KERI C. HORNBUCKLE

4114 Seamans Center for the Engineering Arts and Sciences
University of Iowa, Iowa City, Iowa 52242
Email: keri-hornbuckle@uiowa.edu

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

The Faculty Excellence Award for Service, College of Engineering (2020)
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)
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)
Best Student Paper Award, Environmental Division of the American Chemical Society (1993)

University Affiliations

IIHR- Hydroscience and Engineering, Research Engineer
Interdisciplinary Graduate Program in Human Toxicology, secondary faculty appointment
Department of Occupational and Environmental Health, secondary faculty appointment
Center for Global and Regional Environmental Research, affiliate
Holden Comprehensive Cancer Center at The University of Iowa, Full Member, Cancer Epidemiology and Population Science (CEPS) Program

SERVICE

University Service

2021-present	Faculty Search Committee, DEI Advocate, Dept Chemical and Biochemical Engineering.
2021-present	Research and Discovery Team, Strategic Planning, University of Iowa
2021-present	Review Committee, FY22 Innovations in Teaching With Technology Award. Office of Teaching Learning and Technology, University of Iowa.
2020-present	Review Committee Member, University of Iowa Distinguished Professorships
2020-present	Executive Administrative Council, College of Engineering
2020-present	Research Advisory Committee, College of Engineering
2019-2020	co-Chair, Search Committee for the Dean of the College of Engineering
2019	Chair, Review of the Director of the Center for Bioinformatics and Computational Biology
2019	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
2007-2016	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. Journal Impact Factor 7.9 (2019) Associate Editor (2014- present, I handle ~250 manuscript/yr)

ACS Environmental- AU. Associate Editor (2021- present, no statistics as of yet)

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

Environmental Science & Technology Guest co-Editor, Special Focus Issue: Persistent Organic Pollutants (POPs) (2021)

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).
Workshop Organizer "Leadership Training for Mid-Career Faculty: Return on Investment," AEESP Research and Education Conference. July 13-14, 2021, Online.
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

Conference Co-Organizer, 10th International PCB Workshop and the DIOXIN2018 conference in Krakow, Poland, August 2018
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, 4th International Conference on Occurrence, Fate, Effects, & Analysis of Emerging Contaminants in the Environment (EmCon2014). Iowa City, IA August 2014.
Conference Committee and Session Leader, 7th 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, 6th 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

NIEHS panel reviewer (P42, P30, P2C research centers and R01 individual proposal)s. (2009-present)
External Advisory Board Member, University of California – Davis Superfund Research Program, Davis California, 2021-present.
External Advisory Board Member, University of New Mexico Superfund Research Program, Albuquerque, NM. 2018-present.
External Advisor Board Member, Texas A&M University Superfund Research Program, College Station, TX. 2017-present.
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- 2018)

Advisory Board, Executive Leadership in Academic Technology and Engineering (ELATE), College of Medicine, Drexel University (2014-2018)
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 Muli-Year Plan Panel of the EPA Science Advisory Board.", Panelist. (2003 - 2004).
Co-Chair, 26th 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. 37th 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

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, 2020, 2021 at 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 (2017) Ph.D. level environ. engineering course, enrollment 11
- Physical Chemical Process Fundamentals (2019, 2021) Ph.D. level environ. Engineering course, enrollment 8
- Environmental Organic Chemistry (2019) Ph.D. level environ. Engineering course, enrollment 15
- Environmental Chemistry (2021) Senior level required for major in Env. Eng. Enrollment 30
- 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:

Moala Bannavti (Ph.D. student coadvised with Craig Just)
Alexis Slade (Ph.D. student)
Jason Hua (Ph.D. student)

Christopher Brunet (Ph.D. student)

Current Research Staff:

Rachel Marek, Ph.D. (assistant research scientist)
Maeve Bittle, B.S.E. (research fellow)
Kyle Patternson (undergraduate research assistant)

Graduates and current position:

Jacob Jahnke (Ph.D. 2021)
Panithi (Kong) Saktrakulkla (Ph.D. 2021)
Nicholas Herkert, (MS, 2016, Ph.D., 2018) post doc, Duke University
Andrew Awad (MS, 2015)
Wenxin Koh (Ph.D., 2015) Siegwerk, 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."

Diversity, Equity and Inclusion

Workshops and Professional Development

Certificate of Completion, Diversity Beyond Lip Service Program, American Chemical Society. June 7,2021
Member, Subcommittee Group 5 (departmental policies for faculty searches, including a template for a advertisement, a rubric for evaluating candidates, and a set of recommended best practices) Dept Civil & Environmental Engineering, University of Iowa.
Participant, Exploring White Identity for Effective Allyship (Session 1). University of Iowa Workshop. July 20, 2020.
Member, College of Engineering Diversity Reading Group (2020-present).
Participant, Implicit Bias in Hiring. University of Iowa Training workshop (Dean's Search 2019)

RESEARCH

Publications: https://orcid.org/0000-0002-3478-3221

Peer-Reviewed Articles in Technical Journals

96. Martinez,A.; Awad, AM; Jones,MP; and Hornbuckle, KC. (In Press) Intracity Occurrence and Distribution of Airborne PCB Congeners in Chicago. *Science of The Total Environment.*

95. Schuster, J. K.; Harner, T.; Eng, A.; Rauert, C.; Su, K.; Hornbuckle, K. C.; Johnson, C. W. (2021) Tracking POPs in Global Air from the First 10 Years of the GAPS Network (2005 to 2014). *Environmental Science & Technology*. https://doi.org/10.1021/acs.est.1c01705

94. Li, Y.; Bako, C. M.; Saktrakulkla, P.; Lehmler, H.-J.; Hornbuckle, K. C.; Schnoor, J. L., Interconversion between methoxylated, hydroxylated and sulfated metabolites of PCB 3 in whole poplar plants. (2021) *Science of The Total Environment 785*, 147341. https://doi.org/10.1016/j.scitotenv.2021.147341

93. Bannavti, M; Jahnke, J; Marek, RF; Just, CL; and Hornbuckle, KC. (2021) Room-to-Room Variability of Airborne PCBs in Schools and the Application of Air Sampling for Targeted Source Evaluation. *Environmental Science & Technology*. http://pubs.acs.org/doi/abs/10.1021/acs.est.0c08149

92. Zhang, Duo; Saktrakulkla, Panithi; Tuttle, Kristopher; Marek, Rachel; Lehmler, Hans-Joachim; Wang, Kai; Hornbuckle, Keri; Duffel, Michael (2021) Detection and Quantification of Polychlorinated Biphenyl Sulfates in Human Serum. *Environmental Science & Technology* 55, 4, 2473–2481. https://doi.org/10.1021/acs.est.0c06983

91. Bako, C. M.; Mattes, T. E.; Marek, R. F.; Hornbuckle, K. C.; Schnoor, J. L., (2021) Biodegradation of PCB Congeners by Paraburkholderia xenovorans LB400 in Presence and Absence of Sediment During Lab Bioreactor Experiments. *Environmental Pollution.* 271, 116364. https://doi.org/10.1016/j.envpol.2020.116364

90. Wang, H.; Adamcakova-Dodd, A.; Flor, S.; Gosse, L.; Klenov, V. E.; Stolwijk, J. M.; Lehmler, H.-J.; Hornbuckle, K. C.; Ludewig, G.; Robertson, L. W., (2020) Comprehensive Subchronic Inhalation Toxicity Assessment of an Indoor School Air Mixture of PCBs. *Environmental Science & Technology* 54 (24) 15976–15985. https://doi.org/10.1021/acs.est.0c04470

89. McCarthy RA; Sen Gupta, A; Kubicek, B; Awad AM; Martinez, A; Marek RF; Hornbuckle, KC. (2020) Signal Processing Methods to Interpret Polychlorinated Biphenyls in Airborne Samples. *IEEE Access*, vol. 8, pp. 147738-147755, 2020, doi: https://doi.org/10.1109/ACCESS.2020.3013108.

88. Saktrakulkla, P; Lan, T; Hua, J; Marek RF; Thorne PS; Hornbuckle, KC. (2020) PCBs in Food, *Environmental Science & Technology* 54(18) 11443–11452 https://doi.org/10.1021/acs.est.0c03632.

87. W.J. Heiger-Bernays, K.S. Tomsho, K. Basra, Z.E. Petropoulos, K. Crawford, A. Martinez, K.C. Hornbuckle, M.K. Scammell. (2020) Human health risks due to airborne polychlorinated biphenyls is highest in New Bedford Harbor communities living closest to the harbor, *Science of the Total Environment*, 710, 135576 https://doi.org/10.1016/j.scitotenv.2019.135576

86. P Saktrakulkla, RC Dhakal, HJ Lehmler, KC Hornbuckle (2020) A semi-target analytical method for quantification of OH-PCBs in environmental samples. *Environmental Science and Pollution Research* 27, 8859–*8871* https://doi.org/10.1007/s11356-019-05775-x

85. Boesen, A., Hornbuckle, K.C. and Martinez, A. (2019) Air-Water PCB Fluxes from Southwestern Lake Michigan Revisited. *Environmental Science and Pollution Research* 27, 8826–8834. https://doi.org/10.1007/s11356-019-05159-1

84. Monika A. Roy; Karilyn E. Sant; Olivia L.Venezia; Alix B.Shipman; Stephen D. McCormick; Panithi Saktrakulkla; Keri C.Hornbuckle; Alicia R.Timme-Laragy (2019) The emerging contaminant 3,3′-dichlorobiphenyl (PCB-11) impedes Ahr activation and Cyp1a activity to modify embryotoxicity of Ahr ligands in the zebrafish embryo model (Danio rerio) *Environmental Pollution*. 254, 113027. (https://doi.org/10.1016/j.envpol.2019.113027

83. Jahnke, J and Hornbuckle K.C. (2019) PCB Emissions from Paint Colorants. *Environmental Science & Technology*. 53(95),187-5194. https://doi.org/10.1021/acs.est.9b01087

82. 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.

81. 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. https://doi.org/10.1007/s11356-017-0286-6.

80. 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.

79. Herkert, N.J.; Jahnke, J.C. and Hornbuckle, K.C. (2018) 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.

78. 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

77. 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

76. 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.

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. https://doi.org/10.1016/j.atmosenv.2015.10.040

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

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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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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.

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Presentations

>150 Scientific Presentations at Conferences

Selected Invited Talks

Hornbuckle, K.D. "Sources of airborne PCBs in schools, homes, and cities: a seminar in honor of Deb Swackhamer" Water Resources Center, University of Minnesota. September 24, 2021.

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 and the DIOXIN2018 conference in 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" 9th PCBWorkshop, 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).

Research Grants (Current)

Hornbuckle, K.C. (PI/PD Center Director) Iowa Superfund Research Program. Sponsored by NIESH/ NIH: US Department of Health & Human Services. 4/1/2020-1/31/2025.

Stanier, C.O. (PI/PD), co-PI: Hornbuckle, Marek, and Stone.. Collaborative Research: Photochemical Silicon Aerosols: Establishing Atmospheric Sources and Significance. Sponsored by the National Science Foundation, Division of Atmospheric Chemistry/Geosciences. 02/01/2021-01/31/2024.

Stone, E (PI/PD) co-PIs: Gloer, Cwiertny, and Hornbuckle. MRI: Acquisition of an Orbitrap Mass Spectrometer, PI: Sponsored by the National Science Foundation. 8/1/2019-8/1/2020

Sen Gupta, A (Principal); and Hornbuckle, K.C. "Raw Signal Processing and Peak Cluster Geometry to Discover and Quantify Co-Indicative Associations between Target and Non-Target Environmental Contaminants" National Science Foundation CHE Division. (2018-2021)

Selected reports of the Hornbuckle research in the popular press:

BUSPH electronic newspaper Potentially Harmful Air Contamination from New Bedford Harbor:
South Coast Today Airborne PCBs near New Bedford Harbor pose health risks, study finds
WBSM News Headlines rebutted by MLS and WHB U.S. EPA: No Health Threat from PCB Harbor Emissions
AP news (published by multiple national outlets including the Washington Post, MSN.com, Houston Chronicle, the Christian Science Monitor, USNWR, San Francisco Chronicle, October 2019) "Toxic PCBs linger in schools; EPA, lawmakers fail to act" https://apnews.com/127a37f4ea44480fa24755536046b7f2
Environmental Health News (April 2018) https://www.ehn.org/pcbs-emitted-from-finished-kitchen-cabinets-2560954110.html
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The Times of Northwest Indiana (June 2017): "Four East Chicago schools have PCB levels"
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Iowa Environmental Focus (July 2017) "PCB sources located inside schools"
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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)
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