

► DirecTalk



David Dyjack, DrPH, CIH

The smothering heat index of 107 on Thursday, July 21, 2022, visibly produced copious sweat in most of the pedestrians and casually dressed tourists. The day oozed moisture, honoring the sweltering sauna reputation that Washington, DC, is renowned for. I had anticipated the humidity but did not forecast the sobering discussion that left me overheated by its implications.

I exited the coffee shop and plunged into the late afternoon sun, fully charged by the animated dialogue and double espresso. My caffeinated beverage partner was Dr. Rebecca Aicher, project director of the Center for Scientific Evidence in Public Issues (EPI Center) within the American Association for the Advancement of Science (AAAS). AAAS is an international association of 120,000 members dedicated to advancing science, engineering, and innovation. You might recognize them for a variety of reasons but perhaps most visible are their publications—the *Science* family of journals. The mission of the EPI Center is to deliver clear, concise, and actionable scientific evidence to policy makers and other decision makers. The EPI Center makes it easier for policy makers and others to access relevant scientific evidence and then integrate that evidence into their decision-making process. Dr. Aicher and I discussed developments centered on per- and polyfluoroalkyl substances—known as PFAS to many of us.

PFAS were introduced and widely used in the 1960s and continue to be ubiquitous in commercial applications. These chemicals are long lasting with half-lives ranging

Seersucker Thursday

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from 4–5 years. In other words, some public health scientists characterize them as forever chemicals because once you have been exposed, you will likely have the residuals in your body for the balance of your life. These chemicals possess admirable properties and are beneficial for their nonstick and grease-, oil-, and water-resistant qualities. In that context they have many useful applications: grease-resistant fast-food wrappers, nonstick cookware, stain-resistant coatings on carpets, and water-resistant clothing (think of all that camping gear), among many other products. The U.S. Environmental Protection Agency (U.S. EPA) PFAS website indicates that there are over 9,000 individual chemicals in the PFAS family.

These chemicals accumulate in the ecosystem and subsequently bioaccumulate into human tissues over time, potentially leading to adverse health conditions including many that we fear most—cancer and birth defects. Additionally, the Agency for Toxic Substances and Disease Registry research involving humans suggests that elevated levels of certain PFAS chemicals may give rise

to increased cholesterol levels, decreased vaccine response in children, increased risk of high blood pressure or preeclampsia in pregnant individuals, and increased risk of kidney or testicular cancer.

U.S. EPA reports that PFAS and its sibling chemicals have been discovered in drinking water systems throughout the globe. Regrettably, that is just the beginning. Many processed foods, including organic products, have detectable PFAS levels. Research into biosolids (i.e., sewage sludge) shows evidence of PFAS contamination, with implications for tens of millions of acres of agriculture that have historically been sprayed with this product.

U.S. EPA released four drinking water health advisories for PFAS on June 15, 2022. The health advisories identify the concentration of chemicals in drinking water at or below which adverse health effects are not anticipated to occur: 0.004 ppt for perfluorooctanoic acid (PFOA) and 0.02 ppt for perfluorooctanesulfonic acid (PFOS)—both are members of the PFAS family. Think about it: 1 ppt is a single drop in 18 million gallons of water. Please note that health advisories are nonregulatory and reflect an assessment by U.S. EPA of the best available peer-reviewed science.

The PFAS saga is not new. We hosted a hill briefing for Congress in November 2019 with speakers from the Centers for Disease Control and Prevention, Association of Public Health Laboratories, and National Association of County and City Health Officials. We convened the program in a large room

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Melodie Lake

I joined NEHA in October 2021 as the editor/copywriter for the EZ department. I provide different levels of editing support to EZ depending on the project, giving me the opportunity to work on a variety of materials. I love that I never know what sorts of things I might be asked to edit on any given day, from a training course given via

PowerPoint to a textbook, or even video subtitles. The EZ team has been incredibly welcoming and supportive, and I am so glad to have joined them. It is heartening to know that my opinions and skills can help NEHA make a difference for environmental health professionals.

The road that led me here has been a winding one. I grew up in central Arizona and received my bachelor of arts degree in English from Northern Arizona University. From there, I moved to Tucson, where I spent several years working various jobs and eating excel-

lent food. I found that I have a talent for technical writing and pursued both a career and my masters of science from Northeastern University in that field. After spending 10 years working as a technical writer and manager of a content management system in the health insurance industry, I decided to broaden my horizons. I worked briefly for an engineering firm as a technical editor, then came to work at NEHA.

My partner and I moved to Denver in 2016 because we love the outdoors and Colorado's summer and fall are pretty much perfect. We have an adventure-loving dog named Mocha and we enjoy taking her hiking, snowshoeing, paddle boarding, and camping. I also enjoy reading in my spare time and I cohost a women's comic book club.

Outside of writing for my job, I also write creatively. I have finished two novels and am getting ready to pitch one to agents and editors in the fall. My short stories have appeared in several places around the web and I am always trying to find time and energy (not to mention ideas) for more. 🐾

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in our nation's capital and it was virtually standing-room only. Everyone drinks and eats, and these legacy chemicals are seemingly everywhere and in everything. This issue is not red or blue—it is a universal public health issue.

So where do we go from here? I tender a few thoughts for our network of environmental health professionals.

I believe all of us should be modestly knowledgeable with the PFAS conversation. I encourage you to keep abreast of emerging health advisories and related guidance with an eye to being the voice of science in your local communities. We should be the chief science officers of our communities. As I craft this column, the World Health Organization has declared monkeypox a global health emergency. While not an environmental health issue per se, we should use opportunities like monkeypox and PFAS to share the breadth and depth of our knowledge. Let us stay on top of these issues to minimize misinformation and disinformation.

I feel PFAS is, as some have characterized, the asbestos of this generation. While there is not currently a signature disease associ-



Per- and polyfluoroalkyl substances (PFAS) on the agenda at the 76th Interstate Environmental Health Seminar held on July 20–22, 2022, in Ellicott City, Maryland. Photo courtesy of David Dyjack.

ated with it, like lung cancer and emphysema (tobacco), mesothelioma (asbestos), and cognitive brain damage (lead), I bet that day is coming. Our profession should show up and speak up when the inevitable public hearings occur—it is our opportunity to lead.

Our association should consider crafting and publishing a strong policy state-

ment that is suitable for adoption by state and local jurisdictions. A formal association statement would provide a template for others to duplicate and provide a more homogenous voice in this major environmental health challenge.

Beginning in 2023, U.S. EPA will require some of the largest public drinking water systems to monitor for 29 different PFAS chemicals. Let us get prepared now to provide useful science-based recommendations to assist our communities with difficult decision making. Our offices and agencies should be prepared to help them interpret data and, in the process, raise our visibility and value to society.

The breadth and depth of environmental health issues our profession is asked to address is daunting on most days. We feel like traffic cops in a busy urban intersection after school recesses for the day. But when the giant issues of our era are upon us, such as PFAS, let us own them. We at NEHA will do our part to ensure you have access to the information you need to know when you need to know it. 🐾

DAVE

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