PHLs Link with Law Enforcement
‘It’s A Whole New Ball Game’ (page 3)
Hurricane Katrina and its Aftermath: Public Health Responds

By the time this newsletter reaches you, recovery efforts in the wake of Hurricane Katrina will be well underway. News of the unspeakable destruction and tragedy have shocked and sorrowed the nation, including the members and staff of APHL. Although the extent of the disaster is difficult to fathom, our thoughts and prayers are with the victims and rescuers.

With the help of volunteers and government, New Orleans and its neighbors are beginning to reclaim their cities. Yet public health professionals know there is still a terrible potential for disaster. Contaminated water, spoiled food, floating debris and sewage can cause widespread illness. The need for public health laboratory testing is high, but laboratory facilities are reeling from the affects of the storm and the influx of work.

The Mississippi and Alabama laboratories are fully functional, but the central Louisiana lab, located in the heart of New Orleans, is closed indefinitely. Operations are continuing in branch laboratories in Shreveport, Lake Charles and Amite, but work has been severely disrupted in a time of enormous public need. In response to that need, twenty-three public health laboratories across the nation have volunteered their services, and corporate members have donated money and supplies. This generosity of spirit will make a positive impact on a region that has suffered greatly.

APHL's intent is to be an organized clearinghouse of information and volunteer efforts. Staff have been in close contact with the CDC and with the affected laboratories, as well as with the EPA, the Centers for Medicare and Medicaid Services (to discuss potential CLIA issues stemming from the transferal of laboratory work out-of-state), and the Department of Homeland Security. APHL is using its Web site (www.aphl.org) to post updates on the affected laboratories, health alerts, and volunteer forms. Message palettes, designed to help laboratory leaders speak to the press about the disaster, are also available online. Staff are collecting offers of assistance, contact lists, and any other information that may be of use to the affected laboratories.

Four years ago, the tragedy of September 11 set a new course for public health laboratories. As public health labs prepared vigilantly for potential bio- and chemical-terrorist attacks, straightforward public health testing continued quietly behind the scenes. Today, as a result of a natural disaster, the inherent value of basic public health laboratory testing has been reaffirmed publicly. There is no doubt that laboratory science will be at the forefront of the effort to salvage New Orleans and its surrounding areas. The value of our work is undeniable.

As APHL's members step up to help control a brewing public health disaster, it is clear that there is great strength in partnership. As federal and state resources come together, we can all hope for a successful recovery effort. In the meantime, APHL and its members will do all that it can to help maintain a public health laboratory system throughout the affected region.

Sincerely,

Katherine Kelley, DrPH
Director of Public Health Laboratories
Connecticut Department of Public Health
Before Diane Barden was hired as the weapons of mass destruction (WMD) coordinator for the Connecticut state public health laboratory (PHL) in March 2001, she said the laboratory had had only sporadic contact with law enforcement authorities. “There was one event prior to my start,” she recalled. “A threat letter was sent to an abortion clinic and the FBI hand-delivered the letter to the laboratory. That was the first contact we had with the FBI and handling criminal evidence. As you might imagine, it did not go very well.”

By contrast, Barden said recently, “I was just down at the FBI office yesterday. We’re planning a two-day training session for first responders and we’re doing it together. And it’s our third year doing it this November.” Barden said, “I could call the FBI WMD coordinator on a Sunday afternoon when the sun’s out and he’ll always answer. I’ve never had Special Agent Donnelly say, ‘You know what, I’m eating supper. Can you call me back?’ We’re there for each other all the time.”

The Changing Landscape

Many state and local PHLs have undergone similar transformations in their relationship with police and FBI officials, prompted by the need to prepare for new threats to public health and safety. Before terrorism became a credible menace, most state and local PHLs could carry out their missions with infrequent law enforcement contact. Aside from the occasional high-profile incident—such as contamination or mislabeling of food, illegal dumping/polluting or suspicious unknown samples—most PHLs had little reason to interact with police or FBI officials (outside of a handful of PHLs with a tradition of forensic testing to support drunken driving and/or other everyday criminal cases.)

Growing concern about the possibility of biological terrorism in the late 1990s, followed by the large-scale mobilization of public agencies to deal with the presence of anthrax in the US mail in 2001, triggered a sea change in the relationship between public health and law enforcement authorities nationwide.

In 1999, PHL leaders at APHL and CDC collaborated with FBI officials to establish the Laboratory Response Network (LRN). This multi-tiered chain of laboratories was set up to respond to a bioterrorism (BT) attack and, just two years later, played a key role in both the initial detection of anthrax and the months-long response to the burgeoning crisis. Importantly, LRN reference laboratories had the technology and training to conduct standardized, validated tests for Bacillus anthracis, resulting in comparability of test results across the nation—a very important consideration for public health and for law enforcement decision making. (The LRN—which encompasses all state and some local PHLs—has since been expanded to include tests for chemical agents of terrorism as well as biological agents.)

Anthrax Attacks Connect Labs, Law Enforcement

Public health laboratories tested over 1,200 specimens a day during the anthrax crisis, ultimately conducting over a million laboratory analyses. In every state in the nation, police and FBI officials were interested in the test results, often hand-delivering samples to the laboratory, and in some cases helping laboratories to prioritize testing and to screen out clearly innocuous samples.

In Connecticut, the death of an elderly woman from unexplained anthrax infection and numerous anthrax hoaxes, generated “tons of testing.” Barden said she and her staff worked with FBI agents “everyday, several times a day, over several months.” These efforts eventually led to the successful prosecution of four individuals on various charges related to threats of biological contamination. Barden received an award from the Connecticut District US Attorney’s Office recognizing those “who have been on the front lines of our anti-terrorism efforts.” (She has since received a second award for laboratory assistance prosecuting a more recent case.)

Adjustments Necessary to Procedures, Goals

But relationship-building is not an instantaneous process. Barden and others interviewed for this article noted that adjustments are inevitable to optimize interactions between those schooled in law enforcement and those schooled in laboratory science. An agent in the FBI’s Miami field office said, “Our goals are to protect the community. Who did it, and how can we stop it? Theirs (in public health) are public safety and health first.” Moreover, while public health investigations are held to the standard of scientific peer review, law enforcement work is held to constitutional standards and must withstand legal challenges to obtain a conviction.

Barden conceded that before her current position she had “never really thought about samples from an evidence point-of-view.” Soon after she assumed her position, scientists from the Connecticut forensics laboratory, she said, visited the state PHL to explain a panoply of new techniques: how to examine a sample and not destroy fingerprints or DNA; where to cut an envelope to get a powder out; what written and photographic records to make “so if you get on the stand, you can speak with confidence.” Barden said, “It’s a whole new ball game.”

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Connecticut officials formed an advisory committee that now meets monthly to discuss significant public health/law enforcement incidents and to collaborate on training and other initiatives. The committee—with representatives from the FBI, state police, state epidemiology program and virtually every major laboratory in Connecticut testing people, animals and/or agricultural products—developed an emergency response collection kit that is in every emergency room (ER) in the state. Barden said, “The hospitals are happy with the ease of use for the ER; the FBI is happy with the chain-of-custody [procedures]; epi (sic) is happy with the level of information collected. It worked out very well.”

In addition, the laboratory’s sample submission protocol was passed through the US attorney’s office for its approval. “Any revisions go through that office as well,” said Barden. “This way, when that protocol is presented in court, it’s not new to anybody.”

Ricin Scare Solidifies Lab/Law Enforcement Relationship

In Arizona, a recent ricin scare showcased the good relations between the Arizona Bureau of State Laboratory Services and local law enforcement agencies. At about 10:00 AM on a Friday morning in June, the laboratory received a call from a state police detective who said the police were planning to serve a warrant at 1:00 PM that afternoon on a Mesa man suspected of possessing ricin. Samples would be brought to the laboratory for testing.

Because of some difficulty searching the “trashed out” premises, samples did not arrive until 1:30 AM, and laboratory scientists stayed through the night to test them. Bill Slanta, the laboratory’s assistant bureau chief, said the results of those preliminary tests were positive, but later proved to be false-positive (as a result of the use of suboptimal reagents due to the national LRN reagent shortage).

Slanta said FBI agents who had become involved in the case “understood . . . what had happened and were very supportive of us. They left us with aliquots of the sample and said they wanted us to be the ones retesting the samples with reagents from CDC. Our local FBI and [state police] had the faith and confidence in us to test the samples here; they did not want everything to go back out of state for the federal government to test it.”

Such goodwill, said Slanta, was built up over years of working with law enforcement agencies stemming back to the first anthrax incident in October 2001. Early in the relationship, local FBI and police officials did an on-site review of the laboratory (which has since been replaced by a brand new facility) and suggested changes related to sample collection, storage and chain-of-custody procedures. In addition, Slanta and one of his staff members visited the state police crime lab and the FBI’s Phoenix area field office. “We tried to model our storage rooms and [sample] handling techniques on those [used by the state police] and FBI for criminal evidence,” he said.

Among other things, Slanta learned that samples do not need to be stored with the transport packing material. “We didn’t need to have that five-gallon paint can sitting up on the shelf,” he said.

As in Connecticut, a multidisciplinary team—here comprising law enforcement officers, state epidemiologists, the state BT coordinator and state laboratory members—developed a sampling and delivery protocol for potential criminal evidence. As part of the protocol, private residents are advised to go through local law enforcement agencies to submit a sample potentially associated with a crime. Slanta explained that “local law enforcement will get the tracking number and hand-deliver the sample [to the laboratory].”

Learning to Speak the Right Language

Elizabeth Franko, director of the Georgia Public Health Laboratory, has been working closely with law enforcement officers perhaps longer than many of her peers in other states—going back at least to the planning for the 1996 summer Olympics, held in Atlanta. “I think once we got beyond the point of speaking two completely different languages—with completely different vocabularies—we found that we got along really well,” said Franko of her initial dealings with the FBI.

Since then, Franko and several of her staff have been through National Incident Management System training (a requirement for some federal grants), where she became acquainted with the basic paradigm shift from public health to law enforcement: “Epi (sic) and public health usually want to reach consensus, as opposed to public safety which puts one person in charge.” Franko said, “That’s a big thing to overcome. It’s real different and we’re getting better at it.”

From the other side of the fence, the Miami FBI agent quoted earlier said her agency’s relationship with public health has been “an educational experience for us.” She advises PHL leaders to “reach out” to their local FBI WMD coordinator and, through this contact, to the entire law enforcement community represented on the local Joint Terrorism Task Force (JTTF). “Access to the network,” she said, “is very important. I can pick up the phone and within two phone calls can reach someone and pass on information or advise them on how to collect [criminal samples].”

In addition, she recommends that laboratory scientists “dummy things down a little bit” to improve the understanding of law enforcement officers who have had little or no scientific training. And finally, she said, FBI officials and PHL leaders should meet “on a regular basis.”

Forensic and Public Health Science Interact Beneficially

Two of the newest areas of forensic science—microbial forensics and chemical terrorism forensics—are being developed outside the PHL in working groups organized by the FBI.

Randy Murch, a former deputy assistant director with the FBI and an instigator and current member of the agency’s Scientific Working Group on Microbial Genetics and Forensics, explained that probative evidence falls along a continuum. At one end is evidence of exclusion, meaning that the evidence could not have come from a particular source. At the other end is evidence that can be used for attribution, meaning that the evidence can be confidently traced to one source above all others. The goal, he said, is to achieve attribution in a greater and greater number of cases based on the quantity and quality of evidence and the power of the analytic technique.

Murch noted that much of this “deeper analysis” is not relevant to public health and will continue to be carried out at specialty laboratories—such as the Department of Homeland Security’s
National Biodefense Analysis and Countermeasures Center now under construction at the National Interagency Biodefense Campus in Fort Detrick, MD.

But he acknowledged that PHLs have a critical role to play. “Certainly,” said Murch, “public health labs are the front line and spread out in a distributed network close to the front line wherever something could happen.” He said, “Samples are going to be immediately taken to the local PHL and they will identify species and strain, which is important to public health and the initial foundation for the FBI to take its investigation in the field forward.” Moreover, he noted that the initial collection, preservation and transport of evidence constitute a “major step” in the forensic analytic process. Especially during a covert event, PHLs are likely to be directly or indirectly involved in these activities.

If you aren’t out there beating the bushes getting to know these guys, you better. This is the brave new world we live in.

Jim Pearson, director of Virginia’s Division of Consolidated Laboratory Service and a member of the Scientific Working Group on Forensic Analysis of Chemical Terrorism, is familiar with the scenario Murch described. He said he and his staff interact “pretty much on a daily basis” with local, state and federal law enforcement entities.

In addition to the FBI, the laboratory frequently works with nearby military bases, for which they provide newborn screening. “Some bases are willing to look at the closest available [laboratory] resource,” he said. “When they’ve got something and want a quick answer . . . we’ll end up getting pulled into the mix . . . Once they’ve worked with us on something, they know us and they come back.”

Pearson’s bioterrorism and chemical terrorism staff provide training to law enforcement officers and first responders. Staff have put together an environmental sampling kit comprising 117 different items in a 44-quart cooler. “[First responders] can literally open the kit up on the site,” said Pearson “and

Public Health Meets Law Enforcement: A Primer

Segaran Pillai, a former PHL scientist in Dade County, FL, and now a senior advisor for biological countermeasures at the US Department of Homeland Security, offers the following advice to enhance relations between PHLs and law enforcement officers.

1. Get to know your local FBI WMD coordinator.
2. Establish regular meetings with law enforcement personnel to share information and ensure that all parties understand their roles and responsibilities.
3. Obtain a Department of Justice or other appropriate security clearance for critical PHL staff and establish secure means of communication to facilitate the sharing of sensitive information from and to the FBI and other authorities.
4. Educate the local FBI WMD coordinator and other law enforcement officers on the types of assays performed to confirm a positive test result, approximate turn-around-times, sample packaging requirements, the importance of sharing field test information (e.g., radiological and chemical testing), the need for exterior decontamination prior to sample submission and how an epidemiological investigation is conducted.
5. Establish mutually acceptable chain-of-custody procedures and protocols for sample collection, submission and preservation.
6. Create an emergency contact list that includes all critical public health and law enforcement personnel. The list should include the Homeland Security Operations Center at 202.282.8101, the FBI Strategic Information and Operations Center at 202.323.1000, the CDC Director’s Emergency Operations Center at 404.639.2540, and your local FBI JTTF and/or WMD coordinator. (All critical and sensitive information should only be shared using a land line and only with the agencies and individuals that have need to know.)
7. Understand that saving lives is the first priority, but that catching criminals has equal merit to protect the public.
8. Understand that no one system or organization can protect the public by itself. We all need to work together.

Segaran is one of several contributors to the Criminal and Epidemiological Investigation Handbook, which was produced by the US Department of Justice and can be accessed at www.phppo.cdc.gov/od/phlp/ForensicEpi/ForensicEpi.asp.
The Laboratory Response Network (LRN) Partnership Working Group met on August 5, 2005, in Washington, DC to discuss key network operational issues and other preparedness collaborations. Discussion topics included the DHS target capabilities list and performance measures for preparedness (see sidebar on page 7), LRN electronic results reporting, veterinary services permit requirements for avian influenza and other agents, development of a certification for sentinel laboratories, new training and technology developments for the LRN (both bioterrorism- and chemical terrorism-clinical response areas) and FERN. Partners provided additional updates, including a discussion on the federal initiative to create an Integrated Consortium of Laboratory Networks (ICLN) and the Environmental Laboratory Response Network (e-LRN).

**USDA/APHIS/Veterinary Services Permitting Process**

Dr. LeeAnn Thomas, director of the USDA's Veterinary Services (VS) program within the Animal and Plant Health Inspection Service (APHIS), discussed its permit requirements for the importation of animal pathogens. USDA/APHIS/VS is considering several options to simplify the permitting process. LRN partners expressed numerous concerns about the lack of clarity regarding USDA/APHIS regulation 9 CFR part 122. APHL will be meeting with Thomas and her staff to develop an interim solution to assist LRN public health laboratories with obtaining VS permits for H5N1 and other agents covered under this regulation and is appreciative of the efforts made recently by USDA to address our concerns.

**Laboratory Networks in the Works**

As noted in the last publication of The Minute, a number of federal agencies are in the process of signing an interagency memorandum of agreement, thereby creating the Integrated Consortium of Laboratory Networks (ICLN). The ICLN will provide a structure for collaboration among federal agencies with laboratory networks responsible for the sample testing resulting from a weapons of mass destruction event. This agreement has not been finalized, but federal partners are forging ahead. APHL is pursuing inclusion in these discussions since members have indicated the need for state laboratory representation.

In response to the report, “Ready or Not: Findings and Recommendations of the APHL Chemical Terrorism Project,” and the current lack of standardized protocols to test environmental samples possibly contaminated with chemical warfare agents, the EPA is seeking funding to establish a program office to assist with the oversight of the Environmental Laboratory Response Network (e-LRN). The e-LRN is a proposed network of environmental laboratories that, if fully implemented, will work towards establishing and enhancing laboratory capability and capacity for analysis of environmental samples in a homeland security event. To date, Congress has not authorized any substantial funding to support the EPA's funding request.

**Designing All-Hazards Receipt Facilities**

There were additional discussions on the design of all-hazards receipt facilities (AHRF). Dr. Dennis Reutter, DHS, and Monica Heyl, DoD, described the two pilot facilities, funded by the DHS and the EPA, that will be sited at the New York Wadsworth Laboratory and the EPA's Region I laboratory in Massachusetts. These facilities are designed to facilitate the safe intake and screening of unknown hazardous samples for radiation and volatile chemicals prior to transferring them into the fixed LRN reference laboratory for further biologic and chemical analysis. DHS and DoD staff will be meeting with APHL and other partners to further discuss the design criteria for these facilities.

**Sentinel Level Laboratory Certificate**

The CDC's Bioterrorism Preparedness and Response Program is collaborating with APHL and the ASM to develop a working definition of sentinel laboratories. Additionally, a new certificate for sentinel laboratories that participate in state-sponsored training will be sent soon to confirmatory (reference) level laboratories for distribution.

For more information, contact Chris Mangal, cmangal@aphl.org, or Lena Lago, llago@aphl.org.

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The Laboratory Response Network Partnership Working Group is comprised of representatives from the Centers for Disease Control and Prevention (CDC), Department of Homeland Security (DHS), Department of Defense (DoD), Environmental Protection Agency (EPA), Federal Bureau of Investigation (FBI), Food Emergency Response Network (FERN), Food and Drug Administration (FDA), United States Department of Agriculture (USDA), American Association of Veterinary Laboratory Diagnosticians (AAVLD), Association of Public Health Laboratories (APHL), American Society for Microbiology (ASM), and the National Animal Health Laboratory Network (NAHLN).
Refining Target Capabilities, Performance Measures for Preparedness

Dr. Christine Bradshaw, from CDC’s Coordinating Office of Terrorism Preparedness and Emergency Response, briefed the LRN partners on the creation and refinement of the DHS target capabilities list.

On December 17, 2003, Homeland Security Presidential Directive 8 (HSPD-8) was issued, with the intent to develop a “national preparedness goal” and to integrate currently disparate federal preparedness programs into a more coordinated system. The responsibility for implementing this mandate was delegated to the DHS Office for State and Local Government Coordination and Planning (SLGCP)/Office for Domestic Preparedness (ODP), which provides grants, training, exercises and other support for state and local homeland security personnel. In shifting current planning from a threat-based to a capabilities-based approach, an increased emphasis is placed on the ability of a jurisdiction to perform essential tasks directed toward meeting desired mission outcomes.

In response to HSPD-8, DHS/SLGCP/ODP established the National Preparedness Goal, which includes a Universal Task List and a Target Capabilities List, to provide the nation with a means to address three fundamental areas: the desired level of preparedness of the nation; the current level; and how to prioritize efforts and close the gap.

A range of scenarios were developed by federal partners to illustrate the potential scope, magnitude and complexity of incidents of national significance. These 15 National Planning Scenarios, which include terrorism and natural disasters, provide parameters regarding the nature and scale of incidents; they also create a basis to define prevention, protection, response and recovery tasks that need to be performed, as well as the capabilities and resources required to perform them. Nationally representative teams then identified the various tasks required by each scenario. These tasks were subsequently combined into a comprehensive menu known as the Universal Task List (UTL). The UTL is designed to serve as a common language and reference system, as the foundation for learning and exercise objectives, as a tool for operational planning, and for use in evaluations and assessments of performance. The UTL contains approximately 1,600 tasks encompassing all levels of government and disciplines from the national strategic to the incident level.

The DHS developed the Target Capabilities List (TCL), which identifies and describes 36 capabilities needed to perform critical homeland security tasks identified in the UTL. Currently, DHS is working with other federal agencies and partners to develop performance measures and define resource requirements for each of the target capabilities. The CDC and other public health partners were asked to provide input on the capabilities deemed relevant to public health, such as epidemiological investigation and laboratory testing, mass prophylaxis and post-exposure, environmental health and vector control, and isolation and quarantine. APHL members Ronnie Malmberg and Ralph Timperi participated in meetings to provide input on laboratory measures and resource needs. APHL will continue to provide input as needed throughout this very complex process.

North Carolina Clinical Lab Tech Day Rousing Success

On August 5, 2005, the North Carolina State Laboratory of Public Health and the National Laboratory Training Network co-sponsored the first annual North Carolina Clinical Lab Tech Day. This one-day, educational conference was held on the campus of Wake Technical Community College in Raleigh, NC, and drew over 250 participants from five states, including representatives from both public and private sector healthcare facilities. The program featured Dennis J. Ernst, MT (ASCP), an internationally renowned phlebotomy expert and author. Ernst gave presentations on Mastering Pediatric Phlebotomy and New CLSI Standards: Important Changes Every Phlebotomist Must Know.

The program also included safety presentations by William Patrakis, RS, MA, from the North Carolina Division of Waste Management, and Steven Preissler, MS, occupational health specialist, from the North Carolina Department of Labor’s Division of Occupational Safety and Health.

The exhibit hall also offered participants 16 display areas to interact with exhibitors, vendors, and evaluate various products, literature, instrumentation and services. Attendees also had the unique opportunity to visit an author’s book signing held for Dennis Ernst’s newly-released text, Applied Phlebotomy.
Environmental Health

Snapshot of Nationwide Exposure to Environmental Chemicals

On July 21, 2005, the CDC released the “Third National Report on Human Exposure to Environmental Chemicals.” The report provides an ongoing assessment of the nation’s exposure to various environmental contaminants; the data were obtained through biomonitoring, the laboratory tool by which human exposure to chemicals, environmental toxicants, and their metabolites is measured in clinical samples such as blood, urine, saliva, breast milk and other tissues. The CDC’s report provides exposure information for 148 chemicals, 38 of which have never before been measured in the US population, including additional pesticides, phthalates, PAHs, PCBs, dioxins and furans. The report may be found at www.cdc.gov/exposurereport/.

A continued steady decline was noted in the blood lead levels of children ages one to five. This age group is the most vulnerable sub-population due to the detrimental effects of lead on the development of the brain. This decline, which has been fairly consistent over time, can most likely be attributed to the banning of leaded gasoline in the US.

Similarly, smoking bans have aided in a reduction of human exposure to cotinine, a metabolite of nicotine, resulting from tobacco smoke. Nationally, cotinine levels have decreased by nearly 70%, except in African-Americans: they presented cotinine concentrations roughly double those observed in Caucasians and Hispanics.

Another significant finding was the high levels of cadmium, a metal byproduct of tobacco smoke and fossil fuel exhaust. The CDC reported that 5% of Americans older than 19 had measurable urinary levels which approached the dose associated with impaired renal function and bone-mineral density.

Phthalates, a class of chemicals widely used in plastics manufacturing, have recently come under fire for potentially being a causative agent in reproductive toxicity. The report found that 5% of the US population carried a phthalate body burden which exceeded levels recently associated with genital abnormalities in boys.

The report revealed widespread exposures to a variety of different pesticides, with the highest levels demonstrated in children. In fact, 76% of the sample population contained detectable levels of pyrethroids, a common ingredient of store-bought pesticides. In children ages six to eleven, levels of a specific metabolite associated with chlorpyrifos pesticides were found to be four times higher than the EPA’s safe level.

The release of the report presents an opportunity to re-examine the essential role that the nation’s public health laboratory system and the CDC’s National Center for Environmental Health have played in biomonitoring for decades. Data obtained through biomonitoring are useful at all levels of government for developing public policy and evaluating results of policy changes. While the CDC’s report is capable of providing a nationwide average of human exposure, it is limited in its ability to adequately assess state or population-specific exposures, geographic exposures, or to locate high or unusual clusters of exposure.

State public health laboratory biomonitoring programs provide a means of addressing this gap by utilizing their biomonitoring capability and capacity to determine the actual doses of environmental toxicants of concern in their constituents. For additional information on biomonitoring, contact Lauren DiSano, ldisano@aphl.org.

 Pearson noted that the definition of microbial forensics is “not necessarily clean” and that many analytic procedures in use in PHLs—such as serotyping, pulsed field gel electrophoresis, genetic sequencing, polymerase chain reactions and spoligotyping—could have forensic applications. On the other hand, he pointed out that techniques developed for forensic purposes—such as multi locus variable number tandem repeat analysis (MLVA)—might have public health applications. “It’s fascinating technology,” he said and “breaking new ground.”

All things considered, Pearson predicted that the relationship between PHLs and law enforcement agencies is bound to get “closer and closer.”

“If you aren’t out there beating the bushes getting to know these guys,” he said, “you better. This is the brave new world we live in.”
APHL Urges EPA to Focus on Environmental Testing for CT Agents

On July 15, the EPA's Science Advisory Board-Homeland Security Advisory Committee (HSAC) convened a public meeting in Washington, DC. The committee is charged with providing independent scientific and technical advice on matters pertaining to the EPA's role in controlling the environmental and health consequences of terrorism. Committee members range from state government representatives to industry affilliates and academicians.

At the meeting, representatives of EPA offices briefed committee members on the agency's role in homeland security, as well as the scope of individual research and program activities. Time was also allotted for the public to provide comments to the committee. APHL capitalized on the opportunity, providing a public statement which cited current gaps in environmental testing capabilities for chemical terrorism in state public health and environmental laboratories. Similar, written comments on the same issue were submitted by the Environmental Council of the States and the University of Iowa Hygienic Laboratory.

APHL's statement described the current lack of methods, analytical standards, proficiency testing and certification programs for the analysis of environmental samples (e.g., air, water, soil, food, etc.) for chemical agents, including chemical warfare agents. APHL emphasized that without substantial improvement, the disparity between state public health laboratory testing capabilities for clinical (e.g., blood, urine, etc.) versus environmental samples will continue to seriously compromise the preparedness of the nation. Currently, testing capability for the analysis of chemical warfare agents exists only within the United States Department of Defense, and thus not at the state level. The urgent need for the EPA to fully assume this responsibility and implement environmental testing for chemical agents, despite a lack of dedicated resources at the federal level, was also underscored. APHL also expressed a commitment to support the EPA as it addresses the grave gaps in environmental sampling and testing for chemical terrorism agents. To read the full text of this statement, visit www.aphl.org/docs/aphl_statement_EPA_SAB_7_15_05.pdf.

During the course of this meeting, several high-level EPA personnel, including the director of the EPA's Office of Homeland Security, the acting administrator of the Office of Research and Development, and the acting deputy of the National Homeland Security Research Center, stated that the agency views state laboratory capacity as the most critical issue before the HSAC—a positive step toward addressing the current crisis. APHL will continue to monitor and provide input to the EPA as it moves forward on this vital state public health and environmental laboratory endeavor. For more information, contact Lauren DiSano, ldisano@aphl.org.

EPA Quality Assurance Conference Review

The EPA hosted the 24th Annual National Conference on Managing Environmental Quality Systems in April. APHL provided sponsorship for two staff members of the Connecticut Department of Public Health to attend: Jack Bennett, director of the environmental chemistry division, and Bob Howard, laboratory QA manager.

One highlight of the conference was a half-day course, "The Quality System as Applied to the Environmental Microbiology Laboratory," which focused on the implementation of a quality system that could be applied in any laboratory. The course covered in detail the preparation of a QA manual in the ISO 17025 format and related it to the Deming quality improvement principles. Also covered was the proper way to implement new tests or methods using a performance based measurement system approach.

A second half-day course, "Conducting Internal QMS Audits," went over the differences between internal and external audits, the principles of internal audits, and how to manage and conduct internal audits. The course provided good guidance on the steps involved in setting up and conducting an audit. It also covered the different types of reports that should be presented to various "customers" of the audit (i.e., management should get a one-page summary report and the area audited should get a detailed report). Finally, there was a recommendation that some of the auditors obtain ASQ auditor training and certification.

There were also several workshops that focused on the importance of document control and records management. The seminars stressed the importance of having uniform systems in place across an organization to ensure that documents and records could be retrieved when required. (The EPA is moving away from the ANSI E4-1194 Quality System to the ISO 9001:2004 Quality System.) These seminars also stressed the importance of internal audits to ensure that the quality system is working properly, and the need to be customer-focused, to track customer feedback and use that feedback to improve operations.

The Office of Water presented a series of seminars on method validation, detection and quantitation limit concepts, and how a well-planned QA program can help provide defensible data for litigation. The method validation talk gave some insight on why it takes so long to get a new method approved, and the quantitation limits presentation covered the historical development of the various quant limits currently used in our industry.

Two presentations on ethics and data integrity stressed the importance of instituting a culture of ethical behavior that should be infused from the leadership down through the organization. Employees should feel confident that they will not be punished for admitting errors and needing to re-work samples.

A presentation on the status of the Staged Electronic Data Deliverables (SEDD) standard revealed that it will eventually allow for electronic transmission of all the data required to reconstruct the analysis of a sample. It is based...
The fifth meeting of the Secretary’s Advisory Committee on Heritable Disorders and Genetic Diseases in Newborns and Children was held in July in Washington, DC. The meeting focused on the current state of the states on newborn screening, and subcommittee reports.

In a presentation titled Newborn Screening: Current Status of State Newborn Screening Programs, Brad Therrell, PhD, director of the National Newborn Screening and Genetics Resource Center, gave an overview of the states’ progress towards the ACMG/HRSA recommended panel of 29 disorders. Some highlights of the presentation:

- California began mandated screening for all tandem mass spectrometry conditions and Congenital Adrenal Hyperplasia, now testing for 26 of the ACMG/HRSA conditions.
- Connecticut added 13 more MS/MS conditions to their panel, now screening for the entire recommended ACMG/HRSA panel except for cystic fibrosis.
- Michigan added 11 MS/MS conditions to its universal pilot program and is currently working towards a fee increase to provide comprehensive services and cystic fibrosis.
- Utah began a full scan MS/MS pilot program through a private laboratory, with a fee increase from $35 to $65.

For more information, contact Jelili Ojodu, newborn screening and genetics program manager, at 202.822.5227 x235 or jojodu@aphl.org.

**Did You Know...**

Brad Therrell, director of the national screening resource center, reported that nine states currently screen for all 29 ACMG/HRSA conditions. Thirteen states screen for 28 conditions and five states screen for 27 conditions. Four states screen for 26 conditions, and an additional two states screen for 23-25 conditions. Ten states screen for 10-19 disorders and eight states screen for less than 10 disorders.

During the Follow-up and Treatment Subcommittee meeting, committee members discussed using APHL’s upcoming Newborn Screening and Genetics Testing Symposium as a forum to get input and feedback from the state newborn screening programs on one of its main charges—determining the major barriers to successful short- and long-term follow-up. In pursuit of this information, the subcommittee discussed many alternatives: one option would be to have a qualitative session at the pre-conference workshop on follow-up, asking participants for input on challenges in integrating health care systems, financing, information systems and exchanges, and other key areas. Subcommittee members will work with APHL’s symposium planning committee to finalize this session.

**Global Health Annual Report Available**

APHL’s annual report on its global health program, “Helping to Find Solutions Where Disease Hits Hardest: A Report on APHL’s Global Health Program, 2004,” is now available. The program has been noted within the field due to its substantial success as a partner in the President’s Emergency Plan for AIDS Relief (PEPFAR). PEPFAR is a planned, $15 billion, five-year initiative to prevent HIV infection and treat AIDS patients in other nations.

The annual report describes the program’s recent efforts to strengthen public health laboratories and build laboratory leadership in regions hit hardest by the global AIDS pandemic. APHL’s global health program has expanded from four countries and a budget of $771,000 in 2003 to fifteen countries and a budget of over $5 million in 2004. Future objectives are also outlined. To order a copy, email globalhealth@aphl.org.
Infectious Diseases

TB Laboratories to Receive Unexpected Funding; APHL Instrumental in Reinstatement of Funds

APHL has recently learned that additional funds have been allocated for public health TB laboratories. During a conference call with the National TB Controllers Association (NTCA), the CDC reported that $242,000 has been disseminated from the National Center for HIV, STD and TB Prevention for use by the Division of Tuberculosis Elimination (DTBE). The DTBE will use these funds to offset reductions in laboratory funding that resulted from using the new CDC funding formula to calculate TB laboratory cooperative agreements awards this year.

According to the CDC, $24,000 of the funds will be given to the Pacific Islands to sustain minimal TB laboratory services. The remaining $218,000 will be distributed evenly to all states and jurisdictions that had reduced funding in FY 2005 and completed a true needs assessment as required in the RFA. While the monies will not bring the TB laboratories back to level funding, it should account for about 77% of the total funding deficits. The CDC credited APHL’s proactive collaboration with the NTCA and its letter to William Gimson, CDC chief operating officer, as being instrumental in reinstating funding to the TB laboratories. However, funding is only guaranteed for this year, and deficits may occur in FY 2006, based on the CDC’s funding formula. APHL asks that comments or suggestions for improving the funding formula be sent to CDC and APHL.

The laboratories will not be notified of funding increases directly; instead notices will be sent to the state TB controller. Laboratory directors should contact the state TB controller for information if funding was reduced in FY 2005.

Contact Anthony Tran, HIV, STD, TB program manager, with comments or questions, at atran@aphl.org or 202.822.5227 x229.

Global Health

Laboratory Management Training in Zimbabwe

APHL’s global health program collaborates with the CDC’s Global AIDS Program to reduce HIV transmission and improve HIV/AIDS care and treatment around the world. To support this important public health endeavor, the program strives to build quality laboratory systems in resource-poor settings.

Public health laboratories at all levels have a key role in the development and provision of quality-assured laboratory services for the diagnosis and management of disease. Laboratory managers and scientists must work hand-in-hand with health planners and hospital administrators to detect, manage and control disease successfully. In HIV/AIDS control efforts, it is also critical to establish consistent laboratory methods and broad diagnostic capabilities. Adequate training and support in quality management practices is integral to success.

In an effort to convey these vital skills to laboratorians in resource-poor settings, APHL’s Laboratory Management Workshop was piloted in Darwendale, Zimbabwe, in April 2004. Designed with the assistance of Zimbabwe’s public health laboratory community, it introduced basic managerial concepts and methods to be used to analyze and improve laboratory management.

After appropriate revisions, APHL’s global health program launched a five-day laboratory management workshop in Harare, Zimbabwe, in June 2005; twenty participants from laboratories throughout Zimbabwe attended. The training focused on laboratory leadership and communication. Specific issues addressed included strategic planning, inventory control, supervision, performance evaluation, financial management, team building, communications, organizational structure and quality improvement.

Zimbabweans face unique challenges in their work. The laboratories face high personnel turnover, creating an urgent need to hire qualified staff or retrain current staff. Additionally, Zimbabwe suffers from hyperinflation—rates are currently at 140%—which makes procuring and evaluating suitable reagents and maintaining quality control (QC) and quality assurance (QA) systems extremely difficult. The workshop participants expressed a desire to improve planning practices by implementing the skills taught in this course.

Drs. Burt Wilcke (University of Vermont), Bradford Hill (private consultant), and Mary Haven (AACC, University of Nebraska) were the principal instructors. Local laboratorians Eve Gadzikwa and Dexter Rawson also presented some of the material. APHL intends to develop this workshop into a train-the-trainer format. As more workshops are planned, APHL intends to involve an increasing number of Zimbabweans as trainers.

APHL plans to continue to provide this training to resource-poor countries, as well as expand the training to include additional modules. For more information, contact globalhealth@aphl.org.
Fellows Shine at ASM Conference
APHL’s EID fellows were well represented in the poster section of the June American Society for Microbiology conference in Atlanta.

Nikole Goldsmith: “Is Arbitrarily Primed PCR a Useful Tool in Discriminating *Streptococcus pneumoniae* from other Upper Respiratory Tract *Streptococcus* in Clinical Isolates?”

Shelley Campeau: “Detection of Shiga toxins 1 and 2 using Multiplex Real-time PCR.”

Ryan Novak: “Unusual Clinical Isolates of *Bacillus cereus*: Correlation of Multilocus Sequence Types with Severity of Disease” and “Development and Evaluation of a TaqMan Based Real-time PCR Assay for the Identification of *Burkholderia pseudomallei*.”


Rekha Pai: “A New Clonal Association Between *Streptococcus pneumoniae* Serotype 23A and an Internationally Dispersed Clone of 23F.”


Mary Kate Yost-Daljev: “Comprehensive Analysis of Real-time PCR for Rapid *Bordetella pertussis* Detection.” Yost-Daljev was also an invited speaker at the Richmond Society of Clinical Laboratory Sciences and Virginia Society of Clinical Laboratory Sciences meetings.

Melissa Whaley: “Development and Evaluation of Real-time PCR Detection Assays to *psaA, lyaA*, and *ply* Genes for Diagnosis of Pneumococcal Disease.” Whaley also co-authored a poster presented by Class 9 International EID Fellow Gowrisankar Rajam: “Immunogenicity and Functional Activity of Multi-antigenic Peptides (MAPs) of Pneumococcal Surface Adhesin A (PsaA) in a Rabbit Model.”

Kathryn Bieging: “A Rapid Fluorescent Multivalent Opsonophagocytic Assay (fmOPA) for Determination of Functional Anti-Polysaccharide Antibodies to *Streptococcus pneumoniae*. ”

Angela Fritzinger: “Analysis of Norovirus Strain Types Present in Virginia Outbreaks (2001-2004).” Fritlinger also co-wrote the progress and final reports for Virginia’s Food Safety Capacity grant awarded this year.

Fellows Publish and Present Research
Christina Conrardy presented the poster “Determination of *Bordetella pertussis* Toxin (ptxS1) and Pertactin (prn) Alleles by Real-time PCR” at the International Meeting on Microbial Epidemiological Markers (IMMEM07) in Victoria, British Columbia, in May.

Michelle Crum’s abstract “The Infectivity of WNV Replicons is Cell Type Specific” was accepted for an oral presentation at the American Society of Virology meeting in June.

Kaitlin Rainwater won a first place award for her poster, “White-Tailed Deer and the Transmission of West Nile Virus,” at the University of Iowa Carver College of Medicine and College of Public Health Research Week. Rainwater also presented posters at the 7th Annual University of Iowa Health Sciences Interdisciplinary Poster Session and the APHL annual meeting.

Katie Kurkjian gave an oral presentation, “Analysis of Immune Responses in Bangladesh Patients with Visceral Leishmaniasis,” at the 15th Annual Molecular Parasitology/Vector Biology Symposium in Athens, Georgia. Kurkjian also participated in a two-day Incident Command
System training conference sponsored by the USDA and University of Georgia’s College of Agricultural and Environmental Sciences to prepare local officials to respond to emergency events, including agroterrorism. Upon completing her two-year fellowship, Kukjkan will pursue an MPH at the University of North Carolina where she received a full scholarship – congratulations, Katie!

Renee Ned was the primary author of “Modulation of Immune Responses During HIV-Malaria Co-Infection in Pregnancy” in the June issue of Trends in Parasitology.

Scott Shone gave a presentation, “Little Tick, Big Worry,” at the New Jersey State Museum’s Super Science Weekend in May.

Ivan Kuzmin gave a presentation entitled “Bat Rabies Surveillance in the Former Soviet Union” at the First International Rabies in Europe Conference in Kiev, Ukraine, in June. Kuzmin also recently published two articles in Virus Research: “Efficacy of Rabies Biologics Against New Lyssaviruses from Eurasia” and “Phylogenetic Relationships of Irkut and West Caucasian Bat Viruses within the Lyssavirus Genus and Suggested Quantitative Criteria Based on the N Gene Sequence for Lyssavirus Genotype Definition.”

Laurie Dizney gave an oral presentation entitled “The Link Between Diversity and Disease” at the June American Society of Mammalogists’ annual meeting in Springfield, Missouri.


Julie Anderton gave an oral presentation at the May EuroPneumo Conference in Braunschweig, Germany, entitled “Characterization of the Human Cellular Receptor for the Streptococcus pneumoniae Adhesin, PsaA.”

Laura Gillim-Ross attended the Gordon Conference on Viruses and Cells in Barga, Italy, in May, where she presented “Increased Viral Titers and Subtle Changes in Plaque Morphology Upon Passage of SARS-CoV in Cells from Different Species” and “Mustela vison Angiotensin Converting Enzyme 2 is a Putative Receptor for SARS-CoV.”

Several fellows attended and presented their research at the Keystone Symposia Meeting on TB and HIV in Whistler, British Columbia:

Janice Campos Caoili: “Levels of Serum IgG Against Purified Protein Derivative Among Diagnosed Active and Treated TB Patients and Asymptomatic Individuals.”

Susan Roth: “Inactivation of HIV-1 by Topical Microbicides of Mucosal Innate Immune Factors is Not Always Associated with Reduction of Viral RNA Levels,” co-authored by Amanda Dowland.

Caroline Grady spent most of May in Haiti conducting a field evaluation of the lymphatic filariasis elimination program. Most of her time was spent on Isle de la Tortue, performing antigen tests, collecting blood samples and conducting surveys and GPS mapping of households. Despite transportation challenges on the mountainous terrain, Grady’s team tested nearly 2,000 individuals in just nine days. The results of this study indicate the prevalence of infection is very low and transmission is minimal. The team recommends the national program discontinue treatment on the island. Of the experience, Grady says, “I learned a great deal about fieldwork including the process of planning and developing a field study, the logistics involved in preparation, the necessary tools to execute the study and finally, bringing the data together for analysis. The cumulative experience makes the value of good, coordinated epi and lab work very evident and the interdependence of the two disciplines very tangible.


Member News

Fairfax County PHL: At the Edge of the Nation’s Capital

Director
Mary Sue Kitchen, a medical technologist with 30+ years experience, has been directing the Fairfax County public health laboratory in northern Virginia for nearly a decade. Kitchen said her first public health experience occurred “way back in the ‘70s”—investigating an urban outbreak of North American blastomycosis while working as a hospital mycologist in Chicago—and “it hooked me there and then on the excitement of public health.” However, it was not until the early 1990s, after moving to the Washington, DC area from England, that circumstances led Kitchen into the field. “I saw an ad in The Washington Post for a public health lab technologist right close to home in Fairfax County,” she said, “and was hired.” Kitchen began her tenure as an STD technologist, moving to rabies testing before becoming director in 1995.

Location
In the city of Fairfax, right across the Potomac River from the nation’s capital.

Facility
The 10,000-square-foot facility is on the top floor of the Fairfax County Public Health Department’s administrative building. The only drawback to this situation, said Kitchen, “is that labs leak. We’ve had several accidents over the years and we always have to worry about leaking on the (health agency’s) director’s desk that is right underneath us.” A new security system was recently installed and plans are underway to renovate the 20-year-old space.

# Staff
22. “I wish I had more positions to fill. We are to the bare bones. If one person gets sick or has a family emergency, everyone else scrambles for weeks to keep up with the workload.”

Revenue
About 55% of the laboratory’s funding comes from Fairfax County, about 25% from user fees and 20% from the Virginia Department of Health. Because the state laboratory—the Virginia Division of Consolidated Laboratory Services—is not part of the state public health agency, there is no direct funding from the state laboratory (although it does sometimes provide reagents, technical support and training).

Distinguishing Characteristics

- The largest local public health laboratory in Virginia, serving a sprawling population of 1.2 million people and providing additional fee-for-service testing to agencies in neighboring counties. (For example, the laboratory does all the drinking water microbiology testing for nearby Dulles International Airport.)
- Has had a BSL-3 tuberculosis suite since 1985 to respond to an unusually high TB case rate; about a third of all new Virginia cases occur in the Fairfax County area.
- Functions as both a public health laboratory and a general county laboratory.

Highest Volume Testing
Just under a third of all laboratory tests are for substance abuse screening, performed on behalf of county drug treatment programs and the county courts. STD tests—mainly for HIV, chlamydia and gonorrhea—are next in line in terms of volume. The laboratory also performs maternity testing, enteric testing for foodborne disease investigations, environmental testing (drinking water, stream water, air pollution filters and dairy products) and rabies testing. “We do a lot of rabies work; about 1,000 tests per year and 10 or 15 per day in the summer. I think it’s because we’re such a densely populated county, but still with a lot of wooded areas; it’s more common for wild animals to come into contact with people and with people’s pets.”

I ended up sitting here under our biohazard hood opening hundreds of letters late at night.

Biggest Challenges

- Trying to do state-of-the-art work in an aging facility. “We need a better infrastructure to do PCR effectively.”
- Coordinating emergency response activities with first responders and with
federal authorities. The military leases ordinary office buildings all over Fairfax County. When an emergency arises—as happened when a sample from a biode- tector in a Skyline office building tested positive for anthrax in 2004—local county responders respond. “Since we are not a Laboratory Response Network (LRN) reference lab, we need to make sure that our local law enforcement officers and local first responders are tied into the LRN. We’re the intermediary that does the communication. We need to be more a part of the LRN than an ordinary sentinel lab. We need to know what kind of testing is out there. We at least need to have the information—up-to-date and current—to communicate to our first responders to make sure they’re getting the right kind of collection instructions. There’s a disconnect between what a non-LRN reference lab has access to and what the whole system needs to be effective.” Moreover, when federal authorities become involved, Kitchen said, “You don’t know what kind of samples have been collected or where they’ve been sent. But it’s clearly the authority of the local health officer to declare buildings safe or unsafe.”

Goals

► Continue to upgrade our LIMS.

“We’re moving to a Windows-based environment so order-entry can be accomplished in district offices. Then we will have a truly paperless system!”

► Renovate the facility “so we can more efficiently and effectively utilize our laboratory system and be ready for new technologies.”

► Expand and re-certify the BSL-3 suite.

► Continue to facilitate communication with first responders and to “clarify chains-of-command in the laboratory world in the Washington metropolitan area.”

APHL Welcomes Institutional Members

On July 1, APHL opened institutional membership to local public health laboratories and environmental and agricultural state laboratories. APHL welcomes its newest institutional members.

Public Health Institutional—Local Members

Chicago Department of Health
Judith Schermond, MS

Contra Costa County Public Health Laboratory
Richard C. Alexander, MS MPH

Denver Public Health Laboratory
Michael Wilson, MD

Detroit Health Department, Public Health Laboratory
Aloysius P. Hanson, PhD

Eric County Regional Public Health Laboratories
Scott Zimmerman, DrPH, MPH

Fairfax County Health Department, Public Health Laboratory
Mary Kitchen, MT(ASCP)

Fresno County Public Health Laboratory
James J. Spolodoff

Town of Greenwich Public Health Laboratory
Doug Serafin, MS, MPH

Kalamazoo County Health and Community Services, Public Health Laboratory
Linda Vail Buzas, MPA

Kern County Department of Public Health, Public Health Laboratory
Charles Burke

Maricopa County Public Health Department, Public Health Laboratory
James Knuep

Marion County Health Department, Public Health Laboratory
Matthew M. Matusiak, PhD

City of Milwaukee Health Department, Bureau of Laboratories
M. Stephen Gradus, PhD

City of Philadelphia Public Health Laboratory
Kerry L. Buchs, MHA, MT(ASCP)

Saginaw County Department of Public Health, Public Health Laboratory
Tamara Theisen, MT (ASCP)

San Diego County HHSA, Public Health Laboratory
Christopher R. Peter, PhD

San Joaquin Public Health Services, Public Health Laboratory
Stephen A. Willis

San Luis Obispo County Health Department, Public Health Laboratory
Thomas W. Maier, PhD

Wichita Falls-Wichita County Health Laboratory
Paul G. Guynn, Jr, MEd, MT (AMT), CLS

Associate Institutional Members

Florida Department of Agriculture, Division of Food Safety
Yvonne M. Hale, MS

Missouri Department of Natural Resources, Environmental Services Program
Earl Pabst, MS

Ohio Department of Agriculture Laboratory
Beverly A. Byrum, DVM, PhD

Oregon Department of Environmental Quality Laboratory
Mary M. Abrams, PhD

Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Roger H. Carlson, PhD

APHL Members:

Invite your colleagues in local and environmental labs to join APHL. New members receive full benefits at an introductory rate of $500. For information, contact Anna Dillingham, 202.822.5227, x221, adillingham@aphl.org.
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 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 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, 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 fleas 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.

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.

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 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 . . . .”
**Member Notes**

The University Hygienic Lab, University of Iowa, in conjunction with the Upper Midwest Public Health Training Center, University of Iowa College of Public Health, was a recipient of the 2005 Linkage Award at the 2005 Association of State and Territorial Health Officials (ASTHO) annual meeting. The Council of Linkages Between Academia and Public Health Practice presents the awards each year to recognize collaborative efforts between public health officials and the academic community. Iowa’s lab director, Dr. Mary Gilchrist, accepted the award on behalf of Bonnie Rubin and Beth Hochstedler, who worked on the winning project, a video entitled *Public Health—Science in Action*. The video is a recruitment tool geared toward high school and college students, ultimately intended to help address public health workforce shortages.

Also recognized at the 2005 ASTHO Annual Meeting was Dr. Richard Melton, past director of the Utah public health laboratory and former APHL member. He received the 2005 McCormack Award, presented each year to an official who has served in public health for at least ten years, been a chief state health official for at least five years, demonstrated excellence, and made a significant contribution to the knowledge and practice of the field. Melton continues to serve the public health community in his current role as deputy director at the Utah Department of Health.

Dr. Mike Pentella, program manager at the University of Iowa Hygienic Laboratory, recently passed the American Board of Medical Microbiology (ABMM) exam. He is now board-certified as a diplomate in Medical and Public Health Microbiology. The ABMM was established in 1959 to test the expertise of microbiologists seeking to direct public health or clinical microbiology laboratories.

The New Mexico Public Health Laboratory is slated for a new home in 2008. The state legislature recently approved $59.9 million in funding for the construction of a new Tri-Services Laboratory, which will contain three agencies including the NM Department of Health Scientific Laboratory Division.

Dr. Edward Desmond, chief of the Mycobacteriology and Mycology Section at the Microbial Diseases Laboratory in the California Department of Health Services, recently co-authored the cover story of the August 2005 issue of the Medical Laboratory Observer. The article describes the expanding role of the laboratory in the diagnosis and treatment of tuberculosis in light of new technologies. The article also mentions APHL and *The Future of TB Laboratory Services* report. Desmond is a member of the APHL TB Steering Committee.

If you have member news you would like to share, send a brief notice (approximately two to three sentences) to Anna Dillingham, adillingham@aphl.org. Member notes will be included in upcoming *Minute* issues as space is available.

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### Strong States, Strong Nation: APHL Represented at National Conference of State Legislatures Meeting

“Strong States, Strong Nation” was the theme for the 2005 National Conference of State Legislatures Annual Meeting and Exhibition, which convened in Seattle, WA, in August. This meeting brings together state legislators, legislative staff members, policy analysts, representatives from business entities, members of the association community and federal policy makers to explore new ideas for solving problems facing all of the states. The exhibit hall at the meeting featured over 250 diverse booths of trade associations, healthcare associations, philanthropic organizations, big business, educational entities and federal agencies.

One of the educational sessions featured APHL member, Dr. Mary Gilchrist, director of the University Hygienic Laboratory, University of Iowa, and California Senator Deborah Ortiz, (D-Sacramento), speaking about children’s environmental health and the role of biomonitoring in preventing and mitigating health concerns. The session was well attended by many legislators and staff from across the country and garnered significant interest in the subject.

Anna Dillingham, Karen Breckenridge, and Linette Granen manned the APHL booth, providing information regarding public health laboratories and the association’s activities to this broad audience. During the conference, APHL exhibit staff distributed a variety of APHL publications and networked with legislators and legislative staff members from forty different states. In particular, it was notable that some legislators did not know anything about their state’s public health laboratory. However, several were very much aware of the work being done in the public health laboratories, and one Ohio representative even shared that he was extremely impressed with Dr. Bill Becker’s presentation on newborn screening to his legislative committee.
A fair warning: I am about to tackle the elephant in the room. A large part of my role as executive director is to face down difficult, even unpleasant, association issues. This particular topic is especially sensitive—raised briefly at the annual meeting in June, it bears further discussion. Let’s begin with some history.

One of the first things the board of directors tasked me with when hired over seven years ago was “to diversify resources.” Okay, I thought, that sounds easy enough. Ah, naïveté! In big ways we have done a good job of tackling this task. Yet we have primarily focused on our major partner and supporter, CDC. In 1997, through our cooperative agreement (CA) we collaborated with three of the then ten centers at the CDC; the CA was about $2 million. Today, we collaborate with eight centers and have a much broader footprint across the CDC than ever before. The recently awarded CA is now at about $9 million per year. We were also awarded a second sole source CA for our global health work about six years ago—at approximately $4 million per year, it covers work we do in more than 20 countries. So we have diversified, but with only one source. Most would agree that having all of your eggs in one (federal) basket isn’t the best business model.

Now, facing forward. At the business meeting in June, one member requested from the floor that the board of directors look again at our fiscal situation, noting that the dues for state public health laboratories haven’t been reviewed since 1998, and correctly pointing out that costs have risen. To that member I say, thank you. Tackling the issue of a potential dues increase is something most organizations shy away from. To repeat my comment from the meeting, we should think about member dues as “paying yourself first.” (This one comment sparked a great number of sidebar conversations!)

While member dues constitute a tiny fraction of the association’s budget, these are the most flexible and reliable monies that we receive. Our CAs, no matter how collaborative, are specific—we agree to do work for, with, or on behalf of our funder. We cannot use those resources as we wish. Dues income is different. This income provides the support for high priority issues identified by members. During the June discussion a member said, “look to Homeland, they have money.” Another added, “reach out to other federal agencies for cooperative agreements like the one we have with CDC.” All good thoughts, and I agree. From my vantage point, those are all strategic relationships we need to continue to develop, and perhaps resources may flow. But those will never be general resources—to get where we want to be, we cannot exist solely on the federal dole.

So that’s our elephant. The board, through a newly-created finance committee, will be exploring diversification and resource development strategies over the course of the coming year, and yes, member dues will be considered “fair game.” I’m sure there will be extensive dialogue around this, as there should be. As always, the board and I welcome your thoughts.

And remember, don’t shoot the messenger! I hope you have had a good summer. This fall is shaping up to be one of our busiest and most productive ever.

Sincerely,

A Better APHL: How Much Would We Pay?

Scott Becker, MS
APHL Executive Director
Staff News

Naomi Adams, APHL’s office assistant, resigned in July to attend Wake Forest University Law School in Winston-Salem, NC.

Antonia Henderson joined the Richmond, CA, NLTN office on May 9, 2005, as a training associate. Previously, Henderson worked as a lab assistant and technician for Life Sciences CORE. She holds a bachelor’s of science degree in microbiology from Indiana University.

Vicente Mejia joined the Boston NLTN office on July 25, 2005, as the new program assistant. Mejia worked previously as an administrative assistant for ACTION for Boston Community Development, the Frederick S. Pardee Management Library, and SophioSoft Inc. Mejia holds a bachelor’s degree in Spanish language and literature from Boston University.

Nickisha Shell joined APHL as the global health grants and contracts manager on August 22, 2005, after working just over three years as a project accountant with the International Center for Not-for-Profit Law. Shell has a bachelor’s degree in business administration with a specialization in banking and finance.

Environmental Health Fellowship and Traineeship Programs

APHL and NCEH/CDC are pleased to provide an opportunity for state public health laboratories to enhance environmental health laboratory testing capabilities through the Environmental Health Fellowship and Traineeship Programs. The fellowship program provides an opportunity to recruit and host a pre- or post-doctoral fellow for one-year assignments to address specific environmental health technology needs. The traineeship program provides travel for current laboratory staff to attend relevant conferences or short-term (1-6 week) specialized training in environmental health technology and testing methods at another state health department, NCEH/CDC, or other state or federal agencies (such as ATSDR, EPA, NIEHS or NIOSH). For more information or application materials for the fellowship program, contact Heather Roney, fellowship program manager, at 202.822.5227 x301, or by email at hroney@aphl.org. For information or application materials for the traineeship program, contact Lauren DiSano, environmental health program manager, at 202.822.5227 x204, or by email at ldisano@aphl.org.

APHL Sustaining Membership Program

The following corporations partner with APHL to support the nation’s public health laboratory system.

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The Association of Public Health Laboratories (APHL) is a national non-profit dedicated to working with its members to strengthen public health laboratories. By promoting effective programs and public policy, APHL strives to provide public health laboratories with the resources and infrastructure needed to protect the health of US residents and to prevent and control disease globally.

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