

Richard Rediske, Ph.D.
Annis Water Resources Institute
Grand Valley State University
US Senate Field Summit on PFAS Contamination in Michigan
November 13, 2018

Thank you Senator Peters for this opportunity to present my testimony concerning PFAS contamination in Michigan. My name is Richard R. Rediske and I am a Professor of Water Resources at the Annis Water Resources Institute at Grand Valley State University and a member of the Concerned Citizens for Responsible Remediation. Per- and polyfluoroalkyl substances (PFAS) are impacting the health and sustainability of our water resources in Michigan and many areas of the USA. These chemicals pose a unique hazard to human and environmental health because of their mobility, potential for bioaccumulation, and resistance to degradation. In humans, they bind to proteins in our blood, remain in circulation, and are reabsorbed by the kidney; resulting in long half-lives and difficulties in the interpretation of data from studies with animals that have more rapid clearance rates. Our challenges are further complicated by the fact we are dealing with historical releases involving decades of human exposure over multiple generations and life stages. We clearly need to manage this group of chemicals as hazardous substances, restrict their discharge to the environment, and implement regulations for drinking and surface water that protect both human and environmental health. Only a few PFAS chemicals have been studied for human and environmental health effects and this class of chemicals includes thousands of related compounds that are present in commercial and personal care products.

PFAS impacts in West Michigan include contaminated groundwater plumes from waste disposal sites that impact both residential and public water supply wells and have exposed thousands of residents to varying concentrations of these chemicals. The Rogue River, an important regional trout stream, has both fish consumption and foam contact advisories related to PFAS. Abundant freshwater resources are part of Michigan's Blue Economy and are an integral component of life in Michigan communities. Residents are struggling with the fact that both public and private water supplies have been contaminated for decades with PFAS chemicals and many questions remain concerning their effects on human and environmental health. While

scientific research is ongoing, health effects concerning suppression of the immune system, increased incidence of kidney and testicular cancer, childhood development problems, and disruption of the endocrine system have been reported. Adverse effects of PFAS chemicals have not been linked to specific blood concentrations, however newer studies point to vulnerable exposure windows in sensitive populations. Our knowledge of the health effects of PFAS chemicals continues to evolve and both the risks and uncertainties of exposure need to be communicated to the public in a transparent manner. We need to fully understand the potential costs and risks associated with PFAS chemicals and move in the direction of safer alternatives where necessary. Again, transparency, full disclosure, and public engagement are key to this success of this process.

Additional support for investigation, remediation, and research continue to be critical priorities for PFAS response. I am here today to request more support resources for communities impacted by PFAS contamination. The importance of robust community engagement is critical in the EPA Superfund Program and recognized by the formation of Community Advisory Groups. These groups provide a forum for members of the public to discuss their needs and concerns related to the Superfund decision-making process, facilitate the exchange of information, and provide opportunities to mobilize local and external resources for specialized programs. Community Advisory Groups were active at the Dow/Tittabawassee River dioxin site, which included an extensive blood testing program. Recently, Emory University collaborated with the Pine River Superfund Citizen Task Force to provide follow-up medical monitoring for the 1973 release of PBB in cattle feed. Public Advisory Councils are a hallmark of Great Lakes Restoration as both the US and Canada recognize the importance of community involvement in sustainable environmental programs for Areas of Concern (AOCs). AOCs were identified in the 1980s as highly contaminated areas of the Great Lakes that must be addressed as the first step in ecosystem restoration. Partnerships of concerned citizens, governmental agencies, universities, and public/private sector organizations have worked together to restore complex environmental problems in the AOCs of Muskegon Lake, White Lake, and the Detroit and Kalamazoo Rivers. The State of Michigan also has organized a Statewide Public Advisory Council so that all Public Advisory Councils can share resources and success stories and keep the restoration process moving forward. Both Public Advisory Councils

and Community Advisory Groups can serve as model programs to engage the public in the investigation and remediation process. It is time to empower communities dealing with PFAS contamination in similar programs. While web sites, press releases, and news articles are important, community discussion and stakeholder input can result in a more proactive environment where local technical, educational, medical, philanthropic resources can be engaged in PFAS response and restoration. Plainfield Township's recent decision to enhance their water treatment process with granular activated carbon is in illustration of communities addressing the concerns of their citizens and providing drinking water with PFAS concentrations below the ATSDR's Minimum Response Levels.

In a recent article by Richter et al. (2018), the authors stated that the case of PFAS “illustrates the risks of a regulatory structure that assumes chemicals are safe until proven harmful, and places the burden of proof of harm on residents and agencies ill-equipped to produce scientific knowledge on chemical compounds only substantively known by their private producers.....As with other chemicals, it is engaged members of the public and social movements who ultimately discover unseen science and shift regulatory institutions towards addressing undone science and the implementation of more precautionary environmental policy.” Public pressure and litigation continue to be the major drivers of PFAS response. MPART has stepped forward with an aggressive program to identify PFAS sources that are affecting our drinking water and aquatic ecosystems. The next step is to fully engage the public in education and restoration programs at the local level so that we can address existing PFAS contamination sites and develop effective resource management policies to prevent further degradation of our water resources. Community based restoration programs have a strong record of success and need to be a critical component of PFAS response.

Richter, L., Corder, A., & Brown, P. (2018). Non-stick science: Sixty years of research and (in) action on fluorinated compounds. *Social studies of science*, 48(5), 691-714.