chair: Accreditation university colleges for entitlement to award master degree (HSV)
2008 – 2009 Member of CSN "insynsråd"
2007 – 2011 Member of board Kristianstad University, Sweden
2006 – 2007 Member of CSN board
2007 – 2011 Member of advisory board, Spyken (High school Lund)
2007 Expert at the Swedish National Agency for higher education (HSV): University colleges for entitlement to award master degree
2007– 2008 Member of board Lund university education AB
2006– 2008 National Bologna expert
2006 National Academic Contact Point (NACP) quality assurance
2006 Member of the reference group Business administration at the Ministry of education
2006 Member of the reference group "Ådmission qualifications" (HSV)
2005 – 2006 National Bologna promoter
2002 Expert at the Swedish evaluation of education in chemistry (HSV)

Assignments - International:

2022 – Chair, International Advisory Board Turku University, Finland
2022 Chair, FINEEC Evaluation University Eastern Finland
2020 Member, international evaluation panel, University of South Bohemia, Czech Republic
2019 – Member, International advisory board, Helsinki University, Finland
2015 – Member, Scientific advisory board, Tubingen University, Germany
2019 Chair, institutional review QQI University College Dublin, Ireland
2017 – 2021 Member, Council Tartu University, Estonia
2017 – 2020 Vice chair, The Guild of research intensive universities
2017 – 2018 Chair SANORD (Southern African - Nordic Center)
2015 – 2019 Member of rectors advisory group, Coimbra university network
2015 – 2017 Chair Matariki University Network

2014 – 2015 Vice chair Matariki University network
2014 – 2016 Vice chair SANORD (Southern African - Nordic Center)
2013 Member board SANORD (Southern African - Nordic Center)
2011 Chair of evaluation panel Science, Aalto University, Finland
2010 Evaluation of biology program, Zurich University, Switzerland
2008 Chair: international review panel “Leadership and management of teaching”, Helsinki University, Finland
2007 Member of expert panel, Evaluation of Tuning, Brussels
2005 – 2014 Member National committee Chemistry (Nationalkommitten för kemi)
2005 – 2012 Titular member IUPAC:s Committee on Chemistry Education
2002 – 2005 National representative, IUPAC:s Committee on Chemistry Education

Distinctions and awards:

2020 Uppsala Municipality's Medal of Honor "tirelessly worked to strengthen the university's position as an international research and teaching environment”
2019 Skytte medal, University of Tartu, Estonia, “Contributions to the development of the University of Tartu”
2108 H.M. The King’s Medal of the 12th size with the ribbon of the Order of the Seraphim “Exemplary work in higher education”
2015 Honary doctor, Edinburgh University ”in recognition of your outstanding contributions to Sweden’s higher education system and internationalization”

Pedagogic training

Prov och provkonstruktion 5p (UmU 1994) Pedagogisk kurs för MN lärare
UPC HT-96 Högskolepedagogisk specialkurs
UPC HT-98 Konsten att ge feedback
UPC VT-99 Att utbilda för framtiden, UPC HT-00

Other training and education:

1997 Kurs för blivande docenter, 1 vecka, UPC
2001 Kvinna i karriären- Women in carreer 1 week
2004 – 2005 Akademisk ledarskapsprogram, Högskoleverket – Academic leadership programme
2006 EUA leadership seminar; Building Leading and Implementing an International Strategy
2012 – 2013 GD programmet – general manager leadership programme
2012 – 2013 Rektorsprogrammet, Leadership Programme Vice – chancellors
2021 Utbildning i Professionellt styrelsearbete, Micheal Berglund; professional board work

David Berkowitz (USA)

Expected Contribution

•With my activities in research at the Chemistry/Biology interface and my 6 years in toto serving at the US National Science Foundation, including my leading the Chemistry Division, I see myself best positioned to help set scientific priorities and advise on long-term scientific strategy and vision for IUPAC.
•With our discussions at NSF on Harnessing the Data Revolution as a "Big Idea" and related investments including the MMLI AI Institute and the CCAS, I intend to support the IUPAC near-term priorities with improving continuity of data and data standards.
•Finally, I have a strong interest in international collaboration, having performed much of my PhD research in Switzerland (ETH-Zurich) and having served as a Visiting Professor in (i) Rouen, France (Universite de Rouen); (ii) Dortmund, Germany (Max Planck Institute fuer Molekulare Physiologie); (iii) Tokyo, Japan (JSPS Fellow) and (iv) Paris, France - U. de Paris-Rene Descartes. We also have had an important collaboration with colleagues at the National University in Singapore. I am conversant in French and German, as well as my native English.
•With my NSF hat, we in NSF-CHE have stood up recent successful joint funding calls with the Deutsche Forschungsgemeinschaft (DFG-Germany) and a recent joint virtual symposium with the Agence Nationale de la Recherche (ANR – France) and are in active discussions with several other national science organizations, internationally.

Short Biographical Sketch

David B. Berkowitz is the Director of the Division of Chemistry at the National Science Foundation, where he oversees a staff of over 40 and an annual budget of approximately $260 M dedicated to funding fundamental science in chemistry that bears on many other disciplines and that is directed at training the next generation of scientists. Berkowitz is also Willa Cather Professor of Chemistry at the University of Nebraska-Lincoln where he leads an active research group engaged in science at the chemistry/biology interface with a focus on synthetic chemistry, biocatalysis and mechanism-based enzyme inhibition. He also co-leads the Nebraska Drug Discovery & Development Pipeline (ND3P) along with Kenneth Bayles from the University of Nebraska Medical Center (UNMC, Omaha).
David Berkowitz studied at the University of Chicago (B.S.-Phi Beta Kappa), Harvard/ETH-Zürich (Ph.D.) and Yale (PD). His honoraria include Visiting Professorships at the Université de Rouen (Normandy, France, 2005), the Max Planck Institute (Dortmund, Germany, 2006) and the Université de Paris-V (2016). He has delivered keynote lectures at Sanofi's Visions in Chemistry Symposium (2009), the inaugural World Congress on Catalytic Asymmetric Synthesis (2010, Beijing, China) and the EMBO Conference on Enzyme Mechanisms (2014, Manchester, UK) and the National Medicinal Chemistry Symposium (Nashville, 2018). In 2018, Berkowitz chaired the international Gordon Research Conference on Biocatalysis. Berkowitz has previously served on the Board on Chemical Sciences and Technology

(BCST) and currently sits on the Chemical Sciences Roundtable (CSR), both at the National Academy of Sciences, Engineering and Medicine (NASEM). He has been selected as an Alfred P. Sloan Fellow, a Japan Society for the Promotion of Science (JSPS) Fellow and a AAAS Fellow.

CV:

DAVID B. BERKOWITZ
Willa Cather Professor
Department of Chemistry
University of Nebraska
Lincoln, NE 68588
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DAVID B. BERKOWITZ
Division Director
Division of Chemistry
National Science Foundation
Alexandria, VA 22314
Tel. (703)-292-2949
email: dberkowi@nsf.gov
web: https://www.nsf.gov/div/index.jsp?div=CHE

Education:
1990-1991 Postdoctoral Research, Yale University (Samuel J. Danishefsky, Mentor)
1990 Ph.D., Harvard University (Steven A. Benner, Thesis Advisor)
1986-1990 Traveling Scholar, Eidgenössische Technische Hochschule (ETH), Zürich, Switzerland
1982 B.S., University of Chicago
Academic Positions:
2011- Willa Cather Professor, Department of Chemistry, University of Nebraska
2005-2010 Professor of Chemistry, Department of Chemistry, University of Nebraska
1997-2004 Associate Professor of Chemistry, Department of Chemistry, University of Nebraska
1991-1996 Assistant Professor of Chemistry, Department of Chemistry, University of Nebraska
Scientific/Administrative Leadership:
2020- Division Director, Division of Chemistry, National Science Foundation
2017-2020 Director, Interdisciplinary Therapeutics Research (0.25 appt in NU-ORED)
2019 Committee of Visitors, CBET Division, ENG Directorate, National Science Foundation
2015 Interim Division Director, Division of Chemistry, National Science Foundation
2013-2016 Chair, Department of Chemistry, University of Nebraska
2011-2013 National Science Foundation-CHE Chemistry of Life Processes (CLP) Program Lead
2010-2013 National Science Foundation-CHE Chemical Synthesis (SYN) Program Officer
2004-2008 American Heart Association, Inaugural Bioengineering and Biotechnology Study Section, Co-Chair (Spring 2007, 2008)
Awards, Honors, Featured Lectures:
2021 Keynote Symposium Organizer and Speaker, ACS 261st National Meeting-Sustainable Chemistry-Reinventing Catalysis
2020 Chemical Sciences Roundtable, National Academy of Sciences
2019-20 Board on Chemical Sciences and Technology, National Academy of Sciences
2018 Chair – Biocatalysis Gordon Research Conference, Biddeford, ME
2018 Invited Speaker, International Symposium on Reactive Intermediates & Unusual Molecules (ISRIUM), Ascona, Switzerland
2018 Keynote Lecturer, French-American Chemical Society, Orléans, France
2018 Invited Speaker-ACS National Medicinal Chemistry Symposium, Nashville, TN
2018 Invited Speaker-ACS Biological Chemistry Symposium, Boston, MA
2017 Featured Speaker-CHI Symposium on Biocatalysis, San Diego, CA
2016 Visiting Professor – Universite de Paris-Descartes , Paris, France
2015 AAAS Fellow (American Association for the Advancement of Science)
2014 Invited Speaker, EMBO Conference on Enzyme Mechanisms, Manchester, England

2012 Invited Speaker, International Zing Conference on Biocatalysis, Xcaret, Mexico
2010 Plenary Lecturer, World Congress on Catalytic Asymmetric Synthesis, Beijing, China
2010 Outstanding Research and Creative Activity (ORCA) Award, College of Arts & Sciences, University of Nebraska-Lincoln
2009 Featured Speaker, Visions in Chemistry Symposium, Sanofi-Aventis (Bridgewater, NJ)
2009 Invited Speaker, 19 th ACS Division of Fluorine Chemistry Winter Fluorine Conference (St. Petersburg, FL)
2008-09 Fellow, Japan Society for the Promotion of Science (JSPS)
2008 ACS Division of Organic Chemistry Symposium on Advances in Combinatorial Catalysis and Screening, 236th National ACS Meeting, Aug. 17-21, 2008 (Philadelphia, PA)
2008 Award for Outstanding Contributions to Undergraduate Research – University of Nebraska-Lincoln
2006 Visiting Professor, Max Planck Institut für molekulare Physiologie, Dortmund, Germany.
2005 Visiting Professor, Université de Rouen, Rouen, France.
2005 Invited Speaker, Gordon Research Conference on Bioorganic Chemistry (June 12-17, 2005; Andover, NH)
2002 Invited Speaker, Combinatorial Chemistry Gordon Research Conference, Oxford, England.
2002 Plenary Lecturer, 5th International Colloquium on Organofluorine Chemistry, Gaillon, France, May 5-8, 2002
2001 Plenary Lecturer, 15th ACS Division of Fluorine Chemistry Winter Fluorine Conference (St. Petersburg, FL)
2000 Featured Speaker, Nebraska Academy of Sciences, Chemistry Section
2001-1997 Alfred P. Sloan Research Fellow
Selected Recent Publications and Patents:
Stephany Ramos de Dios, Danielle L. Graham, Jared L. Hass, Nivesh Kumar, Aina E. Antony; Martha D. Morton, David B. Berkowitz* "Information-Rich, Dual Function 13 C/2 H-Isotopic Crosstalk Assay for Human Serine Racemase (hSR) Provides a PLP Enzyme 'Partitioning Fingerprint' and Reveals Disparate Chemotypes for hSR Inhibition," J. Am. Chem. Soc., 2023, 145, 3158-3174; DOI: 10.1021/jacs.2c12774
Stephany Ramos de Dios, Virendra K. Tiwari, Christopher D. McCune, Ranjeet A. Dhokale, David B. Berkowitz* "Biomacromolecule-Assisted Screening for Reaction Discovery and Catalyst Optimization," Chem. Rev. 2022, 121, 13800-13880; DOI: 10.1021/acs.chemrev.2c00213 (Chemical Reviews journal cover: https://pubs.acs.org/pb-assets/images/_journalCovers/chreay/chreay_v122i016-2.jpg?0.09498348523998312)
Virendra K. Tiwari, Douglas R. Powell, Sylvain Broussy, David B. Berkowitz* "Rapid Enantioselective and Diastereoconvergent Hybrid Organic/Biocatalytic Entry into the Oseltamivir Core," J. Org. Chem. 2021, 86, 6494-6503; DOI: 10.1021/acs.joc.1c00326 – Selected for the journal cover! See: https://pubs.acs.org/pb-assets/images/_journalCovers/joceah/joceah_v086i009-4.jpg?0.377468394868246
Gaurav P. Kudalkar, Virendra K. Tiwari, Joshua D. Lee, David B. Berkowitz,* "Hammett Study of Clostridium acetobutylicum Alcohol Dehydrogenase (CaADH): An Enzyme with Remarkable Substrate Promiscuity and Utility for Organic Synthesis," Synlett, 2020, 31, 237-247; DOI: 10.1055/s-0039-1691576 – included in a special Synlett Cluster on Biocatalysis
Kaushik Panigrahi, Xiang Fei, Masato Kitamura,* David B. Berkowitz,* "Rapid Entry into Biologically Relevant a,a-Difluorophosphonates Bearing Allyl Protection - Deblocking Under Ru(II)/(IV) Catalysis," Organic Letters, 2019, 21, 9846-9851; DOI: 10.1021/acs.orglett.9b03707
Medhanjali DasGupta, Dominik Budday, Saulo H. P. de Oliveira, Peter Madzelan, Darya Marchany-Rivera, Javier Seravalli, Brandon Hayes, Raymond G. Sierra, Sebastian Boutet, Mark Hunter, Roberto Alonso-Mori, Alexander Batyuk, Jennifer Wierman, Artem Lyubimov, Aaron S. Brewster, Nicholas K. Sauter, Brandon Hayes, Gregory A. Applegate, Virendra Tiwari, David B. Berkowitz, Michael C. Thompson, Aina

Cohen, James S. Fraser, Michael E. Wall, Henry van den Bedem,* Mark A. Wilson* "Mix and Inject XFEL-Crystallography Reveals Gated Conformational Dynamics During Enzyme Catalysis," PNAS, 2019, 116, 25634-25640; DOI: 10.1073/pnas.1901864116

Danielle L. Graham, Matthew L. Beio, David L. Nelson, David B. Berkowitz* "Human Serine Racemase: Key Active Site Residues/Motifs and Their Relation to Enzyme Function," Frontiers in Molecular Biosciences 2019, DOI: 10.3389/fmolb.2019.00008 (13 March 2019)

Medhanjali DasGupta, Dominik Budday, Peter Madzelan, Javier Seravalli, Brandon Hayes, Raymond G. Sierra, Sebastian Boutet, Mark Hunter, Roberto Alonso-Mori, Aaron S. Brewster, Yuping Tu; Cheryl A. Kreinbring, Megan Hill, Cynthia Liu, Gregory A. Petsko, Christopher D. McCune, David B. Berkowitz, Dali Liu, Dagmar Ringe,* "Crystal Structures of Cystathionine b-Synthase from Saccharomyces cerivisiae: One Enzymatic Step at a Time," Biochemistry 2018, 57, 3134-3145; DOI: 10.1021/acs.biochem.8b00092

Guillaume Malik; Robert A. Swyka, Virendra K. Tiwari, Xiang Fei, Gregory A. Applegate, David B. Berkowitz,* "A Thiocyanopalladation/Carbocyclization Transformation Identified Through Enzymatic Screening: Tandem C-SCN and C-C Bond Formation," Chemical Science 2017, 8, 8050-8060; DOI: 10.1039/C7SC04083K

Christopher D. McCune, Matthew L. Beio, Roberto de la Salud-Bea, Jill M. Sturdivant, Brendan M. Darnell, David B. Berkowitz* "Synthesis and Deployment of an Elusive Fluorovinyl Cation Equivalent: Access to Quaternary, a-(1'-Fluoro)vinyl Amino Acids as Potential PLP Enzyme Inactivators," J. Am. Chem. Soc. 2017, 139, 14077-14089; DOI:10.1021/jacs.7b04690

David L. Nelson; Gregory A. Applegate, Matthew L. Beio, Danielle L. Graham, David B. Berkowitz,* "Human Serine Racemase Structure/Activity Relationship Studies Provide Mechanistic Insight and Point to Position-84 Base as a Hotspot for b-Elimination Function." J. Biol. Chem. 2017, 292 (34), 13986-14002; DOI: 10.1074/jbc.M117.777904.

Xiang Fei; Megan E. Zavorka, Guillaume Malik, Christopher M. Connelly, Richard G. MacDonald,* David B. Berkowitz,* "General Linker Diversification Approach to Bivalent Ligand Assembly: Generation of an Array of Ligands for the Cation Independent Mannose 6-Phosphate Receptor (CI-MPR)." Organic Letters, 2017, 19, 4267-4270; DOI: 10.1021/acs.orglett.7b01914

Christopher D. McCune; Su Jing Chan; Matthew L. Beio; Weijun Shen; Woo Jin Chung,; Laura M. Szczesniak; Chou Chai; Shu Qing Koh , Peter T.-H. Wong;* David B. Berkowitz* "Zipped Synthesis" by Cross-Metathesis Provides a CBS (Cystathionine β-Synthase) Inhibitor that Attenuates Cellular H2 S Levels and Reduces Neuronal Infarction in a Rat Ischemic Stroke Model," ACS Central Science 2016, 2 (4), 242-252; DOI: 10.1021/acscentsci.6b00019

Kannan R. Karukurichi, Xiang Fei, Robert A. Swyka, Sylvain Broussy, Sangeeta Dey, Weijun Shen, Sandip K. Roy, David B. Berkowitz* "Mini-ISES Identifies Promising (Carba)fructopyranose-Based Salens for Asymmetric Catalysis: Tuning Ligand Shape via the Anomeric Effect." Science Advances 2015, 1(6), e1500066; DOI: 10.1126/sciadv.1500066

Gregory A. Applegate and David B. Berkowitz* "Exploiting Dynamic Reductive Kinetic Resolution (DYRKR) in Stereocontrolled Synthesis" Advanced Synthesis & Catalysis 2015, 357, 1619-1632, chosen as a VIP (Very Important Publication) by the editors. DOI 10.1002/adsc.201500316

Kaushik Panigrahi, Gregory A. Applegate, Guillaume Malik, David B. Berkowitz* "Combining a Clostridial Enzyme Exhibiting Unusual Active Site Plasticity with a Remarkably Facile Sigmatropic Rearrangement: Rapid Stereocontrolled Entry into Densely Functionalized Fluorinated Phosphonates for Chemical Biology. J. Am. Chem. Soc, 2015, 137, 3600-3609. DOI: 10.1021/jacs.5b00022; featured as a JACS Spotlight: DOI: 10.1021/jacs.5b02757, featured in Nebraska Today: http://news.unl.edu/newsrooms/unltoday/article/team-spotlights-molecular-discoveries-at-intersection-of-chemistry/

Pierre Braunstein (France)

Expected Contribution:

If I am elected to the new Science Board (SB) of IUPAC, I think I can contribute in many ways to its new role in the governance of IUPAC. Concerning the scientific activities initiated and supported by IUPAC, my own experience has provided me with ample opportunities to interact with chemists of diverse backgrounds, including in editorial functions, and to better understand the challenges faced by chemistry and its key role at the interfaces with other disciplines. Furthermore, the international dimension has always been essential to me, not only in having had the pleasure to work with PhD students and post-docs from many different countries and cultural backgrounds, but also in participating in a number of international panels in Europe, Asia and South America for the evaluation of research projects and of science organisations.

I will be pleased to share my experience with the other members of the SB, with the various governing bodies and members of IUPAC and take advantage of my international network to help promote its actions.

Short Biographical Sketch:

Pierre Braunstein obtained his PhD in Inorganic Chemistry from the University of Strasbourg (France), and then spent a year at University College London (1971-72), with Profs. R. S. Nyholm and R. J. H. Clark. After his State Doctorate from the University of Strasbourg, he worked with Prof. E. O. Fischer (Nobel Laureate) at the Technical University Munich as an Alexander-von-Humboldt post-doctoral fellow (1974-75).

He became Research Director Exceptional Class within the CNRS and is now Emeritus Research Director. He currently also holds various positions in China: at Qingdao University of Science and Technology, Zhejiang University, Soochow University and Yangzhou University.

His broad research interests lie in the inorganic and organometallic chemistry of the transition and main group elements. Focused on synthetic aspects of molecular chemistry, his work has also led to applications, ranging from homogeneous catalysis, to cluster-derived nanoparticles for heterogeneous catalysis and nanosciences.

Among the different research topics that Pierre Braunstein and his group have explored over the years, one can mention the creation of new chemical bonds (in particular metal-metal bonds), of new mono- and poly-nuclear complexes, the elaboration of concepts rationalizing structure-reactivity relationships, diverse applications in homogeneous catalysis (ethylene oligomerization, co-oligomerization olefins/CO and ethylene/polar olefins, transfer hydrogenation of ketones, alkane activation, dehydrogenative coupling of stannanes), the first examples and applications of molecular mixed-metal cluster-derived heterogeneous catalysts (for the carbonylation of organic nitro derivatives to isocyanates). His research achievements also include the synthesis and complexation of polytopic functional ligands, the

development of functional N-heterocyclic carbenes ligands, their metal complexes and catalytic applications, the synthesis of new organic quinonoid molecules with delocalized □ systems and their applications in chemistry and physics; the synthesis, characterization, reactivity and catalytic applications of functional enolates and their metal complexes; the synthesis and reactivity of bimetallic silyl complexes (new molecular interactions and catalysis); molecular metal clusters (concepts, synthesis, structures, reactivity, catalysis).
He has received numerous awards and honors from France, China, Germany, India, Italy, Japan, Portugal, Singapore, Spain, The Netherlands and the United Kingdom. He is a member of Academia Europaea (2002), the European Academy of Sciences (2002), Corresponding Member of the Saragossa Academy of Sciences (Spain) (2002), member of the French Academy of Sciences (2005), the German National Academy of Sciences Leopoldina (2005), Foreign Member of the Lisbon Academy of Sciences (Portugal) (2015). He is also Head of the Chemistry Division of the European Academy of Sciences since 2015.

CV:

Pierre BRAUNSTEIN
Born 4 October 1947 in (68) MULHOUSE (France)
Institut de Chimie de Strasbourg (UMR 7177 CNRS)
Université de Strasbourg, 4 rue Blaise Pascal, F-67081 STRASBOURG (France)
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orcid.org/0000-0002-4377-604X

EDUCATION
Ingénieur-Chimiste Ecole Nationale Supérieure de Chimie de Mulhouse 1969 Major (rank #1)
Docteur-Ingénieur, Université Louis Pasteur (ULP), Strasbourg 1971 Highest grade
Doctorat d'Etat ès Sciences Physiques (State Doctorate), ULP Strasbourg 1974 Highest grade
RESEARCH FUNCTIONS
* CNRS researcher, ULP Strasbourg 1971
* Honorary Research Assistant (CNRS/Royal Society), at University College London (Profs. R. S. Nyholm and R. J. H. Clark), UK 1972
* Attaché de recherche CNRS, ULP Strasbourg 1972
* A. von Humboldt Fellow, TU Munich (Prof. E. O. Fischer, Nobel laureate) 1975
* CNRS Chargé de Recherche, ULP Strasbourg 1975
* CNRS Maître de Recherche, ULP Strasbourg 1979
* CNRS Research Director (1st class), ULP Strasbourg 1990
* CNRS Research Director (except. Class DRCE1), ULP Strasbourg 2003
* CNRS Research Director (« classe exceptionnelle DRCE2», highest rank) 2008
* Emeritus CNRS Research Director and “Professeur conventionné de l’Université de Strasbourg” since Sept. 2014
FOREIGN APPOINTMENTS
In addition to various Invited Professorships (see below), shorter term appointments (2 weeks) as visiting professor/distinguished scientist have been held at Univ. Osaka, Univ. Kyoto, Univ. Ochanomitsu, Univ. Hokkaido (Japan); A*Star Institute of Materials Research and Engineering (Singapore)
INVITED PROFESSORSHIPS
* Invited Professor at the Faculty of Chemistry, University of KONSTANZ (Germany) Oct. 1984
* Distinguished Visiting Scholar - Department of Chemistry, University of ADELAIDE (Australie) July 1994
* Invited Professor at the Department of Chemistry, University of SARAGOSSA (Spain) Sept. 1997

* Invited Professor at Academia Sinica Taipei, TAIPEI (Taiwan) Dec. 2002
* Honorary Professor of the Chinese Academy of Sciences (Institute of Chemistry, BEIJING) April 2006
* GAUSS Professorship – Academy of Sciences in Göttingen (Germany) 2022–2023

EXTENDED FOREIGN APPOINTMENTS

* Department of Chemistry - University College London, LONDON (UK) Nov. 1971–Oct. 1972, Professors R. S. NYHOLM, M. L. TOBE and R. J. H. CLARK, Honorary Research Assistant - CNRS/Royal Society Exchange Programme
* Anorganisch-Chemisches Laboratorium der Technischen Universität München Nov. 1974–Oct. 1975, MUNICH (Germany) - Professor E. O. FISCHER (Nobel Laureate). A. von Humboldt Fellow

RESEARCH AREAS

Fundamental and applied molecular chemistry, creation of new chemical bonds (metal-metal), of new complex molecules, elaboration of concepts rationalizing structure-reactivity relationships, applications in homogeneous catalysis (ethylene oligomerization, co-oligomerization olefins/CO and ethylene/polar olefins, transfer hydrogenation of ketones, alkane activation, dehydrogenative coupling of stannanes), nanomaterials from molecular precursors, applications in heterogeneous catalysis (carbonylation of organic nitro derivatives to isocyanates)

* Synthesis and complexation of polytopic functional ligands
* Functional N-heterocyclic carbenes and their complexes; catalytic applications
* New organic molecules with delocalized p system (quinonoids): applications in chemistry and physics
* Chemistry of functional enolates and their metal complexes (synthesis, characterization, reactivity, catalysis)
* Synthesis and reactivity of bimetallic silyl complexes (new molecular interactions and catalysis)
* Molecular metal clusters (concepts, synthesis, structures, reactivity, catalysis)

SCIENTIFIC PRODUCTION

Review articles: 52
Publications in refereed journals: 578
Patents: 10
Plenary/Keynote/Invited lectures/conferences: 506

EDITORIAL FUNCTIONS

Books/Specials Issues:

* Guest Editor of "Recent Advances in Di- and Polynuclear Chemistry", New J. Chem. 1988, 12, 307–720.
* Guest Editor of "Inorganic Chemistry in France", Coord. Chem. Rev. 1998, 178-180, 1–1846.
* Guest Editor with W. A. Herrmann de "New Perspectives in Organometallic Chemistry", New J. Chem. 1990, 14, 389–587.
* Guest Editor with P. Sobota et J. J. Ziolkowski (Poland) of the "Proceedings of the 13th Summer School on Coordination Chemistry", Polanica-Zdroj, Poland, 2–8/6/1996, New J. Chem. 1997, 21, 647–846.
* Co-editor with P. R. Raithby and L. A. Oro of the book "Metal Clusters in Chemistry", Wiley-VCH, 1999, 3 vol., 1850 pages

Editorial Boards

* Applied Organometallic Chemistry Advisory Board (2009– ...)
* Bull. Soc. Chim. Fr. Advisory Board (1993–1997)
* Comptes-Rendus Acad. Sciences (Paris) Editorial Board ((1994–2001), Editor-in-chief (2002– ...)
* Coord. Chem. Rev. Editorial Board (1997–2007)
* J. Chem. Soc., Dalton Trans. Regional Editor (1989–1993), Advisory Board (1994–1995), Associate Editor (1996–2001)
* J. Cluster Science Editorial Board (1990– ...)
* J. Organomet. Chem. Advisory Board (1994–2001)
* Monatshefte für Chemie/Chemical Monthly Advisory Board (1998–2000), Regional Editor (2001–2010)

* New Journal of Chemistry Advisory Board (1985–1990), Associate Editor (1990–2002), Internat. Advisory Edit. Board (2003–2007)
* Organometallics Advisory Board (1991–1993)

TEACHING ACTIVITIES

* Coordination Chemistry and Cluster Chemistry in D.E.A. "Chimie des Métaux de Transition et Catalyses" then "Chimie des Métaux de Transition et Ingénierie Moléculaire", Strasbourg (1980/81 – 2000/01).
* "Clusters and Aggregates" in Maîtrise de chimie, ULP (2001/02 – 2003/04), and Master 1 (from 2004/05 – 2013/14)
* Various courses within the ERASMUS Exchange Programmes with the Universidade de Lisboa (Portugal) ("Chemistry of Metal-Metal Bonds and Clusters" (8 h) 2001/02–2003/04) et the University of Camerino (Italie),

TRAINING-THROUGH-RESEARCH ACTIVITIES

* Supervision of 49 DEA (Master) students (Transition Metal Chemistry and Catalysis)
* Supervision of > 70 Doctoral theses
* « Garant » of 4 Habilitations
* Collaboration with > 70 post-docs and invited professors.

HIGHLIGHTS OF ACHIEVEMENTS

* Protagonists in Chemistry, Inorg. Chim. Acta, 2013, 350, xxvi-xxviii by J. Rosé, M. Knorr, L. A. Oro, A. Tiripicchio, This issue contains 91 articles dedicated to P. Braunstein from 18 countries. https://www.sciencedirect.com/science/article/pii/S0020169303000768
* Canal Académie 25/10/2009, https://www.canalacademie.com/ida4977-Pierre-Braunstein-l-amoureux-des-clusters-metalliques-et-des-belles-molecules.html
* Author profile, Angew. Chem. Int. Ed. 2010, 49, 1718 – 1720, http://onlinelibrary.wiley.com/doi/10.1002/anie.201000183/abstract
* Editorial by Roger Guilard, Gerhard Erker, Paul Raithby and Qiang Xu for the Special Issues of Coord. Chem. Rev. 2017, 350, 1-339 and Coord. Chem. Rev. 2018, 355, 1- 403. The two volumes of this special issue contain 37 review articles dedicated to P. Braunstein http://www.sciencedirect.com/science/article/pii/S0010854517305581?via%3Dihub and https://www.sciencedirect.com/journal/coordination-chemistry-reviews/vol/355/suppl/C
* https://en.wikipedia.org/wiki/Pierre_Braunstein

SELECTED COMMISSIONS OF TRUST and SCIENTIFIC ACTIVITIES OF GENERAL INTEREST

Regional

* Co-directeur (with J. Dehand) (1989–1990) then director (1990–1996) of the Research Unit URA 416 CNRS, Laboratory of Coordination Chemistry of the Louis Pasteur University (Strasbourg)
* Director of the Laboratory of Coordination Chemistry of the Louis Pasteur University (Strasbourg) within UMR 7513 CNRS (1997–2004) and then Institute of Chemistry (UMR 7177 CNRS) (2005–2017)

National

* Vice-President (1988–1990) and then President (1991–1994) of the Coordination Chemistry Division of the French Chemical Society.
* Member of the « Comité National de la Chimie » (1995–2004)
* Elected member of the Council of the French Chemical Society (1997–2001)
* Appointed by the CNRS or the Ministry of Research in various national evaluation committees
* Member of the Board of the "Fondation Nationale Alfred Kastler" (2001–2007)
* Vice-President of the "Fondation Nationale Alfred Kastler" (2007– ....)
* President of the Alumni of the Ecole Nationale Supérieure de Chimie de Mulhouse (2006–2012)
* Member of the Council of the « Fondation de la Maison de la Chimie » (2008– ...)
* Organization or co-organization of 13 national scientific conferences

International
* Appointed by the CNRS or the Ministry of Research in various international evaluation committees (PROCOPE, bilateral programme CNRS/DFG,...)
* President of the coordination committee of the European Science Foundation Network "Metal Clusters" (1992–1995)
* Co-founder with M. Veith (Sarrebrücken, Germany) of the first European Training Network/Europäisches Graduiertenkolleg" (GRK 532 of the DFG) between the Universities of Sarrebrücken, Luxembourg, Metz, Nancy and Louis Pasteur Strasbourg) (1999–2014).
* Appointed by the Council of the European Science Foundation in the EURESCO Committee (2002–2004)
* Expert for the Helmholtz-Gemeinschaft (Beirat for the Programmes Nanotechnologies (2002–2006) and Environment (2002–2007) of the Forschungszentrum Karlsruhe (FZK) (Karlsruher Institut für Technologie, KIT)
* Elected Member of the Council of the Royal Society of Chemistry (UK) (2005–2009)
* Expert for the Deutsche Forschungsgemeinschaft (DFG) for the evaluation of the excellence initiative (2006–2007)
* European Research Council: Member of Panel PE5 “Materials and synthesis” - Advanced Grants (2010–2015)
* Appointed member of the Strategy Commission of the German National Research Council (Wissenschaftsrat + DFG) for the evaluation of the universities of excellence) (2011–2016)
* Appointed member of the International Program Committee for the Millennium Science Initiative in Chile (Government of Chile) (2012– 2015, 2016–2018 and 2020).
* Appointed expert by the German Government for the German “Exzellenzstrategie” Program (2016–2020)
* Member of the « External Advisory Board » of the « Centro de Quimica Estrutural » of Lisbone (Portugal) (2016–...)
* European Research Council: Vice-Chair of a Peer review panel PE5 ERC “Synergy Grants” (2019)
* Member of the Physical Sciences Panel of the Research Grant Council of Hong-Kong (2020–2025)
* European Research Council: Chair of a Peer review panel PE5 ERC “Synergy Grants” (2021–2022)
* Member of the Singapore A* Star Review Panel for the Central Research Fund in the Science and Engineering Research Council (2022)
* Member of the Singapore A* Star Mid Term Review Panel for the Advanced Manufacturing Engineering Individual Research Grants and Young Individual Research Grants Projects (2022)
* Member of the Singapore A* Star Advanced Manufacturing Engineering Individual Research Grants and Young Individual Research Grants Funding Initiative Review Panel (2022)
* Referee for numerous international journals
* Expert for the evaluation of the research programmes of the NSF, Petroleum Research Funds (USA), European Commission, European Science Foundation, EPSRC (GB), CNR (Italy), DFG (numerous individual grants, SFB and SPP programmes), Volkswagen and A. von Humboldt Foundations (Germany), Fonds national (Switzerland), Wissenschaftsfonds (FWF), Austrian Science Fund and various research organisations in Canada, Spain, Hong-Kong, Israël, Japan, Singapore, Taiwan.
* Referee for appointments and promotions of scientists from Germany, USA, UK, Canada, China (Hong-Kong, Taiwan), Spain, The Netherlands, Italy, Sweden, Switzerland, ...
* Organization or co-organization of 28 international scientific conferences.
MEMBER of ACADEMIES
* Corresponding Member of the French Academy of Sciences (1993)
* Corresponding Member of the Saragossa Academy of Sciences (Spain) (June 2002)
* Member of Academia Europaea (2002)

* Member of the European Academy of Sciences (2002)
* Member of the German National Academy of Sciences Leopoldina (2005)
* Member of the French Academy of Sciences (Paris) (2005)
* Foreign Member of the Lisbon Academy of Sciences (Portugal) (2015)
* Chair of the Chemistry Division of the European Academy of Sciences (2015)
* Chair of the Sciences Section of the 'Académie Rhénane' (2011)

SCIENTIFIC DISTINCTIONS AND AWARDS

* Noelting Award of the Ecole Supérieure de Chimie de Mulhouse 1969
* Thesis Award from the « Association pour le Développement des Relations avec l'Industrie auprès des 1973, Universités de Strasbourg ».
* Award of the Division of Physical Chemistry and Mineral Chemistry of the French Chemical Society 1975
* Prix d'Aumale of the French Institute nominated by the French Academy of Sciences 1983
* Invited Professor at the Faculty of Chemistry of the University of KONSTANZ (Germany) Oct. 1984
* 1st Greater Manchester Inorganic Lecture - UMIST - Manchester (UK) 1985
* Weissberger Williams Lecture - Kodak Research Laboratories - Rochester (USA) 1986
* Alexander von Humboldt Forschungspreis 1988
* Médaille d'Argent (Silver Medal) of the CNRS 1989
* Max-Planck Forschungspreis (jointly with H. Vahrenkamp, Germany) 1991
* Elected Corresponding Member of the French Academy of Sciences 1993
* John van Geuns Lecture, Amsterdam (The Netherlands) 1993
* Distinguished Visiting Scholar - Department of Chemistry of the University of ADELAIDE (Australia) July 1994
* Grand Prix Raymond Beer of the French Chemical Society 1995
* Fellow of the Royal Society of Chemistry (CChem FRSC) May 1996
* Japan Society for the Promotion of Science Fellow - TOKYO (Japan) April 1997
* Invited Professor at the Department of Chemistry of the University of SARAGOSSA (Spain) Sept. 1997
* 1st Awardee of the Franco Spanish Prize Paul Sabatier - Miguel Catalán between the French Chemical Society and the Royal Spanish Chemical Society, selected by the Royal Spanish Chem. Soc. 1998
* Senior Visitor, Académie des Sciences/Royal Society 1998
* Grignard - Georg Wittig Prize between the French Chemical Society and the Gesellschaft Deutscher Chemiker, selected by the Gesellschaft Deutscher Chemiker 1999
* Otto-Warburg Prize (Germany) 2002
* Elected Corresponding Member of the Saragossa Academy of Sciences (Spain) June 2002
* Elected Member of Academia Europaea 2002
* Elected Member of the European Academy of Sciences 2002
* Invited Professor at the Academia Sinica, TAIPEI (Taiwan) Dec. 2002
* Chini Memorial Lecture (Italian Chemical Society) 2003
* Nyholm Lecture and Medal (Royal Society of Chemistry) 2003
* Grand Prix of the Institut Français du Pétrole of the French Academy of Sciences 2004
* Elected Member of the German National Academy of Sciences Leopoldina 2005
* Elected Member of the French Academy of Sciences 2005
* Molecular Science Forum Lecture Professorship, Institute of Chemistry, Chinese Academy of Sciences, Beijing (China) 2006
* Elected « Officer » of the Chemical Sciences Division of the « European Academy of Sciences » 2006
* John van Geuns Lecture, Amsterdam (The Netherlands) 2007
* Descartes-Huygens Prize (Dutch Academy of Sciences) 2008
* Elected Member of the Académie Rhénane – Head of the Sciences Section 2011

* Sacconi Medal and Lecture (Italian Chemical Society) 2013
* International Award of the Japanese Society of Coordination Chemistry 2013
* Award of the International Organic Chemistry Foundation (Kyoto, Japan) 2013
* Distinguished Visiting Scientist, Institute of Materials Research and Engineering, A*STAR, Singapore 2013–2017
* Technische Universität Munich (TUM) Ambassador (1 st promotion) 2013
* Distinguished Member of the “Société Chimique de France” (1st promotion) 2013
* Grand Prix Pierre Süe of the French Chemical Society 2013
* Foreign Corresponding Member of the Academy of Sciences of Lisbon (Portugal) 2015
* Elected Head of the Chemistry Division of the European Academy of Sciences 2015
* Visiting Professor at Qingdao University of Science and Technology (China) June 2016–May 2019
* Qiushi Chair Professor of Zhejiang University (China) March 2017–Dec. 2019
* Chair Professor Soochow University (China) May 2017–April 2020
* Appointed Academic “Master” of the 5 years “111 Project” “Rubber-Plastics Materials and Engineering Overseas Expertise Introduction Center for Discipline Innovation”, Qingdao University of Science and Technology (China) Dec. 2017– 2022
* Adjunct Distinguished Chair Professor of Yangzhou University Jan. 2018–Dec 2022
* Sustech Chemical Sciences Lectureship, Dept. of Chemistry, Southern Univ. of Science and Technology. Nov 2018
* Distinguished Visiting Scholar, University of Hong-Kong Dec. 2018
* “Tongji Master Lecture”, Tongji University (China) March 2019
* Distinguished professor of " Advanced Polymer Materials " Zhejiang University (China) July 2019–June 2024
* 1st Awardee of the Portugal-France Chemistry Bilateral Lectureship Award between the Sociedade Portuguesa de Química and the French Chemical Society, selected by the Sociedade Portuguesa de Química 2019
* China-France Chemistry Bilateral Lectureship Award between the Chinese Chemical Society and the French Chemical Society, selected by the Chinese Chemical Society 2020
* European Prize for Organometallic Chemistry of the European Chemical Society (EuChemS)-Division of Organometallic Chemistry 2021
* GAUSS Professorship – Academy of Sciences in Göttingen (Germany) 2021–2022
* Distinguished Visiting Scientific Advisor, Institute of Materials Research and Engineering, 2022–2025, A*STAR, Singapore

Amanda Forster (USA)

Expected Contribution:
Through the past experience that I could bring to IUPAC, I believe that I can help IUPAC achieve its goals in terms of identifying emerging new fields and helping position IUPAC to be strategic in its future endeavors. Most of my career has been focused on the long-term stability of high strength fibers used in armor applications, and the development of standards and test methods to interrogate these systems. Through this work, I have had the opportunity to hone skills in consensus building amongst diverse groups (research staff, program managers, manufacturers, and law enforcement/stakeholders) and extending theory to application. More recently, I have completed a developmental detail in NIST's Program Coordination Office, where I worked on science policy and strategic planning for the NIST Director's Office, especially focused on standardization in critical and emerging technologies, which provides an excellent foundation to supply the forward thinking vision that the IUPAC Science Board is seeking for its membership. Two other relevant experiences that I bring to the table are my recent efforts to lead and facilitate a group to identify new directions for NIST's Material Measurement Laboratory in materials science. Through this work, I brought in background materials, developing thought-provoking questions, and led a discussion group of 12 NIST leaders and high-level scientists to help identify new directions for budget initiatives. Lastly, I am currently working as a division-level focus area lead for Metrology for Safety and Security, through which I've organized events to foster communication and collaboration within the division and encourage participation from a diverse array of staff, especially focusing on early career staff in events ranging from lightning talks to laboratory tours for management. My current research is also moving in new strategic directions beyond the safety and security focused work, with one project aimed at facilitating a circular economy for textiles and one focused on developing standards and measurements for direct air capture materials for carbon dioxide removal. In summary, I bring a long history of consensus building, facilitation, strategic planning, outreach, and more to the table, and believe I can be an integral part of achieving the vision for the new IUPAC.

Short Biographical Sketch:
Amanda Forster is a materials research engineer in the Material Measurement Laboratory at the National Institute of Standards and Technology in Gaithersburg, MD. She recently completed a developmental detail as a program analyst in NIST's Program Coordination Office and retains an interest in science policy. She holds a B.S. in textile chemistry and a M.S. in textiles, fiber, and polymer science from Clemson University and a Ph.D. in materials science and engineering from the University of Maryland, College Park. Dr. Forster has spent most of her career working on issues related to the longevity of body armor and has been a NIST employee since 2005. Dr. Forster has published numerous papers related to the long-term stability of polymeric materials used in body armor and methods for body armor testing. Her current research interests are working on standards, data, and measurements to facilitate a circular economy for textiles and developing standards and measurements for direct air capture materials for carbon dioxide removal. She is an active participant in ASTM E54.04 Subcommittee

on Personal Protective Equipment (PPE). Dr. Forster has a passion for STEM outreach and education of junior scientists. She has hosted and mentored students of all levels from various countries and universities. She has previously served as Sigma Xi's chapter president in 2020 and has served as their Education Chair since 2018. Dr. Forster previously co-chaired the Summer Undergraduate Research Fellowship Program for MML from 2017 to 2020. She is the 2020 recipient of NIST's Distinguished Mentor Award and has also received two Department of Commerce awards for her work on body armor standards, the gold in 2010 and the bronze in 2011.

CV:

AMANDA LATTAM FORSTER
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240-586-2650

Highlights:

• Track record of leadership in multi-disciplinary technical and developmental projects
• Long history of leadership in standards developing organizations, including ASTM and ISO.
• Experience in standards policy development, including communication among multiple organizations (NIJ, ASTM)
• Focus area lead for Metrology for Safety and Security priority area
• Experience in scientific policy development and strategic planning through selection for competitive detail to NIST's Program Coordination Office.
• Almost 20 years of experience applying engineering and scientific principles in research and testing to solve real world problems in the field of protective materials.
• Recognized for mentorship of others, especially junior scientists through the NIST Distinguished Mentoring Award and long history of work with SURF program.
• Commerce Gold Medal Award Winner for providing the Nation's police enhanced confidence in their ballistic-resistant body armor by revealing and addressing root causes of field failure.
• Significant expertise in polymer science and chemistry with a focus on long-term stability of high strength fibers.

Education:

University of Maryland, College Park, MD
Ph.D. in Materials Science and Engineering May 2012
Advisor: Dr. Mohamed Al-Sheikhly
Dissertation title: Long Term Stability and Implications for Performance of High Strength Fibers Used in Body Armor
Clemson University, Clemson, SC
M.S. in Textiles, Fiber, and Polymer Science 2003
Advisor: Dr. Stephen Foulger
Thesis title: Development of Polymer Photonic Crystals
B.S. in Textile Chemistry 2000

Research Experience:

Materials Research Engineer, Material Measurement Laboratory 2005-present
National Institute of Standards and Technology, Gaithersburg, MD
High Strength Fiber Research
• Founded high strength fiber research program within NIST, including outfitting three specialized laboratories and identifying, hiring, and managing numerous guest researchers as part of a $1.5M/year protective system research program.

• Published numerous papers and reports revealing that field performance issues with polybenzobisoxazole (PBO) were due to hydrolysis in the presence of ambient humidity. This work eventually led to a nationwide officer safety advisory for PBO body armor.
• Developed a suite of techniques to screen used armor ballistic performance via mechanical and chemical property characterization.
• Performed significant work published to examine mechanisms of degradation in aramid, ultra-high molecular weight polyethylene fibers, and aramid copolymer fibers and composites.
Leadership Experience:
Standards Development Activities
• Led a multiple federal agency project, with a highly accelerated time table to design a conditioning protocol and specialized testing apparatus to screen soft body armor for susceptibility to damage by heat, humidity, and mechanical wear.
• Subcommittee chair for ASTM E54.92 subcommittee.
• Task lead for numerous standards through ASTM E54.04 (Personal Protective Equipment), resulting in the publication of several standards for use in testing body armor.
• Technical expert on ISOTC229 for ISO/AWI TS 23878 Positron annihilation lifetime measurement for nanopore evaluation in materials
Program Management and Outreach Activities
• Focus area lead for Materials Measurement and Science Division's Metrology for Safety and Security priority area.
• Lead Materials Science Sprint Discussion Group to identify new budget initiatives in materials science for Material Measurement Laboratory (MML).
• Selected for position representing MML as a rotating program analyst to the NIST Program Coordination Office for FY22.
• Worked on a team to poll Division 643 staff about workplace issues and assisted with a deep dive analysis of gender inequalities in the division based on survey responses.
• Currently serving as Federal Program Officer for four grants to different universities and research institutes in topics related to fundamental characterization and modeling of materials for protective applications.
• Co-led the Material Measurement Laboratory Summer Undergraduate Research Fellowship program from 2017 to 2020, selecting and managing an average of 58+ undergraduate students for an 11 week internship at NIST.
• Significant experience in managing complex, cross-cutting programs across multiple laboratories at NIST and responding to the needs of NIJ, including proposal development, budget analysis, and management of deliverables.
• Coordinated two major program reviews for NIJ, requiring the organization of presentations by staff from across NIST, in addition to presenting my own work.
• A member of the graduate school for the Materials Science and Engineering Department at the University of Maryland, co-advised two students to successful completion of their Ph.D.'s in the 2016-2017 school year, and one in the 2022-2023 academic year.
Awards
• 2020 NIST Distinguished Mentoring Award
• Material Measurement Laboratory Mentor Accolade 2017
• 2011 Department of Commerce Bronze Medal Award
• 2010 Department of Commerce Gold Medal Award
Conferences Organized:
• 2021, Organize and Co-Chair Facilitating a Circular Economy for Textiles Workshop, 150 participants from

around the world, first such conference of its kind.
• 2018, Organize and Chair Personal Armour Systems Symposium, 300 participants from around the world, first time in the 24 year history of this event that is was held in the US.
• 2016 through 2021, excluding 2020, Organized (as part of planning committee) NIST Sigma Xi Postdoctoral Poster Presentation (PPP), average 150 participants/year
Selected Publications:
Impact Measures: Total Citations: 1053; h-index = 14
[1] Engelbrecht-Wiggans, AE and Forster, AL "Analysis of strain correction procedures for single fiber tensile testing." Composites Part A (167), 107411, 2023.
[2] Schumacher, K. and Forster, AL. "Textiles in a circular economy: An assessment of the current landscape, challenges, and opportunities in the United States." Front. Sustain. (3), 2022.
[3] Schumacher, K. and Forster, AL. "Facilitating a Circular Economy for Textiles Workshop Report." NIST Special Publication 1500, 207.
[4] Tsinas, Z, Orski, SV, Bentley, VRC, Gonzalez Lopez, L, Al-Sheikhly, M, Forster, AL. "Effects of Thermal Aging on molar Mass of Ultra-High Molar Mass Polyethylene Fibers." Polymers (14), 1324, 2022.
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[6] Tao, R., Zhang, F., Nguyen, H.G., Bernstein, P. Forster, A.L., Mrozek, R., Forster, A.M. "Temperature-insensitive silicone composites as ballistic witness materials: the impact of water content on the thermophysical properties." J. Mat. Sci. (56), 16362-16375 2021.
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https://doi.org/10.1177/0040517520918232
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https://doi.org/10.6028/NIST.IR.8265
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[13] Krishnamurthy, A., Tao, R., Senses, E., Doshi, S., Burni, F., Natarajan, B., Hunston, D., Thostenson, E., Faraone, A., Forster, A.L., Forster A.M. "Multiscale polymer dynamics in hierarchical carbon nanotube grafted glass fiber reinforced composites." ACS Applied Polymer Materials, 1, 1905, 2019.
[14] Forster, A.L, Tsinas, Z., Al-Sheikhly, M. "Effect of Irradiation and Detection of Long-Lived Polyenyl Radicals in Highly Crystalline Ultra-High Molar Mass Polyethylene (UHMMPE) Fibers. Polymers 11, 924, 2019.
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procedures, tensile testing, and ageing of flexible unidirectional composite laminates." J. Vis. Exp. , 146, e58991, 2019.
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Environments from Copolymer Fibers based on 5-amino-2-(p-aminophenyl)-benzimidazole." NISTIR 7592, 2009.
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Alejandra Palermo (UK)

Expected Contribution:

My connection with IUPAC has been important throughout my career. It began in China at the IUPAC Congress in Beijing in 2004, when I was part of the IUPAC project aiming at bringing together national chemical societies with their national funders of research across the world. The objective of the project was clear: to discuss how to influence research investment at a national scale by learning from sharing experiences highlighting the role that chemistry plays in solving the problems that society faces; with the opportunity to develop multinational research collaborations. This unique project led to a variety of international joint initiatives, some of which still play an important role, for example, the Chemical Sciences for Society Summits, the next such meeting taking place in Japan in September 2023. Since 2004 I have been particularly involved with IUPAC and its Congresses, contributing in many ways including speaking during the World Leaders Chemistry Meetings in 2014 and 2017, and as an active advocate and supporter of key initiatives such as the Global Women's breakfast since 2009, while also ensuring the increased engagement of and support from the RSC.

Currently, I am responsible for global inclusion, leading a talented team working on priority areas. I lead the strategy and implementation of diversity and inclusion in the chemical sciences for RSC, and large international programmes developing inclusive global collaborations. Since taking up this position, a key development has been to transform our approach to I&D to be one based on bespoke research to produce rich data and evidence – this has been widely recognised for its impact in our community, calling out the inequalities that exist and the discrimination that many in our discipline encounter. I am committed to tackle the issues and barriers revealed throughout our work and that of others to drive change toward an inclusive global chemistry culture. I believe that my knowledge and expertise in the inclusion and diversity area would support and advice the work of the Science Board.

During 2017, I led the RSC's "futures" initiative aimed at understanding how the chemical sciences may evolve in the next 10 to 20 years. This initiative involved scenario development, reframing and engaging, consulting and collaborating with global leaders and key stakeholders, leading to a strategically significant report "Future of the Chemical Sciences" outlining plausible scenarios for our discipline and guiding the development of the long-term strategy for the RSC. My experience gained with this scenario thinking process would support and contribute in the planning and devising of future strategic science priorities for the Board.

I am truly excited by the possibility of being part of the IUPAC as it changes its governance structure and would hope to contribute to its ambitious future development. The IUPAC as a global organisation supporting chemists and their national chemical societies across the world has a unique opportunity to create a globally connected community with true integration of chemists in the Global South. My long-term experience of and commitment to science in Africa, as demonstrated by the establishment of the Pan Africa Network, jointly with the strong and long lasting collaborations with chemists and organisations in many other under-developed nations outside Africa would provide an asset to the Board.

I have full support from the Royal Society of Chemistry's Chief Executive, Dr Helen Pain, for my nomination to serve on the Science Board. Her endorsement will enable my participation and commitment to support the work of the IUPAC.
I believe that I have the right skills, knowledge, international profile and connections to ensure that my personal commitment will support the Union's aims.

Short Biographical Sketch:
Ale is a chemical engineer with a PhD in materials science. Her independent career began as an Assistant Professor in Argentina, before joining Cambridge University under a Royal Society Visiting Fellowship. She has published over 50 scientific papers in the field of heterogeneous catalysis.
Her previous roles at the RSC have included managing international work in India and Latin America and the setting up and leading the Pan Africa Chemistry Network. She led the Future of the Chemical Sciences initiative based on scenario planning to guide the development of the RSC long-term strategy. She is currently Head of Global Inclusion at RSC.
Ale's RSC I&D work has resulted in several influential data led, strategic policy reports aimed at driving change towards an inclusive chemistry culture - Diversity Landscape in the Chemical Sciences (2018), Breaking the Barriers (2018), LGBT+ climate for the physical sciences (2019), Is publishing in the chemical sciences gender biased? (2019), A framework for action in scientific publishing (2020), Minimum standards for inclusion and diversity for scholarly publishing (2021), Missing Elements: Racial and ethnic inequalities in the chemical sciences (2022), Many of the reports have had a global reach and her work has been recognized by two awards for the RSC from the Public Relations and Communications Associations in 2019 and 2020.
As part of RSC's commitment to improve I&D, Ale worked to launch the RSC Bullying and Harassment support line and grant schemes which focus on career development for individual chemists with caring responsibilities, and for disabled chemists. Additionally, she launched the LGBT+Toolkit and works with partners to support chemistry students and graduates from minoritised racial and ethnic backgrounds to pursue careers in chemistry - Broadening Horizons, and a national mentoring programme for Black, Asian and Minority Ethnic students in year 12 - Windsor Fellowship
Her most recent work focuses on Socio Economic Inclusion and the launch of a grant scheme to fund research looking at attrition and retention of LGBT+ people within STEM in the UK and the USA in conjunction with BEIS, as well as work to promote inclusive communication.
She is a Fellow of the Royal Society of Chemistry, a life fellow of the Chemical Research Society of India, a member of IUPAC and an honorary Fellow of the Chemical Society of Ethiopia.

CV:
Dr ALEJANDRA PALERMO
I am a chemist and material scientist, former academic and researcher with 54 published papers in leading journals. I have broad experience in managing multidisciplinary international programmes, having led projects in science & technology & innovation in the UK and many countries across the globe, many of which have led to influential policy reports. I initiated and worked extensively on large programmes for sustainable development, especially in Africa, India and Latin America, which included policy making and high-level negotiations with governments and funding bodies. In 2017, I led the Royal Society of Chemistry's "futures" initiative which involved scenario development, and engaging, consulting and collaborating with global leaders and key stakeholders. Central to the success of this initiative was my support in formulating the long-term strategy of the RSC and stimulating strategic conversations so as to embed the scenarios within the chemistry community.
Currently, I am responsible for RSC's global inclusion programme. Responsible for the strategy and the implementation of diversity and inclusion in the chemical sciences for RSC, and on large international

programmes developing inclusive global collaborations. This work led to the launch of 7 influential reports and the development of the Joint Commitment of Publishers to increase I&D across STEM subjects and social scientists.
• Wide-ranging scientific contributions recognised through 54 publications and over 35 conference podium presentations. Global awareness of relevant science agendas and policy development.
• Delivery of strategically important policy reports on diverse topics related to science and technology and inclusion and diversity.
• Excellent track record in strategic planning, organisation of major international events, delivery of capacity-building activities,
• Extensive experience in delivering international events and chairing and speaking at conferences, workshops and policy discussion meetings.
• Extensive experience of creating successful external partnerships and interdisciplinary and international networks.
• Extensive experience in leading and managing international teams and setting up of steering and advisory committees within the academic and private sectors.
• Fluent in Spanish. Working knowledge of Portuguese.
Key Achievements
• Lead author of the RSC- I&D reports: “Diversity Landscape in the Chemical Sciences” (2018), “Exploring the workplace for LGBT+ physical scientists” (2018); “Breaking the Barriers” (2018), “Is publishing in the chemical sciences gender biased?” (2019), “A framework for action on Scientific Publishing” (2019); “A sense of belonging in the Chemical Sciences” (2020), “Missing Elements” (2022). Led on the recommendations and implementation plan of these reports.
• Led the development of the RSC Inclusion and Diversity strategy to 2025. Chair the I&D Strategy Steering Group to follow up on the implementation of the strategy across the RSC.
• Led the RSC’s initiative “Future of the Chemical Sciences” resulting in a report outlining plausible scenarios for chemistry. Co-author (with Oxford University Saïd Business School and Rolls Royce) of a peer-reviewed article on scenarios published in MIT Sloan Management Review.
• Led international strategies for India, Brazil and Africa. Ran high profile collaborative programmes (Japan, China, Korea, Singapore, India, Brazil, South Africa, Thailand, Malaysia, USA and Africa).
• Led exploratory ventures, in collaboration with industry, aimed at developing new research networks and driving the innovation policy agenda.
• Raised funding in support of international activities from a wide range of sponsors including the British Foreign and Commonwealth Office, Research Councils in the UK and abroad, and industry.
• Set up and led successful Innovation and Knowledge Transfer road-shows (Brazil, South Africa, Japan and India) in collaboration with the corporate sector and governments.
• Set up, led, and managed the Pan African Chemistry Network (PACN) and the establishment of hubs in Nairobi and Addis Ababa. Developed partnerships with multinational companies.
• Worked collaboratively with PACN and the United Nations agencies (UN-HABITAT, UNEP, UNECA), the Royal Society and the World Academy of Sciences, and the corporate sector.
• Participated, by invitation, at the World Economic Forum Africa (June 2009, June 2013, June 2015) to showcase science and innovation for development.
• Invited speaker on Science for Development in Africa at the UN Economic Commission for Africa in Addis Ababa in 2008, 2009 and 2010, and at the WLCM at the IUPAC Congress in 2011.
• Co-authored “African Water Quality” policy report launched at UNEP headquarters Nairobi and at UN Economic Commission for Africa’s headquarters in Addis Ababa. Co-authored the “PACN Wealth not Waste” report launched at UNECA in June 2011 and the “PACN Sustainable Agricultural” Report launched at The World Academy of Sciences Congress in Tianjin in 2012.
• Co-author of strategically important science policy reports: “Chemistry-Chemical Engineering

Interface"; "Benign and Sustainable Chemical Technologies", "Chemical Sciences and Crime Prevention", "Chemical Sensors and National Security" and "Chemistry at the Centre".
EDUCATION AND PROFESSIONAL DEVELOPMENT
1997 - 2003 EPSRC Research Associate, Department of Chemistry, University of Cambridge
1999 - 2000 Independent Investigator CONICET (Argentine National Research Council)
1998 - 2003 Assistant Editor of the journal Surface Science, published by Elsevier
1996 -1997 Royal Society Visiting Fellowship, Department of Chemistry, University of Cambridge
1993 - 1999 Assistant Professor, Chemical Engineering Department, National University, Argentina
1991 - 1995 CONICET Research Fellowship, Argentina
1994 PhD in Materials Science, Materials Science Dept., UNMDP, Argentina. Summa cum laude.
1985 Diploma in Chemical Engineering, UNMDP, Argentina.
Highly productive scientific research (54 publications in leading journals) including direction of graduate students in Argentina and in Cambridge, UK. Successful research collaborations with European universities and networks. Extensive teaching and examining experience at all levels
EMPLOYMENT HISTORY
2022- present - Head of Global Inclusion, Royal Society of Chemistry
Key responsibilities:
Lead, review and progress the Inclusion and Diversity strategy to 2025. Responsible for the strategic planning and delivery of large international programmes, including Commonwealth Chemistry and PACN. Management and development of relationships with chemical societies, and international partners, including EuChemS and IUPAC.
2014- 2021 - Senior Manager, External Relations, Royal Society of Chemistry
Key responsibilities:
Lead the Future of the Chemical Sciences initiative (FCS) aimed at understanding how the chemical sciences may evolve in the next 10 to 20 years. Devise a communications' plan to disseminate relevant outputs. Provide insight to leading partners and communities to influence the international chemical science agendas. Provide intelligence on risks and opportunities to enable more effective long-term planning by RSC senior managers in all business areas. Work with RSC Trustees and the CEO in developing the long-term strategy for the society. This initiative involved scenario planning and reframing and engagement with key stakeholders. Develop and maintain relationships with opinion leaders and decision makers and key international bodies and form alliances with strategic partner organisations. From 2017, responsible for the Inclusion and Diversity strategy and its implementation and the mapping, management and engagement with key stakeholders. Develop a team and embed diversity and inclusion across all RSC directorates. Act as Secretary to the Inclusion and Diversity Committee, and other committees as appropriate (i.e. Athena Forum).
Principal achievements:
• Authored a strategically significant report outlining plausible scenarios for the future of the chemical sciences. Co-authored (with Oxford University Saïd Business School and Rolls Royce) a peer-reviewed article on scenarios. Authored an opinion article on FCS in Chemistry World.
• Launch of the new publication Chemistry World incorporating FCS content.
• The FCS scenarios were presented and discussed in a variety of fora and conferences (USA, Cuba, India, Canada, Brazil, Australia) and panel discussion at the Chemistry Means Business 2016.
• Invited speaker at the "Scottish Water Future Leaders and Future Senior Leaders Workshop", Stirling, October 2016. Invited plenary speaker at the Cuban Chemical Society Hot Topics Conference, 2017, Chemical Research Society of India Congress, Guwahati, 2017 and at the IUPAC World Chemistry Leaders meeting, Sao Paulo, 2017.
2013 - 2014 Open Innovation Manager, Royal Society of Chemistry
Key responsibilities:

Lead on the development of cross-departmental open innovation programmes. Lead and co-ordinate initiatives to connect scientists on a global scale, engage diverse communities in the government's mandate on open data and research data management. Develop relationships with opinion leaders and decision makers in national and international organisations, supporting existing initiatives and forming new alliances resulting in long-term programmes.
Principal achievements:
• Led new strategic partnerships with Malaria for Medicine Venture, the Drugs for Neglected Diseases Initiative and the Open Source Drug Discovery, Government of India, to identify and explore opportunities that open source can bring to malaria research.
• Fostered a new UK-India partnership involving policy makers and researchers to identify action plans in open source to advance drug discovery and anti-microbial resistance research.
• Initiated and led a new partnership with specify name (DNDi), specify name (MMV) and Sao Paulo State Research Council (FAPESP) on neglected diseases in collaboration with UK academics. This resulted in the creation of new PhD fellowships in medicinal chemistry, funded by FAPESP.
2005- 2013 Manager, International Projects, Royal Society of Chemistry
Key responsibilities:
Develop RSC strategy in India, Latin America and Africa and management of staff in the associated offices abroad. Manage and lead the Pan Africa Chemistry Network, an ongoing collaborative project funded by the corporate sector to build capacity across Africa. Identify relevant international programmes and lead on these ventures in a timely and effective manner. Develop memoranda of understanding with key organisations such as professional bodies, research funding agencies and government. Foster community driven initiatives to provide input and influence policy-making and future research trends.
Principal achievements:
• Ensured seeding and development of a range of successful longer-term international collaborations.
• Developed and led a joint network on sustainability, The Chemical Sciences for Society, in collaboration with the UK, US, German, Chinese and Japanese national chemical societies and the corresponding national research councils. Initial project co-hosted by an IUPAC programme.
• Defined and led international strategy for India, Brazil and Africa and setting up of the associated RSC offices.
• Initiated and ran high profile international workshops, symposia and policy events (Japan, China, Korea, Singapore, India, Brazil, South Africa, Thailand, Malaysia, USA). Led exploratory ventures with industry, aimed at developing trans-national research networks.
• Set up and led successful Innovation and Knowledge Transfer roadshows in India, Japan, South Africa and Brazil, in collaboration with the UK and corresponding governments.
• Linked RSC's activities in Africa with relevant United Nations agencies (UN-HABITAT, UNEP, UNECA), the World Academy of Sciences, multinational companies, NGOs and governments.
• Participated in the World Economic Forum Africa in 2009, in 2013 and in 2014, to showcase science and innovation for development. Invited speaker at the UNECA in 2008, 2009 and 2010.
• Co-authored the African Water Quality report launched at the UNEP headquarters in Nairobi and at the UNECA in Addis Ababa. Co-authored the PACN Wealth not Waste report launched at UNECA in 2011 and the PACN Sustainable Agricultural Report launched at TWAS Congress 2012.
• In 2012 engaged Procter and Gamble in a 3-year project in Nigeria, with an increased funding commitment of $250,000. Established a Collaboration Laboratory at the University of Lagos—the first example of an Open Innovation initiative in Africa, 2013.
2003—2005 Manager, Special Projects, Royal Society of Chemistry
Key responsibilities:
Develop a strategic plan to action the recommendations from the International Review of UK Chemistry

Research (see below). Plan and execute a variety of follow-up projects arising from the planned approved by RSC Council and President.
Principal achievements:
• Defined RSC's strategy in national security and crime prevention. Engaged key governmental agencies in this initiative and obtained their collaboration and financial support; ensured that RSC Publishing benefited from this.
• Initiated a programme of high-level international activities for RSC, significantly enhancing its international profile.
• Created new mechanisms, including funding, to foster international collaboration between early career UK academics and their counterparts, particularly with US, Singapore, India and Japan.
• Co-author of the following reports:
1. "Green Chemistry and Sustainability", with EPSRC, BBSRC, academia and industry
2. "Chemical Sciences and Crime Prevention", with EPSRC, BBSRC and the Home Office
3. "Chemical Sensors and National Security" with Ministry of Defence, Defence Science and Technology Laboratory and the Home Office.
4. "The Chemistry-Chemical Engineering Interface in the UK", with the IChemE.
2002 –2003 (part-time) Consultant, Special Projects, RSC
Key responsibilities:
Organise and project-manage the EPSRC International Review of UK Chemistry Research on behalf of the RSC in collaboration with twelve world leading American, European, Australian and Indian scientists. Work with EPSRC, BBSRC and other research councils in the UK and other learned societies, in particular the IChemE.
Principal achievement:
Production of a highly influential report "Chemistry at the Centre" with Professor George Whitesides (Harvard, USA), that directly affected UK science policy and funding strategy. This report was regarded as a model and the methodology developed was then adopted by bodies worldwide charged with similar tasks in other scientific and technological areas.
OTHER INFORMATION
Membership of the following bodies
• Fellow, Royal Society of Chemistry, Fellow, International Union of Pure and Applied Chemistry, Life member Chemical Research Society of India, Honorary Fellow, Chemical Society of Ethiopia
• Executive Board Member of Commonwealth Chemistry
• Member of the EuChemS I&D Task group, Member of the Oxford Saïd Business Alumni Network, Oxford University, Member of the UK Development Sciences Research Capacity Strengthening Group, Steering group Member Science Council-Royal Academy of Engineering D&I Progression Framework

Peter Schreiner (Germany)

Expected Contribution:
Giving something back and serving the community of chemists is something I consider important and fulfilling. My experience as a scientist, journal editor, and officer of large institutions will enable me to contribute to solving the challenges ahead. For IUPAC, in particular, these include continuing defining the standards of our profession and to affect policy makers through connecting them with chemists that share their expert knowledge. This should include communicating these efforts also to the lay public.

Short Biographical Sketch:
Academic Career
2020–date Honorary Full Professor, Macquarie University, Sydney, Australia
2002–date Full Professor, Justus-Liebig-University Giessen
2000–2002 Associate Professor of Chemistry, Dept. of Chemistry, U Georgia, Athens, USA
1996–1999 Habilitand, U Göttingen, Germany

CV:
Prof. Dr. Peter R. Schreiner, PhD
Date of birth: November 17, 1965
Institute of Organic Chemistry, Justus-Liebig-University, Heinrich-Buff-Ring 17, D-35392 Giessen, Germany; Tel.: +49-641-9934100; prs@uni-giessen.de; www.uni-giessen.de/schreiner
Education
1999 Privatdozent (PD), venia legendi, U Göttingen
1995 Ph.D., Computational Chemistry with Prof. H. F. Schaefer III, Center for Computational Quantum Chemistry, U Georgia, summa cum laude
1994 Dr. rer. nat., Organic Chemistry with Prof. P. v. R. Schleyer, U Erlangen-Nürnberg; summa cum laude
1992 Dipl. Chem., U Erlangen-Nürnberg, with highest honors
Academic Career
2020–date Honorary Full Professor, Macquarie University, Sydney, Australia
2002–date Full Professor, Justus-Liebig-University Giessen
2000–2002 Associate Professor of Chemistry, Dept. of Chemistry, U Georgia, Athens, USA
1996–1999 Habilitand, U Göttingen, Germany
Military Service
1985–1987 Contract soldier (24 mo.) in the combat forces; last rank: Lieutnant of the reserves
Research Interest
Organocatalysis | Functionalized Nanodiamonds | Reactive Intermediates | Computational Chemistry
Awards and Honors
ERC Advanced Grant (2022–2027)

Arthur C. Cope Scholar Award of the American Chemical Society (2021)
Academy Award of the Berlin-Brandenburg Academy of Science (2020)
Inauguration of the Stan Brown Lecture, Queens U, Kingston, Canada (2020)
Fellow of the Royal Society of Chemistry, UK (2019)
Lloyd B. Thomas Lecture, U Missouri, Columbia, USA (2019)
Boehringer-Ingelheim Lectures, Boston College, USA (2019)
The Royal Society of Chemistry Physical Organic Chemistry Award (2019/20)
Tarrant Distinguished Visiting Professor, U Florida, Gainesville, USA (2019)
Novartis Lecture, Yale U, New Haven, USA (2018)
Inauguration of The Kornis Family Lecture, UNSW Sydney (2018)
Japanese Society for the Promotion of Science (JSPS) Invitation Fellowship, Japan (2018)
Elected member, Academy of Science and Literature | Mainz (as of 2017)
Adolf-von-Baeyer Memorial Medal of the GDCh (2017)
Patai-Rappoport Lecture, European Symposium on Organic Chemistry (ESOC), Cologne (2017)
Craig Visiting Professorship, Australian National University, Canberra (2017)
Australian Assoc. of Theor. and Comput. Chem. Lectureship, Australia (2017)
Kurt-Alder Lecture, University of Cologne, Germany (2015)
Corresponding member, North Rhine-Westphalian Academy of Sciences, Humanities, and the Arts (as of 2015)
Swiss Chemical Society Lectureship (2014)
Elected member, Leopoldina – German National Academy of Science (as of 2013)
Science Award of the German Technion (Israel Institute of Technology) Society (2013)
Honorary lifetime membership, Polish Chemical Society (as of 2013)
Schulich Visiting Professorship (03/2012), Israel Institute of Technology (Technion), Haifa, Israel
Pregl Lecture (2012), National Institute of Chemistry, Ljubljana, Slovenia
Honorary lifetime membership, Israel Chemical Society (as of 2009)
Schleyer Lecture (2010), The University of Georgia, USA
Török Lecture (2008), Eötvös University Budapest, Hungary
Minerva Beirat member, Lise Meitner for Comput. Quantum Chem., Jerusalem & Haifa, Israel (2005–2017)
Dirac Medal (2003), World Association of Theoretically Oriented Chemists (WATOC)
Research Innovation Award (2000), Research Corporation
ADUC-Prize for Assistant Professors (1999), German Chemical Society
Award from the Otto-Röhm-Gedächtnisstiftung (1999)
Liebig-Fellowship of the Fonds der Chemischen Industrie (1997–1999)
Robert C. Anderson Memorial Award (1996)
Best dissertation 1995, U of Georgia, all fields
Karl-Giehrl-Prize (1995)
Best dissertation 1994, University of Erlangen-Nürnberg, all fields
Martin-Reynolds-Smith-Award (1993), American Chemical Society (ACS), SE section
Fellow of the Studienstiftung des Deutschen Volkes (1992–94)
Community Service
President of the German Chemical Society (GDCh) (2020 & 2021); Vice President 2022 & 2023
Member of the Expert Commission of Leopoldina – German National Academy of Science (since 2016)
DFG Review Board Member (since 2016, re-election 2019)
Chairman, Scientific Advisory Board, Max-Planck-Institute for Coal Research, Mülheim, Germany (since 2016)
Vice President for Research (Justus-Liebig University, 2012–2015)

Minerva Foundation board member, Weizmann Institute, Rehovot, Israel (2015–2020)
Board member, World Association of Theoretical and Computational Chemists (WATOC, since 2014)
ADUC-Chairman, Association of German University Professors of Chemistry (2011–2013)
Associate Editor, Beilstein Journal of Organic Chemistry (2011–date)
Chairman, Dechema Board on Kinetics and Reaction Mechanisms (2009–2019)
Editorial Advisory Board Member, Journal of Physical Organic Chemistry (2009–date)
Liaison's Person, Studienstiftung des Deutschen Volkes (2007–date)
Editor-in-Chief, WIREs Computational Molecular Sciences (2007–date)
Dean, Faculty of Biology and Chemistry (2006–2009)
Associate Dean, Faculty of Biology and Chemistry (2003–2006)
Editorial Advisory Board Member, European Journal of Organic Chemistry (2006–2014)
Editor, Journal of Computational Chemistry (2000–date)
Associate Editor, Encyclopedia of Computational Chemistry (1996–2006)
Publications (since 1993; source: Google Scholar, April 03, 2022)
> 425 peer-reviewed publications, 20 book chapters, 13 patents, and 43 contributions to popular science
> 24,000 citations, H-index = 73
Full list: http://www.uni-giessen.de/cms/fbz/fb08/Inst/organische-chemie/agschreiner/publications
Ten significant publications:
1. London Dispersion Rather than Steric Hindrance Determines the Enantioselectivity of the Corey-Bakshi-Shibata Reduction. C. Eschmann, L. Song, P. R. Schreiner Angew. Chem. Int. Ed. 2021, 60, 4823
2. Intramolecular London Dispersion Interactions Do Not Cancel in Solution. J. M. Schümann, J. P. Wagner, A. K. Eckhardt, H. Quanz, P. R. Schreiner J. Am. Chem. Soc. 2020, 143, 41.
3. Competitive nitrogen versus carbon tunnelling. C. M. Nunes, A. K. Eckhardt, I. Reva, R. Fausto, P. R. Schreiner J. Am. Chem. Soc. 2019, 141, 14340.
4. Gas-phase sugar formation using hydroxymethylene as the reactive formaldehyde isomer. A. K. Eckhardt, M. M. Linden, R. C. Wende, B. Bernhardt, P. R. Schreiner Nat. Chem. 2018, 10, 1141.
5. London Dispersion Enables the Shortest Intermolecular Hydrocarbon H•••H Contact. S. Rösel, H. Quanz, C. Logemann, J. Becker, E. Mossou, L. Cañadillas Delgado, E. Caldeweyher, S. Grimme, P. R. Schreiner J. Am. Chem. Soc. 2017, 139, 7428.
6. Gas phase preparation of carbonic acid and its monomethyl ester. H. P. Reisenauer, J. P. Wagner, P. R. Schreiner Angew. Chem. Int. Ed. 2014, 53, 11766.
7. Overcoming Extremely Long C–C Alkane Bond Lability through Attractive Dispersion Forces. P. R. Schreiner, L. V. Chernish, P. A. Gunchenko, E. Yu. Tikhonchuk, H. Hausmann, M. Serafin, S. Schlecht, J. E. P. Dahl, R. M. K. Carlson, A. A. Fokin Nature 2011, 477, 308.
8. Methylhydroxycarbene: Tunneling Control of a Chemical Reaction. P. R. Schreiner, H. P. Reisenauer, D. Ley, D. Gerbig, C.-H. Wu, W. D. Allen Science 2011, 332, 1300.
9. Capture of Hydroxymethylene and its fast Disappearance Through Tunnelling. P. R. Schreiner, H. P. Reisenauer, F. Pickard, A. C. Simmonett, W. D. Allen, E. Mátyus, A. G. Császár Nature 2008, 453, 906.
10. Monochromatic Electron Photoemission from Diamondoid Monolayers. W. K. Yang, J. D. Fabbri, T. M. Willey, J. R. I. Lee, J. E. Dahl, R. M. K. Carlson, P. R. Schreiner, A. A. Fokin, B. A. Tkachenko, N. A. Fokina, W. Meevasana, N. Mannella, K. Tanaka, X. J. Zhou, T. van Buuren, M. A. Kelly, Z. Hussain, N. A. Melosh, Z.-X. Shen Science 2007, 316, 1460.

Chi-Huey Wong (China/Taipei)

Expected Contribution:

I can contribute to the IUPAC Science Board in the general fields of chemical sciences, especially in areas of organic chemistry, biochemistry, chemical biology, biocatalysis, biotechnology, medicinal chemistry, and collaboration with the biotech and pharmaceutical industry.

Specifically, I propose to focus on developing mechanisms and methods to increase research funding for chemistry research worldwide. I can share my experience as a member of the National Research Council (NRC) Panel to Benchmark the Research Competitiveness of the U.S. in Chemistry (see the link). In addition, I can share my ten-year experience as President of Academica Sinica, advisor to the President, initiator of new national programs in science and technology, and as a faculty and board member of The Scripps Research Institute Scientific Governors.

IUPAC can learn from the recent passage of the America Competes Act (HR 2272). This act authorized $43 billion over 3 years for science, technology, engineering, and mathematics (STEM) research and education programs and places NSF, the National Institute of Standards and Technology, and the DOE Office of Science on a near-term doubling path. The American Chemical Society (ACS) took a leadership role among the scientific and educational organizations in advocating for this legislation.

Although the America Competes Act is an authorization bill, it cements a solid, bipartisan consensus in Congress for doubling funding for the key science agencies. Turning authorizations into appropriations is a difficult business that will require continued advocacy. We should urge chemists to join various initiatives, such as the Legislative Action Network (LAN) and analogous programs worldwide to help advocate for increased appropriations for chemistry, which will lead to innovation and new jobs, and for increased funding of chemistry education, which will provide the scientific workforce needed to maintain a global leadership in science and innovation toward a sustainable future.

For further information, see the link: https://pubs.acs.org/doi/pdf/10.1021/cb7001895

Short Biographical Sketch:

Dr. Wong has been a professor of chemistry at The Scripps Research Institute since 1989 and is now Scripps Family Chair Professor of Chemistry with a joint appointment as distinguished fellow at Academia Sinica. He received his BS and MS degrees from National Taiwan University and Ph.D. in chemistry from MIT. His research interest is to develop new chemical and enzymatic methods for making and studying molecules, to understand their role in biology and develop new strategies to combat major diseases associated with aberrant glycosylation.

His has won worldwide recognitions for his seminal contributions to chemistry and human health, including most recently the Wolf Prize and the Welch Award in Chemistry. He is a member of the US National Academy of Sciences and the European Molecular Biology Organization (EMBO). In addition, he has been actively involved in public service and education. He served as a board member of the US National Research Council on Chemical Sciences and Technology to help address the role of chemical sciences in research, education and in society. He also served as a member of the committee appointed

by the President of US National Academy of Sciences on Assessing the Importance of Glycoscience and Glycomics. He was an advisor of RIKEN, Max Planck, and many other institutes, biotech companies, and scientific journals, and served as President of Academia Sinica, as Chief Science Advisor to Taiwan government, and as President of Institute of Biotechnology and Medicine Industry to help promote the cooperation between the information and communication technology industry and the biotech and pharmaceutical industry for development of precision medicine and digital health.
He has published more than 700 papers and trained over 300 graduate students and postdoctoral fellows worldwide, and many of them are now working in academia, the biotech industry and the government.

CV:
Name: Chi-Huey Wong
Current Position: Scripps Family Chair Professor of Chemistry, Department of Chemistry, The Scripps Research Institute, 10550 N. Torrey Pines Rd., La Jolla, California 92037 USA. Web: scripps.edu/faculty/wong/, Tel: +1-858-784-2487 (office). Email: wong@scripps.edu.
Distinguished Research Fellow, Genomics Research Center, Academia Sinica, 128 Academia Rd., Sec. 2, Taipei, Taiwan.Tel: +886-2-2789-9929. Email: chwong@gate.sinica.edu.tw. web: genomics.sinica.edu.tw/chihueywong/
Professor Wong received his B.S. (1970) and M.S. (1977) degrees in biochemical sciences (with KT Wang) from National Taiwan University, and Ph.D. (1982) in Chemistry (with George M. Whitesides) from MIT. After one year of postdoctoral research at Harvard University (with George M. Whitesides), he became a faculty member of the Chemistry Department at Texas A&M University (1983) where he was promoted to full professor in 1987. He then moved to The Scripps Research Institute in 1989 as Professor and Ernest W. Hahn Chair in Chemistry. While he was a faculty member of the Scripps Research Institute, he also served as Head of the Frontier Research Program on Glycotechnology at RIKEN in Japan (1991-1999), Director of Genomics Research Center (2003-2006) and President of Academia Sinica, Taiwan (2006-2016). Since 2019, he has been Scripps Family Chair Professor of Chemistry at The Scripps Research Institute and holding a joint appointment as Distinguished Professor at Genomics Research Center, Academia Sinica.
He served as editorial advisor for several journals in chemistry and chemical biology, as scientific advisor for many organizations including the Max-Planck Institute (2000-2008) and as a member of RIKEN Advisory Council (2010-16). He was the Editor-in-Chief of Bioorganic and Medicinal Chemistry (1993-2010), Chairman of the Executive Board of Editors of the Tetrahedron Publications (2006-2008), a board member of the US National Research Council on Chemical Sciences and Technology (2000-2003), a member of the Committee on Assessing the Importance of Glycoscience and Glycomics, National Research Council USA (2011-12) which published a report in 2012 on “Transforming Glycoscience: A Roadmap for the Future”, and the Chief Science Advisor for Taiwan Government (2006-2015). He received many honorary doctor degrees, given numerous plenary and named lectures, and many honors for recognition of his academic accomplishments. Some representative honors include: Searle Scholar Award in Biomedical Sciences (1985), Presidential Young Investigator Award in Chemistry, USA (1986), Roy Whistler Award of the International Carbohydrate Organization (1994), ACS Harrison Howe Award in Chemistry (1998), ACS Claude S. Hudson Award in Carbohydrate Chemistry (1999), International Enzyme Engineering Award (1999), Presidential Green Chemistry Challenge Award, USA (2000), ACS Award for Creative Work in Synthetic Organic Chemistry (2005), Humboldt Research Award for Senior Scientists, Germany (2006), ACS FA Cotton Medal, USA (2008), Nikkei Asia Prize for Science, Technology and Innovation, Japan (2012), ACS Arthur C. Cope Medal (2012), Wolf Prize in Chemistry, Israel (2014), Robert Robinson Award in Organic Chemistry, Royal Society of Chemistry, UK (2015), Robert A. Welch Award in Chemistry, USA (2021), Chemical Pioneer Award from American Institute of Chemists (2022),

Tetrahedron Prize in Creativity of Organic Synthesis (2022), and Barry Cohen International Award in Medicinal Chemistry, Israel Chemical Society (2023) . He is an elected member of Academia Sinica (1994), American Academy of Arts and Sciences (1996), National Academy of Sciences, USA (2002), World Academy of Sciences (2007), European Molecular Biology Organization (EMBO) (2010) and National Academy of Inventors, USA (2014).

Professor Wong's research interests are in the field of chemical biology and synthetic chemistry, with current focus on the development of new methods and tools for the synthesis and study of complex carbohydrates and glycoproteins, elucidation of carbohydrate-mediated recognition in disease progression and immune response, and development of carbohydrate-based medicines. He has trained more than three hundred graduate students and postdoctoral fellows. Many of them are working in academia, the biotechnology and pharmaceutical industry and the government sector. He has published over 750 papers and received more than 120 issued patents and is a highly cited scientist with an h-index of 154.

Representative Publications (Chi-Huey Wong):

1. Y. Ichikawa, Y. C. Lin, D. P. Dumas, G.-J. Shen, E. Garcia-Junceda, M. A. Williams, R. Bayer, C. Ketcham, L. Walker, J. C. Paulson, C.-H. Wong, "Chemical-enzymatic synthesis and conformational study of sialyl Lex and derivatives," J. Am. Chem. Soc., 1992, 114, 9283–9297.
2. E. E. Simanek, D.-H. Huang, L. Pasternack, T. D. Machajewski, O. Seitz, D. S. Millar, H. J. Dyson, and C.-H. Wong, "Glycosylation of threonine of the repeating unit of RNA polymerase II with β-linked N-acetylglucosame leads to a turn-like structure," J. Am. Chem. Soc., 1998, 120, 11567–11575.
3. Z. Zhang, I. R. Ollmann, X.-S. Ye, R. Wischnat, T. Baasov, C.-H. Wong, "Programmable one-pot oligosaccharide synthesis," J. Am. Chem. Soc., 1999, 121, 734–753.
4. K. M. Koeller, M. E. B. Smith, C.-H. Wong, "Tyrosine sulfation on a PSGL-1 glycopeptide influences the reactivity of glycosyltransferases responsible for synthesis of the attached O-glycan", J. Am. Chem. Soc., 2000, 122, 742–743.
5. K. M. Koeller, C.-H. Wong, "Enzymes for chemical synthesis," Nature, 2001, 409, 232–240.
6. P. Sears, C.-H. Wong, "Toward automated synthesis of oligosaccharides and glycoproteins," Science, 2001, 291, 2344–2350.
7. T. J. Tolbert, C.-H. Wong, "Intein-mediated synthesis of proteins containing carbohydrates and other molecular probes," J. Am. Chem. Soc., 2000, 122, 5421–5428.
8. S. J. Sucheck, A. L. Wong, K. M. Koeller, D. D. Boehr, K.-A. Draker, P. Sears, G. D. Wright, C.-H. Wong, "Design of bifunctional antibiotics that target bacterial rRNA and inhibit resistance-causing enzymes," J. Am. Chem. Soc., 2000, 122, 5230–5231.
9. Heine, G. DeSantis, J. G. Luz, M. Mitchell, C.-H. Wong, I. A. Wilson, "Observation of covalent intermediates in an enzyme mechanism at atomic resolution," Science, 2001, 294, 369–374.
10. F. Burkhart, Z. Zhang, S. Wacowich-Sgarbi, C.-H. Wong, "Synthesis of Globo H using the programmable one-pot strategy," Angew. Chem. Int. Ed., 2001, 40, 1274–1276.
11. F. Fazio, M.C. Bryan, O. Blix, J.C. Paulson, C.-H. Wong, "Synthesis of sugar arrays in microtiter plates," J. Am. Chem. Soc., 2002, 124, 14397-14402.
12. O. Blixt, S. Head, T. Mondala, C. Scanlan, M. E. Huflejt, R. Alvarez, M. C. Bryan, F. Fazio, D. Calarese, J. Stevens, N. Razi, I. van Die, D. Burton, I .A. Wilson, R. Cummings, N. Bovin, C.-H. Wong, J. C. Paulson, "Printed covalent glycan array for ligand profiling of diverse glycan binding proteins," Proc. Natl. Acad. Sci. U.S.A., 2004, 101, 17033–17038.
13. M. Sawa, T. L Hsu, T. Ito, M. Sugiyama, S. R. Hanson, P. K. Vogt, C.-H. Wong, "Glycoproteomic probes for fluorescent imaging of fucosylated glycan's in vivo," Proc. Natl. Acad. Sci. U.S.A., 2006, 103, 12371-6.
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15. T.-L. Hsu, S. R. Hanson, K. Kishikawa, S.-K. Wang, M. Sawa, C.-H. Wong, "Alkynyl Sugar analogs for the

labeling and visualization of glycoconjugates in cells," Proc. Nat. Acad. Sci. U.S.A., 2007, 104, 2614-2619.
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17. S. R. Hanson, E. K. Culyba, T. L. Hsu, C.-H. Wong, J. W. Kelly, E. T. Powers, "The core trisaccharide of an N-linked glycoprotein intrinsically accelerates folding and enhances stability," Proc. Nat. Acad. Sci. U.S.A., 2009, 106, 3131-6.
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19. H.-Y. Liao, C.-H. Hsu, S.-C. Wang, C.-H. Liang, H.-Y. Yen, C.-Y. Su, J.-T. Jan, C.-T. Ren, T.-J. Cheng, C.-Y. Wu, C.-H. Wong "Differential receptor binding affinities of influenza hemagglutinins on glycan arrays," J. Am. Chem. Soc., 2010, 132, 14849-56.
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37. L. Krasnova and C.-H. Wong, "Oligosaccharide synthesis and translational innovation," J. Am. Chem. Soc., 2019, 141, 3735-54.
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45. H.-Y. Huang, H.-Y. Liao, X. Chen, C.-W. Cheng, S.-W. Wang, M. Shahed-Al-Mahmud, T.-H. Chen, J. M. Lo, Y.-M. Liu, H.-H. Ma, Y.-H. Chang, C.-Y. Tsai, P.-Y. Huang, S.-Y. Chang, T.-L. Chao, H.-C. Kao, Y.-M. Tsai, Y.-H. Chen, C.-Y. Chen, K.-C. Lee, C.-Y. Wu, J.-T. Jan, K.-I. Lin, T.-J. R. Cheng, C. Ma, and C.-H. Wong, "Vaccination with SARS-CoV-2 spike protein lacking glycan shields elicits enhanced protective responses in animal models," Sci. Transl. Med. 2022, DOI: 10.1126/scitranslmed.abm0899.

46. S. S. Shivatare, V. S. Shivatare and C.-H. Wong, “Glycoconjugates: synthesis, functional studies and therapeutic developments,” Chem. Rev., 2022, 122, 15603-15671.

Jihong Yu (China/Beijing)

Expected Contribution:

IUPAC was established to unite global chemistry community for the advancement of the chemical sciences via collaboration and the free exchange of scientific information. One role of Prof. Jihong Yu as the Vice President of Chinese Chemical Society (CCS) is to promote the international cooperation in scientific research and education, which is consistent with the IUPAC's goal. China is one of the biggest producers of high-quality chemistry research and also one of the world's largest national producers of chemical products. It is essential for Chinese chemistry community to strengthen chemical and technological ties with other countries to tackle unprecedented challenges in environment, energy and health, etc., and promote the development of global chemistry technology for a sustainable future. As the initiator and director of the International Center of Future science, Jilin University, Prof. Yu has successfully established a global network for academic exchange and multi/cross-disciplinary research including the fields of chemistry, physics, materials science and technology, electronic science and technology, AI, and immunology, etc., which showcases an effective way for the advancement of the chemical sciences and chemistry-related areas via collaboration. The IUPAC is a unique platform for her to play a role of promoting global chemistry. Prof. Yu can lead the development of exchange and collaboration in chemistry research and education between China and other countries through joint efforts of IUPAC and CCS, and maintain IUPAC leadership role in global chemistry community. Meanwhile, she is a model for young women who are considering scientific research as professional careers, which can promote diversity in science community.

Prof. Yu's research interest focuses on the designed synthesis of zeolitic nanoporous materials and their applications in energy, environment and other emerging areas. She has pioneered on the introduction of rational design and predictive chemistry to this field by developing automatic screening-based computational simulation approaches, computational data mining and high throughput-assisted synthetic strategies to the discovery of target zeolite materials. Seven new zeotype structures were obtained and identified by International Zeolite Association. She discovered the free-radicals involved zeolite crystallization mechanism, which paves the way for highly efficient synthesis of zeolites. Her research team synthesized a 3D extra-large-pore zeolite enabled by 1D-to-3D topotactic condensation of a chain silicate, a new mechanism by clicking zoelites together. She also developed new synthetic strategies for zeolite catalysts and zeolite-encaged metal nanocatalysts in important catalytic processes, such as methanol-to-olefins, hydrogen production, propylene production. She first introduced zeolites as solid electrolytes which effectively solves safety and electrochemical stability in solid-state and liquid battery systems. Recently, she and her collaboration teams creatively integrated insulating nanoporous membrane to a designed structured thermal armour for achieving efficient liquid cooling even over 1,000 oC, thereby solving a 266-year-old challenge presented by the Leidenfrost effect. All these creative works show great potentials to address global challenges in energy and environment, and also

have important impacts on traditional chemistry community and emerging cross-cutting areas of research. Given that her outstanding scientific achievements in chemistry and related fields, Prof. Jihong Yu will contribute on providing advices on strategic planning and supervising of IUPAC science-related activities and fully support emerging areas of chemistry.

Short Biographical Sketch:

Prof. Jihong Yu is from the State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, China, and is the director of International Center of Future Science, Jilin University. She received her BS (1989), MS (1992), and PhD (1995) from Jilin University, and worked as a postdoctoral fellow first at the Hong Kong University of Science and Technology and then at Tohoku University in Japan during 1996-1998. She has been a full Professor in the Chemistry Department, Jilin University since 1999. She was elected as the Member of the Chinese Academy of Sciences in 2015, the Fellow of TWAS in 2016, the Foreign Member of Academia Europaea in 2019, and the Foreign Member of Royal Swedish Academy of Sciences in 2021.

Her main research interest is in the designed synthesis and application of zeolitic nanoporous materials in energy, environment and other emerging fields. She has co-authored over 450 research papers including Science, Nature, Nat. Rev. Mater., JACS, Angew. Chem. Int. Ed., Chem, Adv. Mater., etc.; obtained 49 authorized Chinese Invention Patents; co-published 7 books. She was the winners of the National Prize for Natural Science, the IUPAC 2017 Distinguished Women in Chemistry/Chemical Engineering Award, and the Ho Leung Ho Lee Science and Technology Progress Award. She was the Associate Editor of Chemical Science (2012-2020), and joined the JACS as an Executive Editor in 2021. She also serves as the Editor-in-Chief of Chemical Research in Chinese Universities, and Editorial/Advisory Board Members of Chemical Reviews, Accounts of Chemical Research, JACS-Au, Advanced Materials, Chem, Matter, ACS Nano, National Science Review, etc. She is the Vice President of Chinese Chemical Society, the Chair of Chinese Zeolite Association and the Chair of Jilin Provincial Association for Science and Technology.

CV:

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EDUCATION

1995 Ph.D., Inorganic Chemistry Changchun, China, Department of Chemistry, Jilin University, supervisor: Prof. Ruren Xu

1992 M.S., Inorganic Chemistry Changchun, China, Department of Chemistry, Jilin University, supervisor: Prof. Ruren Xu

1989 B.S., Inorganic Chemistry Changchun, China, Department of Chemistry, Jilin University

EMPLOYMENT

2016- Director of International Center of Future Science, Jilin University Changchun, China

1999-present Department of Chemistry, Jilin University Changchun, China, Professor

1997-1998 Department of Chemistry, Jilin University Changchun, China, Associate Professor
1995-1996 Department of Chemistry, Jilin University Changchun, China
Assistant Professor
05-08/2004 Department of Chemistry, Stockholm University Sweden
Guest Professor
1997-1998 Physics Department, Tohoku University Sendai, Japan
CREST Foreign Researcher
1996-1997 Department of Chemistry, The Hong Kong University of Science and Technology Hong Kong,
Postdoctoral Fellow
HONORS
2022 National Labor Award
2022 National March 8th Red-Banner Individual Holder
2021 Ho Leung Ho Lee Science and Technology Progress Award
2019 National Exemplary Teacher
2017 IUPAC Distinguished Women in Chemistry/Chemical Engineering Award
2014 National Key Talent Project, Young and Middle Aged Experts with Outstanding Contributions
2013 National High-Level Talents Special Support Plan
2012 National Prize for Natural Science (second prize)
2012 Science & Technology Innovation Team Award for Young and Middle-aged Talents of Jilin Province
2011 Special government allowances of the State Council, P. R. C.
2010 The Bau Family Award in Inorganic Chemistry for World Chinese Inorganic Chemists
2009 The 6th China Young Female Scientists Award (an extension of the UNESCO for Women in Science
Awards)
2008 National Natural Science Award (first prize) of Jilin Province
2007 The 10th China Youth Science and Technology Award
2007 National Prize for Natural Science (second prize)
2003 The 6th China Youth Science and Technology Innovation Award
2002 The 7th Jilin Province Youth Science and Technology Award
2000 The Teaching and Research Award Program for Outstanding Young Teachers in Higher Education
Institutions of, MOE, China
MEMBERSHIP
 Foreign Member of Royal Swedish Academy of Sciences (2021-)
 Fellow of Chinese Chemical Society (CCS) (2020-)
 Senior Fellow of Hong Kong Institute for Advanced Study (2020-)
 Foreign Member of Academia Europaea (2019-)
 Fellow of The World Academy of Sciences (TWAS) (2016-)
 Member of Chinese Academy of Sciences (CAS) (2015-)
 Fellow of Royal Chemical Society (FRSC) (2014-)
 Vice President of Chinese Chemical Society (CCS) (2019-)
 Chair of the Chinese Zeolite Association (CZA) (2018-)
 Secretary of Council of International Zeolite Association (2013-2017)
 Council Member of International Zeolite Association (2013-2019)
PROFESSIONAL SERVICE
 Executive Editor of Journal of the American Chemical Society (2021-)
 Editorial Advisory Board Member of Chemical Reviews (2022-)
 Scientific Advisory Board Member of ChemRxiv (2021-)
 Advisory Board Member of eScience (2020-)

 Advisory Board Member of JACS Au (2020-)
 Advisory Board Member of Advanced Materials (2020-)
 Advisory Board Member of Aggregate (2020-)
 Advisory Board Member of Accounts of Chemical Research (2021-2023)
 Associate Editor of Chemical Science (RSC) (2012-2020)
 Advisory Board Member of ACS Nano (2020-)
 Editor-in-Chief of Chemical Research in Chinese Universities (2019-)
 Editor-in-Chief of Chemical Journal of Chinese Universities (2019-)
 Advisory Board Member of Matter (2019-)
 Advisory Board Member of ACS Materials Letters (2019-)
 Advisory Board Member of Chem (2019-)
 Advisory Board Member of Inorganic Chemistry (2019-2021)
 Advisory Board Member of Inorganic ACS Central Science (2019-)
 Editorial Board Member of EnergyChem (2018-)
 Editorial Board Member of National Science Review (2017-)
 Advisory Board Member of Materials Horizon (2017-)
 Editorial Board Member of Materials Chemistry Frontiers (2016-)
 Member of RSC China Senior Expert Committee (2022-)
 Chairman of the 10th Committee of Jilin Provincial Association for Science and Technology (2021-)
 Executive Deputy Director of the International Cooperation Department of the Science & Technology Commission of Ministry of Education (2020-)
 Vice President of Chinese Chemical Society (CCS) (2019-)
 Deputy Director of Committee of Women Chemists of Chinese Chemical Association (CAS) (2019-)
 Vice President of Science Specialty Committee of China Higher Education Society (2019-)
 Chair of Chinese Zeolite Association (CZA) (2018-)
 7th Expert Advisory Committee Member of the Department of Chemical Science, National Natural Science Foundation of China (2017-2020)
 Vice President of Committee of Women Chemists of Chinese Chemical Society (CCS) (2016-)
 Committee Member of the Jilin Provincial Association for Science and Technology (2012-)

TEACHING ACTIVIES

 Solid Chemistry (Technical elective graduate)
 Advanced Inorganic Chemistry (Technical elective graduate)
 Chemical Informatics (Required Undergraduate)
 Science and Practice (Talent Undergraduate)
 Future Science (Graduate student)

MENTORING

Supervising over 70 PhD students who have got doctor degree, more than half of them have been promoted as associate professors or full professors, and some work in industry.

RESEARCH INTEREST

Molecular engineering of zeolitic nanoporous materials and their applications in energy, environment and other emerging areas.

 Theoretical study: structure prediction, property screening
 Synthesis: synthesis of new zeolites, developing new synthetic routes, mechanistic study
 Applications: catalysis, separation, host-guest assembly, energy storage, biomedicine

PUBLICATIONS

Coauthored over 450 papers in international journals, including Science, Nature, Nat. Rev. Mater., Nat.

Commun., Sci. Adv., Chem, JACS, Angew Chem. Int. Ed., Adv. Mater., etc., 7 books, and 49 authorized patents. (ORCID: 0000-0003-1615-5034). Total citations:
over 21,000, H index: 78. Elsevier Most Cited Chinese Researchers for Exceptional Research Performance in the field of Chemistry from 2014 to 2021.