

September 28, 2014

CURRICULUM VITAE
Rolf U. Halden, Ph.D., P.E.
Tenured Full Professor

BUSINESS ADDRESS Arizona State University
School of Sustainable Engineering and the Built Environment
Biodesign Institute, Center for Environmental Security
781 E. Terrace Rd., P.O. Box 875904
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ASU CENTER & INSTITUTE Biodesign Institute, Tempe, AZ
Founding Director, Center for Environmental Security

AFFILIATIONS Tenured Professor, School of Sustainable Engineering and the Built Environment, Arizona State University
School of Biological and Health Systems Engineering (Affiliate), ASU
Senior Sustainability Scientist, ASU Global Institute of Sustainability, ASU
Center for Biodiversity Outcomes, (Affiliate), ASU
Honors Faculty, Barrett Honors College, Arizona State University
Chair of Admission, Biological Design Graduate Program, ASU
Founding Director, Center for Environmental Security Mass Spectrometry
Adjunct Faculty, Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD
Co-Founder & Chief Technical Officer, In Situ Well Technologies, LLC, ASU/AzTE Startup Company

EDUCATION B.S., 1986 (Pre-diploma), Technical University of Braunschweig, Field: Biology
M.S., 1992 (Diploma), Technical University of Braunschweig, Major: Biology; Minors: Microbiology, Biotechnology & Sanitary Engineering
M.S., 1994, (Environmental Engineering) Department of Civil Engineering, University of Minnesota, Minneapolis, MN
Ph.D., 1997, (Environmental Engineering) Department of Civil Engineering, University of Minnesota, Minneapolis, MN

POSTDOCTORAL 1997-1998, University of California, Lawrence Livermore National Laboratory, Environmental Protection Department, Livermore, CA

PROFESSIONAL REGISTRATION & CERTIFICATION Management Certificate, University of the Pacific, 2000
Supervisor Certificate, 40-Hour SARA/OSHA 8CCR5192(e)(4)
Professional Environmental Engineer, Minnesota, 1997 – Present (#25155);
Arizona 2010 – Professional Environmental Engineer Lic. (#51849)
Engineer-in-Training, Minnesota, 1996 - 1997

PROFESSIONAL EXPERIENCE Founding Director, Center for Environmental Security (CES), The ASU Biodesign Institute, 6/2012 – Present.
Founding Director, Center for Environmental Security Mass Spectrometry Facility, 7/2013 – Present.
Chair of Admissions for the University-wide Biological Design Program at Arizona State University, 12/2012 – Present.
Leader, Biosecurity Thrust Area, Security and Defense Systems Initiative,

ASU, 6/2012 – Present.
Barrett Honors Faculty, 2012 – Present.
Co-Founder and Chief Technical Officer, In Situ Well Technologies (ISW), LLC Startup Company, ASU/AzTE, 2011 – Present.
Tenured Full Professor, School of Sustainable Engineering and the Built Environment, Arizona State University. 2011 – Present.
Senior Sustainability Scientist, Global Institute of Sustainability, ASU. 2010 – Present.
Co-founder of the MapStory Health Initiative, 2014 - Present
Interim Co-Director, Center for Health Information & Research (CHiR) 2011 – 2012.
Associate Director, Swette Center for Environmental Biotechnology, ASU Biodesign Institute. 2011 – 2012.
Assistant Director, Center for Environmental Biotechnology, ASU Biodesign Institute. 2009 – 2011.
Adjunct Associate Professor. 2008 – Present. Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Johns Hopkins University
Special Government Employee, Food and Drug Administration, '05 – Present
Tenured Associate Professor. 12/2007 – 7/2011. School of Sustainable Engineering and the Built Environment, Arizona State University
Associate Professor. 2007. Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health
Joint Appointment in the Department of Geography and Environmental Engineering, Johns Hopkins University
Assistant Professor. 2001 – 2007. Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Johns Hopkins University
Project Engineer & Environmental Scientist. 1998 – 2001. Environmental Protection Department, Lawrence Livermore National Laboratory, Livermore, CA. Principal Responsibilities: Design and Management of Subsurface Remediation Activities with a Cumulative Budget of \$6M. Supervisor: Dr. John Ziagos.
Research & Teaching Fellow/Assistant. January 1993 – April 1997. Department of Civil Engineering, University of Minnesota, Twin Cities, MN. Supervisor: Dr. Daryl Dwyer
Research Associate. January 1992 – July 1992. Helmholtz Centre for Infection Research, (formerly German National Institute for Biotechnology (GBF), Braunschweig, Germany. Principal Responsibilities: Microbial Ecology. Supervisor: Dr. Daryl F. Dwyer
Research Assistant. January 1991 – December 1991. Helmholtz Centre for Infection Research, (formerly German National Institute for Biotechnology (GBF), Braunschweig, Germany. Principal Responsibilities: Bioreactors. Supervisor: Dr. Joachim Klein

PROFESSIONAL ACTIVITIES

Society Memberships

American Public Health Association (APHA)
American Society for Mass Spectrometry (ASMS)
American Chemical Society (ACS) – ACS Expert for Media Relations, 2014 - Present
American Society for Microbiology (ASM)
American Society of Civil Engineers (ASCE)
Association of Environmental Engineering and Science Professors (AEESP)
Environmental and Water Resources Institute (EWRI)
Society of Environmental Toxicology and Chemistry (SETAC)

Participation on Advisory Panels and Committees

- ACS Expert for Media Relations, American Chemical Society (ACS), 2014 - Present**
Member, NIEHS Fish Advisory Information Network, National Institute of Environmental Health Sciences, June 2014 - Present.
- Center for Transformative Action, Invited Member of the Independent Review Board,**
August 2014 - Present.
- Invited Presenter and Panel Member: Discussion Forum Micro-plastics in the Marine Environment & Potential Human Health Risks, National Academies, Washington, DC, 3/3/2014.**
- Community Advisory Board Member, West van Buren Area WQARF Site, Phoenix, AZ, 2013 - Present.**
- Invited Presenter at Congressional Briefing on the Safety of the Antimicrobial Triclosan, Washington, DC, 2/17/2011.**
- Food And Drug Administration, Center For Drug Evaluation And Research (CDER) Nonprescription Drugs Advisory Committee. Special Government Employee (10/2005 – 10/2015)**
- Science Advisor, Johns Hopkins University Center for a Livable Future, 2009 – Present**
Invited Panelist, **National Association of Clean Water Agencies** Pretreatment and Pollution Prevention Workshop, St. Louis, MO, 5/19/2011.
- Invited Panelist, Workshop on Environmental Estrogens and Endocrine Disrupting Compounds, sponsored by the **Johnson Foundation**, Wingspread, WI, May 2010.
- Invited Panelist, Special Symposium on Next Generation Superfund Contaminants sponsored by the **National Institute of Environmental Health Sciences (NIEHS)**, Tucson, AZ, August 2009.
- Invited Panelist, **American Academy for Microbiology**, "Global Antibiotic Resistance: New Approaches to an Old Problem," Fondation Merieux, Annecy, France, October 2008.
- National Research Council of the National Academies. NRSB-O-05-04-A. Conduct a Technical Assessment of Ongoing and Planned Environmental Remediation and Monitoring Programs at the Los Alamos National Laboratory (LANL) and Provide Recommendations to Improve Their Technical and Cost Effectiveness and Reduce Worker, Public, and Environmental Risks. Invited NRC Committee Member, Dual Appointment in the Areas of Groundwater Monitoring and Chemistry. 15-Month Term Starting March, 2006.**
- Invited Panelist, **BIO 2006**, World's Largest Annual International Convention on Biotechnology. Chicago, IL. Environmental Biotechnology Session. 04/9-12/2006
- Mid-Atlantic States Section of the Air & Waste Management Association (MASS-A&WMA), Special Symposium on Emerging Environmental Issues and Policies. **Invited Speaker/Panelist.** New Brunswick, NJ, April 6, 2006.
- EPA Office of Inspector General, Office of Program Evaluation, Evaluation of Drinking Water Laboratory Procedures. Invited Expert Consultant. 1/19/2006.
- Food And Drug Administration, Center For Drug Evaluation And Research (CDER) Nonprescription Drugs Advisory Committee. "Benefits and Hazards of Antiseptic Products Marketed for Consumer Use." Invited Panelist/Voting Committee Member. 10/20/2005.**
- National Congress on Assessing and Mitigating Environmental Impacts of Emerging Contaminants – Renewable Natural Resources Foundation. Co-Sponsored by the United States Geological Survey and the Food and Drug Administration. **Invited Delegate.** 12/1-2/2005
- Harvard School of Public Health Risk Assessment Workshop: "Pharmaceuticals and Personal Care Products in the Environment: Emerging Threat or Unwarranted Concern?" **Invited Panelist.** 11/10/2005
- International Conference on Safe Water, Exploring Global Demands and Impacts of Natural Disasters, SAFEWATER 2005. San Diego, CA. Groundwater Remediation Session. **Invited Session Chair.** 10/21/2005

DOE/EPA SERDP and ESTCP Expert Panel Workshop on Research and Development Needs for the Environmental Remediation Application of Molecular Biological Tools. **Invited Speaker and Voting Panel Member.** Specialty: Proteomics. 08/9-10/2005

Governor Ehrlich's Maryland Department of the Environment – Maryland State Water Quality Advisory Committee (SWQAC) Public Interest Member. **Selected by JHSPH Dean Al Sommer to be the Johns Hopkins Representative for this Committee.** 1/1/2003 – 12/31/2005

Governor Ehrlich's Maryland Water Security and Wastewater Systems Advisory Council Alternate Member. 01/2004 – 12/2004

Maryland Water Monitoring Council: "Ecological Restoration Assessment & Monitoring" Linthicum, MD. **Invited Panelist.** 11/18/2004

Water Environment Research Foundation (WERF) Project Advisory Committee. "Fate of Pharmaceuticals and Personal Care Products through Wastewater Treatment Processes." **Invited Committee Member.** 2004-2006

Water Environment Research Foundation (WERF) Project Advisory Committee. "Contributions of Household Chemicals to Sewage and their Relevance to Municipal Wastewater Systems and the Environment." **Invited Committee Member.** 2004-06

DOE Natural and Accelerated Bioremediation Research Program (NABIR) Workshop. Warrenton, VA. **Invited Panelist.** 3/18-20/2002

DOE New Perspectives Council, Lawrence Livermore National Laboratory. **Appointed Chairman** of a 14-Member Task Force Assembled to Provide Recommendations for Managing Environmental Cleanup and Research at two CA Superfund Sites, Livermore CA, 2000.

EDITORIAL ACTIVITIES

Book Editor

Contaminants of Emerging Concern: Ecotoxicological and Human Health Considerations, 2010. American Chemical Society (ACS) Book Series. 606 pp. Oxford University Press, New York, NY. ISBN13: 9780841224964; eISBN: 9780841224971; DOI: 10.1021/bk-2010-1048

Peer Review Activities

1. American Chemical Society (ACS) Books
2. American Chemical Society (ACS) Merits Awards, Env. Chem. Division
3. Analytical Chemistry
4. Archives of Environmental Contamination and Toxicology
5. Archives of Microbiology
6. California Environmental Protection Agency
7. Chemosphere
8. Consumer Reports
9. EcoHealth
10. Ecotoxicology and Environmental Safety
11. Environmental Chemistry
12. Environmental Health Perspectives
13. Environmental Pollution
14. Environmental Research
15. Environmental Science & Technology
16. Environmental Science and Pollution Research
17. Environmental Toxicology & Chemistry
18. Environmental Technology
19. Environment International
20. Expert Review of Proteomics
21. Integrated Environmental Assessment and Management (IEAM)
22. International Journal of Industrial Chemistry

23. Journal of Chromatography A
24. Journal of Chromatographic Science
25. Journal of Environmental Science and Health, Part B
26. Journal of Hazardous Materials
27. Journal of Proteome Research
28. Leaking Underground Storage Tank Line
29. Marine Environmental Research
30. Molecular & Cellular Proteomics
31. Renewable Natural Resources Foundation
32. Science
33. Science of the Total Environment
34. Soil & Sediment Contamination: an International Journal
35. Toxicology
36. United States Environmental Protection Agency
37. Water Research
38. Water Science & Technology

PROPOSAL REVIEW ACTIVITIES

- | | |
|------|---|
| 2014 | Department of Defense, Air Force Ad Hoc Proposal Review |
| 2011 | EPA Small Business Innovative Research (SBIR) Panel – Drinking Water |
| 2011 | NIH Study Section Community Level Health Promotion (CLHP) Ad Hoc Member |
| 2011 | Hudson River Foundation for Science and Environmental Research |
| 2010 | Water Resources Research Institutes Program, United States Geological Survey |
| 2009 | NIH Study Section ZRG1 HDM-B 11B, Healthcare Delivery and Methodologies-Occupational Health, Small Business Innovative Research (SBIR) Program |
| 2009 | NIH Study Section ZRG1 HOP E 11, Health of the Population, Small Business Innovative Research (SBIR) Program |
| 2009 | Water Resources Research Institutes Program, United States Geological Survey |
| 2008 | NIH Study Section ZRG1 HOP E 10, Health of the Population, Small Business Innovative Research (SBIR) Program |
| 2007 | NIH Study Section ZRG1 HOP E 10, Health of the Population, Small Business Innovative Research (SBIR) Program |
| 2007 | Natural Sciences and Engineering Research Council of Canada, NSERC's Discovery Grant Program |
| 2007 | Caribbean Coral Reef Institute (CCRI) in Cooperation with the University of Puerto Rico – Mayagüez and the National Atmospheric and Oceanic Administration (NOAA) |
| 2006 | National Academies, U.S. Agency for International Development (USAID), Middle East Regional Cooperation Program (MERC) |
| 2006 | U.S. Environmental Protection Agency (EPA), Office of Research, Small Business Innovative Research (SBIR) Program |
| 2006 | International Science and Technology Center (ISTC); Science Center Programs of the U.S. Department of State |
| 2005 | Natural Sciences and Engineering Research Council of Canada (NSERC), Collaborative Health Research Project (CHRP) Grant Program |
| 2005 | Cooperative Grants Program of the U.S. Civilian Research and Development Foundation (CRDF), Co-founded and Sponsored by the National Science Foundation (NSF) |
| 2004 | National Science Foundation (NSF), Microbial Observatories (MO) and Microbial Interactions and Processes (MIP); RFA: NSF-04-586 |
| 2004 | Water Environment Research Foundation (WERF), Pharmaceuticals and Personal Care Products in the Environment |
| 2003 | National Science Foundation (NSF), Microbial Observatories (MO) and Microbial Interactions and Processes (MIP); RFA: NSF-03-571 |

2002 International Science and Technology Center (ISTC); Science Center Programs of the U.S. Department of State

ACADEMIC SERVICE

Nationwide

National Institute of Environmental Health Sciences (NIEHS) Superfund Research Program, R01 Working Group, National Leader. 2012 – Present

Congressional Briefing, Invited Talk at U.S. Congress: Environmental Health Risks of Triclosan. Capitol Hill Congressional Briefing Room, Washington, DC, February 17, 2011

University Wide

ASU Biological Design Graduate Program, Executive Committee Member. 2013 – Present

ASU Biological Design Graduate Program, Chair of Admission. 2013 – Present

Chief Operating Officer of ASU/AzTE Startup Company, ISW, LLC (2012 – Present)

ASU IPIRC Intellectual Property Institutional Review Committee, Member. 2011 – Present

ASU Biodesign/AzTE Intellectual Property Advisory Committee, Member. 2011 – Present

School Wide

ASU Faculty Search Committee (Member; Process Engineering Position) 2013 – 2014

ASU Faculty Search Committee (Member; Water Resources Position) 2013 – 2014

ASU Faculty Search Committee (Chair; CHiR Director) 2011 – 2012

ASU Faculty Search Committee (Chair; Air Toxics) 2011 – 2012

ASU Curriculum Committee, 2009 – 2011

ASU Fulton Undergraduate Research Initiative (FURI) Committee, 2009 – 2013

ASU Grand Challenges Faculty Search Committee, 2009 – 2011

ASU Faculty Search Committee, 2008 – 2009

Johns Hopkins University Faculty Senator, Dept. of Environ. Health Sciences. Elected
09/2003 – 08/2004

Johns Hopkins University Committee on Information Technology (CIT) Member,
JHSPH, 9/04 – 12/07

Faculty Representative at the Technology Transfer Retreat, JHSPH, July 23, 2004

JHSPH Faculty Title Task Force. Invited Representative of the Junior Faculty, 2003

Co-organizer of the JHSPH Junior Faculty Meetings, 2003

Division and Department

ASU Biodesign Personnel Committee, 2014 – Present

ASU Intellectual Property Institutional Review Committee, 2011 – 2012

ASU Biodesign Research & Collaboration Advancement Committee, 2011 – Present

ASU Specialty Area Coordinator for Environmental and Water Resource Engineering.
2008 – 2009

JHU Enrichment and Seminars Committee, EHS, Member, 08/2003 – 07/2004

JHU Ad-hoc Committee for Development of a Mission Statement for the Dept. of EHS,
2003

JHU Center for Water and Health Faculty Search Committee, Member, 2002 – 2005

JHU Academic Affairs Committee, Dept. of Environ. Health Sci., Member, 9/2004 –
8/2005

JHU Organizer of the “Exposure Assessment Session” at the EHS Annual Research
Day, Mt. Washington Conference Center, Baltimore, MD, Nov. 14, 2003

Communication and Outreach

Conducted 150+ TV/Radio/Newspaper Interviews; Contributions were featured in, e.g.,
New York Times, Wall Street Journal, Time Magazine, Science News, and the Los Angeles Times

AWARDS & HONORS

- 2014 Invited Expert for Media Relations, Expert Program, American Chemical Society (ACS)
- 2012 Appointed National Leader of R01 Working Group of the NIEHS Superfund Program
- 2011 Leroy E. Burney Lecturer, Johns Hopkins School of Public Health
- 2011 List of 20 Public Health Experts Worth Knowing
- 2010 Senior Sustainability Scientist, Global Institute of Sustainability, ASU. 2010 – Present
- 2010 Award for Research Excellence, Arizona BioIndustry Association's BIOFEST 2010, Nominee and Finalist
- 2010 Biodesign Impact Accelerator Program, Selected Startup Company, ASU
- 2010 Faculty Honoree, School of Sustainable Engineering and the Built Environment, ASU
- 2007 Faculty Research Initiative Award, Johns Hopkins University
- 2005 Faculty Research Initiative Award, Johns Hopkins University
- 2002 Faculty Innovation Award, Johns Hopkins University
- 2000 Two Recognition Awards, Lawrence Livermore National Laboratory
- 1998 American Permanent Residency National Interest Waiver, LLNL
- 1997 American Society for Microbiology, Travel Grant
- 1996 Dissertation Fellowship, Outstanding Ph.D. Student, University of Minnesota

PUBLICATIONS

Peer-reviewed, Archival Journal Articles (* Indicates Corresponding Author)

1. Done, H., and **R. U. Halden**. * 2014. Reconnaissance of 47 Antibiotics and Microbial Risks in Major Seafood and Aquaculture Products Consumed in the United States. *J. Hazardous Materials* (In Press).
2. **Halden, R. U.*** 2014. Epistemology of Contaminants of Emerging Concern and Literature Meta-analysis. *J. Hazardous Materials* (In Press).
3. Geer, L. A., B. F. Pycke, D. M. Sherer, O. Abulafi, and **R. U. Halden**. 2014. Use of Amniotic Fluid for Determining Pregnancies at Risk of Preterm Birth and for Studying Diseases of Potential Environmental Etiology. *Environmental Research* (In Press).
4. Pycke, B. F. G.; L. A. Geer; M. Dalloul; O. Abulafia; A. M. Jenck; **R. U. Halden**; Human Fetal Exposure to Triclosan and Triclocarban in an Urban Population from Brooklyn, New York. *Environmental Science & Technology*. 48(15):8831–8838. DOI: 10.1021/es501100w.
5. Pycke, B. F. G., I. Roll, B. Brownawell, C. Kinney, E. Furlong, D. Kolpin, and **R. U. Halden**. * 2014. Transformation Products and Human Metabolites of Triclocarban and Triclosan in Sewage Sludge across the United States. *Environmental Science & Technology*. 48(14):7881-7890. DOI: 10.1021/es5006362.
6. Bruton, T., A., B. F. G. Pycke, and **R. U. Halden**. * 2014. Effect of Nanoscale Zero-Valent Iron Treatment on Biological Reductive Dechlorination: A Review of Current Understanding and Research Needs. (In Press in *Critical Reviews in Environmental Science & Technology*).
7. Venkatesan A. and **R. U. Halden**. * 2014. Loss and In Situ Production of Perfluoroalkyl Chemicals in Outdoor Biosolids-soil Mesocosms. *Environmental Research* 132:321–327; 10.1016/j.envres.2014.04.024
8. Venkatesan, A, B. F. G. Pycke, and **R. U. Halden**. * 2014. Detection and Occurrence of N□Nitrosamines in Archived Biosolids from the Targeted National Sewage Sludge Survey of the

U.S. Environmental Protection Agency. *Environmental Science & Technology* 48(9):5085-5092. doi: 10.1021/es5001352. Epub 2014 Apr 15.

9. Wells, E. M.,* A. Navas-Ancien, B. J. Apelberg, J. B. Herbstman, J. M. Jarrett, Y. H. Lin, C. P. Verdon, C. Ward, K. L. Caldwell, J. R. Hibbeln, **R. U. Halden**, F. R. Witter, and L. R. Goldman. 2014. Association of Selenium and Copper with Lipids in Umbilical Cord Blood. *Journal of Developmental Origins of Health and Disease*. 5(4), 281-287. DOI:10.1017/S2040174414000233.
10. Hesari, N., C. M. Francis, and **R. U. Halden**.* 2014. Evaluation of Glycol Ether as an Alternative to Perchloroethylene in Dry Cleaning. *Toxics* 2:115-133; doi:10.3390/toxics2020115
11. **Halden, R. U.*** 2014. On the Need and Speed of Regulating Triclosan and Triclocarban in the United States. *Environmental Science & Technology* 48:3603–3611. DOI: 10.1021/es500495p. ES&T Cover & Feature. Epub March 3, 2014.
12. Venkatesan, A., H. Done, and **R. U. Halden**.* 2014. United States National Sewage Sludge Repository at Arizona State University – A New Resource and Research Tool for Environmental Scientists, Engineers, and Epidemiologists. *Environmental Science and Pollution Research* (In Press).
13. Venkatesan A. and **R. U. Halden**.* 2014. Brominated flame retardants in U.S. biosolids from the EPA national sewage sludge survey and chemical persistence in outdoor soil mesocosms. *Water Research* 55, 133-142. <http://dx.doi.org/10.1016/j.watres.2014.02.021>
14. Venkatesan A. and **R. U. Halden**.* 2014. Wastewater Treatment Plants as Chemical Observatories to Forecast Ecological and Human Health Risks of Manmade Chemicals. *Scientific Reports*, 4: 3731 | DOI: 10.1038/srep03731. www.nature.com/srep/2014/140116/srep03731/full/srep03731.html
15. Marsalla, J., B-O. Kim. and **R. U. Halden**.* 2013. Analysis of Crop Rotations in the U.S. Breadbasket Using Legumes as an Alternative to Industrially-Produced Fertilizer. *J. Agric. Sci. Appl.* 3(2):169-174. <http://www.j-asa.org/Download.aspx?ID=5141>. PMID TBD.
16. Deo, R. P. and **R. U. Halden**.* 2013. Pharmaceuticals in the Built and Natural Water Environment of the United States. *Water* 5(3):1346-1365. DOI:10.3390/w5031346. PMID TBD.
17. Doudrick, K., N. Corson, G. Oberdorster, A. C. Elder, P. Herckes, **R. U. Halden**, and P. Westerhoff. 2013. Extraction and Quantification of Carbon Nanotubes in Biological Matrices with Application to Rat Lung Tissue. *ACS Nano* (In Press; Article ASAP). DOI: 10.1021/nn403302s
18. Dong, H.-P., Williams, E., Wang, D.-Z., Xie, Z.-X.,³ Hsia, R.-C., Jenck, A., **Halden, R.U.**, Chen, F., Place, A. R. 2013. Responses of *Nannochloropsis oceanica* IMET1 to Long-term Nitrogen Starvation and Recovery. *Plant Physiol.* 162(2):1110-1126. DOI: 10.1104/pp.113.214320
19. Scotch, M, B. Baarson, R. Beard, R. Lauder, A. Varman, and **R. U. Halden**. 2013. Examining the Differences in Format and Characteristics of Zoonotic Virus Surveillance Data on State Agency Websites. *Journal of Medical Internet Research* 15(4):e90. doi:10.2196/jmir.2487.
20. Venkatesan A. and **R. U. Halden**.* 2013. National Inventory of Perfluoroalkyl Substances in Archived U.S. Biosolids from the 2001 EPA National Sewage Sludge Survey. *J. Hazardous Materials* 4:413-418. DOI:10.1016/j.jhazmat.2013.03.016. NIHMS 464002.

21. Ziv-El, M., T. Kalinowski, R. Krajmalnik-Brown and **R. U. Halden**.* 2013. Simultaneous Determination of Chlorinated Ethenes and Ethene in Groundwater using Automated Headspace Solid Phase Microextraction. *Journal of Chromatographic Science* doi 10.1093/chromsci/bms258.
22. North, E. J. and **R. U. Halden**.* 2013. Plastics and Environmental Health: The Road Ahead. Invited paper at *Reviews on Environmental Health* 28(1):1-8. DOI 10.1515/reveh-2012-0030.
23. Venkatesan A. and **R. U. Halden**.* 2013. National Inventory of Alkylphenol Ethoxylate Compounds in U.S. Biosolids and Chemical Fate in Outdoor Soil Mesocosms. *Environmental Pollution* 174:189-193.
24. Love, D. C., **R. U. Halden**, M. F. Davis, and K. E. Nachman. 2012. Response to Comment on Feather Meal: A Previously Unrecognized Route for Reentry into the Food Supply of Multiple Pharmaceuticals and Personal Care Products (PPCPs). *Environ. Sci. Technol.*, 46(24): 13557-13558. DOI: 10.1021/es304181c.
25. Love, D. C., **R. U. Halden**, M. F. Davis, and K. E. Nachman. 2012. Response to Comment on Feather Meal: A Previously Unrecognized Route for Reentry into the Food Supply of Multiple Pharmaceuticals and Personal Care Products (PPCPs). *Environ. Sci. Technol.*, 46(24):13026-13027. DOI: 10.1021/es304180x.
26. Chari, B. P. and **R. U. Halden**.* 2012. Predicting the Concentration Range of Unmonitored Chemicals in Wastewater-dominated Streams and in Run-off from Biosolids-amended soils. *Science of the Total Environment* 440:314-320. doi: 10.1016/j.scitotenv.2012.05.042. PMID 22682556.
27. Kalinowski, T. * and **R. U. Halden**. 2012. Can Stress Enhance Phytoremediation of Polychlorinated Biphenyls? *Environmental Engineering Science* 29(12):1047-1052; DOI: 10.1089/ees.2012.0089.
28. Hartmann, E. M., and **R. U. Halden**.* 2012. Analytical Methods for the Detection of Viruses in Food by Example of CCL-3 Bioagents. *Analytical and Bioanalytical Chemistry* 404(9):2527-2537. PMID 22526652.
29. Pycke, B. F. G., T.-C. Chao, P. Herckes, P. Westerhoff and **R. U. Halden**.* 2012. Beyond nC₆₀: Strategies for Identification of Transformation Products of Fullerene Oxidation in Aquatic and Biological Samples. *Analytical and Bioanalytical Chemistry*, 404(9) (2012):2583-2595. DOI 10.1007/s00216-012-6090-8. PMID 22644149.
30. Chari, B. P. and **R. U. Halden**.* 2012. Validation of Mega Composite Sampling and Nationwide Mass Inventories for 26 Previously Unmonitored Contaminants in Archived Biosolids from the U.S National Biosolids Repository. *Water Research* 36:4814-4824. PMID 22789759.
31. Delgado, A., P. Parameswaran, D. Fajardo-Williams, **R. U. Halden**, and R. Krajmalnik-Brown.* 2012. Role of Bicarbonate as a pH Buffer and Electron Sink in Microbial Dechlorination of Chloroethenes. *Microbial Cell Factories* 1(128):10pp.
32. Ziv-El, M., S. C. Popat, K. Cai, **R. U. Halden**, R. Krajmalnik-Brown, and B. E. Rittmann*. 2012. Managing Methanogens and Homoacetogens to Promote Reductive Dechlorination of Trichloroethene with Direct Delivery of H₂ in a Membrane Biofilm Reactor. *Biotechnol. Bioeng.* 109(9):2200-2210. PMID 22392141.

33. Ziv-El, M., S. C. Popat, P. Parameswaran, D. W. Kang, A. Polasko, **R. U. Halden**, B. E. Rittmann, and R. Krajmalnik-Brown.* 2012. Using Electron Balances and Molecular Techniques to Assess Trichoroethene-induced Shifts to a Dechlorinating Microbial Community. *Biotechnol. Bioeng.* 109(9):2230-2239. PMID 22447387.
34. Venkatesan, A. K., B. F. Pycke, L. B. Barber, K. E. Lee, and **R. U. Halden**.* 2012. Occurrence of Triclosan, Triclocarban, and Its Lesser Chlorinated Congeners in Minnesota Freshwater Sediments Collected Near Wastewater Treatment Plants. *Journal of Hazardous Materials* 229-230:29-35. PMID 22742731.
35. Ziv-El, M., A. G. Delgado, Y. Yao, K. Muto, D.-W. Kang, **R. U. Halden**, R. Krajmalnik-Brown.* 2012. Development and Characterization of DehaloR², a Novel Anaerobic Microbial Consortium Performing Rapid Dechlorination of TCE to Ethene. *Applied Microbiology and Biotechnology* 95(1):273-274. PMID 21667274.
36. Hartmann, E. M., J. P. Badalamenti, R. Krajmalnik-Brown, and **R. U. Halden**.* 2012. Quantitative PCR for Tracking Megaplasmid-borne Biodegradation Potential of a Model *Sphingomonad*. *Appl. Environ. Microbiol.* 78(12):2293-4496. PMID 22492441.
37. Love, D. C., **R. U. Halden**, M. F. Davis, and K. E. Nachman. Response to Comment on Feather Meal: A Previously Unrecognized Route for Reentry into the Food Supply of Multiple Pharmaceuticals and Personal Care Products (PPCPs). *Environ. Sci. Technol.*, 46(10):5631-5631. DOI: 10.1021/es301528a.
38. Hansmeier, N., T.-C. Chao, L. R. Goldman, F. R. Witter, and **R. U. Halden**.* 2012. Prioritization of Biomarker Targets in Human Umbilical Cord Blood: Identification of Proteins in Infant Blood Serving as Validated Biomarkers in Adults. *Environmental Health Perspectives* 120(5):764-769. <http://dx.doi.org/10.1289/ehp.1104190>. PMID 22538116.
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PUBLICATIONS

Submitted Publications

1. Kidd, J. M., S. D. Supowit, and **R. U. Halden**.* Critical Review of the Bioavailability of Anthropogenic Chemicals in Contaminated Soils and Sediments. (In Review).
2. Hartmann, E. M., D. R. Colquhoun, and **R. U. Halden**.* Absolute Quantification of Norovirus in Food, Water and Soil Using Synthetic Peptides with Electrospray and MALDI Mass Spectrometry. (In Review).

PUBLICATIONS

Publications in Preparation

1. Geer, L. A., B. F. G. Pycke, M. Dalloul, O. Abulafia and **R. U. Halden**.* Maternal Exposure to Environmental Aromatic Compounds from Consumer Products. (In Preparation).
2. McClellan, K., T. Kalinowski, T. A. Bruton, and **R. U. Halden**.* In Situ Microcosm Array (ISMA) Technology for Treatability Studies in Groundwater Remediation – Part 1: Design and Capabilities. (In Preparation).
3. McClellan, K., T. Kalinowski, T. A. Bruton, and **R. U. Halden**.* In Situ Microcosm Array (ISMA) Technology for Treatability Studies in Groundwater Remediation – Part 2: Field Application in a Perchlorate-contaminated, Aerobic Aquifer. (In Preparation).
4. McClellan, K., and **R. U. Halden**.* Critical Review of Approaches for Assessing the Feasibility of Biological In Situ Remediation of Contaminated Groundwater. (In Preparation).

PUBLICATIONS

Peer-reviewed Book Chapters

1. Hartmann, E. M. and **R. U. Halden**.* 2010. Challenges of Detecting Bioterrorism Agents in Complex Matrices. NATO. In: *Detection of Biological Agents for the Prevention of Bioterrorism* (Editor: J. H. Banoub). Proceedings of the NATO Advanced Research Workshop on Detection of Biological Agents for the Prevention of Bioterrorism, Terme di Spezzano, Italy, June 26 - July 2, 2009 Series: NATO Science for Peace and Security Series A: Chemistry and Biology, Proceeding. ISBN 978-90-481-9814-6.
2. **Halden, R. U.*** An Introduction to Contaminants of Emerging Concern. 2010. In: Halden, R. U. (Ed.), *ACS Book Series Vol. 1048. Contaminants of Emerging Concern: Ecotoxicological and Human Health Considerations*. American Chemical Society (ACS) Book Series. Pages 1-6. Oxford University Press, New York, NY. ISBN13: 9780841224964; eISBN: 9780841224971; DOI: 10.1021/bk-2010-1048
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42. Kalinowski, T., K. McClellan, K., T. A. Bruton, I. B. Roll, and **R. U. Halden**. Assessing the Predictive Performance of the In Situ Microcosm Array. 25th Annual Meeting of the Superfund Research Program, Raleigh, NC, October 21-24, 2012.
43. Roll, I. B., S. D. Supowit, and **R. U. Halden**. Performance Data for a System for In Situ Sample Preparation, the In Situ Sampler (IS2). 25th Annual Meeting of the Superfund Research Program, Raleigh, NC, October 21-24, 2012.
44. Charles, M., K. McClellan, T. Kalinowski, B. F. G. Pycke, D. W. Kang, R. Krajmalnik-Brown, and **R. U. Halden**. Effects of Nutrient Delivery Mode on the Composition of Microbial Communities Relevant to Bioremediation Using the "In Situ Microcosm Array" (ISMA). 25th Annual Meeting of the Superfund Research Program, Raleigh, NC, October 21-24, 2012.
45. Kalinowski, T., K. McClellan, T. A Bruton, I. B. Roll, S. Supowit and **R. U. Halden**. Introducing the In Situ Microcosm Array: A New Tool for Evaluating In Situ Remediation technologies In Situ. Motorola 52nd St. Superfund Site Community Information Meeting, Sonoran Science Academy, Phoenix, AZ, October 2012.
46. Kalinowski, R. Rushforth, F. Rider, **R. U. Halden**, and A. Wiek. Motorola 52nd St. Community Workshop on Emerging Remediation Technology: In Situ Microcosm Array. Gateway Community College, Phoenix, AZ, August 2012.
47. Love, D. K., **R.U. Halden**, M. Davis and K. Nachmann. Are Animal Feed Ingredients Contributing to Antimicrobial Resistance? Feather Meal Contains Multiple Antimicrobials, and Enrofloxacin at Levels that Inhibit Susceptible E. coli 22nd Annual Meeting of the American Society for Microbiology (ASM) San Francisco, June 19-22, 2012.
48. Kalinowski, T., K. McClellan, T. A. Bruton, I. B. Roll, R. Krajmalnik-Brown and **R. U. Halden**. Bioremediation of TCE and Hexavalent Chromium: Comparing Bench-Scale Treatability Studies to the In Situ Microcosm Array. Battelle's 8th International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 2012.

49. Kalinowski, T., K. McClellan, T. A. Bruton, and **R.U. Halden**. In Situ Microcosm Array: A Novel Tool for Conducting Treatability Studies In Situ. 22nd Annual International Conference on Soil, Water, Energy, and Air and AEHS Foundation Annual Meeting, San Diego, California, March 19-22, 2012.
50. Kalinowski, T., K. McClellan, T. A. Bruton, I. B. Roll, R. U. Halden. "In Situ Microcosm Array (ISMA) Vs. Standard Laboratory Assessment Of Candidate Remediation Technologies – A Trichloroethylene And Hexavalent Chromium Case Study" ACS National Meeting, San Diego, CA, March 29-29, 2012.
51. Bruton, T. A., K. McClellan, T. Kalinowski, I. B. Roll, R. U. Halden. "Use of the *In Situ* Microcosm Array for Predicting the Effectiveness of Persulfate ISCO for the Treatment of Trichloroethene" ACS National Meeting, San Diego, CA, March 29-29, 2012
52. McClellan, K., T. Kalinowski, T. A. Bruton, I. B. Roll, R. U. Halden. "Bringing the Lab to the Field - The *In Situ* Microcosm Array" ACS National Meeting, San Diego, CA, March 29-29, 2012
53. McClellan, K., Kalinowski, T., K., T. A. Bruton, and **R.U. Halden**. Lowering the Barrier for Novel *In Situ* Remediation Approaches - the *In Situ* Microcosm Array. 22nd Annual International Conference on Soil, Water, Energy, and Air and AEHS Foundation Annual Meeting, San Diego, California, March 19-22, 2012.
54. Venkatesan, A. K., and **R. U. Halden**. Nationwide Occurrence in Biosolids of Alkylphenol Ethoxylate Compounds and Their Fate in Soil Amended With Biosolids. 2012 Summer Specialty Conference: Contaminants of Emerging Concern, Denver, CO, June 25 -27, 2012.
55. Venkatesan, A.K., B.F.G. Pycke, T-C Chao, and **R. U. Halden**. Occurrence of triclosan, triclocarban, and their transformation products in sediments up- and downstream of U.S. wastewater treatment plants. Industrial Wastewater Seminar 2011. Atlantic City, NJ, USA. May 10, 2011.
56. Gray, E.P., Bruton, T.A., Higgins, C.P., **Halden, R.U.**, Westerhoff, P., Ranville, J.F. Comparison of Two Nanoparticle Separation Techniques, Asymmetrical Field Flow Fractionation and Hydrodynamic Chromatography Using Gold Particles, 32nd Annual SETAC North America Meeting, Boston, MA, November 13-17, 2011.
57. **Halden, R. U.**, A. K. Venkatesan and N. Hansmeier. Mixtures of Manmade Hazardous Compounds in the Anthroposphere and in Humans. International Toxicology of Mixtures Conference, Arlington, VA, October 21-23, 2011.
58. McClellan, K., T. Kalinowski, T. A. Bruton, I. B. Roll, and **R.U. Halden**. In Situ Microcosm Array (ISMA) vs. Standard Laboratory Assessment of Candidate Remediation Technologies – A Perchlorate Case Study Annual Symposium of the NIEHS Superfund Program, October 23-26, 2011, Lexington, KY.
59. Kalinowski, T., K. McClellan, T. A. Bruton, I. B. Roll, R. Krajmalnik-Brown and **R.U. Halden**. Evaluating Bioremediation of TCE and Hexavalent Chromium: A Case Study of the *In Situ* Microcosm Array (ISMA). Annual Symposium of the NIEHS Superfund Program, October 23-26, 2011, Lexington, KY.
60. Kalinowski, T., K. McClellan, T. A. Bruton, I. B. Roll and **R.U. Halden**. *In Situ* Microcosm Array (ISMA): A Novel Device for Conducting Treatability Studies. Geological Society of America Annual Meeting, October 9-12, 2011, Minneapolis, MN.
61. McClellan, T. Kalinowski, K. T. A. Bruton, I. B. Roll and **R.U. Halden**. *In Situ* Microcosm Array (ISMA) vs. Standard Laboratory Assessment of Candidate Remediation Technologies – A Perchlorate Case Study. Geological Society of America Annual Meeting, October 9-12, 2011, Minneapolis, MN.
62. Bruton, T. A., K. McClellan, T. Kalinowski, I. B. Roll and **R.U. Halden**. Field Application of the In Situ Microcosm Array. Groundwater Resources Association of California (GRAC) conference, October 5, 2011, Sacramento, CA.

63. **Halden, R. U.** Biosolids: A Diagnostic Matrix Foretelling Exposures in the Anthroposphere. 3rd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment, Copenhagen, Denmark, August 23-26, 2011.
64. Hartmann, E. M., M. L. Fisher, and **R. U. Halden.** Site-Directed Mutagenesis of the Dioxin Dioxygenase to Improve Activity Towards 2,3,7,8-Tetrachloro-Dibenzo-*p*-Dioxin. National Science Foundation East Asia and Pacific Summer Institute, Toyama, Japan, August 2011.
65. Miller, T. R., D. R. Colquhoun and **R. U. Halden.** Analysis of Wastewater Bacteria-Degrading Triclocarban. International Symposium on Bioremediation and Sustainable Environmental Technologies, Battelle Conference, Reno, NV. June 27 – 30, 2011.
66. Ziv-El, M., S. Papat, K. Cai, **R. U. Halden,** R. Krajmalnik-Brown and B. E. Rittmann. Optimization of the Membrane Biofilm Reactor for Biological Reduction of Trichloroethylene. International Symposium on Bioremediation and Sustainable Environmental Technologies, Battelle Conference, Reno, NV. June 27 – 30, 2011.
67. Hartmann, E. M. and **R. U. Halden.** Use of AQUA and MALDI-TOF/TOF MS to Quantify a Dioxin-Degrading Enzyme. Science Foundation Arizona Grand Challenges Conference, Flagstaff, AZ. May 22 - 24, 2011.
68. Delgado, A. G., M. Ziv-El, **R. U. Halden,** and R. Krajmalnik-Brown. Microbial Trichloroethene Dechlorination by a Novel Enriched Consortium. Science Foundation Arizona Grand Challenges Conference, Flagstaff, AZ. May 22 - 24, 2011.
69. Pycke, B. F. G., T.-C. Chao, T. M. Benn, R. Scholze, P. Herckes, **R. U. Halden,** and P. Westerhoff. 2011. Mass spectrometry-based detection of aqueous and oxidized fullerenes in biological and environmental samples. Nanotechnology GO Meeting, NIEHS, Bethesda, MD, March 4-5, 2011.
70. Wells, E. M., J. Jarrett, C. Verdon, C. D. Ward, K. Caldwell, F. R. Witter, **R. U. Halden,** L. R. and Goldman. Umbilical Cord Blood Methyl and Inorganic Mercury Concentrations and Their Relationship With Ponderal Index. 2011 International Conference on Mercury as a Global Pollutant. Halifax, Nova Scotia, July 24-29, 2011.
71. Seager, T., M. Fraser, M. Holl and **R. U. Halden.** The SUMMIT Approach to Sustainability in Superfund Research Translation. International Conference on Sustainable Remediation. Amherst, MA, June 1-3, 2011.
72. Venkatesan, A. K., B. Pycke, T.-C. Chao and **R. U. Halden.** Occurrence of Triclosan, Triclocarban, and Their Transformation Products in Sediments Up and Downstream of U.S. Wastewater Treatment Plants. Water Environment Federation: Industrial Wastewater Conference. Bally's Hotel, Atlantic City, New Jersey, May 9-10, 2011.
73. Doudrick, K, A. K. Venkatesan, E. M. Hartmann, T. Kalinowski and **R. U. Halden.** Assessment of the Contribution of Triclosan to Dioxin Emissions from Sludge Incineration in the U.S. Using a Mathematical Model. Water Environment Federation: Industrial Wastewater Conference. Bally's Hotel, Atlantic City, New Jersey, May 9-10, 2011.
74. Hartmann, E. M. and **R. U. Halden.** Use of AQUA and MALDI-TOF/TOF MS to Quantify a Dioxin-Degrading Enzyme. 23rd Annual Sanibel Conference on Mass Spectrometry, American Society for Mass Spectrometry (ASMS), St. Pete Beach, FL, January 21-24, 2011.
75. McClellan, K., T. A. Bruton, T. Kalinowski, and **R. U. Halden.** Use of the "In Situ Microcosm Array"(ISMA) Technology for Evaluation of 1,4-Dioxane and Trichloroethene Co-Remediation. Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C., November 30 - December 2, 2010.
76. Bruton, T. A., K. McClellan, T. Kalinowski, and **R. U. Halden.** Development of Online Sensing Capability for the In Situ Microcosm Array (ISMA) Technology. Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C., November 30 - December 2, 2010.

77. Roll, I. and **R. U. Halden**. Rationale and Theory for a New In Situ Sampling Device. Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C., November 30 - December 2, 2010.
78. Kalinowski, T., K. McClellan, K., T. A. Bruton, and **R. U. Halden**. Capabilities of the In Situ Microcosm Array. Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C., November 30 - December 2, 2010.
79. **R. U. Halden**, K. McClellan, T. Kalinowski, T. A. Bruton, T. R. Miller, E. M. Hartmann, D. R. Colquhoun, T.-C. Chao, N. Hansmeier, R. P. Deo, A. Sapkota, T. E. A. Chalew, T. A. Young, C. R. Matos-Pérez, E. Walters, R. N. Cole, F. R. Witter and L. R. Goldman. Novel Approaches to Studying the In Situ Bioremediation Potential of Complex Mixtures. Annual Conference of the NIEHS Superfund Program, Portland, OR, November 10 - 12, 2010.
80. McClellan, K., T. Kalinowski, T. A. Bruton, and **R. U. Halden**. Field Application of the *In Situ* Microcosm Array. Annual Conference of the NIEHS Superfund Program, Portland, OR, November 10 - 12, 2010.
81. Westerhoff, P., T. Benn, B. Pycke, T.-C. Chao, K. Doudrick, **R. U. Halden** and P. Herckes. Characterization of Fullerols and Fullerenes in Complex Matrices. SETAC North America 31st Annual Meeting, November 7-11, 2010.
82. Lee, H.-S., A. G. Delgado, C. I. Torres, **R. U. Halden**, B. E. Rittmann and R. Krajmalnik-Brown. Anaerobic Dechlorination of Trichloroethene with Hydrogen Produced from a Microbial Electrolysis Cell. Leading Edge Technologies Conference, Phoenix, AZ, June 1, 2010.
83. Goldman, L. R., G. Neta, J. B. Herbstman, A. Sjödin, F. R. Witter, and **R. U. Halden**. Use of principal component analysis to elucidate independent effects of in utero exposure to PBDE and PCB mixtures on newborn thyroid hormone measures. Dioxin 2010 - 30th International Symposium on Halogenated Persistent Organic Pollutants (POPs), San Antonio, TX, September 12-17, 2010.
84. Ziv-El, M. A. Delgado, **R. U. Halden**, and R. Krajmalnik-Brown. 2010. Molecular-biological characterization of a novel, sediment-free mixed culture showing exceptionally rapid dechlorination of TCE to ethane. 13th International Symposium on Microbial Ecology (ISME), Seattle, WA, August 22–27, 2010.
85. Delgado, A., M. Ziv-El, **R. U. Halden**, and R. Krajmalnik-Brown. 2010. Role of pH Buffering on TCE Reduction and Composition of Dechlorinating Consortia. 13th International Symposium on Microbial Ecology (ISME), Seattle, WA, August 22–27, 2010.
86. **Halden, R. U.** Sustainable Management of Hazardous Mixtures. A Proposal. Arizona Department of Environmental Quality, Phoenix, AZ, August 13, 2010.
87. Wells, E. M., J. M. Jarrett, B. J. Apelberg, J. B. Herbstman, A. Navas-Acien, K. L. Caldwell, **R. U. Halden**, F. R. Witter, and L. R. Goldman. The non-monotonic relationship of selenium exposure with blood pressure and hypertension during late pregnancy. The 23rd Annual Meeting of the Society for Pediatric and Perinatal Epidemiologic Research (SPER), Seattle, WA, June 23-26, 2010.
88. Neta, G., L. R. Goldman, D. Barr, A. Sjödin, B. Apelberg, F. Witter, **R. U. Halden**. Distribution and Determinants of in utero Pesticide Mixtures using Principal Component Analysis. Society for Epidemiologic Research (SER) 43rd Annual Meeting Seattle, WA, June 23-26, 2010.
89. Hartmann, E. M. and **R. U. Halden**. Concept for a Brain Tissue Screening Procedure to Ensure Prion Exclusion. Arizona Alzheimer's Consortium Annual Conference, Glendale, AZ, May 21, 2010.
90. Wells E. M., A. Navas-Acien, B. J. Apelberg, J. B. Herbstman, J. M. Jarrett, K. L. Caldwell, **R. U. Halden**, F. R. Witter, and L. R. Goldman. Association of selenium and copper with triglycerides in umbilical cord blood serum. Research ShowCASE 2010, Case Western Reserve University: Cleveland, Ohio, 15 April 2010.

91. Hartmann, E.M. and **R. U. Halden**. 2010. Discovery and Detection of Biomarkers of Petroleum-degrading Bacteria. Science Foundation Arizona Grand Challenges Conference, Phoenix, Arizona, April 12–13, 2010.
92. **R. U. Halden**. Concluding Remarks on Policies for Promoting Sustainable Chemistry. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
93. **R. U. Halden**. Introduction to Policies for Promoting Sustainable Chemistry. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
94. **R. U. Halden**. Concluding Remarks on Antimicrobial Agents and Sustainability. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
95. **R. U. Halden**. Introduction to Antimicrobial Agents and Sustainability. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
96. **R. U. Halden**. Examining the Sustainability of Persistent Antimicrobial Compounds. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
97. Deo, R. P. and **R. U. Halden**. Impact of Sample Processing Procedures on the Quality of Environmental Monitoring Data Influencing Policy Decisions. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
98. **R. U. Halden**. Toward Sustainable Use of Organohalogenes. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
99. Wells, E. M., A. Navas-Acien, B. J. Apelberg, J. Herbstman, J. M. Jarrett, K. L. Caldwell, **R. U. Halden**, F. R. Witter and L. R. Goldman. Association of Selenium and Copper with Triglycerides in Umbilical Cord Serum. Society of Toxicology PPTOXII: Role of Environmental Stressors in the Developmental of Origins of Disease. December 7-10, 2009. Loews Hotel, Miami Beach, Florida.
100. McClellan, K., T. Kalinowski and **R. U. Halden**. ESTCP Project 200914: A New Technology for Remedial Design. Annual Technical Symposium & Workshop hosted by the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP), Washington, DC, December 1-3, 2009.
101. T. Kalinowski, K. McClellan, and **R. U. Halden**. In Situ Sediment Column Microcosms for Studying Bioremediation. Annual Technical Symposium & Workshop hosted by the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP), Washington, DC, December 1-3, 2009.
102. Guerrero-Preston, R., C. LeBron, J. B. Herbstman, **R. U. Halden**, D. Sidransky, and L. Goldman. Global DNA Hypomethylation in Cord Blood Serum of Babies Exposed to Maternal Smoking *In Utero*. 137th APHA Annual Meeting & Exposition, San Antonio, TX, November 7-11, 2009.
103. T. Kalinowski, McClellan, K., and **R. U. Halden**. Novel Approaches to Studying the In Situ Bioremediation Potential of Complex Mixtures. Superfund Research Program 2009 Annual Conference, Columbia University, New York, NY, November 3, 2009.
104. **R. U. Halden**. *In Situ* Downhole Technology for Commercialization. First ASU Spartan Workshop for Technology Commercialization, Scottsdale, AZ, September 19, 2009.
105. **R. U. Halden**. Toward Sustainable Chemistry and Engineering. ASU School of Sustainability and the Built Environment, Student Organization, Invited Seminar, Tempe, AZ, September 4, 2009.
106. Walters, E. K. McClellan and **R. U. Halden**. Fate of Pharmaceuticals and Personal Care Products in Agricultural Soils Modified With Biosolids. 238th American Chemical Society (ACS) National Meeting, Washington, DC, August 16-20, 2009.

107. McClellan and **R. U. Halden**. Analysis of PPCPs in biosolids originating from the 2001 EPA National Sewage Sludge Survey. 238th American Chemical Society (ACS) National Meeting, Washington, DC, August 16-20, 2009.
108. Deo, R. P. and **R. U. Halden**. *In Silico* Screening for Unmonitored High Production Volume (HPV) Chemicals Prone to Accumulate in Biosolids. 238th American Chemical Society (ACS) National Meeting, Washington, DC, August 16-20, 2009.
109. Deo, R. P. and **R. U. Halden**. Empirical Model for Predicting Concentrations of Refractory Hydrophobic Organic Compounds in Digested Sludges from Municipal Wastewater Treatment Plants. 238th American Chemical Society (ACS) National Meeting, Washington, DC, August 16-20, 2009.
110. Fox, A. and **R. U. Halden**. Applicability of Passive Sampling Modules for the Determination of Contaminants of Emerging Interest in Digested Municipal Sewage Sludge (Biosolids). 238th American Chemical Society (ACS) National Meeting, Washington, DC, August 16-20, 2009.
111. Higgins, C. P., Z. J. Paesani, T. E. A. Chalew, **R. U. Halden**, and L. S. Hundal. Persistence and Bioaccumulation of Triclocarban and Triclosan in Soils After Land Applications of Municipal Biosolids. EmCon 2009, 2nd International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment, August 4-7, 2009.
112. Walters, E. K. McClellan and **R. U. Halden**. Fate of Pharmaceuticals and Personal Care Products in Agricultural Soils Modified With Biosolids. Micropol/Ecotox, Burlingame, CA, June 8 – 10, 2009.
113. McClellan, K. and **R. U. Halden**. Nationwide Assessment of Pharmaceuticals and Personal Care Products in U.S. Biosolids. Micropol/Ecotox, Burlingame, CA, June 8 – 10, 2009.
114. Doom, T. R. and **Halden, R. U.**: BME Capstone Design Project Presentation. Tempe, May 1, 2009.
115. Doom, T. R. and **Halden, R. U.**: In Situ Remediation of Contaminated Subsurface Environments: Assessing Industry Needs for Technical Innovations. 19th Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water. San Diego, CA, March 10, 2009.
116. Geer, L. and **R. U. Halden**. Triclosan and Triclocarban Levels in Urine and Cord Blood of Mother/Infant Pairs. Annual Meeting of the Superfund Basic Research Program of the National Institute of Environmental Health Sciences, Pacific Grove, CA, December 7-9, 2008.
117. Hartmann, E., McClellan, K. and **R. U. Halden**. Toward Proteomics-informed Optimization of In Situ Bioremediation. Annual Meeting of the Superfund Basic Research Program of the National Institute of Environmental Health Sciences, Pacific Grove, CA, December 7-9, 2008.
118. Higgins, C. P., Z. J. Paesani, T. E. A. Chalew, and **R. U. Halden**. Bioaccumulation of Triclocarban in *Lumbricus variegatus*. SETAC Meeting, November 2008.
119. Wells, E. M., A. Navas-Acien, K. L. Caldwell, R. L. Jones, B. J. Apelberg, J. B. Herbstman, **R. U. Halden**, F. R. Witter, and L. R. Goldman. Selenium and lipids in umbilical cord serum. International Society for Environmental Epidemiology Annual Conference, Pasadena, CA, October 12-16, 2008.
120. Hartmann, E. M., D. R. Colquhoun, and **R. U. Halden**. Identification of Pollutant-Degrading Bacteria Using Peptide Mass Fingerprinting and Mass Spectrometry. American Chemical Society Middle Atlantic Regional Meeting, Philadelphia, PA, May 16–18, 2007.
121. DeLaquil, A., T. R. Miller, and **R. U. Halden**. Accumulation of Antimicrobial Chemicals in Sediment. American Chemical Society Middle Atlantic Regional Meeting, Philadelphia, PA, May 16–18, 2007.
122. Wells, E., Goldman, L. R., Jones, R., Caldwell, K., Apelberg, B. J., Herbstman, J., Needham, L., Witter, F. R. and **R. U. Halden**. Modeling low-level cord blood lead exposure and maternal blood pressure. 19th Annual Conference of the International Society for Environmental Epidemiology, Mexico City, Mexico, September 5–7, 2007.
123. Herbstman J. B., Witter F. R., Apelberg B. J., Sjödin A., Patterson D. G., **Halden, R. U.**, Needham, L. L., and Goldman, L. R. Prenatal PCB and PBDE Exposure and Thyroid Hormone

- Levels. 19th Annual Conference of the International Society for Environmental Epidemiology, Mexico City, Mexico, September 5–7, 2007.
124. Wells, E., Goldman, L. R., Jones, R., Caldwell, K., Apelberg, B. J., Herbstman, J., Needham, L., Witter, F. R. and **R. U. Halden**. Public Health Policy Implications of Socioeconomic and Demographic Correlates of Prenatal Lead Exposure. 135th Annual Meeting of the American Public Health Association, Washington, D.C., November 3–7, 2007.
 125. Heidler, J., and **R. U. Halden**. Behavior of Persistent Biocides During Wastewater Treatment: Mass Balances and Meta Analysis. American Water Resources Association (AWRA) Summer Specialty Conference on "Emerging Contaminants of Concern in the Environment," Vail, Colorado, June 25–27, 2007.
 126. Heidler, J., and **Halden, R. U.** Detection of Persistent Biocides in Sewage Sludge and Human Blood Using LC-ESI-MS and LC-ESI-MS/MS. 55th ASMS Conference on Mass Spectrometry, Indianapolis, IN, June 3–7, 2007.
 127. Colquhoun, D. R. and **R. U. Halden**. Comparative Proteomic Analysis of Cells of the Dioxin Degrading Bacterium *Sphingomonas wittichii* RW1 Grown on Various Substrates. 107th ASM General Meeting, Toronto, Ontario, Canada, May 21–25, 2007.
 128. Miller, T. R., Salzberg, S. L., Eisen, J. A., and **R. U. Halden**. Comparative Sequence Analysis of Catabolic Megaplastids from *Sphingomonas wittichii* RW1 and Related Bioremediation Agents. 107th ASM General Meeting, Toronto, Ontario, Canada, May 21–25, 2007.
 129. Miller, T. R., Salzberg, S. L., and **R. U. Halden**. Sequence Analysis of Megaplastids from the Dioxin Mineralizing Bacterium *Sphingomonas wittichii* RW1. Joint Genome Institute User Conference, Walnut Creek, CA, March 28–31, 2007.
 130. Higgins, C. P., J. P. Bressler and **R. U. Halden**. Mechanisms of Perfluorochemical Surfactant Bioaccumulation: The Potential Role of Organic Anion Transporters. 15th Annual Scientific Workshop of the JHU-NIEHS Center In Urban Environmental Health. Baltimore, MD, February 28, 2007.
 131. Goldman, L. R., B. J. Apelberg, J. B. Herbstman, **R. U. Halden**, F. R. Witter, A. M. Calafat, Z. Kuklennyik, L. L. Needham. Possible Etiologies of PFAA-Induced Developmental Effects: Reflections from a Pediatric Perspective. Society of Toxicology Conference: Current Concepts in Toxicology—Perfluorinated Alkyl Acids and Related Chemistries: Toxicokinetics and Mode-of-Action Workshop. Arlington, VA, February 14–16, 2007.
 132. **Halden, R. U.**, and T. R. Miller. In Situ Microcosm Array Technology for Remedial Feasibility Assessment and Design. Partnership in Environmental Technology Technical Symposium & Workshop (ESTCP/SERDP), Washington, D.C., November 28–30, 2006.
 133. Herbstman J. B., Sjödin A., Apelberg B. J., Witter F. R., Patterson D. G., **Halden, R. U.**, Jones, R. S., Park, A., Heidler, J., Needham, L. L., and Goldman, L. R. Determinants of Prenatal Exposure to Polybrominated Diphenyl Ethers (PBDEs) in an Urban Population. International Conference on Environmental Epidemiology & Exposure, Paris, France, September 2–6, 2006.
 134. Apelberg B. J., Calafat, A. M., Herbstman J. B., **Halden, R. U.**, Heidler, J., Witter, F. R., Needham, L. L., and Goldman, L. R. Magnitude and Determinants of Fetal Exposure to Perfluorinated Chemicals. International Conference on Environmental Epidemiology & Exposure, Paris, France, September 2–6, 2006.
 135. **Halden, R. U.**, D. R. Colquhoun, R. N. Cole and K. J. Schwab. Mass Spectrometry Method for the Epidemiological Surveillance of Norovirus. 106th General Meeting of the American Society for Microbiology, Orlando, FL, May 21–25, 2006.
 136. Colquhoun, D. R., T. R. Miller, E. M. Hartmann, and **R. U. Halden**. Rapid Characterization of Pollutant Degrading Bacteria Using Matrix Assisted Laser Desorption Ionization—Time of Flight Mass Spectrometry. 106th General Meeting of the American Society for Microbiology, Orlando, FL, May 21–25, 2006.

137. **Halden, R. U.**, and T. R. Miller. Novel Diagnostic In Situ Monitoring Technology. BIO 2006. Annual International Convention. Environmental Biotechnology Session. Chicago, IL, April 9–12, 2006.
138. Miller, T. R., Colquhoun, D. R., and **R. U. Halden**. Characteristics of a Bacterial Enrichment Culture Utilizing the Antimicrobial Compound Triclocarban as Sole Carbon and Energy Source. 106th General Meeting of the American Society for Microbiology, Orlando, FL, May 21–25, 2006.
139. Heidler, J., and **Halden, R. U.**: Preliminary Assessment of Biocide Inputs to U.S. Water Resources and Soils. 5th International Conference on Pharmaceuticals and Endocrine Disrupting Chemicals in Water, Costa Mesa, California, March 13-15, 2006.
140. Colquhoun, D. R. and **Halden, R. U.**: Phenotypic Characterization of a Dioxin-degrading Bacterium Using MALDI-TOF MS. American Society for Mass Spectrometry, Fall Workshop on Characterization of Microorganisms by Mass Spectrometry, San Diego, CA, December 9, 2005.
141. **Halden, R. U.**: Effect of Lifestyle on Mother/Infant Exposure to Ubiquitous Pollutants. CLF Research Day: Insights Along the Path of Sustainability, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, November 30, 2005.
142. **Halden, R. U.**, A. Sapkota, J. Heidler, J. Keehner, N. Haws, and B. G. Halden: Municipal Sludge Disposal and Sustainable Agriculture: A Pilot Study Showcasing the Challenge of Combining the Two. CLF Research Day: Insights Along the Path of Sustainability, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, November 30, 2005.
143. Naples, J., C. Shiff, C., D. R. Colquhoun, and **Halden, R. U.**: The Use of Cedar Oil Components to Prevent Infection by Schistosome Cercariae. 54th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Washington, DC, December 11-15, 2005.
144. Miller, T. R. and **Halden, R. U.**: Enrichment of Xenobiotic-Degrading Bacteria Using a New In Situ Monitoring Device. SETAC 26th Annual Meeting in North America, Baltimore, MD, November 17, 2005. <http://abstracts.co.allenpress.com/pweb/setac2005/document/?ID=56786>
145. Heidler, J. and **Halden, R. U.**: Tracking the Fate of Triclosan during Activated Sludge Wastewater Treatment. SETAC 26th Annual Meeting in North America, Baltimore, MD, November 14, 2005. <http://abstracts.co.allenpress.com/pweb/setac2005/document/?ID=56429>
146. Kim, S.-R., **Halden, R. U.**, and Buckley, T.: Laboratory Studies Characterizing the Sensitivity and Stability of VOC Sampling and Analysis. International Society of Exposure Analysis (ISEA) Annual Meeting, Tucson, AZ, October 30 - November 3, 2005.
147. Herbstman, J., A. Sjodin, D. Patterson, B. Apelberg, F. Witter, **R. U. Halden**, J. Heidler, L. Needham, and L. Goldman: PCBs and PBDEs and Thyroid Hormone Levels in Umbilical Cord Blood in an Urban U.S. Population: A Feasibility Study. Dioxin 2005, Toronto, Canada, August 21-26, 2005.
148. **Halden, R. U.**: Innovative Method for Environmental Monitoring and Bioprospecting. 8th In Situ and On-Site Bioremediation Symposium, Baltimore, MD, June 6-9, 2005.
149. **Halden, R. U.**: Pharmaceuticals and Personal Care Products in Biosolids. New Jersey Water Environment Association Annual Conference, Tropicana Hotel, Atlantic City, NJ, May 4, 2005.
150. **Halden, R. U.**: Pharmaceuticals and Personal Care Products as Indicators of Sewage Spills. Maryland Water Monitoring Council 10th Annual Conference, Linthicum, MD, November 18, 2004. <http://www.mgs.md.gov/mwmc/conf/2004/>
151. Heidler, J. and **R. U. Halden**: Mass Balance for Persistent Antimicrobials in the Back River Wastewater Treatment Plant in Baltimore, MD. Maryland Water Monitoring Council 10th Annual Conference, Linthicum, MD, November 18, 2004. <http://www.mgs.md.gov/mwmc/conf/2004/abspost04.html#heidler>
152. Heidler, J. and **R. U. Halden**: Mass Balance for Antimicrobial Compounds at a Municipal Wastewater Treatment Plant in Baltimore, MD. Groundwater and Public Health – Making the Connection. Groundwater Foundation Annual Conference and Groundwater Guardian Designation, Washington, D.C., November 4-5, 2004. http://www.groundwater.org/pe/conference/2004conference_agenda.pdf

153. Matos, C. and **R. U. Halden**: Antimicrobial Compounds as Indicators of Sewage Contamination in Surface Waters. Annual Biomedical Research Conference for Minority Students (ABRCMS), Dallas, TX, November 10 – 13, 2004.
154. Heidler, J. and **R. U. Halden**: Fate of antimicrobial compounds during wastewater treatment. Proceedings of the 228th National Meeting of the American Chemistry Society. Presented at the 2nd National Symposium on Environmental Aspects of Pharmaceuticals and Personal Care Products, Philadelphia, PA, August 22 – 26, 2004. <http://www.tntech.edu/wrc/PPCPWebcast/PPCP.htm>
155. Colquhoun, D., E. S. Wisniewski, D., A. Kalmykov, and **R. U. Halden**: Identification of *Spingomonas wittichii* RW1 Through the Dioxin Dioxygenase Enzyme Using Mass Spectrometry. General Meeting of the American Society for Microbiology, New Orleans, LA, May 23 – 27, 2004.
156. **Halden, R. U.**, J. Heidler, D. H. Paull, and R. Classon: Trace Analysis of the Broad Spectrum Antimicrobial Compound Triclosan in Drinking Water, Urban Streams and Wastewater by LC/APCI/MS and LC/ESI/MS. 41st Florida Pesticide Residue Workshop, Lake Buena Vista, FL, July 18 – 21, 2004. <http://www.flworkshop.com/2004/classon.pdf>
157. Paull, D.H., and **R. U. Halden**: Environmental Fate of Antimicrobials in Personal Care Products: Implications for Agriculturally Applied Sewage Sludge and Human Milk. Johns Hopkins University Center for a Livable Future Research Conference: Insights Along the Path to Sustainability, Baltimore, MD, 2003.
158. Paull, D.H., and **R. U. Halden**: Monitoring Antimicrobial Compounds as Indicators of Sewerage Problems Impacting Urban Streams. Maryland Water Monitoring Council 9th Annual Conference: Ecological Restoration Assessment and Monitoring, Linthicum, MD, 2003. <http://www.mgs.md.gov/mwmc/conf/abspost03.html#paull>
159. **Halden, R.U.**, R. N. Cole, C. Bradford, D. Chen, and K. J. Schwab. Rapid Detection of Norwalk Virus-like Particles using MALDI-TOF MS and ESI-MS/MS. 51st ASMS Meeting, Montreal, Quebec, Canada, 2003. <http://www.inmerge.com/aspfolder/ASMSSchedule2.asp>
160. Franklin, M. P., Madrid, V., Gregory, S., and **R. U. Halden**: Spatial Analysis of a Microbial Community Mediating Intrinsic Reductive Dechlorination of TCE to *cis*-DCE at a DOE Superfund Site. 103rd General Meeting of the American Society for Microbiology, Washington, D.C., 2003. <http://www.asmta.org/memonly/abstracts/AbstractView.asp?AbstractID=80900>
161. Xie, G., T. Palmateer Oxenberg, W. Dong, A. Kalmykov, M. P. Franklin, E. J. Bouwer, and **R. U. Halden**: Sorption, Bioavailability, and Bioreduction of U(VI) in Sediment from the Aberdeen Proving Ground, MD. 103rd General Meeting of the American Society for Microbiology, Washington, DC, 2003. <http://www.asmta.org/memonly/abstracts/AbstractView.asp?AbstractID=81438>
162. **Halden, R. U.**, R. N. Cole, C. Bradford, D. Chen, and K. J. Schwab: Rapid Detection of Norwalk Virus-like Particles by MALDI-TOF MS. NIH Exploring the Proteome II, Bethesda, MD, 2003. <http://proteome.nih.gov/SymposiumII/poster26.html>
163. **Halden, R. U.**, T. Palmateer Oxenberg, W. Dong, M. Lowe, A. Spiro, and E. Bouwer: Aberdeen Proving Grounds Environmental Research. National Defense Industrial Association (NDIA) TACOM – ARDEC Technical Symposium, Rockaway, NJ, 2002.
164. **Halden, R. U.**: Microarrays for Bioremediation. Presenter and Session Moderator. DOE-NABIR PI Workshop, Warrenton, VA, 2002.
165. Lowe, M., A. Spiro, G. Xie, and **R. U. Halden**: Development of a Multiplexed, Bead-based Assessment Tool for Rapid Identification and Quantitation of Microorganisms in Field Samples. DOE-NABIR PI Workshop, Warrenton, VA, 2002.
166. Madrid, V. M., Z. Demir, **R. U. Halden**, S. D. Gregory and J. E. Valett: New Geospatial Model Tracks Chloroethene Subsurface Contamination. Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, 2002.

167. Madrid, V. M., **R. U. Halden**, Z. Demir, J. E. Valett, and S. D. Gregory: 3-D Geospatial Modeling of a DNAPL Source Area. 97th Annual Meeting of the Geological Society of America, Universal City, CA, 2001.
168. Kane, S. R., H. R. Beller, T. C. Legler, C. J. Koester, **R. U. Halden**, and A. M. Happel: Aerobic Metabolism of Methyl *tert*-Butyl Ether by Aquifer Bacteria. 101st General Meeting of the American Society for Microbiology, Orlando, FL, 2001.
<http://www.asmtusa.org/memonly/abstracts/AbstractView.asp?AbstractID=49632>
169. Daily, W., III, **R. U. Halden**, and P. W. Krauter: Removal of Nitrate from Groundwater Using Open Container Bioreactors. 6th In Situ and On-Site Bioremediation Symposium, San Diego, CA, 2001.
170. Ziagos, J. P., and **R. U. Halden**: Implementing “Green” Technology to Achieve Cleanup Goals. 12th National DOE Technology Information Exchange Workshop, Atlanta, GA, 2000.
171. **Halden, R. U.**, V. M. Madrid, S. D. Gregory, R. L. Goodrich, and P. F. Daley: Advanced Site Characterization and Data Visualization Using Passive Soil Vapor Surveying, GPS/GIS and 3D-Imaging Tools. 10th West Coast Conference on Contaminated Soil and Groundwater, San Diego, CA, 2000.
172. Semprini, L., S. Vancheeswaran, S. Yu, M.-Y. Chu, and **R. U. Halden**: Tetraalkoxysilanes as Slow-release Substrates to Promote Aerobic and Anaerobic Dehalogenation Reactions in the Subsurface. General Meeting of the American Chemical Society, Washington, D.C., 2000.
173. Happel, A. M., E. H. Beckenbach, B. P. Dooher, K. Emmerson, S. R. Kane, C. Koester, **R. U. Halden**, H. R. Beller, and T. C. Legler: Evaluating Attenuation of MTBE. EPA MTBE Biodegradation Workshop, Cincinnati, OH, 2000.
174. Brown, D., R. Holley-Shanks, D. Maeder, K. Schindler, M. Lowe, F. Brockman, **R. U. Halden**, and F. Robb: Comparison of ISR and 16S-ISR Analysis of VOC Effect on Microbial Communities at Two DOE Sites. 100th General ASM Meeting, Los Angeles, CA, 2000.
<http://www.asmtusa.org/memonly/abstracts/AbstractView.asp?AbstractID=30677>
175. Ziagos, J. P., **R. U. Halden**, P. W. Krauter, and W. D. Daily: The Proposed Application of “Green” Technology to Achieve Cleanup Goals. 11th National DOE Technology Information Exchange Workshop, Las Vegas, NV, 1999.
176. **Halden, R. U.**, A. M. Happel, H. R. Beller, C. Koester, B. G. Halden, S. R. Kane, and T. C. Legler: Evidence for Intrinsic Bioremediation of MTBE at a LUFT Site. In-Situ Alternatives for MTBE Impacted Aquifers, Oxnard, CA, 1999.
177. **Halden, R. U.**, V. Madrid, P. Daley, M. Lima, S. Gregory and J. P. Ziagos: Silicon Lubricants Facilitate Bioattenuation of TCE at LLNL’s Superfund Site 300. 5th In Situ and On-Site Bioremediation Symposium, San Diego, CA, 1999.
178. **Halden, R. U.**, S. R. Schoen, Y. Galperin, I. R. Kaplan, and A. M. Happel: Evaluation of EPA and ASTM Methods for Analysis of Oxygenates in Gasoline-Contaminated Ground Water. 8th Annual AEHS West Coast Conference on Contaminated Soil and Groundwater, Oxnard CA, 1998.
179. **Halden, R. U.**, W. W. McNab Jr., R. Ruiz, and A. M. Happel: Palladium-Catalyzed Transformation of TCE and MTBE in Groundwater, 1st International Symposium on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, 1998.
180. Rhodes, I., J. Milazzo, L. Brzuzy, L. Harvey, A. Verstuyft, **R. U. Halden**, S. Schoen, Y. Galperin, I. R. Kaplan, and A. M. Happel: Analytical Methods for the Determination of Oxygenates in Gasoline-contaminated Groundwater: Modified EPA and ASTM Methods. 21st EPA Conference on Analysis of Pollutants in the Environment, Norfolk, VA, 1998.
181. **Halden, R. U.**, B. G. Halden, and D. F. Dwyer: A Kinetic Analysis of Dioxin Degradation in Bioaugmented Soils. 97th General ASM Meeting, Miami Beach, FL, 1997.
182. **Halden, R. U.**, and D. F. Dwyer: Biodegradation of Dioxins in Soils. 4th International Battelle Bioremediation Symposium, New Orleans, LA, 1997.
183. **Halden, R. U.**: A Kinetic Analysis of Dioxin Degradation in Bioaugmented Soils. 5th Environmental Science & Engineering Conference, Minneapolis, MN, 1997.

184. **Halden, R. U.**, and D. F. Dwyer: Biotransformation of Dioxin-Related Compounds Via Angular Dioxygenation: Bacterial Strains, Degradative Pathways and Their Potential Use for Bioremediation. 3rd International ISEB Symposium, Boston, MA, 1996.
185. **Halden, R. U.**, and D. F. Dwyer: Small Inocula Can Effect In Situ Biodegradation of Carboxydiphenyl Ether in Soil. Proceedings of the North Amer. Water & Environment Congress, ASCE, Somerset, NJ, 1996.
186. **Halden, R. U.**, and D. F. Dwyer: Colonization of Soil by Low Numbers of a Bacterium Constructed to Degrade Dioxin-Related Pollutants. 96th General ASM Meeting, New Orleans, LA, 1996.
187. Raatz, W. A., K. Anderson, **R. U. Halden**, and D. F. Dwyer: Bioremediation of Aquifers Using Introduced Bacteria. 96th General ASM Meeting, New Orleans, LA, 1996.
188. **Halden, R. U.:** Detection and Environmental Fate of Bacteria Able to Degrade Dioxin-Related Compounds. 4th Annual Environmental Science & Engineering Conference, St. Paul, MN. 1996.
189. **Halden, R. U.**, G. W. Mundfrom, E. G. Peters, and D. F. Dwyer: Detection and Environmental Fate of Bacteria Able to Degrade Dioxin-Related Compounds," 55th Annual ASM North Central Branch Meeting, Iowa City, IA, 1995.
190. **Halden, R. U.**, G. W. Mundfrom, E. G. Peters, and D. F. Dwyer: In Situ Bioremediation: Tracking Introduced Diaryl Ether-Degrading Bacteria In Soil. National ASCE Environmental Engineering Conference, Pittsburgh, PA, 1995.
191. **Halden, R. U.**, G. W. Mundfrom, E. G. Peters, and D. F. Dwyer: Bioaugmentation: Monitoring Diaryl Ether-Degrading Bacteria Introduced Into Contaminated Environments Using Molecular-Genetic Methods. 3rd International Bioreclamation Symposium, San Diego, CA, 1995.
192. **Halden, R. U.:** In Situ Biodegradation of Diaryl Ether Compounds in Soil and Sediment. 3rd Annual Environmental Science & Engineering Conference, Minneapolis, MN, 1995.

PUBLICATIONS

Invited Keynotes, Invited Presentations, Invited Webinars, Invited Expert Panel Member & Conference Session Moderation

1. **Halden, R. U.** Analytical Methods for Detecting and Prioritizing Contaminants of Concern. ACS-Invited Symposium Chair. 248th ACS National Meeting & Exposition San Francisco, CA, August 10-14, 2014.
2. **Halden, R. U.** Invited Keynote Address: Sewage Epidemiology - Taking the Chemical Pulse of a Nation at the Sewer. AZ Engineers Club of the West Valley: Sun City West, AZ. March, 7, 2014.
3. **Halden, R. U.** Invited Talk: Sewage Metrology - Taking the Chemical Pulse of our Nation at the Sewer. Johns Hopkins University, School of Public Health. April 24, 2014.
4. **Halden, R. U.** Invited Talk and Nationally Broadcasted Webinar: Chemical Composition of U.S. Sewage Sludges Informed by Analysis of EPA-Collected Biosolids Samples from Across the United States. United States Environmental Protection Agency Headquarter, Washington, DC, April 22, 2014.
5. **Halden, R. U.** Invited Talk and Nationally Broadcasted Webinar: Update on Antimicrobials in the U.S. Environment. United States Food and Drug Administration, Headquarter, Washington, DC, April 22, 2014.
6. **Halden, R. U.** Invited Talk, Panel Member, and Panel Moderator: Potential Human Health Risks of Microplastics. U.S. National Academies, Washington, DC, April 23, 2014.
7. **Halden, R. U.** Fate, Transport, and Toxicity of Wastewater-borne Contaminants by Example of Widely Used Persistent Antimicrobials. SETAC North America 34th Annual Meeting, Nashville, TN, November 17-21, 2013.
8. **Halden, R. U.** Environmental Fate and Human Health Risks of Contaminants of Emerging Concern in the U.S. Environment. Invited Seminar. Distinguished Lecture Series. Simulcast and Taped. <http://icsde.ifas.ufl.edu/accordent/live/Haden05-21-13/> University of Florida, Gainesville, FL, May 21, 2013.
9. **Halden, R. U.**, K. McClellan and T. Kalinowski. *In Situ* Microcosm Array – A New Decision-Making and Design Tool for In Situ Remediation. Invited Webinar. Technical Practices Network – In Situ Bioremediation Group, AECOM. Presented Online. December 11, 2012.
10. **Halden, R. U.**, S. D. Supowit, I. A. Roll, V. D. Dang, K. J. Kroll and N. D. Denslow. Addressing Risk Assessment Needs for Traditional and Emerging Contaminants Using the Innovative In Situ Sampling/Bioavailability (IS2B) Device. SETAC North America 33rd Annual Meeting, Long Beach, CA, November 11 – 15, 2012. (Invited talk).
11. **Halden, R. U.** Antimicrobials, Antimicrobial Resistance and New Risk Assessment Tools. SETAC North America 33rd Annual Meeting, Long Beach, CA, November 11 – 15, 2012.
12. **Halden, R. U.** Understanding and Minimizing the Health Risks of Plastics. SETAC North America 33rd Annual Meeting, Long Beach, CA, November 11 – 15, 2012.
13. Kalinowski T., K. McClellan and **R. U. Halden**. An Emerging Remediation Technology: The *In Situ* Microcosm Array. Community Informational Group meeting for the Motorola 52nd St. Superfund Site community hosted by the EPA. Sonoran Science Academy-Phoenix K-12 School. Oct. 24, 2012. (Invited talk).
14. **Halden, R. U.**, K. McClellan and T. Kalinowski. *In Situ* Microcosm Array – A New Decision-Making and Design Tool for In Situ Remediation. Invited Interactive Webinar. Remedial Design (In-Situ) Network. Presented Online. September 19, 2012.
15. **Halden, R. U.** and N. Denslow. *In Situ* Sampling Tool for Assessing Bioavailability and Toxicity of Sediments. Invited Webinar Presented Online on May 7, 2012. <http://www.clu-in.org/conf/tio/srpfunding/>

16. **Halden, R. U.**, K. McClellan and T. Kalinowski. *In Situ* Microcosm Array – A New Decision-Making and Design Tool for In Situ Remediation. Invited EPA Clu-in Webinar. Presented Online. August 15, 2012. <http://www.clu-in.org/conf/tio/isma/>
17. **Halden, R. U.** Invited Member of 5-Expert Panel Discussion. *Feed 8 Billion*. Arizona State University, Tempe Campus, AZ, February 2, 2012.
18. **Halden, R. U.** Invited Talk. Polluting While Cleaning: *How Personal Care Products Affect Environmental Quality and Human Health*. Polytechnic Campus, Arizona State University, Mesa, AZ, January 10, 2012.
19. Benny F.G. Pycke, L. A. Geer, A. K. Venkatesan, K. E. Lee, L. B. Barber, A. Crabbé, N. Leys, P. Monsieurs, M. Mergeay, G. Vanermen, H. De Wever, W. Verstraete, and **R. U. Halden**. Invited Talk. Antimicrobial Exposure Assessment From The Cradle To The Grave. *International Conference of the Flemish Centre of Expertise for Environment and Health*. Brussels, Belgium, December 21-22, 2011.
20. **Halden, R. U.** Invited Talk (Webcast). Sustainable Chemistry: Public Health at the Crossroads. Biomedical Informatics Symposium Series, Department of Biomedical Informatics, ASU Mayo Campus, Scottsdale, AZ, November 17, 2011.
21. **Halden, R. U.** Invited Talk. Novel Approaches to Assessing the *In Situ* Treatability and Health Impacts of Toxic Mixtures. Pacific Northwest National Laboratory (PNNL), Richland, WA, November 14, 2011.
22. **Halden, R. U.**, K. McClellan, T. Kalinowski, T. A. Bruton, E. M. Hartmann, T. R. Miller, M. Ziv-El, A. Delgado, D. R. Colquhoun, T.-C. Chao, N. Hansmeier, R. P. Deo, J. Heidler, J. B. Herbstman, B. J. Apelberg, E. M. Wells, G. Neta, F. R. Witter, L. R. Goldman, and R. Krajmalnik-Brown. Novel Approaches to Understanding and Managing Complex Mixtures. Annual Conference of the NIEHS Superfund Program, Lexington, KY, October 23 – 26, 2011.
23. **Halden, R. U.** Invited Talk: Overuse of Antimicrobial Household Products: Environmental and Human Health Effects. American Public Health Association (APHA) Annual Meeting, Washington, DC, October 31, 2011.
24. **Halden, R. U.** Invited Panel Member: Beyond the Hospital: Antibiotic Resistance as a Problem of the Community Environment. American Public Health Association (APHA) Annual Meeting, Washington, DC, October 31, 2011.
25. **Halden, R. U.** Invited Talk: Biosolids: A Diagnostic Matrix Foretelling Exposures in the Anthroposphere. Institute for Food Toxicology and Analytical Chemistry, University of Veterinary Medicine, Hanover, Germany, August 29, 2011.
26. **Halden, R. U.** Invited Talk: Antimicrobial Agents and Sustainable Chemistry, *Science Cafe* Series, hosted by the Center for Nanotechnology in Society, Phoenix, AZ, May 20, 2011.
27. **Halden, R. U.** Invited Talk: Public Health Engineering: From Problem Recognition to Regulation. Presented to the IGERT Program at the University of Minnesota, Minneapolis, MN, May 5, 2011.
28. **Halden, R. U.** Invited Talk: In Situ Microcosm Array and In Situ Sampling Technologies for Technology Transfer. ASU Biodesign Institute, April 21, 2011.
29. **Halden, R. U.** Invited Talk: Sustainable Chemistry & Human Health in the 21st Century. U.S. EPA Emerging Chemicals Workgroup. Presented on April 6, 2011.
30. **Halden, R. U.** Invited Talk at Leroy E. Burney Lecturer Series: Sustainable Chemistry and Human Health in the 21st Century, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, March 7, 2011.
31. **Halden, R. U.** Invited Talk at the U.S. Congress: Environmental Health Risks of Triclosan. Capitol Hill Congressional Briefing Room, Washington, DC, February 17, 2011.
32. **Halden, R. U.** and T. Jones-Lepp. Invited Session Chairs: Contaminants of Emerging Concern in the Natural and Built Environment. 241st American Chemical Society National Meeting & Exposition, Anaheim, California, March 27-31, 2011.
33. **Halden, R. U.** Invited Talk: In Situ Microcosm Array Technology and the SUMMIT Center. Arizona Department of the Environment, Phoenix, AZ, January 31, 2011.

34. **Halden, R. U.** Invited Talk: Sustainable Chemistry and Human Health, *The Wiseguise Seminar Series*, Scottsdale, AZ, November 19, 2010.
35. **Halden, R. U.** Invited Chalk Talk. Sustainable Chemistry for the 21st Century and Beyond. Center for Biological Physics Seminar Series, Arizona State University, Tempe, AZ, October 26, 2010.
36. **Halden, R. U.** Invited Presentation. Antimicrobial Personal Care Products: Are They Good for Us? Science Salon. Spirit of the Senses Seminar Series. Biodesign Institute, Arizona State University, Tempe, AZ, September 30, 2010.
37. **Halden, R. U.** Invited Presentation. The SUMMIT Project. CHiR-Arizona HealthQuery Stakeholder Meeting, ASU Biomedical Campus, Phoenix, AZ, September 20, 2010.
38. **Halden, R. U.:** Invited Seminar. Examining the Sustainability of Persistent Antimicrobial Compounds. Department of Chemical and Environmental Engineering, University of Arizona, Tucson, AZ, April 20, 2010.
39. **Halden, R. U.:** Parallel *In Situ* Screening of Remediation Strategies for Improved Decision Making, Remedial Design, and Cost Savings. Department of Defense, ESTCP Program, Arlington, VA, February 10, 2010.
40. **Halden, R. U.:** Chemicals of Emerging Concern in the U.S. Environment. American Chemical Society Meeting, Las Vegas, November 10, 2009.
41. **Halden, R. U.:** Wastewater Treatment Plants as Chemical Observatories of Persistent and Problematic Contaminants in the Environment. 238th American Chemical Society (ACS) National Meeting, Washington, DC, August 16-20, 2009.
42. **Halden, R. U.** and J. Katz: Occurrence, Fate, and Impact of Triclosan and Other Antimicrobials to Wastewater Treatment Utilities. Microconstituents and Industrial Water Quality, Water Environment Federation (WEF), Baltimore, MD, July 26-29, 2009.
43. **Halden, R. U.:** Invited Panel Member. "Superfund Contaminants: The Next Generation." Invitation-only Special Symposium Tucson, AZ, August 12-14, 2009.
44. **Halden, R. U.:** Invited Speaker. "State of the Science – Antimicrobial Resistance." FDA Discussion: the Problem of Triclosan, Food and Drug Administration, Washington, D.C., July 13, 2009.
45. **Halden, R. U.:** Invited Speaker. "State of the Science – Environmental Fate & Persistence." FDA Discussion: the Problem of Triclosan, Food and Drug Administration, Washington, D.C., July 13, 2009.
46. **Halden, R. U.:** Toward Sustainable Chemistry and Engineering. Invited Seminar presented at the 1st Biological Design Graduate Program Symposium, Tempe, May 6, 2009.
47. Hartmann, E. and **R. U. Halden.** Invited presentation: "Challenges of Detecting Bioterrorism Agents in Complex Matrices." NATO ARW Workshop on "Detection of Biological Agents and Toxins for the Prevention of Bioterrorism in Homeland Security by Advanced Mass Spectrometric Methods," Spezzano Albanese Terme, Italy, June 26-July 2, 2009.
48. **Halden, R. U.:** Invited Speaker. High-throughput Diagnostic Screening and Proteomics in Bioremediation - Opportunities & Challenges. The 19th Annual AEHS Meeting and West Coast Conference on Soils, Sediments, and Water. San Diego, CA, March 10, 2009.
49. **Halden, R. U.:** Invited Speaker. What's in Our Water? National Research Council 6th Workshop of the Standing Committee on Risk Analysis Issues and Reviews. Characterizing the Potential Human Toxicity from Low Doses of Pharmaceuticals in Drinking Water: Are New Risk Assessment Methods or Approaches Required? The National Academies, Washington, D.C., December 11-12, 2008.
50. **Halden, R. U.** and B. Anderson: SBRP Technology Transfer: Statistics & Case Study. Annual Conference of the Superfund Basic Research Program (SBRP) of the National Institute of Environmental Health Sciences. Member of Steering Committee and Invited Speaker of Technology Transfer Session, Pacific Grove, CA, December 7-9, 2008.

51. **Halden, R. U.:** Pharmaceuticals and Personal Care Products in U.S. Water Resources. Invited Keynote at the 2008 Fall Meeting of the Interstate Technology & Regulatory Council (ITRC). Phoenix, AZ, October 21, 2008.
52. **Halden, R. U.:** Invited Panel Member. Antibiotic Resistance: New Approaches to an Old Problem. The American Academy of Microbiology. Invitation-Only International Symposium, Annecy, France, October 12-14, 2008.
53. **Halden, R. U.:** Invited Speaker and Session Chair. Environmental Fate of Antimicrobials: 50 years in 15 minutes. Pacific Southwest Organic Residuals Symposium 2008. Sacramento, October 1-2, 2008.
54. **Halden, R. U.:** Parallel *In Situ* Screening of Remediation Strategies for Improved Decision Making, Remedial Design, and Cost Savings. Department of Defense, ESTCP Program, Arlington, VA, September 16, 2008.
55. **Halden, R. U.:** Occurrence of and Exposure Routes to Triclosan and Triclocarban in the U.S. Environment. State University of New York, Downstate Medical Center, Department of Preventive Medicine and Community Health Seminar, August 28, 2008.
56. **Halden, R. U.:** Work Plan for Field Deployment of the *In Situ* Microcosm Array Technology, Lawrence Livermore National Laboratory, Livermore, CA, July 11, 2008.
57. **Halden, R. U.:** Exposure Sources of Triclosan and Triclocarban in the Environment. Invited Talk at the Food and Drug Administration, Washington, DC, February 27, 2008.
58. **Halden, R. U.:** Field Deployment of the *In Situ* Microcosm Array Technology, Lawrence Livermore National Laboratory, Livermore, CA, February 25, 2008.
59. **Halden, R. U.:** Innovative Technologies. Session Moderator and Planning Committee Member, 20th Anniversary Meeting of the Superfund Basic Research Program, Durham, NC, December 3, 2007.
60. **Halden, R. U.:** Findings from the Johns Hopkins Nationwide Study on the Fate of Pharmaceuticals and Personal Care Products in the Environment. U.S. EPA, Office of Science and Technology, November 28, 2007.
61. **Halden, R. U.:** Forensic Tools for Environmental Assessment and Remediation. University of Delaware, Newark, DE, Department of Civil and Environmental Engineering, October 19, 2007.
62. **Halden, R. U.:** Keynote Speaker. Emerging Knowledge on Emerging Contaminants. New England Interstate Water Pollution Control Commission's (NEIWPCC) 2007 Northeast Water Science Forum – Pharmaceuticals and Personal Care Products: State of the Science Conference, Portland, ME, August 8–9, 2007.
63. **Halden, R. U.:** Guest Speaker. Risks and Benefits of Using Persistent Antimicrobials in Public Health Practice. Public Health Practice Grand Rounds, Live Webcast, MidAtlantic Public Health Training Center (MAPHTC), Baltimore, MD, June 20, 2007.
64. **Halden, R. U.** and K. J. Schwab: Guest Speaker. Environmental Issues Related to Industrial Food Animal Production. National Commission on Industrial Farm Animal Production. Denver, CO, June 5, 2007.
65. **Halden, R. U.:** Keynote Speaker. Antimicrobial Pesticides as Environmental Pollutants. Beyond Pesticides 25th National Pesticide Forum: “*New Opportunities for Protecting Health and the Environment*,” Chicago, IL, June 2, 2007.
66. **Halden, R. U.:** Guest Speaker. Antimicrobial Pesticides in Aquatic Environments – Implications for the Great Lakes. Beyond Pesticides 25th National Pesticide Forum: “*New Opportunities for Protecting Health and the Environment*,” Chicago, IL, June 3, 2007.
67. **Halden, R. U.:** Guest Speaker. Rachel Carson Open House and Centennial Celebration: “U.S. Environmental Quality 45 Years after the Publication of *Silent Spring*,” Silver Spring, MD, May 19, 2007.
68. **Halden, R. U.:** Guest Speaker. USGS Symposium: Rachel Carson Centennial Celebration: “Considering the Microbial Loop in Wildlife Conservation,” USGS Patuxent Wildlife Research Center, Laurel, MD, May 18, 2007.

69. **Halden, R. U.:** Guest Speaker & Session Moderator. Antimicrobial Agents in the Chesapeake Bay Watershed. Pesticides in Chesapeake Waterways: Working Group Meeting, Reisterstown, MD, May 14, 2007.
70. **Halden, R. U.:** Guest Speaker. Emerging Contaminants in U.S. Surface Waters: Challenges and Potential Solutions. Potomac River Basin Drinking Water Source Protection Partnership's Mini-Workshop. Rockville, MD, May 7, 2007.
71. **Halden, R. U.:** Moderator of Film Screening and Invited Discussant. Lifecycle Analysis of Polyvinyl Chloride Products. Chesapeake Sustainable Business Alliance, Visionary Arts Museum, Baltimore, MD, March 19, 2007.
72. **Halden, R. U.:** Keynote Speaker. Antimicrobial Agents in the Environment and Human Exposure Assessment. Chesapeake Potomac Chapter of SETAC Winter Meeting, Washington, DC, February 22, 2007.
73. **Halden, R. U.:** Panel Chair and Keynote Speaker. Reducing Our Ecological Footprint. 10th Anniversary of the Johns Hopkins Center for a Livable Future – Charting A Course To Sustainability Through Research, Education And Service, Baltimore, MD, December 6, 2006.
74. **Halden, R. U.:** Overused Household Biocides Cause Nationwide Pollution. 10th Anniversary of the Johns Hopkins Center for a Livable Future – Charting A Course To Sustainability Through Research, Education And Service, Baltimore, MD, December 6, 2006.
75. **Halden, R. U.:** Persistent Antimicrobials as Emerging Endocrine Disrupting Chemicals in U.S. Water Resources, Biosolids and Sediments. Endocrine Disruptors – What We Know & What We Don't Know. Research Symposium of the Mid-Atlantic Regional Water Program, A Partnership of USDA CSREES & Land Grant Colleges and Universities, Frederick, MD, November 16, 2006.
76. **Halden, R. U.:** Environmental Routes of Human Exposure to Persistent Antimicrobial Compounds – A Human Exposure Assessment. Municipal Institute of Medical Research, Barcelona, Spain, November 3, 2006.
77. **Halden, R. U.:** Environmental Toxins. 44th Annual New Horizons in Science Briefing, sponsored by the Council for the Advancement of Science Writing, hosted by The Johns Hopkins University, Baltimore, MD, October 30, 2006. <http://www.jhu.edu/newhorizons/>
78. **Halden, R. U.:** Persistent Antimicrobial Compounds in the Environment – A Human Health Concern? Christine Mirzayan Science and Technology Policy Graduate Fellowship Program at the National Academies—National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research, Washington, DC, October 25, 2006.
79. **Halden, R. U.:** Contemporary Technologies for Combating Emerging Contaminants. Biodesign Institute, Center for Environmental Biotechnology. Tempe, AZ, October 12, 2006.
80. **Halden, R. U.:** In Situ Microcosm Array (ISMA) Technology for Environmental Monitoring and Toxicity Testing. U.S. Army Invitation-Only Symposium, Massachusetts Institute of Technology. Boston, MA, September 15, 2006.
81. **Halden, R. U.:** Novel Approaches in Environmental Biotechnology. Arizona State University. Tempe, AZ, August 16, 2006.
82. **Halden, R. U.:** Use of Proteomics and In Situ Microcosm Arrays in Environmental Biotechnology. BIO 2006. Annual International Convention. Environmental Biotechnology Session. Chicago, IL, April 9-12, 2006.
83. **Halden, R. U.:** Study on Consumer Products and Pharmaceuticals in the Environment. The Mid-Atlantic States Section of the Air & Waste Management Association (MASS-A&WMA), New Brunswick, NJ, April 6, 2006.
84. **Halden, R. U.:** Environmental Fate of Persistent Antiseptic Compounds. Southern Nevada Water Authority. Las Vegas, NV, February 9, 2006.
85. **Halden, R. U.:** A Novel Tool in Environmental Restoration: Proteomics-enabled In Situ Microcosm Array. Lawrence Livermore National Laboratory, CA, February 6, 2006.
86. **Halden, R. U.:** Fate of Persistent Antimicrobials in the Environment: From Germ Killers to Culinary Curiosities. Colorado School of Mines, Golden, CO, December 14, 2005.

87. **Halden, R. U.:** Environmental Exposure to Persistent Antimicrobial Compounds – A Human Health Concern? Municipal Institute of Medical Research, Barcelona, Spain, November 18, 2005.
88. **Halden, R. U.:** Through a Glass Safely: How Healthy is Our Drinking Water? A Woman’s Journey—Johns Hopkins Premier Woman’s Health Conference, Baltimore, MD, November 12, 2005.
89. **Halden, R. U.:** Sources, Occurrences, and Fate of Pharmaceuticals and Personal Care Products in the Environment. Public Health Risk Assessment Workshop. Harvard School of Public Health, Boston, MA, November 10, 2005.
90. **Halden, R. U.:** Screening of Groundwater Remediation Technologies Using In Situ Microcosm Arrays. Presenter and Chair of Groundwater Remediation Session. International Conference on Safe Water: Exploring Global Demands and Impact of Natural Disasters, San Diego, CA, October 21, 2005.
91. **Halden, R. U.:** Secondary Routes of Exposure to Biocides. Food And Drug Administration, Center For Drug Evaluation And Research (CDER) Nonprescription Drugs Advisory Committee. “Benefits and Hazards of Antiseptic Products Marketed for Consumer Use.” Silver Spring, MD, October 20, 2005.
92. **Halden, R. U.:** Use of Proteomics in Bioremediation. The 21st Annual International Conference on Soils, Sediments, and Water. University of Massachusetts, Amherst, MA, October 18, 2005.
93. **Halden, R. U.:** Measuring Antibacterial Agents in Biosolids and Predicting Their Environmental Fate. Mid-Atlantic Biosolids Association Research Symposium, Washington, DC, September 28, 2005.
94. **Halden, R. U.:** Proteomics in Bioremediation: Opportunities and Challenges. University of Maryland, Department of Chemistry and Biochemistry. College Park, MD, September 9, 2005.
95. **Halden, R. U.:** Potential Application of Proteomics. DoD SERDP/ESTCP Molecular Biological Tools Workshop, Charlottesville, VA, August 9, 2005.
96. **Halden, R. U.:** Fate of Personal Care Products During Wastewater Treatment. 35th Annual Joint Conference and Exhibition. The Chesapeake Water Environment Association and the Waters and Waste Operators Association of Maryland, Delaware and the District of Columbia, Ocean City, MD, July 8, 2005.
97. **Halden, R. U.:** Use of Proteomic Mass Spectrometry and Bioinformatics for the Identification of Environmental Microorganisms. U.S. Department of Agriculture, Beltsville, MD, June 27, 2005.
98. **Halden, R. U.:** ISMA – A Platform Technology with Biomedical Applications. Johns Hopkins University, School of Medicine. Alliance for Science and Technology. Spring 2005 Meeting. April 12, 2005.
99. **Halden, R. U.:** Fate of Polychlorinated Antimicrobial Compounds in the U.S. Environment. U.S. Headquarters of the Soap and Detergent Association (SDA), Washington, D.C., March 29, 2005.
100. **Halden, R. U.:** Polychlorinated Antimicrobials as Indicators of Sewage Spills. Presented at the American Chemical Society Meeting, Maryland Chapter, Baltimore, MD, February 23, 2005.
101. **Halden, R. U.:** Triclocarban: A New Contaminant in Baltimore Streams. Maryland State Water Quality Advisory Committee (SWQAC), Baltimore, MD, December 3, 2004.
102. **Halden, R. U.:** Pharmaceuticals and Personal Care Products as Indicators of Sewage Spills. Presenter and Panelist at the Maryland Water Monitoring Council 10th Annual Conference, Linthicum, MD, November 18, (2004).
<http://mddnr.chesapeakebay.net/MWMC/pub/MWMC10conf.pdf>.
103. **Halden, R. U.:** Antimicrobials Signal High Levels of Pathogens in Baltimore Streams. Herring Run Watershed Association Annual Meeting, Baltimore, MD, November 16, 2004.
104. **Halden, R. U.:** Invited Discussant for Seminar by Dr. Leigh English, Director of the Monsanto Protein Science Team, titled: Genetically Modified Crops: A Jelly Donut of Social Issues Surrounded by Technical Explanations. Institute for Global Studies in Culture, Power and History; Fall Seminar Series: Feeding the World: Ethical, Moral, Legal and Scientific Dimensions, Baltimore, MD, November 11, 2004.

105. **Halden, R. U.:** JHU Center for Water and Health On-going Research. Chesapeake Bay Foundation Research Retreat, Port Isobel, VA, October 3, 2004.
106. **Halden, R. U.:** The Johns Hopkins University Center for Water and Health Nationwide Study on the Fate of Pharmaceuticals and Personal Care Products in the Environment – Preliminary Results for the State of Maryland. Johns Hopkins University, Baltimore, MD, September 21, 2004.
107. **Halden, R. U.:** Pharmaceuticals and Personal Care Products in the Environment. Chesapeake Biological Laboratory, University of Maryland, Solomon, MD, September 9, 2004.
108. **Halden, R. U.:** Leaky Pipes and Cross-Contamination – Is Baltimore’s Aging Sewer System a Threat to Public Health? Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, August 13, 2004.
109. **Halden, R. U.:** Chemical Analysis and Treatment of Perchlorate. Aberdeen Proving Ground, MD, July 23, 2002.
110. **Halden, R. U.:** Aberdeen Proving Grounds Environmental Research. National Defense Industrial Association TACOM – ARDEC Technical Symposium, Rockaway, NJ, April 10, 2002.
111. **Halden, R. U.:** Pharmaceuticals in U.S. Streams – A Public Health Concern? Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, March 27, 2002.
112. **Halden, R. U.:** Microcontaminants in Food and Water. Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, March 12, 2002.
113. **Halden, R. U.:** Toxins as Modifiers of Human Vulnerability to Disease. University of Pennsylvania, 2002 Health-Environment Symposium, Hershey, PA, March 7, 2002.
114. **Halden, R. U.:** Bioremediation: From Pure Culture to the Dirty Reality. Johns Hopkins University, Department of Geography and Environmental Engineering, Baltimore, MD, October 23, 2001.
115. **Halden, R. U.:** From Cloning to Cleaning: Bioremediation in the Real World. University of Maryland Biotechnology Institute – Center of Marine Biotechnology, Baltimore, MD, September 26, 2001.
116. **Halden, R. U.:** Detection and Bioremediation of Fuel Oxygenates, Perchlorate and Trichloroethene. University of Minnesota, School of Public Health, Minneapolis, MN, August 21, 2001.
117. **Halden, R. U.:** Detection and Destruction of Anthropogenic Toxins in Drinking Water Resources. University of California at Berkeley, Center for Environmental Biotechnology Video-taped Lecture Series, Berkeley, CA, March 6, 2001.
118. **Halden, R. U.:** Detection and Destruction of Anthropogenic Toxins in Drinking Water Resources. Johns Hopkins University, Department of Environmental Health Sciences, October 15, 2000.
119. **Halden, R. U.:** Analytical Methods for the Detection of Oxygenates in Ground Water. United States Environmental Protection Agency, MTBE Scientist-to-Scientist Meeting, Argonne National Laboratory, Argonne, IL, June 20, 2000.
120. **Halden, R. U.:** ASTD Deployment of Bioremediation and Natural Attenuation at the Building 834 Complex at Site 300. Lawrence Livermore National Laboratory, Subcon Focus Area Meeting, Livermore, CA, October 9, 2000.
121. **Halden, R. U.:** The Building 834 Study Area at Site 300, CA. Idaho National Engineering and Environmental Laboratory, Idaho Falls, ID, September 9, 1999.
122. **Halden, R. U.:** Where Did that TCE End Up? – Refining the Conceptual Model for Contaminant Fate at LLNL’s Site 300, Building 834. Oregon State University, Department of Civil Engineering, Corvallis, OR, February 5, 1999.
123. **Halden, R. U.:** Engineered In Situ Biodegradation of Dioxins – Do Laboratory Bacteria Function in the Real World? University of Florida at Gainesville, Department of Environmental Engineering Sciences, Gainesville, FL, March 4, 1997.
124. **Halden, R. U.:** Engineered In Situ Biodegradation of Dioxins. Lawrence Livermore National Laboratory, Environmental Protection Department, Livermore, CA, January 16, 1997.

SPONSORED RESEARCH

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| Halden (0% Effort) In Situ Delivery of Remediation Agents Chevron. Role: PI. (60% Recognition) | 04/15/2014 – 01/15/2014 \$38,725 |
| Halden (5% Effort) Thermal <i>In Situ</i> Remediation of Weathered Heavy Hydrocarbons Chevron. Role: PI. (100% Recognition) | 01/1/2014 – 12/31/2014 \$75,000 |
| Halden (10% Effort) NIEHS-R01 1R01ES020889 In Situ Sampling Tool for Assessing Bioavailability and Toxicity of Sediments This Project Explores the Bioavailability of Traditional and Emerging Contaminants Role: PI. (100% Recognition) | 09/20/2011 – 07/31/2014 \$830,943 |
| DoD ESTCP Project 201122 Halden (16.6% Effort) Cost-effective, Ultra-sensitive Groundwater Monitoring for Site Remediation and Management Role: Sole PI. (100% Recognition) | 03/01/2011 – 2/28/2014 \$1,151,152 |
| Halden (0% Effort) Arizona Technology Enterprises (AzTE) The ASU Catalyst Fund Role: PI. (100% Recognition) | 06/1/2013 – 05/30/2014 \$25,000 |
| Halden (0% Effort) NIEHS-R01 Supplement 3R01ES020889-03S1 <i>In Situ</i> Sampling / Bioavailability Assessment (IS2B) Tool Addressing Remediation Market Needs This Project Supports the Development for Commercial Application of a Small Sampling Device Role: PI. (100% Recognition) | 08/1/2013 – 07/31/2014 \$42,597 |
| Salt River Project (SRP) Halden (8.3% Effort) In Situ Bioremediation – An Innovative Approach for Elevated Chlorinated Volatile Organic Compounds in Groundwater Role: Sole PI. (100% Recognition) | 01/01/2013 – 06/30/2014 \$60,000 |
| Halden (10% Effort) Piper Charitable Trust Center for Environmental Security/AZ Public Health Observatory Role: PI. (100% Recognition) | 06/1/2012 – 05/30/2015 \$450,000 |
| Halden (0% Effort) AZ Board of Regents Planning, Development and Implementation of a State-wide Research Initiative in Environmental Informatics: “Arizona Environmental Grid Infrastructure Service (AEGIS)” Role: ASU-PI. (PD: Petuskey) | 5/24/2013 – 11/23/2014 \$40,000 subcontract of \$450K Total |
| Halden (0% Effort) TRIF Biodesign Mass Spectrometry Recharge Facility Trial Run Role: PI. (0% Recognition) | 01/1/2013 – 12/30/2013 \$60,000 |

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| Halden (0% Effort) NASA 2012-T72247 Analysis of Hormones, Steroids, Pharmaceuticals, and Personal Care Products in Water, Wastewater and Preserved Urine Samples Role: PI. (100% Recognition) | 03/1/2012 – 02/28/2013 \$15,000 |
| WRF Water Research Foundation (PI: Westerhoff, Co-PI: Halden, 8.3% Effort) Constructed Wetlands for Treatment of Organic and Nanomaterial Pollutants. The major goal of this project is to develop design criteria for constructed wetlands for removal of emerging contaminants. Role: Co-PI (30% Recognition or \$100,200) | 9/30/2010 – 8/31/2012 \$334,000 (\$84,000 match. funds) |
| NIH-NIEHS-RC2 1RC2ES018801-01 (PI: Westerhoff; Co-PI: Halden, Herckes, Hristovski) Detection of Engineered Nanomaterials in Drinking Water, Food, Commercial Products and Biological Samples. The major goal of this project is to develop and validate analytical methods for the determination of nanomaterials in environmental and biological samples. Role: Co-PI (28% Recognition or \$355,144; 8.3% Effort) | 9/30/2009 – 7/31/2011 \$1,268,370 |
| Halden (0% Effort; PI: B. Bakkaloglu) ASU Grand Challenges Seed Funding Research Center for Integrated Sub-mm Environmental & Molecular Sensors (iSEMS) Role: Co-PI. (15% Recognition) | 01/01/2011 – 12/31/2011 \$100,000 |
| Halden (16.6% Effort) DoD ESTCP ER-200914 Parallel In Situ Screening of Remediation Strategies for Improved Decision Making, Remedial Design, and Cost Savings. Role: Sole PI. (100% Recognition) | 03/01/2009 – 12/31/2013 \$1,060,125 |
| Halden (16.6% Effort) Biocides in the U.S. Environment. Role: Sole PI. (100% Recognition) | 02/01/2008 – 12/31/2011 \$373,031 |
| Halden (0% Effort) Anonymous Gift, JHU Hopkins Graduate Student Initiative Role: Sole PI. (100% Recognition) | 02/01/2008 – 12/31/2011 \$131,468 |
| Halden (0% Effort) NIEHS-R01 3R01ES015445-04W1 Cooperative Supplement to: Novel Approaches to Studying the In Situ Bioremediation Potential of Complex Mixtures Detection of Triclocarban in Human Specimens. Role: Sole PI at ASU. (100% Recognition) | 08/12/2009 – 07/31/2012 \$228,164 |
| Halden (0% Effort) NIEHS-R01 3R01ES015445-04S-TT Technology Transfer Supplement to: Novel Approaches to Studying the In Situ Bioremediation Potential of Complex Mixtures Development of a Nutrient Injection Unit for the In Situ Microcosm Array. | 08/12/2009 – 07/21/2012 |

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| Role: Sole PI. (100% Recognition) | \$152,843 |
| Halden (0% Effort) NIEHS-R01 1R01ES015445S Supplement to: Novel Approaches to Studying the In Situ Bioremediation Potential of Complex Mixtures Evaluation of In Situ Microcosms Arrays for the Study of Chemical Mixtures in Contaminated Environments. | 09/28/2009 – 09/27/2012 |
| Role: Sole PI. (100% Recognition) | \$109,375 |
| Halden (16.6% Effort) NIEHS-R01 1R01ES015445 Novel Approaches to Studying the In Situ Bioremediation Potential of Complex Mixtures Evaluation of In Situ Microcosms Arrays for the Study of Chemical Mixtures in Contaminated Environments. | 09/28/2006 – 07/31/2012 |
| Role: Sole PI. (100% Recognition) | \$624,261 |
| Halden (8.3% Effort) Central Arizona Project (PI: Westerhoff, Co-PI: Halden and Herckes) Enhancement Project by Central Arizona Project (CAP): Regional Water Quality Monitoring and Evaluation for the Metropolitan-Phoenix Area Water Supply. | 01/01/2008 – 04/30/2009 |
| Role: Co-PI. (25% Recognition or \$7,500) | \$30,000 |
| Halden (0% Effort) City of Phoenix Planning Dept. (PI: Westerhoff, Co-PI: Halden and Herckes) Regional Water Quality Monitoring and Evaluation for the Metropolitan-Phoenix Area Water Supply. | 07/01/2007 – 06/30/2010 |
| Role: Co-PI. (0% Recognition) | \$155,250 |
| Salt River Project (SRP) Halden (8.3% Effort) In Situ Bioremediation – An Innovative Approach for Elevated Chlorinated Volatile Organic Compounds in Groundwater | 06/01/2011 – 5/30/2012 |
| Role: Sole PI. (100% Recognition) | \$75,000 |
| Halden (0% Effort) DOE BER Genome Sequencing Program Genome Sequencing of the Dioxin-Mineralizing Bacterium <i>Sphingomonas wittichii</i> RW1 Sequencing and Annotation of the Genome of a Dioxin-Metabolizing Bacterium. | 01/01/2007 – 12/31/2009 |
| Role: Sole PI. (100% Recognition) | Free Genome Sequencing ~\$100,000 |
| Halden (PI: Ketner) JHSPH-Faculty Research Initiative Proteomic Approach to Understanding Viral Infection and Pathogenesis Elucidation of viral infection mechanisms and identification of intervention strategies. | 03/01/2007 – 2/28/2009 |
| Role: Co-PI. (50% Recognition or \$17,500) | \$35,000 |
| Halden (PI: Schwab; Co-PI: Halden, Graczyk) R83300201 U.S. EPA Science to Achieve Results (STAR) Program Quantitative Assessment of Pathogens in Drinking Water Development and Evaluation of Novel Methods for the Detection of Emerging Waterborne Pathogens. | 04/01/2006 – 12/31/2008 |
| Role: Co-PI. (30% Recognition or \$180,000) | \$600,000 |
| Halden (PI: Lawrence; Co-PI: Silbergeld, Schwab, Halden) | 10/01/2005 - 12/31/2007 |

The Pew Charitable Trusts
National Commission on Industrial Farm Animal Production
A Collaboration Was Formed Between The Pew Charitable Trusts and the Johns Hopkins Bloomberg School of Public Health to Investigate and Summarize in a Report, Issues of Environmental Quality, Public Health, and Ethics Linked to Concentrated Animal Feeding Operations (CAFOs) in the United States.
Role: Co-I. (20% Recognition or \$84,600) \$423,000 (JHU of \$2.4M total)

Halden 10/01/2005 – 09/30/2006
State of Maryland TEDCO
Supporting Funds for International Patent Rights to a Hopkins' Technology (International Patent Application PCT WO 2004/081530).
Role: Sole PI. (100% Recognition) \$10,000

Halden (PI: Goldman) 10/01/2005 – 09/30/2006
JHU-Center for a Livable Future Pilot Project
Exposures to Persistent Contaminants in Food and Fetal Growth and Development.
Determination of Potential Linkages Between Fetal Exposure to Polybrominated Flame Retardants / Perfluorinated Organic Compounds and Adverse Health Outcomes.
Role: Co-I. (10% Recognition) \$20,000

Halden 01/01/2005 – 06/30/2007
JHSPH-Faculty Research Initiative
Carcinogens in Biosolids as Determinants of Human Morbidity and Mortality
Creation of a Nationwide Repository and Database for Application of Municipal Sludge (Biosolids) in Agriculture.
Role: PI. (100% Recognition) \$50,000

Halden 01/1/2006 – 07/30/2006
JHU-NIOSH ERC Pilot Project
Application of Proteomics for the Development of Biomarkers of Occupational Exposure
Proteomic Analysis of Baltimore Cord Blood Serum Samples for the Discovery of Protein Biomarkers of Exposure to Toxic Occupational Contaminants.
Role: Sole PI and Advisor. (100% Recognition) \$14,995

Halden 9/1/2004 – 8/31/2005
JHU-Center for a Livable Future Pilot Project
Municipal Sludge Disposal and Sustainable Agriculture – A Pilot Study Showcasing the Challenge of Combining the Two
Explore the Fate of Persistent Antimicrobial Compounds in Municipal Sludge and Their Potential Uptake into Agricultural Plants as a Pathway for Human Exposure to Carcinogens. Role: Sole PI. (100% Recognition) \$20,000

Halden 06/01/2004 – 05/30/2005
CRF—Maryland Cigarette Restitution Fund
(Matching Funds by the CDC; PI: Needham)
Human Fetal Exposure to Drinking Water Carcinogens in Maryland
Creation and Analysis of a Cord Blood/Cord Tissue Repository and Determination of Fetal Exposure Levels to Carcinogens in Maryland Drinking Water Resources and Water Supply. Role: Sole PI. (100% Recognition) \$150,000

Halden 06/01/2004 – 05/30/2005

CDC—Centers for Disease Control and Prevention
(Matching Funds for CRF Study; PI: Needham)
Human Fetal Exposure to Drinking Water Carcinogens in Maryland
Creation and Analysis of a Cord Blood/Cord Tissue Repository and Determination of Fetal Exposure
Levels to Carcinogens in Maryland Drinking Water Resources and Water Supply. Role: Sole PI of
Parent Grant. (10% Recognition) \$250,000

Halden (PI: Buckley; Co-PI: Halden) 11/1/2004 – 10/30/2005
CRF—Maryland Cigarette Restitution Fund
Statistical Analysis of Drinking Water Quality vis-à-vis Cancer Morbidity and Mortality
Geospatial Analysis to Identify Potential Links Between Drinking Water Quality and Cancer
Morbidity and Mortality in the State of Maryland.
Role: Co-PI. (50% Recognition or \$10,000) \$20,000

Halden 11/1/2003 – 10/31/2004
JHSPH—Technology Transfer Seed Grant
Production and Testing of an In Situ Microcosm Array Prototype
Design, Construction and Initial Testing of an Innovative Environmental Monitoring Device.
Role: Sole PI. (100% Recognition) \$25,000

Halden 9/1/2003 – 8/31/2004
JHU-Center for a Livable Future Pilot Project
Mass Spectrometric Determination of Microbial Pathogens in Waste Streams of
Explore the Use of Mass Spectrometry for Detecting the Bacteriophage MS2 as an Indicator of
Microbial Pathogens Originating from Concentrated Animal Feeding Operations.
Role: Sole PI, Advisor. (100% Recognition) \$20,000

Halden 10/1/2003 – 9/30/2004
JHU-Center for a Livable Future Pilot Project
Effect of Lifestyle on Mother/Infant Exposure to Ubiquitous Pollutants
Determine Whether Exposure to Polyfluorinated Environmental Contaminants is Associated with
Lifestyle Choices. (100% Recognition)
Role: Sole PI. \$20,000

Halden 10/1/2003 – 8/31/2005
JHU-CLF Pre-doctoral Fellowship/Mentor Award
Proteomic Approach to Monitoring Microbes in Waste Streams from Animal Production Facilities
Explore the Use of Mass Spectrometry for Detecting Viruses and Bacterial Pathogens in Samples
from Concentrated Animal Feeding Operations Using MALDI-TOF MS, Nanospray ESI-MS/MS,
and AP-MALDI and ESI-IT-MS Techniques.
Role: Sole PI and Advisor. (100% Recognition) \$99,000

Halden 7/1/2003 – 12/31/2003
JHU-CLF Donor's Gift (No Title)
Environmental Fate of Persistent Personal Care Products.
Role: Sole PI. (100% Recognition) \$3,000

Halden 3/1/2003 – 2/28/2004
JHSPH—Technology Transfer Seed Grant
Down-Well Diagnostic Device for Environmental Monitoring and Bioprospecting
Conceptually Develop and Refine Plans for a Novel Environmental Monitoring Device Amenable to
Automated, High-throughput Analysis Using Genomic and Proteomic Analyses.
Role: Sole PI. (100% Recognition) \$25,000

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| Halden | 10/1/2003 – 9/30/2004 |
| JHU-NIOSH Education and Research Center Grant | |
| LC-MS Analysis of a Urinary Biomarker of Occupational Exposure to PAHs | |
| Detection of a Urinary PAH Biomarker in Human Specimens Targeting the Underivatized Conjugate. | |
| Role: Sole PI. (100% Recognition) | \$9,000 |
| Halden | 06/01/2004 – 05/30/2005 |
| Donor's Gift (No Title) | |
| In Support of Technology Transfer Activities Directed Toward a Down-Well Diagnostic Device for Environmental Monitoring and Bioprospecting (International Patent Application PCT WO 2004/081530). | |
| Role: Sole PI. (100% Recognition) | \$20,000 |
| Halden | 10/1/2002 – 6/30/2003 |
| JHU-Center for a Livable Future Pilot Project | |
| Bioaccumulation of Methyl Triclosan in Agriculturally Applied Sewage Sludge and in Breast Milk | |
| Trace Analysis of Biocides in Municipal Sludge and Human Milk. | |
| Role: Sole PI. (100% Recognition) | \$17,500 |
| Halden | 6/1/2002 – 5/30/2003 |
| JHU-NIEHS Center Pilot Project; P30ES03819 | |
| Development of an Exposure Assessment Tool for the Biocide Triclosan | |
| Development an LC-MS Technique Suitable for Trace Analysis of the Biocides. | |
| Role: Sole PI. (100% Recognition) | \$15,000 |
| Halden | 7/1/2002 – 9/30/2002 |
| JHU-Center for a Livable Future Internship/Mentoring Award | |
| Sponsored Research Internship in Environmental Health Sciences | |
| Provide Laboratory Study Opportunities for an Undergraduate Student. | |
| Role: Sole PI; Student Advisor. (100% Recognition) | \$4,000 |
| Halden | 5/1/2002 – 6/30/2003 |
| JHSPH—Faculty Innovation Award | |
| Environmental Sources, Occurrence and Biodegradation of the Biocide Triclosan | |
| Pilot Study Designed to Explore the Extent of Environmental Contamination with the Biocide Triclosan. | |
| Role: Sole PI. (100% Recognition) | \$30,000 |
| Halden | 2/12/2002 – 12/31/2002 |
| Bechtel BWXT Idaho, LLC, Research Contract | |
| Determination of the Microbial Community Structure at a Trichloroethene-Contaminated Area at Site 300, CA, in Support of a Proposed In Situ Bioremediation Deployment | |
| Use Non-culture-dependent Techniques to Determine the Impact of Chloroethenes on the Microbial Community of a Polluted Aquifer. | |
| Role: Sole PI (100% Recognition) | \$57,500 |
| Halden | 7/1/2001 – 6/30/2002 |
| Shimadzu Corp. Instrumentation Grant (No Title) | |
| Improve Laboratory Instrumentation Infrastructure for Trace Analysis of Environmental Toxicants. | |
| Role: Sole PI. (100% Recognition) | \$56,000 |
| Halden (PI: Naples; Co-PI: Shiff, Halden) | 11/1/2003 – 10/31/2004 |

JHSPH—Technology Transfer Seed Grant
 A Product for the Detection and Focal Control of Schistosome Cercariae to Reduce Disease Burden
 and Cercariae Dermatitis, Both in Endemic Areas, and in U.S. Lacustrine Habitats
 Explore the Use of Natural Essential Oils for the Control of Cercariae in Surface Waters. Role: Co-PI.
 (25% Recognition or \$6,250) \$25,000

Halden (PI: Lowe; Co-PI: Halden) 2/12/2002 – 12/31/2002
 DOE—NABIR Research Grant (DE-FG02-01ER63264)
 Development of a Multiplexed, Bead-based Assessment Tool for Rapid Identification and
 Development of Novel Diagnostic Tool for Microbial Community Analysis at Contaminated
 Subsurface Sites.
 Role: Co-PI. (30% Recognition or \$19,444) \$64,812

Halden (Project Director: Rice) 10/1/2000 – 9/30/2001
 LLNL Work-In-the-Public-Interest Grant
 Dioxins in San Francisco Bay
 Determine Potential Avenues for Reducing Environmental Contamination with Dioxin-like
 Compounds.
 Role: PI (20% Recognition or \$26,000) \$130,000

Halden (PI: Happel) 10/1/2000 – 9/30/2001
 DOE—Fossil Fuel Research Project
 Detection and Biodegradation of MTBE from Leaking Underground Storage Tanks
 Determine the Bioremediation Potential of LUFT Sites.
 Role: Co-PI. (10% Recognition or \$5,000) \$50,000

TEACHING

Graduate Students Supervised

Ph.D. Students

1. Sung-Roul Kim (Ph.D.) Environmental Health Sciences, Johns Hopkins. “Assessment of Urban Air Pollution Exposure Among New Mothers and Nursing Infants and Internal Dose Measured in Breast Milk” (2006). (Committee member)
2. Tanya Oxenberg (Ph.D.) Environmental Engineering, Hopkins. “Subsurface Transformation of Depleted Uranium at Aberdeen Proving Ground, Maryland” (2006). (Co-Advisor)
3. David R. Colquhoun (Ph.D.) Environmental Health Sciences, Johns Hopkins. “Public Health Applications of Quantitative Protein Biomarkers” (2007). (Chairman)
4. Jochen Heidler (Ph.D.) Environmental Health Sciences, Johns Hopkins. (Chairman) “Environmental Fate of Persistent Biocides and Human Exposure” (2007).
5. Talia E. A. Chalew (Ph.D.) Environmental Health Sciences, Johns Hopkins. (Expected 2011).” (Past Advisor)
6. Kristin McClellan (Ph.D.) Environmental Engineering, ASU. “A New Approach to Groundwater Remediation Treatability Studies – Moving Flow-through Column Experiments from Laboratory to *In Situ* Operation” (8/2008 – 4/3/2013). (Chairman)
7. Erica M. Hartmann (Ph.D.) Biological Design, ASU. “Application of Proteomic Mass Spectrometry in Bioremediation” (8/2008 – 6/2012). (Chairman)
8. Tomasz Kalinowski (Ph.D.) Biological Design, ASU. “Technical, Economical and Social Aspects of Moving Treatability Studies for the *In Situ* Bioremediation of Contaminated Aquifers from the Laboratory to the Field” (8/2008 – 4/4/2013). (Chairman)
9. Thomas Bruton (Ph.D.) Environmental Engineering, ASU. “Use of Nano Zerovalent Iron in Groundwater Remediation” (2009 - 2012). (Transferred to UC Berkeley)

10. Arjun K. Venkatesan (Ph.D.) Environmental Engineering, ASU. "Contaminants of Emerging Concern in U.S. Sewage Sludges and Forecasting of Associated Ecological and Human Health Risks Using Sewage Epidemiology Approaches" (8/1/2010 - 11/14/2013). (Chairman)
11. Isaac Roll (Ph.D.) Environmental Engineering, ASU. "Novel Tools for Environmental Analysis of Trace Contaminants at Ultra-low Detection Limits" (Expected 2014). (Chairman)
12. Samuel Supowit (Ph.D.) Environmental Engineering, ASU. "Application of and Active Sampling Device for Bioavailability Assessment of Contaminants in Sediment." (Expected 2014). (Chairman)
13. Hansa Done (Ph.D.) Biological Design, ASU. "Antibiotics and Antibiotic Resistant Microbes in U.S. Seafood." (Expected 2016). (Chairman)
14. Alizee Jenck (Ph.D.) Environmental Engineering, ASU. "Application of MALDI-TOF/TOF Mass Spectrometry to Environmental Health Monitoring." (Expected 2016). (Chairman)
15. Maurissa Charles (Ph.D.) Environmental Engineering, ASU. "Application of the In Situ Microcosm Array Technology to Environmental Remediation." (Expected 2016). (Chairman)
16. Burcu Yavuz (Ph.D.) Environmental Engineering, ASU. "To Be Determined (Expected 2017). (Chairman)
17. Erin Driver (Ph.D.) Environmental Engineering, ASU. "To Be Determined." (Expected 2017). (Chairman)
18. Jing Chen (Ph.D.) Biological Design, ASU. "To Be Determined." (Expected 2017). (Chairman)
19. Justin Kidd (Ph.D.) ASU "To Be Determined." (Expected 2018). (Chairman)

M.S., M.S.E, and M.P.H. Students

20. Sharri Hollist (M.P.H.) Public Health, Hopkins. "Incidence of Illness Associated with Recreational Water Contact: Determining and Evaluating a Potential Public Health Problem" (2005). (Capstone Advisor)
21. Toni Nunes (M.P.H.) Public Health, Hopkins. "Pesticides in Ground and Surface Waters of the Chesapeake Bay Watershed: Occurrence, Risks and Potential Solutions" (2007). (Capstone Advisor)
22. Christopher von Seggern (M.P.H.) Public Health, Hopkins. "Biodetection Utilizing Matrix-assisted Laser Desorption/Ionization Mass Spectrometry" (2005). (Capstone Advisor)
23. Meredith Lewis (M.S.E.) Environmental Engineering, ASU. (2009).
24. Guozheng Li (M.S.) Biological Design, ASU (2011).
25. Alison D. Fox (M.S.) Technology (Environmental Management), ASU. "Use of Passive Sampling Devices for Determination of Contaminants in Sewage Sludge" (2010 - 2012). (Graduate Advisor)
26. Sara Carey (M.S.) Environmental Engineering, ASU. "Policy Solutions for Limiting Environmental Release of Persistent, Bioaccumulative and Toxic Compounds." (2012). (Temporary Advisor)
27. Bipin Chari (M.S.) Environmental Engineering, ASU. "Analysis and Modeling of Residual Compounds in Process Streams From U.S. Wastewater Treatment Plants" (4/12/2012). (Thesis Advisor)

Other Graduate Students

28. Peter D'Amato (Ph.D.) Environmental Engineering, Hopkins. "Biodegradation of Polycyclic Aromatic Hydrocarbons" (2003). (Committee Member)
29. Denise Taylor (Ph.D.) Environmental Engineering, Hopkins (2003). (Committee Member)
30. Amir Sapkota (Ph.D.) Environmental Health Sciences, Hopkins (2004). (Committee Member)

31. Kristen Malecki Chossek (Ph.D.) Health Policy and Management, Hopkins (2005). (Committee Member)
32. Michelle Hladik (Ph.D.) Environmental Engineering, Hopkins (2005). (Committee Member)
33. Henry Schuver (Dr.P.H.) Epidemiology, Hopkins (2007). (Committee Member)
34. Ying Yao (M.S.) Environmental Engineering, ASU. (2009). “Development of a Novel Dechlorinating Culture” (2009). (Committee Member)
35. Ed Hilyard (Ph.D.) Marine Biotechnology, University of Maryland, (Expected 2010) (Committee Member 2005-2009)
36. Liang Chen (M.S.) Environmental Engineering, ASU. (2009). (Committee Member)
37. John Schloendorn (Ph.D.) Molecular and Cellular Biology, ASU. “Progress Towards Medical Bioremediation by Enzymatic Transformation of 7-Ketocholesterol and the Pyridinium Bisretinoid A2e” (2009). (Committee Member)
38. Katherine Muto (M.S.) Environmental Engineering, ASU. (2010). (Committee Member)
39. Prathap Parameswaran (Ph.D.) Environmental Engineering, ASU. (2010). (Committee Member)
40. Youneng Tang (Ph.D.) Environmental Engineering, ASU. Biofilm Reduction of Oxidized Contaminants” (2/19/2011). (Committee Member)

Postdoctoral Researchers

41. Guibo Xie (10/2001 – 06/2003)
42. Wenming Dong (2002) (Currently: Staff Scientist, U.S. National Laboratory)
43. Mark P. Franklin (04/2002 – 12/2003)
44. Eric S. Wisniewski (06/2003 – 08/2003) (Currently: Staff Scientist, U.S. Government)
45. Amir Sapkota (11/2004 – 10/2005) (Currently: Tenure-track Assistant Professor, University of Maryland)
46. Todd R. Miller (10/2004 – 10/2007) (Currently: Assistant Professor, University of Wisconsin, Milwaukee)
47. Christopher Higgins (11/2006 – 12/2007) (Currently: Tenure-track Assistant Professor, Colorado School of Mines)
48. Jay Graham (02/2008 – 07/2008) (Currently: Assistant Professor, George Washington University, Washington, DC)
49. Randhir Deo (04/2008 – 2012) (Currently: Assistant Professor, Grand Canyon University, Phoenix, AZ)
50. Tzu-Chiao Chao (01/2009 – 01/2011) (Currently: Faculty, University of Regina, Canada)
51. Gopianth Nallani (02/2011 – 06/2011)
52. Nicole Hansmeier (12/2008 – 6/2012) (Currently: Assistant Professor, Osnabrück University, Germany)
53. Benny Pycke (02/2010 – Present)
54. Bhagyashree Manivannan (03/2013 – 04/2014)
55. Manivannan Yegambaram (03/2013 – 04/2014)
56. Arjun Venkatesan (12/2013 – Present)

Graduate Independent Projects Supervised

57. Jacqueline Heilman, Johns Hopkins University Research Intern (2002) “Antimicrobial Compounds and Their Possible Breakdown Products in Biosolids”
58. Edward Kruse (2007). (M.P.H.) Public Health, Hopkins. “Assessing the Impact of Point and Nonpoint Sources of Pollution on Recreational and Drinking Water Quality in the Springfield Watershed in Dominica” (2007). (Capstone Advisor)
59. Katherine Muto (Spring 2010) “Method for Detection of Chlorinated Carbanilides”
60. Chen Zhou (Spring 2010) “Versatile Roles of Sulfate Reducing Bacteria in Contaminant Remediation”
61. Kristin McClellan (Spring 2010) “Demonstration Plan: Parallel In Situ Screening of Remediation Strategies for Improved Decision Making, Remedial Design, and Cost Savings”

62. Isaac Roll (Fall 2010) “Cost-effective, Ultra-sensitive Groundwater Monitoring for Site Remediation and Management”
63. Thomas Bruton (Fall 2010) “Investigation of Fate and Transport of Zero Valent Iron Nanoparticles Using an In-Situ Microcosm Array”
64. Arjun Venkatesan (Fall 2010) “Analysis of compounds of emerging concern in Biosolids by GC/MS”
65. Kristin McClellan (Fall 2010) “Review Paper on Treatability Studies”
66. Jing Chen (Fall 2013) Rotational Student of the Biological Design Graduate Program, “Determination of Contaminants in Autopsy Tissues of Alzheimer’s Disease Fatalities”
67. Stephen Hart (Fall 2013) Rotational Student of the Biological Design Graduate Program, “Application of the In Situ Microcosm Array in a Fractured Bedrock Aquifer Contaminated with Perchlorate”

Undergraduate Students and High School Interns

68. Stephanie Burge (Research Intern, LLNL) “Optimization Study of Nitrate and Perchlorate Removal by Ion Exchange” (1999).
69. Daniel Paull (Undergraduate Research Intern, Johns Hopkins) “Detection of Antimicrobials by Liquid Chromatography/Mass Spectrometry” (2002).
70. Daniel Paull (Undergraduate Research Intern, Johns Hopkins) “Detection of Triclocarban in Environmental Waters by Liquid Chromatography/Mass Spectrometry” (2003).
71. Beth Links (High School Intern, Johns Hopkins) “Uptake into Plants of Contaminants from Biosolids-Amended Soils” (2004).
72. Cristina Matos (Diversity Research Intern, Johns Hopkins) “*Ab Initio* and *In Situ* Comparison of Organic Wastewater Compounds as Indicators of Sewage-derived Microbes in Surface Waters” (2004).
73. Anna Kalmykov (High School Intern, Johns Hopkins) (2004 – 2005).
74. Amelia DeLaquil (Undergraduate Research Intern, Johns Hopkins) “Fate of Triclosan and Triclocarban in Estuarine Sediment” (2006).
75. Jocelyn Keehner (High School Intern, Johns Hopkins) “Uptake into Plants of Contaminants from Biosolids-Amended Soils” (2006).
76. Erica Hartmann (Undergraduate Research Intern, Johns Hopkins) “Detection of Bioremediation Agents by MALDI Mass Spectrometry” (2006 – 2008).
77. Travis Doom. (B.S.E.) Biomedical Engineering, ASU. “Nutrient Injection Unit: Subsurface Environmental Engineering with In Situ Microcosm Array Tool” (2009).
78. Benjamin Duong (High School Intern, ASU) “Development of a Laboratory Web Page” (2008 – 2009).
79. Patrick Trang (High School Intern, ASU) “Development of a Laboratory Web Page” (2008 – 2009).
80. David E. C. Adams (B.S.E.) Environmental Engineering, ASU. (2010). “Fluorinated Chemicals and the Impacts of Anthropogenic Use” (2010) (Honor Thesis Advisor).
81. James Fernandez (Undergraduate Research Intern, ASU) “Policy Analysis for Atrazine” (2011 – 2012).
82. Benjamin Duong (Undergraduate Research Intern, ASU) “Programming of a Bioremediation Device” (2009 – 2012).
83. Patrick Trang (FURI Undergraduate Research Intern, ASU) “Programming the Nutrient Injection Module” (2009 – 2012).
84. Kristen Latta (Undergraduate Research Intern, ASU) “Environmental Research” (2012).
85. Justin Kidd (Undergraduate Research Intern, ASU) “Theoretical Examination of the Bioavailability of Contaminants in Soils” (2012 – 2013).
86. Olga Epshtein (Undergraduate Research Intern, ASU) “Modeling of the Tres Rios Wetland” (2012 – 2013).
87. Amitis Karris (High School Intern, ASU) “Environmental Research” (2013).
88. Cody Moore (Barrett Honors College Intern, ASU) “Environmental Research” (2012 – 2013).

89. Chris Bean (Undergraduate Research Intern, ASU) “Environmental Research” (2013).
90. Emily North (Barrett Honors College Intern, ASU) “Safety of Plastics” (2012 – 2013).
91. Olga Epshtein (B.S.) Civil Engineering, ASU (Expected 5/2014)
92. Justin Kidd (B.S.) Biology, ASU (Expected 5/2014)

Technicians Employed and Co-supervised

93. Tina Legler (1998 – 1999)
94. Thayer Young (01/2005 – 2007)
95. Kristin McClellan (4/2008 – 8/2008)
96. Sara Murch (11/2012 – 5/2014)

Synergistic Activities

- Supervisor Certificate, 40-Hour SARA/OSHA 8CCR5192(e)(4) (1999).
- Management Certificate, University of the Pacific, 2000.
- DOE Natural and Accelerated Bioremediation Research Program (NABIR) Workshop. Warrenton, VA. Invited Panelist. 3/18-20/2002.
- Johns Hopkins School of Public Health Faculty Title Task Force. Invited Representative of the Junior Faculty, 2003
- Co-organizer of the Johns Hopkins School of Public Health Junior Faculty Meetings, 2003.
- Organizer of the “Exposure Assessment Session” at the Environmental Health Sciences Annual Research Day of the Johns Hopkins Bloomberg School of Public Health, Mount Washington Conference Center, Baltimore, MD, November 14, 2003.
- Water Environment Research Foundation (WERF) Project Advisory Committee. “Contributions of Household Chemicals to Sewage and their Relevance to Municipal Wastewater Systems and the Environment.” Invited Committee Member. 2004-06.
- Water Environment Research Foundation (WERF) Project Advisory Committee. “Fate of Pharmaceuticals and Personal Care Products through Wastewater Treatment Processes.” Invited Committee Member. 2004-2006.
- Maryland Water Monitoring Council: “Ecological Restoration Assessment & Monitoring” Linthicum, MD. Invited Panelist. 11/18/2004.
- Governor Ehrlich’s Maryland Water Security and Wastewater Systems Advisory Council Alternate Member. 01/2004 – 12/2004.
- Governor Ehrlich’s Maryland Department of the Environment – Maryland State Water Quality Advisory Committee (SWQAC) Public Interest Member. Selected by JHSPH Dean Al Sommer to be the Johns Hopkins Representative for this Committee. 1/1/2003 – 12/31/2005.
- DOE/EPA SERDP and ESTCP Expert Panel Workshop on Research and Development Needs for the Environmental Remediation Application of Molecular Biological Tools. Invited Speaker and Voting Panel Member. Specialty: Proteomics. 08/9-10/2005.
- International Conference on Safe Water, Exploring Global Demands and Impacts of Natural Disasters, SAFEWATER 2005. San Diego, CA. Groundwater Remediation Session. Invited Session Chair. 10/21/2005.
- Harvard School of Public Health Risk Assessment Workshop: "Pharmaceuticals and Personal Care Products in the Environment: Emerging Threat or Unwarranted Concern?" Invited Panelist. 11/10/2005.
- National Congress on Assessing and Mitigating Environmental Impacts of Emerging Contaminants – Renewable Natural Resources Foundation. Co-Sponsored by the United States Geological Survey and the Food and Drug Administration. Invited Delegate. 12/1-2/2005.
- Food And Drug Administration, Center For Drug Evaluation And Research (CDER) Nonprescription Drugs Advisory Committee. “Benefits and Hazards of Antiseptic Products Marketed for Consumer Use.” Invited Panelist/Voting Committee Member. 10/20/2005.

- EPA Office of Inspector General, Office of Program Evaluation, Evaluation of Drinking Water Laboratory Procedures. Invited Expert Consultant. 1/19/2006.
- Mid-Atlantic States Section of the Air & Waste Management Association (MASS-A&WMA), Special Symposium on Emerging Environmental Issues and Policies. Invited Speaker/Panelist. New Brunswick, NJ, April 6, 2006.
- Invited Panelist, BIO 2006, World's Largest Annual International Convention on Biotechnology. Chicago, IL. Environmental Biotechnology Session. 04/9-12/2006
- National Research Council of the National Academies. NRSB-O-05-04-A. Conduct a Technical Assessment of Ongoing and Planned Environmental Remediation and Monitoring Programs at the Los Alamos National Laboratory (LANL) and Provide Recommendations to Improve Their Technical and Cost Effectiveness and Reduce Worker, Public, and Environmental Risks. Invited NRC Committee Member, Dual Appointment in the Areas of Groundwater Monitoring and Chemistry. 15-Month Term Starting March, 2006.
- Panel Chair and Keynote Speaker. Reducing Our Ecological Footprint. 10th Anniversary of the Johns Hopkins Center for a Livable Future – Charting A Course To Sustainability Through Research, Education And Service, Baltimore, MD, December 6, 2006.
- Co-Organizer, Annual Conference of the Superfund Basic Research Program (SBRP) of the National Institute of Environmental Health Sciences (NIEHS). Innovative Technologies. Session Moderator and Planning Committee Member, 20th Anniversary Meeting of the Superfund Basic Research Program, Durham, NC, December 3, 2007.
- Co-Organizer, Annual Conference of the Superfund Basic Research Program (SBRP) of the National Institute of Environmental Health Sciences (NIEHS). Member of Steering Committee and Invited Speaker of Technology Transfer Session, Pacific Grove, CA, December 7-9, 2008.
- Invited Panelist, American Academy for Microbiology, "Global Antibiotic Resistance: New Approaches to an Old Problem," Fondation Merieux, Annecy, France, October 2008.
- Invited Speaker and Session Chair. Environmental Fate of Antimicrobials. Pacific Southwest Organic Residuals Symposium 2008. Sacramento, October 1-2, 2008.
- Invited Panelist, Special Symposium on Next Generation Superfund Contaminants sponsored by the National Institute of Environmental Health Sciences (NIEHS), Tucson, AZ, August 2009.
- Symposium Chair and Organizer, Pharmaceuticals, Personal Care Products and Organohalogenes in Biosolids, 238th American Chemical Society (ACS) National Meeting, Washington, DC, August 16-20, 2009.
- Symposium Chair and Organizer, Toward Sustainable Use of Organohalogenes. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
- Symposium Chair and Organizer, Policy Options for Sustainability. Spring 2010 National Meeting & Exposition of the American Chemical Society, San Francisco, CA, March 21-25, 2010.
- Invited Panelist, Workshop on Environmental Estrogens and Endocrine Disrupting Compounds, sponsored by the Johnson Foundation, Wingspread, WI, May 2010.
- Co-Organizer, 25th Anniversary Conference of the Superfund Research Program (SRP) of the National Institute of Environmental Health Sciences (NIEHS). Scientific Session 2: Risk Assessment and Remediation. Planning Committee Member, 25th Anniversary Meeting of the Superfund Basic Research Program, Raleigh, NC, October 21-24, 2012.

Classroom Instruction

Principal Instructor

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| CEE470 | Sustainable Environ. Biotechnologies (87936) (3 credits). Fall 2014. Enrollment: 15 |
| CEE570 | Sustainable Environ. Biotechnologies (87937) (3 credits). Fall 2014. Enrollment: 7 |
| HON494 | Sustainable Environ. Biotechnologies (88753) (3 credits). Fall 2014. Enrollment: 5 |
| HON494 | Biological Design Seminar (89949). Lecture (1 credit). Fall 2014. Enrollment: 9 |
| BDE598 | Biological Design Seminar (84106). Lecture (1 credit). Fall 2014. Enrollment: 7 |
| BDE598 | Biological Design Seminar (89564). Lecture (1 credit). Fall 2013. Enrollment: 8 |
| HON494 | Biological Design Seminar (89591). Lecture (1 credit). Fall 2013. Enrollment: 12 |
| CEE361 | Introduction to Environmental Engineering, Lecture (3 credits). Spring 2013 Enrollment: 61 |
| CEE361 | Introduction to Environmental Engineering, Laboratory (1 credit). Spring 2013 Enrollment: 61 |
| CEE563 | Environmental Chemistry Laboratory (3 credits). Fall 2012. Enrollment: 18 |
| ASU101 | The ASU Experience (1 credit). Fall 2011. Enrollment: 16 |
| CEE598* | Sustainable Environmental Biotechnologies (3 credits). Fall 2011. Enrollment: 16 |
| CEE494 | Sustainable Environmental Biotechnologies (3 credits). Fall 2011. Enrollment: 2 |
| CEE361 | Introduction to Environmental Engineering, Lecture (3 credits). Spring 2011. Enrollment: 56 |
| CEE361 | Introduction to Environmental Engineering, Laboratory (1 credit). Spring 2011 Enrollment: 56 |
| CEE790 | Reading and Conference, Spring 2011 Enrollment: 1 |
| CEE563 | Environmental Chemistry Laboratory (3 credits). Fall 2010. Enrollment: 19 |
| ASU101 | The ASU Experience (1 credit). Fall 2010. Enrollment: 19 |
| E2 Camp | Taught one module of ASU101 at Fall 2010 Freshman Camp in Prescott, AZ |
| CEE790 | Reading and Conference. Fall 2010. Enrollment: 3 |
| ASU101-1 | The ASU Experience (1 credit). Fall 2009. Enrollment: 19 |
| ASU101-2 | The ASU Experience (1 credit). Fall 2009. Enrollment: 19 |
| CEE790 | Reading and Conference. Fall 2009. Enrollment: 2 |
| CEE563 | Environmental Chemistry Laboratory (3 credits). Fall 2009. Enrollment: 17 |
| CEE598* | Sustainable Environmental Biotechnologies (3 credits). Spring 2009. Enrollment: 7 |
| CEE494 | Sustainable Environmental Biotechnologies (3 credits). Spring 2009. Enrollment: 33 |
| CEE598 | Environmental Engineering Analytical Laboratory (3 credits). Fall 2008. Enrollment: 11 |
| JHU-Spain | Air, Water and Food Toxics (3 credits). Barcelona, Spain. JHU Fall Institute on Health Policy and Management (October 2008). Enrollment: 7. |
| 182.638 | Water & Health (4 credits), 4 th Term, 2006/07. Enrollment: 12. |
| 182.852 | Air, Water, and Food Toxics (3 credits), 3 rd Annual JHU Fall Institute in Health Policy and Management, Barcelona, Spain, 2006. Enrollment: 14. |
| 182.638 | Fundamentals of Water Quality Engineering for Public Health (4 credits), 4 th Term, 2005/06. Enrollment: 13. |
| 182.639 | Introductory Principles of Water Quality Engineering for Public Health Water (3 credits). Highest-ranked Course of the 2 nd Annual JHU Fall Institute in Health Policy and Management, Barcelona, Spain, 2005. Enrollment: 6. |
| 183.849 | SSR: Water-borne Diseases: Emerging Threats To Potable Water Supplies. 2004. Enrollment: 6. |

Online Training Modules for the Center of Public Health Preparedness

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| (No Code) | Chemical Weapons and Water Safety, 2005. http://www.jhsph.edu/preparedness/training/online/chemagents_water_safety.html . |
| (No Code) | Water Safety, 2005. http://www.jhsph.edu/preparedness/training/online/water_safety.html |

- (No Code) Water Safety—A Case Study, 2005. http://www.jhsph.edu/preparedness/training/online/water_safety_case_study.html
- (No Code) Monitoring Chemical Agents, 2005. http://www.jhsph.edu/preparedness/training/online/monitoring_chem_agents.html
- Guest Lectures**
- MIC445 Molecular Biology & Genetics, Fall 2012. Enrollment: 50
- PFF Preparing Future Faculty, Fall 2012. Enrollment: 32
- BDE 598 Biological Design. Fall 2011. Enrollment: 13.
- BDE 701 Biological Design. Fall 2009. Enrollment: 13.
- CEE 100 Introduction to Civil and Environmental Engineering. Spring 2009. Enrollment: 60.
- BDE 598 Biological Design. Fall 2008. Enrollment: 13.
- 180.609 Principles of Environmental Health I. 2004, 2006. Sources and Types of Water Contamination.
- 180.609 Principles of Environmental Health I. 2004. Water and Wastewater Treatment Systems.
- 182.640 Food and Waterborne Diseases, 3rd Term, 2002, 2004, 2006. Microcontaminants in Water.
- 180.880 Special Studies in Environmental Health Community Outreach. 2004. Sewage Spills: Turning a Community Concern into a Science Project.
- (No Code) Diversity Student Summer Seminar Series. 2004. Pharmaceuticals and Personal Care Products in the Environment.
- (No Code) Maryland Public Television Summer Institute. 2004.
- 550.865 Public Health Perspectives on Research. 2002. Environmental Health Engineering—Making a Career of Protecting the Environment and Human Health.
- AS 020.151 General Biology I. Fall. Bioremediation. Enrollment: 297 (2004), 250 (2005). TBD (2006).
- AS 020.161 Biology Workshop I. Fall. Bioremediation. Enrollment: 48 (2004), 48 (2005), TBD (2006).
- (Taped) Environmental Biotechnology Lecture Series, UC Berkeley, Berkeley, CA. 2001. Detection and Destruction of Anthropogenic Toxins in Drinking Water.

OTHER SIGNIFICANT TEACHING ACTIVITIES AND INSTRUCTIONAL TRAINING

- 2009 Spartan Entrepreneurial Workshop, Crash Course for Faculty Entrepreneurs. ASU Sky Song, Scottsdale, September 17-19.
- 2009 Preparing Future Faculty, Conducted Mock Interviews with Graduate Students, ASU.
- 2007 Teaching Well, Saving Time. A Teaching Workshop, Johns Hopkins University, January 12, 2007.
- 2005 Extreme Course Make-overs: Using Student Evaluations to Improve Your Course. Johns Hopkins University Workshop, Bloomberg School of Public Health, January 19.
- 2004 Creating the Loop: Developing Learning Objectives and Assessment Methods. Johns Hopkins University Workshop, Bloomberg School of Public Health, July 26.
- 2004 Lecturing & Active Learning: Strategies for Excellence Johns Hopkins University Workshop, Bloomberg School of Public Health, January 13-14.
- 1998 – 2001 Mentor, Science & Technology Education Program, Lawrence Livermore National Laboratory. Supervised four undergraduate research semester (URS) and two summer students.
- 1999 – 2001 Supervisor, 40 Hour SARA/OSHA Hazardous Waste Site Operator, 8CCR5192(e)(4), Lawrence Livermore National Laboratory.
- 1996 – 1997 Participant, University of Minnesota, Graduate School. Participated in the Bush Faculty Development Program for Excellence and Diversity in Teaching Program Preparing Doctoral Candidates for Their Role as Future Faculty: Introduction to

Diverse Teaching Methods, Peer-reviewed Practice Teaching, Design of Effective Courses/Exams/Homework Assignments, Acknowledging Students' Diversity and Learning Styles.

1993 – 1997

Teaching Assistant, University of Minnesota, Department of Civil Engineering. Organized and Conducted Laboratory Section of Graduate Courses Titled “Microbiology for Environmental Engineers” and “Groundwater Microbiology.”