## BIOGRAPHICAL SKETCH

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| NAME | POSITION TITLE |
|---|---|
| Ellen K. Silbergeld | Professor of Environmental Health Sciences |
| eRA COMMONS USER NAME (credential, e.g., agency login)<br>esilber2 | |

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

| INSTITUTION AND LOCATION | DEGREE *(if applicable)* | MM/YY | FIELD OF STUDY |
|---|---|---|---|
| Vassar College, Poughkeepsie, NY | AB | 1967 | Modern History |
| The Johns Hopkins University, Baltimore, MD | PhD | 1972 | Environmental Engineering |
| The Johns Hopkins University, Baltimore, MD | Post Doctoral Fellowship | 1972-75 | Env. Medicine and Neurosciences |

### A. Personal Statement

Since receiving my PhD in 1972, I have been engaged in regulatory policy as an appointed expert to EPA, FDA,, OSHA, HUD, DoE, and numerous international institutions including IARC, WHO, ILO, and UNEP. This experience exposed me to the challenges in science based policymaking and particularly the difficulties of resolving controversies in risk assessment of toxic chemicals and other environmental exposures. Through my academic appointments in epidemiology and toxicology at the University of Maryland Medical School and adding an additional professorial appointments in health policy at Hopkins, I was introduced to the principles and methods of evidence based medicine (EBM), which may offer a way forward for environmental health. I co-authored three of the first applications of EBM to environmental health (Navas Acien et al 2005, 2006, 2007) and became engaged in the early discussions of “evidence based toxicology” (Silbergeld 2009). Since that time, my interactions with EBM have deepened through research and discussions with Hopkins colleagues in the US Center for the Cochrane Collaboration including Drs Roberta Scherer and Kay Dickersin. I am convinced that there is an urgent and important need to adopt an evidence based approach to improve decisionmaking, increase public confidence in policymaking, and enhancing the scientific basis of toxicology as well as its utility for other domains including drug regulation, assessing adverse effects, and incorporating mechanistic research into the evaluation of evidence. I have participated in workshops on this topic organized by EPA, CDC, and scientific societies, including the International Union of Toxicology. Through this process, I think that the time is now appropriate to draw together a workshop of stakeholders to begin the work of developing consensus based approaches for evidence based assessment of environmental risks, testing these approaches, and establishing a transparent and accessible process of continuous improvement that emulates the Cochrane model. The success of this project will also be valuable to FDA risk assessment processes as well as similar agencies in other countries (such as the EU Medicines and Food Safety Agencies, the Brazilian Agency for Risk Assessment, and others. [References are listed in the publications section below].

### B. Positions and Honors

**Positions and Employment**

1972-75 Postdoctoral Fellow, Neurotoxicology: The Johns Hopkins Univ Sch of Public Health (JHSPH), Baltimore, MD
1975 Assistant Professor: Department of Environmental Medicine, JHSPH
1975-79 Staff Fellow/Head: Behavioral Neuropharmacology Unit, Experimental Therapeutics Branch, NINCDS, NIH
1979-81 Chief: Section of Neurotoxicology, NINDS, NIH, Bethesda, MD
1982-84 Guest Scientist: Reproductive Toxicology Section, Pregnancy Research Branch, NICHD, NIH, Bethesda, MD

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|---|---|
| 1982-91 | Chief Toxics Scientist: Environmental Defense, Washington, D.C. |
| 1987- | Adjunct Faculty: Department of Health Policy & Management, JHSPH |
| 1990-01 | Adjunct Professor: Dept of Environmental Health Sciences, JHSPH |
| 1991-01 | Professor: Program in Toxicology, University of Maryland School of Medicine, Baltimore, MD |
| 1992-01 | Professor: Dept of Epidemiology & Preventive Medicine, Univ of Maryland School of Medicine, Baltimore, MD |
| 1993-98 | Senior Consultant/Toxicologist: Environmental Defense Fund, Washington, D.C. |
| 1996-01 | Director: Program in Human Health & the Environment, Univ of Maryland School of Medicine, Baltimore, MD |
| 2002- | Professor, Depts of Environmental Health Sciences, Health Policy and Management, and Epidemiology, JHSPH, Baltimore, MD |
| 2006 - | Guest Investigator, Woods Hole Oceanographic Institution |

**Other Experience and Professional Memberships relevant to this project**

Member, USDHEW-FDA Committee to Coordinate Toxicology and Related Programs, 1977-81 (now CCERP-DHHS)
Expert panelist, NIH Consensus Conferences, 1979, 1982
Member, U.S. EPA Executive Committee, Science Advisory Board, 1983-89; 1993- 999
Member, NAS-NRC Board on Toxicology and Environmental Health Hazards, 1983-89; Committee on Exposure Assessment 1989-90; Committee on Biological Markers, 1985-89; Committee on Dioxin, 1987-91; Committee on Neurotoxicology, 1987-91; Committee on Risk Assessment Reviews, 1994; Commission on Geosciences and Environmental Research, 1994-97; NAS-NRC-IOM Committee on Lead Poisoning in the Americas, 1994-1996; Committee on Grand Challenges in Environmental Sciences, 1998-2000; Board on Biotechnology and Agriculture 2000-2005
Member, NIEHS-NIH Board of Scientific Councillors, National Toxicology Program, 1989-1992
Member, CDC Advisory Committee to Center for Environmental Health1997-2002
Member, Advisory Panel on Lead Screening, CDC, 1997-1999; 2010-

American Public Health Association
International Society for Environmental Epidemiology
Society of Toxicology (Metals, Neurotoxicology, Epidemiology and Reproductive Toxicology Sections)
Member, Public Policy Committee, American Society for Neurochemistry, 1983-84
Co-Organizer, Women in Neuroscience
President, Society for Occupational and Environmental Health
Councillor, Collegium Ramazzini

**Honors (Selected)**

| | |
|---|---|
| 1967 | Graduate: S*umma cum laude* (Vassar College), Phi Beta Kappa |
| 1967 | Leverhulme and Fulbright Fellowships |
| 1971-72 | Rockefeller Foundation Predoctoral Research Fellowship |
| 1974-75 | Joseph P. Kennedy Jr. Fellowship in Neurosciences |
| 1987 | Warner-Lambert Award, Distinguished Women in Science, University of Wisconsin |
| 1991 | Wolman Award, Maryland Public Health Association |
| 1992 | Barsky Award, APHA |
| 1993 | MacArthur Foundation Fellow |
| 1995 | Women Who Make a Difference, Chatham College |
| 1998 | Fellow, International Commission of Occupational Health, WHO |
| 2005 | Global Tox Award, Canadian Society of Toxicology |
| 2006 | Elected to Delta Omega, Johns Hopkins University |
| 2009 | Women Taking the Lead US Library of Congress |
| 2010 | Randall Award for Women in Science, University of Idaho |
| 2012 | Rockefeller Foundation Fellowship, Bellagio |

**C. Selected Peer-reviewed Publications (from 252 total)**

Silbergeld EK: The role of toxicology in causation: A scientific perspective. Courts, Health Science & Law 1:374-385, 1991.

Silbergeld EK: Investing in prevention: Opportunities to reduce health care costs through identifying and reducing environmental contributions to preventable disease. New Solutions Fall: 37-51, 1993.

Silbergeld EK, Graham J, and Price LB. Industrial food animal production, antimicrobial resistance, and human health. Ann Rev Public Health 29:151-169, 2008.

Silbergeld EK: Understanding risk: The case of dioxin. Sci Amer Science and Medicine Nov/Dec: 48-57, 1995.

Silbergeld EK: Preventing lead poisoning in children. Ann Rev Public Health 18:187-210, 1997.

Silbergeld EK, Waalkes M, and Rice JM: Lead as a carcinogen: Experimental evidence and mechanisms of action. Am J Indust Med 38:316-323, 2000.

Navas-Acien A, Sharrett A R, Silbergeld EK, Nachman K, Burke TA, Schwartz BS, Guallar E. Arsenic exposure and cardiovascular disease: A meta-analysis of the epidemiological evidence. Amer J Epid 162: 1037-1049, 2005.

Navas-Acien A, Silbergeld EK, Streeter RA, Clarke JM, Burke TA, Schwartz BS, Guallar E. Arsenic exposure and type 2 diabetes: A systematic review of the experimental and epidemiological evidence. Environ Health Perspect 114:641-648, 2006.

Navas Acien A, Guallar E, Silbergeld EK, and Rothenberg SJ. Lead exposure and cardiovascular disease: a systemic review. Environ Health Perspect Mar 115(3):472-482, 2007.

Silbergeld EK, Davis M, Leibler JH, and Peterson AE. One reservoir: Redefining the community origins of antimicrobial-resistant infections. Med. Clin. N Am 92:1391-1407, 2008.

Silbergeld E. Applying an evidence-based approach: arsenic as a health risk. Human Exper Toxicol 28:127-129, 2009.

Maull EA, Ahsan H, Edwards J, Longnecker MP, Navas-Acien A, Pi J, Silbergeld EK, Styblo M, Tseng CH,Thayer KA, Loomis D. Evaluation of the Association between Arsenic and Diabetes: A National Toxicology Program Workshop Review. Environ Health Perspect 120: 539-543, 2012.

Silbergeld E and Scherer RW. Evidence-based toxicology: strait is the gate, but the road is worth taking. ALTEX 30: 67-73, 2003

**D. Ongoing Research Support**

Fogarty International Center, NIH Silbergeld (PI) 7/1/10 - 6/30/15
"Environmental Risk Factors for Cardiovascular Disease in Mongolia"

NIEHS, NIH Silbergeld (PI) 9/30/09 – 9/29/14
"Community/Worker Exposures to Pathogens from Industrial Food Animal Production"

NIEHS, NIH Navas Acien, PI 07/01/12-03/31/16
"Arsenic Exposure, Genetic Determinants and Diabetes Risk in a Family Study'

Thrasher Research Foundation Silbergeld (co-PI) 02/01/13-01/31/16
Preventing Community-Associated Methicillin and Multidrug-Resistant *Staphylococcus aureus*

NIEHS, NIH Guallar (PI) 01/15/09-11/30/13
"Lead, Cadmium, Arsenic, and Cardiovascular Risk in Children"