

## KERI C. HORNBUCKLE

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<https://research.engineering.uiowa.edu/hornbuckle/>

### Professional Appointments

2018-present Director, Iowa Superfund Research Program, University of Iowa  
2007-present Professor, Dept. Civil and Environmental Engineering, University of Iowa  
2010-2016 Associate Dean for Academic Programs, College of Engineering, University of Iowa  
2007-2010 Chair, Dept. Civil and Environmental Engineering, University of Iowa  
2007 Visiting Professor, Stockholm University, Sweden  
2001- 2007 Associate Professor, Dept. Civil and Environmental Engineering, University of Iowa  
1998- 2001 Assistant Professor, Dept. Civil and Environmental Engineering, University of Iowa  
1995-1998 Assistant Professor, Dept. Civil, Structural and Environmental Engineering, State University of New York at Buffalo

### Education

Ph.D. (Civil Engineering - Environmental Engineering and Science) January 1996. University of Minnesota, Twin Cities,  
Bachelor of Arts (Chemistry) May 1987. Grinnell College, Grinnell, Iowa.

### Fellowships/Professorships

2015-present Donald E. Bently Professor of Engineering  
2012-2013 Executive Leadership in Academic Technology and Engineering (ELATE) Fellowship  
2007-2010 Robert and Virginia Wheeler Faculty Fellow of Engineering  
1999, 2000 Old Gold Summer Fellowship, University of Iowa  
1994-1995 Doctoral Dissertation Fellowship, University of Minnesota  
1991-1992 Charles S. Mott / International Association of Great Lakes Research Fellowship  
1986 Grinnell/ Leiden Research Fellowship. University of Leiden, The Netherlands

### Awards and Honors

Honors Award for Campus Support, University Honors Program (2016)  
International Advocate, International Programs - the University of Iowa. (2016)  
The Faculty Excellence Award for Research, College of Engineering (2013)  
Distinguished Achievement Award for Women at the University of Iowa (2009)  
Iowa Women of Innovation (Nominated), Technology Association of Iowa. (2009)  
University of Iowa Career Development Award (to work at Stockholm University, Sweden, 2007)  
IAGLR Appreciation Award, International Association for Great Lakes Research (2006)  
Collegiate Teaching Award, College of Engineering (Nominated, 2005)  
Distinguished Service Award, Association of Environmental Engineering and Science Professors (2003)  
Excellence in Review Award, American Chemical Society, *Environmental Science & Technology* (2003)  
Certificate of Appreciation, the Great Lakes Program at SUNY University at Buffalo (1998)  
Early Faculty Career (CAREER) Award, National Science Foundation (1997)  
Engineering Education Scholar, National Science Foundation (1996)  
Postdoctoral Award (declined), NSF/NATO (1995)  
Best Student Paper Award, Environmental Division of the American Chemical Society (1993)

### University Affiliations

IIHR- Hydrosience and Engineering  
Interdisciplinary Graduate Program in Human Toxicology  
Department of Occupational and Environmental Health, secondary faculty appointment  
Center for Global and Regional Environmental Research

## SERVICE

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### University Service

2019-present co-Chair, Search Committee for the Dean of the College of Engineering  
2019-present Chair, Review of the Director of the Center for Bioinformatics and Computational Biology  
2019-present Chair, Seven-Year Review of the College of Public Health  
2017-present Chair (2017-18), Member (2019-) Academic Technologies Advisory Council (ATAC)  
2017 Research & Economic Development Central Service Review Committee  
2017 Member, Seven-Year Review of the College of Education  
2015-2016 Faculty Advisory Council, International Programs  
2013-2014 Chair, Seven-Year Review of the College of Liberal Arts and Sciences  
2012-2016 University of Iowa Arts Advancement Committee  
2011-2016 Executive Committee, Grand Challenges Scholars Program  
2010-2016 Conference Committee: UI Health Sciences & Engineering Women Faculty Dev. Conf.  
2011-2014 Presidential Scholars Selection Committee  
2011-2012 College of Engineering Strategic Planning Executive Committee  
2011 Program Review Committee, Applied Math and Computational Science  
2010-2011 Provost Search Committee  
2010-2011 Program Review Committee, Faculty Scholar and Global Scholar award  
2010-2014 Honors Scholarship Selector, University of Iowa Honors Program.  
2009-2014 U of IA Patent Advisory Committee, Office of the Vice President for Research  
2009 Committee, proposal to President Mason for cluster hire in Water Sustainability  
2009 Keynote Speaker, Belin-Blank Honors Recognition Event October 18, Iowa City  
2009-2010 Chair, Search Committee for Associate VP for Diversity  
2009-2010 Graduate Programs Assessment Task Force  
2009-2010 Search Committee, Associate Provost for Faculty  
2008-2009 Sustainability Curriculum Committee Member  
2008 Review Committee, Regents Award for Faculty Excellence  
2007-present Engineering Administrative Council (EAC) Member  
2007-2008 Provost Search Committee  
2005-2008 AGEP Iowa Advisory Board member (Alliance for Graduate Education & Professoriate)  
2003- 2004 Faculty Senate Member  
2004- 2007 Review Committee for the IREU (Iowa Research Experience for Undergraduates)  
2003- 2006 Faculty Senate subcommittee on Student Financial Aid  
2002- 2008 Center for the Health Effects of Environmental Contamination (CHEEC) Advisory Board

### Scientific and Professional Societies

American Chemical Society (ACS) (1985 - Present).

*Environmental Science & Technology*. Associate Editor (2014- present, I handle ~250 manuscript/yr)

*Environmental Science & Technology* Guest co-Editor, Special Focus Issue: PCB Sources, Exposures and Toxicities (2010)

American Society of Civil Engineers (ASCE) (2006-present)

*Journal of Environmental Engineering* Associate Editor (2006)

Association of Environmental Engineering and Science Professors (AEESP) (1995 - Present).

Conference Selection Committee (2010-2016)

Internet Resources Committee Member (2009 - 2011)

Board Member (2006 - 2009)

International Association for Great Lakes Research (IAGLR) (1993 - Present).

Vice President / President / Past President (2003 - 2006)

*Journal of Great Lakes Research*. Associate Editor (2001 - 2007)

Board Member (2002 - 2006)

Society for Environmental Toxicology and Chemistry (SETAC) (2000 - Present)

Women in Engineering Programs and Advocates (WEPAN) (2000 - 2010)

## **International Service**

- Facilitator, The Path for Women Scientists in China, a roundtable discussion hosted by the Editorial Team of *Environmental Science & Technology* at the National Conference on Environmental Chemistry (NCEC), Hangzhou, China. October 2017.
- Opponent for the Ph.D. defense, Department of Environmental Science and Analytical Chemistry (ACES), Stockholm University, Sweden. (2015)
- Conference Committee, 4<sup>th</sup> International Conference on Occurrence, Fate, Effects, & Analysis of Emerging Contaminants in the Environment (EmCon2014). Iowa City, IA August 2014.
- Conference Committee and Session Leader, 7<sup>th</sup> PCB Workshop 2012, Arcachon, France, (May 2012).
- Opponent for the Ph.D. defense, Department of Occupational and Environmental Medicine, Sahlgrenska Academy at University of Gothenburg, Sweden. (2010).
- Expert Reviewer for faculty search, Stockholm University, ITM- Applied Environmental Science (2010, 2014).
- Conference Committee Member, 6<sup>th</sup> International PCB Workshop, Visby, Sweden, (2009 - 2010).
- Co-Organizer, Special session honoring Steven J. Eisenreich at the International Association for Great Lakes Research annual meeting, Waterloo, Ontario. (May 2004).
- Workshop Organizer, presenter, and scientific advisor: "Using Models to Develop Air Toxics Reduction Strategies: Lake Michigan as A Test Case." Sponsored by the Lake Michigan Forum, the Delta Institute, and the International Joint Commission, Milwaukee, WI, (October 2000).
- Organizer, Joint Workshop of the Delta Institute and the International Air Quality Advisory Board of the International Joint Commission: "The Use of Atmospheric Modeling in Policy Development". Ann Arbor, MI, (July 1999).
- International Joint Commission Science Advisory Board (1998 - 2002).
- Liaison to the Air Quality Advisory Board, International Joint Commission (1998-2002).

## **State and National Service**

- Webinar, with Scott Spak. SRP Research Translation/Community Engagement (RT/CE) Cores monthly webinar "PCBs in Schools- Research and Research Translation".
- Webinar, SRP Risk eLearning Analytical Tools and Methods, "Laboratory and computational technologies to reduce the cost and improve the quality of congener-specific measurement of PCB congeners in air, water, sediments, and human blood serum" Sponsored by National Institute for Environmental Health Sciences, Superfund Research Program. June 12, 2017.
- Environmental Laboratory Advisory Board (ELAB), a standing Federal Advisory Committee Act board that advises the U.S. Environmental Protection Agency (2016- present)
- Advisory Board, Executive Leadership in Academic Technology and Engineering (ELATE), College of Medicine, Drexel University (2014-present)
- Headwaters Council member, University of Minnesota Water Resources Center, St Paul, MN, Member. (2009 - 2013).
- NSF (unsolicited proposals, air pollution), Panel Reviewer. (2003, 2005, 2007, 2012).
- Presentation and Discussion with Graduate Student Women in Engineering, University of Wisconsin, Madison, (2011).
- National Institute of Environmental Health Sciences (NIH Institute) panel review (2009, 2013).
- Lake Michigan Atmospheric Deposition of Toxics Task Force, Lake Michigan Forum, Task Force Member. (2001- 2005).
- Air Quality Advisory Committee, Iowa Environmental Council, Member. (2009).
- Conference Organizing Committee, Biennial Conference of the Association of Environmental Engineering and Science Professors (AEESP), Iowa City, Iowa. (July 2009).
- Science Committee for the National Science Foundation's CLEANER Project (the Collaborative Large-scale Engineering Analysis Network for Environmental Research), (2005 - 2006).
- U.S.EPA's Science Advisory Board. Produced report EPA-SAB-05-002: "EPA's Air Toxics Research Strategy and Air Toxics Multi-Year Plan. A review by the Air Toxics Research Strategy and Multi-Year Plan Panel of the EPA Science Advisory Board.", Panelist. (2003 - 2004).
- Co-Chair, 26<sup>th</sup> Annual Midwest Environmental Chemistry Workshop, Iowa City, IA. (October 2003).
- Advisory board: UNI Summer Lakes study, University of Northern Iowa, Cedar Fall, IA, Member. (May 2000).
- ASCE Environmental and Water Resources Design Conference. Williamsburg, Iowa. 37<sup>th</sup> annual "Aboard the USEPA Research Vessel Lake Guardian: Tracking Toxic organic chemicals in the Great Lakes", (1999).
- Delta Institute's Workshop on Atmospheric Deposition of Toxics, Integrating Science and Policy, Chicago, IL, (1999).
- National Science Foundation's Engineering Education Scholars Workshop. "Surviving and Thriving in the First Years." Carnegie Mellon University. Pittsburgh, PA, (1997 and 1998).

Session Chair, Adirondacks and Beyond, a Conference to Explore Science and Policy Linkages. “Predictive Models for Air Quality Assessment and Ecological Effects”, Saratoga Springs, NY, N. (1997).  
Air and Waste management Association’s Conference on Atmospheric Deposition to the Great Waters, Niagara Fall, NY, Session Chair (October 1996).

## TEACHING

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### Classroom Teaching

Environmental Engineering: Natural Systems (Iowa) / Water Quality (SUNY) (1995-2004,2017) Required sophomore/junior level civil engineering course and associated laboratory sections, enrollment 50-100.  
Air Pollution Control Technology (1997, 2000-2006, 2019 SUNY and Iowa) Elective senior/MS level civil & environmental and chemical engineering course, enrollment 20-30.  
Engineering Problem Solving I (2002-2005, 2017) Required first-year engineering course, enrollment ~400.  
Environmental Processing of Organic Chemicals (2000, 2002) 20-30.  
PCBs in the Environment (2018) Ph.D. level environ. engineering course, enrollment 11  
Physical Chemical Process Fundamentals (2019) Ph.D. level environ. Engineering course, enrollment 8  
Environmental Engineering Graduate Seminar (frequently)  
Civil & Environmental Engineering Sophomore Seminar (2008-2010)  
Civil & Environmental Engineering Professional Seminar (2007-2010)  
Careers in Environmental Engineering Sophomore Seminar (2018)  
Engineering Student Success (2015-2016)  
Engineering Honors Seminar (2011- 2016)

### Current Graduate Students:

Jacob Jahnke (Ph.D. student)  
Panithi (Kong) Saktrakulkla (Ph.D. student)  
Moala Bannavti (Ph.D. student coadvised with Craig Just)

### Current Research Staff:

Rachel Marek, Ph.D. (assistant research scientist)  
Maeve Bittle (undergraduate researcher)  
Luke Lesnik (undergraduate researcher)  
Stephanie Hornik (undergraduate researcher)  
Connor Johnson (undergraduate researcher)  
Jason Hua (undergraduate researcher)

### Graduates and current position:

Nicholas Herkert, (MS, 2016, Ph.D., 2018) post doc, UNC Chapel Hill  
Andrew Awad (MS, 2015)  
Wenxin Koh (Ph.D., 2015) Siegwark, Des Moines, Iowa  
Colin O’Sullivan (MS, 2014)  
Zach Rodenburg (MS, 2014), consulting engineer, Illinois/Iowa  
Rachel Marek (MS, 2009, Ph.D., 2013) Post-doc IIHR  
Rachel Yucuis, (MS, 2012) consulting engineer, Mpls  
Nick Petrich (MS, 2011 w/ Prof Scott Spak) consulting engineer  
Tim Schulz (MS, 2011) consulting engineer, St. Louis  
Andres Martinez (Ph.D., 2010) Research Engineer IIHR  
Paul Eastling, (MS, 2010) consulting engineer, Mpls  
Carolyn Persoon (MS 2005, Ph.D. 2010) U.S. EPA Region 5, Chicago  
Karin Norström, Ph.D. (former post-doctoral fellow) IVL Swedish Environmental Research Institute  
Mark Weldon (Ph.D., 2007) Quaker Oats, Cedar Rapids, Iowa  
William Wombacher (MS, 2007) University of Colorado

Bryan Boulanger (Ph.D., 2004) Assoc Prof, Ohio Northern Univ.  
Aaron M. Peck (Ph.D., 2004) Environmental Consultant, GA  
Meredith Gooding (former post-doctoral fellow) U.S. EPA RTP, NC  
Emily Linebaugh, (MS, 2004) Veenstra and Kimm, Inc., Coralville, IA  
Sondra M. Miller (MS 2000, Ph.D., 2003) Assoc Prof. Boise State University  
David Wethington (MS, 2002), Army Corp of Engineers, Chicago  
Gretchen (Smith) Tsosie (MS, 1999) Navajo Area Indian Health Services, NM  
S. Nicole Brown (MS, 2000) Smith Engineering Consultants, York IL  
Jerel J Bodgdan (M.S., 1999), Malcolm-Pirnie, Inc., Orchard Park, NY  
Mark L. Green (Ph.D., 2000) State University of New York at Buffalo  
Zunyu Tao (M.S., 1998) State University of New York at Buffalo

**PhD Committee Membership (other than as chair) Total: >25 students**

**Undergraduate Student Research Mentoring. Total: >30 students**

#### **Supervision of Postdoctoral Associates**

Wenxin Koh "Metabolites of PCBs: method development"  
Rachel Marek "Sources and fate of PCBs and OH-PCBs in Chicago and in Human Serum"  
Dingfei Hu, "Detection and characterization of polychlorinated biphenyls in urban air."  
Izabela Kania-Korwel, "Iowa Superfund Research Program Analytical Core."  
Andres Martinez. "PCBs in industrial sediments"  
Meredith Gooding Lassiter, "Effects of Synthetic Must Fragrances on Freshwater Mussels."  
Karin Norström, "Analytical Chemistry of PCBs and their Metabolites in Complex Matrices."

## **RESEARCH**

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**Publications:** (<https://scholar.google.com/citations?user=s4VuhOwAAAAJ&hl=en>)

#### **Peer-Reviewed Articles in Technical Journals**

85. Boesen, A., Hornbuckle, K.C. and Martinez, A. (In Press) Air-Water PCB Fluxes from Southwestern Lake Michigan Revisited. *Environmental Science and Pollution Research*.
84. Jahnke, J and Hornbuckle K.C. PCB Emissions from Paint Colorants. (In Press) *Environmental Science & Technology*.
83. Martinez, A., A.M. Awad, N.J. Herkert, and K.C. Hornbuckle, (2019) Determination of PCB fluxes from Indiana Harbor and Ship Canal using dual-deployed air and water passive samplers. *Environmental Pollution*, 244: p. 469-476. PMC6277018.
82. Tomsho, K.S., K. Basra, S.M. Rubin, C.B. Miller, R. Juang, S. Broude, A. Martinez, K.C. Hornbuckle, W. Heiger-Bernays, and M.K. Scammell, (2018) Community reporting of ambient air polychlorinated biphenyl concentrations near a Superfund site. *Environmental Science and Pollution Research*. 25(17): p. 16389-16400. PMC6015112.
81. TE Mattes, JM Ewald, Y Liang, A Martinez, A Awad, P Richards (2018) PCB dechlorination hotspots and reductive dehalogenase genes in sediments from a contaminated wastewater lagoon. *Environmental Science and Pollution Research* 25 (17), 16376-16388.
80. Herkert, N.J.; Jahnke, J.C. and Hornbuckle, K.C. Emissions of Tetrachlorobiphenyls (PCBs 47, 51 and 68) from Polymer Resin on Kitchen Cabinets as a Non-Aroclor Source to Residential Air. *Environmental Science & Technology* 52 (9), 5154-5160.

79. Herkert, N.J. and Hornbuckle, K.C. (2018) Effects of room airflow on accurate determination of PUF-PAS sampling rates in the indoor environment. *Environmental Science: Processes & Impacts* 20 (5), 757-766 DOI: 10.1039/c8em00082d
78. Herkert, N. J.; Spak, S. N.; Smith, A.; Schuster, J. K.; Harner, T.; Martinez, A.; Hornbuckle, K. C., (2018) Calibration and evaluation of PUF-PAS sampling rates across the Global Atmospheric Passive Sampling (GAPS) network. *Environmental Science: Processes & Impacts* 20, 210-219. DOI: 10.1039/C7EM00360A
77. Spisak, A.L.; Van Horne, S.; Hornbuckle, K.C. (2017) How the Implementation of Honors Sections Affects the Academic Performance of Non-Honors Students. *Journal of the National Collegiate Honors Council (JNCHC)* 18(2) 177-193.
76. Tomsho, K. S.; Basra, K.; Rubin, S. M.; Miller, C. B.; Juang, R.; Broude, S.; Martinez, A.; Hornbuckle, K. C.; Heiger-Bernays, W.; Scammell, M. K., (2017) Community reporting of ambient air polychlorinated biphenyl concentrations near a Superfund site. *Environmental Science and Pollution Research* 25 (17), 16389-16400. <https://doi.org/10.1007/s11356-017-0286-6>.
75. Marek, R.F., Thorne, P.D., Herkert, N, Awad,A., and Hornbuckle, KC (2017). Airborne PCBs and OH-PCBs Inside and Outside Urban and Rural U.S. Schools. *Environmental Science & Technology* 10.1021/acs.est.1027b01910.
74. Grimm, F.A., Lehmler, H., Koh, W. X., DeWall, J., Teesch, L.M., Hornbuckle, K.C., Thorne, P.S., Robertson, L.W., Duffel, M.W. (2017) Identification of a sulfate metabolite of PCB 11 in human serum. *Environment International* 98, 120-128. DOI: 10.1016/j.envint.2016.10.023
73. Martinez, A., Hadnott, B.N., Awad, A., Herkert, N.J., Tomsho, K., Basra, K., Scammell, M.K., Heiger-Bernays, W., Hornbuckle, K.C. (2017) Release of Airborne Polychlorinated Biphenyls from New Bedford Harbor Results in Elevated Concentrations in the Surrounding Air. *Environmental Science & Technology Letters* 4 (4), 127-131. DOI: 10.1021/acs.estlett.7b00047
72. Koh, W., Hornbuckle, K. C., Wang, K., Thorne, P. (2016). Serum polychlorinated biphenyls and their hydroxylated metabolites are associated with demographic and behavioral factors in children and mothers. *Environment International*, 94, 538-545. DOI:10.1016/j.envint.2016.06.014
71. Herkert, N. J., A. Martinez and K. C. Hornbuckle (2016). "A model using local weather data to determine the effective sampling volume for PCB congeners collected on passive air samplers." *Environmental Science & Technology*, 50(13), 6690–6697. DOI: 10.1021/acs.est.6b00319
70. Awad, A., Martinez, A., Marek, R. F., Hornbuckle, K. C. (2016). Occurrence and Distribution of Two Hydroxylated Polychlorinated Biphenyl (OH-PCB) Congeners in Chicago Air. *Environmental Science & Technology Letters*, 3 (2), pp 47–51. DOI: 10.1021/acs.estlett.5b00337
69. Koh, W., Hornbuckle, K. C., Marek, R. F., Wang, K., Thorne, P. S. (2016). Hydroxylated polychlorinated biphenyls in human sera from adolescents and their mothers living in two U.S. Midwestern communities. *Chemosphere*, 147, 389–395. DOI: 10.1021/acs.estlett.5b00337
68. Martinez, A., Schnoebelen, D. J., Hornbuckle, K. C. (2016). Polychlorinated biphenyl congeners in sediment cores from the Upper Mississippi River. *Chemosphere*, 144, 1943–1949. doi:10.1016/j.chemosphere.2015.10.090
67. Martinez, A., Spak, S. N., Petrich, N. T., Hu, D., Carmichael, G. R., Hornbuckle, K. C. (2015). Atmospheric dispersion of PCB from a contaminated Lake Michigan harbor. *Atmospheric Environment*, 122, 791–798. doi:10.1016/j.chemosphere.2015.10.090

66. Shanahan, C. E., Spak, S. N., Martinez, A., Hornbuckle, K. C. (2015). Inventory of PCBs in Chicago and Opportunities for Reduction in Airborne Emissions and Human Exposure. *Environmental Science & Technology*, 49(23), 13878-13888. <http://dx.doi.org/10.1021/acs.est.5b00906>
65. Koh, W., Hornbuckle, K.C., and Thorne, P.S. (2015) Human Serum from Urban and Rural Adolescents and Their Mothers Shows Exposure to Polychlorinated Biphenyls Not Found in Commercial Mixtures. *Environmental Science & Technology* 49 (13), 8105-8112. DOI: 10.1021/acs.est.5b01854
64. Peverly, A. A., O'Sullivan, C., Venier, M., Liu, L.-Y., Martinez, A., Hornbuckle, K. C., Hites, R. A. (2015). Chicago's Sanitary and Ship Canal Sediment: Polycyclic Aromatic Hydrocarbons, Polychlorinated Biphenyls, Brominated Flame Retardants, and Organophosphate Esters. *Chemosphere* 134, 380-386. doi:10.1016/j.chemosphere.2015.04.065
63. Ampleman, M. D., Martinez, A., DeWall, J., Rawn, D. F. K., Hornbuckle, K. C., Thorne, P. S. (2015). Inhalation and Dietary Exposure to PCBs in Urban and Rural Cohorts via Congener-Specific Measurements. *Environmental Science & Technology*, 49(2), 1156-1164. <http://dx.doi.org/10.1021/es5048039>
62. Grimm, F. A., Hu, D., Kania-Korwel, I., Lehmler, H.-J., Ludewig, G., Hornbuckle, K. C., Duffel, M. W., Bergman, Å., Robertson, L. W. (2015). Metabolism and metabolites of polychlorinated biphenyls. *Critical Reviews in Toxicology*, 45(3), 245–272. DOI:10.3109/10408444.2014.999365
61. Peverly, A. A., Ma, Y., Venier, M., Rodenburg, Z. L., Spak, S. M., Hornbuckle, K. C., Hites, R. A. (2015). Variations of Flame Retardant, Polycyclic Aromatic Hydrocarbon, and Pesticide Concentrations in Chicago's Atmosphere Measured using Active and Passive Sampling. *Environmental Science & Technology* 49 (9), 5371-5379.
60. Liang, Y., Martinez, A., Hornbuckle, K. C., Mattes, T. E. (2014). Potential for Polychlorinated Biphenyl Biodegradation in Sediments from Indiana Harbor Shipping Canal. *International Biodeterioration and Biodegradation*, 89, 50–57. [dx.doi.org/10.1016/j.ibiod.2014.01.005](http://dx.doi.org/10.1016/j.ibiod.2014.01.005)
59. Marek, R. F., Thorne, P. S., DeWall, J., Hornbuckle, K. C. (2014). Variability in PCB and OH-PCB serum levels in children and their mothers in urban and rural U.S. communities. *Environmental Science & Technology* 48, 13459-13467.
58. Zhu, Y., Mapuskar, K. A., Marek, R. F., Wu, W., Lehmler, H.-J., Robertson, L. W., Hornbuckle, K. C., Spitz, D. R., Aykin-Burns, N. (2013). A New Player in Environmentally Induced Oxidative Stress: Polychlorinated Biphenyl Congener, 3,3' dichlorobiphenyl (PCB11). *Toxicological Sciences*, 136(1), 39–50. [10.1093/toxsci/kft186](http://dx.doi.org/10.1093/toxsci/kft186)
57. Yucius, R. A., Stanier, C. O., Hornbuckle, K. C. (2013). Cyclic Siloxanes in Air, Including Identification of High Levels in Chicago and Distinct Diurnal Variation. *Chemosphere*, 92(8), 905–910.
56. Marek, R. F., Martinez, A., Hornbuckle, K. C. (2013). Discovery of Hydroxylated Polychlorinated Biphenyls (OH-PCBs) in sediment from a Lake Michigan waterway and original commercial Aroclors. *Environmental Science & Technology*, 47, 8204–8210.
55. Marek, R. F., Thorne, P. S., Wang, K., DeWall, J., Hornbuckle, K. C. (2013). PCBs and OH-PCBs in Serum from Children and Mothers in Urban and Rural U.S. Communities. *Environmental Science & Technology*, 47(7), 3353–3361.
54. Martinez, A., O'Sullivan, C., Reible, D., Hornbuckle, K. C. (2013). Sediment pore water distribution coefficients of PCB congeners in enriched black carbon sediment. *Environmental Pollution*, 182, 357-363.

53. Petrich, N. T., Spak, S. N., Carmichael, G. R., Hu, D., Martinez, A., Hornbuckle, K. C. (2013). Simulating and explaining passive air sampling rates for semi-volatile compounds on polyurethane foam passive samplers. *Environmental Science & Technology*, 47, 8591–8598.
52. Martinez, A., Erdman, N. R., Rodenburg, Z. L., Eastling, P. M., Hornbuckle, K. C. (2012). Spatial distribution of chlordanes and PCB congeners in soil in Cedar Rapids, Iowa, USA. *Environmental Pollution*, 161, 222-228.
51. Hu, X., Adamcakova-Dodd, A., Lehmler, H.-J., Hu, D., Hornbuckle, K., Thorne, P. S. (2012). Subchronic Inhalation Exposure Study Of An Airborne Polychlorinated Biphenyl Mixture Resembling The Chicago Ambient Air Congener Profile. *Environmental Science & Technology*, 46(17), 9653-9662.
50. Martinez, A., Hornbuckle, K. C. (2011). Record of PCB congeners, sorbents and potential toxicity in core samples in Indiana Harbor and Ship Canal. *Chemosphere*, 85(3), 542.
49. Hu, D., Martinez, A., Hornbuckle, K. C. (2011). Sedimentary records of non-Aroclor and Aroclor PCB mixtures in the Great Lakes. *Journal of Great Lakes Research*, 37(2), 359.
48. Ela, W. P., Sedlak, D. L., Barlaz, M. A., Henry, H. F., Muir, D. C. G., Swackhamer, D. L., Weber, E. J., Arnold, R. G., Ferguson, P. Lee, Field, J. A., Furlong, E. T., Giesy, J. P., Halden, R. U., Henry, T., Hites, R. A., Hornbuckle, K. C., Howard, P. H., Luthy, R. G., Meyer, A. K., Saez, A. Eduardo, vom Saal, F. S., Vulpe, C. D., Wiesner, M. R. (2011). Toward Identifying the Next Generation of Superfund and Hazardous Waste Site Contaminants. *Environmental Health Perspectives*, 119(1), 6.
47. Hu, D., Lehmler, H.-J., Martinez, A., Wang, K., Hornbuckle, K. C. (2010). Atmospheric PCB congeners across Chicago. *Atmospheric Environment*, 44(12), 1550.
46. Zhao, H. X., Adamcakova-Dodd, A., Hu, D., Hornbuckle, K. C., Just, C. L., Robertson, L. W., Thorne, P. S., Lehmler, H. -J. (2010). Development of a synthetic PCB mixture resembling the average polychlorinated biphenyl profile in Chicago air. *Environment International*, 36(8), 819.
45. Norstrom, K., Czub, G., McLachlan, M. S., Hu, D., Thorne, P. S., Hornbuckle, K. C. (2010). External exposure and bioaccumulation of PCBs in humans living in a contaminated urban environment. *Environment International*, 36(8), 855.
44. Martinez, A., Wang, K., Hornbuckle, K. C. (2010). Fate of PCB Congeners in an Industrial Harbor of Lake Michigan. *Environmental Science & Technology*, 44(8), 2803.
43. Hu, D., Hornbuckle, K. C. (2010). Inadvertent Polychlorinated Biphenyls in Commercial Paint Pigments. *Environmental Science & Technology*, 44(8), 2822.
42. Hornbuckle, K. C., Robertson, L. R. (2010). Polychlorinated Biphenyls (PCBs): Sources, Exposures, Toxicities: Environ Sci Technol. *Environmental Science & Technology*, 44, 2749-2751.
41. Martinez, A., Norstrom, K., Wang, K., Hornbuckle, K. C. (2010). Polychlorinated biphenyls in the surficial sediment of Indiana Harbor and Ship Canal, Lake Michigan. *Environment International*, 36(8), 849.
40. Miller, S. M., Hornbuckle, K. C. (2010). Spatial and temporal variations of persistent organic pollutants impacted by episodic sediment resuspension in southern Lake Michigan. *Journal of Great Lakes Research*, 36(2), 256.
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#### **Data deposited in public repositories**

Jahnke, Jacob and Hornbuckle Keri C. (2019): Dataset for PCB Emissions from Paint Colorants. Iowa Research Online: The University of Iowa's Data Repository <https://ir.uiowa.edu/data/7/>, in supplement to Jahnke, J.C. and Hornbuckle K.C. "PCB Emissions from Paint Colorants" *Environmental Science & Technology* (2019) DOI 10.1021/acs.est.9b01087

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### Peer-Reviewed Conference Papers

4. Hornbuckle, K. C., Green, M. L. The Effects of Air Temperature, Wind Direction, and the Chicago Urban Plume on Gas-Phase Organic Compounds over Lake Michigan, in *University of Antwerp Press. Proceedings from the International Symposium on Atmospheric Deposition and Impact on Ecosystems, with particular reference to the Mid-East*, December 2002.
3. Hornbuckle, K. C. Predicting and measuring atmospheric deposition of POPs to Lake Ontario, in *Great Lakes Monograph No. 12 published by the State University of New York at Buffalo*, September 10, 1998.
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1. Hornbuckle, K. C., van der Meulen, M.C.H., Ambrose, S. A., Davidson, C. I. The National Science Foundation's Engineering Education Scholars Workshop: Strategies for the new professor, in *College of Engineering and Graduate School, Southern Illinois University—Carbondale*, August 13, 1997.

### Technical Articles Published in Cited Media

10. Kolpin, D. Hornbuckle, K. C. (2010). *What's in your floodwaters? A Watershed Year: Anatomy of the Iowa Floods of 2008*. University of Iowa Press.
9. Hornbuckle, K. C., Carlson, D. L., Swackhamer, D. L., Baker, J. E., Eisenreich, S. J. (2006). *PCBs in the Great Lakes*. (pp. 33-35). The Handbook in Environmental Chemistry Series Springer-Verlag, Heidelberg.
8. Hornbuckle, K. C., Green, M. L. (2002). *The Effects of Air Temperature, Wind Direction, and the Chicago Urban Plume on Gas-Phase Organic Compounds over Lake Michigan*. University of Antwerp Press. Proceedings from the International Symposium on Atmospheric Deposition and Impact on Ecosystems, with particular reference to the Mid-East.
7. Hornbuckle, K. C., Hoff, S. J., Thorne, P. S., Bundy, D. S., O'Shaughnessy, P. T. (2002). *Emissions and Community Exposures from CAFOs* (pp. 45-85). Iowa Concentrated Animal Feeding Operations Air Quality Study, Final Report by the University of Iowa and Iowa State University Study Group, J.A. Merchant and R.F. Ross.
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5. Eisenreich, S. J., Hornbuckle, K.C., Achman, D.A. (1997). *Air-Water Exchange of Semi-Volatile Organic Chemicals (SOCs) in the Great Lakes*. Atmospheric Deposition of Contaminants to the Great Lakes and Coastal Water Baker JE, ed., Society for Environmental Toxicology and Chemistry. 109-136.
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2. Vlahos, P., Mackay, D., Eisenreich, S. J., Hornbuckle K.C. (1995). *Exchange of chemicals between the atmosphere and lakes* (pp. 167-184). In *Physics and Chemistry of Lakes*. Lerman A, Imboden DM, Gat JR, eds. Heidelberg, Springer-Verlag.
1. Eisenreich, S.J., Achman D. Hornbuckle, K, Baker, J.E. (1991). *Volatilization of PCBs from the Great Lakes* (pp. 400-412). *Air-Water Mass Transfer*. Wilhelm SC, ed. Gulliver JS.

## **Presentations**

>150 Scientific Presentations at Conferences

## **Selected Invited Talks**

Hornbuckle, K.C. "Non-Aroclor emissions from consumer products and the potential for inexpensive and effective remediation of airborne PCBs in Schools" Symposium to recognize the ACS Award for Creative Advances in Environmental Science and Technology: Jerald L. Schnoor. American Chemical Society Meeting, Orlando FL (April 2019).

Hornbuckle, K.C. (Plenary) "Emissions of legacy and non-legacy PCB congeners to air of homes and schools" 10th International PCB Workshop, Krakow, Poland, August 2018

Hornbuckle, K.C. (Plenary) "Airborne PCBs released from Aroclor and non-Aroclor sources in outdoor and indoor environments" International Network of Environmental Forensics (INEF) biennial meeting. Salt Lake City, UT (June 2018)

Hornbuckle, K. C. "Development and Application of a Predictive Model for Measuring Airborne PCBs near New Bedford Harbor and in Midwestern Schools," Graduate Seminar, University of Massachusetts, Amherst, Department of Environmental Health, Amherst, MA. (January 2018).

Hornbuckle, K. C. "Development and Application of a Predictive Model for Measuring Airborne PCBs near New Bedford Harbor and in Midwestern Schools," Graduate Seminar, University of Pittsburgh Department of Civil & Environmental Engineering, Pittsburgh, Pennsylvania. (November 2017).

Hornbuckle, K.C. (Keynote speaker) "Legacy versus Modern: Sources of PCBs and OH-PCBs to the Environment Case Study: PCBs in School Air" ACS Publication Forum at NCEC 2017. Hangzhou, China (October 21 2017)

Hornbuckle, K.C. "Legacy versus Modern: Sources of PCBs and OH-PCBs to the Environment" 9<sup>th</sup> PCB Workshop, Kobe, Japan. (October 2016).

Hornbuckle, K. C., "Fate of Polychlorinated Biphenyls in an industrial harbor of Lake Michigan," Ohio State University, Columbus, OH. (September 2015).

Hornbuckle, K. C., "Inadvertent Production of Polychlorinated Biphenyls and its Impact on Environmental and Human Exposure to these Persistent, Bioaccumulating, and Toxic Pollutants," Dept. Ecological and Environmental Engineering, West Lafayette, IN. (November 2015).

Hornbuckle, K.C. "The Future of Engineering Education" Panelist. Syracuse University (December 2014).

Hornbuckle, K. C., Keynote to the UM Dept of CEE, "Experiences from the Iowa Superfund Basic Research Program," University of Michigan Department of Civil and Environmental Engineering, Ann Arbor, MI. (January 2014).

Hornbuckle, K. C., Martinez, A., Wang, K., Spokane River Regional Toxics Task Force (SRRTTF) toxics workshop

#1, "Indiana Harbor and Ship Canal: not just a tributary source of PCBs into Lake Michigan," Spokane, WA. (June 2012).

Hornbuckle, K. C., Martinez, A., Hu, D., Schulz, T., Thorne, P. S., 7th International PCB Workshop, "Sources of PCB congeners in urban, industrial, rural, and indoor environments," NIH/NIEHS, Arcachon, France. (May 2012).

Hornbuckle, K. C., "Origin, Source, Exposure and Toxicology of Non-Aroclor PCB11," University of Wisconsin – Madison. Environmental Chemistry & Technology Graduate Program, Madison, WI. (February 2011).

Hornbuckle, K. C., Agency for Toxic Substances and Disease Registry (ATSDR), "Industrial chemicals in urban environments: Airborne PCBs and their sources," Atlanta, GA. (February 2010).

Hornbuckle, K. C., "Industrial Chemicals in Urban Environments: Airborne PCBs in Chicago," Iowa State University, Graduate Program in Meteorology, Ames, IA. (February 2010).

Hornbuckle, K. C., State Legislators at the Environment, Health and the Future – 2009 Policy Summit, "Airborne PCBs in Chicago," Chicago. (January 2009).

Hornbuckle, K. C., Wombacher, W., "The fate of synthetic musk fragrances in a conventional water plant with lime softening." Department of Applied Environmental Science, Stockholm University. (March 2007).

Hornbuckle, K. C., "PCBs in the Great Lakes, The role of the atmosphere," Department of Applied Environmental Science and the Department of Environmental Chemistry, Stockholm University. (February 2007).

Hornbuckle, K. C., PCB Workshop, "Distribution of PCB congeners in urban/industrial Chicago: experimental design," Zakopane, Poland. (September 2006).

Hornbuckle, K. C., "Consumer and Industrial Chemicals in Natural Systems," Inaugural Installment of the Nunan Lectures in Syracuse University's L.C. Smith College of Engineering and Computer Science, Syracuse, NY. (March 2006).

Hornbuckle, K. C., "Passive Air Sampling for Airborne PCBs," Masaryk University, Research Center for Environmental Chemistry and Toxicology (RECETOX), Brno, Czech Republic. (December 2005).

Hornbuckle, K. C., Boulanger, B. O., International Joint Commission Science Advisory Board, "Fluorinated Surfactants in the Great Lakes: Today, Yesterday, and Tomorrow," Toronto, Ontario. (June 2005).

Hornbuckle, K. C., "Synthetic Fragrances and other Personal Care Products in Natural Systems," School of Public and Environmental Affairs, Indiana University, Bloomington, IN. (December 2, 2004).

Hornbuckle, K. C., Gordon Research Conference on Environmental Sciences 2000: Water, "Episodic large-scale sediment dynamics in large lakes: Organic contaminant cycling and the role of the atmosphere," Holderness School, New Hampshire. (June 2000).

Hornbuckle, K. C., Green, M. L., DePinto, J. V., Eisenreich, S. J., International Symposium on Atmospheric Deposition and Impact on Ecosystems, with particular reference to the Mid-East. Sponsored by the International Union of Pure and Applied Chemistry (IUPAC), "The effects of air temperature, wind direction and the Chicago urban plume on spatial and temporal variability of gas-phase organic compounds," Tel Aviv, Israel. (June 2000).

Hornbuckle, K. C., "The Effect of Climate on Transport of Persistent Organic Pollutants," Grinnell College Chemistry Department, Grinnell, Iowa. (November 1999).

Hornbuckle, K. C., "Modeling the Regional Transport of Toxic Organic Compounds," Department of Environmental Sciences, Rutgers University, New Brunswick, NJ. (January 1998).

Hornbuckle, K. C., "Exchange of Persistent Organic Compounds between Air and Terrestrial Surfaces.," Department of Civil and Environmental Engineering, Michigan Technical University, Houghton, MI. (May 1997).

Hornbuckle, K. C., "Are Green Plants Sources or Sinks of Airborne Contaminants: A Discussion of the Dynamics of Vapor Exchange in Terrestrial Systems," Department of Civil and Environmental Engineering, Clarkson University, Potsdam, NY. (April 1997).

Hornbuckle, K. C., Great Lakes Ecosystem Modeling Seminar and Discussion Group on the Great Lakes, "The Role of Vegetation in the Long Range Transport of Persistent Organic Chemicals," Great Lakes Program at the University at Buffalo and the Great Lakes Center at Buffalo State College, New York. (April 1997).

Hornbuckle, K. C., Analytical Chemistry Seminar Series, "Long-range and regional transport of potential toxic compounds," Department of Chemistry, University at Buffalo, Buffalo, NY. (January 1997).

Hornbuckle, K. C., "Air/Water Exchange of Semi-Volatile Organic Compounds in the Great Lakes," University of Toronto, Department of Chemistry, Toronto, Ontario. (March 1995).

## Selected reports of the Hornbuckle research in the popular press:

- Environmental Health News (April 2018) <https://www.ehn.org/pcbs-emitted-from-finished-kitchen-cabinets-2560954110.html>
- Buzzfeed (April 2018) "Finished kitchen cabinets are emitting toxic PCBs"  
<https://www.buzzfeednews.com/article/theresatamkins/kitchen-cabinets-pcbs>
- Chicago Tribune (June 2017) "[Study: Replace aging building materials in schools](#)"
- CBS2/FOX28 (June 2017) "[UI research finds known carcinogen in older schools](#)"
- The Times of Northwest Indiana (June 2017): "[Four East Chicago schools have PCB levels](#)"
- The Muscatine Journal (June 2017): "[U of I study finds PCBs in Columbus Junction schools](#)"
- IowaNow (June 2017) "[UI Researchers Conduct Largest Survey Yet of PCBs in Schools](#)"
- Association of Schools & Programs of Public Health Member Research and Reports (June 2017): "[Iowa researchers conduct largest survey yet of PCBs in schools](#)"
- Phys.org (June 2017): "[Indoor air in schools could add to children's exposure to PCBs](#)"
- Breitbart (June 2017) "[Indoor air in schools may exposure children to PCBs](#)"
- NBCTV6 (July 2017) "[Potential cancer-causing chemical found in Columbu Community School District](#)"
- Iowa Environmental Focus (July 2017) "[PCB sources located inside schools](#)"
- RadioIowa (July 2017): "[UI Study: 'Concerning' PCB levels found inside older Iowa schools](#)"
- ACS News Service press release (July 2017): "[Indoor air in schools could add to children's exposure to PCBs](#)"
- ACS Science Elements podcast (August 2017): "[Episode 803 – PCBs levels in air raises school concerns](#)"
- SRP Research Translation/Community Engagement Cores monthly webinar, Keri Hornbuckle, (August 2017)
- The Times of Northwest Indiana (October 2017): "[Contractors to replace lighting and fountains at two East Chicago schools](#)"
- Iowa Public Radio (June 2017): "[UI Study Finds Cancer-Causing PCBs in Some Schools](#)"
- IowaNow (June 2017) "[UI Researchers Conduct Largest Survey Yet of PCBs in Schools](#)"
- SouthCoastToday (March 2017) "[Airborne PCBs come from harbor, study says](#)"
- WQAD Moline. Feb 24, 2014 "Yellow dye can hurt you – and it's everywhere"  
<http://wqad.com/2014/02/24/report-yellow-dye-can-hurt-you-and-its-everywhere/>
- Iowa Now (May 2013): "PCBs are Everywhere" [http://now.uiowa.edu/2013/04/pcbs-are-everywhere?utm\\_source=email%2Blink&utm\\_medium=PCBs%20are%20everyw&utm\\_campaign=IANow%20Email%20asap%20%28%29&CFID=263979&CFTOKEN=27793828](http://now.uiowa.edu/2013/04/pcbs-are-everywhere?utm_source=email%2Blink&utm_medium=PCBs%20are%20everyw&utm_campaign=IANow%20Email%20asap%20%28%29&CFID=263979&CFTOKEN=27793828)
- Scientific American.com (April 2013): "Chemicals from Personal Care Products Pervasive in Chicago Air"  
<http://www.scientificamerican.com/article.cfm?id=chemicals-from-personal-care-products-pervasive-in-chicago-air>
- Environmental Health News (April 2013): "Chemicals on federal radar pervasive in Chicago Air"  
<http://www.environmentalhealthnews.org/ehs/news/2013/siloxanes-in-the-air>
- Environmental Health Perspectives (March 2013): "Nonlegacy PCBs: Pigment Manufacturing By-Products Get a Second Look" <http://ehp.niehs.nih.gov/2013/03/121-a86/>
- Environmental Health News (December 2012): "Dredging could unleash PCBs in Indiana community"  
<http://www.environmentalhealthnews.org/ehs/news/2012/indiana-canal-pcbs>
- University of Iowa Press Release (November 2011) "UI engineers conduct residential soils study, one of few such U.S. studies ever done" <http://news-releases.uiowa.edu/2011/november/112911hornbuckle.html>
- NIEHS Environmental Factor "SRP researchers quantify PCB pollution in East Chicago harbor"  
<http://www.niehs.nih.gov/news/newsletter/2011/october/science-chicago/index.cfm>
- IIHR- University of Iowa Special Report (Spring 2011) "Understanding PCBs"  
<http://www.iihr.uiowa.edu/research/understanding-pcbs/>
- Northwest Indiana Post-Tribune (Jan 15, 2010) "Concern over canal mud as dredge plan nears. Study finds extreme levels of PCBs, but Army Corps says alarm unwarranted"
- Des Moines Register (Dec 5, 2009) "U of I team fears PCBs may remain cause for concern"
- Science News (Nov 23, 2009) "PCBs: When green paint isn't 'green'"  
[http://www.sciencenews.org/view/generic/id/49932/title/PCBs\\_When\\_green\\_paint\\_isn%E2%80%99t\\_%E2%80%98green%E2%80%99](http://www.sciencenews.org/view/generic/id/49932/title/PCBs_When_green_paint_isn%E2%80%99t_%E2%80%98green%E2%80%99)
- Chicago Tribune (Jan 22, 2009) "Mysterious PCB found near schools."