



International Union of Pure and Applied Chemistry

A member of the International Council of Scientific Unions

Division VI, Chemistry and the Environment

2012 Progress Report – Submitted by Laura L. McConnell,

President

- I. Highlights, Expectations and Goals for 2012
 - a. The annual meeting of the division will be held in Berlin Germany, May 25-26, just after the Society of Environmental Toxicology and Chemistry (SETAC) World Congress. At present 17 division members are planning to attend, and one young observer has been invited.
 - i. Leading up to our annual meeting, a strategic planning subcommittee is being formed to prepare for the development of an updated vision and goals for the division to be implemented over the next 3 to 4 years. The new goals will be designed to complement the goals of the Society. This will assist in focusing the efforts and resources of the division.
 - b. The division president will seek to improve communication and interaction with division members and provide more transparency in the business of the division. This process has begun through the development of a flyer to announce the deadline for submission of new proposals for consideration at the division annual meeting. This flyer was distributed to all division and subcommittee members (see attachment).
 - c. The DCE is interested in participating in the upcoming 2013 IUPAC Congress in Turkey through the development of at least one symposium on an environmental chemistry topic. Initial contact has been made with the conference organizer and we have received a positive response.
 - d. The DCE president has agreed to assist with the development of a new IUPAC global experiment in cooperation with Dr. Mark Cesa and others. Several potential projects are currently being evaluated by the committee members.
 - e. The DCE will co-sponsor three workshops and conferences this year:
 - i. 2nd International Conference on Agrochemicals Protecting Crops, Health and Natural Environment - The Role of Chemistry for Sustainable Agriculture in New Delhi, India, February 15-18, 2012
 - ii. 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

- iii. 7th World Mycotoxin Forum and XIIIth International IUPAC Symposium on Mycotoxins & Phycotoxins, Wageningen, Netherlands, November 5-9, 2012
 - f. The 2012 IUPAC International Award for Contributions to Harmonized Approaches to Crop Protection Chemistry will be presented to Ms. Lois Rossi of the United States Environmental Protection Agency. The award will be 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
- II. Accomplishments and Outcomes in 2011
 - a. DCE members co-organized two symposia at the IUPAC Congress in Puerto Rico. The first, "Advanced physico-chemical techniques to solve environmental science challenges", was a two day symposium that was supported by a challenge grant from the American Chemical Society, and additional funding from the Division of Agrochemicals of the ACS, the Division of Environmental Chemistry of the ACS, and the Society of Environmental Toxicology and Chemistry. The second was a 2.5 day symposium, "Sustainability of Water Quality". Both symposia were very well attended.
 - b. Due to travel support obtained from the ACS Challenge grant and other sources, members of the DCE Subcommittee on Crop Protection Chemistry were able to hold a two day meeting in Puerto Rico for approximately 20 members to discuss on-going projects and to plan for new project proposals. Two other DCE Subcommittees, Environmental Compartments and Biophysico-Chemical Processes in Environmental Systems, also met in Puerto Rico to discuss on-going work and to develop new proposal ideas.
 - c. As part of a DCE supported project, Regional Drinking Water Quality Assessment in the Near East (Palestinian Authority, Jordan, and Israel): An Overview and Perspective, led by Dr Yehuda Shevah, a 2-day Environmental Workshop was organized, and the IUPAC Project Session was held as part of the Malta Conferences Foundation 'Frontiers of Chemical Sciences' which took place at UNESCO HQ in Paris, France, 4th – 9th, Dec, 2011. The workshop program included the following sessions: Water Resources Management, Environmental Chemistry, and Collaborative Resesearch - Progress & Opportunities. (2008-003-3-600)
 - d. The DCE voted to change the term of office of all Division officers and titular members to a period of 2 years instead of the current 4 years.

Titular members may run a second 2-year term. Officers, including the Division President will only serve for 2 years. This change brings the DCE into accordance with the IUPAC bylaws. Therefore, in 2013 the DCE will elect 8 new TMs including a Vice President. A new nominating committee will be selected in the first half of 2012.

- e. A long-time DCE member, Prof. P. Ming Huang of the University of Saskatchewan, Canada, passed away in 2009. Prof. Huang had served as a senior co-editor on the Wiley Book series “Biophysical-chemical processes of anthropogenic organic compounds in environmental systems”. A new, co-editor Prof. Baoshan Xing of the University of Massachusetts, Amherst has agreed to take over this responsibility. The newest book in progress is “Engineered Nanoparticles and the Environment: Physicochemical Processes and Biototoxicity” (2011-01901-600)
- f. A Spanish translation of the textbook “Pesticides in the Environment” by Gerry Stephenson and Keith Solomon was published by the University of Costa Rica as the final piece of a very productive IUPAC project (2003-013-1-600, Carazo).
- g. The DCE co-sponsored the workshop “3rd Latin American Pesticide Residue Workshop” in Montevideo, Uruguay, May 8-11, 2011
- h. Several additional projects that were funded in 2011:
 - i. Materials for a Sustainable Future. A book project led by Dr. Trevor Lecher (2010-028-3-600).
 - ii. Critical review of approaches to dietary risk assessment for pesticides, led by Drs. Eloisa Calda and Caroline Harris (2011-023-2-600).
 - iii. Maintaining and ensuring the pesticide properties database. A website project pesticides.iupac.org led by Dr. John Unsworth (2011-060-1-600).
 - iv. Global framework for implementing consistent ecological risk assessment of pesticides for sustainable agriculture, led by Dr. John Unsworth (2010-056-1-600).
 - v. Advancement in product development, safety evaluation and risk-based regulation of crop protection chemistry in the Asian-Pacific region, led by Dr. Wenlin Chen (2011-061-1-600)
 - vi. Management of maritime pollutants in shipping and commercial European ports based on relevant physical and biogeochemical environmental parameters, led by Dr. Fani Sakellariadou (2010-028-3-600)

- vii. Quantitative review and analysis of pesticide sorption and its effect on degradation in relation to soil and climate, led by Dr. Wenlin Chen (2010-018-2-600)
- viii. Appropriate consideration of bioavailability of metals/metal compounds in the aquatic environment, led by Heinz Ruedel (2012-002-1)
- i. Publications that were completed in 2011:
 - i. Kalderis, D., Juhasz, A.L., Comfort, S. "Soils contaminated with explosives: environmental fate and evaluation of state-of-the-art remediation processes (IUPAC technical Report). *Pure Appl. Chem.*, 2011, Vol. 83, No. 7, pp. 1407-1484; doi:10.1351/PAC-REP-10-01-05
 - ii. Dassenakis, M., Parakevopoulou, V., Cartalis, C., Adaktilou, N., Katsiabani, K. "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>
 - iii. Xing, B., Senesi, N., Huang, P.M. eds. 2011. *Biophysical-Chemical Processes of Anthropogenic Organic Compounds in Environmental Systems*. Wiley, 592 pp. ISBN: 978-0-470-53963-7
 - iv. Kleter, G.A., Unsworth, J.B., Harris, C.A. eds. The impact of altered herbicide residues in transgenic herbicide-resistant crops on standard setting for herbicide residues. *Pest Management Science*. 2011. 67:1193-1210. DOI:10.1002/ps.2128
 - v. Zeinali, M., McConnell, L.L., Hapeman, C.J., Nguyen, A., Schmidt, W.F., Howard, C.J. Volatile organic compounds in pesticide formulations: methods to estimate ozone formation potential. *Atmospheric Environment*. 2011. 45:2404-2412. <http://dx.doi.org/10.1016/j.bbr.2011.03.031>