National Institute of Environmental Health Sciences
Your Environment. Your Health.

Partnerships for Environmental Public Health (PEPH)

Environmental public health research aims to discover how the environment influences people's health and translate research into action to address harmful environmental exposures and health risks to the public.

Redefining environmental public health research

The PEPH program brings together scientists, community members, educators, health care providers, public health officials, and policymakers to coordinate environmental public health research at local, state, regional, tribal, national, and global levels. The multilevel partnerships fostered by PEPH help these groups discover and share vital information about the link between environmental exposures and disease, which can be used to promote health and reduce the risk of disease.

A hallmark of the PEPH program is the active engagement of communities in all stages of research, dissemination, and evaluation, to help prevent, reduce, or eliminate adverse health outcomes caused by environmental exposures. The program emphasizes both scientific advances and translation of research into practical resources, such as toolkits, brochures, and videos to explain research findings to stakeholders, communities, and individuals.

Examples of PEPH in action

Improving environmental health literacy

As part of an ongoing effort to increase environmental health literacy, the Community Outreach and Engagement Core within the University of North Carolina at Chapel Hill Center for Environmental Health and Susceptibility, funded by the National Institute of Environmental Health Sciences (NIEHS), offers training to public health professionals, so they can teach the public about how the environment can affect health. The core provides training on healthy homes and asthma. With the right training and education, these professionals can increase environmental health literacy so that individuals, families, and communities can make informed decisions and take actions to improve their health. Participants have shared this information with more than 500 individuals and families during home and clinical visits.

Another training session prepared nearly 100 public health nurses, social workers, housing professionals, and asthma advocates on how to inform patients and their families about reducing environmental triggers of asthma in the home.

PEPH Key Principles

- Engage diverse communities.
- Promote the worthiest science.
- Respond to current issues.
- Focus on prevention.
- Foster unified, integrated, and synergistic activities.
- Support research to improve theories, methods, and practice.
- Share the value of scientific advances and translational efforts.
- Promote research into action.

PEPH Goals

- Coordinate and integrate new and existing initiatives that involve communities and scientists collaborating on environmental public health research.
- Develop and evaluate strategies to communicate environmental public health messages to diverse audiences.
- Create and distribute materials to increase awareness and literacy about environmental health risks.

Additionally, more than 250 nurses viewed a webinar about federal guidelines to protect young mothers and their infants from lead poisoning.

WEBINAR Learn more about environmental health literacy and see the PEPH webinar at https://go.usa.gov/xN9R4.

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Creating culturally relevant health messages

Researchers in the PEPH network partner with Native American communities to gain a greater understanding of how they view environmental health. Incorporating this cultural sensitivity into research and health messaging helps reduce environmental health disparities in Native American communities.

- University of Washington researchers worked with tribal college students to identify community, wellness, and interrelationship as core concepts of Native American environmental health. The researchers shared their findings with tribal communities by creating The Return,[1] a story of environmental health from a Native American perspective.
- Researcher Annie Belcourt, Ph.D., conducted focus groups and interviewed tribal members to develop culturally driven resources to improve public health and prevent disease in Native American communities in Montana. Through Belcourt's digital storytelling project, tribal members produced their own health messages that highlight the role of the land and community in the Native American way of life.
- Researchers at the University of Arizona Superfund Research Program developed educational modules for tribal colleges related to mining on tribal lands. The modules teach tribal college students about the mining process and its effects on health and the environment. Mining can result in widespread contamination of the surrounding soil, water, and vegetation. This is especially troubling because the tribal way of life is closely tied to the land.

PODCAST Hear experts discuss the consequences of abandoned mines on tribal lands in a PEPH podcast at https://go.usa.gov/xN9RT.

Addressing environmental health disparities

Scientists from the Children's Environmental Health Center at Columbia University have found that exposure to cockroach and mouse allergens and traffic-related air pollutants increase a child's risk of developing asthma.[2,3] Asthma is a serious respiratory disease that affects approximately one in 11 children in the U.S.[4] Low-income and minority neighborhoods often bear a disproportionate share of environmental exposures that can trigger an asthma attack, and children living in these communities suffer a greater burden of the disease.[5] By shedding light on the factors driving asthma disparities, this research can help reduce asthma prevalence among children living in disadvantaged neighborhoods.

The Alaska Community Action on Toxics partnered with 15 tribal communities in the remote region of Norton Sound, Alaska, to increase public understanding about local environmental contamination, health implications, and ways to limit exposure. Researchers showed that people living in these communities are exposed to high levels of polychlorinated biphenyls from abandoned military bases in the area, and elevated concentrations of persistent organic pollutants (POPs), which are carried to the Arctic by wind and water currents.[6] Children are especially vulnerable to the health effects of exposure to POPs, which may include cancer and adverse effects on the immune, reproductive, nervous, cardiovascular, and endocrine systems.[7]

Alaska Community Action on Toxics and its partners:

- Developed a toolkit for local health care professionals.
- Trained tribal environmental leaders and community health workers.
- Helped guide state, national, and international chemical regulation policies.

Reducing risk in occupational settings

Researchers from Emory University created a Web-based training tool with information on pregnancy health, pesticide safety, heat stress, ergonomic risk factors, and health-promoting and protective behaviors for women farmworkers in Florida. The researchers found that women were underestimating the risks associated with their jobs, and that most women continued to work in the fields while they were pregnant. Agriculture is one of the most hazardous occupations in the U.S.[8] Farmworkers face potential exposures to agricultural chemicals, physical stress from long hours of repetitive bending and standing, and exposure to extreme heat and dehydration. The online training provided a cost-effective and accessible way to promote healthy, protective behaviors among female farmworkers, especially during pregnancy. The project was conducted in partnership with the Farmworker Association of Florida and the Farmworker Health and Safety Institute, and was funded by the National Institute for Occupational Safety and Health as part of the NIEHS Research to Action[9] program.

Sharing best practices to reduce health risks: urban gardening

To help urban gardeners reduce their exposure to soil contaminants, researchers from the Boston University School of Public Health developed a manual to educate communities about soil quality and best practices for safe urban gardening. The research team also set up free soil testing stations at gardening festivals in the Boston area, to analyze soil samples for lead, explain the results to attendees, and provide tips to reduce exposure.

While urban gardens provide city residents access to affordable and healthy produce, urban soils can expose gardeners to harmful compounds, such as lead and polycyclic aromatic hydrocarbons.[10,11] Increasing the community's awareness of soil conditions and providing gardeners with practical solutions, such as washing hands after gardening and building raised garden beds, can decrease exposure to common soil contaminants while maintaining the benefits of growing and eating locally grown food.

PODCAST Learn more about PEPH projects addressing the risks and benefits of urban gardening and listen to a PEPH podcast at https://go.usa.gov/xN9Rj.

NIEHS-funded programs that support PEPH

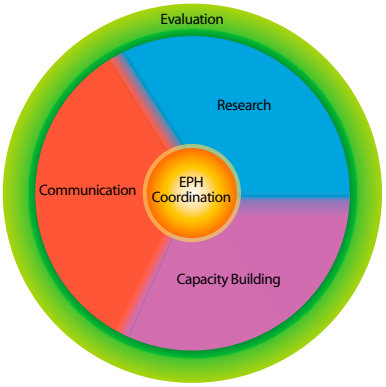
- **Breast Cancer and the Environment Research Program:** Funds a network of multidisciplinary scientists, clinicians, and community partners studying environmental exposures that occur throughout a woman's life and could predispose her to breast cancer.
- **Centers for Children's Environmental Health and Disease Prevention Research:** Study how environmental exposures affect children's health. Centers have Community Outreach and Translation Cores to translate research findings into information that community groups, health care professionals, and decision-makers can use to protect children's health.
- **Deepwater Horizon Research Consortia:** Includes community-university partnerships aimed at addressing the health effects stemming from the Deepwater Horizon oil spill.

- **Environmental Health Sciences Core Centers Community Outreach and Engagement Cores:** Communicate environmental health research findings and concepts to their partners and convey the voice of the community to researchers.
- **Ethical, Legal, and Social Implications of Genomic Research:** Develops policies dealing with issues such as the protection of human subjects, the privacy of genetic information, and the possible discriminatory use of project data.
- **Research Supplements to Promote Diversity in Health-related Research:** Improves diversity of the research workforce, by supporting and recruiting students, postdoctoral fellows, and eligible researchers from underrepresented racial and ethnic groups; individuals with disabilities; and individuals from socially, culturally, economically, or educationally disadvantaged backgrounds.
- **Research Supplements to Promote Re-entry Into Biomedical and Behavioral Research Careers:** Encourages individuals with high potential to re-enter an active research career, after taking time off to care for children or attend to other family responsibilities.
- **Research to Action:** Brings together community members and environmental and occupational health researchers to investigate the potential health risks of environmental and occupational exposures.
- **Superfund Research Program:** Supports the needs of communities impacted by hazardous waste sites and translates research findings into information that stakeholders and the general public can use to protect human health.
- **Understanding and Promoting Health Literacy:** Supports research focused on measuring and increasing environmental health literacy, so that policymakers, health care professionals, and communities can make informed decisions concerning environmental exposures and health.
- **Worker Training Program:** Trains workers to protect themselves from exposures when handling hazardous waste or responding to emergencies involving hazardous materials.

The PEPH model: coordinated activities in research, communication, capacity building, and evaluation

The PEPH model categorizes activities into five primary areas — coordination, research, communication, capacity building, and evaluation — with interaction and crossover among them.

Evaluation is an all-encompassing component in the PEPH model. The PEPH Evaluation Metrics Manual[12] provides examples of tangible metrics that PEPH grantees and their community partners can use to plan, implement, and evaluate a program or project. Documenting achievements related to building community partnerships and translating research is critical for demonstrating the value of environmental public health.



Stay connected with the PEPH network

Podcasts: The Environmental Health Chat podcast series explores how environmental exposures affect our health. Podcast topics include hydraulic fracturing, contaminants at schools, mercury in seafood, breast cancer and the environment, asthma and diet, the epigenome, and the exposome. Listen to the podcasts at https://go.usa.gov/xNFqw.

Newsletter: Each month, the PEPH newsletter highlights projects that align with PEPH program goals. It also includes events, resources, and funding opportunities relevant to environmental public health. Read the current issue and subscribe at https://go.usa.gov/xNFqe.

Webinar series: PEPH conducts webinars to promote interactions among grantees, increase awareness of common issues and approaches, and facilitate consideration of emerging concerns. Anyone interested in environmental public health is welcome to join. For more on the webinars, visit https://go.usa.gov/xN9Rn.

Resources: The PEPH resources page has educational and outreach materials developed by PEPH grantees and their community partners to increase awareness of environmental health issues and topics. Find them at https://go.usa.gov/xN9RQ.

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For more information on the PEPH program, visit **www.niehs.nih.gov/peph** or follow on Twitter at **www.twitter.com/NIEHS_PEPH**.

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