

BIOGRAPHICAL SKETCH

NAME Elaine Cohen Hubal	POSITION TITLE Chemical Engineer		
eRA COMMONS USER NAME			
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i>)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Massachusetts Institute of Technology, Cambridge, MA	S.B.	1984-1988	Chemical Engineering
North Carolina State University, Raleigh, NC	M.S.	1990-1992	Chemical Engineering
North Carolina State University, Raleigh, NC	Ph.D.	1992-1996	Chemical Engineering
Chemical Industry Institute of Toxicology	Predoc fellow	1992-1996	

A. POSITIONS and HONORS**Research and Professional Experience:**

Mar 2004- present Research Scientist, National Center for Computational Toxicology, ORD, USEPA
 May 2004- Mar 2004 Research Scientist, one year detail to ETD, NHEERL, ORD USEPA
 May 2003- Apr 2004 Acting Associate Director for Human Exposure Modeling, HEASD, NERL, USEPA
 Oct 2002- Apr 2003 Acting Associate Director for Human Exposure Measurements, HEASD, NERL, USEPA
 1997-2004 Chemical Engineer, HEASD, NERL, USEPA
 1996-1997 Research Chemical Engineer, RTI, RTP, NC
 1988-1990 Chemical Engineer, Camp Dresser & McKee, Boston, MA

Professional Societies and Affiliations:

International Society of Exposure Analysis, Chair of the International Committee 2006-2008

Honors and Awards:

USEPA 2007 Children's Environmental Health Excellence Award; USEPA Bronze Medal for Commendable Service, for developing a risk assessment resource, a Framework for Assessing Health Risks of Environmental Exposures to Children 2006; USEPA Gold Medal for Exceptional Service, in recognition of advancing the scientific basis for assessing and monitoring children's environmental exposures through the development of agency-wide risk assessment guidance 2006; USEPA Bronze Medal for Commendable Service, for contributions to the development of guidance for presenting exposure information submitted under the Voluntary Children's Chemical Evaluation Program (VCCEP) 2003

Selected Invitations at National & International Symposia:

Application of Probabilistic Approaches To Children's Exposure Estimation. Symposium on Contemporary Issues and Approaches in Children's Risk Assessment. Toxicology and Risk Assessment Conference. Cincinnati, OH. April 23-26, 2007; Panel Discussion. Bridging Human and Ecological Exposure Sciences: A Window of Opportunity. ISEA Annual Meeting, Durham, NC. October 14-18, 2007; Exposure Assessment. Fundamentals of Human Health Risk Assessment with a Case Study Approach. Continuing Education Course AM05. Society of Toxicology Continuing Education Course, Charlotte, North Carolina, March 25, 2007; Application of Nanotechnology-Enabled Sensor Technologies for Monitoring Human Exposure to Environmental Contaminants. Nanosensors, and nanomaterials for sensors, in exposure research panel. EPA/ORCAS Nanotechnology Applications in Environmental Health Workshop. Research Triangle Park, NC,

April 20, 2006; Application of Micro- and Nanoscale Sensor Technologies for Monitoring Human Exposure to Environmental Contaminants. ILSI HESI Emerging Issues Forum. Puerto Rico, January 17, 2006; Framework to Use Biomonitoring Data to Inform Exposure Assessment in Children. WHO/IPCS Workshop on Advances in the Use of Biomarkers in Children, Buenos Aires, Argentina, November 17-18, 2005; Panel Discussion. The Future of Exposure Assessment. The 15th Annual Conference of the International Society of Exposure Analysis (ISEA). Tucson, AZ. October 30-November 3, 2005; Overview of US EPA Research Activities Aimed at Characterizing Children's Exposures ACS Progress Lectureship series, UW-Madison Chemistry Department, October 21, 2005; Overview of US EPA Research Activities Aimed at Characterizing Children's Exposures. Workshop session titled Current Regulatory and Scientific Views Regarding Chemical Hazards to Children for the SOT Annual Meeting in New Orleans, Louisiana, March 6-10, 2005; Overview of EPA Office of Research and Development Research Activities Aimed at Characterizing Children's Exposure. Region 7 STAR Seminar, Kansas City, Kansas, December 16, 2004; US EPA Research Activities to Characterize Children's Environmental Exposures. International Symposium on Children's Environmental Health. Juntendo University, Tokyo, Japan. March 22-23, 2004; US EPA Research Activities to Characterize Children's Environmental Exposures. Symposium on Data Needs and Priorities for Improved Children's Exposure Assessment. The 13th Conference of the International Society of Exposure Analysis (ISEA), Stresa, Italy. September 21-25, 2003; Issues in understanding dermal exposures resulting from contact with contaminated surfaces, measuring surface contamination, and characterizing transfers. Invited presentation. International Conference on Occupational and Environmental Exposures of the Skin to Chemicals: Science and Policy. Crystal City, VA, September 8-11, 2002; Children's Exposure Assessment. EPA/ACC Technical Workshop for the Voluntary Children's Chemical Evaluation Program (VCCEP). Herndon, VA. December 11-13, 2001; Measurement Research Strategy. Workshop on Micro/macro-activity Data Needs to Improve Multi-media, Multi-pathway Exposure/intake Dose. Research Triangle Park, NC. May 17-18, 2001; Exposure Assessments for Children, an Overview. Presentation to the Risk Assessment Forum Technical Workshop on Issues Associated with Considering Developmental Changes in Behavior and Anatomy when Assessing Exposure to Children. US EPA Office of Science Policy. Washington, DC. July 26-27. 2000.

Selected Expert Committees/Advisory Panels/Organizing Committees:

Program planning committee for the International Society of Exposure Analysis 2007 Annual Meeting. Chair Symposium: Computational Toxicology. Durham, NC. October 14-18, 2007; Program planning committee for US EPA/ICCA meeting on Public Health Applications of Human Biomonitoring. Chair plenary session: International Perspectives. Research Triangle Park, NC. September 24-25, 2007; Editorial Board Journal of Exposure Science and Environmental Epidemiology. Appointed January 2007 for three year term; Member ILSI Health and Environmental Sciences Institute Sensitive Subpopulations Working Group, 2006-present.

Invited participant International Council of Chemical Associations (ICCA) workshop "Making Sense of Human Biomonitoring Data" Minneapolis, Minnesota. July 26-27, 2006.

Program planning committee for the EPA/ORCAS Nanotechnology Applications for Environmental Health Workshop. Research Triangle Park, NC. April 20, 2006. Member ILSI Health and Environmental Sciences Institute Biomonitoring Steering Team, 2004-present.

Invited participant. The Global Net on Consumer Exposure Modeling Workshops, sponsored by the European Commission Joint Research Center, Intra/Verbania, Italy, June 20-24, 2005.

Member of program planning committee for the Occupational and Environmental Exposures of Skin to Chemicals (OEEESC) 2005 meeting Stockholm, Sweden, June 12-15, 2005. Chair of the quantitative risk assessment section. (Did not attend)

Member of the steering committee and working group chair for the ILSI HESI Biomonitoring Workshop. September 21-22, 2004 in Research Triangle Park, North Carolina.

Invited participant in the ILSI Risk Sciences Institute Workshop titled "Investigating Probabilistic Methods to Assess Worker Exposure to Agriculture Pesticides." Brussels, Belgium, November 10-11, 2003.

Core Member of the Peer Consultation Panel for the Voluntary Children's Chemical Evaluation Program (VCCEP) July 2002-Dec 2006

Editorial Board Journal of Children's Health, April 2002-Dec 2004

Core member of the Study Design Working Group for the National Children's Study, October 2001-Dec 2005

Member of American Chemistry Council (ACC) Human Exposure Assessment Technical Implementation Panel, 2001-2003.

Reviewer for Environmental Health Perspectives, International Journal of Human and Ecological Risk Assessment, Journal of Exposure Analysis and Environmental Epidemiology, Journal of Pharmaceutical Sciences, Risk Analysis, Journal of Children's Health

Member planning committee for International Conference on Occupational and Environmental Exposures of the Skin to Chemicals: Science and Policy. Also chaired workshop at conference titled "Measuring and Predicting Exposures." Crystal City, VA, September 8-11, 2002.

Co-chaired session titled "Children's Health: Exposures and Epidemiology" 12th Conference of the International Society of Exposure Analysis (ISEA) /ISEE, Vancouver, BC Canada. August 11-15, 2002.

Co-chaired session titled "Dermal Exposure" 11th Annual Conference of the International Society of Exposure Analysis. Charleston, SC. November 4-8, 2001.

Invited participant in the ILSI Risk Sciences Institute Workshop to Develop a Framework for Assessing Risks to Children from Exposure to Environmental Agents. Stowe, VT, July 31 - August 2 2001.

Selected Assistance/Advisory Support to the Agency:

Program planning committee for US EPA Workshop on Research Needs for Community-Based Risk Assessment. Session chair: Data needs and measurement methods for CBRA. Research Triangle Park, NC. October 18-19, 2007; Member US EPA Risk Assessment Forum. Appointed June 2004 for 4-year term.

EPA's Workshop on the Analysis of Children's Measurement Data. September 27-28, 2005, Research Triangle Park, NC. Invited participant; STAR Centers for Children's Environmental Health Research Workshop, July 11 -12, 2005, Research Triangle Park, NC. Co-chair with Elaine Faustman breakout session on Computational Toxicology; Member ORD Risk Assessment Forum, Cumulative Risk Assessment Technical Panel, Subcommittee on ORD Long-term Research, November 2003-present; Member NCEA working group to develop a children's risk assessment framework. 2003 – present; Invited speaker and expert panelist.

EPA/ACC Technical Workshop for the Voluntary Children's Chemical Evaluation Program (VCCEP). Herndon, VA. December 11-13, 2001; Member EPA's Risk Assessment Forum Children's Exposure Technical Panel, January 2000-present; Member Interagency Dosimetry Working Group. 1998-2002; Originated, organized, and chaired the NERL Dermal Exposure Workshop, Research Triangle Park, NC, September 1998.

B. SELECTED PUBLICATIONS.

Cohen Hubal, EA, MG Nishioka, WA Ivancic, M Morara, P Egeghy. (In Press) Comparing surface residue transfer efficiencies to hands using polar and non-polar fluorescent tracers. Environmental Science & Technology.

Firestone M, Moya J, Cohen Hubal E, and V Zartarian. (2007) Identifying Childhood Age Groups for Exposure Assessments and Monitoring. Risk Analysis 27(3): available online July 2007.

Ryan, PB, TA Burke, EA Cohen Hubal, JJ Cura, and TE McKone. (2007) Using Biomarkers to Inform Cumulative Risk Assessment. Environ Health Perspect 115:833-840.

deFur, PL, GW Evans, EA Cohen Hubal, AD Kyle, RA Morello-Frosch, and D Williams. (2007) Vulnerability as a Function of Individual and Group Resources in Cumulative Risk Assessment. Environ Health Perspect 115:817-824.

Xu, Y., EA Cohen Hubal, PA Clausen, and JC Little. Exposure to phthalate emitted from vinyl flooring and sorbed to interior surfaces, dust, airborne particles and human skin. In preparation.

Birnbaum, L.S., E.A. Cohen Hubal. (2006) Polybrominated diphenyl ethers: a case study for application of biomonitoring data to characterize exposure. Environ Health Perspect 114:1770-1775.

Cohen Hubal, EA. (2006) Uso de los Datos de Biomonitorio para Informar sobre la Evaluación de la Exposición Infantil [Using Biomonitoring Data to Inform Exposure Assessment in Children] Journal of the Argentinian Society of Toxicology. 14(suplemento)17-19.

- Barone S Jr, RC Brown, S Euling, E Cohen Hubal, CA Kimmel, S Makris, J Moya, SG Selevan, B Sonawane, T Thomas, C Thompson. (2006) Vision General de al Evaluacion del Riesgo en Salud Infantil Empleando un Enfouque por Etapas de Desarrollo [Overview of a Life Stage Approach to Children's Health Risk Assessment] Acta Toxicologica Argentina. 14(suplemento)7-10.
- Cohen Hubal, EA, P Egeghy, K Leovic, G Akland. (2006) Measuring potential dermal transfer of a pesticide to children in a daycare center. Environmental Health Perspectives. Vol 114, No. 2, pp 264-269. [Online 20 September 2005]
- Barone S Jr, RC Brown, S Euling, E Hubal, CA Kimmel, S Makris, C Thompson, H El-Masri, J Moya, SG Selevan, B Sonawane. (2006) A Framework for Assessing Health Risks of Environmental Exposures to Children. National Center for Environmental Assessment, Office of Research and Development, Washington, DC; EPA/600/R-05/093F.
- Cohen Hubal, EA, JC Suggs, MG Nishioka, WA Ivancic. (2005) Characterizing residue transfer efficiencies using a fluorescent imaging technique. Journal of Exposure Analysis and Environmental Epidemiology. Vol 15, No.3, pp 261-270.
- Firestone M, E Cohen Hubal, J Moya, and V Zartarian. (2005) Guidance on Selecting Age Groups for Monitoring and Assessing Childhood Exposures to Environmental Contaminants. Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, DC. EPA/630/P-03/003F.
- Cohen Hubal, EA. (2004) Issues in dermal exposure of infants. Journal of Children's Health. Vol 2, No. 3-4, pp 253-266.
- Ivancic WA, Nishioka, MG, Barnes, RH, and Cohen Hubal EA. (2004) Development and evaluation of a quantitative video fluorescence imaging system and fluorescent tracer for measuring transfer of pesticide residues from surfaces to hands with repeated contacts. Annals of Occupational Hygiene. Vol. 48, No. 6, pp. 519-532.
- Riley, W.J., T.E. McKone, and E.A. Cohen Hubal. (2004) Estimating Contaminant Dose for Intermittent Dermal Contact: Model Development, Testing, and Application. Risk Analysis. Vol 24, No. 1:73-85.
- Tulve, N.S., Suggs, J.C., McCurdy, T., Cohen Hubal, E.A. (2002) Frequency of mouthing behavior in young children. Journal of Exposure Analysis and Environmental Epidemiology. Vol 12:259-264.
- Cohen Hubal, E.A. (2001) "Protecting our Children from Harm" New Voices in Chemistry. Invited essay. Chemical & Engineering News. Vol 79(13):170.
- Cohen Hubal, E.A., Sheldon, L.S., Zufall, M.J., Burke, J.M., and Thomas, K. (2000) The challenge of assessing children's residential exposure to pesticides. Journal of Exposure Analysis and Environmental Epidemiology. Vol 10:638-649.
- Cohen Hubal, E.A., Sheldon, L.S., Burke, J.M., McCurdy, T.R., Berry, M.R., Rigas, M.L., Zartarian, V.G. (2000) Exposure assessment for children: a review of the factors influencing exposure of children, and the data available to characterize and assess that exposure. Environmental Health Perspectives. Vol 108(6):475-486.
- Cohen Hubal, E.A., Schlosser, P.M., Conolly, R.B., and Kimbell, J.S. (1997) Comparison of inhaled formaldehyde dosimetry predictions with DNA-protein cross-link measurements in the rat nasal passages. Toxicology and Applied Pharmacology. Vol 143:47-55.
- Cohen Hubal, E.A., Kimbell, J.S., Fedkiw, P.S. (1996) Incorporation of nasal-lining resistance into a computational-fluid-dynamic model for prediction of ozone dosimetry in the upper respiratory tract of a rat. Inhalation Toxicology. Vol 8:831-857.
- Cohen Hubal, E.A., Fedkiw, P.S., and Kimbell, J.S. (1996) Review of mass-transport models to predict toxicity of inhaled gases in the upper respiratory tract. Journal of Applied Physiology. Vol 80(4):1415-1427.
- Cohen Hubal, E.A. and Overcash, M.R. (1995) Net waste reduction analysis applied to zero-water-discharge systems for chromic-acid electroplating. Journal of Cleaner Production. Vol 3(3):161-167.
- Cohen Hubal, E.A. and Overcash, M.R. (1993) Net waste reduction analysis applied to air pollution control technologies. Air & Waste. Vol 43:1449-1454.