

Patricia D. Koman, PhD, MPP

tkoman@umich.edu

Scientist, strategic leader, and effective communicator adept at designing and delivering climate change and health research and programs. Strong track record of community engagement, writing, research analysis, and public speaking. Experience spans higher education, government & consulting.

Skills

Research & Analysis Strategic Planning Community Engagement Environmental Health
Climate Change Air pollution mitigation Public Speaking & Influence Writing of all kinds

Education

Ph.D. University of Michigan, School of Public Health, Environmental Health Sciences

M.P.P. Graduate School of Public Policy, University of California, Berkeley

B.A. with Distinction, Chemistry and Philosophy, University of Virginia, *Phi Beta Kappa*, Raven Society, Louis Hammond prize

Professional Experience

University of Michigan, Ann Arbor, MI (Jan 2026 – present)

Taubman College of Architecture and Urban Planning, Adjunct Instructor of Professional Practice

Professional writing instructor and coach for 40 graduate students (URP 502 U.S. Planning Institutions and Law)

College of Literature, Science and the Arts, Program in the Environment, Intermittent Lecturer

Developed and taught new upper-level undergraduate course (ENVIRON 305.302 Air pollution, public health and environmental justice)

Green Barn Research Associates Non-Profit, Ann Arbor, MI (2017 – present)

President, CEO, and Senior Health Scientist

Engage with network of over 150 health scientists on policy, communication, and science issues

U.S. Environmental Protection Agency, Office of Air and Radiation

Senior Health Scientist and Senior OAR Environmental Justice Coordinator, Office of Policy and Program Support, Washington, DC (originally hired 1991; in this position March 2022 – Dec 31, 2025)

- Developed strategy for multi-billion dollar grantmaking under the Inflation Reduction Act (IRA), including Climate Pollution Reduction Grants, aligning funding with environmental justice priorities
- Sponsored and managed research initiatives on cumulative impacts of air pollution, utilizing advanced data science techniques and urban heat island assessments to inform policy
- Devised OAR-wide strategic plans across 5 program offices and 10 regional offices to assist communities most affected by air pollution in improving health outcomes and climate resilience
- Served as EPA lead on interagency working groups, designing cumulative impact frameworks, environmental health disparity indicators, and equity-driven action plans per Presidential directives

- Provided expert testimony to the Clean Air Act Advisory Committee and supported the National Environmental Justice Advisory Committee (NEJAC) air pollution monitoring task force. Established and led a cross-office regulatory analytics and modeling community of practice resulting in enhanced efficiency, more accessible data and transparent analyses of the distribution of health impacts of OAR programs

[University of Michigan, School of Public Health \(SPH\), Ann Arbor, MI \(2012 – 2022\)](#)

Assistant Research Scientist, Environmental Health Sciences

- At the invitation of Flint community groups, secured and managed grant-funded environmental education initiatives, training 900+ Flint residents on health risks and the drinking water system through a community-participatory approach
- Served on Michigan Department of Environmental Quality (MDEQ) Expert Panel, reviewing Flint water quality data and recommending specific, stronger protections for most vulnerable populations
- Co-led [External Collaboration](#) team, directing 7 research assistants in developing a [report](#) for the University of Michigan's President's Commission on Carbon Neutrality
- Principal investigator for MI-Environment vulnerability mapping, identifying climate-related health risks (e.g., heat stress, wildfire exposure) and shaping community resilience strategies
- Designed and taught upper level science course Residential College RCNSCI 201: Climate Change and Health
- Principal investigator on air pollution and obesity research, assessing cardiopulmonary health impacts
- Trained multi-disciplinary teams of scientists, faculty, and community members nationwide to communicate scientific data through the 5-year Reach the Decision Makers program
- Initiated and piloted first School of Public Health multi-disciplinary community-engaged project with Michigan Engaging Community Through the Classroom; served as co-investigator 5-year \$938,000 teaching innovation grant, awarded Provost prize and HRSA promising practice recognition
- Organized and led university-wide symposia on Climate Change & Health and Toxic Chemical Exposure, convening experts, policymakers, and community advocates

[University of Michigan, College of Engineering, Ann Arbor, MI \(2018 – 2022\)](#)

Program Manager, Multidisciplinary Design Program, Faculty Research Student Teams

- Managed the placement and integration of 200+ students into 12 faculty-led research design teams, fostering cross-disciplinary collaboration on engineering and environmental challenges
- Designed and led summer programs for need-based scholarship students, increasing accessibility to experiential learning and research opportunities; developed curriculum and led weekly seminar

[U.S. Environmental Protection Agency, San Francisco, CA; Research Triangle Park, NC; Ann Arbor, MI \(1991 – 2012\)](#)

Proven experience in project leadership, policy development and analysis, and public-private partnerships

- Founded a nationwide diesel emissions reduction initiative at seaports, expanding in five years from a pilot to a \$100M EPA grant program with projects at all major U.S. seaports and significant private sector investment; laying foundation for current billion dollar program

- Charter developer of Clean School Bus USA nationwide public-private partnership and grant program measurably improving children's health
- Principal author and team leader of landmark air pollution standards for fine particulate matter, managing a 20-person, multi-division team and a \$1M budget under court-ordered deadlines, briefing Congressional staff and public in 15-city public hearing tour; regulations successfully defended before the U.S. Supreme Court
- Managed benefit-cost analyses for major federal clean air policies, shaping regulatory justifications that upheld legal scrutiny and influenced long-term national air quality standards; managed air emissions and atmospheric modeling, meeting deadlines on budget
- Supervised technical staff and managed budgets; represented the agency with industry, states and local governments, public health groups, the public, and elected officials
 - As Mobile Sources Air Toxics Center Director, supervised 11 engineers and specialists; formulated and managed center's annual budget and resource request for 5-year plan
 - As Coatings and Consumer Products Group Manager, supervised 12 engineers and Ph.D. scientists; responsible for personnel actions, health & safety and security policies for employees; managed all aspects of regulatory development and technical support for 28 new Clean Air Act actions; managed \$2.3 million budget; advised senior management and prepared EPA witnesses for Congressional hearings; represented office to key stakeholders; briefed Congressional staff and the Office of Management and Budget staff; managed response to comment on six volume Report to Congress; interpreted legislation for first national rulemaking

Professional Honors and Awards

- US EPA Bronze Medal: Justice 40 Team (2023)
- American Public Health Association, Environment Section Advocacy Award (2018) and Distinguished Service Award (2020)
- University of Michigan, Provost's Teaching Innovation Prize (2016)
- U.S. Health Resources and Services Administration and Association of Schools and Programs of Public Health "Promising Practice" recognition for teaching innovation
- Graham Institute Dow Distinguished Interdisciplinary Sustainability Award (2014, 2015, 2016)
- EPA Administrator's Award for Scientific Excellence (2006)
- EPA Gold Medals for Exceptional Service to the Country: Clean Diesel Initiative Team (2007); Clean Air Nonroad Diesel Rule (2005); Heavy Duty Diesel Engine and Fuel Rule (2002); Particulate Matter National Ambient Air Quality Standards (1998); EPA Silver Medal: Economic Benefits Methods Development (2004)

Selected Press Appearances

[ABC News](#), [ABC News website](#), [Arizona Republic](#) (part of USA Today), [Washington Post](#) (letter to editor) [PBS Student Reporting Labs](#), [Detroit Public TV](#), [Scientific American](#), [Bridges Magazine](#), Michigan Radio [Stateside](#), [WCMU Radio](#), [WEMU Radio](#), [San Luis Obispo Tribune](#), [Southern Maryland Chronicle](#), E&E News, [San Francisco-Marin Medical Society Magazine](#), [Ludington Daily News](#), [Michigan Climate Action Network](#), Findings Magazine, University of Michigan [Record](#)

Selected Publications: view more on [Google Scholar](#)

Workgroup member and contributing author, Interim Framework for Advancing Consideration of Cumulative Impacts, U.S. EPA report, 2024

Koman, P.D., N.H.F. French, 2023. Assessing Smoke Exposure in Space and Time, Landscape Fire, Smoke, and Health, [10.1002/9781119757030.ch10](https://doi.org/10.1002/9781119757030.ch10), (193-216), in Landscape Fire, Smoke, and Health: Linking Biomass Burning Emissions to Human Well-Being, American Geophysical Union Online ISBN:9781119757030 | DOI:10.1002/9781119757030 (2024).

Woodruff, T.J., Rayasam, S.D.G., Axelrad, D.A., **Koman, P.D.**, et al. 2023. A science-based agenda for health-protective chemical assessments and decisions: overview and consensus statement. *Environ Health* **21** (Suppl 1), 132. <https://doi.org/10.1186/s12940-022-00930-3>

Varshavsky, J.R., Rayasam, S.D.G., Sass, J.B. et al. 2023. Current practice and recommendations for advancing how human variability and susceptibility are considered in chemical risk assessment. *Environ Health* **21** (Suppl 1), 133. <https://doi.org/10.1186/s12940-022-00940-1>

Koman, P.D., Billmire, M., Baker, K.R., Carter, J.M., Thelen, B.J., French, N.H.F., Bell, S.A. 2022. Using wildland fire smoke modeling data in gerontological health research (California, 2007–2018) *Science of the Total Environment* **3**, 838. <https://doi.org/10.1016/j.scitotenv.2022.156403>.

Carter, J.M., **Koman, P.D.**, Cameron, L. et al. 2021. Assessing perceptions and priorities for health impacts of climate change within local Michigan health departments. *J Environ Stud Sci* **11**, 595–609. <https://doi.org/10.1007/s13412-021-00679-0>

Koman, P.D., Billmire, M., Baker, K.R., de Majo, R., Anderson, F.J., Hoshiko, S., Thelen, B.J., French, N.H.F., 2019. Mapping Modeled Exposure of Wildland Fire Smoke for Human Health Studies in California, *Atmosphere*, **10**, 6, (308). [10.3390/atmos10060308](https://doi.org/10.3390/atmos10060308)

Koman, P.D., Singla, V., Lam, J., Woodruff, T.J. 2019. Population susceptibility: A vital consideration in chemical risk evaluation under the Lautenberg Toxic Substances Control Act, *PLOS Biology*, **17**, 8, (e3000372), [10.1371/journal.pbio.3000372](https://doi.org/10.1371/journal.pbio.3000372)

Koman, P.D., Hogan, K.A., Sampson, N., Mandell, R., Coombe, C.M., Tetteh, M.M., Hill-Ashford, Y.R., Wilkins, D., Zlatnik, M.G., Loch-Caruso, R., Schulz, A.J., Woodruff, T.J., 2018. Examining Joint Effects of Air Pollution Exposure and Social Determinants of Health in Defining “At-Risk” Populations Under the Clean Air Act: Susceptibility of Pregnant Women to Hypertensive Disorders of Pregnancy. *World Med. Heal. Policy* **10**, 7–54. <https://doi.org/10.1002/wmh3.257>

Koman P.D., Mancuso P. 2017. Ozone exposure, cardiopulmonary health, and obesity: a substantive review. *Chem. Res. Toxicol.* doi:10.1021/acs.chemrestox.7b00077. ISSN 0893-228X. PMID: 28574698 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5556919>

Norton R.K., David N.P., Buckman S., **Koman P.D.** 2018. Overlooking the coast: Limited local planning for coastal area management along Michigan’s Great Lakes. *Land use policy* **71**:183–203; doi:10.1016/j.landusepol.2017.11.049

Norton, R.K., Gerber, E.R., Fontaine, P., Hohner, G., **Koman, P.D.**, 2018. The Promise and Challenge of Integrating Multidisciplinary and Civically Engaged Learning. *J. Plan. Educ. Res.* 0739456X1880343. First Published October 1, 2018. <https://doi.org/10.1177/0739456X18803435>

"Report to Congress: Highlights of the Diesel Emissions Reduction Program, Energy Policy Act of 2005," US EPA Office of Air and Radiation report, EPA-420-R-09-006, August 2009 (Principal author)

"National Clean Diesel Campaign: Working Together for Cleaner Air," US EPA, Office of Transportation and Air Quality, EPA-420-F-09-063, 2009

"National Clean Diesel Campaign: State and Local Government Tools and Resources," U.S. EPA, Office of Transportation and Air Quality, EPA-420-F-09-070, 2009

"Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information," U.S. EPA Office of Air and Radiation report, EPA-452\|R-96-013, (Principal author)

Selected Conference Program Development and Thought Leadership

Invited panelist, Clean Air Round Table, White House First Environmental Justice Summit, Washington, DC, 2024

"[Resetting the Course of EPA](#)" report was featured in an article by the [Associated Press](#). This article was reprinted by [The New York Times](#), [NBC News](#), [Los Angeles Times](#), [San Francisco Chronicle](#), [U.S. News and World Report](#), the [Minneapolis Star Tribune](#), and over 200 others

Contributing author to two chapters:

[Restoring Science as the Backbone of EPA Decision-making](#)
[Reducing Toxic Risks](#)

Koman, P.D., [The Intersection of Climate, Race, and Health: A Discussion of the Empirical Relationship Between the Top Issues of 2020](#), [New York Energy Forum](#), virtual panel discussion with Dr. Francesca Dominici, Professor of Biostatistics, Harvard T.H. Chan School of Public Health and Dr. Saria Hassan, Assistant Professor of Medicine, Emory School of Medicine, Oct 28, 2020

Koman, P.D. Heat Stress Vulnerability in Michigan, panel discussion at documentary movie event, Charles H. Wright Museum of African American History, currently on [Detroit Public Television](#), Detroit, MI (June 11, 2020, reached over 700 participants during live event and more on website) Watch [panel](#): June 11, 2020

Koman P.D. Climate Reality Leaders, Climate Crisis and Public Health, webinar with international audience, 200 live viewers and more on website, February 28, 2020

University of Michigan, Winter 2021 Design Expo, Multidisciplinary Design Program Faculty Research Teams Presentations, organized and moderated virtual poster presentations for 12 teams representing over 50 students and 9 faculty, including 2 Honors thesis presentations, April 14, 2021

University of Michigan, School of Public Health Symposium, [Making the Toxic Substances Control Act \(TSCA\) work](#), Ann Arbor, MI (steering committee chairperson, organizer, panel moderator and speaker) March 2022

University of Michigan, School of Public Health Symposium, “[TSCA at 5 Years: Opportunities to Act with Foresight](#),” Ann Arbor, MI (steering committee chairperson, organizer, panel moderator and speaker), in partnership with Detroit Public Television and Great Lakes Now TV network, March 2021

University of Michigan, School of Public Health Symposium, “[Readiness and Resilience: Climate Change and Health](#).” [Dr. Renee Salas](#) (Harvard Emergency Medicine and [Lancet Countdown](#) author) keynote speaker on children’s environmental health, Ann Arbor, MI (steering committee chairperson, organizer) March 9, 2020

University of Michigan, School of Public Health Symposium, “[Climate Change and Health Summit](#),” John Balbus, M.D., NIEHS, keynote speaker, Ann Arbor, MI (steering committee chairperson, panel moderator, February 2019)

Koman, P.D., M. Billmire, N.H. French. Understanding health equity and population risk implications of exposure to air pollution from wildland fires and hypertensive disorders of pregnancy in California
APHA ID 413874, American Public Health Association Annual Meeting, San Diego, CA, Nov 4, 2018

Koman, P.D., E.C. Gartner, V. Singla, R. Harrison, A. Finkel. The Promise and Perils of Using the Toxic Substances Control Act. American Public Health Association Annual Meeting, San Diego, CA, Nov 4, 2018 (organizer, special Environment Section and Occupational Health symposium)

Koman, P.D., T.J. Woodruff, G.K. Jensen, M. Diamond, Catherine Ganzleben, J. H. Leem, Chemical Policy in the 21st Century: Comparing Canadian, U.S., European, and Asian Approaches. International Society of Environmental Epidemiology. 2018. Ottawa, Canada (ID: 289891 *symposium*)

University of Michigan, School of Public Health, Inaugural Environmental Health Practice Workshop, “Health Equity at Industrial Scale – Lautenberg Chemical Safety Act Under the Trump Administration,” Ann Arbor, MI (steering committee chairperson, panel moderator, March 28, 2017)

Genesee County Health Department keynote presentation, “Climate Change and Human Health,” Tenth Annual Public Health Conference, Flint, MI, May 3, 2016

University of Michigan, School of Public Health, Public Health Leadership Summit, “Blue Skies with Green Allies,” featuring former Mayor of Grand Rapids discussing climate action planning and Toledo communications director during algal bloom water crisis, September 16, 2015

Teaching, Training, and Instruction

1. Curriculum developer and trainer, “See for Yourself: What’s in Your Water” water quality and drinking water delivery system training for 700 community members and K-12 students in Flint, MI with funding from US Environmental Protection Agency. This project boosted participant competencies and increased acceptance of proper installation of water filters in homes, and importantly rebuilt trust with federal and state governments. Flint residents would not open their doors to the state program employing local residents to install point-of-use water filters; by using trusted messengers from the community, our training resulted in full rosters of willing participants and significant increase in proper filter installation, protecting residents from harmful lead exposures. Fall 2016 and Winter Term 2017

2. Instructor, University of Michigan, LSA Residential College, RCNSCI Climate Change and Health: Evidence and Solutions 3.0 credits. 2020. Developed and taught new science undergraduate course, pivoted to online during pandemic.
3. Assistant course instructor, University of Michigan, School of Public Health, PH600 Cross-disciplinary approaches to public health challenges, 4 credits.
4. Faculty research student team program manager for the Multidisciplinary Design Program recruited over 250 students per term for experiential learning program. Planned and oriented students to the research enterprise via annual Jumpstart and Research Apprentice programs. Organized end of term Design Expo, including peer feedback system and my assessment. Created paid summer research fellowship for non-traditional students to succeed in STEM fields during the summer session, including developing the curriculum and leading a weekly seminar for the fellows, as well as coaching and assessing individual student progress over their 12-month research experiences (2017-2022).
5. Mentor and instructor for University of California at San Francisco (UCSF) Reach the Decision Makers fellowship. Trained, mentored and developed scientists, faculty, and community members nationwide to communicate scientific data in regulatory decisions; team recommendations to Agency executives have been accepted, resulting in new research priorities, discussion in *Federal Register* records of decisions of additional data, and new and deeper involvement of medical sector stakeholders in environmental issues
 - a. Guest lecture for webinar for 50 health professionals, "Strategies for Effective Communication with the U.S. Environmental Protection Agency," June 2015
 - b. Invited in-person trainer for 25 health professionals nationwide, "Making Your Case in Environmental Policy," Reach the Decision Maker Program, Washington, DC, May 2014
 - c. Guest lecture for webinar for 50 health professionals, "Effective Communication with the Environmental Protection Agency," June 2014
6. Co-investigator, Initiated and led first University of Michigan School of Public Health (SPH) multi-disciplinary community-engaged project with Michigan Engaging Community Through the Classroom (MECC); co-investigator on three grants including 5-year \$938,000 UM Third Century Transformative Learning grant for interdisciplinary engaged learning; awarded University of Michigan Provost Teaching Innovation Prize (2015); recognized by the U.S. Health Resources and Services Administration and Association of Schools and Programs of Public Health "Promising Practice" for teaching innovation for my experiential learning program for conducting Health Impact Assessments (2013) University of Michigan, School of Public Health, Associate Dean Phyllis Meadows. Winter Term 2016
7. Guest lecture for Population Health Seminar, University of Michigan, Medical School, Feb 8, 2018
8. Practitioner roundtable for Rackham's Institute for Social Change introduction to public scholarship, "Working for Social Justice Inside and Outside Academia," University of Michigan, Rackham Graduate School, Ann Arbor, MI August 22, 2017
9. Master Class instructor, "Transportation Affects Health," Movin'On Michelin World Summit on Sustainable Transportation, Montreal, Canada, June 14, 2017
10. Curriculum co-developer, "Environmental Justice Academy" community-based participatory research partnership. Winter Term 2017

11. Guest lecture for Future Public Health Leaders program, for 40-70 undergraduate Center for Disease Control and Prevention scholars. Taught two lessons annually: Introduction to Environmental Health Sciences and Health Impact Assessment. University of Michigan, School of Public Health, Ann Arbor, MI. Associate Dean Phyllis Meadows. 2013-2017
12. Koman, P.D. "Climate Change and Human Health," Keynote. University of Michigan School of Public Health and Michigan Association for Local Public Health Day, Ann Arbor, MI, March 9, 2015 Available as Michigan Public Health Training Center on-line training: <http://miphtcdev.web.itd.umich.edu/trainings/climate-change-and-human-health>
13. Guest lecture for 25 urban planning masters students, "Building Healthy Communities: Children's Environmental Health and Hazardous Substance Clean Up Criteria in Michigan." University of Michigan, Urban Planning Department. Ann Arbor, MI. UP 502 Environmental Planning, Issues and Concepts. Assistant Professor Ana Paula Pimental Walker. Fall 2013
14. Guest lecture on air quality and marine ports for masters students. University of Michigan, School of Public Health, Environmental Health Sciences. Ann Arbor, MI. EHS 572/SNRE 514 Environmental Impact Assessment. Professor Stuart Batterman. Fall 2012
15. Guest lecture for graduate students, "Ship Air Emissions and Controls," University of Michigan, College of Engineering, Naval Architecture and Marine Engineering. Ann Arbor, MI. Professor Jing Sun. Winter 2007
16. Trainer and course developer, "EPA Mobile Source Emissions software MOVES2010b Pilot Training Course." International Emissions Inventory Conference. 8-hour training, Tampa, FL. August 13, 2012
17. Trainer, "MOVES 3-Day Training Course," EPA Mobile Source Emissions Modeling 3-day computer-based training, Lansing, MI. May 2012
18. Trainer, "Effectively Communicating Key Messages," EPA's National Clean Diesel Campaign Regional Office Partners meeting. Washington, DC. December 9, 2005