

SAN LUIS OBISPO COUNTY PUBLIC HEALTH LABORATORY: GUARDING CALIFORNIA'S CENTRAL COAST

by Emily Mumford, writer

LOCATION

San Luis Obispo County is located centrally on California's coastline, equidistant from San Francisco and Los Angeles. It is largely rural, with about 260,000 residents, and is known for both agricultural production and its natural beauty. Tourists come to see the beaches, hike the hills, drive the coastline or visit one of the county's 100 wineries, bringing an important influx of revenue to the area. The Hearst Castle at San Simeon and Morro Bay are well-known landmarks of the region.

The city of San Luis Obispo is about 12 miles inland from the Pacific Ocean and at the foot of the Nine Sisters, a once-volcanic mountain range that reaches to the coast. The city is home to the county's public health laboratory and to California Polytechnic State University.

FACILITY

The San Luis Obispo County public health laboratory is located one mile from the city's center in a one-story building with a walk-out basement. The county health department headquarters is across the street in an old public health hospital that closed in 2004. The lab has a view of two of the Nine Sisters. "It's a lovely area," said Laboratory Director James Beebe, PhD, D(ABMM).

The laboratory shares its building with a county nursing clinic and the health officer, and occupies about 2,500 square feet. It will soon gain another 300-400 square feet as the down-sized county AIDS program moves across the street into the health department building. The extra space will create an office, which will double as training space.

The lab has two BSL-3 laboratories to handle TB and select agent detection. In addition to testing potential agents of bioterrorism, the lab handles "a local, naturally-occurring select agent—Coccidioides—that appears one to two times per month," said Beebe. More room has just been created by moving the current PCR platform into the lab's new amplification room. A new ABI 7500 fast Dx will replace it.

The lab began a badly-needed remodel in 2003, but due to "a number of interlocking problems," said Beebe, the remodel was halted. Efforts to bring the lab up-to-date were renewed about two years ago, using the last of the federal preparedness funds. Very recently, the lab received a HRSA grant that will enable the completion of the project.

The remodel is progressing slowly around the working laboratorians. "It's like remodeling your kitchen while you're cooking in it," said Beebe. They are concentrating on turning unusable space into usable space and

are adding a new air handling system, an amplification room, a microscope room, a room to receive and prep specimens and new benchwork. "The old benchwork is wood; it's been out of code for... 40 years?" remarked Beebe. "It's one of the worst facilities I've ever seen, with some of the best laboratorians I've ever worked with."

DIRECTOR

Beebe has worked with many laboratorians in his career. Born in New Jersey, he attended Seton Hall and then Rutgers University for his doctorate. He trained as an academic research microbial chemist. While working in that capacity at Cornell University, Beebe was exposed to the clinical microbiological group and became interested in the field. After five years on the medical faculty at Cornell, Beebe left for a two-year post-doc at Columbia-Presbyterian Medical Center to earn his board certification. Beebe then spent 10 years working in private reference labs. After a transfer to a private lab in Denver, CO, Beebe decided it was time to make a major life change.

Beebe left his job, embarking on one year of Christian ministry service: he was sent to Tallahassee, FL, and found work as a clinical microbiologist in a hospital, an experience that reawakened his interest in the field. Returning to Denver, Beebe accepted a position as chief microbiologist at the Colorado Public Health Laboratory and embarked on "a lot of on-the-job training." Twenty years later, he retired—for about two weeks. He learned that California needed local lab directors: in fact, the San Luis Obispo County laboratory had been without a full-time director for two years. The lab supervisor, Sharon Beccacio, had been filling both jobs.

"It's been great," said Beebe. "It's wonderful to work with such dedicated people."

STAFF

In addition to Beebe, the lab has 12 employees. Beccacio is the lab supervisor, and there are seven public health microbiologists, two technicians and two senior account clerks. "This staff has a 'can do' attitude about everything," said Beebe. "At times, the working conditions have been very uncomfortable during this remodel, but everyone has been very patient." Beebe also noted that the staff have taken on the daunting task of converting the paper-based quality control system to an electronic one, and are making good progress.

REVENUE

The county laboratory runs on about \$1.6 million annually, receiving 25% of its funding from the county

and 75% from fees for services. “Twenty-five percent is a goodly amount; I am very happy with the county support,” said Beebe. The fees-for-service are paid from a variety of sources, including MediCal (California’s Medicaid program), state-administered federal grants (for water testing), state tourism and recreation funds (for ocean water testing) and other submitting agencies.

TESTING

The county public health laboratory conducts a wide variety of testing. In addition to testing drinking, ocean and waste water, the lab tests local shellfish for a dangerous marine toxin, domoic acid.

“We occasionally test food, although we are not a PulseNet lab,” said Beebe. “We currently have an *E. coli* 0157 cluster in California, with about 15 local cases. The state lab is conducting the Pulsed field typing but we’re involved at the ground-level, encouraging hospitals to provide isolates.”

The lab can test “at the highest level for infectious disease” and has expertise in bacteriology, molecular biology, mycobacteriology, virology, parasitology, serology and mycology; and serves as the Level B Laboratory Response Network laboratory for the central coast

Flu response efforts are underway in San Luis Obispo County. The lab has participated in exercises with the health agency and has received Homeland Security funding for the new PCR platform, the ABI 7500 Fast Dx, so staff will be able to conduct CDC’s new influenza test. “We’re still sorting through the red-tape of adding new technology to the lab and need to train staff, but the acquisition is in process and we expect to have the new platform running by the end of October or early November.” Currently the lab is handling a steady rate of about 12-20 flu specimens per week.

The lab has also filled an important niche with its TB testing efforts. “This county has a large Latino population that was born outside of the United States, and it is important to be able to detect latent TB in this group,” said Beebe. Using the Quantiferon test, he said, “we most often identify latent TB infection in pregnant, and often uninsured, women.”

RECENT SUCCESSES

Increased Testing Volume. “I have spent a lot of time on the road to meet with customers and find out their needs. This has been very helpful,” said Beebe. “These conversations led us to add the Aptima method for gonorrhea and Chlamydia testing, so we can test throat and rectal swabs now. This is a large part of the reason our testing volume increased by 13% last year.”

Identified Source of Local Pollution. The lab partnered with California Polytechnic State University to conduct a pollution study at nearby Pismo Beach. “Ocean pollution has been a controversial issue here,” said Beebe. “Tourism is very important to the local economy.” Tests revealed high indicators of *E. coli* and enterococci in the local waters, and the media and the public blamed multiple suspects. At the completion of



the study, the lab and Cal-Poly scientist indicated the likely culprits are the pigeons that populate the pier.

CHALLENGES

Ongoing Facility Remodel. “We must create a proper in-code lab space,” said Beebe.

Economic Downturn. “My main focus since I have arrived is to make sure that everyone gets paid,” said Beebe. “The economy is definitely our biggest problem.”

While the budget cuts throughout California have not impacted the lab as severely as feared, the local housing industry has been very depressed, leading to significant losses in county revenue. The county is still wrestling with the fallout. So far the lab has lost one empty position and one more may be at risk.

“If you’re not pulling as hard as you can in this economy, you’re going to get swamped,” said Beebe.

GOALS

Complete the Facility Remodel. Using the new HRSA grant, the lab will move through the last several stages of the remodel.

Upgrade the Information Technology. “Our customers need to be able to order tests electronically, and we need to be able to return those results electronically,” said Beebe. The lab incorporated a new information system in November, which is allowing internal electronic transmissions among related areas in the health department, but not external communications.

Beebe noted that the information system has upgraded service to the clients, improving the appearance of the report. “Like ecology,” he said, “in labs everything is related to everything else. As we generate information for our clients, our quality systems, information systems, all of it helps determine whether those clients will use us again.” ■

Staff of the San Luis Obispo County Public Health Laboratory conduct a variety of testing with a “can do” attitude.

Photo courtesy of San Luis Obispo County PHL