

Curriculum Vitae

Youcheng Liu, MD, ScD, MPH, MS

**Assistant Professor, Regular Title Series
Department of Preventive Medicine and Environmental Health
University of Kentucky (UK) College of Public Health (CPH)**

EDUCATION

YALE UNIVERSITY SCHOOL OF MEDICINE, NEW HAVEN, CT
Postdoctoral Fellowship: Industrial Hygiene and Occupational Epidemiology
June 1999

HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH, BOSTON, MA
Doctor of Science: Major in Industrial Hygiene and Minors in Epidemiology and Indoor
Air Sciences
September 1997

HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH, BOSTON, MA
Master of Science: Environmental Health Sciences
July 1994

UNIVERSITY OF HAWAII SCHOOL OF PUBLIC HEALTH, HONOLULU, HI
Doctor of Philosophy Candidate: Environmental Epidemiology
July 1992

PEKING UNIVERSITY SCHOOL OF PUBLIC HEALTH, BEIJING, CHINA
Master of Public Health: Environmental Health Sciences
July 1987

NANJING MEDICAL UNIVERSITY, NANJING, CHINA
Doctor of Medicine: Preventive Medicine
August 1983

FACULTY APPOINTMENTS

UNIVERSITY OF KENTUCKY COLLEGE OF PUBLIC HEALTH, LEXINGTON, KY

Department of Preventive Medicine and Environmental Health
Assistant Professor, July 1, 2006 – present

UNIVERSITY OF KENTUCKY GRADUATE SCHOOL, LEXINGTON, KY
Associate Member, September 1, 2006 – present

YALE UNIVERSITY SCHOOL OF PUBLIC HEALTH, NEW HAVEN, CT

Division of Environmental Health

Assistant Professor, July 1, 2004 – June 30, 2006

YALE UNIVERSITY SCHOOL OF MEDICINE, NEW HAVEN, CT

Department of Internal Medicine, Section of General Internal Medicine, Occupational
and Environmental Medicine Program

Assistant Professor, July 1, 2003 – June 30, 2006

Associate Research Scientist, July 1, 1999 – June 30, 2003

Post-Doctoral Associate, October 1, 1997 – June 30, 1999

PEKING UNIVERSITY SCHOOL OF PUBLIC HEALTH, BEIJING, CHINA

Department of Environmental Health

Assistant Professor, July 1, 1987 – June 24, 1990

OTHER POSITIONS

HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH, BOSTON, MA

Department of Environmental Health

Research Assistant, 1993 - 1997

Research Associate, 1994 - 1995

Center for Risk Analysis

Research Assistant, 1992 - 1993

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH, BOSTON, MA

Research Assistant, 1993 - 1994

MASSACHUSETTS GENERAL HOSPITAL, HARVARD MEDICAL SCHOOL,
BOSTON, MA

Research Assistant, 1992 - 1993

PEKING UNIVERSITY SCHOOL OF PUBLIC HEALTH, BEIJING, CHINA

Department of Environmental Health

Research Assistant, 1984 – 1987

RECENT PROFESSIONAL DEVELOPMENT

- 9th Annual Pilot Research Project (PRP) Symposium
University of Cincinnati College of Medicine, NIOSH-Supported Education and Research Center, Cincinnati, OH, October, 2008
- Occupational Health in the Healthcare Industry: A Training Course
American Industrial Hygiene Association (AIHA), American Industrial Hygiene Conference and Exposition (AIHCE), Minneapolis, MN, June, 2008
- Skin Exposure to Chemicals in the Workplace: A Training Course
International Conference of Occupational and Environmental Exposures of Skin To Chemicals, Golden, Colorado, USA, June, 2007
- Effectiveness of Chemical Protective Clothing: A Training Course
AIHA, AIHCE, Chicago, IL, May, 2006
- Respiratory Protection in the Workplace: A Training Course
AIHA, AIHCE, Anaheim, CA, May, 2005
- Comprehensive Industrial Hygiene Review
University of Michigan, Ann Arbor, MI, September 2004
(5-day certification program)
- Skin Exposure Assessment and Modeling: A Training Course
AIHA, AIHCE, Dallas, TX, May, 2003

APPLICATIONS PENDING

1. **PI:** **Youcheng Liu, MD, ScD**
Co-I: T. Scott Prince, MD, MSPH, Audra L. Stinchcomb, PhD
Salary: 13% FTE
Title: The Efficacy of a Barrier Cream
Agency: National Institute for Occupational Safety and Health (NIOSH)/Centers for Disease Control and Prevention (CDC)
Funding: \$148,500
Length: April 1, 2010 to March 30, 2012
Description: Assesses the effectiveness of a barrier cream in reducing the absorption of nicotine in human subject and laboratory testing

2. **PI:** Larry Figgs, PhD, MPH
Co-I: **Youcheng Liu, MD, ScD**
Salary: 15% FTE
Title: Evaluating the Interaction of Childhood Development Milestones on Environmental Hazard Exposure Risk Among Children 0 to 10 Years Old
Agency: Environmental Protection Agency
Funding: \$1,243,704
Length: January, 2010 to December 31, 2013
Description: Determines how development milestones impact the environmental hazard exposure risk of 0 – 10 year old children, provides the first proteome-wide image of contaminant-specific protein changes in

T-lymphocyte (T-cell), and provides the basis for biomarker development

CURRENT EXTRAMURAL FUNDING

1. PI: Larry Figgs, PhD, MPH
Co-I: Youcheng Liu, MD, ScD
 Salary: 10% FTE
 Title: Regional CLOUT (Consortium for Leadership, Outreach and Training)
 Agency: Environmental Protection Agency (EPA)
 Funding: \$249,750
 Length: October 1, 2007 to September 30, 2010 (with two-year no cost extension)
 Description: Conducts an educational outreach program on the potential health risk associated with lead exposure; provides Lead-Safe Work Practices (LSWP) training, and seeks a new or modified ordinance or regulation for property owners, realtors, and contractors to further protect children from lead exposure

2. PI: Larry Figgs, PhD, MPH
Co-I: Youcheng Liu, MD, ScD
 Salary: 5% FTE
 Title: Kentucky Regional Lead Screening Consortium: A Multi-County Approach to Blood Lead Poisoning Risk Reduction in Kentucky's Pediatric Medicaid Population
 Agency: Environmental Protection Agency (EPA)
 Funding: \$100,000
 Length: October 1, 2007 to September 30, 2009 (one-year no cost extension)
 Description: Identifies and reduces lead poisoning in understudied areas with a high probability for undocumented elevated blood-lead levels

GRANTS AND CONTRACTS RECENTLY COMPLETED AT UK

1. PI: Terry Bunn, PhD
Co-I: Youcheng Liu, MD, ScD
 Salary: 0% FTE
 Title: Fuel Solvent Exposure Assessment in the Repair and Maintenance Of Farm Machinery in Kentucky Farmers: A Pilot Study
 Agency: University of Kentucky Vice President for Research- Research Support Grant
 Funding: \$20,000.
 Length: February 1, 2007 to June 30, 2008

- Description: A pilot study in Kentucky farmers and farm workers that evaluated their exposure to fuel solvents during farm machinery maintenance and repairs
- Outcome: A manuscript is in press at the American Journal of Industrial Medicine. An abstract is to be presented at the American Public Health Association annual meeting in Philadelphia, 2009
2. PI: Thomas Chambers, PhD (College of Agriculture)
Co-I: Youcheng Liu, MD, ScD
 Salary: 0% FTE
 Title: Inactivation of Influenza Virus via Gamma Irradiation and Reusability of N95 Respirators
 Agency: University of Kentucky Vice President's Research Support Grant
 Funding: \$18,400.
 Length: November 1, 2006 to October 31, 2007
 Description: A pilot study that examined the efficacy of Gamma irradiation on equine influenza virus and the physical and functional integrity of N95 respirators after irradiation
 Outcome: Some preliminary results. An RO1 grant application to NIOSH was planned

GRANTS AND CONTRACTS PREVIOUSLY COMPLETED AT YALE

1. PI: Mark Cullen, MD
Co-I: Youcheng Liu, MD, ScD
 Award#: 2 R01 OH034506
 Salary: 40% FTE
 Title: Longitudinal Study of Isocyanate Asthma in Auto Body Shops
 Agency: National Institute for Occupational Safety and Health (NIOSH)/Centers for Disease Control and Prevention (CDC)
 Funding: \$2,297,393
 Length: August 30, 2002 to September 29, 2007
 Description: Examined the incidence and etiology of isocyanate asthma in auto body shop workers in Connecticut longitudinally
 Outcome: Data are being analyzed
2. **PI: Youcheng Liu, MD, ScD**
 Co-I: Mark Cullen, MD, Carrie Redlich, MD, MPH, Susan Woskie, PhD
 Award#: 5 R01OH004246
 Salary: 60% FTE
 Title: Isocyanate Exposure Intervention Study in Body Shops
 Agency: National Institute for Occupational Safety and Health (NIOSH)/Centers for Disease Control and Prevention (CDC)
 Funding: \$1,221,890
 Length: September 30, 2002 to October 29, 2006

- Description: Implemented a comprehensive intervention program in auto body shops and evaluated its effectiveness in reducing exposures to isocyanates and the risk of immunologic markers
- Outcome: Published manuscripts, abstracts, conference presentations and a product video; more data analysis is being conducted
3. **PI:** **Youcheng Liu, MD, ScD**
Co-I: Mark Cullen, MD, Susan Woskie, PhD
Award#: MM-0722-04/04
Salary: 10% FTE
Title: Efficacy Study on Skin Protection in Body Shops
Agency: American Association of Medical Colleges (AAMC)/National Institute for Occupational Safety and Health (NIOSH)/Centers for Disease Control and Prevention (CDC) Cooperative Agreement
- Funding:** \$99,985
Length: October 1, 2003 to September 30, 2005 (one-year no cost extension)
- Description:** Evaluated the effectiveness of existing vs. NIOSH-recommended gloves and coveralls against organic solvents in auto body shops
- Outcome:** Manuscripts are being prepared; conference abstracts were presented
4. **PI:** Mark Cullen, MD
Co-I: **Youcheng Liu, MD, ScD**
Award#: 1R01-HL62932
Salary: 40% FTE
Title: Isocyanate Dermal Exposures in Auto Body Shops
Agency: National Institute of Heart, Lung and Blood Institute (NHLBI)/National Institute of Health (NIH)
- Funding:** \$235,438
Length: September 1, 1998 to August 31, 2001
- Description:** Qualitatively and quantitatively assessed surface contamination, skin exposure to isocyanates, evaluated the effectiveness of personal protective equipment in auto body shops and determined the systemic absorption and risk of asthma
- Outcome:** Published manuscripts, abstracts and conference presentations

GRANTS AND CONTRACTS PREVIOUSLY COMPLETED IN CHINA

1. **PI:** Hansheng Hu, Professor (Peking University, China)
Co-I: **Youcheng Liu, MD, ScD**
Title: Indoor Exposure to Formaldehyde in Greater Beijing Areas
Agency: China Ministry of Health
Funding: ¥ 500,000
Length: January 1, 1988 to December 31, 1990

Description: Assessed indoor exposures to formaldehyde in residential buildings, furniture shops, office buildings and evaluated exposure determinants

Outcome: Published manuscripts and conference presentations

PUBLICATIONS

Manuscripts in Preparation

Liu Y, Sparer JA, Woskie SR, Walsh F, Streicher RP, Ernst MK, Williamson GY, Bello D, Stowe MH, Cullen MR, Redlich CA. Field and laboratory comparison of two different air sampling methods for collecting aliphatic isocyanates. To be submitted to Journal of Occupational and Environmental Hygiene.

Fleming C, **Liu Y**, Stowe MH, Woskie SR, Sparer JA, Cullen MR, Holm CT, Redlich CA. Biological monitoring of urine to assess airborne and dermal exposures to isocyanates in auto body shop workers: a field study. To be submitted to Journal of Occupational and Environmental Hygiene.

Sparer JA, Wang S, Woskie SR, Redlich CA, **Liu Y**. Respirator workplace protection factors for isocyanates in auto body shop spray painting. Journal of Occupational and Environmental Hygiene.

Peer-Reviewed Original Research Articles

2009

Liu Y, Woodin MA, Smith TJ, Herrick RF, Hauser R, Williams PL, Christiani DC. Occupational exposure to boiler repair hazards: internal dose estimation and relation to biological monitoring. Annals of Occupational Hygiene (accepted with revision).

Wu S, Deng F, Niu J, Huang Q, **Liu Y**, Guo X. Association of heart rate variability in taxi drivers with marked changes of particulate air pollution in Beijing in 2008. Environmental Health Perspectives:10.1289/ehp.0900818 available via <http://dx.doi.org/> [Online 16 September 2009]

Bunn TL, **Liu Y**, Lee K, Robertson M, Yu L. Farmer exposure to organic solvents during the maintenance and repair of farm machinery: a pilot study. American Journal of Industrial Medicine (in press).

Liu Y, Stowe MH, Bello D, Sparer JA, Gore R, Cullen MR, Redlich CA, Woskie SR. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: III. a personal exposure algorithm. Annals of Occupational Hygiene 2009;53(1):33-40.

2008

Woskie SR, Bello D, Gore RJ, Stowe MH, Eisen E, **Liu Y**, Sparer JA, Redlich CA, Cullen MR. Comparison of task-based inhalation exposure metrics for an epidemiologic study of isocyanate exposed auto body shop workers. *Journals of Occupational and Environmental Hygiene* 2008;5:588-598.

Bello D, Stowe MH, Sparer JA, Woskie SR, Streicher RP, Cullen MR, Redlich CA, **Liu Y**. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: II. A quantitative assessment. *Annals of Occupational Hygiene* 2008; 52(2):117-124.

2007

Liu Y, Bello D, Sparer JA, Stowe MH, Gore RJ, Woskie SR, Cullen MR, Redlich CA. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: a qualitative assessment. *Annals of Occupational Hygiene* 2007;51(5):429-439.

Bello D, Sparer JA, Redlich CA, Ibrahim K, Stowe MH, **Liu Y**. Slow curing of aliphatic polyisocyanate paints in automotive refinishing: A potential source for skin exposure. *Journal of Occupational and Environmental Hygiene* 2007;4(6):406-411.

Bello D, Herrick CA, Smith TJ, Woskie SR, Cullen MR, **Liu Y**, Redlich CR. Skin exposure to isocyanates: reasons for concern. *Environmental Health Perspective* 2007;115(3):328-335.

2006

Bello D, Smith TJ, Woskie SR, Streicher RP, Boeniger MF, Redlich CA, **Liu Y**. In-vitro FTIR investigation of isocyanate skin absorption using hairless guinea pig skin. *Journal of Environmental Monitoring* 2006;8(5):523-529.

Liu Y, Stowe MH, Bello D, Woskie SR, Sparer J, Gore R, Youngs F, Cullen MR, Redlich CA. Respiratory protection from isocyanate exposure in auto body repair and refinishing industry. *Journal of Occupational and Environmental Hygiene* 2006;(5):234-249.

2005

Liu Y, Woodin MA, Smith TJ, Herrick RF, Williams PL, Hauser R, Christiani DC. Exposure to fuel-oil ash and welding emissions during the overhaul of an oil-fired boiler. *Journal of Occupational and Environmental Hygiene* 2005;2(9):435-443.

Bello D, Woskie SR, Streicher RP, Stowe MH, Sparer J, Redlich CA, Cullen MR, **Liu Y**. A laboratory investigation of the decontamination effectiveness of various skin and surface decontaminants for aliphatic polyisocyanates. *Journal of Environmental Monitoring* 2005;7(7):716-721.

Liu Y, Woodin MA, Hauser R, Williams PL, Herrick RF, Christiani DC, Smith TJ. Estimation of personal exposures to particulate matter and metals for workers exposed to fuel-oil ash. *Journal of Occupational and Environmental Medicine* 2005;47(1):68-78.

2004

Bello D, Woskie SR, Streicher RP, **Liu Y**, Stowe MH, Ellenbecker MJ, Eisen EA, Sparer J, Youngs F, Cullen MR, Redlich CA. Polyisocyanates in occupational environments: a critical review on exposure limits and metrics. *American Journal of Industrial Medicine* 2004;46:480-491.

Woskie SR, Sparer JA, Gore R, Stowe MH, Bello D, **Liu Y**, Youngs F, Redlich CA, Cullen M. Determinants of isocyanate exposures in autobody repair and refinishing shops. *Annals of Occupational Hygiene* 2004;48:393-403.

Sparer J, Stowe M, Bello D, **Liu Y**, Gore R, Youngs F, Cullen MR, Redlich CA, Woskie SR. Isocyanate exposures in autobody shop work: The SPRAY study. *Journal of Occupational and Environ Hygiene* 2004;1(9):570-581.

Liu Y, Berode M, Stowe MH, Holm CT, Walsh FX, Slade M, Boeniger MF, Redlich CA. Urinary hexane diamine to assess respiratory exposure to hexamethylene diisocyanate aerosol: a human inhalation study. *International Journal of Occupational and Environmental Health* 2004;10(3):262-271.

2000-2003

Bello D, Streicher RP, **Liu Y**, Sparer J, Youngs F, Woskie SR. Field comparison of impingers and treated filters for sampling of total aliphatic isocyanates with the MAP reagent. *American Industrial Hygiene Association Journal* 2002;63:790-796.

Redlich CA, Stowe MH, Wisnewski AV, Eisen EA, Karol MH, Lemus R, Holm CT, Chung JS, Sparer J, **Liu Y**, Woskie SR, Appiah-Pippim J, Gore R, Cullen MR. Subclinical immunologic and physiologic responses in hexamethylene diisocyanate-exposed auto body shop workers. *American Journal of Industrial Medicine* 2001;39:587-597.

Liu Y, Sparer JA, Woskie SR, Cullen MR, Chung JS, Holm CT, Redlich CA. Qualitative assessment of isocyanate skin exposure in auto body shops: a pilot study. *American Journal of Industrial Medicine* 2000;37(3):265-274.

Woodin MA, **Liu Y**, Neuberg D, Hauser R, Smith TJ, Christiani DC. Acute respiratory symptoms in workers exposed to vanadium-rich fuel-oil ash. *American Journal of Industrial Medicine* 2000;37(4):353-363.

1994-1999

Woodin MA, **Liu Y**, Hauser R, Smith TJ, Christiani DC. Pulmonary function in workers exposed to low levels of fuel-oil ash. *Journal of Occupational and Environmental Medicine* 1999;41(11):973-980.

Woodin MA, Hauser R, **Liu Y**, Smith TJ, Siegel PD, Lewis DM, Tollerud DJ, Christiani DC. Molecular markers of acute upper airway inflammation in workers exposed to fuel-oil ash. *American Journal of Respiratory and Critical Care Medicine* 1999;158:182-187.

1989-1993

Liu J, Hu H, **Liu Y**, Wei B, Wen T, Liu Z, Wen T, Hao L, Zhao T, Wu M, Lu Q. A study on indoor formaldehyde pollution and sources in rural area in North China. *Chinese Journal of Environment and Health* 1993;10(1):10-13 (in Chinese with English abstract).

Hu H, **Liu Y**. Evaluation of indoor air pollution and its effect on human health in Beijing rural areas. *Environment International* 1989;15:321-335.

Editorials and Reviews

Liu Y, Lee K, Perez-Padilla R, Hudson NL, Mannino DM. Outdoor and indoor air pollution and COPD related diseases in high- and low-income countries. *IJTLD* 2008;12(2): 115-127.

Liu Y. Where there is smoke, there is lung disease. *Thorax* 2007;62:838-839.

Liu Y, Hu H. Indoor formaldehyde pollution and human health. *Chinese Journal of Medicine Abroad* 1987;15(4): 210-213 (in Chinese).

Book Chapters

Liu Y. Exposure assessment and modeling methods in epidemiologic studies. In: Wang Z, editor. *Environmental Medicine*. Beijing, China: Beijing Medical University Press. pp 150-162, 2001 (in Chinese).

Liu Y. Respiratory diseases. In: Wang Z, editor. *Environmental Medicine*. Beijing, China: Beijing Medical University Press, pp 231-239, 2001 (in Chinese).

Smith KR, **Liu Y**. Indoor air pollution in developing countries. In: Samet JM, editor. *Epidemiology of Lung Cancer*. New York, NY: Marcel Dekker, Inc., pp 154-163, 1994.

Liu Y. Housing and Health. In: Wang L, editor. *Environmental Health*. Beijing, China: Traditional Chinese Medicine Press, pp 139-169, 1989 (in Chinese).

Books as Committee Work

IOM Committee for the Assessment of the NIOSH Head-and Face Anthropometric Survey of the U.S. Respirator Users, John C. Bailar III, Emily Ann Meyer, Robert Pool, Editors. *Assessment of the NIOSH Head-and-Face Anthropometric Survey of U.S. Respirator Users*. Washington, DC: National Academies Press, pp 1-224. ISBN: 0-309-66888-3, 2007.

IOM Committee for the Development of Reusable Facemasks for Use during an Influenza Pandemic. Reusability of Facemasks during an Influenza Pandemic: Facing the Flu. Washington, DC: National Academies Press, pp 1-92. ISBN 0-309-10182-4, 2006.

Peer-Reviewed Articles Published in Conference Proceedings

Liu Y, Liu J, Hu H. Variations of formaldehyde exposure in residences and public buildings in Beijing. In: Jaakkola JJK, editor. Proceedings of Sixth International Conference on Indoor Air Quality and Climate (INDOOR AIR '93). Helsinki, Finland: University of Technology, Volume 2, pp 129-134, 1993.

Smith KR, **Liu Y**, Revera J, Boy E, Leaderer B, Johnston CS, Yanagisawa Y, Lee K. Indoor air quality and child exposure in Highland Guatemala. In: Jaakkola JJK, editor. Proceedings of Sixth International Conference on Indoor Air Quality and Climate (INDOOR AIR '93). Helsinki, Finland: University of Technology, Volume 1, pp 441-446, 1993.

Liu J, **Liu Y**, Hu H. Characteristics of rural indoor formaldehyde pollution in Northern China. In: Walkinshaw D, editor. Proceedings of Fifth International Conference on Indoor Air Quality and Climate (INDOOR AIR '90). Toronto, Canada: Canada Housing and Mortgage Corporation, Volume 2, pp 275-280, 1990.

Liu Y, Xu D. Measures to improve environmental health in rural China. Proceedings of the Fourth Asian Congress on Rural Medicine and Primary Health Care. Beijing, China: Ministry of Health, pp 86-87, 1988.

Hu H, **Liu Y**. Hygienic evaluation of indoor air pollution and its effect on human health in Beijing's rural areas. In: Seifert B, editor. Proceedings of Fourth International Conference on Indoor Air Quality and Climate (INDOOR AIR '87). West Berlin, Germany: Institute of Air, Water and Soil, Volume 3, pp 15-19, 1987.

Abstracts Published in Conference Proceedings

Redlich CA, Stowe MH, Wang S, Liu, J, Gore RJ, **Liu Y**, Woskie SR, Wisnewski AV. IgG responses to isocyanate in auto body shop workers: associations with skin and respiratory exposures. American Journal of Respiratory and Critical Care Medicine 2009;179:A3670.

Stowe MH, **Liu Y**, Wisnewski AV, Spare J, Holm CT, Cullen MR, Woskie SR, Redlich CA. Cross-sectional study of auto body workers exposed to diisocyanates: does dermal exposure contribute to sensitization? American Journal of Respiratory and Critical Care Medicine 2006;3:A250.

Stowe MH, Wisnewski, Holm CT, Spare J, **Liu Y**, Woskie SR, Cullen MR, Redlich CA. Cross-Sectional Study of Auto Body Workers Exposed to Isocyanates: Immunologic Responses. American Journal of Respiratory and Critical Care Medicine 2005:A816.

Liss DJ, Lutgendorf CS, Daly CM, Stowe MH, Wisnewski AV, Gulati M, **Liu Y**, Sparer J, Redlich CA. Isocyanate sensitization: a cross sectional study of MDI exposure and effects in the production of polyurethane coated fabrics. *American Journal of Respiratory and Critical Care Medicine* 2005:A816.

Liu Y, Bello D, Redlich CA, Stowe MH, Cullen MR, Walsh FX, Young F, Woskie SR. Comparison of two methods for sampling hexamethylene diisocyanate biuret aerosol: a chamber study. *American Journal of Respiratory and Critical Care Medicine* 2003;167(7):A716.

Liu Y, Berode M, Holm CT, Stowe MH, Walsh F, Sparer JA, Redlich CA. Urinary hexane diamine as a biomarker for assessing respiratory exposure to hexamethylene diisocyanate aerosol. *American Journal of Respiratory and Critical Care Medicine* 2001;163(5):A809.

Redlich CA, Stowe MH, Wisnewski AW, Holm CT, Sparer J, **Liu Y**, Woskie S, Eisen E, Karol MK, Lemus R, Cullen MR. Cross sectional study of auto body shop workers exposed to hexamethylene diisocyanate containing paints: immunologic and physiologic responses. *American Journal of Respiratory and Critical Care Medicine* 2000;161:A761.

Liu Y, Sparer JA, Woskie SR, Cullen MR, Chung JS, Holm CT, Redlich CA. Qualitative assessment of isocyanate skin exposure in auto body shops. *American Journal of Respiratory and Critical Care Medicine* 1999;159(3):A234.

Woodin MA, **Liu Y**, Newberg D, Hauser R, Smith TJ, Christiani DC. Acute respiratory symptoms in workers exposed to fuel oil ash. *American Journal of Respiratory and Critical Care Medicine* 1999;159(3):A235.

Liu Y, Woodin MA, Smith TJ, Hauser R, Herrick RF, Williams PL, Christiani DC. 1998. Internal dose estimation of occupational exposures to fuel oil ash and metals. *American Journal of Respiratory and Critical Care Medicine* 1998;157(3):A884.

Woodin MA, Hauser R, **Liu Y**, Smith TJ, Christiani DC. Respiratory symptom incidence in workers overhauling an oil-fired boiler. *American Journal of Respiratory and Critical Care Medicine* 1997;155(4):A811.

Woodin MA, Hauser R, Siegel PD, Tollerud DJ, Lewis DM, **Liu Y**, Smith TJ, Christiani DC. 1996. Nasal lavage inflammatory mediators as biomarkers of upper airway exposure to fuel oil ash. *American Journal of Respiratory and Critical Care Medicine* 1997;153(4):A475.

Presentations at Local, National & International Professional Meetings

Adedoyin O, Strasinger C, Hammell D, **Liu Y**, Prince TS, Tom Klingner T, Boeniger M, and Stinchcomb A. Combating green tobacco sickness among green tobacco farm

workers: an *in-vitro* transdermal analysis of a barrier cream. Presented at the University of Kentucky Graduate Student Interdisciplinary Conference, Lexington, KY, April 3, 2009.

Bunn TL, **Liu Y**, Lee K, Robertson M, Yu L. Farmer exposure to organic solvents during the maintenance and repair of farm machinery: a pilot study. Accepted for poster presentation at the APHA 137th Meeting and Expo, Philadelphia, PA, November 7-11, 2009.

Liu Y, Lee K, Li J. Indoor surface contamination by isocyanates from consumer products as a potential source of skin exposure for children: a pilot study. Platform presentation in the International Conference of Occupational and Environmental Exposures of Skin to Chemicals - 2009 (OEESC-2009), Edinburgh, UK, June 14-17, 2009.

Redlich CA, Stowe MH, Wang S, Liu J, Gore RJ, **Liu Y**, Woskie SR, Wisnewski AV. IgG responses to isocyanate in auto body shop workers: associations with skin and respiratory exposures. Presented at the American Thoracic Society's 105th International Conference, San Diego, CA, May 15-20, 2009.

Liu Y, Prince TS. Efficacy study of a nicotine barrier cream. Presented as a poster at the 2008 Pilot Research Project (PRP) Symposium of The University of Cincinnati NIOSH Education and Research Center, Cincinnati, OH, October 2-3, 2008.

Liu Y, Bello D, Sparer JA, Stowe MH, Gore RJ, Woskie SR, Cullen MR, Redlich CA. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: I. a qualitative assessment. Presented in the International Conference of Occupational and Environmental Exposures of Skin to Chemicals – 2007 (OEESC-2007), Golden, Colorado, USA, June 17-20, 2007.

Bello D, Hosgood D, Stowe MH, **Liu Y**, Woskie SR, Cullen MR, Redlich CA. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: II. a quantitative assessment. Presented in the International Conference of Occupational and Environmental Exposures of Skin to Chemicals - 2007 (OEESC-2007), Golden, Colorado, USA, June 17-20, 2007.

Stowe MH, Wisnewski AV, Bello D, **Liu Y**, Sparer JA, Gore RJ, Cullen MR, Woskie SR, Redlich CA. Cross-sectional SPRAY study of auto body workers exposed to isocyanates: Effects of skin and respiratory exposure. Presented in the International Conference of Occupational and Environmental Exposures of Skin to Chemicals - 2007 (OEESC-2007), Golden, Colorado, USA, June 17-20, 2007.

Sparer J, Ibrahim K, Redlich C, Youngs F, **Liu Y**. Comparing solvent airborne exposures, outside PPE deposition and inside PPE exposure during auto body spray painting. Presented at the American Industrial Hygiene Conference and Exposition, Philadelphia, PA, June 2-7, 2007.

Liu Y, Hazards, exposure, health and exposure control in small businesses: the auto body service industry. The 23rd Annual Governor's Safety & Health Conference & Expo. Louisville, KY, May 10, 2007.

Stowe MH, **Liu Y**, Wisnewski, Spare J, Holm CT, Cullen MR, Woskie SR, Redlich CA. Cross-sectional study of auto body workers exposed to diisocyanates: Does dermal exposure contribute to sensitization? Presented as a poster at the American Thoracic Society's 102nd International Conference, San Diego, CA, May 19-24, 2006.

Ibrahim K, Sparer J, Stowe MH, Fleming CE, Collin-Hansen I, Redlich CA, **Liu Y**. NCO group availability within polyurethane autobody paint-isocyanate curing times. Presented orally at the American Industrial Hygiene Conference and Exposition, Chicago, IL, May 13-18, 2006.

Collin-Hansen I, Stowe MH, Ibrahim K, Youngs F, Vo E, Boeniger MF, Woskie SR, Redlich CA, **Liu Y**. Field evaluation of gloves and protective clothing against organic solvents during auto body spray painting. Presented orally at the American Industrial Hygiene Conference and Exposition, Chicago, IL, May 13-18, 2006.

Liu Y, Stowe MH, Sparer JA, Bello D, Cartmel B, Ibrahim K, Fleming C, Collin-Hansen I, Daly C, Youngs F, Woskie SR, Cullen MR, Redlich CA. Intervention Research in the Auto Body Repair and Refinishing Industry: The SMASH Study. Presented at the NIOSH NORA Symposium, *Research Makes A Difference*, Washington DC, April 18-21, 2006.

Stowe MH, Wisnewski, Spare J, **Liu Y**, Woskie SR, Redlich CA, Cullen MR. Cross-sectional study of auto body workers exposed to diisocyanates: Respiratory and dermal exposures contribute to immune response. Presented at the NIOSH NORA Symposium, *Research Makes A Difference*, Washington DC, April 18-21, 2006.

Liu Y, Stowe MH, Bello D, Sparer JA, Lutgendorf CS, Daly CM, Ullman S, Youngs F, Ibrahim K, Fleming C, Collin-Hansen I, Cartmel B, Gore R, Boeniger MF, Woskie SR, Cullen MR, Redlich CA. Surface and skin decontamination of aliphatic isocyanates: a field study. Presented as a Poster at the International Conference on Occupational and Environmental Exposures of Skin to Chemicals – 2005 (OEESC-2005), Stockholm, Sweden, June 12 – 15, 2005.

Stowe MH, Wisnewski, Holm CT, Spare J, **Liu Y**, Woskie SR, Cullen MR, Redlich CA. Cross-sectional study of auto body workers exposed to isocyanates: Immunologic responses. Presented as a poster at the American Thoracic Society's 101st International Conference, San Diego, California, May 20 - 25, 2005.

Liss DJ, Lutgendorf CS, Daly CM, Stowe MH, Wisnewski AV, Gulati M, **Liu Y**, Sparer J, Redlich CA. Isocyanate sensitization: a cross sectional study of MDI exposure and effects in the production of polyurethane coated fabrics. Presented as a poster at the

American Thoracic Society's 101st International Conference, San Diego, California, May 20 - 25, 2005.

Liu Y, Stowe MH, Sparer J, Bello D, Lutgendorf CS, Daly CM, Ullman S, Ibrahim K, Fleming C, Cartmel B, Collin-Hansen I, Youngs F, Gore R, Woskie SR, Redlich CA, Cullen MR. Improving the safety and health of Hispanic workers in auto body repair and refinishing industry: a multi-facet approach. Presented at the Roundtable Discussion on Alternative Methods to Reach Hispanic Workers of American Industrial Hygiene Conference and Exposition, Anaheim, CA, May 21-26, 2005.

Woskie S, Bello B, **Liu Y**, Gore R, Stowe M, Sparer J, Youngs F, Redlich C, Eisen E. Development of a tiered exposure algorithm for isocyanate exposures in autobody repair shops. Presented at the X2004 Exposure Assessment in a Changing Environment, Utrecht, The Netherlands, June 16-18, 2004.

Bello D, Woskie S, Streicher RP, Stowe MH, Sparer JA, **Liu Y**. Surface and skin decontamination of aliphatic isocyanates in an experimental study. Orally presented at the American Industrial Hygiene Conference and Exposition, Atlanta, GA, May 8-13, 2004.

Boeniger M, Stull J, Hee SQ, Phalen R, Buckley T, Anna D, **Liu Y**, Vo E, Gao P. Recent methods developments and informational needs for chemical protective clothing (CPC) being supported by the National Institute for Occupational Safety and Health. Presented at the ASTM's Eighth Symposium on Performance of Protective Clothing: Global Needs and Emerging Markets. Tampa, FL, January 2004.

Liu Y, Sparer JA, Bello D, Stowe MH, Young F, Cullen MR, Redlich CA, Walsh FX, Holm CT, S. Woskie. Workplace performance assessment of half face-piece respirators in isocyanate-exposed body shop workers: the SPRAY study. Orally presented at the American Industrial Hygiene Conference and Exposition, Dallas, TX, May 10-15, 2003.

Liu Y, Bello D, Redlich CA, Stowe MH, Cullen MR, Walsh FX, Young F, Woskie SR. Comparison of two methods for sampling hexamethylene diisocyanate biuret aerosol: a chamber study. Presented as a poster at the American Thoracic Society's 99th International Conference, Seattle, WA, May 16-21, 2003.

Liu Y, Stowe MH, Cullen MR, Walsh F, Sparer JA, Holm CH, Woskie SR, Boeniger M, Redlich CA. Effectiveness of decontamination products and nitrile gloves in reducing isocyanate skin exposure in auto body shops: A pilot assessment. Orally presented at the American Industrial Hygiene Conference and Exposition, San Diego, California, June 1 - 6, 2002.

Liu Y, Berode M, Holm CT, Stowe MH, Walsh F, Sparer JA, Redlich CA. Urinary hexane diamine as a biomarker for assessing respiratory exposure to hexamethylene diisocyanate aerosol. Orally presented at the American Thoracic Society's 97th International Conference, San Francisco, California, May 18-23, 2001.

Liu Y, Stowe MH, Berode M, Walsh F, Cullen MR, Sparer JA, Boeniger M, Holm CT, Redlich CA. Biological monitoring to assess exposure to hexamethylene diisocyanate in auto body repair shops. Orally presented at the American Industrial Hygiene Conference and Exposition, New Orleans, Louisiana, June 2-7, 2001.

Liu Y, Stowe MH, Walsh F, Sparer JA, Cullen MR, Holm CT, Youngs F, Bello D, Woskie SR, Boeniger M, Redlich CA. Surface contamination and skin exposure to aliphatic isocyanates in auto body shops: a quantitative assessment. Orally presented at the American Industrial Hygiene Conference and Exposition, New Orleans, Louisiana, June 2-7, 2001.

Bello D, Woskie SR, Youngs F, Streicher R, **Liu Y**, Sparer J. Field comparison of IOMs and impingers for sampling of total aliphatic isocyanates in air with the MAP Reagent. Orally presented at the American Industrial Hygiene Conference and Exposition, New Orleans, Louisiana, June 2-7, 2001.

Youngs F, Streicher R, Bello D, Woskie SR, **Liu Y**. Quantitative determination of total aliphatic isocyanates on skin and surfaces using the MAP Reagent. Presented as a poster at the American Industrial Hygiene Conference and Exposition, New Orleans, Louisiana, June 2-7, 2001.

Redlich CA, Stowe MH, Wisnewski AW, Holm CT, Sparer J, **Liu Y**, Woskie S, Eisen E, Karol MK, Lemus R, Cullen MR. Cross sectional study of auto body shop workers exposed to hexamethylene diisocyanate containing paints: immunologic and physiologic responses. Orally presented at the American Thoracic Society's 96th International Conference, Toronto, Canada, May 6-11, 2000.

Bello D, Woskie SR, Streicher RP, Youngs F, **Liu Y**, Sparer JA. Field comparison of IOMs and impingers for sampling of aliphatic isocyanates using the MAP reagent. Orally presented at Isocyanate 2000 - the First International Symposium on Isocyanates in Occupational Environments, Stockholm, Sweden, June 19 - 21, 2000.

Redlich CA, Stowe MH, Wisnewski AV, Eisen EA, Karol MH, Lemus R, Holm CT, Sparer JA, **Liu Y**, Woskie SR, Gore R, Cullen MR. Subclinical immunologic and physiologic responses in hexamethylene diisocyanate-exposed auto body shop workers. Orally presented at Isocyanate 2000 - the First International Symposium on Isocyanates in Occupational Environments, Stockholm, Sweden, June 19 - 21, 2000.

Liu Y, Sparer JA, Cullen MR, Stowe MH, Holm C, Woskie SR, Redlich CA. Epicutaneous exposure to isocyanate in auto body shops: a qualitative assessment. Orally presented at the American Industrial Hygiene Conference and Exposition, Orlando, Florida, May 19-26, 2000.

Liu Y, Sparer JA, Cullen MR, Stowe MH, Holm C, Woskie SR, Redlich CA. Respirator subjective assessment in auto body repair shops. Presented as a poster at the American Industrial Hygiene Conference and Exposition, Orlando, Florida, May 19-26, 2000.

Liu Y, Sparer JA, Woskie SR, Streicher RP, Ernst MK, Williamson GY, Cullen MR. Field evaluation of two isocyanate sampling methods. Presented as a poster at the American Industrial Hygiene Conference and Exposition, Toronto, Canada, June 5-11, 1999.

Liu Y, Sparer JA, Woskie SR, Cullen MR, Chung JS, Holm CT, Redlich CA. Qualitative assessment of isocyanate skin exposure in auto body shops. Presented as a poster at the American Thoracic Society's 95th International Conference, San Diego, California, April 24-28, 1999.

Woodin M.A, **Liu Y**, Newberg D, Hauser R, Smith TJ, Christiani DC. Acute respiratory symptoms in workers exposed to fuel oil ash. Presented as a poster at the American Thoracic Society's 95th International Conference, San Diego, California, April 24-28, 1999.

Liu Y, Woodin MA, Smith TJ, Hauser R, Herrick RF, Williams PL, Christiani DC. Internal dose estimation of occupational exposures to fuel oil ash and metals. Presented as a poster at the American Thoracic Society's 94th International Conference, Chicago, Illinois, April 25-29, 1998.

Liu Y, Smith TJ, Herrick RF, Williams PL, Woodin MA, Hauser R, Christiani DC. Assessing boilermakers' occupational exposures to respiratory hazards. Orally presented at the American College of Occupational and Environmental Medicine State-of-the-Art Conference, Phoenix, Arizona, October 18-22, 1998.

Liu Y, Smith TJ, Hauser R, Woodin MA, Williams PL, Herrick RF, Christiani DC. Estimating boilermakers' personal exposures to particles and metals. Presented as a poster at the American College of Occupational and Environmental Medicine State-of-the-Art Conference, Phoenix, Arizona, October 18-22, 1998.

Woodin MA, Hauser R, **Liu Y**, Smith TJ, Christiani DC. Respiratory symptom incidence in workers overhauling an oil-fired boiler. Presented as a poster at the American Thoracic Society's 93rd International Conference, San Diego, California, May 17-21, 1997.

Woodin MA, Hauser R, Siegel PD, Tollerud DJ, Lewis DM, **Liu Y**, Smith TJ, Christiani DC. Nasal lavage inflammatory mediators as biomarkers of upper airway exposure to fuel oil ash. Presented as a poster at the American Thoracic Society's 92nd International Conference, New Orleans, Louisiana, May 11-15, 1996.

Liu Y, Liu J, Hu H. Variations of formaldehyde exposure in residences and public buildings in Beijing. Presented as a poster at the Sixth International Conference on Indoor Air Quality and Climate (INDOOR AIR '93). Helsinki, Finland, July 4-8, 1993.

Smith KR, **Liu Y**, Revera J, Boy E, Leaderer B, Johnston CS, Yanagisawa Y, Lee K. 1993. Indoor air quality and child exposure in Highland Guatemala. Presented as a poster

at the Sixth International Conference on Indoor Air Quality and Climate (INDOOR AIR '93). Helsinki, Finland, July 4-8, 1993.

Liu J, **Liu Y**, Hu H. Characteristics of rural indoor formaldehyde pollution in Northern China. Presented as a poster at the Fifth International Conference on Indoor Air Quality and Climate (INDOOR AIR '90). Toronto, Canada, July 29-August 3, 1990.

Liu Y, Xu D. 1988. Measures to improve environmental health in rural China. Orally presented at the Fourth Asian Congress on Rural Medicine and Primary Health Care. Beijing, China, October 10-16, 1988.

Hu H, **Liu Y**. 1987. Hygienic evaluation of indoor air pollution and its effect on human health in Beijing's rural areas. Orally presented at the Fourth International Conference on Indoor Air Quality and Climate (INDOOR AIR '87). West Berlin, Germany, August 20-24, 1987.

Research Product

Ouimet T, Stowe MH, Sparer JA, Walsh F, **Liu Y**. Auto Body Shops: Safe Work Habits for Limiting Exposures to Hazardous Chemicals. New Haven, CT: OEHS/Yale University, 2003. Videocassette.

Research Awards

Michigan Industrial Hygiene Society (MIHS) Best Paper Award 2007 for the article "Bello D, Sparer JA, Redlich CA, Ibrahim K, Stowe MH, **Liu Y**. Slow curing of aliphatic polyisocyanate paints in automotive refinishing: A potential source for skin exposure. J Occup Environ Hyg 2006;4(6):406-411". Award was presented at the American Industrial Hygiene Conference and Exposition, Minneapolis, MN, June, 2008

American Industrial Hygiene Association (AIHA) 2007 Outstanding Project Team Award for the Exposure Assessment Strategies Committee Dermal Exposure Group where I have been an active team member since 2000. Award was presented at the American Industrial Hygiene Conference and Exposition in June, 2008 in Minneapolis, MN

Ministry of Health, China, Third-place Achievement Award for Advances in Science and Technology for the project entitled "Indoor Formaldehyde and Smoke Pollution and Control Strategies in Beijing Areas", Beijing, China, August 1994

Ministry of Health, China, Third-place Achievement Award for Advances in Science and Technology for the project entitled "Indoor Air Pollution and Human Health in Beijing Areas", Beijing, China, November 1988

Invited Seminars

Rice University Department of Statistics, “Statistical applications and challengers in assessing occupational exposures to hazards and resulting health outcomes”, Houston, TX, Nov 20, 2006

University of Kentucky College of Public Health, Department of Preventive Medicine and Environmental Health, “Exposure assessment and intervention of isocyanates in the auto body repair and refinishing industry”, Lexington, KY, May 17, 2005

University of Kentucky College of Public Health, Department of Preventive Medicine and Environmental Health, “Isocyanate studies at Yale University: Exposure characterization, modeling and risk assessment”, Lexington, KY, May 16, 2005

International Autobody Congress and Exposition (NACE 2000), “Exposures to isocyanates and subclinical, physiologic and immunologic changes in auto body shop workers”, Orlando, FL, December 8, 2000

NIOSH/Yale University/Labor/Industry Tripartite Diisocyanate Interest Group Meeting, “Skin exposures to isocyanates and biological monitoring of urinary hexane diamine in auto body shop workers”, New Haven, CT, November 28, 2000

Harvard University School of Public Health, Department of Environmental Health “Assessing isocyanate exposures in auto body shops”, Boston, MA, March 20, 2000

University of Texas Health Center, Department of Occupational Health “Exposures to boiler repair hazards and respiratory and immunologic effects”, Tyler, TX, May 1998

University of Minnesota School of Public Health, Division of Environmental Health, “Respiratory exposures to boiler repair hazards and respiratory and immunologic effects”, Minneapolis, MN, February 1998

Harvard University School of Public Health Educational Research Center, “Assessment on exposures to boiler repair hazards”, Boston, MA, September 1997

Yale University School of Medicine, Occupational and Environmental Medicine Program, “Assessing occupational exposures to boiler repair hazards and implications on health outcomes”, New Haven, CT, September 1997

University of Alabama School of Public Health, Department of Environmental Health Sciences, “Assessing occupational exposures to boiler repair hazards”, Birmingham, AL, August 1997

Purdue University School of Health Sciences, Department of Occupational and Environmental Health Sciences, “Exposures to boiler repair hazards and respiratory and immunologic effects”, West Lafayette, IN, July 1997

Columbia University School of Public Health, Division of Occupational and Environmental Health Sciences, “Assessing exposures to boiler repair hazards and evaluating respiratory effects”, New York, NY, June 1997

University of California at Davis, Department of Epidemiology and Preventive Medicine, “Exposures to boiler repair hazards and respiratory and immunologic effects”, Davis, CA, April 1997

TEACHING AND ADVISING

UNIVERSITY OF KENTUCKY SCHOOL OF PUBLIC HEALTH, LEXINGTON, KY

Fall 2009

Course Director, CPH 728 (PM 651), Workplace Ventilation, 3 credit hours, an elective course for MPH students majored in environmental health or industrial hygiene
Guest Lecture, Tox 509, Biochemical and Environmental Toxicology. Course Director: Dr. Mary Vore and Dr. Davy Jones. Topic presented: Toxicants in Occupational Environments: exposure, risk and exposure control

Spring 2009

Course Director, CPH 602, Occupational and Environmental Health II, Course Director, 3 credit hours, for MPH students majored in environmental health
Course Director, PM 661, Occupational and Environmental Health Sampling, 3 credit hours, for MPH students majored in environmental health
Guest Lecture, CPH 601, Occupational and Environmental Health I. Course Director: Dr. David Mannino. Topic presented: Indoor air pollution and health
Guest Lecture, CPH 921, Professional Seminar in Environmental Health. Course Director: Dr. T. Scott Prince. Topic presented: The importance of skin diseases and skin exposure assessment
Guest Lecture, Tox 680, Biochemical and Environmental Toxicology. Course Director: Dr. Hsin-Sheng Yang. Topic presented: Outdoor air pollution and health
Guest Lecture, Tox 680, Biochemical and Environmental Toxicology. Course Director: Dr. Hsin-Sheng Yang. Topic presented: Indoor air pollution and health

Fall 2008

Course Director, PM 651, Workplace Ventilation, 3 credit hours, a web-based elective course for MPH students majored in environmental health or industrial hygiene
Guest Lecture, CPH 601, Occupational and Environmental Health I. Course Director: Dr. Larry Figgs. Topic presented: Workplace: exposure to chemicals, health effects and exposure control
Guest Lecture, Tox 509, Biochemical and Environmental Toxicology. Course Director: Dr. Mary Vore and Dr. Davy Jones. Topic presented: Toxicants in Occupational Environments: exposure, risk and exposure control

Spring 2008

Course Director, CPH 602, Occupational and Environmental Health II, 3 credit hours, for MPH students majored in environmental health, course substantially revised

Course Director, PM 661, Occupational and Environmental Health Sampling, 3 credit hours, for MPH students majored in environmental health, course substantially revised

Course Director, CPH 729, Independent Studies in Occupational and Environmental Health, 3 credit hours. Used PM 651, Workplace Ventilation, as an Independent Study course for one part-time MPH student majored in environmental health

Course Director, CPH 729, Independent Studies in Occupational and Environmental Health, 3 credit hours. Developed a new course: Advanced Exposure Assessment for Doctoral Students. Used it for one DrPH student

Guest Lecture, CPH 601, Occupational and Environmental Health II. Course Director: Dr. Larry Figgs. Topic presented: Workplace: exposure to chemicals, health effects and exposure control

Guest Lecture, CPH 921, Professional Seminar in Environmental Health. Course Director: Dr. T. Scott Prince. Topic presented: Exposure Assessment for Occupational Epidemiologic Studies

Fall 2007

Course Director, PM 651, Workplace Ventilation, 3 credit hours, a web-based elective course for MPH students majored in environmental health or industrial hygiene

Guest Lecture, CPH 601, Occupational and Environmental Health I. Course Director: Dr. Larry Figgs. Topic presented: Workplace: exposure to chemicals, health effects and exposure control

Guest Lecture, CPH 920, Advanced Environmental Health. Course Director: Dr. Gail Brion. Topic presented: Isocyanates in the auto body industry: exposure, health effects and exposure control

Spring 2007

Course Director, PM 661, Occupational and Environmental Health Sampling, 3 credit hours, for MPH students majored in environmental health, course substantially revised

Guest Lecture, CPH 601, Occupational and Environmental Health I. Course Director: Dr. Kiyong Lee. Topic presented: Workplace: exposure to chemicals, health effects and exposure control

Guest Lecture, CPH 921, Professional Seminar in Environmental Health. Course Director: Dr. Kiyong Lee. Topic presented: Isocyanates in the auto body industry: exposure, health effects and exposure control

Fall 2006

Guest Lecture, CPH 601, Occupational and Environmental Health I. Course Director: Dr. Kiyong Lee. Topic presented: Workplace: exposure to chemicals, health effects and exposure control

Guest Lecture, CPH 920, Advanced Environmental Health. Course Director: Dr. Gail Brion. Topic presented: Isocyanates in the auto body industry: exposure, health effects and exposure control

MPH Capstone Committee

Patrick McGuire, 2009

Capstone paper title: Impact of smoke-free policy on personal exposures to PM_{2.5} in Kentucky prison systems

Tiffany Johnson Baker, 2009

Capstone paper title:

Kristi Lynn Moore, 2008

Capstone paper title: Occurrence of bacterial and viral indicators among private ground water wells in Hickman County, Kentucky

MPH Students Advised

Patrick McGuire

Kara Stanfield

YALE UNIVERSITY SCHOOLS OF MEDICINE AND PUBLIC HEALTH, NEW HAVEN, CT

Springs 2005, 2006

Course Director, EHS 510b: Fundamentals of Environmental Health and Risk

Assessment, 3 credit hours, for MPH students, course substantially revised

Springs 1998-2006

Guest Lecture, EHS 573b: Introduction to Occupational Epidemiology. Course Director:

Dr. Mark Cullen. Topic presented: Exposure assessment and modeling in epidemiologic studies

Springs 1998-2006

Guest Lecture, EHS 575b: Introduction to Occupational Medicine. Course Director: Dr.

Mark Russi. Topic presented: Industrial hygiene

Spring 2003

Guest Lecture, EHS 505b: Introduction to Industrial Hygiene. Course Director: Ms. Judy

Sparner. Topic presented: Personal protective equipment

Guest Lecture for Yale Affiliated Hospital Teaching Program (Bridgeport Hospital, CT)

Spring 2002 – Introduction to occupational and environmental Health

Fall 2003 – Disability and work compensation

Spring 2005 – Noise and hearing loss

Guest Lecture for Yale Physician Assistant Teaching Program

Springs 2002, 2003 – Health hazards in the Workplace: Exposure assessment and modeling

HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH, BOSTON, MA

Teaching Assistant **1992 - 1997**
EH201 Introduction to Environmental Health
EH262 Introduction to Occupational Hygiene
EH263 Analytical Methods and Exposure Assessment
ID204 Principles of Toxicology

Lab Assistant **1993 - 1994**
In-Place Filter Testing Workshop
Testing and Certification of Biological Safety Cabinets

BEIJING MEDICAL UNIVERSITY, BEIJING, CHINA

1987 - 1990
Course Director Introduction to Environmental Health for nursing students
Lab Instructor Laboratory Techniques in Environmental Health Sciences for students in public health and preventive medicine
Guest Lecture Indoor Environment and Health for continuing education students
Thesis Advising Two students each year

SERVICE

University, College and Department Committees at UK

Member, Faculty Council, College of Public Health (July 2008 to June 2010)
Member, Research Committee, College of Public Health (September 2008 to June 2009)
Member, Global Health Certificate Program, College of Public Health (started in October 2008)

Professional Activities at National and International Level

Advisory Board Faculty Member, Occupational and Environmental Medicine, Faculty of 1000 Medicine, August 2007 – present
Member, Exposure Assessment Committee, Dermal Exposure Assessment Group, American Industrial Hygiene Association, April 2000 – present
Member, Committee for the Assessment of the NIOSH Head-and-Face Anthropometric Survey of U.S. Respirator Users, Institute of Medicine, June 2005 – December 2006

Member, Committee for Developing Reusable Facemasks for Use during an Influenza Pandemic, Institute of Medicine, January 2006 – April 2006

Member, the NIOSH-funded Education and Research Center (ERC), Harvard University School of Public Health, June 2004 – June 2006

Manuscript Reviewer *Annals of Occupational Hygiene*
Journal of Exposure Science and Environmental Epidemiology
Journal of Occupational and Environmental Hygiene
Thorax
American Industrial Hygiene Association Journal (discontinued)

Invited Reviewer

NIOSH research protocol: Exposure Assessment Tools for Airborne Sensitizers. Reviewed July 2009
NIOSH Publication: NIOSH Current Intelligence Bulletin: A Strategy for Assigning the New NIOSH Skin Notations for Chemicals. Reviewed September 2008
NIOSH Publication: Skin Exposure Resource Guide. Reviewed August, 2007

Grant Reviewer

NIOSH/CDC External Review Panels
FY06 Intramural NORA (National Occupational Research Agenda): Program Project (Big NORA) Supplements and Small Grant Program
FY07 Intramural new NORA projects; Washington DC, June 2006
University of Kentucky Southeast Center for Agricultural Health and Injury Prevention pilot project program (2007-2008)

F1000 Medicine Published Article Reviewer

August 28, 2009: Evaluated the article by Künzli N, Bridevaux PO, Liu LJ, Garcia-Esteban R, Schindler C, Gerbase MW, Sunyer J, Keidel D, Rochat T, Swiss Cohort Study on Air Pollution and Lung Diseases in Adults. Traffic-related air pollution correlates with adult-onset asthma among never-smokers. *Thorax* 2009;64(8):664-70. Published review comments at <http://www.f1000medicine.com/article/id/1163543/evaluation>.
June 9, 2009: Evaluated the article by Samet JM, Rappold A, Graff D, Cascio WE, Berntsen JH, Huang YC, Herbst M, Bassett M, Montilla T, Hazucha MJ, Bromberg PA, Devlin RBA. Concentrated ambient ultrafine particle exposure induces cardiac changes in young healthy volunteers. *Am J Respir*

Crit Care Med 2009;179(11):1034-42. Published review comments at

<http://www.f1000medicine.com/article/id/1160998/evaluation>.

October 9, 2008: Evaluated the article by Samoli E, Peng R, Ramsay T, Pipikou M, Touloumi G, Dominici F, Burnett R, Cohen A, Krewski D, Samet J, Katsouyanni K. Acute effects of ambient particulate matter on mortality in Europe and North America: results from the APHENA study.

Environ Health Perspect 2008;116(11):1480-6. Published review comments at:

<http://www.f1000medicine.com/article/id/1123173/evaluation>.

May 28, 2008: Evaluated the article by Elliott P, Shaddick G, Wakefield JC, de Hoogh C, Briggs DJ. Long-term associations of outdoor air pollution with mortality in Great Britain. *Thorax* 2007;62(12):1088-94. Published review comments at:

<http://www.f1000medicine.com/article/id/1097449/evaluation>.

October 11, 2007: Evaluated the article by Zhong N, Wang C, Yao W, Chen P, Kang J, Huang S, Chen B, Wang C, Ni D, Zhou Y, Liu S, Wang X, Wang D, Lu J, Zheng J, Ran P. Prevalence of chronic obstructive pulmonary disease in China: a large, population-based survey. *Am J Respir Crit Care Med* 2007;176(8):753-60. Published review comments at:

<http://www.f1000medicine.com/article/id/1091362/evaluation>.

August 29, 2007: Evaluated the article by “Liu S, Zhou Y, Wang X, Wang D, Lu J, Zheng J, Zhong N, Ran P. Biomass fuels are the probable risk factor for chronic obstructive pulmonary disease in rural South China. *Thorax* 2007;62(10):889-97. Published review comments at:

<http://www.f1000medicine.com/article/id/1085975/evaluation>.

Professional Membership

American Conference of Governmental Industrial Hygienists

American Industrial Hygiene Association

American Thoracic Society

International Society of Exposure Analysis

International Society of Indoor Air Quality and Climate