

Paul C. DeLeo, Ph.D. Principal



Education and Credentials

Ph.D., Cornell University, Ithaca, New York, 1996, research emphasis on environmental microbiology

M.S., Environmental Engineering, Rensselaer Polytechnic Institute, Troy, New York, 1992

B.S., Mechanical Engineering, Marquette University, Milwaukee, Wisconsin, 1988

Continuing Education and Training

Leading Strategically (week-long course), Center for Creative Leadership (2014)

Professional Affiliations

Member of Society of Environmental Toxicology and Chemistry

Member of International Society for Exposure Science

Member of the Society of Toxicology

Professional Profile

Dr. Paul DeLeo is a scientific professional whose focus over the past two decades has included applied research and regulatory and public outreach related to the human and environmental safety of food ingredients, pesticides, pharmaceutical and personal care products, and cleaning products. A strategic and visionary thinker, Dr. DeLeo successfully implements solutions from conception through rollout and broad stakeholder outreach. His professional interests span broad areas related to product stewardship and the sustainability of formulated consumer products and their ingredients. For 10 years, Dr. DeLeo held key positions with the American Cleaning Institute (ACI), representing 160+ association member companies of the \$30 billion U.S. cleaning products industry. He directed a \$500,000+ research budget supporting the human and environmental safety of cleaning product ingredients and developing tools to further advance the science of consumer product ingredient safety. Prior to his tenure at ACI, he held positions at the U.S. Food and Drug Administration (FDA) for 8 years evaluating the human and environmental safety of food additives and drugs. His work has been published in the peer-reviewed literature, and he has delivered dozens of oral and poster presentations at conferences for major scientific societies including the American Chemical Society, the Society of Environmental Toxicology and Chemistry, the International Society of Exposure Science, and the Society for Risk Analysis.

Relevant Experience

Product Stewardship

TSCA Low Volume Exemption (LVE) Support for Per- and Polyfluoroalkyl Substances (PFAS)—Provided technical support to a client seeking a TSCA LVE for its short-chain PFAS-based product. Developed rationale to justify to EPA that there is no unreasonable risk associated with the compound under the client’s conditions of use. The LVE was granted in a timely manner permitting the client to preserve its market for the seasonal product.

Exposure Assessment of Chemicals in Sporting Goods for Compliance with California’s Proposition 65, California—Led the assessment of constituents present in client’s sporting goods to determine whether they were subject to California’s Proposition 65



(Prop 65). For those chemicals on the Prop 65 list, an exposure assessment was conducted to confirm that they were present below the safe harbor levels and, therefore, not subject to labeling.

Development of Database for Environmental Risk Assessment of Cosmetic Ingredients, Nationwide—Led the development of a database for conducting environmental risk assessment of ingredients used in cosmetic products sold throughout the world, on behalf of an international cosmetics manufacturer. The database included the capability of collecting environmental hazard data for use in establishing a predicted no-effect concentration (PNEC). In addition, the database estimated the predicted environmental concentration (PEC) from input parameters, which is used by the client for a PEC-PNEC comparison and product development decision-making.

Response to Proposed Regulations on Topical Antiseptics, Nationwide—Led ACI's response to proposed regulations of over-the-counter (OTC) topical antiseptic products by FDA. Developed an economic benefits assessment that was used to successfully advise the White House Office of Management and Budget to secure a deferral of rulemaking for ingredients critical to member companies' consumer antiseptic wash products and to preserve the members' ability to continue to market their products.

Work Plan for Safety and Effectiveness Testing, Nationwide—Served as industry direct point of contact to FDA on OTC topical antiseptic products. Led the development of the industry work plan to FDA (September 2016) regarding safety and effectiveness testing of four active ingredients being supported for various topical antiseptic products. Developed and submitted numerous associated study protocols to FDA and a current *in vitro* time-kill study and an *in vivo* study of the effectiveness of ethyl alcohol in healthcare personnel hand rubs.

Response to TSCA Reform, Nationwide—Led ACI's response to implementation of the 2016 reforms of the Toxic Substances Control Act by EPA, including developing public written and oral comments on proposed rules and related initiatives.

Ingredient Safety Initiative, Nationwide—Conceived, developed, and implemented ACI's Cleaning Product Ingredient Safety Initiative. Identified an inventory of 588 chemicals used in consumer cleaning products in the U.S.; developed hazard and exposure information, leading to a screening-level risk assessment data for each ingredient.

Response to Canadian Chemical Management Plan, Canada—Collaborated with industry partners in developing scientific and policy positions in response to implementation of the Canadian Chemical Management Plan including draft screening assessments for talc, triclosan, and boric acid and its salts and precursors.

U.S.–Canada Regulatory Cooperation Council Chemical Management Work Plan, U.S.–Canada—Served as industry representative partnering with regulators from the U.S. EPA, Health Canada, and Environment and Climate Change Canada to develop a binational collaboration framework for regulatory human and environmental risk assessment of chemicals in commerce.



Regulatory Exposure Modeling, Worldwide—Served as representative of the global chemical industry to the Organisation of Economic Co-operation and Development (OECD) Working Party on Exposure Assessment. Partnered with regulators from OECD nations to develop harmonized approaches for assessing exposures to chemical in commercial products.

North American Aquatic Environmental Exposure Model (iSTREEM®), U.S.–Canada—Spearheaded the effort to develop a web-based, single-medium, in-stream environmental exposure model, iSTREEM® (www.istreem.org). The model is publicly available and covers the contiguous United States and Southern Ontario, Canada. iSTREEM® estimates in-stream concentrations for chemicals disposed of “down the drain” at mean annual and low (7Q10) stream flows for more than 228,000 effluent-exposed stream segments covering more than 243,000 river miles.

Field Research on Environmental Exposure Levels of Metabolites of Alcohol-Based Detergents, Ohio, Oklahoma, Oregon, Virginia—Designed, led, and completed four field campaigns to measure environmental concentrations of long-chain alcohols to better understand the contribution of alcohol-based detergents used in cleaning products to the concentrations observed. Demonstrated through the use of stable isotope analysis (¹³C and ²H) that anthropogenic sources were minimal in contributing to environmental concentrations of long-chain alcohols.

Consumer Safety

Review of Food and Color Additive Petitions, Nationwide—Guided food and color additive petitions through the regulatory review process including providing guidance to individuals seeking interpretation of food and color additive regulations. Conducted review of the intended technical effect (microbiology) and environmental sections of food and color additive petitions.

Food and Color Additive Compliance with NEPA, Nationwide—Evaluated environmental submission in food and color additive petitions and food contact notifications for compliance with the National Environmental Policy Act, including review of scientific data to determine the environmental impact of FDA-regulated chemicals.

Microbiology Reviews for Drug Sterility, Nationwide—Responsible for the critical evaluation and preparation of microbiology reviews of the sterility assurance portion of Abbreviated New Drug Applications for injectable, ophthalmic, and inhalation drugs.

Environmental Compliance and Remediation

Review of EPA Policies, Procedures, and Guidance for Environmental Risk Assessment under the Toxic Substances Control Act, Nationwide—Conducted a review of the availability and relevance of current policies, procedures, and guidance of EPA for environmental risk assessment under the Toxic Substances Control Act in the context of the 2016 reforms of the Lautenberg Chemical Safety Act for the 21st Century for an industry client. Provided recommendations for those areas in greatest need of development or enhancement.

Evaluation of Industry Studies, Nationwide—Critically evaluated the validity and regulatory compliance of industry studies on the environmental fate of pesticides for EPA under the Federal



Insecticide, Fungicide, and Rodenticide Act. Studies included laboratory hydrolysis, photolysis, mobility, metabolism, bioaccumulation, and field dissipation studies. Also prepared data evaluation records.

Remediation Planning, Nationwide—Served as technical lead for the design of remedial plans at various federal facilities contaminated with hazardous wastes. Led development teams for bench-scale and pilot-scale treatability studies for *in situ* bioremediation of groundwater contaminated with petroleum and solvents.

Selected Publications

DeLeo, P., C. Huynh, M. Pattanayek, K. Clark Schmid, and N. Pechacek. 2020. Assessment of ecological hazards and environmental fate of disinfectant quaternary ammonium compounds. *Ecotox. Environ. Safe.* doi.org/10.1016/j.ecoenv.2020.111116

DeLeo, P.C., H. Summers, K. Stanton, and M.W. Lam. 2020. Environmental risk assessment of polycarboxylate polymers used in cleaning products in the United States. *Chemosphere* 258:127242. <https://doi.org/10.1016/j.chemosphere.2020.127242>

Mudge, S.M., S.E. Belanger, and P.C. DeLeo. 2019. Fatty alcohols: Anthropogenic and natural occurrence in the environment. 2nd Edition. Royal Society of Chemistry, London.

Zhen, W., D. Dihn, W.C. Scott, E.S. Williams, M. Ciarlo, P.C. DeLeo, and B.W. Brooks. 2019. Critical review and probabilistic health hazard assessment of cleaning product ingredients in all-purpose cleaners, dish care products, and laundry care products. *Environ. Int.* 125: 399–417.

DeLeo, P.C., M. Ciarlo, C. Pacelli, W. Greggs, E.S. Williams, W.C. Scott, Z. Wang, and B.W. Brooks. 2018. Cleaning product ingredient safety – What is the current state of availability of information regarding ingredients in products and their function? *ACS Sustainable Chem. Engr.* 6(2): 2094–2102.

Zhen, W., W.C. Scott, E.S. Williams, M. Ciarlo, P.C. DeLeo, and B.W. Brooks. 2018. Identification of novel uncertainty factors and thresholds of toxicological concern for health hazard and risk assessment: Application to cleaning product ingredients. *Environ. Int.* 113:357–376.

Ferrer, D.L., and P.C. DeLeo. 2017. Development of an in-stream environmental exposure model for assessing down-the-drain chemicals in Southern Ontario. *Water Quality Research Journal* 52(4):258-269.

Kapo, K.E., P.C. DeLeo, R. Vamshi, C.M. Holmes, D. Ferrer, S.D. Dyer, X. Wang, and C. White-Hull. 2016. iSTREEM®: An approach for broad-scale in-stream exposure assessment of “down-the-drain” chemicals. *IEAM* 12:782–792.

Schmier, J.K., C.K. Hulme-Lowe, S. Semenova, J.A. Klenk, P.C. DeLeo, R. Sedlak, and P.A. Carlson. 2016. Estimated hospital costs associated with preventable health care-associated infections if health care antiseptic products were unavailable. *ClinicoEconomics and Outcomes Res.* 8:197–205.



Yost, L.J., J.D. Rodricks, D. Turnbull, P.C. DeLeo, J.F. Nash, A. Quiñones-Rivera, and P.A. Carlson. 2016. Human health risk assessment of chloroxylenol in liquid hand soap and dishwashing soap used by consumers and health-care professionals. *Regul. Toxicol. Pharm.* 80:116–124.

Mudge, S.M., P.C. DeLeo, and S.D. Dyer. 2014. The effect of secondary treatment and eco-region on the environmental fate of fatty alcohol based surfactants. *Sci. Tot. Environ.* 470–471:835–843.

Mudge, S.M., and P.C. DeLeo. 2014. Estimating fatty alcohol contributions to the environment from laundry and personal care products using a market forensics approach. *Environ. Sci.: Processes Impacts* 16:74–80.

DeLeo, P.C., and R.I. Sedlak. 2014. Comment on “On the need and speed of regulating triclosan and triclocarban in the United States.” *Environ. Sci. Technol.* 48(19):11021–11022.

Sanderson, H., W. Greggs, C. Cowan-Ellsberry, P. DeLeo, and R. Sedlak. 2013. Collection and dissemination of exposure data throughout the chemical value chain: A case study from a global consumer product industry. *Human Ecol. Risk Assess.* 19(4):999–1013.

Mudge, S.M., P.C. DeLeo, and S.D. Dyer. 2012. Quantifying the anthropogenic fraction of fatty alcohols in a terrestrial environment. *Environ. Toxicol. Chem.* 31:1209–1222.

Boxall, A.B.A., M.A. Rudd, B.W. Brooks et al. 2012. Pharmaceuticals and personal care products in the environment: What are the big questions? *Environ. Health Perspect.* 120:1221–1229.

DeLeo, P.C., S.M. Mudge, and S.D. Dyer. 2011. Use of market forensics to estimate the environmental load of ingredients from consumer products. *Environ. Forensics* 12(4):349–356.

DeLeo, P.C., S. Pawlowski, S. Barton, and D.J. Fort. 2011. Comment on “Effects of triclocarban, triclosan, and methyl triclosan on thyroid hormone action and stress in frog and mammalian culture systems.” *Environ. Sci. Technol.* 45 (23):10283–10284.

Mudge, S.M., W. Meier-Augenstein, C. Eadsforth, and P.C. DeLeo. 2010. What contribution do detergent fatty alcohols make to sewage discharges and the marine environment? *J. Environ. Monitor.* 12:1846-1856.

Baveye, P., P. Vandevivere, P.C. DeLeo, B. Hoyle, and D. Sanchez de Lozada. 1998. Environmental impact and mechanisms of the biological clogging of saturated soils and aquifer materials. *Critical Reviews in Environmental Science and Technology* 28(2):123-191.

DeLeo, P.C., P. Baveye, and W.C. Ghiorse. 1997. Use of confocal laser scanning microscopy on soil thin-sections for improved characterization of microbial growth in unconsolidated soils and aquifer materials. *J. Microbiological Methods* 30:193–203.

DeLeo, P.C., and P. Baveye. 1997. Factors affecting protozoan predation of bacteria clogging laboratory aquifer microcosms. *Geomicrobiology J.* 14:127–149.



DeLeo, P.C. and P. Baveye. 1996. Use of flow cytometry for enumeration and biomass estimation of bacteria in aquifer microcosm studies. *Applied and Environmental Microbiology* 62:4580–4586.

Vandevivere, P., P. Baveye, D. Sanchez de Lozada, P. DeLeo. 1995. Microbial clogging of saturated soils and aquifer materials: evaluation of mathematical models. *Water Resour. Res.* 31:2173–2180.

DeLeo, P.C., and H.L. Ehrlich. 1994. Reduction of hexavalent chromium by *Pseudomonas fluorescens* LB300 in batch and continuous cultures. *Applied Microbiol. Biotech.* 40:756–759.

Presentations/Posters

DeLeo, P., M. Pattanayek, Y. Atalay, C. Huynh, and N. Pechacek. 2020. Assessment of ecological hazards and environmental fate of disinfectant quaternary ammonium surfactants. SETAC SciCon, SETAC Europe 30th Annual Meeting (Online). May 3–7.

DeLeo, P., H. Summers, M. Lam, A. Carrao, N. Pechacek, and K. Stanton. 2019. Environmental stewardship program for polymers used in cleaning products—polycarboxylate polymers. Poster presented at SETAC North America 40th Annual Meeting, Toronto, Ontario, Canada. November 3–7.

DeLeo, P., and S. Hartigan. 2019. Do we need new chemical assessment criteria? Consideration of the recent proposal for application of persistent, mobile, and toxic (PMT) criteria. Poster presented at SETAC Europe Annual Meeting, Helsinki, Finland. May 26–30.

DeLeo, P.C., and S. Hartigan. 2019. PBT assessment criteria—critical tool or policy anachronism? An analysis of regulatory approaches for selection of chemicals for expedited action. Society of Toxicology 58th Annual Meeting and ToxExpo, Baltimore, MD. March 10–14.

Hartigan, S., and P.C. DeLeo. 2018. New approach methodologies—Fools gold or the mother lode? Platform presentation at SETAC North America 39th Annual Meeting, Sacramento, CA. November 4–8.

DeLeo, P.C., and S. Hartigan. 2018. The second act of TSCA—Is EPA ready for the curtain to rise? Poster presented at SETAC Europe Annual Meeting, Rome, Italy. May 13–17.

Mendelsohn, E., H. Summers, P. DeLeo, and A. Carrao. 2018. Exposure-based, high-throughput screening of ingredients in consumer products for environmental risk assessment—The other half of the risk equation. Poster presented at SETAC North America Focused Topic Meeting on High-Throughput Screening and Environmental Risk Assessment, Durham, NC. April 16–18.

DeLeo, P., D. Macinga, A. Maier, and W. Phillips. 2017. Making sense of the FDA Antiseptic Monographs: What the infection preventionist needs to navigate regulatory changes around antimicrobial hand products. APIC Annual Conference, Portland, OR. June 14–16.

Brooks, B., Z. Wang, E.S. Williams, M. Ciarlo, P.C. DeLeo, and C. Scott. 2017. Toxicology data mining for cleaning product ingredients and innovation: Derivation of novel uncertainty factors for



health risk assessment. 21st Annual Green Chemistry & Engineering Conference, Reston, VA. June 13–15.

Holmes, C., R. Vamshi, P. DeLeo, D. Ferrer, and S. Dyer. 2017. Integrating treatment facility and river network information to model spatially-explicit environmental concentrations of down-the-drain substances: iSTREEM. SETAC Europe 27th Annual Meeting, Brussels, Belgium. May 7–11.

Wang, Z., C. Scott, E.S. Williams, M. Ciarlo, P.C. DeLeo, and B. Brooks. 2017. High-throughput development of no observable adverse effect levels for the use in screening level human health risk assessment of cleaning product ingredients. 56th Annual Meeting of the Society of Toxicology, Baltimore, MD. March 12–16.

DeLeo, P., M. Ciarlo, Z. Wang, E.S. Williams, C. Scott, and B. Brooks. 2016. Cleaning Product Ingredient Safety Initiative: Development and application of an approach for high-throughput screening-level human health risk assessment for nearly 600 ingredients. Society for Risk Analysis Annual Meeting, San Diego, CA. December 12–15.

Kapo, K., R. Vamshi, C. Holmes, P.C. DeLeo, and D. Ferrer. 2015. Broad-scale exposure modelling and risk assessment of consumer product ingredients: Applications and opportunities using the iSTREEM® model. The International Chemical Congress of Pacific Basin Societies (Pacifichem) 2015, Honolulu, HI. December 15–20.

McDonough, K., T. Federle, K. Wehmeyer, S. Belanger, and P.C. DeLeo. 2015. Evaluation of anionic surfactants in the environment using a novel approach for regional probabilistic exposure assessments. International Chemical Congress of Pacific Basin Societies (Pacifichem) 2015, Honolulu, HI. December 15–20.

DeLeo, P.C., E.S. Williams, M. Ciarlo, C. Pacelli, and W. Greggs. 2015. Transparency in cleaning product formulation: What do we know about ingredients, their hazards, and potential for human exposure? The International Chemical Congress of Pacific Basin Societies (Pacifichem) 2015, Honolulu, HI. December 15–20.

Williams, E.S., M. Ciarlo, C. Pacelli, W. Greggs, B. Brooks, and P.C. DeLeo. 2015. Deterministic exposure assessment of ingredients used in consumer cleaning products in the United States. SETAC North America, Salt Lake City, UT. November 1–5.

Yost, L., J. Rodricks, D. Turnbull, P.C. DeLeo, J. Nash, A. Quinones-Rivera, and P. Carlson. 2015. Human health risk assessment of chloroxylenol in liquid hand soap and dishwashing soap used by consumers and health-care professionals. SETAC North America, Salt Lake City, UT. November 1–5.

DeLeo, P.C., D. Salvito, S.D. Dyer, B. Lewis, and S. Gainey. 2015. Proceedings from a Collaborative Workshop Discussing Challenges in Characterizing Hazard Associated with Difficult-to-Test Substances – Part 2. SETAC North America, Salt Lake City, UT. November 1–5.



McDonough, K., K. Casteel, S. Belanger, K. Wehmeyer, T. Federle, and P.C. DeLeo. 2015. Evaluation of anionic surfactants in the environment using a novel approach for regional probabilistic exposure assessments. SETAC North America, Salt Lake City, UT. November 1–5.

DeLeo, P.C., C. Pacelli, E.S. Williams, and M. Ciarlo. 2015. What is the purpose of ingredients used in household cleaning products? A study on the distribution of functions for ingredients in products. SETAC North America, Salt Lake City, UT. November 1–5.

DeLeo, P.C., E.S. Williams, M. Ciarlo, C. Pacelli, and W. Greggs. 2015. Transparency in cleaning product formulation: What do we know about ingredients and potential for human exposure? 19th Annual ACS Green Chemistry and Engineering Conference, North Bethesda, MD. July.

Mudge, S.M., P.C. DeLeo, C. Eadsforth, R. Stackhouse, and S. Belanger. 2015. How would changing the feedstock alter the fate or risk of my fatty alcohol-based surfactants. CESIO 10th World Surfactants Conference, Istanbul, Turkey. June.

McDonough, K., T. Federle, K. Wehmeyer, and P.C. DeLeo. 2015. Evaluation of anionic surfactants in the environment using a novel approach for regional probabilistic exposure assessments. CESIO 10th World Surfactants Conference, Istanbul, Turkey. June.

Ferrer, D.L., P.C. DeLeo, K. Kapo, and C. Holmes. 2015. Estimating environmental exposure concentrations for formulated consumer products at broad geographic scale – application of iSTREEM® for fragrance materials. SETAC Europe 25th Annual Meeting, Barcelona, Spain. May.

Kapo, K., R. Vamshi, C. Holmes, P. DeLeo, and D. Ferrer. 2015. Advancements in the assessment of micropollutants through the application of broad-scale “down-the-drain” exposure modelling. SETAC Europe 25th Annual Meeting, Barcelona, Spain. May.

Ferrer, D.L., and P.C. DeLeo. 2014. Data acquisition for a North American geospatial environmental exposure model for “down-the-drain” home and personal care product chemicals. SETAC North America 35th Annual Meeting, Vancouver, BC, Canada. November 9–13.

Williams, E.S., and P.C. DeLeo. 2014. A multi-tier approach to characterizing exposures to cleaning product ingredients. 24th Annual Meeting of the International Society of Exposure Science, Cincinnati, OH. October 12–16.

Holmes, C.M., P.C. DeLeo, J.A. Weeks, and K.E. Kapo. 2014. iSTREEM: A web-based river chemical concentration estimation model for consumer pesticide product chemicals. 13th IUPAC International Congress of Pesticide Chemistry, San Francisco, CA. August 10–14.

DeLeo, P.C., E.S. Williams, M. Ciarlo, C. Horne, and W. Greggs. 2014. Transparency in cleaning product formulation – What do we know about ingredients and available hazard data? American Chemical Society 18th Annual Green Chemistry and Engineering Conference, North Bethesda, MD. June 17–19.



DeLeo, P.C., M. Ciarlo, E.S. Williams, W. Greggs, and W. Goodfellow. 2013. What's out there in consumer products and the environment? A survey of home and personal care product ingredients and related safety information. SETAC North America Annual Meeting, Nashville, TN. November 17–21.

Ciarlo, M., P.C. DeLeo, C. Horne, W. Greggs, and E.S. Williams. 2013. What ingredients are present in everyday home cleaning products? Preliminary findings and trends from the Cleaning Product Ingredient Safety Initiative. SETAC North America Annual Meeting, Nashville, TN. November 17–21.

Mudge, S.M., and P.C. DeLeo. 2013. Market forensics as an environmental exposure tool: using sales data to determine the contribution of personal care product ingredients to WWTPs. SETAC North America Annual Meeting, Nashville, TN. November 17–21.

Pawlowski, S., M. Capdevielle, C. D'Ruiz, S. Belanger, G. Carr, P.C. DeLeo, and B. Montemayor. 2013. A weight of evidence approach to the assessment of the bioaccumulation potential of triclosan in fish. SETAC North America Annual Meeting, Nashville, TN. November 17–21.

Mudge, S.M., and P.C. DeLeo. 2013. The risks to global water supplies from fatty alcohol based surfactants. CESIO 2013 – 9th World Surfactant Congress, Barcelona, Spain. June 10–14.

DeLeo, P.C. 2013. Tools for screening environmental risks of consumer product chemicals in the Great Lakes watershed. IAGLR 56th Annual Conference on Great Lakes Research, West Lafayette, IN. June 4.

Mudge, S.M., and P.C. DeLeo. 2012. The ecological risk of naturally-occurring and anthropogenic sources of personal care product ingredients: fatty alcohols and related surfactants. SETAC North America Annual Meeting, Long Beach, CA. November 11–15.

Sanderson, H., S. Belanger, and P.C. DeLeo. 2012. Global regulatory environment and risk assessments for surfactants. SETAC Asia Pacific Meeting, Kumamoto, Japan. September 24–27.

DeLeo, P.C., S. Belanger, C. Cowan-Ellsberry, P. Dorn, S.D. Dyer, H. Sanderson, K. Stanton, and D. Versteeg. 2012. A review of the confirmation of the environmental safety of major surfactants used in consumer products in North America. SETAC Asia Pacific Meeting, Kumamoto, Japan. September 24–27.

Mudge, S.M., and P.C. DeLeo. 2012. Distinguishing between naturally-derived and anthropogenic sources of fatty alcohols present in freshwater environments. SETAC Asia Pacific Meeting, Kumamoto, Japan. September 24–27.

DeLeo, P.C., S.M. Mudge, and S.D. Dyer. 2012. Use of market forensics to estimate the environmental load of ingredients from consumer products. 8th National Monitoring Conference, Portland, OR. April 30–May 4.



DeLeo, P.C., S.D. Dyer, and X. Wang. 2012. iSTREEM™ – an internet-based national watershed scale model capable of determining where and when to monitor for chemicals from consumer products. 8th National Monitoring Conference, Portland, OR. April 30–May 4.

