

# MIRANDA LOH

## CHRONOLOGY OF EDUCATION

- Sc.D. 2006 **Harvard School of Public Health, Boston, MA**
- Major field: Exposure Assessment
  - Minor fields: Biostatistics and Risk Analysis
  - Thesis: Assessing exposures and risks to organic hazardous air pollutants, Advisor Deborah H. Bennett, Ph.D.
- S.M. 2002 **Harvard School of Public Health, Boston, MA**
- Environmental Science and Risk Management
  - Research practicum topic: Modeling the effect of environmental interventions on low-income asthmatic children.
- A.B. 1997 **Stanford University, Stanford, CA**
- Human Biology, concentration in international development and health.

## CHRONOLOGY OF EMPLOYMENT

**Institute of Occupational Medicine, Edinburgh, United Kingdom, Section Head, Environment and Public Health, July 2019 - present**

**Institute of Occupational Medicine, Edinburgh, United Kingdom, Senior Scientist, April 2014-June 2019**

**University of Arizona, Mel and Enid Zuckerman College of Public Health, Assistant Professor, July 2010 – 2015, currently Adjunct Professor**

**National Institute for Health and Welfare (THL), Kuopio, Finland, Visiting Scientist**

**National Institute for Health and Welfare (THL), Kuopio, Finland Researcher Jan 2007-June 2010**

**Harvard School of Public Health, Boston, MA, Doctoral Candidate 2002-2006**

**Harvard School of Public Health, Boston, MA, Research Assistant, June 2001 – Feb 2002**

**Resources for the Future, Washington, DC, Consultant, June 2001 – January 2003**

**World Resources Institute, Washington, DC, Research Assistant, June 1999 - July 2000**

**Chemonics International, Washington, DC, Project Assistant, September 1998 – June 1999**

## HONORARY POSITIONS

**University of Manchester, Honorary Senior Lecturer, 2019-present**

**University of Arizona, Adjunct 2014-present**

## RECENT GRANTS AND CONTRACTS

**Scottish Government (Hilary Cowie, PI), 2016**

Strategic Air Quality Indicator, Project no. IOM/003/15, £33,780

**National Environmental Research Council/Medical Research Council (Miranda Loh, PI), 2016-**

**2019** Air Pollution Impacts on Cardiopulmonary Disease in Beijing: An integrated study of Exposure Science, Toxicogenomics and Environmental Epidemiology. (APIC-ESTEE), NE/N007182/1, £390,973.

**National Environmental Research Council, Medical Research Council (DK Arvind, PI), 2016-2020**

Delhi Air Pollution: Health and Effects (DAPHNE), NE/P016340/1, £311,806.

**Medical Research Council (John Cherrie, PI), 2017-2019**

Assessing the Health Impacts of Air Pollution in Thailand, MR/R006210/1, £381,003.

**Engineering and Physical Sciences Research Council, SECURE Network (Miranda Loh, PI) 2017**

Health Inequalities and Air Quality in Scotland (Health-IE-Air), EP/M008347/1, project no. FP2017004ML, £15,000.

**Arts and Humanities Research Council (Patrick Bueker, PI), 2017-2019**

The AIR Network – Action for Interdisciplinary air pollution Research, AH/R006059/1, £9513

**Medical Research Council (Kevin Mortimer, PI), 2019-2022**

Non-communicable lung disease in Kenya: from burden and early life determinants to participatory interdisciplinary solutions, MR/S009027/1, £43,000

**European Union, Horizon 2020 (Anjoeka Pronk, PI), 2020-2024**

Exposome Project for Health and Occupational Research (EPHOR), Grant no. 874703 €584,549 (£495,870)

**United Kingdom Research and Innovation (Miranda Loh, PI) 2020**

Citizens' Data for Air Pollution (CitiDAir), BB/T019301/1, £19,995

## **HONORS AND AWARDS**

Finalist for CEFIC Long Range Initiative Innovative Science Award 2009

## **SERVICE AND OUTREACH**

### *Media outreach*

Arizona Public Media Web Feature "Arsenic and Old Toenails" by Gisela Telis,

<https://www.azpm.org/p/top-health/2012/5/10/539-web-feature-arsenic-and-old-toenails/>

KVOA.com "Toenails and Arsenic? U of A studying connection" <http://www.kvoa.com/news/toenails-and-arsenic-u-of-a-studying-connection/>

KOLD evening news feature December 5, 2011

BBC Radio Scotland, Mornings – With Kay Adams. Guest expert on air pollution and idling. 4 December 2018.

News features regarding effectiveness of facemasks against air pollution:

<https://bmj.altmetric.com/details/36090800/news>

Interviewed by Beth Gardiner for New York Times: <https://www.nytimes.com/2019/08/13/well/live/how-to-reduce-exposure-to-air-pollution.html>

### *Invited expert testimony/participation*

Invited participant to Royal Society of Biology sponsored Roundtable Discussion: 2018

The Impacts of Air Quality on Health and Associated Interventions, 2 August 2018.

Expert witness, Preventative Agenda on Clean Air, Health and Sport Committee, Scottish Parliament 17 April 2018 2018

### *Community service/outreach*

Dewey-Humboldt community meetings and outreach: <http://superfund.pharmacy.arizona.edu/content/ua-srp-attends-2012-agua-fria-festival;>  
<http://www.prescottvalleytribune.com/main.asp?Search=1&ArticleID=56979&SectionID=1&SubSectionID=901&S=1>

University of Arizona Superfund Research Program, *Promotor Module on Risk Assessment*. Development of training module for promotoras de la salud (community health workers) and training in Nogales and Naco, Mexico. <http://superfund.pharmacy.arizona.edu/learning-modules/promotor-modules/risk>

### *Committee membership*

Member of Distinguished Lecturer Committee of International Society for Exposure Science (ISES) 2007-2010

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Membership Committee and Outreach Special Project Leader of ISES	2009-present
Councilor, Board of Directors, ISES	2015-present
Scientific and Organizing Committees for Inhaled Particles XII Conference	2017
Scientific Committee for Chemix: Assessing and Managing Real Life Risks from Chemical Mixtures, Royal Society of Chemistry	2017

*Review work:*

Journals include:

- Annual Reviews in Public Health
- Atmospheric Environment
- Building and Environment
- Chemosphere
- Environmental Health Perspectives
- Environment International
- Environmental Science and Technology
- Indoor Air
- Journal of Exposure Science and Environmental Epidemiology
- Journal of the Air and Waste Management Society
- International Journal of Environmental Research and Public Health

Reviewer for Health Canada Residential Indoor Air Guidelines 2010

**TEACHING**

Course director:

CPH 484/584 Fundamentals of Industrial and Environmental Health, University of Arizona, 2010-2013  
 CPH 604 Modeling Exposures to Environmental Hazards, 2013

Guest lecturer:

A10HB, The Environment and Health Honours Unit, Heriot-Watt University, 2015-2018

Co-supervision of students:

Currently: 2 Ph.D., University of Edinburgh and London School of Hygiene and Tropical Medicine  
 Previous: 1 M.Sc., Heriot-Watt University; 2 M.P.H., University of Arizona  
 Primary supervision: 2 M.P.H., University of Arizona

**PUBLICATIONS**

**Chapters in scholarly books and monographs**

**Loh, M.** and Morgenstern, R.D. 2004. Trichloroethylene in the United States: Embracing Market-based Approaches? *Choosing Environmental Policy: Comparing Instruments and Outcomes in the United States and Europe*. Eds. Winston Harrington, Richard Morgenstern, Thomas Sterner. Washington, D.C.: Resources for the Future Press.

Nijhuis, N., **M. Loh**, and P. Harrison, *Tetrachloroethylene*, in *WHO Guidelines for Indoor Air Quality: Selected Pollutants*. 2010, World Health Organization Regional Office for Europe: Bonn, Germany. p. 415-454.

Bonvallot, N., P. Harrison, and **M. Loh**, *Trichloroethylene*, in *WHO Guidelines for Indoor Air Quality: Selected Pollutants*. 2010, World Health Organization Regional Office for Europe: Bonn, Germany. p. 377-414.

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Loh, M. 2004. Exposure to Environmental Hazards and Effects on Chronic Disease, in *Environmental Determinants of Human Health*, Eds. Jozef M. Pacyna, Elisabeth G. Pacyna. Switzerland: Springer, p. 27-49.

### Refereed journal articles

**Loh, M.M.**, Houseman, E.A., Levy, J.I., Gray, G.M., Spengler, J.D., Bennett, D.H., 2006. Measured concentrations of VOCs in several non-residential microenvironments in the United States. *Environmental Science and Technology*. 40(22): 6903-6911. PMID: 17153993

**Loh, M.M.**, Levy, J.I., Spengler, J.D., Houseman, E.A., Bennett, D.H., 2007. Ranking cancer risks of organic hazardous air pollutants in the United States. *Environmental Health Perspectives*. 115(8): 1160-1168. PMID: 17687442

**Loh, M.M.**, Houseman, E.A., Levy, J.I., Spengler, J.D., Bennett, D.H. 2009., Contribution to volatile organic compound exposures from time spent in stores and restaurants and bars. *Journal of Exposure Science and Environmental Epidemiology*. 19(7):660-673. PMID:19002215

Tainio, M., Sofiev, M., Hujo, M., Tuomisto, J.T., **Loh, M.M.**, Jantunen, M.J., Karppinen, A., Kangas, L., Karvosenoja, N., Kupiainen, K., Porvari, P., Kukkonen, J., 2009. Evaluation of the intake fractions for the European and Finnish anthropogenic primary fine particulate matter emissions and the European populations. *Atmospheric Environment*, 43(19): 3052-3059. DOI: 10.1016/j.atmosenv.2009.03.030

**Loh, M.M.**, Soares, J., Karppinen, A., Kukkonen, J., Kangas, L., Riikonen, K., Kousa, A., Asikainen, A., Jantunen, M.J., 2009. Intake fraction distributions for benzene from vehicles in the Helsinki metropolitan area. *Atmospheric Environment*. 43(301-310).

Halonen, JI., Lanki, T., Tiittanen, P., Niemi, JV., **Loh, M.M.**, Pekkanen, J, 2010. Ozone and cause-specific cardiorespiratory morbidity and mortality. *Journal of Epidemiology and Community Health*, Sep;64(9):814-20. PMID: 19854743

Beamer, PI., Elish, CA., Roe, DJ., **Loh, MM**, Layton, DW. 2011. Differences in metal concentration by particle size in house dust and soil. *Journal of Environmental Monitoring*. 14(839-844).

Beamer, P., Sugeng, A.J., Kelly, M.D., Lothrop, N., Klimecki, W.T., Wilkinson, S.T., **Loh, M.**, 2014. Use of dust fall filters as passive samplers for metal concentrations in air for communities near contaminated mine tailings. *Environ. Sci. Process. Impacts Accepted*. doi:10.1039/C3EM00626C

Fantke, P., Jolliet, O, Evans, JS, Apte, JS, Cohen, AJ, Hänninen, O, Hurley, F, Jantunen, MJ, Jerrett, M, Levy, JI, **Loh, MM**, Marshall, JD, Miller, BG, Preiss, P, Spadaro, JV, Tainio, M, Tuomisto, JT, Weschler, CJ, McKone, TE. 2014. Health effects of fine particulate matter in life cycle impact assessment: findings from the Basel Guidance Workshop. *The International Journal of Life Cycle Assessment*, 1-13.

Lothrop, N., Wilkinson, S.T., Verhougstraete, M., Sugeng, A., **Loh, M.M.**, Klimecki, W. and Beamer, P.I., 2015. Home Water Treatment Habits and Effectiveness in a Rural Arizona Community. *Water*, 7(3), pp.1217-1231.

Ramirez-Andreotta, M.D., Lothrop, N., Wilkinson, S.T., Root, R.A., Artiola, J.F., Klimecki, W. and **Loh, M.**, 2015. Analyzing patterns of community interest at a legacy mining waste site to assess and inform environmental health literacy efforts. *Journal of Environmental Studies and Sciences*, pp.1-13.

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Hodas, N., **Loh, M.**, Shin, H.M., Li, D., Bennett, D., McKone, T.E., Jolliet, O., Weschler, C.J., Jantunen, M., Lioy, P. and Fantke, P., 2015. Indoor inhalation intake fractions of fine particulate matter: review of influencing factors. *Indoor air*, doi:10.1111/ina.12268.

Ramirez-Andreotta, M.D., Brody, J.G., Lothrop, N., **Loh, M.**, Beamer, P.I. and Brown, P., 2016. Reporting back environmental exposure data and free choice learning. *Environmental Health*, 15(1), p.2.

Beamer, P.I., Klimecki, W.T., **Loh, M.**, Van Horne, Y.O., Sugeng, A.J., Lothrop, N., Billheimer, D., Guerra, S., Lantz, R.C., Canales, R.A. and Martinez, F.D., 2016. Association of Children's Urinary CC16 Levels with Arsenic Concentrations in Multiple Environmental Media. *International Journal of Environmental Research and Public Health*, 13(5), p.521.

**Loh, M.M.**, Sugeng, A., Lothrop, N., Klimecki, W., Cox, M., Wilkinson, S.T., Lu, Z. and Beamer, P.I., 2016. Multimedia exposures to arsenic and lead for children near an inactive mine tailings and smelter site. *Environmental Research*, 146, pp.331-339.

**Loh, M.**, Sarigiannis, D., Gotti, A., Karakitsios, S., Pronk, A., Kuijpers, E., Annesi-Maesano, I., Baiz, N., Madureira, J., Oliveira Fernandes, E., Jerrett, M., Cherrie, J.W. 2017. How Sensors Might Help Define the External Exposome. *International Journal of Environmental Research and Public Health*, 14(4), p. 434. PMID: 28420222

Pan, L., Dong, W., Li, H., Miller, MR., Chen, Y., **Loh, M.**, Wu, S., Xu, J., Yang, X., Shima, M., Deng, F., Guo, X., 2018. Association patterns for size-fractioned indoor particulate matter and black carbon and autonomic function differ between patients with chronic obstructive pulmonary disease and their healthy spouses. *Environmental Pollution*, 236: 40-48. PMID: 29414364

Cherrie, JW., Apsley, A., Cowie, H., Steinle, S., Mueller, W., Lin, C., Horwell, C., Sleuwenhoek, A., **Loh, M.** 2018. The Effectiveness of Facemasks Used to Protect Beijing Residents Against Particulate Air Pollution. *Occupational and Environmental Medicine*, 75(6):446-452. PMID: 29632130.

Cherrie, JW., Wang, S., Mueller, W., Wendelboe-Nelson, C., **Loh, M.**, 2018. In-mask temperature and humidity can validate respirator wear-time and indicate lung health status. *Journal of Exposure Science and Environmental Epidemiology*. Epub, ahead of print. PMID: 30382241.

Franken, R., Maggos, T., Stamatelopoulou, A., **Loh, M.**, Kuijpers, E., Bartzis, J., Steinle, S., Cherrie, JW., Pronk, A. 2019. Comparison of Methods for Converting Dylos Particle Number Concentrations to PM2.5 Concentrations. *Indoor Air*, <https://doi.org/10.1111/ina.12546>.

Shi, Z, ...**Loh, M.**, ...Yuanhang, Zheng, M., 2019. Introduction to the special issue "In-depth study of air pollution sources and processes within Beijing and its surrounding region (APHH-Beijing)." *Atmospheric Chem. Phys.* 19, 7519–7546. <https://doi.org/10.5194/acp-19-7519-2019>

Dong, W., Liu, S., Chu, M., Zhao, B., Yang, D., Chen, C., Miller, M.R., **Loh, M.**, Xu, J., Chi, R., Yang, X., Guo, X., Deng, F., 2019. Different cardiorespiratory effects of indoor air pollution intervention with ionization air purifier: Findings from a randomized, double-blind crossover study among school children in Beijing. *Environ. Pollut.* Barking Essex 1987 254, 113054–113054. <https://doi.org/10.1016/j.envpol.2019.113054>

Huang, J., Song, Y., Chu, M., Dong, W., Miller, M.R., **Loh, M.**, Xu, J., Yang, D., Chi, R., Yang, X., Wu, S., Guo, X., Deng, F., 2019. Cardiorespiratory responses to low-level ozone exposure: The inDOOR Ozone Study in childrEn (DOSE). *Environ. Int.* 131, 105021–105021.

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<https://doi.org/10.1016/j.envint.2019.105021>

Mueller, W., Steinle, S., Pärkkä, J., Parmes, E., Lienes, H., Kuijpers, E., Pronk, A., Sarigiannis, D., Karakitsios, S., Chapizanis, D., Maggos, T., Stamatelopoulou, A., Wilkinson, P., Milner, J., Vardoulakis, S., **Loh, M.**, 2020. Urban greenspace and the indoor environment: Pathways to health via indoor particulate matter, noise, and road noise annoyance. *Environ. Res.* 180, 108850. <https://doi.org/10.1016/j.envres.2019.108850>

### **Refereed conference proceedings:**

**Loh, M.**, Houseman, E.A., Spengler, J.D., Bennett, D.H., 2005. Characterization of VOC exposures and risk in non-residential microenvironments. *Proceedings of the 10<sup>th</sup> International Conference on Indoor Air Quality and Climate*, Beijing, China.

**Loh, M.**, Bennett, D.H., 2006. Relative impact on exposure of pollutants released in the indoor environment. *Proceedings of the Healthy Buildings 2006 Conference*, Lisbon, Portugal.

**Loh, M.M.**, Dodson, R.D., Bennett, D.H. 2008. Contribution of secondary formation to formaldehyde in Boston homes. In *Indoor Air 2008: Proceedings of the 11th International Conference on Indoor Air Quality and Climate*. Eds.: Strøm-Tejsten, P, Olesen, BW, Wargocki, P, Zukowska, D, Toftum, J, Indoor Air 2008, Copenhagen, Denmark, 2008, paper ID: 847. ISBN 9788778772701.

Gerharz, L.E., **Loh, M.**, Yang, A. & Kuhn, A., 2009. Using European Time Use Data for Modelling Individual Exposure to Air Pollution. 31st conference of the International Association for Time Use Research (IATUR). September 23-25, 2009. Lüneburg, Germany.

Hänninen, O., Brüske-Hohlfeld I, **Loh, M.**, Stoeger T, Kreyling W, Schmid O, Peters A, 2009. Estimation of health risks and safety margins due to inhalation of ultrafine particles and nanoparticles in selected occupational, consumer and environmental settings. Grenoble Nanosafe 08 conference proceedings, *Journal of Physics: Conference Series* 170: 012031 doi:10.1088/1742-6596/170/1/012031 [http://www.iop.org/EJ/article/1742-6596/170/1/012031/jpconf9\\_170\\_012031.pdf](http://www.iop.org/EJ/article/1742-6596/170/1/012031/jpconf9_170_012031.pdf)

Asikainen, A., Hänninen, O, Kuhn, A., Yang, A., **Loh, M.**, Gerharz, L., Brelih, N., Leal, V., Allard, F., Wargocki, P. 2012. Modeling Residential Ventilation Rates in European Countries. *Proceedings of the Healthy Buildings 2012 Conference*, Brisbane, Australia.

### **SCHOLARLY PRESENTATIONS**

Loh, M., Houseman, E.A., Bennett, D.H. , 2004 Characterization of Microenvironmental VOC Concentrations Using a Composite Sampling Method. Presented at the 14<sup>th</sup> Annual International Society for Exposure Analysis Conference, Philadelphia, PA.

Loh, M., Bennett, D.H., 2005. “Contribution to Total Personal Exposure of VOC’s from Shopping and Dining Microenvironments.” Presented at the 15<sup>th</sup> Annual International Society for Exposure Analysis Conference, Tuscon, AZ.

Loh, M., Houseman, E.A., Spengler, J.D., Bennett, D.H., 2005. “Characterization of VOC Exposures and Risk in Non-residential Microenvironments.” Presented at the 10<sup>th</sup> International Conference on Indoor Air Quality and Climate, Beijing, China.

Loh, M., Bennett, D.H., 2006. ”Commuter Exposure to VOCs in Various Transportation Modes.”  
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Presented at the International Conference of Environmental Epidemiology and Exposure, Paris, France.

Loh, M., Bennett, D.H., 2006. "Relative Impact on Exposure of Pollutants Released in the Indoor Environment." Presented at the Healthy Buildings 2006 Conference, Lisbon, Portugal.

Loh, M., Dodson, R., 2006. "Microenvironmental Exposures to VOCs," Environmental Energy Technologies Division Seminar, Lawrence Berkeley National Laboratory, Berkeley, CA, USA.

Loh, M., Soares, J., Karpinen, A., Kukkonen, J., Jantunen, M., Asikainen, A., 2007. "Intake Fraction of Benzene from Mobile Sources in Helsinki." Presented at the 17<sup>th</sup> Annual International Society for Exposure Analysis conference, Durham, NC., USA.

Loh, M.M, Dodson, R.D., Bennett, D.H. Contribution of Secondary Formation to Formaldehyde in Boston Home. 2008. Presented at Indoor Air 2008, Copenhagen, Denmark.

Loh, M., Gerharz, L., Kuhn, A., Yang, A. "A Tool for Air Pollution Exposure Modelling and Assessment in Europe." 2011. Presented at the 21<sup>st</sup> Annual ISES Conference, *Advancing Exposure Science for Environmental Health*, Baltimore, Maryland, October 23 – 27, 2011.

Annual Meeting Closing Session Panel of Early Career Scientists, Annual Member's Meeting, University Corporation for Atmospheric Research, Boulder, CO, October, 2010.

Loh, M., Gerharz, L. "Using Open Environmental Models for Exposure Science." Presented at the 22<sup>nd</sup> Annual ISES Conference, *Lessons Learned: Contributions of Exposure Science to Environmental and Occupational Health*, Seattle, Washington, October 28-November 1, 2012.

Bekris, H., Loh, M., O'Rourke, MK. "Toenails as a Biomarker for Arsenic Exposure in Well Water Users in Rural Arizona." Presented at the 22<sup>nd</sup> Annual ISES Conference, *Lessons Learned: Contributions of Exposure Science to Environmental and Occupational Health*, Seattle, Washington, October 28-November 1, 2012.

Beamer, P, Sugeng, A, Lothrop, N, Cox, M, Klimecki, W, Wilkinson, ST, Loh, M. "Airborne metal concentrations measured using passive samplers in a community near contaminated mine tailings." Presented at the 23rd Annual ISES Conference 2013 - A joint conference with the International Society for Environmental Epidemiology and the International Society of Indoor Air Quality and Climate (ISIAQ), *Environment and Health - Bridging South, North, East and West*, Basel, Switzerland, August 19 – 23, 2013

Loh, M, Sugeng, A, Lothrop, N, Klimecki, W, Cox, M, Wilkinson, ST, Beamer, P. "Exposure to Metals in Environmental Media Near a Mine Tailings Site." Poster presented at the 23rd Annual ISES Conference 2013 - A joint conference with the International Society for Environmental Epidemiology and the International Society of Indoor Air Quality and Climate (ISIAQ), *Environment and Health - Bridging South, North, East and West*, Basel, Switzerland, August 19 – 23, 2013

Sugeng, A, Beamer, P, Lothrop, N, Cox, M, Klimecki, W, Wilkinson, ST, Loh, M. "Comparison of Inter-Home and Intra-Homes Variance of Arsenic in Children's Urine for Households Near a Hazardous Waste Site ." Poster presented at the 23rd Annual ISES Conference 2013 - A joint conference with the International Society for Environmental Epidemiology and the International Society of Indoor Air Quality and Climate (ISIAQ), *Environment and Health - Bridging South, North, East and West*, Basel, Switzerland, August 19 – 23, 2013

Lothrop, N., Sugeng, A, Loh, M, Cox, M, Klimecki, W, Wilkinson, ST, Beamer, P. "Relationship of  
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Arsenic Concentration in Residential Yard Soil, Home Location, and Topography in a Community near a Superfund Site.” Poster presented at the 23rd Annual ISES Conference 2013 - A joint conference with the International Society for Environmental Epidemiology and the International Society of Indoor Air Quality and Climate (ISIAQ), *Environment and Health - Bridging South, North, East and West*, Basel, Switzerland, August 19 – 23, 2013.

Sugeng, A, Beamer, P, Klimecki, W, Lothrop, N, Cox, M, Wilkinson, ST, Loh M. “Assessing Metals Exposure in the Community Surrounding the Iron King Superfund Site.” Presented at the National Institute of Environmental Health Sciences’ Superfund Research Program Annual Meeting, Baton Rouge, LA, October 15-17, 2014.

Loh, M. “Multimedia Exposure to Metals Near a Mine Tailings Site.” Presented at the 53<sup>rd</sup> Meeting of the Society of Toxicology, Phoenix, AZ, March 23-27, 2014.

Lothrop N, Wilkinson ST, Moreno Ramirez D, Sugeng A, Beamer P, Loh M. “Community engagement and research translation at the Iron King Mine and Humboldt Smelter Superfund Site in Dewey-Humboldt, Arizona.” Paper presented at: Safety Culture in the Context of Environmental Health Sciences (F-64). 74<sup>th</sup> Annual Meeting of the Society for Applied Anthropology; 2014 March 18-22; Albuquerque, NM.

Lothrop, N, Wilkinson, ST, Klimecki, W, Beamer, P, Sugeng, A, Loh, M. “Developing Community-engaged Results Report-back Materials for an Environmental Exposure Study in a Rural Arizona Community near a Superfund Site.” Poster presented at the 24<sup>th</sup> Annual Conference of the International Society for Exposure Science, Cincinnati, OH, October 12-16, 2014.

Loh, M, Lothrop, N, Sugeng, A, Felix, O, Betterton, E, Saez, AE, Klimecki, W, Wilkinson, ST, Beamer, P. “Environmental Exposures to Children at a Legacy Mine Site.” Presented at the 24<sup>th</sup> Annual Conference of the International Society for Exposure Science, Cincinnati, OH, October 12-16, 2014.

Loh, M, Pronk, A, Kuijpers, E, Schieberle, C, Li, N, Stamatelopoulou, A, Chapizanis, D, Sargiannis, D, Bartzis, J, Spiric, Z, Cherrie, J. “A comparison study of location and activity monitoring for exposure studies.” Poster presented at the 24<sup>th</sup> Annual Conference of the International Society for Exposure Science, Cincinnati, OH, October 12-16, 2014.

Sugeng, A, Beamer, P, Canales, R, Lu, Z, Lothrop, N, Wilkinson, ST, Klimecki, W, Loh, M. “Assessing the Potential for Metals Transport into Homes Surrounding A Legacy Mining Site.” Poster presented at the National Institute of Environmental Health Sciences’ Superfund Research Program Annual Meeting, San Jose, CA, November 12-14, 2014.

Loh, M, Pronk, A, Kuijpers, E, Schieberle, C, Chapizanis, D, Stamatelopoulou, A, Bartzis, J, Spiric, Z, Sargiannis, D, Cherrie, J. “Using a physical activity monitor and smartphone app to determine time-use and location information for exposure studies.” Presented at the 18th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, organized by MESAEP - Mediterranean Scientific Association of Environmental Protection, September 26-30, 2015.

Loh, M., Li, N., Schieberle, C., Pronk, A., Kuijpers, E., Sargiannis, D., Chapizanis, D., Karakitsios, S., Maggos, T., Stamatelopoulou, A., Bartzis, J., Spiric, Z., Cherrie, J. “A pilot study to collect time-location-activity data using a mass market smartphone app and fitness tracking device.” Presented at the 25<sup>th</sup> Annual Meeting of the International Society for Exposure Science, Las Vegas, NV, October 18-22, 2015.

Pronk, A., Sargiannis, D., Chapizanis, D., Karakitsios, S., Kuijpers, E., Boessen, R., Pierik, F., Maggos, T., Stamatelopoulou, A., Bartzis, J., Spiric, Z., Schieberle, C., Loh, M., Cherrie, J. “Prediction of  
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location in indoor/outdoor micro- environments using smart consumer products.” Presented at the 25<sup>th</sup> Annual Meeting of the International Society for Exposure Science, Las Vegas, NV, October 18-22, 2015.

Steinle, S. Loh, M., Sleuwenhoek, A., Pronk, A., Cherrie, J., Kuijpers, E., Sarigiannis, D. “The use of low cost sensors to assess personal exposure to air pollution: results from the HEALS pilot study.” Presented at the 26<sup>th</sup> Annual Meeting of the International Society for Exposure Science, Utrecht, the Netherlands, October 22-26, 2016.

Loh, M. Steinle, S., Sleuwenhoek, A., Sarigiannis, D., Chapizanis, D., Pronk, A., Kuijpers, E., Maggos, T., Stamatelopoulou, M. “Participant Use of Wireless Sensing Technologies in an Exposure Study.” Presented at the 26<sup>th</sup> Annual Meeting of the International Society for Exposure Science, Utrecht, the Netherlands, October 22-26, 2016.

Loh, M., Sarigiannis, D., Gotti, A., Karakitsios, S., Pronk, A., Kuijpers, E., Annesi-Maesano, I., Baiz, N., Madureira, J., Fernandes, E.O., Jerrett, M., Cherrie, J. “Sensor Technologies and the Exposome.” Presented at the 26<sup>th</sup> Annual Meeting of the International Society for Exposure Science, Utrecht, the Netherlands, October 22-26, 2016.

Cherrie, JW., Apsley, A., Cowie, H., Mueller, W., Sleuwenhoek, A., Steinle, S., Loh, M (presenter). “The effectiveness of facemasks used to protect Beijing residents against particulate air pollution” Presented at the 27<sup>th</sup> Annual Meeting of the International Society for Exposure Science, Durham, NC, USA, October 15-19, 2017.

Lin, C., Jia, X., Hu, D., Deng, F., Guo, X., Heal, M.R., Miller, M., Wilkinson, P., Loh, M. “Quantifying personal PM2.5 and Black Carbon exposure using portable monitors in the Chinese megacity, Beijing.” Poster presented at 2017 Annual UK Review Meeting on Outdoor and Indoor Air Pollution Research in the UK, Birmingham, 15-16 May 2017.

Loh, M. Lin, C., Cherrie, J., Wilkinson, P. “Modeling Exposure Reduction for Personal Level Interventions.” Presented at the 28<sup>th</sup> Annual Meeting of the International Society for Exposure Science, A joint conference with the International Society for Environmental Epidemiology, Ottawa, Canada, 26-30 August, 2018.

### **Invited presentations:**

Loh, M. “The Metals Exposure Study in Homes (MESH): Examining children’s exposure to metals near the Iron King Superfund Site,” as part of Mining Site Metals: Exposure Pathways and Bio-Assays. Presented at *Live at 9: SRP/EPA Seminar Series*, San Francisco, July 30, 2013. (Webinar on September 3, 2013)

Loh, M. “Pathways of exposure to arsenic.” Presented at *Health Effects and Mitigation of Arsenic: Current Research Efforts and Future Directions*, National Institute of Environmental Health Sciences, Research Triangle Park, NC, USA, March 3-4, 2014

Loh, M. Dweik, B. “What are the most appropriate assessment methods for acute and chronic arsenic exposure in humans?” Presented in Part 1: Contributions of Advanced Techniques to Understanding Arsenic in Health and the Environment, from NIEHS Arsenic Workshop Panel Discussion Webinar Series, May 6, 2014.

Loh, M. “The exposome: A new paradigm for exposure science.” Presented at the *Global Change Seminar*, Department of Geosciences, University of Edinburgh, November 12, 2014.

Loh, M. Invited panelist at the *Workshop on Personal Environmental Exposure Measurements: Making Sense and Making Use of Emerging Capabilities*, in the Emerging Science for Environmental Health Decisions seminar series, National Academies of Sciences, Engineering, and Medicine, Washington, DC, USA, November 16-17, 2016.

Loh, M. "Sensor Technologies and the Exposome." Presented at the inaugural *Air Sensors Everywhere Small Sensors Symposium (ASSESS)*. National Railway Museum, York, UK, October 13-14, 2016.

Loh, M. "Sensor Technologies and Data for a Healthy Environment." Presented at the DorsaVi sponsored event: Panel discussion on the topic of wearable technology in the workplace and how it can help us create safer environments and a healthier workforce, London, UK, February 23, 2017.

Loh, M. "Sensor Technologies and the Exposome." Presented at the Centre for Occupational and Environmental Health, University of Manchester, February 27, 2017.

Loh M. "Respiratory Protection from Workplace to Beyond." Keynote for Respiratory Protection session at Inhaled Particles XII, Glasgow, Scotland, UK, 25-27 September, 2017.

Loh, M. "Air Pollution and Health in the Era of the Exposome." Institute of Biological Chemistry, Biophysics, and Bioengineering Seminar, Heriot-Watt University. 5 December 2018.

Loh, M. "Sensing the environment for Health," SICSA Ambient Assisted Living (AAL) Summer School, Heriot-Watt University, 6 August 2019.

Loh, M. "Pollution and Health in the Era of the Exposome," Berkeley Education Alliance for Research in Singapore (BEARS) seminar 17 December 2019.