

**Michael A. Kelsh, Ph.D., M.P.H.**  
**Principal Scientist**

**Professional Profile**

Dr. Michael Kelsh is a Principal Scientist in Exponent's Health Sciences Center for Epidemiology, Biostatistics, and Computational Biology. Dr. Kelsh specializes in the application of epidemiology and biostatistics to occupational, environmental health, and pharmaceutical issues. Dr. Kelsh has extensive experience in the design, implementation, analysis, and interpretation of epidemiologic studies. Dr. Kelsh has conducted epidemiologic studies of occupational injuries, musculoskeletal diseases, cardiovascular disease, respiratory and neurological diseases, and cancer incidence and mortality. His research has also focused on exposure assessment issues, and as part of epidemiologic investigations, has evaluated the potential health effects of air pollution, arsenic, asbestos, beryllium, hexavalent chromium, electric and magnetic fields, ergonomic factors, mercury, perchlorate, radiofrequency energy, and trichloroethylene. Dr. Kelsh has conducted occupational health studies among a variety of worker groups including: Aerospace, electric utility, electronics, mining, and petroleum research workers. He has also worked on meta-analyses of trichloroethylene and cancer, arsenic and bladder cancer; auto mechanic work and mesothelioma; and magnetic fields and childhood leukemia.

Dr. Kelsh taught seminars in occupational/environmental epidemiology and exposure assessment as an adjunct professor at the University of California, Los Angeles (UCLA) School of Public Health (1996-2008). Dr. Kelsh has served on Scientific Advisory Panels covering a variety of environmental health issues for the California Department of Health Services, the New York Department of Environmental Health, and the Oregon Department of Human Services. Dr. Kelsh is fluent in Spanish and has international public health experience through consulting, research, and volunteer projects in Latin America.

**Academic Credentials and Professional Honors**

Ph.D., Epidemiology, University of California, Los Angeles, 1993  
M.A., Latin American Studies, University of California, Los Angeles, 1986  
M.P.H., Epidemiology, University of California, Los Angeles, 1984  
B.A., Cellular Biology/Spanish, University of California, Santa Barbara, 1981

Fellow, InterAmerica Foundation  
Fellow, American Statistical Association Conference  
Traineeship, National Institute of Health, Occupational/Environmental Epidemiology, UCLA

**Languages**

Spanish

## **Publications**

Shum M, Kelsh MA, Sheppard AR, Zhao K. An Evaluation of Self-Reported Mobile Phone Use Compared to Billing Records Among a Group of Engineers and Scientists. *Bioelectromagnetics* 2011; 32(1); 37-48

Kelsh MA, Shum MS, Sheppard AR, McNeeley M, Kuster N, Lau E, Wielding R, Fordyce T, Sulser C. Measured Radiofrequency Exposure in Various Mobile Phone-Use Scenarios. *J. Exp Science Environ Epidemiol* 2010; June 15 (EPub)

Ghatto N, Kelsh MA, HaMai D, Suh M, Proctor DM. Occupational Hexavalent Chromium and Cancers of the Gastrointestinal Tract: A Meta-Analysis. *Cancer Epidemiology* 2010; 343(4): 388-99

Fordyce TA, Morimoto L, Coalson J, Kelsh MA, Mezei G. Neck Injuries among electric utility workers, 1995-2007. *J Occup Environ Med* 2010; 52(4): 441-49

Kelsh MA, Alexander DD, Mink PJ, Mandel JH. Occupational Trichloroethylene Exposure and Kidney Cancer: A Meta-Analysis. *Epidemiology* 2010; 21: 95-102

Kelsh MA, Fordyce TA, Lau E, Mink P, Morimoto L, Lu E, Yager JW. Factors that distinguish serious versus less severe strain and sprain injuries: An analysis of electric utility workers. *Am J Ind Med* 2009; 53(3): 210-20

Kelsh MA, Morimoto L, Lau E. Cancer mortality and oil production in the Amazon region of Ecuador. *Int Arch Occup Environ Health* 2009; 82(3): 381-195.

Mink PJ, Alexander DD, Barraj LM, Kelsh MA, Tsuji JS. Low-level arsenic exposure in drinking water and bladder cancer: A review and meta-analysis. *Regul Toxicol Pharmacol* 2008; 52(3): 299-310.

Kelsh MA, Alexander DD, Kalmes RM, Buffler PA. Personal use of hair dyes and risk of bladder cancer: A meta-analysis of epidemiologic data. *Cancer Causes Control* 2008; 19(6):549–558.

Goodman M, Barraj LM, Mink PJ, Britton NL, Yager JW, Flanders WD, Kelsh MA. Estimating uncertainty in observational studies of associations between continuous variables: Example of methylmercury and neuropsychological testing in children. *Epidemiol Perspect Innov* 2007, Sept 26: 4:9 PMID 17894895

Clarke CC, Mowat FS, Kelsh MA, Roberts MA. Pleural plaques: A review of diagnostic issues and possible non-asbestos factors. *Arch Environ Occup Health* 2007; 61(4):183–192.

Alexander DD, Kelsh MA, Mink PJ, Mandel JH, Basu R, Weingart W. A meta-analysis of occupational trichloroethylene exposure and liver cancer. *Int Arch Occup Environ Health* 2007; 81(2):127–143.

Kelsh MA, Craven VA, Teta MJ, Mowat FS, Goodman, M. Mesothelioma in vehicle mechanics: Is the risk different for Australians? *Occup Med* 2007; 57:581–589.

Buffler PA, Kelsh MA, Kalmes RL, Lau E, Chapman PC, Wood S, Brorby G, Silva M, Hooper C, Rizzo B, Wood R. A nested case-control study of brain tumors among employees at a petroleum exploration and extraction research facility. *J Occup Environ Med* 2007; 49:791–802.

Erdreich LS, VanKerkhove MP, Scrafford CG, Barraij L, McNeely M, Shum M, Sheppard AR, Kelsh MA. Factors that influence radiofrequency power output of GSM Mobile Phones. *Rad Research* 2007; 168(2):253–261.

Fordyce TA, Kelsh MA, Lu E, Sahl JD, Yager JW. Thermal burn and electric shock injuries among electric utility workers, 1995–2004. *Burns* 2007; 33(2):209–20.

Kelsh MA, Berman DW, Langer AW. Residential proximity to naturally occurring asbestos and mesothelioma risks: Further consideration of exposure misclassification and occupational confounding. *Am J Respir Crit Care Med* 2006; 174(12):1400. (Letter).

Alexander DD, Mink PJ, Mandel JH, Kelsh MA. A meta-analysis of occupational trichloroethylene exposure and multiple myeloma or leukemia. *Occup Med* 2006; 56(7):485–93.

Cher DJ, Deubner DC, Kelsh MA, Chapman PS and Ray RM. Assessment of the beryllium lymphocyte proliferation test using statistical process control. *Inhalat Toxicol* 2006; 18(11):901–910.

Mandel JH, Kelsh MA, Mink PJ, Alexander D, Kalmes RM, Weingart M, Yost L Goodman M. Occupational trichloroethylene exposure and non-Hodgkins lymphoma: A meta-analysis and review. *Occup Environ Med* 2006; 63(9):597–607.

Buffler PA, Kelsh MA, Lau EC, Edinboro CH, Barnard JC, Rutherford GW, Daaboul JJ, Palmer L, Lorey FW. Thyroid function and perchlorate in drinking water: An evaluation among California newborns, 1998. *Environ Health Perspect* 2006; 114(5):798–804.

Mezei G, Cher D, Kelsh M, Edinboro C, Chapman P, Kavet R. Occupational magnetic field exposure, cardiovascular disease mortality, and potential confounding by smoking. *Ann Epidemiol* 2005; 15(8):622–629, September.

Niple JC, Sahl JD, Kelsh MA, Kavet R. Equipment grounding affects contact current exposure: A case study of sewing machines. *Ann Occup Hyg* 2005; 49(8):673–682.

Kelsh MA, Lu ET, Ramachandran K, Jesser C, Fordyce T, Yager JW. Occupational injury surveillance among electric utility employees. *J Occup Environ Med*. 2004; 46(9):974–984.

Ebi KL, Exuzides KA, Lau E, Kelsh M, Barnston A. Weather changes associated with hospitalizations for cardiovascular diseases and stroke in California, 1983–1998. *Int J Biometeorol* 2004; 49(1):48–58.

Goodman M, Teta MJ, Hessel PA, Garabrandt DH, Craven VA, Scrafford CG, Kelsh MA. Mesothelioma and lung cancer among motor vehicle mechanics: A meta-analysis. *Ann Occup Hyg* 2004; 48(4):309–326.

Mink P, Goodman M, Barraji L, Imrey H, Kelsh MA, Yager JA. Evaluation of uncontrolled confounding in studies of environmental exposures and neurobehavioral testing in children. *Epidemiology* 2004; (4):385–393.

Buffler PA, Kelsh MA, Chapman P, Wood S, Lau E, Golembesky A, Wood R, Kalmes R, Brorby G. Primary brain tumor mortality at a petroleum exploration and extraction research facility. *J Occup Environ Med* 2004; 46:257–270.

Kelsh MA, Buffler P, Daaboul J, Rutherford G, Lau E, Exuzides KE, Cahill J, Palmer L, Lorey F. Primary congenital hypothyroidism and newborn thyroid function among residents of a Southern California community. *J Occup Environ Med* 2003; 45:1116–1127.

Kelsh MA, Bracken TD, Sahl JD, Shum M, Ebi KL. Occupational magnetic field exposures of garment workers: Results of personal and survey measurements. *Bioelectromagnetics* 2003; 24:316–326.

Tsuji JS, Williams PR, Edwards MR, Allamneni KP, Kelsh MA, Paustenbach DJ, Sheehan PJ. Evaluation of mercury in urine as an indicator of exposure to low levels of mercury vapor. *Environ Health Perspect* 2003; 111(4):623–630.

Mandel J and Kelsh MA. A review of the epidemiology of trichloroethylene and kidney cancer. *Hum Ecol Risk Assessment* 2001; 7(4):727–735.

Ebi K, Exuzides KA, Lau E, Kelsh MA, Barnstorm A. Association of normal weather periods and El Nino events with viral pneumonia hospitalization in females, California 1983–1998. *Amer Public Health Assoc J* 2001; 91:1200–1208.

Goodman M, Kelsh MA, Ebi KL, Ianuzzi J, Langholz B. Evaluation of potential confounders in planning a study of occupational magnetic field exposure and female breast cancer. *Epidemiol* 2001; 13:50–58.

Deubner D, Kelsh MA, Shum M, Maier L, Kent MS, Lau E. Beryllium sensitization, chronic beryllium disease, and exposures at a beryllium mining and extraction facility. *Appl Occup Environ Hyg* 2001; 16(5):579–592.

Kolanz ME, Madl AK, Kelsh MA, Kent MS, Kalmes RM, Paustenbach DJ. A comparison and critique of historical and current exposure assessment methods for beryllium: Implications for evaluating risk of chronic beryllium disease. *Appl Occup Environ Hyg* 2001; 16(5):593–614.

Yager JW, Kelsh MA, Zhao K, Mrad RJ. Development of an occupational illness and injury surveillance database for the electric energy sector. *Appl Occup Environ Hyg* 2001; 16(2):291–294.

Greenland S, Sheppard AR, Kaune WT, Poole C, Kelsh MA. A pooled analysis of magnetic fields, wire codes and childhood leukemia. *Epidemiol* 2000; 227(2):294–306.

Kelsh MA, Kheifets LI, Smith RW. Assessing the impact of work environment, utility and sampling design on occupational exposure summaries: A case study of magnetic field exposures among electric utility workers. *Amer Ind Hygiene Assn J* 2000; 61:174–182.

Morgan RW, Kelsh MA, Zhao K, Exuzides KA, Heringer S, Negrete W. Radiofrequency exposure and mortality from cancers of the brain and lymphatic/hematopoietic system. *Epidemiol* 2000; 11:118–127.

Cher DJ, Mrad RJ, Kelsh MA. Cellular telephone use and fatal traffic collisions: A commentary. *Accident Anal Prev* 1999; 31:599.

Morgan RW, Kelsh MA, Zhao K, and Heringer S. Mortality of aerospace workers exposed to trichloroethylene. *Epidemiol* 1998; 9:424–431.

Kelsh MA and Sahl JD. Mortality among a cohort of electric utility workers 1960–1991. *Am J Ind Med* 1997; 31:534–544.

Del Razo LM, Garcia–Vargas GG, Vargas H, Albores A, Gonesbatt ME, Montero R, Ostrosky–Wegman P, Kelsh MA, Cebrian ME. Altered profile of urinary arsenic metabolites in adults with chronic arsenicism. *Arch Toxicol* 1997; 71:211–217.

Gonesbatt ME, Vega L, Salazar AM, Montero R, Guzman P, Blas J, Del Razo LM, Garcia–Vargas G, Albores A, Cerbian ME, Kelsh MA, Ostrosky–Wegman P. Cytogenetic effects in human exposure to arsenic. *Mut Res* 1997; 386(3):219–228.

Sahl JD, Kelsh MA, Haines KD, Sands F, Kraus J. Acute work injuries among electric utility linemen. *Am J Ind. Med* 1997; 31:223–232.

Sahl JD, Kelsh MA, Haines KD, Sands F, Kraus J. Acute work injuries among electric utility meter readers. *Epidemiol* 1997; 8:287–292.

Smith RW, Sahl JD, Kelsh MA, Zalinski J. Task–based exposure assessment: Analytical strategies for summarizing data by occupational groups. *Amer Ind Hyg Assoc J.* 1997; 58:402–412.

Kelsh MA, Sahl JD. Sex differences in work–related injury rates among electric utility workers. *Amer J Epidemiol* 1996; 143:1050–1058.

Allen MJ, Velez PV, Diehl DW, McFadden SE, Kelsh MA. Demographic variability in seafood consumption rates among recreational anglers of Santa Monica Bay, California in 1991–1992. *Fisher Bull* 1996; 94:597–610.

Ricci PF, Catalano JA, Kelsh MA. Time series (1963–1991) of mortality and ambient air pollution in California: An assessment with annual data. *Inhalation Toxicol* 1996; 8:95–106.

Sahl JD, Kelsh MA, Smith RW, Aseltine D. Exposure to 60-Hertz magnetic fields in the electric utility work environment. *Bioelectromagnetics* 1994; 15:21–32.

Sahl JD, Kelsh MA, Greenland S. Cohort and nested case–control studies of hematopoietic cancers and brain cancer among electric utility workers. *Epidemiol* 1993; 4:104–114.

Hagberg M, Morgenstern H, Kelsh MA. Impact of occupations and job tasks on the prevalence of carpal tunnel syndrome: A review. *Scand J Work Environ Health* 1992; 18:337–345.

Morgenstern H, Kelsh MA, Kraus JF, Margolis W. A cross–sectional study of hand/wrist symptoms in female grocery checkers. *Amer J Ind Medicine* 1991; 20:209–218.

### **Book Chapters**

Kelsh MA. Injury epidemiology. In: *Encyclopedia of Epidemiology 2007*, Sage Publications, Thousand Oaks, CA, 2007, in press.

Kelsh MA, Alexander DD. Occupational and environmental epidemiology. In: *Encyclopedia of Epidemiology 2007*, Sage Publications, Thousand Oaks, CA, 2007, in press.

Morimoto L, Kelsh MA. Biomarkers. In: *Encyclopedia of Epidemiology 2007*, Sage Publications, Thousand Oaks, CA, 2007, in press.

Mowat F, Shum M, Kelsh MA. Exposure assessment in epidemiology. In: *Encyclopedia of Epidemiology 2007*, Sage Publications, Thousand Oaks, CA, 2007, in press.

### **Conference Presentations**

Kelsh MA, Kucera G, Erdreich L. Updated meta-analysis of mobile phone use and brain tumors. Presented at BioEM, San Diego, CA. June 8–12, 2008.

Kelsh MA. Optimal dosimetry for mobile phone studies: Factors influencing exposure and implications for epidemiologic research. *Dosimetry meets Epidemiology Workshop*, Swiss Science Foundation, Zurich, Switzerland, January 11, 2008 (invited speaker).

Kelsh MA, Weingart M, Mandel JH, Mink PJ, Alexander D, Basu R, Kalmes R, Goodman M. Occupational TCE exposure and kidney cancer and non-Hodgkin's lymphoma: A meta-analysis. Presented at the 2<sup>nd</sup> North American Congress of Epidemiology, Seattle, WA, June 21–24, 2006.

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Mink P, Alexander D, Barraj L, Kelsh M, Tsuji J. Meta-analysis of low level arsenic exposure and bladder cancer. A poster presentation at the 2<sup>nd</sup> North American Congress of Epidemiology, Seattle, WA, June 21–24, 2006.

Mink PJ, Alexander DD, Barraj LM, Kelsh MA, Tsuji JS. Meta-analysis of low level arsenic exposure and bladder cancer: Implications for risk assessment in the United States. A poster presentation at the 45<sup>th</sup> Annual Meeting of the Society of Toxicology, San Diego, CA, March 5–9, 2006.

Weingart M, Kelsh MA, Shum M, Sheppard AR, Kuster N. Statistical analysis of the influences of technology, antenna, mobile phone shape and position on SAR measurements from FCC compliance testing data. BioEM, University College, Dublin, Ireland, June 19–24, 2005.

Shum M, Kelsh MA, Zhao K, Erdreich LS. A comparison of recall of mobile phone use with billing record data. Presented at BioEM, University College, Dublin, Ireland, June 19–24, 2005.

Kelsh MA, Sulser C, Shum M, McNeely M, Kuster N, Froehlich J, Sheppard A. Evaluation of mobile phone handset exposures using software modified phones and field phantom systems. Presented at BioEM, University College, Dublin, Ireland, June 19–24, 2005.

Erdreich LS, Van Kerkhove MD, Scrafford C, Shum M, Kelsh MA. Assessing the relative impact of factors that influence rf exposure for mobile phones. Presented at BioEM, University College, Dublin, Ireland, June 19–24, 2005.

Kelsh MA, Weingart M, Mandel JH, Mink P, Alexander D, Basu R, Kalmes R, Goodman M. A meta-analysis of epidemiology studies of occupational TCE exposure and selected cancers. Presented to National Research Council, Committee on Human Health Risks of Trichloroethylene (Invited Speaker), Irvine, CA, June 9, 2005.

Van Kerkhove MD, Erdreich LS, Shum M, McNeely M, Chan N, Barraj L, Kelsh M. Abstract. Variability of Radiofrequency Power Output of GSM Mobile Phones. *Epidemiol* 15(4):S115. Presented at International Society for Environmental Epidemiology Meetings, New York, September 2004.

Kelsh M, Erdreich LS, Sheppard AR, Kuster N, Van Kerkhove MD, Shum M, Fröhlich J, McNeely M. Abstract. Improving radiofrequency exposure assessment in studies of mobile phone users: An overview of research design and preliminary data. *Epidemiol* 15(4):S115–S116. Presented at International Society for Environmental Epidemiology Meetings, New York, September 2004.

Shum M, Sheppard A, Kelsh M, Kuster N, Fröhlich J, McNeely M, Chan N. Pilot study to determine environmental factors that influence RF Exposure from mobile phones. Presented at Bioelectromagnetics Society 26<sup>th</sup> Annual Meeting, Washington, DC, June 23, 2004.

Shum M, Kelsh M, Sheppard A, Chan N, Kuster N, Fröhlich J, Erdreich L, Van Kerkhove McNeely M. Improved assessment of cell phone exposure for epidemiologic studies. Presented

at American Industrial Hygiene Conference and Exposition (AIHce), Atlanta, GA, May 12, 2004.

Kelsh MA and Yager JA. Workplace injuries and illness trends in the electric energy industry: Initial results from a comprehensive occupational health and safety surveillance system. Presented at the National Occupational Injury Research Symposium, Pittsburg, PA October 28–30, 2003.

Kelsh MA. What can we learn about TCE from epidemiologic studies? Presented at the Toxicology Forum, Aspen, CO, July 13–17, 2003.

Mezei G, Cher D, Kelsh M, Chapman C, Kavet R. Cardiovascular deaths and occupational exposure to magnetic fields in the national mortality followback survey. Presented at the Bioelectromagnetics Society Annual Meetings, Wailea, Maui, HI, June 22–26, 2003.

Proctor D, Kelsh MA, Lau E, Exuzides KE, Cahill J. Analysis beyond publication: Further evaluation of an occupational study of chromium workers. Presented at the Society for Epidemiologic Research Annual Meetings, Atlanta, GA, June 11–14, 2003.

Kelsh MA, Exuzides KE, Cher D, Mandel JS. Heterogeneity, influence and sensitivity analyses in meta-analysis – it matters: A case study of trichloroethylene and cancer. Presented at the Society of Epidemiologic Research, Palm Desert, CA, June 18–21, 2002.

Kelsh MA. Evidence linking environmental agents to breast cancer: A review of research on electric and magnetic fields and light at night exposures. Presented at the International Summit on Breast Cancer and the Environment: Research Needs, Charminade, Santa Cruz, CA, May 22–25, 2002.

Exuzides KA, Lau E, Kelsh MA, Ebi KL. Association of weather variables with hospital admissions for asthma in Northern and Southern California regions, 1983–1998. Presented at the 13<sup>th</sup> Conference of the International Society for Environmental Epidemiology, Garmisch-Partenkirchen, Germany, Sept 2–5, 2001.

Kelsh MA, Bracken TD, Sahl JD, Shum M, Ebi K. Magnetic field exposures of garment workers: Results of personal and survey measurements and a pilot survey. Presented at the Bioelectromagnetics Society Annual Meetings, St. Paul, MN, June 10–14, 2001.

Shum M, Kelsh MA, Bracken TD, Chapman PS, Ebie K. Magnetic-field exposures of garment workers: Results of personal and survey measurements and a pilot interview study. Presented at Northern California Epidemiology Network, Berkeley, CA, February 5, 2001.

Kelsh MA, Morgan RW, Zhao K, Exuzides KA. Occupational radiofrequency exposure and cancer mortality. Presented at the Bioelectromagnetics Society Annual Meetings, Munich, Germany, June 16, 2000.

Bracken TD, Kelsh MA, Sahl JD, Rankin R. Comparing exposures among garment workers to electric utility workers for designing a study of occupational 60 Hz magnetic field exposures

and female breast cancer. Presented at the Bioelectromagnetics Society Annual Meetings, Munich, Germany, June 16, 2000.

Kelsh MA, Zhao K, Yager J. Developing a surveillance database for epidemiologic analysis of occupational injuries: Experience with the electric utility industry. Presented at the American Industrial Hygiene Conference & Exposition, Orlando, FL, May 20–25, 2000.

Kelsh MA, Chapman P, Bracken TD. Assessing exposure comparability for a study of occupational 60 Hz electromagnetic fields exposure and female breast cancer. Presented at the American Industrial Hygiene Conference & Exposition, Orlando, FL, May 20–25, 2000.

Kelsh MA, Deubner D, Maier L, Kent M, Smith B, Chapman P, Shum M, Paustenbach D, Kolanz M. Medical monitoring survey results at a beryllium mine and extraction facility. Presented at the Society of Toxicology Annual Meetings, Philadelphia, PA, March 19–24, 2000.

Paustenbach D, Deubner D, Kelsh MA, Lowney Y. Consideration of alternate exposure pathways in the possible relation to prevalence beryllium disease. Presented at the Society of Toxicology Annual Meeting, Philadelphia, PA, March 19–24, 2000.

Greenland, S, Sheppard AR, Kelsh MA, and Kaune WT. A pooled analysis of magnetic fields wire codes, and childhood leukemia. Presented at Society of Epidemiologic Research 32nd Annual Meeting, Baltimore, MD, June 10–12, 1999.

Kelsh MA, Sahl JD, Atherton M, and Shih J. History of previous injury as a risk factor for future severe injury: An analysis among utility workers. Presented at American College of Epidemiology Annual Meeting, Bethesda, MD, October 3–4, 1999.

Yager J, Kelsh MA, Zhao K, and Mrad R. Development of an occupational illness and injury surveillance database for the electric utility sector. Presented at ACGIH Symposium: Occupational Exposure Databases and Their Application for the Next Millennium, London, England, November 1–3, 1999.

Kelsh MA. Injury and illness surveillance database pilot study. Invited speaker at EPRI Health and Safety Advisory Meetings, Chicago, IL, October 1, 1998.

Kelsh MA. Radiofrequency exposure assessment for occupational studies: Overview and future directions. Invited speaker at the 5<sup>th</sup> Annual COST244bis Zagreb, Croatia, Workshop, November 21–22, 1998.

Sheppard AR, Kelsh MA, Kaune WT, Greenland S. Estimated attributable fraction for childhood leukemia in association with residential power frequency magnetic field exposures. Presented at Bioelectromagnetics Society Annual Meeting, St. Petersburg, FL, June 1998.

Sheppard AR, Kelsh MA, Greenland S, Kaune WT. Pooled analysis of childhood leukemia and residential power frequency magnetic field exposures: Dose response and influence studies. Presented at the 1998 Annual Review of Research on Biological Effects of Electric and

Magnetic Fields from the Generation, Delivery and Use of Electricity, Tuscon, AZ, September 14–17, 1998.

Kelsh MA. Epidemiology methods and case studies. Presented at UCLA—Sociedad Mexicana del Mexicana del Trabajo Collaborative Conference on Occupational Medicine, September 12–14, 1997.

Kelsh MA. Health and safety research among electric utilities. Invited speaker at EPRI Environmental Group Advisory Meetings, October 6–9, 1997.

Kelsh MA, Kheifets L, Smith RW. The impact of work location on occupational summaries of magnetic field exposures among electric utility workers. Presented at the 1997 Annual Review of Research on Biological Effects of Electric and Magnetic Fields from the Generation, Delivery and Use of Electricity, San Diego, CA, November 9–13, 1997.

Bowman JD, Kelsh MA, Kaune WT. A manual of methods for measuring occupational electric and magnetic field exposures. Presented at the 1996 Annual Review of Research on Biological Effects of Electric and Magnetic Fields from the Generation, Delivery and Use of Electricity, San Antonio, TX, November 1996.

Kelsh MA, Kheifets LI, Smith RW, Haines KD, Senior R, Bracken TD, and Riege LE. Comparative analyses of occupational magnetic field exposure data among electric utility workers. Presented at Bioelectromagnetics Society Annual Meeting, Victoria, British Columbia, June 1996.

Kelsh MA, Sheppard AZ, Florig K, Atherton MA, and Bernstein BB. Estimating potential health costs for cost–benefits analysis of policy options for school exposures to electric and magnetic fields. Presented at the 1996 Annual Review of Research on Biological Effects of Electric and Magnetic Fields from the Generation, Delivery and Use of Electricity, San Antonio, TX, November 1996.

Kelsh MA, Sheppard AR, Kaune WT, Atherton MJ. Pooling measures of magnetic field exposures across childhood leukemia studies: Implications for meta–analysis and attributable risk estimation. Presented at Bioelectromagnetics Society Annual Meeting, Victoria, British Columbia, June 1996.

Sheppard AR, Kelsh MA, Florig HK, Bernstein BB. Disease endpoints pertinent to cost–benefit analysis for school exposures to power frequency electric and magnetic fields. Presented at Bioelectromagnetics Society Annual Meeting, Victoria, British Columbia, June 1996.

Kelsh MA and Sahl JD. Mortality among a cohort of electric utility workers, 1960–1991. Presented at American Public Health Association Annual Meeting, San Diego, CA, October 1995.

Kelsh MA and Scott R. A strategy for monitoring magnetic field exposures among an electric utility workforce. Presented at Bioelectromagnetics Annual Meeting, Boston, MA, June 1995.

Ryan MG and Kelsh MA. Work-related injuries among county workers: Assessing impacts and identifying high-risk occupations. Presented at American Public Health Association Annual Meeting, San Diego, CA, October 1995.

Del Razo LM, Garcia-Vargas G, Ahlores A, Cebrian ME, Montero R, Ostrowsky P, Kelsh MA. Chronic high exposure alters the profiles of urinary arsenic metabolites in humans. Presented at Society of Toxicology Annual Meeting, Baltimore, MD, 1995.

Kelsh MA, Ostrosky-Wegman P, Cebrian M, Gonsebatt M, Del Razo L, Garcia-Vargas G, Riege LE, Yager J. Comparative analysis of biomarkers for arsenic exposure and early health effects among populations of Northern Mexico. Presented at SEGH Second International Conference on Arsenic Exposure and Health Effects, San Diego, CA, June 1995.

Kelsh MA and Sahl JD. Misclassification of electrical worker occupations from death certificate data: An analysis among electric utility workers. Presented at DOE/EPRI Contractors Review Meeting, Albuquerque, NM, November 1994.

Kelsh MA and Sahl JD. Sex differences in work-related injury rates among electric utility workers. Presented at the Society for Epidemiologic Research Annual Meeting, Miami, FL, June 1994.

Sahl JD, Aseltine DA, Senior RS, Rankin R, Kelsh MA, Riege LE, Smith RW, Bracken TD. An analysis of alternate summaries of magnetic field exposure data. Presented at DOE/EPRI Contractors Review Meeting, Albuquerque, NM, November 1994.

Sheppard AR, Kaune WT, Kelsh MA, Greenland S, Sahl JD. Development of a model for estimating attributable fractions for childhood leukemia and residential exposures to power frequency magnetic fields. Presented at 16<sup>th</sup> Annual Bioelectromagnetics Society Meeting, Copenhagen, Denmark, June 1994.

Kelsh MA. A review of occupational health research in power frequency electric and magnetic fields. Invited speaker at Pacific Gas and Electric Company EMF Update Conference, January 14, 1993.

Ryan MG and Kelsh MA. Work related injuries among county firefighters, 1987-1992. Presented at the American Public Health Association Annual Meeting, San Francisco, CA, October 1993.

Kelsh MA, Sahl JD, Smith RW, Aseltine DA. Sampling design for ELF magnetic field exposure assessment. Presented at the DOE/EPRI Annual Contractors Review Meeting, Savannah, GA, November 1993.

Kelsh MA, Sahl JD, Sorenson S. Sex differences in injury rates among electric utility workers. Presented at the American Public Health Association Annual Meeting, San Francisco, CA, October 1993.

Kelsh MA, Ke D, Morgenstern H. Shoulder, neck, and back pain among trade and office workers. Presented at the American Public Health Association Annual Meeting, San Francisco, CA, October 1993.

Kelsh MA, Ke D, Morgenstern H. The importance of non-occupational risk factors in the assessment of occupationally-related carpal tunnel syndrome. Presented at Society for Epidemiologic Research Annual Meeting, Keystone, CO, June 1993.

Kelsh MA, Sahl JD, Smith R. The next generation of work exposure assessments. Presented at Bioelectromagnetics Society Annual Meeting, Los Angeles, CA, June 1993.

Sahl JD, Scarfuto J, Pineo J, Kelsh MA, Aseltine D. Magnetic field exposures among electric utility workers: Consideration of occupation, job task and facility type. Presented at Bioelectromagnetics Society Annual Meeting, Los Angeles, CA, June 1993.

Kelsh MA and Sahl JD. Work related injuries among electric utility workers. Presented at the Soc. for Epidemiologic Research Annual Mtg., Minneapolis, MN, June 1992.

Sahl JD and Kelsh MA. Exposure assessment for power frequency magnetic fields among electrical utility workers. Presented at First World Congress for Electricity and Magnetism in Biology and Medicine, Orlando, FL, June 1992.

Kelsh MA, Sahl JD, Greenland S. Improving study design and exposure assessment procedures in the analyses of the health effects of occupational exposures to electromagnetic fields. Presented at 1<sup>st</sup> World Congress for Electricity and Magnetism in Biology and Medicine, Orlando, FL, June 1992.

Kelsh MA, Morgenstern H, Ke D. A cross-sectional study of carpal tunnel syndrome symptoms among trade and office workers. Presented at the Ninth International Symposium, Epidemiology in Occupational Health, Cincinnati, OH, September 1992.

Kelsh MA, Sahl JD, Greenland S, and Guggenheim DE. An analysis of cancer mortality among utility electrical workers. Presented at Bioelectromagnetics Society Annual Meeting, Salt Lake City, UT, June 1991.

Kelsh MA, Guggenheim DE, Sahl JD. Application of epidemiologic methods to occupational injury prevention. Presented at National Safety Congress, New Orleans, LA, October 1991.

Kelsh MA, Sahl JD, Greenland S, Guggenheim DE. Influence of study design, analytical decisions and data sources in occupational mortality. Presented at Bioelectro-magnetics Society Annual Meeting, Salt Lake City, UT, June 1991.

Rock AR, Kelsh MA, Faeder EJ. Information management approach for databases required for hazard assessment in the aerospace industry. Presented at Society for the Advancement of Material and Process Engineering, San Diego, CA, May 1991.

Sahl JD, Kelsh MA, Guggenheim DE. Characteristics of minor injuries that predict the occurrence of severe injury. Presented at Society for Epidemiologic Research Annual Meeting, Buffalo, NY, June 1991.

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Morgenstern H, Kraus J, Kelsh MA, Margolis W. A cross-sectional study of carpal-tunnel syndrome in female grocery checkers. Presented at Society for Epidemiologic Research Annual Meeting, Vancouver, British Columbia, June 1988.

Kelsh MA. Health impacts of a latrine-sanitation project on rural villages of Michoacan, Mexico. Presented at American Public Health Association Annual Meeting, New Orleans, LA, October 1987.

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Kelsh MA, Iverson E, Scrimshaw SW. Differences in perception and treatment of asthma and epilepsy among Latino and Anglo children and adolescents in Los Angeles. Presented at American Public Health Assoc. Annual Meeting, Dallas, TX, November 1983.

### **Technical Reports**

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Kelsh MA, Chapman P, Bracken, TD, Sahl JD, Rankin R, Exuzides A. Female breast cancer feasibility study: A comparison of magnetic fields exposures in a garment manufacturing and electric utility work environment. EPRI, Palo Alto, CA 2000. TR-114845.

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Sahl JD and Kelsh MA. A report on the International Utility Symposium—Health effects of electric and magnetic fields: Research, communication, regulation. WEST Associates, ETF 86–12. Southern California Edison Company, Rosemead, CA, 1987.

### **Academic Appointments**

- Adjunct Associate Professor, UCLA School of Public Health, Department of Epidemiology, 1999–present

### **Project Experience**

- Principal Investigator, Cell Phone Exposure Assessment, CTIA/CRADA, 2003–2006
- Co-Principal Investigator, EMF Exposure Assessment, NIOSH/NCI, 2005–2006
- Principal Investigator, EPRI Injury, Electric Power and Research Institute, 1999–2006
- Principal Investigator, TCE Meta-Analysis, TCE Issues Group, 2004–2005
- Co-Principal Investigator, Newborn Thyroid Study, Lockheed, 2000–2005
- Project Manager, Chevron Epidemiologic Study, University of California, Berkeley, 2003–2005
- Principal Investigator, EPRI Breast Cancer Exposure Assessment, Electric Power and Research Institute, 1999–2002
- Project Manager, Motorola Epidemiologic Study, Motorola, Inc., 1997–2001
- Co- Investigator, Childhood Leukemia – EMF Pooled Analysis, NIEHS, 1996–1999
- Project Manager, Aerospace Workers Epidemiologic Study, Hughes Aircraft, 1997–1998
- Co-Investigator, EMF Exposure and School Policy, California Department of Health Services, 1995–1996
- Project Manager, Electric Utility Worker Injury Surveillance Study, Southern California Edison, 1990–1995
- Project Manager, UCLA Study of Musculoskeletal Injury Among Trade and Office Workers, 1990–1993
- Project Manager, Electric Utility Worker Epidemiologic Study, Southern California Edison, 1985–1990

## **Professional Affiliations**

- International Society of Pharmacoepidemiology (member)
- International Society for Environmental Epidemiology (member)
- Society for Epidemiologic Research (member)
- American College of Epidemiology (member)
- American College of Occupational and Environmental Medicine (associate member)
- Bioelectromagnetics Society (member)
- American Public Health Association (past member)
- American Industrial Hygiene Association (past member)