



International Union of Pure and Applied Chemistry

A member of the International Council of Scientific Unions

Division VI, Chemistry and the Environment

2014 Progress Report – Submitted by Laura L. McConnell, President

- I. Highlights, Expectations and Goals for 2014 and 2015
 - a. The DCE is in process of developing a special issue of Pure and Applied Chemistry based on the three symposia presented at the IUPAC Congress in Istanbul. The title is “: "Critical Advances in the Assessment of the Behaviour and Impact of Emerging Environmental Contaminants".
 - b. Preparations are underway for the 13th IUPAC International Congress of Pesticide Chemistry to be held August 10-14, 2014 in San Francisco, CA at the American Chemical Society National Meeting and Exposition. Abstract submission has completed for 9 main scientific topics. Approximately 100 scientists are involved with the scientific program development, with a combination of US and International scientists. Approximately 1000 abstracts have been submitted. The meeting website has recently been updated www.iupac2014.org.
 - c. Three new projects have been funded
 - i. 2013-019-2 (Unsworth) - World Crop Protection Chemistry Institute: Developing Global Leaders for Research, Regulation and Stewardship in the 21st Century.
 - ii. 2013-024-1 (Molyneux) - Unequivocal Identification of Compounds with Biological Activity of Significance in Food Chemistry.
 - iii. 2013-029-1 (Kleter) – Inventory of developments in the field of RNAi-based pesticides and potential needs for international harmonization of regulatory safety requirements.
 - d. The division has also agreed to sponsor the 9th World Mycotoxin Forum & XIVth International Symposium on Mycotoxins and Phycotoxins, 6-10 June, 2016 in Winnipeg, Canada. Discussions are underway to launch a new subcommittee on Mycotoxins and Phycotoxins.
 - e. Another goal of this division is to seek out opportunities for cooperative projects with other divisions and committees. Division VI will utilize cross-divisional meetings to discuss new project opportunities.
- II. Accomplishments and Outcomes in 2012 and early 2013 – Organized by IUPAC Strategic Plan
 - a. *IUPAC will provide leadership as a worldwide scientific organization that objectively addresses global issues involving the chemical sciences.*
 - i. Initial Project Workshop 2010-028-3 (Sakellariadou) was held in Barcelona Spain in February, 2013, “Management of maritime pollutants in shipping and commercial European ports based on relevant physical and biogeochemical environmental parameters”

- ii. Initial Project Workshop 2012-020-3 (Kookana) was held in York, United Kingdom in May 2013, "Guiding principles to facilitate a harmonized ecological risk assessment framework for nano-pesticides in the environment.
- b. *IUPAC will facilitate the advancement of research in the chemical sciences through the tools that it provides for international standardization and scientific discussion.*
- i. Several new projects were funded in 2012:
 - 1. Guiding principles to facilitate a harmonized ecological risk assessment framework for nano-pesticides in the environment, Kookana (2012-020-3).
 - 2. The Importance of Chemistry in Maintaining a Secure Food Supply Unsworth (2012-019-1)
 - 3. 4th Latin American Pesticide Residue Workshop Food And Environment (LAPRW 2013) Dallos (2012-017-1)
 - 4. Bibliometric analysis of research on secondary organic aerosols (SOA) in atmospheric and environmental journals. Klasinc (2012-028-1)
 - 5. Environmental Chemistry, Green and Sustainable Chemistry, Garelick, (2012-034-1)
 - 6. Clean Energy through Chemistry – Symposia for Istanbul. Taft (2012-049-1)
 - ii. Publications that were completed in 2012 and early 2013:
 - 1. Dassenakis, M., Paraskevopoulou, V., Cartalis, C., Adaktilou, N., Katsiabani, K. 2012. Remote sensing in coastal water monitoring: Applications in the eastern Mediterranean Sea (IUPAC Technical Report). *Pure Appl. Chem.*, 2012, Vol. 84, No. 2, pp. 335-375.
<http://dx.doi.org/10.1351/PAC-REP-11-01-11>
 - 2. Macarthur R., von Holst C.: A protocol for the validation of qualitative methods of detection. *Anal. Methods*, 2012, 4, 2744-2754. DOI: 10.1039/C2AY05719K
 - 3. Kleter, G.A., Unsworth, J.B. and Harris C.A.(2012) Genetically modified, herbicide-resistant crops, *New Food Magazine* 15 19-22.
 - 4. Kördel, W. Garelick, H., Gawlik, B.M., Kandile, N.G., Peijnenburg, Rüdél, H. Substance-related environmental monitoring strategies regarding soil, groundwater and subsurface water – an overview. *Environmental Science and Pollution Research*, 2013, 20, 2810-2827.
 - 5. Jinfeng Li, Yuanhang Zhang, Marjan Veber, Paul H. Wine and Leo Klasinc. Bibliometric analysis of research on secondary organic aerosols: A Science Citation Index Expanded-based analysis (IUPAC Technical Report). 2013, Vol. 85, Issue 6, pp. 1241-1255.

- c. *IUPAC will assist chemistry-related industry in its contribution to sustainable development, wealth creation, and improvement in the quality of life.*
 - i. The 2012 IUPAC International Award for Contributions to Harmonized Approaches to Crop Protection Chemistry was presented to Ms. Lois Rossi of the United States Environmental Protection Agency. The award was presented at the 4th International Symposium on Pesticide and Environmental Safety & 8th International Workshop on Crop Protection Chemistry and Regulatory Harmonization in Beijing, China, in September 2012.
- d. *IUPAC will foster communication among individual chemists and scientific organizations, with special emphasis on the needs of chemists in developing countries.*
 - i. The DCE co-sponsored four workshops/conferences in 2012 and early 2013:
 1. 4th International Symposium on Pesticide and Environmental Safety & 8th International Workshop on Crop Protection Chemistry and Regulatory Harmonization in Beijing, China, September 15-20, 2012. A meeting of the DCE Crop Protection subcommittee was held at this workshop, and members conducted a training session on developing a “Global Framework for Implementing Consistent Ecological Risk Assessment of Pesticides for Sustainable Agriculture”. See attachment showing program and speakers.
 2. 7th World Mycotoxin Forum and XIIIth International IUPAC Symposium on Mycotoxins & Phycotoxins, Wageningen, Netherlands, November 5-9, 2012. Rietje van Dam served as IUPAC lecturer for this meeting.
 3. 4th Latin American Pesticide Residue Workshop Food and Environment (LAPRW 2013), Bogota, Colombia, May 26-29, 2013. <http://laprw2013.com/>. Members of the DCE Crop Protection Subcommittee will provide a workshop on a Global Framework for Implementing Consistent Ecological Risk Assessment of Pesticides for Sustainable Agriculture.
 4. THE FIRST KPUC RESEARCH AND TECHNOLOGY CONFERENCE 2013 - Environmental Monitoring Research Science and Technology for Sustainable Development in Kenya and the Impact on the National Vision 2030. http://kpuc.tukenya.ac.ke/index.php?option=com_content&view=article&id=344&Itemid=281. Crop Protection Subcommittee chair, Dr. John Unsworth and Division member, Dr. Rai Kookana will serve as IUPAC lecturers.

- e. *IUPAC will utilize its global perspective and network to contribute to the enhancement of chemistry education, the career development of young chemical scientists, and the public appreciation of chemistry.*
 - i. Young observer was invited to annual meeting and has been incorporated into subcommittee activities.

III. Other Substantive Information

- i. The annual meeting of the division was held in Berlin Germany, May 25-26, just after the Society of Environmental Toxicology and Chemistry (SETAC) World Congress. Present were 15 Titular members, and 3 division members, including one IUPAC young observer who has been invited to join the division.

- 1. At this meeting the Division carried out short strategic planning session and this resulted in a revised mission statement:

Mission Statement

“The IUPAC Division of Chemistry and the Environment (DCE) is recognised as a leading organization on authoritative critical reviews, interactive workshops, and outreach to the scientific community and the public on emerging topics in environmental and food chemistry.”

- 2. And the Division established two primary goals to govern their activities

Goals:

- a. The DCE will provide leadership in the scientific community by facilitating the formation of internationally-recognized teams to carry out critical reviews on emerging environmental chemistry topics.
- b. The DCE will enhance the visibility and impact of its activities by forging alliances with other professional organizations and seeking new approaches to more effectively disseminate project outcomes