WORLD CHEMISTRY LEADERSHIP MEETING

Sponsored by
International Union of Pure and Applied Chemistry at the 49th General Assembly, July 7-13, 2017
São Paulo – Brazil

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

WCLM Theme:

IUPAC's role in developing interdisciplinary/collaborative work in the chemistry community and beyond.

IUPAC serves to advance worldwide aspects of the chemical sciences and to contribute to the application of chemistry in the service of mankind.

The WCLM is an integral part of the IUPAC General Assembly. It offers a platform for representatives from National Adhering Organizations (NAOs) to meet and discuss emerging and pressing issues of global concern.

It has been universally recognized that chemistry is an essential discipline and as a pre-eminent science it plays an important role in many rapidly developing technical areas with vital societal impact. These interdisciplinary areas in chemistry are forefront research topics and often the career focus of the younger scientist community.

Chemistry is increasingly becoming multidisciplinary and interdisciplinary as it also depends closely on other scientific disciplines (e.g. physics, biology) to tackle problems of socio-economic importance. This has been highlighted in the role that chemistry plays in contributing to the UN Sustainable Development Goals, which was the theme of WCLM2015. It is hoped that the multidisciplinary and interdisciplinary themes can now be developed in depth in WCLM2017.

WCLM2017 aims to facilitate the specific involvement of Young Observers (YOs), targeting and furthering interdisciplinary topics and cross divisional/committee collaboration. This will be facilitated through work with the inter-divisional sub-committees of Material Chemistry (ISMC) and the interdivisional committee of Green Chemistry for Sustainable Development (ICGCSD), using them as a launch pad for developing shared languages and activities.

The YOs and invited leaders will have the opportunity to discuss and identify gaps in existing knowledge and practice of chemical science and how to address them.

Contact:
Fabienne Meyers, Associate Director IUPAC
fabienne@iupac.org or fmeyers@iupac.org

YOs are invited to take part in all the activities of the WCLM programme which will be as follows:

Monday Evening, July 10 (16:00-20-00) :

Reception for YOs hosted by IUPAC Divisions and Committees to introduce the WCLM activities. This will be done in a speed-networking format in which we will have a round table discussion at each station with 2 representatives from each Division/Committee and up to 10 YOs in each discussion.

- speed-networking (16.00-18.00)
- YOs reception (jointly with IYCN, around poster session) (18.00-20.00)

Tuesday Morning, July 11 (09.30-12.30):

Presentations from representative of 2 Interdivisional committees:

- The interdivisional subcommittee of Material Chemistry (ISMC).
- The interdivisional committee of Green Chemistry for Sustainable Development (ICGCSD).

Following a workshop with ISMC and ICGCSD representatives, the YO teams will work with IUPAC volunteers to develop their ideas into a presentation for the WCLM plenary session.

Wednesday Morning, July 12 (09..00-12.00):

- Plenary presentation from leaders in the academia and Industry.
- Presentation form the International Young Chemist Network (IYCN) representatives.
- Presentation from the organizing committee of IUPAC100 -IUPACs first 100 years
- Presentations from YO Teams.
- Group discussion and identification of highest priority tasks.

All activities will take place in the Chagall. room

WORLD CHEMISTRY LEADERSHIP MEETING

Sponsored by
International Union of Pure and Applied Chemistry at the 49th General Assembly, July 7-13, 2017
São Paulo – Brazil

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

In preparation for the Tuesday and Wednesday sessions participants in the WCLM are invited to read the suggested references below

WCLM Plenary session

Wednesday Morning, July 12 (09..00-12.00):

Speakers:

Prof Qi-Feng Zhou IUPAC Vice President.
Welcome.

Dr Alejandra Palermo FRSC, Manager, External Relations.
Future of the Chemical Sciences—preparing for an uncertain future.

Dr Natalie LaFranzo, PhD, Director of Scientific Projects and Market Development,
Cofactor Genomics, and Chair, American Chemical Society Younger Chemists Committee.
Science through a molecular lens – navigating an interdisciplinary career path.

Marcos De Marchi, Abiquim's President of the Board and CEO of Elekeiroz
Views from the Brazilian Chemical Industry.

Suggested Reading:

- Palermo, A. "Future of the Chemical Sciences", RSC Report, 2015, http://www.rsc.org/globalassets/04-campaigning-outreach/campaigning/future-chemical-sciences/future-of-the-chemical-science-report-royal-society-of-chemistry.pdf.
- Matlin, S. A. Goverdhan Mehta, Henning Hopf and Alain Krief, "One-world chemistry and systems thinking", Nature Chemistry 2016, 8, 393. http://www.nature.com/nchem/journal/v8/n5/full/nchem.2498.html
- Whitesides, G. "Reinventing Chemistry", Angew. Chem. Int. Ed. 2015, 54, 3196 – 3209. https://gmwgroup.harvard.edu/pubs/pdf/1241.pdf
- Vincent J. Venditto, Francis C. Szoka Jr., Cancer nanomedicines: So many papers and so few drugs! Advanced Drug Delivery Reviews 65 (2013) 80–88 https://doi.org/10.1016/j.addr.2012.09.038
- Rudy Juliano, Nanomedicine: is the wave cresting? Nat Rev Drug Discov. 2013 Mar; 12 (3): 171–172 https://doi.org/10.1038/nrd3958
- Harald F. Krug, Nanosafety Research—Are We on the Right Track? Angew. Chem. Int. Ed. 2014, 53, 12304 – 12319 https://doi.org/10.1002/anie.201403367
- Emma Perkin, Vladimir Gubala, Nanomaterials—On the Brink of Revolution? Or the Endless Pursuit of Something Unattainable? Chemistry International April-June 2017, 10-13 https://doi.org/10.1515/ci-2017-0206
- Science, technology and innovation for the SDGs 1, 2, 3, 5, 9 and 14 https://sustainabledevelopment.un.org/forum/?forum=88
- STI plans, policies and capacity building https://sustainabledevelopment.un.org/forum/?forum=89

Post-GA Activities:

Outcomes from the WCLM will be used to drive the actions of a newly formed IUPAC-UN SDG Working Group as a means to develop interdisciplinary projects.

WORLD CHEMISTRY LEADERSHIP MEETING
Sponsored by
International Union of Pure and Applied Chemistry at the 49th General Assembly, July 7-13, 2017
São Paulo – Brazil

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

IUPAC2017 São Paulo, Brazil

WCLM Theme:
IUPAC's role in developing interdisciplinary/collaborative work in the chemistry community and beyond.

IUPAC serves to advance worldwide aspects of the chemical sciences and to contribute to the application of chemistry in the service of mankind.

Program
Wednesday Morning, July 12th

1. 09:00 (Chairs: Prof Chris Ober and Prof Hemda Garelick)
   Welcome: Professor Qi-Feng Zhou (China), IUPAC Vice President/President Elect

2. 09:10 Plenary talks (20 minutes each)
   - **Dr Alejandra Palermo**, Manager, Open Innovation, Royal Society of Chemistry, UK
   - **Mr. Marcos De Marchi**, Abiquim's President of the Board and CEO of Elekeiroz, Brazil
   - **Dr Natalie LaFranzo**, Chair, American Chemical Society National Younger Chemists Committee, Director of Scientific Projects and Market Development, Cofactor Genomics, Inc. US

3. 10:10 Coffee break

4. 10:20 Introduction to the panel discussion session 1 (Chair: Prof Javier Garcia Martinez)
   - 10:25 Ms Christine Dunne and Mr Maarten van Sisseren, International Younger Chemists Network (IYCN)
   - 10:35 Prof Mary Garson Chair of IUPAC100 committee
   - 10:45 The panel discussion will refer to the themes raised in the plenary talks and to the presentation by IYCN and IUPAC100

5. 11:10 Feedback on the YOs project work and introduction to panel discussion session 2 (Chair Prof Jan Apotheker)
   - 11:15 Presentations from YO Teams (2 presentations expected)
   - 11:35 Panel/Group discussion and identification of highest priority tasks. Discussion on Post GA activities

6. 12.00 closing remarks (Chairs: Prof Chris Ober and Prof Hemda Garelick)

Dr Alejandra Palermo FRSC, Manager External Relations, Royal Society of Chemistry

Alejandra Palermo is a chemical engineer with a PhD in Materials Science. Her independent academic career began as Assistant Professor in Chemical Engineering 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 and, since joining RSC, a number of influential policy reports. She is an FRSC, a life fellow of the Chemical Research Society of India, a member of IUPAC and an Honorary Fellow of the Chemical Society of Ethiopia. She is also a mentor in the University of Cambridge and member of the Advisory Group on Responsible Research and Innovation at University College, London. Recently, she joined the Oxford Business Alumni Network, Saïd Business School. Alejandra Palermo leads the External Relations for the Royal Society of Chemistry which involves the management and engagement of key stakeholders and overseeing the RSC inclusion and diversity strategy. In addition, she led the *Future of the Chemical Sciences* initiative which aimed at developing our long-term strategy. This is a new area for the RSC and involves using scenario planning as a business tool. Previous roles included developing and managing RSC work in India and Latin America and the setting up and management of the Pan Africa Chemistry Network, an RSC initiative in collaboration with the private sector—its achievements have been recognised across the world.

Abstract

Future of the Chemical Sciences—preparing for an uncertain future

Scientific, social and technological trends are rapidly changing the way we live and work. They not only affect our subject – the nature and practice of chemistry – but also the roles of chemists themselves. Accordingly, the Royal Society of Chemistry wanted to assess how the chemical sciences might evolve; as well as the possible consequences for academia, industry and society over the next 10 to 20 years. To this end, we launched the Future of the Chemical Sciences initiative, a multi-stage scenario development process involving leaders from across the chemical sciences. Scenario planning was used as a methodology to understand and manage uncertainty, and to challenge conventional thinking. With this process we sought to understand what chemistry and chemists might look like in the future, what the next big issues in the field could be, and how these information could influence the future of our discipline.

Mr. Marcos De Marchi, Abiquim's President of the Board and CEO of Elekeiroz, Brazil

Marcos Antonio De Marchi earned a Bachelor's degree in Mechanical Engineering from Faculdade de Engenharia Industrial – FEI, specialization in Advanced Management Program from Fundação Dom Cabral in 1997, and INSEAD – European Management Institute in Fontainebleau, in 1997.

Elekeiroz S.A. - CEO, Investor Relations Officer, Member of Disclosure Committee, Member of the Strategy, Governance and Risk Committees, Personnel Committee since April 2012.

Rhodia Group - CEO of Rhodia Latin America and Member of Management Committee of Rhodia Group from November 2005 to March 2012; Managing Vice-President of Rhodia Brasil (2004/2005), Managing Vice-President of Rhodia Industrial Yarns & Fibers (2001/2003), Managing Vice-President of Rhodia Poliamida América do Sul (1999/2000), among others management and technical positions from 1979 to 1998.

Other business activities - Chairman of the Board of Directors of Abiquim (Brazilian Chemical Industry Association); Member of the Board of Directors of ICCA (International Council of Chemical Associations); Director of APLA (Latin American Petrochemical and Chemical Association); Member of CDES (Economic and Social Development Council of the Republic Presidency); Vice President of FNQ- National Foundation of Quality; Member of the Economic Council of FIESP (Federation of São Paulo State Industries).

Abstract

Innovation – a key to essential development

The Brazilian Chemical Industry Association (Abiquim) is a non-profit organization founded on June 16, 1964, to unite small-, mid-, and large-sized chemical companies, as well as a variety of chemical industry service providers in areas such as logistics, transportation, waste management and emergency response.

Furthermore, Abiquim is in charge of the national coordination of the Responsible Care® Program. The Program is a global initiative and it aims at supporting the chemical industry in the management of its health, safety, and environmental activities, by fostering nationwide sustainable development and competitiveness.

At this moment, ABIQUIM understands the importance of discussing innovation in the chemical industry chain. Strengthening the partnership between academia, government and industry is key for the consolidation of a favorable environment for innovation.

Over the past 30 years, Brazil has consolidated its capacity to generate scientific knowledge, as it figures in the 13th position in scientific publications. This position puts Brazil on par with countries such Switzerland, the Netherlands and Russia. However, the transformation of this scientific knowledge in technology, goods and services to society still needs to evolve.

On this sense, the presentation will focus on how innovation is essential to develop a sustainable environment, generating knowledge, increasing higher level employment, promoting industrial competitiveness and therefore, providing a higher quality of life for the Brazilian society.

Dr Natalie LaFranzo, Chair, American Chemical Society National Younger Chemists Committee, Director of Scientific Projects and Market Development, Cofactor Genomics, Inc. US

Natalie LaFranzo earned her BS in Chemistry from Bradley University, and her PhD in Chemistry from Washington University in St. Louis where her interdisciplinary research was aimed at developing new patterned surfaces to study neurobiology and neuronal development. During her graduate career, Natalie worked with multiple biotech start-ups and entrepreneurs as a Project Manager in the student/post-doc run consulting group, The Biotechnology and Life Science Advising (BALSA) Group.

After completing graduate school in early 2013, Natalie joined Cofactor Genomics, a boutique next-generation sequencing (NGS) contract research organization. As a Project Scientist at Cofactor, Natalie worked with clients from many industries, from biofuels to pharmaceuticals, to develop customized experimental design solutions to apply NGS technologies to their research goals. In early 2015, Natalie transitioned to a role at Horizon Discovery, a UK-based translational genomics company, supporting their genomic reference standards products for assay validation and benchmarking. In mid-2016 Natalie was recruited back to lead the sales and marketing team at Cofactor Genomics as the Director of Scientific Projects and Market Development, as Cofactor transitioned to a clinical assay provider. Throughout her graduate and early career, Natalie has honed an interest in understanding the needs of scientists from a commercial perspective. Natalie actively volunteers for the American Chemical Society on a local and national level, and is the current chair of the Younger Chemists Committee (YCC). Natalie has also integrated a personal passion into her career by serving as head coach of the Washington University Cheerleading Team.

Abstract

Science through a molecular lens – navigating an interdisciplinary career path

As ambitious young scientists, it's natural to set our sights on a prestigious career path in academia, industry, or government. In our minds this path is linear, with a focus on becoming an expert in a specific field, making significant contributions, and being rewarded with publications and accolades. The reality of science and scientific careers, however, is that sometimes what we initially hypothesize does not come to yield the best results. Rather, the scientific career paths of today and tomorrow require us to be open-minded, seeking ways to apply our knowledgebase to new scientific questions, and challenges that span disciplines and industries. Chemists are able to bridge wide technical gaps and advance science to benefit mankind by engaging with colleagues in other disciplines, being open to alternative career paths, and retaining our approach to understanding the world at the molecular level. This can further be achieved by volunteering within professional societies such as the American Chemical Society and IUPAC, which allow young scientists to remain anchored in their identities as chemists, while building a network of passionate, interdisciplinary scientists who all see the world through a molecular lens.

Professor Qi-Feng Zhou (China), IUPAC Vice President/President Elect

Professor Qi-Feng Zhou holds a BS degree from Peking University, MS and PhD from the University of Massachusetts, Amherst USA.
Prior to his election as Vice President at the 48th Council Meeting in Busan, Korea he was an Elected Member of the Bureau and Member of the Executive Committee of the Bureau (2010-2013; 2014-2017)
He served as the executive dean of the Graduate School of Peking University for 6 years, and the Director General of the Office of Academic Degrees Committee of the State Council and Director General of Department of Postgraduate Education of the Ministry of Education. He has received national and ministerial awards in recognition of his significant contributions.
Prof. Zhou has served as vice president of the Chinese Chemical Society since 2010 and is the former President of Jilin University and Peking University. As Academician of Chinese Academy of Sciences, Professor Zhou has been deeply involved in the study of liquid crystalline polymers with 200+ papers and books, including a textbook on liquid crystalline polymers published by World Scientific Publishing Co.
Prof. Zhou devotes much of his time to social services in science, education and the popularization of chemistry.

Contact Information for the WCLM2017 Organizing Committee

Christopher Ober (Co-chair), . USA
christopher.ober@cornell.edu

Hemda Garelick (Co-chair), , UK.
h.garelick@mdx.ac.uk

Jan Apotheker, The Netherlands,
j.h.apotheker@rug.nl

Pietro Tundo, Italy
tundop@unive.it

Vladimir Gubala, UK
V.Gubala@kent.ac.uk;

Javier Garcia Martinez, Spain
j.garcia@ua.es

Returning YOs:

Christine Dunne , USA
christine.dunne11@gmail.com

Danniebelle (D) Haase . USA
DHaase@dow.com

Johan Scheers, Sweden.
johan.scheers@chalmers.se