

CURRICULUM VITAE

RUTHANN RUDEL, M.S.

Silent Spring Institute
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EDUCATION

Oberlin College, B.A., Chemistry and Neuroscience (High Honors), 1986

Summer Research Fellowships, Rockefeller University, National Institute of Health, 1984-1986

Tufts University, Department of Civil Engineering, 1989-1991, M.S., Hazardous Materials Management, 1991

Harvard Extension School and New England Epidemiology Institute, 1993-1995, graduate courses in epidemiology, statistics

ACADEMIC APPOINTMENTS

Research Associate, Department of Pathology and Laboratory Medicine, The Warren Alpert Medical School of Brown University, 2007-present

PRIMARY CAREER APPOINTMENTS

Senior Research Assistant, Neuroscience Laboratories, Tufts University Medical School, Boston, MA, 1986-1989

Editor, World Information Systems, Cambridge, MA, 1989-1990

Environmental Toxicologist, Gradient Corporation, Cambridge, MA, 1990-1995

Director of Research, Senior Scientist, Toxicology and Environmental Health Risk Assessment, Silent Spring Institute, 1995-present (Silent Spring Institute is a nonprofit research organization dedicated to studying the environment and women's health.)

OTHER APPOINTMENTS

Ad hoc Manuscript Reviewer, *Environmental Science & Technology*, *Toxicological Sciences*, *Environmental Health Perspectives*, *Environmental Research*, and others, 1997-present

Invited Reviewer, Toxicology Excellence for Risk Assessment, Cincinnati, OH, 1998-present

Reviewer, US EPA/NIEHS STAR grants, 1999

Invited Reviewer, Cornell University Program on Breast Cancer and Environmental Risk Factors, 1999-2002

Advisor, Breast Cancer Fund, Breast Cancer Action, Massachusetts Breast Cancer Coalition, Massachusetts Alliance for a Healthy Tomorrow, California Breast Cancer Research Program, and others, 1999-present
Consultant, risk assessment reviewer, Health Canada, 1997-2009
Science Advisory Board Member, Massachusetts Toxics Use Reduction Act implementation, 2000-2001
Developer, Co-Chair, Society of Toxicology annual meeting symposium, *Breast Cancer: Issues in Screening and Testing of Potential Human Carcinogens*, 2001
Chair, Member, Society of Toxicology Regulatory Affairs and Legislative Assistance Committee, 2004-2006
Expert Panelist, California Breast Cancer and Chemicals Policy Project, 2009
Board of Scientific Counselors, US National Toxicology Program, 2009-2011

UNIVERSITY TEACHING ROLES

Guest lecturer at Tufts University, Harvard School of Public Health, and Suffolk University, 2005-present

PUBLICATIONS LIST

ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Talamo, B.R., **R.A. Rudel**, K.S. Kosik, V.M. Lee, S. Neff, L. Adelman, and J.S. Kauer. 1989. Pathological changes in olfactory neurons in patients with Alzheimer's disease. *Nature* 337:736-739.
2. **Rudel**, R.A., T.M. Slayton, and B.D. Beck. 1996. Implications of arsenic genotoxicity for dose-response of carcinogenic effects. *Regulatory Toxicology and Pharmacology* 23(2):87-105.
3. **Rudel**, R.A., P. Geno, S.J. Melly, G. Sun, and J.G. Brody. 1998. Identification of alkylphenols and other estrogenic phenolic compounds in wastewater, septage, and groundwater on Cape Cod, Massachusetts. *Environmental Science & Technology* 32(7):861-869.
4. **Rudel**, R.A., P. Geno, G. Sun, A. Yau, J. Spengler, J. Vallarino, and J.G. Brody. 2001. Identification of selected hormonally active agents and animal mammary carcinogens in commercial and residential air and dust samples. *Journal of Air and Waste Management Association* 51:499-513.
5. Brody, J.G., D.J. Vorhees, S.J. Melly, S.R. Swedis, P.J. Drivas, and **R.A. Rudel**. 2002. Using GIS and historical records to reconstruct residential exposure to large-scale pesticide application. *Journal of Exposure Analysis and Environmental Epidemiology* 12:64-80.
6. Swartz, C.H., **R.A. Rudel**, J.R. Kachajian, and J.G. Brody. 2003. Historical reconstruction of wastewater and land use impacts to groundwater used for public drinking water: Exposure assessment using chemical data and GIS. *Journal of Exposure Analysis and Environmental Epidemiology* 13(5):403-416.
7. **Rudel**, R.A., D.E. Camann, J.D. Spengler, L.R. Korn, and J.G. Brody. 2003. Phthalates, alkylphenols, pesticides, polybrominated diphenyl ethers, and other endocrine-disrupting compounds in indoor air and dust. *Environmental Science & Technology* 37(20):4543-4553.

8. Brody, J.G., A. Aschengrau, W. McKelvey, R.A. **Rudel**, C.H. Swartz, and T. Kennedy. 2004. Breast cancer risk and historical exposure to pesticides from wide-area applications assessed using GIS. *Environmental Health Perspectives* 112(8):889-897. doi:10.1289/ehp.6845.
9. Brody, J.G., A. Aschengrau, W. McKelvey, C.H. Swartz, T. Kennedy, and R.A. **Rudel**. 2006. Breast cancer risk and drinking water contamination by wastewater: A case control study. *Environmental Health: A Global Access Science Source* 5:28. (Highly accessed)
10. Swartz, C.H., S. Reddy, M.J. Benotti, H. Yin, L.B. Barber, B.J. Brownawell, and R.A. **Rudel**. 2006. Steroid estrogens, nonylphenol ethoxylate metabolites, and other wastewater contaminants in groundwater affected by a residential septic system on Cape Cod, MA. *Environmental Science & Technology* 40(16):4894-4902.
11. **Rudel**, R.A., K.R. Attfield, J. Schifano, and J.G. Brody. 2007. Chemicals causing mammary gland tumors in animals signal new directions for epidemiology, chemicals testing, and risk assessment for breast cancer prevention. *Cancer* 109(S12):2635-2666.
12. Newton, E., and R.A. **Rudel**. 2007. Estimating correlation with multiply censored data arising from the adjustment of singly censored data. *Environmental Science & Technology* 41(1):221-228.
13. Brody, J.G., R. Morello-Frosch, P. Brown, R.A. **Rudel**, R.G. Altman, M. Frye, C.A. Osimo, C. Perez, and L.M. Seryak. Sep 2007. Improving disclosure and consent: "Is it safe?": New ethics for reporting personal exposures to environmental chemicals. *American Journal of Public Health* 97:1547-1554.
14. **Rudel**, R.A., L.M. Seryak, and J.G. Brody. 2008. PCB-containing wood floor finish is a likely source of elevated PCBs in residents' blood, household air and dust: A case study of exposure. *Environmental Health* 7:2. doi:10.1186/1476-169X-7-2. (Highly accessed)
15. Standley, L.J., R.A. **Rudel**, C.H. Swartz, K.R. Attfield, J. Christian, M. Erickson, and J.G. Brody. 2008. Wastewater-contaminated groundwater as a source of endogenous hormones and pharmaceuticals to surface water ecosystems. *Environmental Toxicology and Chemistry* 27(12):2457-2468.
16. Zota, A.R., R.A. **Rudel**, R.A. Morello-Frosch and J.G. Brody. 2008. Elevated house dust and serum concentrations of PBDEs in California: Unintended consequences of furniture flammability standards? *Environmental Science & Technology* 42(21):8158-8164.
17. Altman, R.G., R. Morello-Frosch, J.G. Brody, R.A. **Rudel**, P. Brown, and M. Averick. 2008. Pollution comes home and gets personal: Women's experience of household chemical exposure. *Journal of Health and Social Behavior* 49(4):417-435.
18. **Rudel**, R.A., and L.J. Perovich. 2009. Endocrine disrupting chemicals in indoor and outdoor air. *Atmospheric Environment* 43(1):170-181.
19. Morello-Frosch, R., J.G. Brody, P. Brown, R.G. Altman, R.A. **Rudel**, and C. Perez. 2009. Toxic ignorance and right-to-know in biomonitoring results communication: A survey of scientists and study participants. *Environmental Health* 8:6. doi:10.1186/1476-069X-8-6.
20. Brody, J.G., R. Morello-Frosch, A. Zota, P. Brown, C. Perez and R. **Rudel**. 2009. Linking exposure assessment science with policy objectives for environmental justice and breast

cancer advocacy: The Northern California Household Exposure Study. *American Journal of Public Health* 99(S3):S600-S609.

21. Brown, P., R. Morello-Frosch, J.G. Brody, R.G. Altman, R.A. **Rudel**, L. Senier, C. Perez, and R. Simpson. 2010. Institutional review board challenges related to community-based participatory research on human exposure to environmental toxins: A case study. *Environmental Health*, 9:39. doi:10.1186/1476-069X-9-39 (Highly accessed)
22. Zota, A.R., A. Aschengrau, R.A. **Rudel**, and J.G. Brody. (2010) Self-reported chemicals exposure, beliefs about disease causation, and risk of breast cancer in the Cape Cod Breast Cancer and Environment Study: A case-control study. *Environmental Health*
23. **Rudel**, R.A., R.E. Dodson, L.J. Perovich, R. Morello-Frosch, D.E. Camann, M.M. Zuniga, A.Y. Yau, A.C. Just, and J.G. Brody. (2010) Endocrine disrupting compounds in paired indoor and outdoor air in two northern California communities. *Environmental Science and Technology*
24. Dunagan, S.C., R.E. Dodson, R.A. **Rudel**, and J.G. Brody. 2010. Toxics use reduction in the home: Lessons learned from household exposure studies. *Journal of Cleaner Production* 19(2011):438-444. doi:10.1016/j.jclepro.2010.06.012
25. Adams, C., P. Brown, R. Morello-Frosch, J.G. Brody, R. **Rudel**, A. Zota, S. Dunagan, J. Tovar, and S. Patton. June 2011. Disentangling the exposure experience: The roles of community context and report-back of environmental exposure data. *Journal of Health and Social Behavior* 52(2):180-196. doi: 10.1177/0022146510395593
26. **Rudel**, R.A, J.M. Gray, C.L. Engel, T.W. Rawsthorne, R.E. Dodson, J.M. Ackerman, J. Rizzo, J.L. Nudelman, and J.G. Brody. 2011. Food packaging and bisphenol A and bis(2-ethylhexyl) phthalate exposure: Findings from a dietary intervention. *Environmental Health Perspectives* 119(7):914-920. doi:10.1289/ehp.1003170
27. Brody, J.G., R.A **Rudel**, and M. Kavanaugh-Lynch. 2011. Testing chemicals for effects on breast development, lactation, and cancer. *Environmental Health Perspectives* 119(8):A326-A327. doi.10028641289/ehp.1104077
28. **Rudel**, R.A, S.E. Fenton, J.M. Ackerman, S.Y. Euling, and S.L. Makris. 2011. Environmental exposures and mammary gland development: State of the science, public health implications, and research recommendations. *Environmental Health Perspectives* 119(8):1053-1061. doi/10.1289/ehp.1002864
29. Brown, P., J.G. Brody, R. Morello-Frosch, J. Tovar, A.R. Zota, and R.A. **Rudel**. 2011. Measuring the success of community science: The Northern California Household Exposure Study. *Environmental Health Perspectives*. 120(3): 326-331. doi:10.1289/ehp.1103734
30. Dodson, R.E., M. Nishioka, L.J. Standley, L.J. Perovich, J.G. Brody, R.A. **Rudel**. 2012. Endocrine Disruptors and Asthma-Associated Chemicals in Consumer Products. *Environmental Health Perspectives*, 120(7): 935-943. doi:10.1289/ehp.1104052
31. Dodson, R.E., L.J. Perovich, A. Covaci, N. Van den Eede, A.C. Ionas, A.C. Dirtu, J.G. Brody, R.A. **Rudel**. 2012. After the PBDE phase-out: A broad suite of flame retardants in repeat house dust samples from California. *Environmental Science & Technology*. 46(24): 13056-13066.

32. Schaidler L.A., R.A. Rudel, J.M. Ackerman, S. Dunagan, and J.G. Brody. 2014. Pharmaceuticals, Perfluorosurfactants, and Other Organic Wastewater Compounds in Public Drinking Water Wells in a Shallow Sand and Gravel Aquifer. *Science of the Total Environment*, 468–469:384-393. doi: 10.1016/j.scitotenv.2013.08.067.
33. Ackerman JM, Dodson RE, Engel CL, Gray JM, **Rudel RA**. Temporal variability of urinary di(2-ethylhexyl) phthalate metabolites during a dietary intervention study. *J Expo Sci Environ Epidemiol*. 2014 Jan 22. doi: 10.1038/jes.2013.93.
34. **Rudel, R.A.**, J.M. Ackerman, K.R. Attfield, J.G. Brody. 2014. New exposure biomarkers as tools for breast cancer epidemiology, biomonitoring, and prevention: a systematic approach based on animal evidence. *Environmental Health Perspectives*. 122(9): 881-895. doi: 10.1289/ehp.1307455.

OTHER PEER-REVIEWED PUBLICATIONS

1. Brody, J.G., R.A. **Rudel**, N.I. Maxwell, and S.R. Swedis. 1996. Mapping out a search for environmental causes of breast cancer. *Public Health Reports* 3(6):495-507.
2. **Rudel R.A.** 1997. Predicting health effects of exposures to compounds with estrogenic activity: Methodological issues. *Environmental Health Perspectives* 105 (Suppl 3):655-663.
3. Brody, J.G., R.A. **Rudel**, S.J. Melly, and N.I. Maxwell. 1998. Endocrine disruptors and breast cancer. *Forum for Applied Research and Public Policy* 13(3):24-31.
4. Kriebel, D., J. Tickner, P. Epstein, J. Lemons, R. Levins, E.L. Loechler, M. Quinn, R.A. **Rudel**, R. Schettler, and M. Stoto. 2001. The precautionary principle in environmental science. *Environmental Health Perspectives* 109(9):871-875.
5. Brody, J.G., and R.A. **Rudel**. 2003. Environmental pollutants and breast cancer. *Environmental Health Perspectives* 111(8):1007-1019.
6. Brody, J.G., J. Tickner, and R.A. **Rudel**. 2005. Community-initiated breast cancer and environment studies and the precautionary principle. *Environmental Health Perspectives* 113(8):920-925.
7. Brody, J.G., R.A. **Rudel**, K.B. Michels, K.P. Moysich, L. Bernstein, K. R. Attfield, and S. Gray. 2007. Pollutants, diet, physical activity, body size, and breast cancer: Where do we stand in research to identify opportunities for prevention? *Cancer* 109(S12):2627-2634.
8. Brody, J.G., K.P. Moysich, O. Humblet, K.R. Attfield, G.P.. Beehler, and R.A. **Rudel**. 2007. Environmental pollutants and breast cancer: Epidemiologic studies. *Cancer* 109(S12):2667-2711.
9. Brody, J.G., and R.A. **Rudel**. 2008. Environmental pollutants and breast cancer: The evidence from animal and human studies. *Breast Diseases: A Year Book Quarterly* 19(1):17-19.
10. Brody, J.G., R.A. **Rudel**, M. Kavanaugh-Lynch. 2011. Testing Chemicals for Effects on Breast Development, Lactation, and Cancer. *Environmental Health Perspectives*, 119(8).
11. Adams, C., P. Brown, R. Morello-Frosch, J. G. Brody, R. **Rudel**, A. Zota, S. Dunagan, J. Tovar, and S. Patton. June 2011. Disentangling the exposure experience: the roles of

community experience: the roles of community context and report-back of environmental exposure data. *Journal of Health and Social Behavior*, 52(2): 180-196.

12. Osborne G, **Rudel** R, Schwarzman M. 2014. Evaluating chemical effects on mammary gland development: A critical need in disease prevention. *Reprod Toxicol*. doi: 10.1016/j.reprotox.2014.07.077
13. Brody JG, Dunagan SC, Morello-Frosch R, Brown P, Patton S, **Rudel** RA. 2014. Reporting individual results for biomonitoring and environmental exposures: lessons learned from environmental communication case studies. *Environ Health*. 13: 40. doi: 10.1186/1476-069X-13-40

BOOKS AND BOOK CHAPTERS

Rudel, R.A., and B.D. Beck. 1993. Risk assessment for indoor air: Evaluating risks to susceptible populations. In *NATO/CCMS Pilot Study on Indoor Air Quality: Methods of Risk Assessment for the Indoor Environment*. Ed. B. Seifert. Institute for Water, Soil, and Air Hygiene of the Federal Health Office, Berlin.

Beck, B.D., R.A. **Rudel**, and E.J. Calabrese. 1994. The use of toxicology in the regulatory processes. In *Principles and Methods of Toxicology, Third Edition*. Ed. A. Wallace Hayes. New York: Raven Press.

Beck, B.D., R.A. **Rudel**, G.C. Hook, and T.S. Bowers. 1995. Risk assessment. In *Metal Toxicology*, Eds. R. Goyer, C. Klaasen, and M. Waalkes. San Diego, CA: Academic Press.

Rudel, R.A. 2000. Polycyclic aromatic hydrocarbons, phthalates, and phenols. In *Indoor Air Quality Handbook*, Eds. J. Spengler, J. Samet, and J. McCarthy. New York: McGraw-Hill.

Beck, B.D., T.M. Slayton, E.J. Calabrese, L. Baldwin, and R.A. **Rudel**. 2001. The use of toxicology in the regulatory process. In *Principles and Methods of Toxicology*, Ed. A. Wallace Hayes. Philadelphia, PA: Taylor & Francis.

Brody, J.G., R. Morello-Frosch, P. Brown, R.A. **Rudel**, R.G. Altman, M. Frye, C.A. Osimo, C. Perez, and L.M. Seryak. 2008. Improving disclosure and consent: "Is it safe?": New ethics for reporting personal exposures to environmental chemicals. In *Perspectives in Medical Sociology, Fourth Edition*, Ed. Phil Brown. Long Grove, IL: Waveland Press, Inc.

Morello-Frosch, R., P. Brown, J.G. Brody, R.G. Altman, R.A. **Rudel**, A. Zota, and C. Perez. 2011. Experts, ethics, and environmental justice: Communicating and contesting results from personal exposure science. In *Technoscience and Environmental Justice: Expert Cultures in a Grassroots Movement*, eds. G. Ottinger and B.R. Cohen. Cambridge, MA: MIT Press.

Rudel RA, Rodgers KM, Just AC. 2014. Phthalates in Food Packaging, Consumer Products, and Indoor Environments. In: *Toxicants in Food Packaging and Household Plastics: Exposure and Health Risks to Consumers*. London:Springer.

OTHER NON-PEER-REVIEWED PUBLICATIONS

Letters

Rudel, R.A., J.G. Brody, and J.D. Spengler. 2001. Identification of selected hormonally active agents and animal mammary carcinogens in commercial and residential air and dust samples [Response]. *Journal of Air and Waste Management Association* 51:1388-90.

Rudel, R.A., and E. Newton. 2004. Letter to the Editor: Exposure assessment for decabromodiphenyl ether (decaBDE) is likely to underestimate general U.S. population exposure. *Journal of Children's Health* 2(2):171-173.

Zota, A.R., R.A. **Rudel**, R.A. Morello-Frosch and J.G. Brody. 2009. Response to comment on "Elevated house dust and serum concentrations of PBDEs in California: Unintended consequences of furniture flammability standards?" *Environmental Science & Technology* 43(7):2661-2662.

Brody, J.G., R. Morello-Frosch, P. Brown and R.A. **Rudel**. 2009. Letter to the Editor: Reporting individual results for environmental chemicals in breastmilk in a context that supports breastfeeding. *Breastfeeding Medicine* 4(2):121.

Schaider, L.A., R.A. **Rudel**, J.M. Ackerman, and J.G. Brody. (2010) Correspondence re: Using residential history and groundwater modeling to examine drinking water exposure and breast cancer by Lisa Gallagher et al., *Environmental Health Perspectives*, published online 1 September 2010.

Rudel, R.A, J.M. Ackerman, and R.E. Dodson. 2011. Dietary intervention and DEHP reduction: Rudel et al. respond. *Environmental Health Perspectives* 119:a380-a381. doi:10.1289/ehp.1103852R

Rudel, R.A. and L.J. Perovich. 2012. Accurate risk-based chemical screening relies on robust exposure estimates. *Toxicological Sciences*, doi:10.1093/toxsci/kfs143.

PUBLICATIONS SUBMITTED

Dodson, R.E., Van den Eede, N, Covaci, A, Perovich,LJ, Brody, JG., **Rudel, RA.** (Under review) Urinary biomonitoring of phosphate flame retardants: Levels in California adults and recommendations for future studies

INVITED PRESENTATIONS

1. **Rudel**, R.A. 1995. Modeling *in vivo* estrogenic potency. Invited talk. Workshop on hormones, hormone metabolism, and breast cancer. National Cancer Institute's National Action Plan on Breast Cancer, September, New Orleans, LA.
2. **Rudel**, R.A. 2001. Residential exposure to EDCs in the context of a breast cancer study. e.hormone 2001, October 18-20, Tulane University, New Orleans, LA.
3. Brody, JG, RA **Rudel**. 2002. Environmental pollutants and breast cancer: using GIS and environmental sampling in the Cape Cod Breast Cancer and Environment Study. Presented at the

National Institute of Environmental Health Sciences (NIEHS), June 10, 2002, Research Triangle Park, North Carolina.

4. **Rudel**, R.A. 2002. Household exposure to hormonally active agents and animal mammary carcinogens in indoor air, dust, and residents' urine on Cape Cod, MA. Invited talk sponsored by the EPA conference Risk Management for Endocrine Disrupting Compounds, January, Cincinnati, OH.
5. **Rudel**, R.A. 2003. Air, dust, and urinary markers of phthalates. NIEHS Workshop on Human Health Effects of Phthalate Exposure. March 26-27, Research Triangle Park, NC.
6. Brody, JG, RA **Rudel**. 2005. Community-initiated breast cancer and environment studies and the Precautionary Principle. Presented to the Collaborative on Health and the Environment Cancer Working Group, June 1.
7. Brody, JG, RA **Rudel**. 2007. Endocrine disruptors and breast cancer: The Cape Cod Study and beyond. Presented at the Superfund Basic Research Program Seminar, Brown University, April 20, Providence, Rhode Island.
8. Brody, JG, RA **Rudel**. 2007. Breast cancer and the environment: Science review with Silent Spring Institute. Presented to the Collaborative on Health and the Environment Partnership Call, June 19.
9. **Rudel**, RA. 2009. Key issues and data needs for considering mammary gland effects in chemical risk assessment. Presented at the Mammary Gland Evaluation and Risk Assessment Workshop, November 16-17, Oakland, CA.
10. Brody, J.G., R. Morello-Frosch, P. Brown, R.A. **Rudel**, S. Dunagan. Is It Safe? Reporting Personal Exposures When Health Effects are Uncertain. Presented at the Keystone Science Lecture Series sponsored by the NIEHS Division of Extramural Research and Training (DERT), December 1, 2009, Research Triangle Park, North Carolina.
11. **Rudel**, R.A. 2010. Toxicology Can Advance Breast Cancer Prevention by Informing Chemicals Policies and Epidemiologic Study Design. Institute of Medicine Committee on Breast Cancer and the Environment. July 7, 2010, San Francisco, CA
12. **Rudel**, RA., R. Dodson. 2011. SVOCs in indoor air, dust, and personal care products. Presented at the SVOCs in the Indoor Environment: Mechanistic Insights to Support Sustainable Product Design, Safe Use and Improved Public Health Workshop sponsored by the Indoor Air Institute, January 5-7, 2011, EPA, Research Triangle Park, North Carolina.
13. **Rudel**, RA. 2011. "Is It Safe?": New Ethics for Reporting Personal Exposures to Environmental Chemicals. Presented at the Biomonitoring California Workshop: Understanding and Interpreting Biomonitoring Results, March 17, 2011, Oakland, California.
14. Brody, J.G., **R. Rudel**. Household Cancer Hazards Interview. Julie and Ruthann interviewed with Dr. Lynn Goldman on NPR's On Point (Tom Ashbrook) regarding the Product Testing Study, March 13, 2012.

15. **Rudel**, R.A. 2013. Chemicals and Breast Cancer: Building on National Initiatives for Chemical Safety Screening. Presented at Chemical Testing in the 21st Century: Opportunities and Challenges, January 24, 2013, Environmental Defense Fund, Washington DC.
16. **Rudel**, R.A. 2013. Chemicals Testing Workgroup Panel. California Breast Cancer Research Program's "From Research to Action: Two Decades of Change" symposium, May 17-18, 2013, Costa Mesa, CA.
17. **Rudel**, R.A. 2013. How are the critical relationships between chemical bioavailability, activity, and adversity established within an AOP in a way that protects the most sensitive subpopulations? Panel speaker at Adverse Outcome Pathways: From Research to Regulation. September 3-4, 2014, Bethesda, MD.
18. **Rudel**, R.A. Toxicology for Breast Cancer Prevention. Risk Assessment Specialty Section (RASS) and Mixtures Specialty Section (MSS) Webinar. September 10, 2014.

SELECTED ABSTRACTS

1. **Rudel**, R.A., and B.D. Beck. 1993. Risk assessment for indoor air: Evaluating risks to susceptible populations. *Methods of Risk Assessment for Indoor Environment*. B. Seifert, ed. NATO/CCMS Pilot Study of Indoor Air Quality and European Collaborative Action. "Indoor Air Quality and its Impact on Man (Formerly Cost Project613)." Report on a joint workshop, held October 15-17, 1991 in Kloster Banz, Federal Republic of Germany.
2. **Rudel**, R.A., and B.D. Beck. 1994. Variability in international criteria for chemical toxicity: Comparison of the methods and criteria developed by the U.S. EPA, the WHO, and the RIVM. Presented at the Society for Risk Analysis Annual Meeting, December, Baltimore, MD.
3. Melly, S.J., S.R. Swedis, R.A. **Rudel**, Y.T. Joyce, and J.G. Brody. 1996. Environmental factors in breast cancer: Enhancing an ecological epidemiology study through the use of a geographic information system. Joint Annual Meeting of the Society for Risk Analysis and the International Society for Exposure Assessment. New Orleans, LA.
4. Melly, S.J., R.A. **Rudel**, A.M. Soto, C. Sonnenschein, M. Fernandez, and J.G. Brody. 1996. Potential exposure to estrogenic chemicals via drinking water from a vulnerable aquifer: Pairing chemical analysis with a bioassay. Joint Annual Meeting of the Society for Risk Analysis and the International Society for Exposure Assessment. New Orleans, LA.
5. Brody, J.G., A. Aschengrau, and R.A. **Rudel**. 1997. Occupational history module of the breast cancer core questionnaire. American Public Health Association Annual Meeting. Indianapolis, IN.
6. **Rudel**, R.A. 1998. Estrogenic components in wastewater, septage, and groundwater: A comparison between chemical analysis and results from an MCF-7 cell proliferation bioassay. Presented at the NIEHS/EPA Endocrine Disruptor Grantees Annual Meeting, October, Research Triangle Park, NC.

7. **Rudel**, R.A., A.M. Soto, C. Sonnenschein, M. Luizzi, B. Weill, S.J. Melly, P.W. Geno, and J.G. Brody. 1998. Estrogenic components in wastewater, septage, and groundwater: A comparison between chemical analysis and results from an MCF-7 cell proliferation bioassay. NIEHS/US EPA Endocrine Disruptor Investigators Meeting. Research Triangle Park, NC.
8. Camann, D.E., J.S. Colt, S.L. Teitelbaum, R.A. **Rudel**, R.M. Hart, and M.D. Gammon. 2000. Pesticide and PAH distributions in house dust from seven areas of USA. Society of Environmental Toxicology and Chemistry 21st Annual Meeting, Nashville, TN.
9. **Rudel**, R.A., D. Camann, P.W. Geno, N. Ho, M. Ortiz, A. Yau, J.D. Spengler, J. Vallarino, and J.G. Brody. 2000. Identification of animal mammary carcinogens and hormonally active chemicals in residential air and dust samples. International Society for Exposure Analysis Meeting. Monterey, CA.
10. Brody, JG, SJ Melly, RA **Rudel**, NI Maxwell. 2000. GIS exposure assessment for pesticides and drinking water in the Cape Cod Breast Cancer and Environment Study. Annual Conference of International Society for Environmental Epidemiology (ISEE)/International Society of Exposure Analysis (ISEA). *Epidemiology* 11(4):S102.
11. **Rudel**, R.A. and B. Davis. 2001. Breast cancer: Issues in screening and testing of potential human carcinogens. Symposium for 2001 Society of Toxicology Annual Meeting, March 29, San Francisco, CA.
12. O'Leary, ES, CH Swartz, JG Brody, RA **Rudel**. 2001. GIS in exposure assessment for pesticides in the Cape Cod Breast Cancer and Environment Study and the Long Island Breast Cancer Study Project. Presented at the American Public Health Association Meeting. October 24, Atlanta, Georgia.
13. **Rudel**, RA, D Barr, JG Brody. 2001. Characterizing exposure to a wide range of chemicals of interest for breast cancer research: Indoor air and dust and urinary measure for pesticides, endocrine disruptors, and animal mammary carcinogens. Presented at the American Public Health Association Meeting, October 24, Atlanta, Georgia.
14. **Rudel**, RA, JG Brody, D Camann, A Yau, JD Spengler, J Vallarino. 2001. Characterization of residential exposures to a wide range of endocrine-active compounds in the context of a breast cancer epidemiologic study. Presented at e.hormone 2001: The Cutting Edge of Endocrine Disruptor Research, Tulane University. October 20, New Orleans, Louisiana.
15. **Rudel**, RA. 2002. Residential indoor air and dust measurements of phthalates and other EDCs. Effective Risk Management of Endocrine Disrupting Chemicals, U.S. Environmental Protection Agency. January 29–30, Cincinnati, Ohio.
16. Brody, JG, RA **Rudel**. 2002. Environmental pollutants and breast cancer: using GIS and environmental sampling in the Cape Cod Breast Cancer and Environment Study. Presented at National Institute's Environmental Health Sciences meeting. June 10, Research Triangle Park, North Carolina.

17. Brody, JG, CH Swartz, T Kennedy, RA **Rudel**. 2002. Historical pesticide exposure assessment using a geographic information system and self-report in a breast cancer study. Annual Conference of International Society for Environmental Epidemiology (ISEE)/International Society of Exposure Analysis (ISEA). *Epidemiology* 13(4):S209.
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20. Swartz, CH, RA **Rudel**, JR Kachajian, JG Brody. 2002. Indicators of wastewater and land use impacts on public drinking water: Historical reconstruction of exposure on Cape Cod, MA. Annual Conference of International Society for Environmental Epidemiology (ISEE)/ International Society of Exposure Analysis (ISEA). *Epidemiology* 13(4):S191.
21. **Rudel**, R.A. 2003. Phthalates in indoor air, housedust, and urine. Invited talk. NIEHS Workshop on Human Health Effects of Phthalate Exposure. March 26-27, 2003, Research Triangle Park, NC.
22. McKelvey, W, RA **Rudel**, V Cortessis, JG Brody. 2003. Is there an association between cryptorchidism or hypospadias in a son and a mother’s risk of breast cancer? Presented at the 36th Annual Meeting of the Society for Epidemiologic Research; June 11–14, Atlanta, Georgia. *American Journal of Epidemiology* 157(suppl 11): S39.
23. Brody, JG, RA **Rudel**, R Morello-Frosch, P Brown, A Napolis, RG Altman, C Osimo, C Perez, L Seryak, A Just. 2006 Environmental justice and breast cancer advocacy: Household exposure to endocrine disrupting compounds. 134th Annual Meeting of the American Public Health Association, November, Boston, Massachusetts.
24. Attfield, K, T Kennedy, A Just, S Gray, R **Rudel**, JG Brody. 2006. Developing computer mapping tools for public access to environmental health information. 134th Annual Meeting of the American Public Health Association, November, Boston, Massachusetts.
25. Morello-Frosch, R, JG Brody, M Frye, P Brown, RG Altman, RA **Rudel**, C Perez. 2006. Right-to-know, the right-to-act, and the right not-to-know: Ethical and scientific dilemmas of reporting data in biomonitoring and environmental exposure studies. 134th Annual Meeting of the American Public Health Association, November, Boston, Massachusetts.
26. Standley, LJ, RA **Rudel**, CH Swartz, KR Attfield, JG Brody. 2006. Contamination of surface ponds on Cape Cod, MA, by EDCs and pharmaceuticals from septic-contaminated groundwater. North

American Meeting of the Society for Environmental Toxicology and Chemistry, November, Montreal, Canada.

27. Zota, AR, RA **Rudel**, RA Morello-Frosch, DE Camann, JG Brody. 2007. Regional variation in levels of indoor polybrominated diphenyl ethers may reflect differences in fire safety regulations for consumer products. 17th Annual Conference of the International Society of Exposure Analysis. Research Triangle Park, North Carolina.
28. Zota, AR, RA **Rudel**, RA Morello-Frosch, JG Brody. 2008. Elevated house dust and serum concentrations of PBDEs in California: Unintended consequences of furniture flammability standards? ISEE-ISES Joint Annual Conference on Exposure and Health in a Global Environment. Pasadena, California.
29. Morello-Frosch, RA, AR Zota, RA **Rudel**, C Perez, J Tovar, P Brown, R Dodson, JG Brody. 2008. Community-based participatory exposure assessment in an environmental justice community: preliminary results and communication. ISEE-ISES Joint Annual Conference on Exposure and Health in a Global Environment. Pasadena, California.
30. **Rudel** RA, RE Dodson, E Newton, AR Zota, JG Brody. 2008. Correlations between urinary phthalate metabolites and phthalates, estrogenic compounds 4-Butyl phenol, and some pesticides in home indoor air and house dust. ISEE-ISES Joint Annual Conference on Exposure and Health in a Global Environment. Pasadena, California.
31. Dodson RE, RA **Rudel**, E Newton, JG Brody. 2008. Urinary Pesticide Concentrations and Their Relationship to Air and Dust Concentrations and Household Predictors. ISEE-ISES Joint Annual Conference on Exposure and Health in a Global Environment. Pasadena, California.
32. Dodson RE, LJ Standley, JG Brody, RA **Rudel**. 2008. Development of an Evidence-based Intervention Study to Reduce Exposures to Contaminants in Consumer Products. ISEE-ISES Joint Annual Conference on Exposure and Health in a Global Environment. Pasadena, California.
33. Brody JG, RG Altman, R Morello-Frosch, P Brown, C Adams, RA **Rudel**. 2008. Reporting Individual-level Exposure Measurements to Participants in Intervention Studies for Emerging Contaminants. ISEE-ISES Joint Annual Conference on Exposure and Health in a Global Environment. Pasadena, California.
34. Dodson RE, KR Attfield, RA **Rudel**. 2009. Green buildings and indoor air quality: Lessons learned from household exposure studies. Healthy Buildings 2009 Conference and Exhibition. Syracuse, New York.
35. Zota AR, G Adamkiewicz, JD Spengler, R Morello-Frosch, JG Brody, RA **Rudel**. 2009. Cumulative Exposures to Thyroid Hormone Disrupting Compounds (PCBs and PBDEs) in Residential House Dust. Annual Conference of the International Society of Exposure Science (ISES). Minneapolis, Minnesota.

36. Dodson RE, JG Brody, RA **Rudel**. 2009. Endocrine Disrupting Compounds in Paired Residential Indoor and Outdoor Air Samples from Two Northern California Communities: Comparisons and Relationships. Annual Conference of the International Society of Exposure Science (ISES). Minneapolis, Minnesota.
37. **Rudel**, RA. 2009. Residential exposures to endocrine disrupting compounds from consumer products and building materials: recent findings and future directions. Annual Conference of the International Society of Exposure Science (ISES). Minneapolis, Minnesota.
38. Chan E, S Dairkee, S Janssen, J Latimer, RA **Rudel**, M Schwarzman, A Wlassowsky, L Zeise, DE Johnson. 2009. Chemical Exposure and Breast Cancer: identifying compounds of concern. Society of Toxicology Annual Meeting. March 5-12, 2010. Salt Lake City, UT.
39. Schaidler LA, JM Ackerman, SC Dunagan, JG Brody, RA **Rudel**. 2010. Organic Wastewater Compounds in Drinking Water Wells Impacted by Septic Systems. Annual North America Meeting of the Society of Environmental Toxicology and Chemistry (SETAC). Portland, Oregon.
40. **Rudel** RA, SY Euling, SL Makris, SE Fenton. Mammary Gland Development as a Sensitive Indicator of Early Life Exposures: Recommendations from an Interdisciplinary Workshop. Society of Toxicology Annual Meeting, Salt Lake City, UT March 2010.
41. Dodson, R.E., J.G. Brody, R.A. **Rudel**. Household Exposures in an Urban Environmental Justice Community. Urban Environmental Pollution Conference 2010. Boston, Massachusetts.
42. Dodson, R.E., L.J. Perovich, M. Nishioka, J.D. Spengler, J. Vallarino, R.A. **Rudel**. Long-term integrated sampling of SVOCs in indoor air: Measurement of emerging compounds using novel active and passive sampling methods. International Society of Exposure Science/International Society of Environmental Epidemiology (ISES/ISEE) 2010. Seoul, South Korea.
43. Dodson, R.E., R.A. **Rudel**, L.J. Perovich, D.E. Camann, J.G. Brody. Partitioning theory applied to paired indoor air and house dust SVOC measurements: Implications for residential exposure measurements in epidemiology studies. ISES/ISEE 2010. Seoul, South Korea.
44. Adamkiewicz, G, R Dodson, A Zota, L Perovich, J Brody, R **Rudel**, J Spengler. 2010. Semi-volatile Organic Compounds Distributions in Residential Dust Samples From 5 US Communities: Key Lessons for Improving Residential Exposure Assessment. Joint Conference of International Society of Exposure Science & International Society for Environmental Epidemiology. Seoul, Korea. *Epidemiology*. 22(1):S160-S161, January 2011. doi: 10.1097/01.ede.0000392166.33641.22.
45. Dodson, R.E., M.G. Nishioka, L.J. Standley, L.J. Perovich, J.G. Brody, R.A. **Rudel**. Chemical analysis of household and personal care products for endocrine disrupting compounds and other chemicals of emerging concern. ISES/ISEE 2010. Seoul, South Korea.
46. **Rudel** RA, Ackerman JA, Euling S, Makris S, Fenton S. 2010. Chemical Perturbation of Mammary Gland Development and Function: current initiatives to strengthen mammary gland assessment in

guideline studies and risk assessment. Society of Toxicology Annual Meeting 2011. March 6-10, 2011. Washington, D.C.

47. Schaider, L.A., R.A. **Rudel**, J.M. Ackerman, S.C. Dunagan, J.G. Brody. 2011. Pharmaceuticals, Perfluorinated Compounds and Other Organic Wastewater Compounds in Private Drinking Water Wells on Cape Cod, Massachusetts. 32nd Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) North America. November 13-17, 2011, Boston, Massachusetts.
48. Dodson, R., M. Nishioka, L. Standley, L. Perovich, J. Brody, R. **Rudel**. 2011. What Do We Know About What Is in Personal Care Products?. 32nd Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) North America. November 13-17, 2011, Boston, Massachusetts.
49. Dodson, R., L. Perovich, J. Brody, R. **Rudel**. 2011. Relationship Between House Dust and Indoor Air Concentrations: Applying Partitioning Theory to Empirical Data. 32nd Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) North America. November 13-17, 2011, Boston, Massachusetts.
50. **Rudel** RA, J. Ackerman, K. Attfield, R. Dodson, JG Brody. New exposure biomarkers for breast cancer epidemiology. ISES 2012. Seattle, WA.
51. Dodson R.E., K. Rodgers, A. Covaci, N. Van den Eede, A. Ionas, A. Dirtu, L. Perovich, J. Brody, R. **Rudel**. 2012. Health Risks from Flame Retardants in California House Dust. Environment and Health-Bridging South, North, East and West Conference of ISEE, ISES, and ISIAQ. August 19-23, 2013, Basel, Switzerland.
52. **Rudel** RA, JA Ackerman, C Vulpe. 2013. *In Vitro* Predictive Toxicology for Breast Cancer. Society of Toxicology Annual Meeting 2013. March 10-14, 2013. San Antonio, Texas.
53. Van den Eede N, RE Dodson, RA **Rudel**, LJ Perovich, H Neels, A Covaci. Urinary Concentration of Phosphate Flame Retardants and Plasticiser Metabolites and Relationships with Indoor Dust Levels. Brominated Flame Retardants Conference. 2013.
54. Pan, S., C. Yuan, A. Tagmount, R. **Rudel**, C. Vulpe, D. Leitman. 2013. Cross-Talk Between HER2 Agonists and Xenoestrogens Lead to a Synergistic Proliferation of Breast Cancer Cells. California Breast Cancer Research Symposium. May 17-18, 2013, Costa Mesa, California.
55. Dodson, RE, KM Rodgers, A Covaci, N Van den Eede, AC Ionas, AC Dirtu, LJ Perovich, JG Brody, RA **Rudel**. 2013. Health Risks From Flame Retardants In California Homes. Sixth International Symposium On Flame Retardants. April 7-10, 2013, San Francisco, California.
56. **Rudel**, R., J. Ackerman, C. Vulpe. 2013. Chemical Screening to Identify Potential Breast Carcinogens Using Human Breast Cell Cultures: Genotoxicity. California Breast Cancer Research Symposium. May 17-18, 2013, Costa Mesa, California.

57. Zarate, O, J Brody, P Brown, L Sweeney, M Ramirez-Andreotta R. **Rudel**. 2013. "Open Data" Practices for Environmental Health Studies. Environmental Health Disparities and Environmental Justice Meeting. July 29-31, 2013, Research Triangle Park, North Carolina.
58. Dodson, RE, RA **Rudel**. 2013. Indoor exposure to SVOCs from consumer products and building materials: Empirical data validates air-dust partitioning models and informs measurement strategies. 2013 Conference of the International Society of Environmental Epidemiology (ISEE), the International Society of Exposure Science (ISES), and the International Society of Indoor Air Quality and Climate (ISIAQ). August 19–23, 2013, Basel, Switzerland.
59. Dodson, RE, K Rodgers, A Covaci, N Van den Eede, A Ionas, A Dirtu, L Perovich, J Brody, RA **Rudel**. 2013. Health Risks of Flame Retardants in California House Dust. 2013 Conference of the International Society of Environmental Epidemiology (ISEE), the International Society of Exposure Science (ISES), and the International Society of Indoor Air Quality and Climate (ISIAQ). August 19–23, 2013, Basel, Switzerland.
60. Ackerman J., R **Rudel**, C. Vulpe. 2014. High-Content Screening of Genotoxicity in Breast and Liver Cells. FutureTox II: In Vitro Data and In Silico Models for Predictive Toxicology. January 16-17, 2014, Chapel Hill, North Carolina

GRANTS

1. California Breast Cancer Research Program Women Firefighters Biomonitoring Collaborative	2013 - 2016	\$833,945
2. National Institutes of Health: 1R01ES021726-01 Data Sharing and Privacy Protection in Digital-Age Environmental Health Studies	2012 - 2017	\$1,785,672
3. US Department of Housing and Urban Development: MAHH000512 (PI) Impact of Green Renovations on asthma and IEQ in public housing: The role of phthalates, glycol ethers, flame retardants, perfluorinated compounds and PCBs	2012 - 2015	\$699,786
4. California Breast Cancer Research Program Chemicals and Breast Cancer: Building on National Initiatives for Chemical Safety Screening	2011 - 2014	\$256,194
5. Avon Foundation Methods and resources for cohort studies of breast cancer and environmental chemicals;	2011 - 2014	\$175,000
6. American Chemistry Council Interpretation of Biomonitoring Data from a Dietary Intervention Study	2011 – 2012	\$120,000
7. Mount Desert Island Biological Laboratory Exposure Ontology and HES data on the Web	2010 – 2011	
8. Avon Foundation (Co-I)	2010 - 2011	\$150,000

Methods and resources for cohort studies of breast cancer and environmental chemicals;
Massachusetts Health and Environment Information System

9.	National Institute of Environmental Health Sciences: 1R01ES017514-01A1	2009 - 2014	\$2,830,157
	Ethical and Legal Challenges in Communicating Individual Biomonitoring and Personal Exposure Results to Study Participants: Guidance for Researchers and Institutional Review Boards (5 years)		
10.	MA Environmental Trust (Co-I)	2009-2010	\$45,000
	Emerging Contaminants in Public and Private Drinking Water Wells		
11.	Centers for Disease Control: 1R01EH000632-01 (Co-I)	2009 - 2010	\$333,000
	Women's Health and the Environment: Breast Cancer Prevention Research		
1.	Passport Foundation/Breast Cancer Fund (Co-I)	2009 – 2010	\$10,000
	BPA Migration and Consumption in a Pilot Sample of US Families		
13.	Brown University/NIEHS (Co-I)	2009 – 2010	\$10,000
	Brominated Flame Retardants		
14.	Avon Foundation (Co-I)	2009 - 2010	\$200,000
	Methods and resources for cohort studies of breast cancer and environmental chemicals; Massachusetts Health and Environment Information System		
15.	Barnstable Assembly of Delegates (Co-I)	2009 – 2010	\$24,000
	EDC's in Public Drinking Water on Cape Cod		
16.	New York Community Trust (Co-I)	2009 - 2010	\$75,000
	Pollution at Home: Exposures in a Fence-line Environmental Justice Community		
17.	California Breast Cancer Research Program (PI)	2009	\$25,000
	Conference on the Effects of Chemicals on Mammary Glands		
18.	National Institute of Environmental Health Sciences (PI)	2009	\$32,000
	Conference on the Effects of Chemicals on Mammary Glands		
19.	US Environmental Protection Agency (PI)	2009	\$17,354
	Conference on the Effects of Chemicals on Mammary Glands		
20.	NSF/University of California – Berkeley: SES-0822724 (Co-I)	2008 - 2011	\$94,395.66
	Toxic Ignorance and the New Right-to-Know: The Implications of Biomonitoring for Regulatory Science		
21.	Centers for Disease Control: 1H75EH000377-01 (Co-I)	2008 - 2009	\$118,886

Women's Health and the Environment: Breast Cancer Prevention Research

22.	National Institute of Environmental Health Sciences: 3R25ES013258-04S2 (Co-I) 2008 - 2009 Linking Breast Cancer Advocacy and Environmental Justice Supplement 2	\$139,805
23.	Avon Foundation (Co-I) Breast Cancer and Environmental Chemicals	2008 - 2009 \$175,000
24.	Commonwealth of Massachusetts Breast Cancer Prevention Research: Household Exposure	2008 - 2009 \$20,000
25.	New York Community Trust (Co-I) California Household Exposure Study Data Analysis	2007 - 2008 \$75,000
26.	Commonwealth of Massachusetts Breast Cancer and the Environment on Cape Cod	2007 - 2008 \$107,500
27.	Commonwealth of Massachusetts (UMASS Lowell) (Co-I) Breast Cancer Prevention Research: Household Exposure	2007 - 2008 \$175,000
28.	MA Environmental Trust (Co-I) EDC's in Ponds on Cape Cod (FY2008 grant)	2007 - 2008 \$25,000
29.	Avon Foundation (Co-I) Breast Cancer and Environmental Chemicals	2007 - 2008 \$175,000
30.	HES Goldman (Co-I) Exposure Reduction for Endocrine Disruptors in Homes	2006 - 2009 \$400,000
31.	Department of Defense (Co-I) Nanotech Method to Identify EDC's in Septic Waste	2006 - 2008 \$93,108
32.	Babylon Breast Cancer Coalition (Co-I) EDC's in Cape Cod Groundwater and Drinking Water	2006 - 2007 \$7,500
33.	MA Environmental Trust (Co-I) Groundwater and Drinking Water	2006 - 2007 \$25,000
34.	Hurricane Voices (Co-I) Household Exposure Study	2006 - 2007 \$45,000
35.	Jane's Trust Environmental Factors in Breast Cancer	2006 - 2007 \$100,000
36.	Avon Foundation (Co-I)	2006 - 2007 \$100,000

Breast Cancer and Environmental Chemicals

37. Commonwealth of Massachusetts Cape Cod Household Exposure Study	2006 - 2007	\$107,500
38. National Science Foundation: SES-0450837 (Co-I) "Research Right-to-Know": Ethics and Values in Communicating Environmental Health Study Results to Individuals and Communities	2005 - 2008	\$299,999
39. Beldon Fund Environmental factors and women's health	2005 - 2007	\$150,000
40. Centers for Disease Control: R01DP000218-01 (Co-I) Impact of Environmental Pollutants on Breast Cancer and Women's Health	2005 - 2006	\$347,200
41. Avon Foundation Environmental factors and breast cancer	2005 - 2006	\$75,000
42. MA Department of Public Health (Co-I) Cape Household Exposure Study follow-up	2005 - 2006	\$107,500
43. MA Environmental Trust (Co-I) Groundwater and Drinking Water	2005 - 2006	\$25,000
44. National Institute of Environmental Health Sciences: 1R25ES013258 (Co-I) Linking Breast Cancer Advocacy and Env. Justice (4 yrs)	2004 - 2008	\$932,104
45. Susan G. Komen for the Cure (Co-I) Breast Cancer and the Environment Science Review	2004 - 2008	\$611,273
46. Agua Fund (Co-I) EDCs in Cape Cod Groundwater and Drinking Water	2004 - 2006	\$25,000
47. National Cancer Institute: 5R03CA103478-2 Risk Factors for Ductal Carcinoma In Situ (DCIS)	2004 - 2006	\$140,000
48. National Library of Medicine: 1G08LM008415 Public Access to Environmental Health Information	2004 - 2006	\$130,199
49. Hurricane Voices (Co-I) Household Exposure Study of EDCs	2004 - 2005	\$60,000
50. Avon Foundation Environmental factors and breast cancer	2004 - 2005	\$50,000

51. MA Environmental Trust (FY05 grant) (Co-I) Groundwater and Drinking Water	2004 - 2005	\$25,000
52. Heinz Endowments Environmental factors and breast cancer	2004 - 2004	\$50,000
53. Jane's Trust Environmental factors and women's health	2003 - 2004	\$281,980
54. Beldon Fund Environmental factors and women's health	2003	\$75,000
55. MA Environmental Trust 2003 grant – Wells (Co-I) EDCs in Cape Cod Water	2003	\$25,000
56. MA Environmental Trust 2002 grant (Co-I) EDCs in Cape Cod Water	2002	\$25,000
57. Susan G. Komen Breast Cancer Foundation Cape Cod Breast Cancer and Environment Study data analysis	2001 - 2002	\$160,000
58. Anonymous foundation Environmental factors and women's health	2000-2005	\$606,072
59. Tides Foundation (Co-I) EDCs in Cape Cod Groundwater and Drinking Water	2000 - 2001	\$115,000
60. Jessie B. Cox Charitable Trust Environmental factors and women's health	1998-2002	\$194,000
61. Dolphin Trust (Soil, Atlas, Wells, and Septic) (Co-I) EDCs in Cape Cod Groundwater and Drinking Water	1998 - 2001	\$86,700
62. Komen Massachusetts Affiliate Outreach and education	1996 - 2003	\$312,000
63. Massachusetts Department of Public Health (Co-I) Cape Cod Breast Cancer and Environment Study	1994 - 2003	\$7,300,000