

Testimony of Dr. Elizabeth Southerland

Former Director of the Office of Science & Technology, U.S. EPA's Office of Water

Before the House Committee on Science, Space, and Technology

Subcommittee on Investigations and Oversight

March 17, 2021

Chairman Foster, Ranking Member Obernolte, distinguished Members of the Subcommittee, my name is Elizabeth Southerland. I had the privilege of serving in the U.S. Environmental Protection Agency (EPA) from January 1984 until August 2017. With my PhD in Environmental Science and Engineering, I was first hired at EPA as a scientist and then was promoted to manage other scientists. I worked in the Water and Superfund programs at EPA Headquarters and played a major role in developing over 40 regulations and significant guidance documents designed to reduce pollutant discharges to the nation's waterways, clean up hazardous waste sites, and identify the safe level of toxic chemicals in drinking water, recreational waters, fish and shellfish. Thank you for the opportunity to testify today about "Brain Drain: Rebuilding the Federal Scientific Workforce."

While I know that EPA currently has a dedicated team of knowledgeable, highly qualified career professionals, today's staffing levels are the lowest they have been in 30 years. In addition, hundreds of the career scientists at the agency have reported in surveys by the Union of Concerned Scientists and the EPA Office of Inspector General over the past two years that their research findings were altered or suppressed for "other than technical reasons." As a result, I believe the complex environmental challenges of the 21st century cannot be successfully addressed unless Congress and the Administration work together to significantly increase EPA's staff levels, and EPA leadership rebuilds the morale of the EPA workforce.

Today I will give you my thoughts on the challenges that scientists at EPA have been facing over the past decade, the impact of the loss of experienced scientists, the importance of restoring scientific integrity at the agency, and policies that can rebuild the workforce. Since my retirement, I have been a member of the Environmental Protection Network (EPN), a bipartisan organization of 550 EPA alumni volunteering their time to protect the integrity of EPA and the health and well-being of the American people. My testimony incorporates data and recommendations in EPN's *Resetting the Course of EPA*,¹ but I am here in my personal capacity.

¹ Environmental Protection Network. *Resetting the Course of EPA*. (<https://www.environmentalprotectionnetwork.org/reset/>) (August 2020).

Challenges to Federal Scientists

Data from the Environmental Protection Network show that EPA has experienced years of declining resources, with significant loss of buying power and reductions in staff despite the fact that congressionally mandated responsibilities have increased substantially over this time. In terms of inflation-adjusted dollars, Administrator Regan will have half the resources the agency had in 1980, a year that predates the 1984 Resource Conservation and Recovery Act reauthorization, the 1986 Superfund reauthorization, the 1987 Clean Water Act, the 1990 Clean Air Act Amendments, the 1996 Safe Drinking Water Amendments, and the 2016 Toxic Substances Control Act Amendments.

In the past decade, between 2010 and 2020, the Environmental Programs and Management account that funds EPA's regulatory and enforcement staff dropped 31%, the Science and Technology account that funds research staff dropped 40%, and the Superfund account that funds remediation staff dropped 29%, all in real dollars.

In 2013 and 2014, the Obama administration gave early-out retirements to certain senior scientists in order to reduce grade levels and reduce the dollars per full-time equivalent (FTE). EPA had not backfilled all of those vacated positions when the Trump administration began, so staff levels were already at a historically low point in 2017.

President Trump requested huge cuts in the agency's staff every year, and his EPA administrators did not authorize any significant hiring until 2020. By 2020 over 670 scientists had left EPA. While Congress rejected President Trump's requested budget cuts, the agency's appropriations were basically flatlined during the Trump administration, further exacerbating the decline in buying power.

I can tell you from personal experience how EPA career staff have tried to compensate for the critically low staff levels. All managers do a significant amount of technical work themselves on nights and weekends so during office hours they can focus on supervision, mentoring, budget, and work planning. All managers and technical staff do many of the administrative tasks themselves since the agency has reduced the support staff to the lowest possible level. These administrative tasks are so time-consuming they reduce productivity and hurt morale. Because of the lack of funding, managers and staff also struggle with out-of-date information technology, and laboratory and field scientists often lack cutting-edge monitoring and analysis equipment. Despite valiant efforts to compensate, the lack of staff and resources has forced EPA to focus primarily on those rules with statutory or court ordered deadlines. Rules without deadlines, no matter how important for public health and environmental protection, are often postponed for years or take years to propose and promulgate. One recent example of such a delayed rule is the Safe Drinking Water Act's lead and copper rule which was not updated for almost 30 years despite the high risk lead poses to children. Significant guidance documents are also subject to postponement or take years to

complete. Recent examples of delayed guidance documents are toxicity assessments for the perfluorinated “forever chemicals” that contaminate drinking water throughout the country. Despite EPA declaring in 2018 that toxicity assessments for two of these chemicals were an agency priority, neither has been completed at this time.

Impact of Loss of Experienced Scientists

EPA is responsible for administering over 20 environmental laws and is affected by a number of other related statutes. Scientists at the agency are engaged in many different types of work under all those laws. Scientists in EPA’s Office of Research and Development conduct basic research on the ecological and public health effects of pollutants and on innovative treatment and remediation technologies. Scientists in the other EPA offices analyze the world’s scientific literature in order to set national standards for clean air, water, and land and to regulate pesticides, toxic chemicals, and hazardous wastes. They conduct engineering evaluations to develop technology-based treatment standards and remediation procedures, and they monitor and assess air, water, and land pollution.

A 2019 Office of Management and Budget (OMB) Report to Congress documented how effective these scientists have been. OMB estimated the annual benefits of 39 EPA regulations promulgated between 2006 and 2016 ranged from \$194B to \$687B, far outweighing the costs to polluters, which were less than \$55B. The American people cannot continue to enjoy such tremendous benefits unless experienced scientists in adequate numbers are employed at the EPA, and today there is not an adequate number of experienced scientists at the agency.

Importance of Restoring Scientific Integrity

EPA’s Scientific Integrity Policy was released in February 2012. The Office of Inspector General (OIG) conducted an audit in 2018 to determine whether the policy was being implemented as intended to ensure scientific integrity throughout the agency. The OIG published the disturbing results of that survey in a May 2020 report entitled “Further Efforts Needed to Uphold Scientific Integrity Policy at EPA.” The report includes the following:

- 705 respondents said they feared retaliation if they expressed a scientific opinion about the agency’s scientific work;
- 624 respondents believed the management chain did not stand behind staff who put forth scientifically defensible positions;
- 368 respondents reported research findings being altered or suppressed for other than technical reasons;
- 1,166 respondents indicated they did not feel comfortable reporting instances relating to the loss of scientific integrity; and
- 400 respondents said they had not reported violations of the scientific integrity policy because of fear of retaliation and belief that the reporting would make no difference.

Clearly, EPA cannot protect the health and welfare of the American people if the career scientists are silenced or ignored. It is imperative that the new administration revive and strengthen the scientific integrity policy at EPA and at all federal agencies. I would note that passage of the Scientific Integrity Act would provide federal scientists with government-wide protection.

Policies to Restore the Workforce

In order to fully restore the workforce at EPA, the new administration should work with Congress to get agreement on a four-year goal to rebuild EPA's budget to its 40-year average level (\$11.4B in 2019 dollars). This goal would represent about a 40% increase in the 2021 budget. Michael Regan's confirmation was a major accomplishment, but the new administration and Congress must promptly fill all the key leadership positions with experienced executives so the EPA workforce can focus as soon as possible on the agency's new priorities. President Biden has already announced plans to prioritize and bolster scientific integrity across the federal government in several Presidential Memoranda and Executive Orders. New leaders at EPA will be most successful when they work as quickly as possible to build trust and communication with career managers and staff. Unlike the previous three administrations, the Trump administration did not maintain collaborative working relationships between political appointees and career staff based on the free exchange of ideas. The new leaders need to reinstate that collaborative approach, once again including career staff in decision meetings and welcoming their input.

Specifically, EPA's new leaders should initiate a number of critical actions in order to recruit and hire the next generation of professionals, with an eye toward diversifying the agency's staff and leadership. There is a plethora of diverse talent both inside and outside the agency, and dedicated steps need to be taken to recruit, hire, and train these individuals so EPA can better reflect the diversity of the constituency it serves. First, the new leaders should expand successful past EPA workforce planning and analysis programs to cover all offices so they can identify priority hires for both entry-level and senior-level scientists. Second, they should review and strengthen the agency's hiring program to ensure all available authorities are being used to speed hiring, including the 2018 STEM authority for the direct hire of scientific, technical, engineering, and mathematics positions. To fill entry-level positions, they should increase funding for the Pathways, Presidential Management Fellowship, and Science to Achieve Results Fellowship programs. To fill the most senior scientist positions, they should continue to use the Title 42 hiring authority to directly recruit and hire world-renowned scientists with outstanding scientific and technical skills. They should also review and strengthen the agency's recruitment program by investing in a hiring campaign over multiple years that is focused on hiring 1,000 of the best, brightest, and diverse STEM graduates of universities. Third, they must strengthen staff development by providing enhanced training, cross-program assignments, and state-of-the-art scientific equipment and information technology. Fourth, they need to strengthen

partnerships with EPA bargaining units to address important workforce issues and support an inclusive workplace.

Conclusion

The complex challenges of public health and environmental protection in the 21st century cannot be successfully addressed unless EPA leadership rebuilds the capabilities, productivity, and morale of the EPA workforce and creates a more inclusive workforce that reflects the communities EPA serves. While the historic challenges cannot be overcome quickly, it is my hope Congress will take concrete steps to provide the necessary resources to increase funds for core programs and to support new initiatives addressing climate change and environmental justice.

Thank you for this opportunity to share my thoughts.

Dr. Elizabeth Southerland (USEPA—retired)

Dr. Southerland retired from the USEPA in 2017 as Director of the Office of Science and Technology in the Office of Water following a 40-year career as an environmental engineer/scientist for Federal, State and local environmental protection agencies, including 33 years at USEPA.

At USEPA, she led or made major contributions to water quality management, drinking water protection, and hazardous waste site clean-up programs. She led the development of national regulations and guidance manuals; coordinated and negotiated with state environment agencies, industry representatives, and environmental groups; and testified before Congressional committees. Her accomplishments include the development of the following influential rules and guidance documents: the first federal controls on toxic wastewater discharges from coal-fired power plants; the FDA-EPA national fish consumption advisory on mercury contamination; national drinking water health advisories for harmful algal bloom toxins and the toxic “forever chemicals” PFOA and PFOS; and a systematic approach for deriving hazardous waste cleanup standards. In 2015, Dr. Southerland received the Distinguished Presidential Rank Award for her career at USEPA.

Prior to joining USEPA, Dr. Southerland led stormwater pollution control programs for the Virginia State Water Control Board, and she managed the development of the first water quality model of the Chesapeake Bay Watershed (covered 6 states and 64,000 sq mi) while completing her PhD research.

She received her PhD in Environmental Science and Engineering from Virginia Tech which inducted her into the Academy of Distinguished Alumni in 2013.