

Kristan Markey

USEPA · 1200 Pennsylvania Ave. NW · Mail Code: 7405M · Washington,



Professional Experience

Program Manager and Chemist, United States (USEPA) 5/2008-present Environmental Protection Agency

Oversees multi-disciplinary regulatory reviews of new nanoscale materials under the Toxic Substances Control Act (TSCA). Works with stakeholders to develop appropriate regulatory and testing approaches for nanoscale materials. Develops and represents Agency policy positions on nanotechnology in the New Chemicals Program for workgroup, intergovernmental, and public meetings. Manages and contributes to special projects and initiatives associated with nanoscale materials across the Agency.

Major Accomplishments

- Led analysis and development of the Nanoscale Materials Stewardship Program (NMSP) Interim Report. Leading workgroup on NMSP submission reviews.
- Programme Chair of the OECD Conference on Potential Environmental Benefits of Nanotechnology: Fostering Safe Innovation Led Growth.

Consultant 2/2008 - 5/2008

Breast Cancer Fund

Clean Production Action, Tides Center

Provided scientific direction to program activities and chemical hazard analysis.

Research Analyst, Environmental Working Group (EWG) 12/2004-5/2008

Acquired and integrated disparate databases to predict emerging pollutants. Provided chemical and policy expertise on human and environmental exposures, personal care products, polyfluorinated chemicals, and nanotechnology. Researched and developed chemical profiles and directions for future research.

Regularly represented EWG to media, scientists, and officials in areas of expertise. Designed interactive websites and tools for research and public dissemination findings.

Major Accomplishments

- Served as lead designer for chemical information system that links properties, toxicity, exposure, and regulatory data from 30 primary sources to allow comparisons on over 250K chemicals. Used system to evaluate industry chemical data under EPA's High Production Volume program and evaluate chemical profiles in nationally featured cosmetics and sunscreen database and website.
- Developed and implemented chemical hazard evaluation framework, data gap analysis system, and sunscreen efficacy models for nationally featured cosmetics and sunscreen database and website.
- Lead author on three reports on EPA changes to the Toxics Release Inventory (TRI) and advised California legislators leading to successful passage of state TRI.
- Served as EWG representative on the steering committee and as a working group rapporteur for international OECD conference on polyfluorinated chemicals.
- Developed technical analysis and organizational policy positions for Toxics Release Inventory Rule, Final Sunscreen Rule, and national legislation to reform the Toxic Substances Control Act.
- Developed software systems to automatically acquire and process online databases, linguistically recognize and convert physical units on-the-fly, and track media and public policy impacts.

Educational Program Specialist, Holy Cross Hospital 8/2004-6/2005

Developed and instituted data management systems for hospital wide educational programs. Completed data and statistical analyses to meet internal and regulatory requirements. Oversaw student nurse clinical experience program throughout hospital.

Science Teacher, St. John's College High School 8/2002 - 8/2004

Taught physical science and astronomy to grades 9, 11 and 12. Supervised students in academic, laboratory, and non-academic settings. Created course and independent learning materials and maintained all materials on website. Moderated Ski Club, Chess Club, and Student Pugwash.

Research Fellow, Physicians for Social Responsibility 6/2003 - 9/2003

Developed and presented organizational technical comments and legislative briefing materials evaluating the science of plutonium aging and the need for modern plutonium pit production facilities. Coordinated among scientists, policy experts, and decision-makers. Developed media materials and handled press inquiries.

Research and Teaching Assistant, University of Georgia 1/2000 - 12/2001

Developed novel algorithm for improving gaussian basis sets in density functional theory to better describe hydrogen bonding. Edited scientific manuscripts and peer-reviewed papers and grants. Prepared and presented talks and posters on research and literature topics. Led undergraduate chemistry and physics labs and intensive writing sections

Research Assistant, Universität Göttingen 6/1997 - 12/1999

Developed novel algorithm for improving gaussian basis sets in density functional theory. Investigated properties of carbon chains to assist experimental detection in interstellar gas. Developed a potential energy surface for combustion chemistry molecules.

Education

University of Georgia, Athens, GA 1/2000 - 12/2001

Doctoral student in theoretical chemistry with Chemistry and Physics master's coursework. Received prestigious National Science Foundation Graduate Research Fellowship. GPA: 3.5

Universität Göttingen, Göttingen, Germany 10/1996 - 8/1997, 6/1999 - 12/1999

German and Chemistry studies with Max Kade Fellowship (1996-1997). Undergraduate coursework in German, graduate coursework in chemistry and physics.

The Colorado College, Colorado Springs, CO 8/1994 - 5/1999

Bachelor of Arts, Distinction in Chemistry, ACS certified Chemistry degree, Senior thesis Awarded full-tuition Otis A. Barnes Chemistry Scholarship. GPA: 3.5

Summer Research Ctr. for Comp. Quantum Chem., U. of Georgia 6/1996 - 9/1996

Chemistry Dept., Colorado College 5/1995 - 12/1995

Performed density functional studies on clusters of catalytic interest. Attended computational chemistry summer school. Investigated oscillating reactions theoretically and experimentally.

President Student Affiliates of the American 1/1995 - 5/1996

Chemical Society

Initiated, organized and ran K-12 science demonstrations, field trips, and chemistry events. Recruited participants and trained chemistry students to assist and lead demonstrations.

Publications and Reports

USEPA (2009), "Nanoscale Materials Stewardship Program Interim Report." United States Environmental Protection Agency. January, 2009. Accessed from: <http://www.epa.gov/oppt/nano/nmsp-interim-report-final.pdf>.

Gray, S.; Lunder, S.; Markey, K.; Sutton, R.; Leiba, N.; Houlihan, J. (2008). "Sunscreens: What works and what's safe." Environmental Working Group. Retrieved from <http://www.cosmeticsdatabase.com/special/sunscreens/summary.php>.

Markey, K., Herget, C., Gouldin, C (2008). "ChemIndex - A Chemical Information Organizational System." Environmental Working Group. Retrieved from <http://www.ewg.org/chemindex/>. Markey, K. and Houlihan, J. (2007). "Comments from EWG on the U.S. FDA's Proposed Amendment of Final Monograph for Sunscreens." Environmental Working Group. Retrieved from <http://www.ewg.org/node/25705>.

Invited Presentations

Markey, K. (2009) "EPA Progress and the Emerging Regulatory Role for Industrial Nanoscale Materials." NanoRegulation - Anticipating the Smallest Threats and the Largest Opportunities, Sacramento, CA, March 19, 2009.

Markey, K. (2008) "How is EPA regulating industrial nanoscale materials? A look at national and international approaches." Environmental Nanoparticles: Science, Ethics, and Policy, Newark, DE, University of Delaware, November 10-11, 2008.

Markey, K. "Emerging EPA perspectives on industrial nanoscale materials." International Congress of Nano-Bio & Clean Tech, San Francisco, CA, October 27-30, 2008. Markey, K. "Nanotechnology - An EPA perspective." Nanotech Advanced Product Manufacturing and Related Considerations for Toxicology, Fayetteville, AR, University of Arkansas, August 14-15, 2008.

Markey, K. (2006). "Using Existing Chemical Datasets to Assess the HPVIS: Finding PBTs in HPVs." Characterizing Chemicals in Commerce. Austin, TX, U.S. EPA Office of Pollution Prevention and Toxics, December 12-14, 2006.