

Big picture talk offers behind-the-scenes look at NTP in action

By Eddy Ball

The National Toxicology Program (NTP) took center stage Jan. 20 with the latest seminar of the popular Big Picture, Small Talk series, which was designed as a forum for presenting scientific topics in a friendly way for a general audience.

A capacity audience of NIEHS employees turned out to hear NTP molecular toxicologist [Scott Auerbach, Ph.D.](#), discuss his group's ongoing [research project](#) (<http://ntp.niehs.nih.gov/results/areas/wvspill/>) to characterize the chemicals involved in the Jan. 9, 2014 spill into the Elk River in Charleston, West Virginia.

The accidental discharge occurred at a Freedom Industries storage facility 1.5 miles upstream from the intake for the West Virginia American Water treatment plant that provides drinking water for some 300,000 people across nine counties.

Linked Video

[Watch the Jan. 10, 2014 PBS NewsHour report on the spill \(02:31\)](#)

"This is sort of an everyone project," Auerbach said of the motivation for featuring it as a Big Picture, Small Talk topic. He pointed to the number of people at NIEHS and NTP involved in some aspect of the study, including scientists, contract and acquisitions specialists, administrative support personnel, and communications staff. A [nomination](#) (<http://ntp.niehs.nih.gov/testing/noms/search/summary/nm-n21408.html>) by the U.S. Centers for Disease Control and Prevention (CDC) prompted the study.

It was also a high-profile effort, of obvious interest to employees and the general public, and a natural fit for NTP with its mission of coordinating toxicological testing for the federal government. "NTP has fully transparent testing procedures and does not have a conflict of interest," he added, pointing to the program's reputation for objective and thorough toxicology testing, with regular reports for the public.

Mystery chemicals

One of the first questions to emerge as people learned of the 10,000-gallon spill of contaminated water, with its distinctive licorice smell, involved the little known chemical 4-methylcyclohexanemethanol (MCHM) that is used to wash coal. As Auerbach explained, the primary sources of information about MCHM were limited [studies](#) (<http://www.eastman.com/Pages/Eastman-Crude-MCHM-Studies.aspx>) by the manufacturer, Eastman Chemical Company.

Auerbach outlined the logic behind a 6-step process that involved the coordination of 11 groups of scientists and support staff, as well as a [battery of screening and testing protocols](#) (http://ntp.niehs.nih.gov/ntp/research/areas/wvspill/project_508.pdf)

The study began with the CDC nomination in July 2014, as researchers set out to identify all of the chemicals involved in the spill. The team focused on addressing three major areas of uncertainties — development of unborn children, long-term effects, and reliability of safe level estimates.

Preliminary results from the toxicology studies suggest the chemical exposure that occurred due to the spill is unlikely to produce long-lasting health effects. MCHM has a noticeable odor at very low concentrations, Auerbach said, so the exposure was probably quite limited.

But although people may not have consumed or used much of the water, Auerbach added, local public health officials also didn't think to save samples of treated water from the tap, to help researchers better calculate dose and more accurately conduct risk assessments. "If you have any

Big Picture, Small Talk – a winning combination

Understandably, many in the audience were Auerbach's colleagues at NTP, but employees from other divisions at NIEHS who weren't as familiar with the program also turned out for an informal, but informative look at how NTP relates to real-world concerns about chemical exposures. Among them were biologist Negin Martin, Ph.D., and librarian Erin Knight.

"I didn't know that much about NTP," Martin said, "so, it was nice to learn what kind of an event triggers an NTP study and what they do."

"I love this series," Knight added, "I think it brings together a great group of people who wouldn't normally get together for a seminar. There's always a good discussion of a topic that is very interesting."



"Really, all of you have touched it at some level," Auerbach said of the research project. "Thank you for contributing." (Photo courtesy of Steve McCaw)

trouble like this,” he urged the audience, “collect the water.”



Among attendees from outside NTP at the talk was Scott Redman, of the NIEHS Financial Management Branch in the Office of Management.



Auerbach's presentation was so well attended that latecomers were hard pressed to find available seating. NTP toxicologist Cynthia Rider, Ph.D. filled in as host. (Photo courtesy of Steve McCaw)

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