

# New Mexico's Consolidated State Laboratory Takes Coordination in Stride

## Forensics, Dead Cattle and Biomonitoring Added to Daily Routine at Scientific Laboratory Division

When Dave Mills first visited the New Mexico public health laboratory in 1992, he found one of the staff members jack hammering a corpse out of an oil drum full of cement. “It was a murder case,” explained Mills, nonchalantly.

Such is life in New Mexico's consolidated Scientific Laboratory Division. Mills, who has been the laboratory's director since 1997, explained that while the laboratory is administratively located in the New Mexico Department of Health, by law it also serves the office of the medical investigator, the state agriculture department, the state department of environment and state, local and tribal law enforcement agencies. With such a broad mandate, the laboratory tests everything from drinking water to DWI blood specimens and from dairy products to corpses. It maintains certifications under CLIA, the EPA, the FDA and the American Board of Forensic Toxicology.

While national authorities lately have been discussing ways to promote coordination across state agencies, Mills said, “We've been coordinating (with other state agencies) for 22 years, because by state law we do their testing. We have access to livestock and wildlife specimens and autopsy material from death surveillance. We do food outbreak testing.”

The laboratory's toxicology bureau chief, Rong-Jen Hwang, and his staff have been frequent expert witnesses for criminal cases, receiving upwards of 800 subpoenas each year for driving-while-intoxicated (DWI) prosecutions.

Although serving multiple “masters” outside the health agency keeps laboratory staff busy, Mills said that consolidation is a boon for disease surveillance. “We are a common end point for the lab

work for all of these different agencies in the state, and being in the health department, we are directly linked with the department of epidemiology.”

Just one example of the benefits of consolidation is the early detection of Hanta virus; when the disease first emerged in New Mexico in 1993, it was a convergence of cases from human autopsies and from Indian Health

of the building,” said Mills. “Of course, we eventually get the specimens from those.”

But with no other public health laboratory in the state—since New Mexico has no local health departments—the Scientific Laboratory Division maintains a heavy focus on public health testing. Its biological sciences bureau is the public health reference laboratory for the state,



**San Diego Canyon, New Mexico.**

Photo courtesy of New Mexico Scientific Laboratory Division.

Service patients that led investigators to identify it as a new disease transmitted by deer mice.

The laboratory is physically located on the University of New Mexico (UNM) Health Sciences campus in Albuquerque, where it shares a building with two of its outside partners: the office of the medical investigator (OMI) and the agriculture department's veterinary diagnostic services (VDS) unit. “Dead cattle and corpses regularly come in either end

and its overall highest volume testing is pure public health: 28,000 newborn screening tests per year, followed by thousands of chlamydia and gonorrhea tests. The laboratory is one of five Level 1 chemical terrorism laboratories in the country and is the administrative lead for the six-state Rocky Mountain Biomonitoring Consortium, currently collecting data on human exposure to arsenic and other metals present in the region's groundwater.

Because both anthrax and plague exist naturally in New Mexico's desert environment, the laboratory routinely tested samples for these pathogens well before the anthrax crisis of 1991 and, of course, continues to do so. (Mills said t-shirts are available with the slogan, "New Mexico, the land of the flea and the home of the plague.")

Situated on the southern US border amidst 24 different sovereign tribes, the laboratory frequently works with other nations. Tuberculosis (TB), and especially multi-drug resistant TB, is a significant problem in the border region, often spreading north with legal and illegal immigrants from Mexico.

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Mills said the laboratory engages in occasional joint TB surveillance activities with New Mexico's sister state, Chihuahua.

Mills and his staff of roughly 145 people are looking forward to an eventual move to a new facility, now in the design stage and tentatively slated for completion in November 2008. The state legislature has appropriated \$59 million for the new building, which—at 175,000 square feet—will be about twice the size of the laboratory's current building. Both the OMI and VDS will re-locate with the laboratory.

Fortunately, Mills will not lose his view of the Sandia Mountains, the Rio Grande Valley or the three inactive volcanoes on the mesa to the west. The new building will remain on the UNM campus, but "more on the edge" for "better step-back and better security." Mills said "We have a lot of bodies and animal carcasses being delivered to the facility as well as live animals that need to be euthanized on the loading dock. This will give us a bit more privacy for these things."

Despite the legislature's recent largess for the new facility, state funding for the laboratory is tight. Each year the legislature assigns a laboratory budget comprised of general state funds and expected fee-for-service income. This budget currently hovers around \$11 million/year (including about 50% state funds and 50% fees and grants).

Because the laboratory does not do high-volume patient care testing—the result of an agreement with New Mexico's private sector laboratories—Mills said, "we are primarily working for other public entities and there are not high profits to be made and there are not ways of greatly ramping up our

revenues. We are dependent on general funds. As the economy goes and general funds go, so we go. This has always been an issue for us."

The formula used to calculate state funding includes a built-in vacancy factor, which assumes that—with well over 100 laboratory positions—not all job slots will ever be filled, or need be funded, at once. "In order to get our work done," explained Mills, "we need to have a 2% vacancy (or less)." But in recent years the vacancy factor has inched up to 8-10%. At the same time, a growing population, a spate of emerging infectious diseases and a technological revolution requiring costly new equipment have all put a strain on the laboratory's human and physical infrastructure.

Mills said, "We have not had an increase in general fund positions in over 20 years in the public health testing arena or the environmental health testing arena. That's an issue." (Special appropriations were approved to add four positions in the toxicology arena to handle an upswing in DWI activity.)

Currently, the laboratory has four vacant positions that are frozen and thus cannot be filled and seven vacancies for which the laboratory is actively recruiting.

Perhaps the only downside to a consolidated laboratory comes into play when funding is tight. "Since we are the lab for these external agencies, we don't really have a say in how much work they send to us," Mills explained. "They can keep sending us work despite budget and staffing problems." However, he is quick to add that "all things considered, (consolidation) is an excellent arrangement."

Given the laboratory's multi-function nature, Mills is a fitting leader for the organization. The Connecticut native has an undergraduate degree in agriculture and animal science and a doctorate in human physiology. He spent a term engaged in post-doctoral studies in the UNM Department of Medicine.

Mills' "meandering" path to the director's office includes seven years as a professor in the interdisciplinary Health Studies and Gerontology Department at the University of Waterloo in Ontario where he taught classes and studied dietary fatty acids and cardiovascular function. This was followed by five years as department chair. He said, after a while "I thought it'd be kind of nice to do something different." In fact, Mills said, "People used to ask me, 'If you could do anything, what would you do?' And I'd say, 'Gee, working in public health back in New Mexico would be fun.'"

As luck would have it, Mills came across an advertisement for a position in the Scientific Laboratory Division in Albuquerque. "I had no idea what (the job) was," said Mills. "But I talked to them and it was perfectly suited for me." He started as a bureau chief in the biology section of the laboratory in 1994 and became director three-and-a-half years later.

Today Mills is focused on new goals. The laboratory, he said, strives "to be an expert resource for scientific analysis and policy for the state. We just want to do that well; to meet our clients needs. And we have a lot of clients . . ."

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