MISSION
Shape national and global health outcomes by promoting the value and contributions of public health laboratories and continuously improving the public health laboratory system and practice.

VISION
A healthier world through quality laboratory systems.

Bottom photo: A high magnification digitally-colorized SEM of Ebola virus particles. Credit: National Institute of Allergy and Infectious Diseases (NIH)
The year 2014 will be remembered in public health circles as “The Year of the Virus,” with Ebola, MERS and other viral diseases demanding an all-out response by APHL and partners. The West African Ebola epidemic — the biggest and most complex Ebola epidemic ever documented — captured the nation’s attention and prompted widespread fear. Even though few Americans were directly impacted, preparedness was all-important. APHL supported deployment of the Department of Defense Ebola Zaire assay to member laboratories, developed an Ebola risk template and standard operating procedures, provided technical assistance to Ebola-testing laboratories in the US and Africa, and convened national partners to coordinate all of the above.

Yet, while APHL provided substantial support to contain Ebola and other viral threats, it tackled other issues, as well. For example:

• Supporting a proof-of-concept project involving the use of whole genome sequencing to speed the detection of foodborne disease outbreaks.
• Working with John Hopkins University Bloomberg School of Public Health to create the massive open online course, “Chemicals and Health.”
• Providing technical assistance to develop the African Public Health Laboratory Network, modeled on the US Laboratory Response Network (LRN).
• Convening the 2014 APHL Newborn Screening and Genetics Testing Symposium, the world’s most prominent newborn screening event.
• Wrapping up a 30-month effort to develop the first core competencies for public health laboratory scientists.
• Developing the APHL Informatics Messaging Services (AIMS) Platform — a secure, cloud-based environment that simplifies electronic transmission of public health data.

Throughout the year, the association worked diligently with partners to ensure the quality of the US newborn screening system, which saves hundreds of babies from death or disability every year, but can still be better.

APHL also undertook activities to improve the culture of quality and safety in America’s laboratories, for example, identifying laboratories to evaluate the biosafety characteristics of technologies under consideration for LRN deployment and collaborating on biosafety training for laboratorians in the US and in Africa.

At year’s end, with a push from APHL and other advocates, Congress passed the Newborn Screening Saves Lives Reauthorization Act, which supports federal activities to strengthen the nation’s newborn screening system, and an omnibus spending bill with $5.4 billion for Ebola response and level funding for CDC’s Advanced Molecular Detection initiative.

We begin the new year on a hopeful note. If nothing else, the Ebola crisis underscores a simple truth: laboratories save lives. As 2014 recedes into memory, we must not be lulled into complacency. Rather, we must redouble our efforts to strengthen laboratory systems worldwide. This is a goal APHL stands ready to achieve, working with partners and drawing upon the consummate expertise of its members.

Sincerely,

Daniel Rice, DrPH             Scott J. Becker, MS
President              Executive Director
Exotic infectious diseases often spark fear well ahead of an actual public health threat. Last summer, 40% of US adults reported concerns about a domestic Ebola virus outbreak, according to a Harvard University poll, even though not a single case had yet been diagnosed in the US. US Ebola Fears Spread Faster Than Virus, trumpeted a Voice of America headline in October. And the American Psychological Association devoted an entire webpage to “managing your fear about Ebola.”

As a science-based organization, APHL strives to counter fear and outpace public health threats with the one thing that matters: **preparedness.** And, as Ebola coursed through West Africa last year, the association had no shortage of work to do.

On August 5, the US Food and Drug Administration (FDA) authorized emergency use of the US Department of Defense (DoD) EZ1 Real-time RT-PCR Assay for presumptive detection of Ebola Zaire virus in DoD-approved laboratories using specified laboratory instrumentation. Three days later, the CDC Laboratory Response Network for Biological Threats—preparedness — co-founded by APHL and the Federal Bureau of Investigation — invited a handful of select US public health laboratories to implement the DoD assay. All said yes. APHL immediately began work to support the assay deployment:

- Developed a risk assessment template to help laboratories implement enhanced precautions to minimize workers’ risk of Ebola exposure when handling blood or other potentially infectious materials.
- Provided technical assistance to laboratories conducting Ebola testing.
- Supplied the New York City public health laboratory with the ABI 7500 Fast Dx real-time PCR instrument needed to run the EZ1 assay, just days after city officials realized they might have a positive imported case of the virus.
- Procured equipment and reagents to ensure confirmatory testing capability in four selected cities.

On September 30, the **Texas Department of State Health Services laboratory** became the first US laboratory to report a positive Ebola virus specimen, confirmed shortly thereafter by CDC.

Some weeks later, FDA authorized emergency use of additional Ebola assays, including the BioFire Defense FilmArray Biothreat-E test. Prior to that approval, APHL:

- Issued a guidance document listing considerations for Ebola testing and requirements for consultation with a public health laboratory both before and after testing.
- Collaborated with BioFire Defense and FDA to craft language for the FilmArray Biothreat-E test package insert, advising clinical laboratorians of the need for public health laboratory consultation.
- Provided ongoing situational updates and technical assistance to APHL member laboratories, to prepare them to respond to questions from clinical labs in their jurisdictions.

Yet Ebola was not the only exotic illness to raise concerns in the United States last year. **Middle East Respiratory Syndrome (MERS),** a viral illness that has killed about 30% of those with confirmed infection, was documented in the US last May. The MERS coronavirus was brought by two travelers from Saudi Arabia, where MERS has killed more than 280 people since its emergence in 2012.

Fortunately, the US public health system was prepared for MERS. The **Indiana State Department of Health Laboratories** tested the first confirmed-positive specimen and then tested 124 additional specimens from the index patient’s direct contacts. As with Ebola, APHL served as a liaison between CDC and US public health laboratories, providing situational updates and working with subject matter experts to review MERS laboratory testing guidance.

The **Laboratory Response Network (LRN),** which was originally founded to respond to bioterrorism, proved itself extraordinarily nimble as it adapted its systems to respond to both Ebola and MERS. CDC used the LRN to deploy the Ebola and MERS tests and updated the network’s electronic data messaging service — known as LRN Results Messenger — so laboratories can send secure Ebola and MERS test data to CDC for near real-time surveillance.

As ever, APHL spent time and resources to enhance the LRN’s responsiveness and technological sophistication:

- Identified laboratories to **evaluate biosafety characteristics of technologies under consideration for LRN deployment,** including a matrix-assisted laser desorption ionization time-of-flight assay for detection of biothreat agents. Five APHL member laboratories participated in this technically challenging work, led by the **Michigan Department of Community Health, Bureau of Laboratories,** which designed the study plan and reviewed all data from participating labs.
- Recruited five APHL member laboratories to conduct a comparative study of a lateral flow assay and time-resolved fluorescence assay for detection of ricin toxin. The **New York State Department of Health, Wadsworth Center,** served as study lead, assisting with the research design, sample preparation and data review.
- With CDC, released a **Materials Planning and Cost Estimator tool** to help LRN laboratories rapidly (1) identify assays, reagents and supplies needed to test for specific biothreat agents and (2) calculate the cost of surge events.
- With CDC, trained 32 laboratory scientists in **LRN conventional testing methods,** covering everything from biosafety to advanced molecular detection. These courses instill the rigorous mindset, safety habits and analytical skills required to work with the most dangerous biothreat agents.
- Continued work on the association’s **Laboratory Information Management System integration (LIMSi) project** to enable real-time **CDC surveillance** of biothreat agents. So far, 34 laboratories are using LIMSi protocols.
When Ebola-like Illnesses Arise, Will the FDA Tie Scientists’ Hands?

When exotic diseases emerge, laboratories do not expect to find a US Food and Drug Administration (FDA)-approved test kit on the market available for ready use. Instead, public health laboratories — the first labs to act when emerging pathogens threaten the public — rely on tests they, or CDC, develop themselves: so-called “laboratory-developed tests” or “LDTs.” This practice enables a swift response and allows laboratories to capitalize on innovative assays and cutting-edge technologies to protect public health.

On the last day of July 2014, FDA signified its intent to change this system by using its authority to regulate LDTs. While APHL endorses the desire to assure the safety and efficacy of LDTs (which are sometimes manufactured by commercial entities trying to circumvent federal medical device oversight), the association is concerned about unintended, adverse consequences for public health.

APHL has argued against overly burdensome federal regulations and for a reasonable definition of “rare diseases” necessitating the use of LDTs. Association experts have also provided information to select members of Congress and FDA leaders and will take part in public hearings on the subject.
This year also brought a number of less lethal, though still serious, emerging and re-emerging infectious pathogens that APHL and its member laboratories worked to control:

- The mosquito-borne **chikungunya virus** that has run rampant in the Caribbean and was transmitted locally in Florida and Texas.

- **Enterovirus D68 (EV-D68)** — linked to over 1,000 cases of severe respiratory illness, especially among children and adolescents with asthma or other pre-existing respiratory problems.

- **Measles and mumps** — two re-emerging viruses. States reported over 600 cases of measles to CDC in 2014, compared with about 200 in 2013 and about 50 in 2012. At least one local outbreak was linked to an index case imported from the Philippines, where measles sickened over 50,000 people last year. **Mumps** outbreaks were reported on at least four college campuses — Ohio State University, Fordham University, University of Wisconsin-Madison and University of Illinois at Urbana-Champaign — and infected roughly 1,000 individuals, compared with 438 in 2013.

APHL played an integral role in the response to each of these viral threats by:

- **Distributing CDC’s molecular testing protocol for chikungunya virus** to US public health laboratories and hosting a technical assistance call for those interested in implementing the protocol.

- **Facilitating exchanges of positive chikungunya specimens** between laboratories, so labs could validate the chikungunya assay during CDC’s summer moratorium on specimen shipments.

- **Alerting member laboratories to send suspect EV-D68 specimens to CDC.**

- **Assisting with deployment of CDC’s EV-D68 molecular testing protocol.**

- **Working with CDC to identify and alert states to the presence of groups of unvaccinated Amish people returning from charity work in the Philippines.**

Additionally, APHL-supported Vaccine Preventable Disease (VPD) Reference Centers specializing in detection and characterization of VPDs tested hundreds of specimens during the measles and mumps outbreaks.
The human resources and physical infrastructure needed to bolster preparedness require ongoing investment. Two examples: (1) Many public health laboratories acquired the ABI 7500 Fast Dx real-time PCR instrument needed for definitive Ebola testing six or more years ago for 2009 H1N1 influenza testing. These aged instruments must be replaced and newer technologies evaluated. (2) Past budget cuts have forced many state public health laboratories to cut back on outreach to clinical and hospital labs, including curtailing training in packaging and shipping highly infectious pathogens. One result, reported anecdotally to APHL and reported extensively by the news media, is widespread fear among hospital lab technicians who might be required to handle Ebola specimens. Recognizing the need to address these and other gaps, APHL was an early and avid supporter of the Obama Administration’s request for $6.18 billion in emergency funding for Ebola preparedness and response. In the end, Congress appropriated $5.4 billion, with $2.74 billion of that total directed to the US Department of Health and Human Services. Among other things, the agency will use the funding to develop vaccines and treatments, train healthcare workers, create isolation units and send CDC emergency responders to Ebola hotspots.
The largest Ebola outbreak in history dominated news and life in West Africa in 2014. As of year’s end, more than 20,000 cases of the potentially fatal viral illness had been reported in the three countries hit hardest: Liberia, Sierra Leone and Guinea. Yet, because Ebola surveillance on the African continent is enormously challenging, many additional cases went unreported, hindering the emergency response.

One major surveillance (and diagnostic) impediment is the continent’s limited capacity for laboratory-based Ebola testing. Authorities in many African nations, for example, assume their countries are Ebola-free, but cannot be certain without testing capability.

“If these people, facilities and labs had been in place in these countries currently battling Ebola, the early outbreaks would not have grown to what we are facing today.”

Testimony of Beth P. Bell, MD, MPH, director, National Center for Emerging and Zoonotic Infectious Diseases, CDC, before the Senate Health, Education, Labor and Pensions Committee and Senate Appropriations Committee Subcommittee on Labor, Health and Human Services, Education and Related Agencies — Joint Hearing on the Ebola Threat in West Africa, September 16, 2014

Africa’s tragic Ebola epidemic will have dire, long-term socioeconomic consequences that will likely reach beyond the continent. In the near-term, the epidemic has lent urgency to an APHL-supported effort to strengthen Africa’s public health infrastructure and, thus, emergency preparedness: establishment of the African Public Health Laboratory Network (APHLN). The APHLN — modeled on the US Laboratory Response Network — will enable greater coordination and collaboration among the continent’s national reference laboratories, facilitating data-sharing, regional outbreak investigation, joint training activities and dissemination of best practices to assure quality laboratory services. Importantly, the APHLN will also expand members’ testing resources, as they may reach out to one another for surge capacity and for laboratory services that may be unavailable in-country.

Currently, for example, only a few African laboratories have the capability to safely test for Ebola virus, and it could take years before all African nations develop such capability. But progress continues as both the Democratic Republic of Congo and Uganda have successfully contained previous Ebola outbreaks, have testing capability and can share lessons learned.

APHL is providing substantial technical assistance to the African Society for Laboratory Medicine (ASLM), which is overseeing development of the APHLN. The association has supported:

• The launch of a listserv linking Africa’s national public health laboratory directors for the first time, enabling coordinated response to public health emergencies of pan-African and international concern.

• An in-person meeting for African laboratory directors at the biannual ASLM meeting in Cape Town, South Africa, in late 2014, to design a roadmap for future network development.

• Ebola training, also at the ASLM Cape Town meeting, to review laboratory risk assessment/biosafety, Ebola testing requirements and technologies, and a case study of Uganda’s Ebola surveillance system.

As this work was taking place, an APHL-ASLM consultant, Isatta Wurie, PhD, was serving as lead coordinator for laboratory response in the Ebola emergency operations center in Sierra Leone. There she developed laboratory SOPs, supported implementation of a specimen referral system, implemented quality assurance practices at mobile testing centers run by donor nations, and — perhaps most importantly — developed a unified laboratory implementation plan enabling international aid workers to quickly identify how best to support a single, integrated strategy for delivery of laboratory services.

With the Ebola epidemic as a backdrop, 2014 saw the launch of the ambitious, federal Global Health Security Agenda — a collaborative, international effort “to accelerate progress toward a world safe . . . from infectious disease threats and to promote global health security as an international security priority.” Among its goals are to prevent and reduce the likelihood of disease outbreaks, to detect threats early, and to provide a rapid, international response when threats arise.

APHL is one of many partners supporting the Global Health Security (GHS) Agenda, which is based largely on implementation of the revised 2005 International Health Regulations (IHR) maintained by the World Health Organization. These regulations span eight core public health capacities, including laboratory-based biosurveillance and laboratory support for emergency response. Already, APHL has:

• Met with Ambassador Bonnie Jenkins, the US Department of State coordinator for threat reduction programs and administration lead for the GHS Agenda, to discuss strategies for achieving Agenda goals.

• Proposed using the US-managed Laboratory Response Network for Biological Threats Preparedness (LRN-B) as a model for building testing capacity in laboratories worldwide and assuring an interconnected global response to biological threats, a key GHS Agenda goal.

• Begun a twinning project between the New Mexico Scientific Laboratory Division and Uganda’s Central Public Health Laboratory to help speed adoption of laboratory-related IHR regulations in Uganda.

As both Ebola and the GHS Agenda make clear, public health preparedness is inescapably a global undertaking.
From left: APHL Director of Public Health Preparedness and Response Chris Mangal, APHL Past-President and New Hampshire Public Health Laboratories Director Christine Bean, Gryphon Scientific Senior Analyst Patrick Rose, APHL Senior Director of Public Health Systems Eric Blank, and Florida Department of Health Bureau Public Health Laboratories Tampa Laboratory Director Andrew Cannons at the African Society for Laboratory Medicine (ASLM) conference.

A twinning initiative between the New Mexico Scientific Laboratory Division and Uganda’s Central Public Health Laboratory began in 2014. From left: Steven Aisu, director of the Central Public Health Laboratory of Uganda; David Mills, director, Scientific Laboratory Division, New Mexico Department of Health; Romesh Gautam, laboratory director, Washington Public Health Laboratories; Guma Gaspard, Central Public Health Laboratory of Uganda.

A laboratorian working with the new, nationwide laboratory information management system (LIMS) in Lesotho. APHL supported development, implementation and training for this multi-year initiative.

LIMS Handover Ceremony in Lesotho. From left: Bryan Kim, CDC-Lesotho; Kajari Shah, APHL manager of the National Center for Public Health Laboratory Leadership (NCPHLL); Kim Lewis, APHL senior lab consultant; Yohannes Eshele Mengistu, CDC-Lesotho; Ambassador Matthew T. Harrington; Lucy Maryigo-Robinson, APHL director of global health; Sherrie Staley, APHL senior specialist of global health; and Pandora Ray, APHL director of NCPHLL.
Newborn screening (NBS) is one of the most challenging — and most consequential — areas of public health laboratory practice. Depending on the population served, NBS laboratories receive tens to hundreds of thousands of infant blood spot specimens annually, each one requiring screening for dozens of congenital disorders. The goal is to detect newborn screening disorders in early life, so that healthcare providers can intervene before irreparable damage occurs. This means rigorous attention to detail, day in and day out.

APHL has been a long-time supporter of its members’ NBS missions. A current quality improvement focus is the timeliness of NBS — prompted by a 2013 Milwaukee Journal Sentinel series detailing delays in the delivery of infant specimens to NBS laboratories and, in some cases, delays in results reporting. APHL is supporting the work of an expert advisory panel convened by the US Department of Health and Human Services, Health Resources and Services Administration (HRSA) to better understand and address the practical challenges to timely newborn screening.

As part of this effort, the association surveyed member NBS laboratories to collect data regarding program operations, best practices and barriers to timely testing — such as unsatisfactory specimen collection, lack of dedicated courier services to transport specimens to laboratories or limited hours of laboratory specimen accessioning. The HRSA panel will use this information to develop a recommended timeline for various NBS activities. The timeline, in turn, will serve as a benchmark against which key stakeholders can peg their performance.

Other quality improvement activities include:

• Convening the 2014 APHL NBS and Genetics Testing Symposium, Re-assessing Business as Usual. Every 18 months, APHL convenes a topical NBS and genetics testing symposium, which ranks as the world’s most prominent NBS event. The 2014 symposium drew over 450 NBS stakeholders from 23 countries and featured presentations from individuals and families affected by NBS disorders, as well as presentations from international experts, who discussed emerging technologies, molecular advances, candidate NBS conditions and clinical outcomes.

• Collecting and storing NBS program information in the secure Newborn Screening Technical assistance and Evaluation Program (NewSTEPs) data repository. APHL’s NewSTEPs resource center was established in 2012 with HRSA funding. The center was refunded in 2014 and is now increasing its utility to NBS stakeholders. While the data repository can be accessed by the general public, some data will be available only to state newborn screening programs, so they can gauge their performance using standardized quality metrics.

• Releasing the Residual Dried Blood Spot Specimens Educational Toolkit in June 2014. Residual dried blood spots are the specimens left over after NBS is complete. Laboratories typically retain these specimens for a period of time and use them to recalibrate laboratory instrumentation and for other quality assurance purposes. Some states permit their use for approved, anonymous research. The APHL toolkit endorses the development of a formal policy, reviewed by an appropriate legal authority, governing the retention and use of residual blood spots. It also supplies sample policy language and a sample educational brochure for parents.

• With HRSA funding, initiating a grant program to facilitate the implementation or enhancement of state NBS activities for Severe Combined Immunodeficiency (SCID). SCID is one of the most recent conditions added to the federal Recommended Uniform Screening Panel, and many states have not yet begun SCID screening. Program activities will focus on providing resources to NBS programs and other entities wishing to offer or to improve this life-saving service.

• Strengthening NBS screening for sickle cell disease and other hemoglobinopathies in Ghana and in the United States. With early detection and appropriate medical management, individuals with hemoglobinopathies can live a long, productive life. APHL is partnering with CDC to develop a hemoglobinopathy training curriculum for genetic counselors in Ghana, where hemoglobinopathies occur at a high rate and are the only disorders on the country’s NBS test panel. At the same time, APHL began work on a requirements/guidance document for hemoglobinopathy screening in the United States. Despite decades of screening, new technologies promise improvements. The guidance document — slated for release in summer 2015 — will explain various testing methodologies and delineate the pros and cons of each.
Newborn screening specimens received at the Florida Newborn Screening Laboratory are sorted by size of blood spots and checked for specimen quality.

Congress Comes Through for Babies!

With vigorous support from APHL and other advocates, Congress passed the Newborn Screening Saves Lives Reauthorization Act at the end of its legislative session last year. Like the original Newborn Screening Saves Lives Act — enacted in 2008 — the law authorizes federal support and technical assistance for states seeking to expand and improve their newborn screening programs by adding additional screening disorders, strengthening laboratory quality assurance, enhancing follow-up systems for screen-positive infants and boosting education and support programs for all stakeholders, especially parents. Importantly, the law also provides explicit authorization for the expert panel that advises the US Department of Health and Human Services’ secretary on conditions nominated for inclusion on the federal Recommended Uniform Screening Panel or RUSP. Since the RUSP was instituted in 2006, it has spurred states’ voluntary adoption of new screening technologies and newborn screening tests. This, in turn, has undoubtedly saved lives.
Governmental laboratories and public health agencies routinely handle gigabytes or even terabytes of data. Yet, translating this data into actionable knowledge requires a means to centralize, sort and assess it. Often data must be stored in-house and also shared with CDC, clinicians and a myriad of other partners.

Recognizing data’s central role in public health practice — and especially emergency response — APHL has long been a leader in public health informatics. The association’s latest contribution is the APHL Informatics Messaging Services (AIMS) Platform — a secure, cloud-based environment that simplifies the validation, translation and routing of electronic public health data. The platform already has more than 40 messaging partners who route more than 10,000 messages per month, on average, through the system.

The AIMS Platform has been used to:

- Transport laboratory influenza data to CDC for near real-time surveillance. (The data is the basis for CDC’s FluView, accessible at www.cdc.gov/flu/weekly.)
- Maintain pandemic influenza surge capacity for electronic laboratory test orders and result reporting.
- Transport syndromic surveillance and immunization data.
- Transport messages related to possible bioterrorism threats.

AIMS is also routing surveillance data to CDC from two of four APHL-supported vaccine preventable disease (VPD) reference centers: Minnesota Department of Health, Public Health Laboratory Division; and the Wisconsin State Laboratory of Hygiene. These centers provide highly sophisticated testing services — including genotyping and molecular serotyping for select pathogens — for some of the most common VPDs in the United States, such as measles, mumps, rubella, chickenpox and pertussis. APHL’s standardized VPD electronic laboratory surveillance message protocol enables reportable results to be sent automatically to CDC from each center’s information management system — a significant achievement that already boosted emergency response during last year’s measles and mumps outbreaks. (See Page 4.)

In February 2014, CDC launched a major agency-wide surveillance strategy and enlisted APHL and the Council of State and Territorial Epidemiologists (CSTE) to help carry it out. A priority component of the strategy is the National Notifiable Diseases Surveillance System (NNDSS) Modernization Initiative (NMI), which aims to revolutionize disease surveillance in the United States by making it more comprehensive, more timely and more relevant than ever before.

APHL’s Informatics Technical Assistance Team is working with select state public health agencies — in a pilot phase of the project — to provide assistance as they adopt new-generation message mapping guides to send case notification messages to CDC (via the AIMS Platform if they choose) for high priority conditions, including STDs, hepatitis, mumps and pertussis. The ultimate goal is to transition all nationally notifiable conditions and public health reporting jurisdictions to the new and improved NNDSS infrastructure. APHL will assist in every phase of the process.

With over a decade of experience in public health informatics, APHL is now making its expertise more widely available through its informatics consulting services. Public health entities, clinical laboratories and commercial labs can contact APHL for customized informatics analysis and informed solutions, at an affordable price.

Services include (but are not limited to):

- Short- and long-term health informatics project management.
- Technical assistance for adoption of federal meaningful use regulations.
- Technical assistance for adoption of LOINC, SNOMED and HL7 codes and standards.
- Personalized education and training for staff and partners.

In public health, data drives policy. And APHL delivers data.
Reaching for the Cloud.

What makes the cloud-based APHL Informatics Messaging Services (AIMS) Platform so user-friendly? It:

- Employs a shareable Open Source architecture and monitoring and auditing systems.
- Reduces the burden of security certificate management (since APHL maintains these certificates), enabling users to send and receive with any AIMS trading partner with minimal effort.
- Simplifies data translation and transformation.
- Offers users experienced technical support, including vocabulary and HL7 message support.

For more information, send email to: wes.kennemore@aphl.org.
As the Ebola outbreak shows, infectious diseases pose a serious public health threat. Unfortunately infectious diseases are not the only threats governmental health laboratories must guard against.

Scarcely had the year 2014 been rung in when thousands of gallons of crude 4-methylcyclo-hexanemethanol (a chemical foaming agent) fouled West Virginia’s Elk River, effectively shutting off the faucets for 300,000 people in the Charleston area.

Throughout the year, millions of people were sickened by foodborne bacteria. One pathogen, *Listeria monocytogenes*, was detected in Roos Foods dairy products, Oasis Brands, Inc., cheeses and mung bean sprouts produced by Wholesome Soy Products, Inc. Outbreaks related to these foods killed four people. Another outbreak related to commercially produced, prepackaged caramel apples was linked to 29 cases of illness and five deaths.

APHL member laboratories played an integral role in the response to these crises and many others. APHL, in turn, supported member laboratories by boosting preparedness and sharing lessons learned.

**Putting Science on the Menu to Keep Tainted Food Off**

In 1996, APHL helped to establish the United States’ first nationwide, laboratory-based network for foodborne disease surveillance, *PulseNet*, which has relied on a technology called pulsed-field gel electrophoresis (PFGE) to identify clusters of foodborne illness linked to a common bacterium. Last year, APHL supported a proof-of-concept project to investigate the use of whole genome sequencing (WGS) in PulseNet. Compared with PFGE, WGS:

- Is more discriminatory. In fact, clusters detected by PFGE can often be broken into sub-clusters using WGS.
- Potentially yields more information, including antimicrobial resistance profiles.
- Is faster and more efficient.

APHL:

- Organized two hands-on, weeklong WGS trainings for PulseNet laboratorians. Over 10 scientists from nine states and two federal agencies participated in the trainings, which were held at CDC.
- Hosted five 50-state webinars comparing benchtop next generation sequencing machines and discussing the analysis of sequencing data.
- Supported an effort to systematically sequence the entire genomes of *L. monocytogenes* bacteria linked to foodborne illness. APHL served as liaison with its member food-testing laboratories — which either sequenced the *L. monocytogenes* isolates collected in their jurisdictions or forwarded them to CDC for sequencing — and convened two webinars on the project. This groundbreaking initiative, also involving other government partners, earned the federal HHS Innovates Award and was one of three projects honored as a Secretary’s Pick. The three *L. monocytogenes* outbreaks noted above were detected and confirmed using WGS — a noteworthy success that prevented additional illness.

To assure state testing data can confidently be used as the basis for regulatory interventions, APHL is collaborating with partners (the Association of Food and Drug Officials, Association of American Feed Control Officials and US Food and Drug Administration) to assist US food and feed testing laboratories wishing to achieve ISO accreditation or expand it to include additional test methods or foods. APHL:

- Provided on-site consultation, document reviews, internal audits and other direct assistance to laboratories.
- Organized nine webinars on accreditation topics throughout the year and a full-day preconference workshop in conjunction with APHL's 2014 annual meeting. Additional workshops were held during the AFDO 2014 Annual Education Conference.

- Provided technical assistance to help laboratories achieve automated data transmission to FDA’s eLEXNET database, a key tool for the storage and analysis of food testing data.

**Empowering People with Exposure Data**

While West Virginia’s Elk River crisis was the focus of intense media coverage (and public health laboratory response), other environmental health threats are more subtle and insidious. For example, Don Marean, a 72-year-old Republican state representative from Hollis, and Maria Jenness, a 28-year-old mother and outdoor guide from Boothbay Harbor, were among two dozen Mainers surprised to learn that their bodies are contaminated with potentially toxic phthalates.

How were they exposed to the endocrine disrupting chemicals? The same as most Americans: phthalates are omnipresent in US homes, schools and businesses, incorporated into such everyday items as diaper covers, shampoos, vinyl shower curtains, plastic food containers, floor tiles and body lotions.

An ongoing APHL project — *Meeting Community Health Needs Through Environmental Labs* — aims to link concerned individuals with the governmental laboratories that can furnish data to evaluate suspected environmental health threats. The Maine study, initiated by the Alliance for a Clean and Healthy Maine, used APHL's Biomonitoring Toolkit and Capabilities List to connect with the Washington State Public Health Laboratory, which tested the blood, hair and urine of a group of Maine volunteers using a rigorous CDC methodology. The Alliance will use its findings to advocate for evidence-based restrictions on phthalates in consumer products.
Last year, APHL ramped up the Community Needs project. With CDC funding, the association partnered with state public health laboratories in Iowa and New Hampshire to bring together, in each state, community groups, laboratory leaders and government officials for a daylong meeting to:

- Discuss the work of their state environmental health systems.
- Identify ways to make the laboratories more accessible to concerned community groups.

In 2015, APHL will provide funding so the two groups can conduct additional outreach and pursue their recommendations, such as establishing systems to assure residents’ queries receive thorough follow-up.

Other APHL environmental health activities include:

- Working with John Hopkins University Bloomberg School of Public Health to create a massive open online course (MOOC) titled, “Chemicals and Health.” More than 16,000 people enrolled in the course.
- Hosting the free webinar, “Ethics and Data Integrity for Environmental Laboratories,” which drew almost 1,000 participants and is one of several activities funded via APHL’s cooperative agreement with the US EPA Water Security Division.
- Co-sponsoring the webinar “Learning from the Elk River Chemical Spill.”
- Beginning a pilot project to connect college students with available biomonitoring or environmental health tracking data in need of analysis. The pilot recruited Georgetown University students, and will help them meet school requirements while making a positive public health impact.
2014 was a year of innovation and impact for APHL’s workforce programs, which are dedicated to equipping scientists with the skills needed to excel in the field of governmental laboratory practice.

The association’s National Center for Public Health Laboratory Leadership:
- Wrapped up a 30-month effort to develop the first core competencies for public health laboratory scientists. This ambitious undertaking draws on the work of 160 contributors and spans 15 domains and 522 sub-competencies. The final product — awaiting publication in CDC’s MMWR — constitutes a formal competency model that can be used to inform career ladders, training efforts and performance management.
- Graduated its sixth Emerging Leader Program (ELP) class and recruited its seventh, comprising 17 individuals from state and local public health laboratories (13), CDC (2), a state agricultural laboratory (1) and the APHL staff (1). The ELP — which helps mid-career scientists become resourceful laboratory leaders — teamed up with APHL’s Global Health Program to launch its first international program. Ten Lesotho laboratorians received on-site training in topics such as change management. The Lesothan scientists will be working on two group projects, addressing (1) procurement roadblocks and (2) the need for training in specialized testing areas. Both US and Lesothan ELP participants will benefit from a program innovation: each participant has been paired with an ELP alumnus who will act as a professional development coach. This enhancement affords alumni a different kind of leadership opportunity while enriching the experience of current class members.
- Brought together groups of public health laboratorians and state epidemiologists to discuss ways to enhance collaboration between the two professions. This novel activity — coordinated by ELP graduates from the program’s Network of Laboratory Leader Alumni — employed case studies and role-playing. Afterwards, the Council of State and Territorial Epidemiologists invited APHL staff and members to take part in a pre-conference workshop at the Council’s annual meeting to continue the discussion.
- Welcomed five new Emerging Infectious Disease (EID) fellows (four at the master’s level) to begin projects at CDC and the New York, North Carolina and Washington State public health laboratories. Two of the five are being mentored by former EID fellows who have advanced to permanent laboratory positions.
- For the second straight year, hosted a free workshop for students in grades 6-10 in conjunction with the APHL annual meeting. Last year’s workshop was held at the University of Arkansas for Medical Sciences. While students were busy building lava lamps, extracting DNA and creating colloidal suspensions, parents were invited to tour the Arkansas Public Health Laboratory and given experiments to complete with their children on a rainy day at home.

Also in 2014, APHL/CDC National Laboratory Training Network (NLTN) celebrated its 25th year. Since its inception in 1989, the NLTN has offered over 5,000 courses to more than 300,000 registrants from the US and 28 other countries, on topics ranging from chemical terrorism to virology. In 2014, the Network offered 23 hands-on laboratory workshops and 44 seminars and webinars with nearly 2,000 participants in all.

Is Your Laboratory Sustainable?
Governmental laboratories face the vicissitudes of both public health threats and government funding cycles. In this ever-changing environment, APHL works hard to help laboratory leaders maintain customer service standards and their bottom line. Despite budget cuts and costly outbreak responses, the goal is to assure governmental laboratories remain sustainable and able to react reliably and effectively to the crisis du jour.

In 2014, APHL’s Quality Systems Program:
- Partnered with Deloitte Consulting to conduct analyses of non-labor spending at the New Mexico Scientific Laboratory Division and the Tennessee Department of Health Laboratory. Identified savings opportunities include reducing the number of laboratory vendors to achieve volume discounts and strategic sourcing of laboratory consumables. Three additional spending analyses are underway.
- Released the Policy Guide for Public Health Laboratory Test Service Sharing — a resource for laboratory leaders wishing to explore legal issues and other matters related to interstate test service sharing. Thirteen of 17 surveyed laboratories participate in such arrangements for services such as newborn screening, TB drug resistance testing and bioterrorism response.
- Contracted medical technology company, Becton Dickinson (BD), to provide LEAN quality improvement training and certification to scientists from member laboratories in Alaska, Florida, New York State, the City of Milwaukee and Tulare County, CA. The five trainees have carried out projects to enhance efficiency within their own laboratories and may consult on LEAN projects in other labs.
- Among the LEAN achievements in the Tulare County Public Health Laboratory — where 10 students volunteered over 150 hours to work on the project — are a doubling of specimen-receiving capacity and a 75% reduction in the time needed to complete a test order.
Members engage in an activity at the Cohort 7 skills development training organized by the National Center for Public Health Laboratory Leadership.

Class 20 EID Fellows at orientation in August 2014 at CDC in Atlanta, GA.

Members of the first international cohort of laboratory leaders dancing as part of a team-building activity in Lesotho.

Policy Guide for Public Health Laboratory Test Service Sharing

Laboratory Efficiencies Initiative APHl 2014
2014 Financials

$31,076,799 Grants and Contracts

$814,379 Conferences and Exhibits

$401,724 Workshops

$830,060 Membership Dues

$522,320 Other

$31,076,799 Grants and Contracts

$814,379 Conferences and Exhibits

$401,724 Workshops

$830,060 Membership Dues

$522,320 Other

$33,645,282 Total Revenue
## Domestic Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious Diseases</td>
<td>4,346,248</td>
</tr>
<tr>
<td>Informatics</td>
<td>3,703,730</td>
</tr>
<tr>
<td>Lab Strengthening/Leadership</td>
<td>2,691,806</td>
</tr>
<tr>
<td>Food Safety</td>
<td>2,313,152</td>
</tr>
<tr>
<td>Leadership Development</td>
<td>1,920,355</td>
</tr>
<tr>
<td>Workshops</td>
<td>1,880,023</td>
</tr>
<tr>
<td>Newborn Screening</td>
<td>1,837,466</td>
</tr>
<tr>
<td>Public Health Preparedness</td>
<td>1,622,638</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>925,233</td>
</tr>
<tr>
<td>Laboratory Systems and Standards</td>
<td>877,485</td>
</tr>
<tr>
<td>Member Services</td>
<td>838,199</td>
</tr>
<tr>
<td>APHL Consulting</td>
<td>682,830</td>
</tr>
<tr>
<td>Conferences</td>
<td>651,509</td>
</tr>
<tr>
<td>Administration</td>
<td>391,728</td>
</tr>
<tr>
<td><strong>Domestic Programs Total</strong></td>
<td><strong>24,682,402</strong></td>
</tr>
</tbody>
</table>

## Global Programs

<table>
<thead>
<tr>
<th>Country</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>82,827</td>
</tr>
<tr>
<td>APHL Consulting</td>
<td>68,638</td>
</tr>
<tr>
<td>Botswana</td>
<td>451,493</td>
</tr>
<tr>
<td>DRC</td>
<td>91,915</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>158,289</td>
</tr>
<tr>
<td>Ghana</td>
<td>447,266</td>
</tr>
<tr>
<td>Guyana</td>
<td>65,355</td>
</tr>
<tr>
<td>Haiti</td>
<td>411,958</td>
</tr>
<tr>
<td>Kenya</td>
<td>554,518</td>
</tr>
<tr>
<td>Lesotho</td>
<td>690,653</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1,293,150</td>
</tr>
<tr>
<td>Namibia</td>
<td>315,961</td>
</tr>
<tr>
<td>Nigeria</td>
<td>205,280</td>
</tr>
<tr>
<td>Other Global Health</td>
<td>162,543</td>
</tr>
<tr>
<td>Program Management</td>
<td>182,708</td>
</tr>
<tr>
<td>Rwanda</td>
<td>111,973</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>248,513</td>
</tr>
<tr>
<td>South Africa</td>
<td>406,984</td>
</tr>
<tr>
<td>Sudan</td>
<td>129,551</td>
</tr>
<tr>
<td>Swaziland</td>
<td>235,439</td>
</tr>
<tr>
<td>Tanzania</td>
<td>752,433</td>
</tr>
<tr>
<td>Ukraine</td>
<td>39,798</td>
</tr>
<tr>
<td>Vietnam</td>
<td>206,741</td>
</tr>
<tr>
<td>Zambia</td>
<td>726,448</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>670,659</td>
</tr>
<tr>
<td><strong>Global Programs Total</strong></td>
<td><strong>8,711,093</strong></td>
</tr>
</tbody>
</table>

**Total Expenses**: $33,393,495
AWARD WINNERS FROM THE 2014 APHL ANNUAL MEETING & EIGHTH GOVERNMENT ENVIRONMENTAL LABORATORY CONFERENCE

Champion of the Public Health Laboratory
Senator Kay Hagan, North Carolina

Lifetime Achievement Award
Dr. Steve Hinrichs, professor and chair of the Department of Pathology and Microbiology at the University of Nebraska Medical Center

Lifetime Achievement Award
Dr. May Chu, assistant director for public health, Office of Science and Technology Policy, Executive Office of the President of the United States

Presidential Award
Dr. May Chu, assistant director for public health, Office of Science and Technology Policy, Executive Office of the President of the United States

Silver Award
Dr. Sanwat Chaudhuri, chief of the chemical and environmental laboratory at the Utah Public Health Laboratory
Emerging Leader Award
Dr. Scott Shone, newborn screening program manager at the New Jersey Department of Health’s Public Health and Environmental Laboratories

On the Front Line Award
Lara Phelps, senior advisor and quality assurance officer in the Office of the Science Advisor at the US Environmental Protection Agency

Thomas E. Maxson Education, Training and Workforce Development Award
Dr. Christina Egan, chief of biodefense at the Wadsworth Center, New York State’s public health laboratory

Healthiest Laboratory Award
First place winner: New York State Department of Agriculture and Markets Laboratory
Runner-Up: Minnesota Public Health Laboratory Division
Honorable Mention: Florida Department of Health Bureau of Public Health Laboratories

Thomas E. Maxson Education, Training and Workforce Development Award
Dr. Martin Evans, consultant in public health informatics
February
APHL returns to support public health in Zimbabwe after nine-year hiatus
APHL receives 325 applications for EID Laboratory Fellowship Program
APHL explains potential negative impact of “priority review” provisions in Senate newborn screening bill to House Energy and Commerce staff. The provisions are removed
CSTE enlists APHL to carry out CDC agency-wide surveillance strategy

March
Orange County becomes second local laboratory to complete L-SIP assessment
APHL conducts annual Hill Day with four member states participating
CDC publishes findings from APHL consultation, Recommendations for the Laboratory-Based Detection of Chlamydia trachomatis and Neisseria gonorrhoeae
APHL completes migration of AIMS Platform to Amazon Web Services environment

April
Iowa public health laboratory and APHL hold meeting to discuss ways to improve public health system to meet community environmental needs
APHL releases Policy Guide for Public Health Laboratory Test Service Sharing
APHL launches Public Health Laboratory Systems Database to a subset of members
APHL initiates twinning program between Uganda National Health Laboratory and New Mexico Public Health Laboratory
APHL collaborates with CDC and FDA to investigate outbreak of Listeria monocytogenes in cheese products using whole genome sequencing

May
APHL funds New Hampshire meeting to facilitate community access to state public health laboratory for environmental testing
APHL sponsors Influenza Laboratory Management Training in Istanbul, Turkey with attendees from southeastern European countries

June
APHL delivers training on laboratory strategic planning and policy at the African Center for Integrated Laboratory Training in Johannesburg, South Africa
APHL responds to first chikungunya cases in US with call to distribute testing protocols and facilitate specimen exchange between laboratories
APHL produces first in series of trainings to meet needs of food and feed laboratories seeking ISO 17025 accreditation
APHL and CDC publish Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations
APHL sponsors laboratory day for middle school students at University of Arkansas for Medical Sciences
APHL and ASTHO complete phase 1 proof of concept for project to notify providers and state health departments of reportable conditions via electronic laboratory reporting
2014 TIMELINE

**July**
- APHL is awarded 2015 HHS Innovates award for work with CDC and FDA to apply whole genome sequencing to detection of foodborne outbreaks caused by Listeria
- APHL fields Newborn Screening Timeliness Survey to inform Secretary’s Discretionary Advisory Committee on Heritable Disorders in Newborns and Children

**August**
- APHL develops template for Public Health Laboratory Risk Assessment for Ebola Virus Disease Testing in two weeks
- APHL provides laboratory information on Toledo toxic algae event to White House Office of Science and Technology Policy
- APHL is awarded new five-year PEPFAR cooperative agreement to support its global health activities
- APHL launches coaching program for emerging laboratory leaders in US and Lesotho
- APHL conducts Third Annual CDC/APHL Policy Summit in Atlanta

**September**
- APHL responds to nationwide outbreak of Enterovirus D68 by releasing a fact sheet, holding laboratory calls and working with CDC to distribute testing protocols
- APHL initiates procurement of ABI 7500 Fast Dx real-time PCR instrument to support New York City response to Ebola
- Ambassador Bonnie Jenkins visits APHL to discuss Global Health Security Agenda
- APHL delivers Laboratory Information Management Systems training in Johannesburg, South Africa
- APHL presents online course, “Chemicals & Health,” in conjunction with Johns Hopkins University. Nearly 16,000 people enroll, 30% of whom live in developing countries
- APHL launches coaching program for emerging laboratory leaders in US and Lesotho
- APHL launches two interactive data visualization dashboards for members’ use
- APHL launches twinning program that pairs Zambia with Georgia Public Health Laboratory
- NewSTEPs receives HRSA funding to engage six state newborn screening programs in pilot network to improve timeliness of newborn screening in US
- APHL receives HRSA funding to enable more state laboratories to screen for Severe Combined Immunodeficiency (SCID) and to provide related training
- APHL hosts 2014 Newborn Screening and Genetic Testing Symposium with more than 450 attendees from 23 countries
- APHL completes multi-year project to define Public Health Laboratory Competencies and submits document for CDC clearance

**October**
- APHL publishes Good Laboratory Practices for Biochemical Genetic Testing and Newborn Screening for Inherited Metabolic Disorders, which examines recommendations published in MMWR
- APHL launches two interactive data visualization dashboards for members’ use
- APHL launches twinning program that pairs Zambia with Georgia Public Health Laboratory

**November**
- APHL delivers integrated, national laboratory information management system to Lesotho Ministry of Health at ceremony with US Ambassador
- APHL fields Public Health Impact Assessment survey on adding Mucopolysaccharidosis I (MPS1) to Recommended Uniform Screening Panel
- APHL and CDC’s Enteric Diseases Laboratory Branch publish paper on options for Salmonella serotyping with sustainability model for serotyping at state and local public health laboratories
- APHL and CDC convene Laboratory Response Network Conventional Methods Course in Richmond, VA
- APHL’s National Center for Laboratory Medicine at 2014 African Society for Laboratory Medicine Conference in Cape Town, South Africa
- APHL and CDC co-host annual CaliciNet Users Group Meeting in Nashville, TN, to consider norovirus surveillance
- APHL and CDC co-host annual CaliciNet Users Group Meeting in Nashville, TN, to consider norovirus surveillance
- APHL hosts hands-on wet lab workshop, “16S rRNA Sequence Based Bacterial Identification”

**December**
- APHL finalizes contracts with public health laboratories in Alaska, District of Columbia, Illinois, Michigan, Montana and Oregon to support Laboratory Information Management System integration (LIMS) for bioterror agents
- APHL releases updated edition of Core Functions of Public Health Laboratories applicable to all governmental health laboratories
- APHL presents Ebola training at 2014 African Society for Laboratory Medicine Conference in Cape Town, South Africa
- APHL and CDC co-host annual CaliciNet Users Group Meeting in Nashville, TN, to consider norovirus surveillance
- APHL and CDC co-host annual CaliciNet Users Group Meeting in Nashville, TN, to consider norovirus surveillance
- APHL hosts hands-on wet lab workshop, “16S rRNA Sequence Based Bacterial Identification”
BOARD OF DIRECTORS

Christine Bean, PhD, MBA, MT(ASCP), President; Laboratory Director, New Hampshire Public Health Laboratories

Daniel Rice, DrPH, President-Elect Laboratory Director, New York State Department of Agriculture and Markets

Judith Lovchik, PhD, D(ABMM) Secretary-Treasurer; Director, Indiana Public Health Laboratory

Ewa King, PhD, Member-at-Large; Laboratory Director, Rhode Island State Health Laboratories

A. Chris Whelen, PhD, D(ABMM) Member-at-Large; Laboratory Director, Hawaii Department of Health State Laboratories

Joanne Bartkus, PhD, D(ABMM) Member-at-Large; Laboratory Director, Minnesota Public Health Laboratory Division

Mimi Lachica, MA, Local Institutional Member Representative; Laboratory Services Officer, Long Beach Public Health Laboratory

Tamara “Tammy” Theisen, MT(ASCP), Local Institutional Member Representative Division Director, Saginaw County Department of Public Health Laboratory

Charles Brokopp, DrPH, MPH, Immediate Past President; Director, Wisconsin State Laboratory of Hygiene

Scott J. Becker, MS, Ex-Officio; Executive Director, Association of Public Health Laboratories

FINANCE COMMITTEE

Judith Lovchik, Chair
Susan Neill
Christopher Atchison
Tammy Bannerman
Norma Tavakoli
Bill Whitman
Michael L. Wilson
Carol Hedg-Peth, Internal Staff
Patricia Smith, Staff Liaison

NATIONAL LEGISLATIVE REVIEW COMMITTEE

Paul Kimsey, Chair
Chris Atchison
Charles Brokopp
John Fontana
Jill Taylor
Peter Kyriacopoulos, Staff Liaison

ENVIRONMENTAL HEALTH

Sanwat Chaudhuri, Chair
Tara Lydick
Jyl Madlem
Martina McGarvey
W. George Mills
Paul Moyer
Blaine Rhodes
Michael Wichman
Ewa King, Board Liaison
Megan Latshaw, Internal Staff

ENVIRONMENTAL LABORATORY SCIENCE

Jack Bennett, Chair
Akin Babatola
Sanjib Bhattacharyya
Sanwat Chaudhuri
Natalie Dorsch
John Krueger
Henry Leibovitz
Martina McGarvey
Laurie Peterson-Wright
Craig Smith
Jianlin Wang
Kathryn Wangsness
Michael Wichman
Tamara Theisen, Board Liaison
Megan Latshaw, Internal Staff

FOOD SAFETY

Robyn Atkinson-Dunn, Chair
David Boxrud
Barbara Cote
Elizabeth Delamater
Philip Haines
Tim Herrman
Laura Hornstein
Tim Monson
Tom Phillips
Debra Rutledge
Brian Saunders
Tracy Stiles
Amy Woron
Dan Rice, Board Liaison
Kristy Kubota, Internal Staff
Shari Shea, Internal Staff
Kirsten Larson, Staff Liaison

GLOBAL HEALTH

Romesh Gautam, Chair
Joanne Bartkus
Patricia Blevins
Maria Paz Carlos
Frances Downes
Fizza Gulamali-Majid
Susan Neill
Michael Pentella
Christina Pleasanlton
Olga Ponomareva
Shahrzad Radahd
Robert Rej
J. Royden Saah
Haynes Sheppard
Robert Sokolow
Dan Rice, Board Liaison
Kaiser Shen, Staff Liaison
INFECTIONOUS DISEASE
Jennifer Rakeman, Chair
Karim George
Laura Gilim-Ross
Brandon Leader
Sharon Master
Michael Pentella
Peter Shult
Sandra Smole
Sara Vetter
David Warshauer
Susanne Zanto
Jill Taylor, Policy Liaison
Judith Lovchik, Board Liaison
Laura Kovach, Staff Liaison

INFORMATICS
Mark Conde, Chair
Wanda Andrews
Dina Caloggero
Susanne Crowe
Paul Duffey
Martin Evans
Keith Higginbotham
Bernd Jilly
John Krueger
Jacquelyn Lee
Garrett Peterson
Kenneth Pote
Robert Sokolow
Cassandra Hadley, Staff Liaison
Michelle Meigs, Staff Liaison

KNOWLEDGE MANAGEMENT
Billie Juni, Chair
Mary Celotti
Ming Chan
Romesh Gautom
Lorelei Kurinmski
Mark McCarrn
Shashi Mehta
Victor Waddell
Burton Wilcke
Dongxiang Xia
Mimi Lachica, Board Liaison
Deborah Kim, Internal Staff
Sadira Daher, Staff Liaison

LABORATORY SYSTEMS AND STANDARDS
Jill Power, Co-Chair
Paula Snippes Vagnone, Co-Chair
John Fontana
Paul Kimsey
Twila Kunde
Steven Marshall
Sharon Massingale
Deborah Severson
Charlene Thomas
Miki VanHouten
Anna Weber
Burton Wilcke
Joanne Bartkus, Board Liaison
Karen Breckenridge, Internal Staff
Bertina Su, Staff Liaison

LOCAL LABORATORY
Kerry Buchs, Chair
Zenda Berrada
Sanjib Bhattacharyya
Anthony Gonzalez
Mary Kitchen
Donna Rosson
Bonny Van
Mimi Lachica, Board Liaison
Tamara Theisen, Board Liaison
Tiffany Bennett Adams, Internal Staff
Eric Blank, Internal Staff
Drew Gaskins, Staff Liaison

MEMBERSHIP AND RECOGNITION
Jack Bennett, Chair
Mary Celotti
Prince Kassim
Andrea Labik
Cynthia Mangione
Pamela Mollenhauer
Michael Wichman
Tamara Theisen, Board Liaison
Tiffany Bennett Adams, Internal Staff
Drew Gaskins, Staff Liaison

NEWBORN SCREENING AND GENETICS IN PUBLIC HEALTH
Susan Tanksley, Chair
Michele Caggana
George Dizikes
Patrice Held
Cheryl Hermerath
Patrick Hopkins
Fred Lorey
Julie Luftbke
Hari Patel
Patricia Scott
Darrin Sevier
Scott Stone
Charles Brokopp, Board Liaison
Ruhiyih Degeberg, Staff Liaison

PUBLIC HEALTH PREPAREDNESS AND RESPONSE
Christina Egan, Chair
Andrew Cannons
Cheryl Gauthier
Scott Hughes
Grace Kubin
Philip Lee
Denise Pettit
Bonnie Rubin
James Rudrik
J. Royden Saah
Anthony Sambol
Maureen Sullivan
Christian Whelen, Board Liaison
Chris Mangal, Internal Staff

WORKFORCE DEVELOPMENT
Philip Amuso, Chair
Sanjib Bhattacharyya
Kerry Buchs
Maria Paz Carlos
Sharon Cibrik
Shoolah Escott
Leah Gillis
Beth Hochstedler
Bernd Jilly
Suzanne Kamel-Mohamed
Musau Wakabongo
Christine Bean, Board Liaison
Eva Perlman, Staff Liaison

2014 APHL ANNUAL REPORT
PARTNER ORGANIZATIONS

Centers for Disease Control and Prevention

Center for Global Health
Office of Infectious Diseases, National Center for Immunization and Respiratory Diseases; National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention; National Center for Emerging and Zoonotic Infectious Diseases
Office of Noncommunicable Diseases, Injury and Environmental Health; National Center on Birth Defects and Developmental Disabilities; National Center for Environmental Health/Agency for Toxic Substances and Disease Registry
Office of Public Health Preparedness and Response
Office of State, Tribal, Local and Territorial Support
Office of Public Health Scientific Services; Center for Surveillance, Epidemiology, and Laboratory Services; Division of Health Informatics and Services; Division of Laboratory Programs, Standards, and Services; Division of Scientific Education and Professional Development

Other Federal Agencies

Centers for Medicare and Medicaid Services, Division of Laboratory Sciences
Department of Defense
Department of Homeland Security, Office of Health Affairs; Science and Technology Directorate
Department of State, Office of Global AIDS Coordinator
Environmental Protection Agency, Office of Water, Office of Solid Waste and Emergency Response
Federal Bureau of Investigation, Hazardous Materials Science Response Unit; Hazardous Materials Response and Training Unit; Chemical, Biological, Radiological Nuclear Sciences Unit; Weapons of Mass Destruction Directorate
Food and Drug Administration, Center for Biologics and Evaluation Research, Center for Devices and Radiologic Health, Center for Food Safety and Applied Nutrition, Center for Veterinary Medicine, Office of Regulatory Affairs
Health Resources and Services Administration, Maternal and Child Health Bureau
US Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response, Office of the National Coordinator for Health Information Technology

Associations, Non-Governmental Organizations and Other Partners

AOAC International
Association of American Feed Control Officials
African Field Epidemiology Network
African Society for Laboratory Medicine
Alliance to Make US Healthiest
American Academy of Pediatrics
American Clinical Laboratory Association
American College of Medical Genetics
Association of Food and Drug Officials
American Public Health Association
American Society for Clinical Pathology
American Society for Microbiology
American Thoracic Society
Association of Maternal and Child Health Programs
Association of Schools of Public Health
Association of State and Territorial Health Officials
Booz Allen Hamilton
Canadian Public Health Laboratory Network
Caribbean Epidemiology Center
Children’s Environmental Health Network
Clinical and Laboratory Standards Institute
Clinton Health Access Initiative

College of American Pathologists
Colorado School of Public Health
Columbia University Mailman School of Public Health, University Technical Assistance Program
Council of State and Territorial Epidemiologists
Council to Improve Foodborne Outbreak Response
deBeaumont Foundation
D4O - Design for Others
Elizabeth Glaser Pediatric AIDS Foundation
Foundation for Innovative Diagnostics
Genetic Alliance
The George Washington University, Milken Institute School of Public Health
Global Laboratory Initiative
International Food Protection Training Institute
International Society for Neonatal Screening
J. Michael Consulting
Johns Hopkins Bloomberg School of Public Health
Management Sciences for Health
March of Dimes
National Alliance of State and Territorial AIDS Directors
National Association for Public Health Statistics and Information Systems
National Association of County and City Health Officials
National Coalition of STD Directors
National Conference of State Legislatures
National Environmental Health Association
National Tuberculosis Controllers Association
Pacific Island Health Officers’ Association
Pan American Health Organization
Pew Charitable Trusts
Public Health Accreditation Board
Public Health Data Standards Consortium
Public Health Foundation
Public Health Informatics Institute
The Robert Wood Johnson Foundation
Society for Inherited Metabolic Disorders
The St. John Group
Trust for America’s Health
Vanderbilt University
World Health Organization

DIAMOND
Abbott
www.abbott.com
HDR
www.hdrinc.com
Hologic
www.hologic.com
Luminex
www.luminexcorp.com
PerkinElmer
www.perkinelmer.com
QIAGEN
www.qiagen.com
Roche
www.roche.com
Thermo
www.thermofisher.com

PLATINUM
Bio-Rad
www.bio-rad.com/diagnostics
ESRI
www.esri.com/health
Illumina
www.illumina.com
STARLIMS
www.starlims.com

GOLD
HealthLIMS
www.compaid.com
www.healthlims.com
Quanta Biosciences
www.quantabio.com

SILVER
Applied Maths
www.applied-maths.com
The Baker Company
www.bakerco.com
BioFire Diagnostics
www.bio-surveillance.com
Brucker Daltonics
www.bdal.com/MALDIbiotyper
Cepheid
www.cepheid.com
Chembio Diagnostic Systems, Inc.
http://chembio.com
ChemWare
www.chemware.com
ClordiSys
http://clordisys.com/
Global Biohazard Technologies
www.globalbiohazardtechnologies.com
Integrated Software Solutions
www.intsoftsol.com
iPassport
www.genialgenetics.com
National Jewish Health
www.njlabs.org
OpGen
www.opengen.com
Puritan
www.puritanmedproducts.com
Qualtrax
www.qualtrax.com
The St. John Group
www.TSJG.com
WorkingBuildings
www.workingbuildings.com
APHL Member Dues
Centers for Disease Control and Prevention:
  Office of the Director
  Center for Global Health
  Office of Infectious Diseases
  Office of Noncommunicable Disease, Injury and Environmental Health
  Office of Public Health Preparedness and Response
  Office of Public Health Scientific Services
Environmental Protection Agency
President’s Emergency Plan for AIDS Relief
US Food and Drug Administration
US Health Resources and Services Administration