



U.S.

# As Flint Fought to Be Heard, Virginia Tech Team Sounded Alarm

By **MITCH SMITH** FEB. 6, 2016

BLACKSBURG, Va. — The young scientists, mostly in their 20s and counting the semesters until their next degree, had drawn an audience so large that it spilled from the auditorium on the Virginia Tech campus into two overflow rooms.

They were explaining to students, members of the faculty and guests how they were at first laughed off by government regulators about 550 miles northwest of here in Flint, Mich., when they detected alarming amounts of lead coming from residents' taps.

Siddhartha Roy, a doctoral student from India, held up a bottle of yellow-tinted Flint water. The team's role, he told the crowd, was "essentially validating what citizens had been saying for months." That validation was so important to the increasingly desperate people of Flint that one resident hugged him when he heard that the Virginia Tech scientists had indeed confirmed that the water was contaminated.

"He just wouldn't let go," Mr. Roy, 27, said in an interview. "It's surreal,

because when it's happening, your mind is blank. But when you go back home and you reflect on it, you feel happy and grateful that you can be part of something big.”

Flint's public health problem stemmed from a failure to properly treat water from the Flint River, which resulted in pipe corrosion and elevated levels of lead. The crisis is at best a tale of neglect and incompetence. At worst, critics say, it is criminal conduct that imperiled the public's well-being. Already state and federal agencies, including the F.B.I., have opened investigations.

But as government officials were ignoring and ridiculing residents' concerns about the safety of their tap water, a small circle of people was setting off alarms. Among them was the team from Virginia Tech.

The team began looking into Flint's water after its professor, Marc Edwards, spoke with LeeAnne Walters, a resident whose tap water contained alarming amounts of lead. Dr. Edwards, who years earlier had helped expose lead contamination in Washington, D.C., had his students send testing kits to homes in Flint to find out if the problem was widespread. Lead exposure can lead to health and developmental problems, particularly in children, and its toxic effects can be irreversible.

Their persistence helped force officials to acknowledge the crisis and prompted warnings to residents not to drink or cook with tap water. Officials are now scrambling to find a more permanent solution to the problem than trucking in thousands of plastic jugs, and are turning to Virginia Tech for advice.

The scientists “became the only people that citizens here trust, and it's still that way,” said Melissa Mays, a Flint resident who has protested the water quality.

At Virginia Tech, which experienced the nation's deadliest mass shooting by a single gunman in 2007 and last weekend saw two students arrested in the

murder of a 13-year-old girl, the researchers are a source of pride. At the presentation on campus on Jan. 28, they were interrupted several times by standing ovations.

The team is a mixed group. Mostly environmental engineers, members range in experience from undergraduates to professors.

The students come from places as disparate as Arizona, Virginia, India and Singapore. Many said they had known little about Michigan, let alone Flint, before they started their research, spending nights and weekends working on the project.

Several of them were drawn to environmental engineering, Mr. Roy said, because “we have this childhood aspiration of hopefully helping people and serving society at some point.”

Dr. Edwards, who testified before a congressional committee on Wednesday, said the situation in Flint in many ways paralleled his work about 10 years ago in Washington, where government agencies were similarly dismissive of his efforts and slow to grasp the problem’s scope.

The students began their work last summer as Michigan officials insisted that Flint’s malodorous, discolored water was safe. The team mailed testing kits to Flint, and in August a group packed into Dr. Edwards’s family van and set off for a site visit.

Once in Flint, the group visited several homes to collect water, shipping the samples back to Virginia so they could be tested quickly on campus.

“It’s like a once-in-a-lifetime experience,” said Colin Richards, 25, a graduate student in environmental engineering, who went on that trip. “This is a crazy situation. This is very unexpected that it got this big.”

The tests revealed alarming levels of lead. Besides calling residents to advise them of the troubling results, the team posted its documents and data

online at [flintwaterstudy.org](http://flintwaterstudy.org), an act that has helped others investigate Flint's problems.

Members of the team kept returning to Flint, collecting their samples and forging friendships with residents. When the federal, state and local governments failed to acknowledge the scope of the problem, Dr. Edwards held a community meeting in September advising residents to stop drinking the water.

In October, government officials finally warned of the lead risk, but the Virginia Tech researchers became concerned about the possibility that the water was causing Legionnaires' disease. As it turned out, state officials had long been aware of a spike in Legionnaires' cases after the switch in water sources, but the public was not told until last month.

Joyce Zhu, a doctoral student, went to collect samples at a Flint hospital, looking for signs of the bacteria that cause Legionnaires'.

"When I turned on the tap, you see this corrosive, reddish, brownish tap water," she said. "It's that moment that made it so real."

Ms. Zhu said she had planned on a "typical" academic career, doing lab research with limited application off campus. But after analyzing lead-tainted water samples in the labs in Blacksburg and traveling to Flint, she said, she is considering how her career can benefit the public.

"I grew up in Singapore, where clean water, you take it for granted so much," Ms. Zhu said.

State officials in Michigan initially dismissed the Virginia Tech team's findings. As they did with other whistle-blowers, they disparaged its work. In one email obtained by the researchers, a spokesman for the Michigan Department of Environmental Quality, Brad Wurfel, played down the lead risk, telling a reporter that the Virginia Tech team was known to "pull that rabbit

out of that hat everywhere they go.”

“They had all the power,” Dr. Edwards said of Michigan environmental officials, “and in a million years they thought no one would do what we did.”

Now the tables have turned, and the Virginia Tech team has been enlisted to help address the crisis. Gov. Rick Snyder, whose administration has been widely blamed for a failure to protect Flint’s residents, has thanked Dr. Edwards and included him in a group now advising officials on permanent fixes for the Flint problem. Karen Weaver, the city’s mayor, asked the researchers to oversee state and federal lead testing.

The Virginia Tech team is among a handful of outside researchers who have been credited with helping expose the lead problem and stop it from getting worse. Miguel Del Toral, an Environmental Protection Agency scientist, first sounded alarms about the lead in Ms. Walters’s tap water, though his superiors were slow to notify the public. And in September, around the same time Dr. Edwards suggested that residents not drink the water, Dr. Mona Hanna-Attisha, a pediatrician in Flint, announced test results that indicated elevated lead levels in children’s blood, which she attributed to the water.

Some in Flint have said they will not trust that the water is safe until the Virginia Tech researchers say so. Ms. Walters visited Blacksburg last month, touring the labs where the tests took place and where the corroded, lead-leaching pipes removed from her house are now stored.

Without Dr. Edwards and his team, Ms. Walters said, she suspects little would have been done to protect Flint from its toxic water.

“They cared about the people,” Ms. Walters said as the college team showed her twin boys around their labs. “That’s why Virginia Tech has all the trust.”

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