

Robert M. Burgess, Research Physical Scientist, in EPA's National Health and Environmental Effects Research Laboratory

Atlantic Ecology Division
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Area of Expertise: My research focuses on better understanding the partitioning and distribution of organic and metal contaminants in the environment. The goal of this work is to predict the bioavailability of anthropogenic contaminants in order to assess the probability of adverse ecological effects. Specifically, most recently, this research has emphasized the use of passive samplers for measuring the bioavailability of legacy and emerging contaminants, including nanomaterials, in the marine environment. This research is intended to inform environmental managers and regulators to generate sound and effective environmental protection.

Select Publications ([Several links exit this site](#)):

- Fernandez, L. A., W. Lao, K. Maruya, and R. M. Burgess. 2014. [Calculating the diffusive flux of persistent organic pollutants between sediments and the water column on the Palos Verdes Shelf Superfund Site using polymeric passive samplers](#). *Environmental Science and Technology*. **48**:3925-3934.
- Parks, A. N., G. T. Chandler, L. M. Portis, J. C. Sullivan, M. M. Perron, M. G. Cantwell, R. M. Burgess, K. T. Ho, and P. L. Ferguson. 2014. [Effects of single-walled carbon nanotubes on the bioavailability of PCBs in field-contaminated sediments](#). *Nanotoxicology* **8**:111-117.
- Perron, M. M., R. M. Burgess, M. G. Cantwell, and L. A. Fernandez. 2015. [Evaluating cost when selecting performance reference compounds \(PRCs\) for the environmental deployment of polyethylene passive samplers](#). *Integrated Environmental Assessment and Management* **11**:256-265.
- Dong, Z., C. G. Lewis, R. M. Burgess, and J. P. Shine. 2015. [The Gellyfish: an in-situ equilibrium-based sampler for determining multiple free metal ion concentrations in marine ecosystems](#). *Environmental Toxicology and Chemistry* **34**:983-992.
- Booij, K., C. D. Robinson, R. M. Burgess, P. Mayer, C. A. Roberts, L. Ahrens, I. J. Allan, J. Brant, L. Jones, U. R. Kraus, M. M. Larsen, P. Lepom, J. Petersen, D. Proefrock, P. Roose, S. Schäfer, F. Smedes, C. Tixier, K. Vorkamp, and P. Whitehouse. 2016. [Passive sampling in regulatory chemical monitoring of nonpolar organic compounds in the aquatic environment](#). *Environmental Science and Technology*. **50**:3-17.
- Cantwell, M., J. Sullivan, D. Katz, R. M. Burgess, J. Hubeny, and J. King. 2016. [Source determination of benzotriazoles in sediment cores from two urban estuaries on the Atlantic Coast of the United States](#). *Marine Pollution Bulletin* **101**:208-218.

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Education:

- Ph.D., University of Rhode Island, Narragansett, RI; Chemical Oceanography, 1996
- M.S., University of Rhode Island, Narragansett, RI; Biological Oceanography, 1990

Professional Experience:

- Research Physical Scientist, U.S. EPA ORD/NHEERL Atlantic Ecology Division, 1997-present
- Active member of:
 - Society of Environmental Toxicology and Chemistry
 - The American Chemical Society
 - The American Association for the Advancement of Science
- Instructor, *Porewater Concentrations and Bioavailability: How You Can Measure Them and Why They Influence Contaminated Sediment Remediation* workshop, U.S. EPA 2016 National Association of Remedial Project Managers meeting, Pittsburgh, PA, USA, 2016
- Invited participant, *Defining the Role of Chemical Activity in Environmental Risk Assessment within the Context of Mode of Action: Practical Guidance and Advice*. Sponsored by the European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) and Research Institute for Fragrance Materials (RIFM), Snowbird, UT, USA, 2015
- Stakeholder Board, European Collaborative Project SOLUTIONS, European Union funded project. Helmholtz Centre for Environmental Research GmbH – UFZ, Leipzig, Germany, 2013-present
- Invited participant, NORMAN Expert Workshop on Linking Environmental Quality Standards and Passive Sampling. Brno, Czech Republic, 2013
- Research Physical Scientist, U.S. EPA Office of Solid Waste and Emergency Response, 2004
- Invited participant, Strategic Environmental Research and Development Program (SERDP) - Environmental Security Technology Certification Program (ESTCP) *Research and Development Needs for Understanding and Assessing the Bioavailability of Contaminants in Soils and Sediments* workshop. Annapolis, MD, USA, 2008
- Editorial Board, *Environmental Toxicology and Chemistry*, 2003-2008