DIRECT FROM EHAC

From Classrooms to Communities: Impact Stories From Accredited Environmental Health Programs

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Editor's Note: To promote the growth of the environmental health profession and the academic programs that fuel that growth, the National Environmental Health Association (NEHA) has teamed up with the National Environmental Health Science and Protection Accreditation Council (EHAC) to publish two columns a year in the *Journal*. The mission of EHAC is to enhance the education and training of students in environmental health science and protection.

Through this column, EHAC will share current trends within undergraduate and graduate environmental health programs, as well as highlight available resources and the efforts to further the environmental health field. The conclusions of this column are those of the author(s) and do not necessarily represent the views or official position of NEHA.

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I have been thinking a lot these days about good storytelling—not just as a way to cut through the noise of misinformation, but as a means to communicate the true impact of prevention. So much of what we do in environmental health is about ensuring that nothing happens, that no one gets sick from their water, food, or air. But when we do our jobs well, our success is invisible, making it a challenge to communicate the value of our work to people who have never had to think twice about these essential daily services.

In my Introduction to Environmental Health class, I start each quarter with a simple exercise: I ask students to think about their morning routines—pouring a glass of water from the tap, eating breakfast, flushing the toilet, and commuting to campus. Then I ask, "Were you worried about getting sick from your water? Did you question the safety of your food? Did you wonder where your waste went? Did you worry about the air you breathed?" Nearly every head shakes, "No." Only when I mention concerns about wildfire smoke do hands go up. I point out that this peace of mind exists because there is a profession working tirelessly behind the scenes to prevent harm before it happens.

To help bring these invisible successes to light, I reached out to the environmental health academic programs that are accredited by the National Environmental Health Science and Protection Accreditation Council (EHAC) and asked them to share stories that illustrate the real-world impact of their work. In preparing this collection, we edited submissions using a storytelling framework to highlight the challenge or need, the actions taken, and the outcomes or impact achieved (Davidson, 2017; Fadlallah et al., 2019). The following collection highlights their diverse efforts, making visible the often-unseen contributions of academicians and their support of the environmental health profession, and revealing the profound difference they make in our communities—one safe glass of water, clean breath of air, and healthy meal at a time.

While these stories are organized by topical area to highlight the range of environmental health challenges addressed, several unifying themes emerge. Across all domains, programs demonstrate a commitment to hands-on, community-engaged research; innovative, applied learning; and the development of a skilled, resilient workforce. Students and faculty are not only responding to immediate public health needs but also building partnerships, advancing environmental justice, and preparing the next generation of leaders.

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Air Quality

So, let us begin by building on the foundation of prevention and unseen impact with air quality—a domain where environmental health professionals work tirelessly to ensure the air we breathe is safe, even when the hazards are invisible.

Illinois State University's Environmental Health & Sustainability program is making a measurable difference in local air quality and environmental justice. Through the Bloomington-Normal Community Air Research and Education (BN-CARE) project, students and faculty partnered with the Ecology Action Center and the Bloomington-Normal National Association for the Advancement of Colored People (NAACP) to install solar-powered and portable air quality monitors in environmental justice neighborhoods. The real-time data, made available on BNCARE.org, have raised awareness of air pollution and its health effects, helping residents and local leaders to make informed decisions. This initiative not only advances scientific understanding but also provides a model for community-driven environmental health action. This research, funded by the U.S. Environmental Protection Agency (U.S. EPA), exemplifies the program's commitment to reducing exposure to environmental hazards and improving public health outcomes.

University of Pittsburgh's Environmental & Occupational Health students in the School of Public Health are engaged in community-based participatory research exploring the relationship between poor indoor and outdoor air quality and asthma severity in several Pittsburgh-area townships. Their work includes interventions using low-cost options to enhance indoor air quality and reduce the respiratory health impacts of pollution. Students also participate in community engagement efforts to train and educate residents on the US EPA's AirNOW system, air pollution, and its effects on health. Through these projects, students gain practical experience while directly contributing to improved respiratory health and increased environmental awareness in their local communities.

University of Washington's Department of Environmental & Occupational Health Sciences (DEOHS) is a national leader in research, outreach, and policy innovation to address the escalating health risks of wildfire smoke in the Pacific Northwest. DEOHS faculty and students collaborate with public health agencies, community-based organizations, and tribal partners to conduct health effects research, implement exposure reduction interventions, and co-develop culturally relevant risk communication strategies. Research from the department has characterized statewide health risks, demonstrated disproportionate smoke exposures among Indigenous Peoples and agricultural worker communities, led to the implementation and evaluation of interventions such as box fan filters and N95 mask distribution programs, and shaped state emergency rules to protect outdoor workers. By integrating real-time air quality data, community-driven storytelling, and targeted, evidence-based interventions, DEOHS empowers Washingtonians to better prepare for and respond to wildfire smoke, building resilience in the face of longer, more severe wildfire seasons.

West Chester University's Environmental Health Science Program is addressing air quality concerns related to the region's mushroom farming industry, the largest in the U.S. Faculty and students conducted a two-phase environmental sampling study that found elevated and irregular hydrogen sulfide (H_2S) concentrations on residential properties near mushroom production facilities—sometimes exceeding state air quality standards. Their ongoing research, funded by the Pennsylvania Department of Agriculture, includes expanded monitoring and weather data collection to better understand and mitigate exposure risks for both workers and nearby residents. This work is vital for informing public health policies and ensuring safer environments in agricultural communities.

Disease Transmission

While clean air is fundamental, the control of infectious disease transmission is another cornerstone of environmental health. The next example demonstrates how programs are using surveillance and early warning systems to protect communities from emerging threats.

Beginning in 2020, **Central Michigan University** partnered with laboratories across Michigan to monitor SARS-CoV-2 and other pathogens in rural wastewater systems, providing early warning of disease trends to local health departments. By collecting and analyzing samples from rural communities, the university enabled public health officials to respond proactively, offering targeted interventions, communication, and increased testing where viral loads were rising. Over 5 years, the project expanded to track norovirus, RSV (respiratory syncytial virus), and influenza, illustrating how wastewater surveillance can be a crucial tool for community health protection and pandemic preparedness.

Emergency Preparedness

Beyond ongoing risks, environmental health professionals must also be ready to respond to sudden crises. The following story highlights how academic training and real-world emergency preparedness converge to keep communities safe during emergencies.

In today's complex world, threats to public and environmental health often go unnoticed until disaster strikes. There is a growing need for professionals who can anticipate, prevent, and respond to these hidden dangers, especially in underserved or rural communities where resources are limited. The **University of Findlay's** Bachelor of Science in Environmental Health, Safety and Sustainability (EHSS), and Master of Science in Environmental, Safety, and Health Management programs address this need by preparing students to lead in emergency preparedness, environmental protection, and workplace safety. An example is the All-Hazards Training Center, which provided free, hands-on emergency response training to rural firefighters, including the team that responded to the East Palestine, Ohio, train derailment without injury or loss of life.

University of Findlay further extended this impact by integrating real-world events into coursework and engaging with local communities. As a result, students, faculty, and alumni are making a measurable difference in public safety and environmental health. Whether managing hazardous waste, cleaning waterways, or responding to emergencies, they deliver "invisible" protection that saves lives and safeguards ecosystems. Graduates go on to lead in industry and government, driving compliance, training, and sustainability initia-

tives—often without recognition but always with purpose. The quiet, behind-the-scenes work of EHSS professionals is more vital than ever. As the field rapidly expands, so do opportunities to shape a safer, healthier, and more sustainable world. The University of Findlay's programs are not just educating future leaders—they are building the foundation for resilient communities and a more secure future.

Food Safety

Ensuring the safety of our food supply is another vital, often invisible, aspect of environmental health. The next example showcases how programs prepare students to prevent foodborne illness and promote safe food practices.

The **University of Illinois, Springfield's** Environmental Health Program integrates food safety into both education and workforce development. Students and faculty have translated local health department educational resources into several languages and developed mock inspection scenarios for food inspector training. The program also assists in formalizing standard operating procedures for foodborne illness complaints and food recalls, ensuring compliance with the Voluntary National Retail Food Regulatory Program Standards from the Food and Drug Administration. These efforts, combined with hands-on training and internships, prepare graduates to prevent foodborne illness and promote safe food practices in diverse communities.

Healthy Housing

Safe and healthy housing forms the bedrock of community well-being. Here, we see how environmental health training helps residents and addresses housing-related health disparities.

Texas Southern University's Environmental Health Program prepares graduates to address crucial environmental health challenges, including the promotion of healthy housing in underserved communities. This commitment is exemplified by a recent student internship with the Houston Health Department, where the student designed a brochure for the Apartment Compliance Program to educate residents about their rights and responsibilities regarding housing conditions and how to report violations. Drawing on insights gained during ride-alongs, the student created an accessible guide to help community members navigate the reporting process. By empowering residents with clear information, the program supports efforts to improve living environments and fosters a deeper understanding of tenant rights, directly advancing healthier housing outcomes in the community.

Noise and Indoor Air Quality

Environmental health extends to the spaces where we learn and gather. The following example demonstrates how programs are reducing noise impacts and improving indoor air quality in schools and public venues.

University of Wisconsin–Eau Claire's environmental health students, guided by faculty, have evaluated noise levels and hearing risks at athletic events, resulting in the availability of earplugs for fans and protection for all 475 members of the university's marching band. Their research extended to local industry, where testing at a rubber manufacturing facility documented noise reductions following engineering improvements. Students also installed and tested air purifiers in 17 classrooms at the Children's Nature Academy, documenting a 30% decrease in respiratory disease transmission. By engaging in these applied projects, students gain valuable hands-on experience while delivering lasting benefits to the campus and local community. Collectively, these applied projects demonstrate how the program translates classroom learning into real-world solutions that prevent hearing loss, improve air quality, and protect community health.

Vectorborne Diseases

Vectorborne diseases pose ongoing threats to public health. This example highlights how students and faculty are advancing research and practical solutions to control these risks.

East Carolina University's environmental health students gain practical experience in vectorborne disease control through faculty-mentored, community-engaged research. Students collaborate with mosquito control programs across North Carolina, conducting applied research on insecticide resistance in local mosquito populations. By rearing mosquitoes from eggs sent by partner agencies and assessing their resistance to various insecticides, students generate data that inform operational decisions for mosquito control and help track resistance patterns statewide. This work not only supports public health agencies but also equips students with the skills and knowledge needed for effective vector management and disease prevention in their future careers.

Water Quality

Access to clean, safe water remains a universal need and a persistent challenge. The following stories demonstrate how academic–community partnerships are making a difference in water quality and public health.

Montana State University's environmental health majors tackle the widespread challenge of inorganic contaminants in private well water, a pressing issue for rural communities across Montana. By leveraging the Montana Ground Water Information Center's database, students analyzed water quality data for 1 of >50 state watersheds, with several taking on leadership roles in peer collaboration, data visualization, and outreach to local health departments. Their findings revealed significant health risks from long-term exposure, prompting a formal statewide cumulative risk assessment by university and state partners. The results informed state policy and were presented at the Montana Environmental Health Association conference. Further, the results will be made publicly accessible at the watershed level, empowering well owners and communities to make informed decisions about their drinking water safety. This project highlights how student-led research can drive policy change, contribute to improving community well-being, and foster professional growth in environmental health.

East Tennessee State University's faculty and students are tackling water quality and

public health challenges in underserved rural communities of Central Appalachia. Their research investigates harmful chemical contaminants, including disinfection byproducts, and the resilience of water infrastructure to extreme weather such as hurricanes. By collaborating with local utilities and partners, the team identifies barriers to effective water management and implements sustainable solutions to mitigate health risks. This work not only advances scientific understanding but also delivers practical improvements in water safety and resilience for vulnerable populations.

Western Carolina University's Environmental Health Program delivers measurable impact on water quality through community-engaged service learning and applied research. Students develop water quality monitoring reports that inform local health departments, collaborate with the Eastern Band of Cherokee Indians on water education, and participate in events like the Tuck River Cleanup. These efforts provide students with practical workforce experience and deliver lasting benefits to communities across Western North Carolina, reinforcing the vital, often unseen role of environmental health professionals in ensuring clean, safe water for all.

Worker Health and Safety

Protecting worker health and safety is a core mission of environmental health. The next stories illustrate how academic–community partnerships and applied research prepare graduates to address evolving occupational risks.

Colorado State University's Environmental Public Health bachelor's degree program prepares students to address crucial worker health and safety challenges through interdisciplinary research and hands-on experience. Students engage in projects investigating pathogen and particle exposures, respiratory disease, and kidney injury among agricultural workers, as well as developing city-wide health and safety management systems in partnership with local municipalities. Experiential learning opportunities, including internships with hazardous waste programs and in-class projects focused on safer environments for workers, ensure that graduates are equipped with the breadth and depth needed to confidently and competently solve real-world occupational health issues. Alumni are prepared for impactful careers in health agencies, private industry, and beyond, advancing the protection of worker health and safety across diverse settings.

Western Kentucky University's Environmental and Occupational Health Science (EOHS) Programs, in partnership with the Center for Environmental and Workplace Health, address crucial occupational and environmental health risks in Kentucky and beyond. Responding to hazards ranging from hazardous materials transport and stormwater management to chemical and infectious agent exposures among firefighters, the programs integrate research into teaching, ensuring students are actively involved in every stage of project design and implementation. Collaborative studies have uncovered resource disparities and health risks—especially for volunteer firefighters—prompting targeted interventions such as enhanced personal protective equipment (PPE) decontamination protocols, training, and support for fire departments. Faculty and students routinely present their findings to state officials, and their recommendations are now being used by public health units across the Commonwealth. Internationally, the EOHS team has assessed blood lead levels among workers and established trauma registries to improve trauma care in Zanzibar, Tanzania. Through close collaboration with community partners and a strong focus on applied research, Western Kentucky University's programs promote comprehensive strategies for worker well-being and prepare graduates to meet the complex challenges of environmental and occupational health.

Workforce Development

At the heart of all these efforts is the development of a skilled, adaptable workforce. The following stories showcase how accredited programs are preparing the next generation of environmental health leaders.

Baylor University's Environmental Health Science Program prepares graduates for "regional, national, and global leadership and service within a caring community." The program's interdisciplinary and practice-oriented curriculum is built around environmental toxicology, chemistry, microbiology, and risk assessment, and is enriched by strong engagement in internships, field experiences, and partnerships with agencies, businesses, and nonprofit organizations. Baylor's direct involvement in national workforce initiatives—such as the UNCOVER EH (Understanding the Needs, Challenges, Opportunities, Vision, and Emerging Roles in Environmental Health) project, which assesses and advances the environmental health workforce—ensures that its students are at the forefront of workforce development. By routinely partnering with communities at home and abroad, the program provides meaningful health outcomes and "positive returns on investments" for communities, while ensuring that its graduates are exceptionally well-aligned with evolving workforce needs.

Since its inception in 1973, the Environmental Health Sciences and Sustainability Program at **Eastern Kentucky University** has prepared students in the environmental health and occupational safety option for impactful careers nationwide. Alumni contribute at every level—working in public health agencies, safeguarding workers in diverse settings, conducting research, and pursuing advanced degrees in environmental health, medicine, and veterinary science. Many have advanced into leadership roles, including CDR Anna Khan, immediate past-president of the National Environmental Health Association and a proud graduate of Eastern Kentucky University. Environmental health is woven into every aspect of daily life, and students and alumni are the professionals behind the scenes making communities safer and healthier. Their collective efforts are the threads holding together the fabric of public health in communities across the country. As they leave the university with the words, "Go forth and do great things," their ongoing achievements continue to shape the field.

For nearly 40 years, the Environmental Health Science Program at **California State University at San Bernardino** has trained and empowered local students to serve and lead in environmental public health. The program's strong curriculum, hands-on training, and impactful research have produced a workforce serving in key roles across Southern California, including air pollution monitoring, water treatment, vector con-

trol, and environmental health inspections. By training students from the region, the program ensures graduates understand and address the unique environmental and cultural needs of their communities. Many alumni have transitioned into research organizations and public agencies, applying their academic knowledge to practical challenges and enhancing public health outcomes throughout the region. The program's commitment to workforce development and community partnership continues to shape healthier, more resilient communities across Southern California.

Zoonotic Disease Transmission

Finally, the intersection of human, animal, and environmental health is increasingly important in a changing world. The next example illustrates how hands-on research prepares students to address zoonotic disease transmission and protect public health.

At **Fort Valley State University**, students in the Master of Public Health Program have played an integral role in a 5-year research project investigating the prevalence of zoonotic diseases in white-tailed deer and the potential risks to hunters, wild-game processors, Department of Natural Resources technicians, and taxidermists who handle deer carcasses. Under faculty guidance, students collected and tested blood and fecal samples for pathogens such as anaplasmosis and gastrointestinal nematodes, and surveyed hunters about their knowledge of zoonotic disease transmission. The project expanded to include COVID-19 testing in deer and culminated in community outreach at Georgia's Buck-a-Rama hunting convention, where students provided educational materials on preventing exposure. These hands-on experiences not only contributed valuable data for disease prevention but also fulfilled thesis and field experience requirements for students, directly preparing them for careers in environmental health and public health protection. The team is now applying this research methodology to new projects, including studying the zoonotic potential of wild-caught freshwater fish and the risks to anglers, demonstrating the program's commitment to hands-on learning and protecting public health in diverse settings.

Final Thoughts

We hope you have enjoyed reading just a bit of what your EHAC-accredited undergraduate and graduate environmental health programs have accomplished. These stories demonstrate that accredited degree programs are far more than academic training grounds—they are engines of innovation, service, and leadership in communities across the country. Whether improving air and water quality, advancing food safety, preparing for emergencies, or developing the next generation of environmental public health professionals, these programs are united by a commitment to hands-on learning, community engagement, and measurable impact. The diverse projects and partnerships described here underscore the essential, often unseen role that environmental public health professionals play in safeguarding our daily lives and building healthier, more resilient communities for the future. As environmental health challenges evolve, the continued dedication of these programs will remain vital to protecting and advancing public health for all.

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