

Job Profile: Environmental Health Specialists

Mark Miller, RS, MPH, (CAPT USPHS), Sr. Environmental Health Officer, Environmental Health Services Branch, NCEH

When people think of disaster response, they often think of firefighters, police and EMT workers. Part of Miller's job is to advocate making environmental health practitioners as much a part of the first-response effort as those other players.



Local officials who track air quality, food and water safety, and disease-carrying vectors “know their communities better than anybody,” says Miller. So they are vital for preventing the illnesses that can be a devastating secondary effect of disasters such as flood, fire, tornadoes, or terrorist attacks.

In the aftermath of Hurricane Katrina, Miller was part of a group of eight CDC staff that assisted county health officials in caring for the 15,000 evacuees housed at the vast Reliant Park in Houston (formerly known as the Astrodome). With the evacuees at high risk of communicable disease, Miller and the team ensured that volunteers practiced good hand hygiene, that food temperatures were adequate, that housekeeping measures were up to par, and the like.

Katrina is long gone, but environmental health practitioners are still an important part of the recovery effort, Miller says. For example, they oversee control measures in restaurants that are reopening. The recovery for many kinds of disasters “can last for years,” Miller says. “We always say we’re one of the first to get involved, and the last to leave.”

Through training programs and other support initiatives, Miller is helping local-level environmental health specialists prepare for disasters large and small. It’s a challenge at a time when public health departments are being asked to “do more with less,” he says.



Chandran Achutan, PhD, Industrial Hygienist, Hazard Evaluations and Technical Assistance Branch, NIOSH

As he was conducting public health outreach in the aftermath of Hurricane Katrina, Achutan visited an outdoor animal shelter where he was taken aback by the loud ruckus produced by barking dogs. Since then, Achutan has found hearing loss among animal shelter workers who had worked at shelters for only two or three years. Many of these workers are in their 20s, which is a very young age to be suffering from hearing loss. “This is a serious noise problem that no one has looked into,” Achutan says.

Though noise is his special interest at the moment, Achutan’s abilities span the full range of industrial hygiene. Actually, it was his skills as a chemist that sent him down his career path. While he was a chemistry student in his home country of Malaysia, a friend working in Iowa told him that his professor was looking for a chemist who was handy with a piece of equipment known as a mass spectrometer. Achutan was accepted into the University of Iowa’s Department of Preventive Medicine and obtained a master’s degree in environmental health along the way. Eventually, however, he became “tired of spending all [his] time in a lab” and moved into industrial hygiene, where he received a doctorate.

At CDC, his workplace inspections have taken him everywhere from a plastic-bag maker in Pennsylvania to a dialysis center in New York. He likes the fact that within NIOSH, his Hazard Evaluations and Technical Assistance Branch is “the only place where the public can directly ask us for assistance.” His reports and recommendations have spurred real changes in the workplace, though he admits to frustration that sometimes they take a long time to get out the door, due to several layers of review.

When it comes to occupational hazards, the problem of noise doesn't get a lot of attention. Hearing loss “creeps up on you” over the course of years, Achutan says. Workers, especially those from the lower socioeconomic rungs, often are not tested until serious and irreversible damage has occurred. And noise problems occur in a much wider range of industries than most people think. Animal shelters are just one example: Achutan has also found high noise levels on many farms.

As he prepares to publish some of his research on animal shelters, Achutan is working with a health communications specialist to design a campaign to persuade shelter workers to wear earplugs. His message to shelter workers: “I tell them they need to wear earplugs, or they will be wearing hearing aids.”



Russell E. “Rusty” Ensore, MS, REHS, (CAPT USPHS), Environmental Health Officer, Division of Vector Borne Infectious Diseases, NCID

To the layman, the word “plague” conjures up horrifying images from the Middle Ages, when millions died of the disease caused by the bacterium *Yersinia pestis*. But plague is still a serious problem in Africa and Asia—the World Health Organization reports 1,000 to 3,000 cases each year—and plague still strikes an average of 10 to 15 people each year in the United States, mostly in rural areas in the Southwest.

As the only environmental health specialist at the vector-borne diseases lab at Fort Collins, Colo., Ensore is the principal investigator and project officer for several projects concerning plague control. The largest is in Uganda, where he frequently travels to a plague field lab. As epidemiologists track the human part of plague outbreaks, Ensore works to control the rodent fleas that carry *Yersinia*. For example, he's currently working on an experiment with rodent bait. In the US, rodents can be excluded via building methods, but that approach isn't possible in areas where people live in huts or other porous structures, Ensore says. Different bait will also be tried out around Sante Fe, New Mexico this Spring.

The US now spends less per capita on vector control than it did in the 1960s, Ensore says. As a result of the decline in spending that began in the 1970s, “many rodent and insect-related diseases are returning to haunt us.”

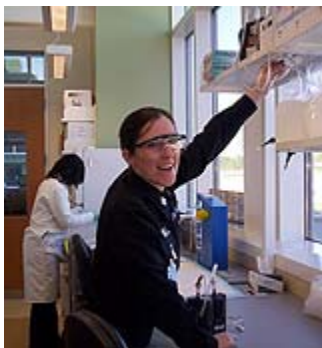


Hien Nguyen, MPH, REHS, (LT, USPHS), Environmental Health Officer, Vessel Sanitation Program, NCEH

Containing thousands of passengers, today's cruise ships are densely-packed, self-contained cities where infectious disease can travel like wildfire. Protecting passengers and crew is the job of Nguyen and her colleagues in the Vessel Sanitation Program. The bulk of Nguyen's job involves traveling to ports and conducting comprehensive sanitation inspections. That includes everything from galleys to potable water systems, pool water, ventilation systems, child activity centers and housekeeping. A typical ship will take Nguyen and a partner a full day to inspect.

Though she is based at the Vessel Sanitation Program's office in Fort Lauderdale, Fla., Nguyen is out on the road a whopping 60 percent of the time. She visits ports on all coasts as well as Puerto Rico and St. Thomas, typically for just a day or two before moving on. She also travels to shipyards in Europe for pre-launch inspections. Travel, she says, "is the best part of the job and the worst part of the job." Fortunately, her team gets along well, because they must spend nearly every minute of each day together while on the road. Her favorite ports: St. Thomas—for the beaches, the weather and laid-back atmosphere—and Anchorage, for the scenery.

Ever since she was a teenager, Nguyen was interested in the environment. After graduating from college with a degree in environmental geoscience, she worked as a surveyor and on GIS systems. But she didn't find her niche until she took a job at a health department in Massachusetts. "I liked the interaction with people, and the education aspect," she says. And education, including trainings and presentations, is a big part of what she likes about her job.



Aimee Treffiletti, MPH, REHS, (LCMDR, USPHS) Industrial Hygienist, Office of Health and Safety, Office of the Director

Are you concerned about something in your workplace that is uncomfortable, or might impact your health? Then you should speak to Treffiletti or someone on her industrial hygiene team in the Office of Health and Safety. Her duties range from conducting annual lab safety surveys to responding to complaints about indoor quality, monitoring noises, or handling concerns about ergonomics in offices. "Every day it's something different," she says. (CDC has over 1,000 labs on over 20 campuses in the US and internationally, so there is plenty for the Office of Health and Safety to do).

For an ergonomics evaluation, Treffiletti will not only check out office equipment but also observe employees working at their jobs. When she does a lab safety check, she takes a close look at the chemicals used, how they're processed and where there is potential for overexposure. "We're able to provide people with information that make their work life better and increase their job satisfaction, or make it so they don't have to worry about something," she says. "We protect the people who protect the public health of the nation; that's where my reward is."



Deborah Rose, MPH, PhD, (CMDR, USPHS), Senior Scientist, NCHS

Rose does it all. When she's not working at CDC or caring for her 13-year-old daughter, she's serving as board chair of a social-service organization at Yale, board secretary of the Carnegie Institute in Washington, even as a board member of the National Bonsai Association. Last year she received the Yale Medal, the top honor for an individual's service to the university. "I try to improve the communities in which I find myself," she says.

For Rose, Yale was just a stopover in a long academic career that led to CDC. As a freshman at the University of Wisconsin, she became fascinated with the idea of using animal population models to predict the effects of human population growth. She transferred to Yale, where she received an undergraduate degree, a masters in public health, and a doctorate in chronic disease and environmental epidemiology. Along the way she studied ecology, demography, epidemiology and even forestry. She also met her husband - the former dean of the School of Public Health at Yale.

At CDC, Rose has found a way to follow her interest in the “interface between human populations and the environment.” She was team leader on supplements to the National Health Interview Survey on lead, radon and environmental tobacco smoke. She has co-authored two papers on the effects of environmental tobacco smoke, and she was lead author of a paper that found high asthma rates in Puerto Ricans living outside Puerto Rico.

Currently, Rose works in the NCHS Research Data Center, which provides public access to NCHS data while protecting the confidentiality of respondents. For Rose, the RDC is a great opportunity to learn about a wide variety of new surveys. She's especially intrigued by the increasing availability of so-called linked-mortality (or mortality followback) surveys. These surveys link mortality records for individuals to health surveys they had completed while alive. The surveys provide a scientifically rigorous way to study issues such as the causes of disease and demographic trends in mortality.



Jeffrey Percy, MSc., Health Statistician, Office of Analysis and Epidemiology, NCHS

For Percy, a skill with statistics has been a bridge between two seemingly very different fields. A love for camping and an appreciation for environmental issues grew into a first career as a forester. At the National Forest Service, Percy developed ecological classification systems for the US Forest Service. The systems help the Forest Service determine appropriate uses for forestland.

When Percy got married and moved to Maryland in 1995, he started looking for a new job. “There are always jobs for people who can write simple programs and know something about statistics,” he says. Percy joined the Maryland Department of Health as a research associate, where he worked for a year before joining NCHS in Maryland.

Currently, Percy is the environmental health liaison to the Healthy People 2010 initiative. He works closely with environmental health practitioners to assist in gathering, monitoring and interpreting new data that emerges both from within CDC and from a wide variety of other federal agencies and other sources. He also assists in planning for the next iteration of environmental health objectives.

Over his years at CDC, Percy has helped to develop ways to measure health disparities and to connect disparate health outcomes to environmental factors. He has also analyzed trends in leading health indicators and assessed health outcomes at the local, state, regional and national scales. Currently, Percy is focusing on central Appalachia, investigating potential links between major causes of disease and death and environmental contaminants.