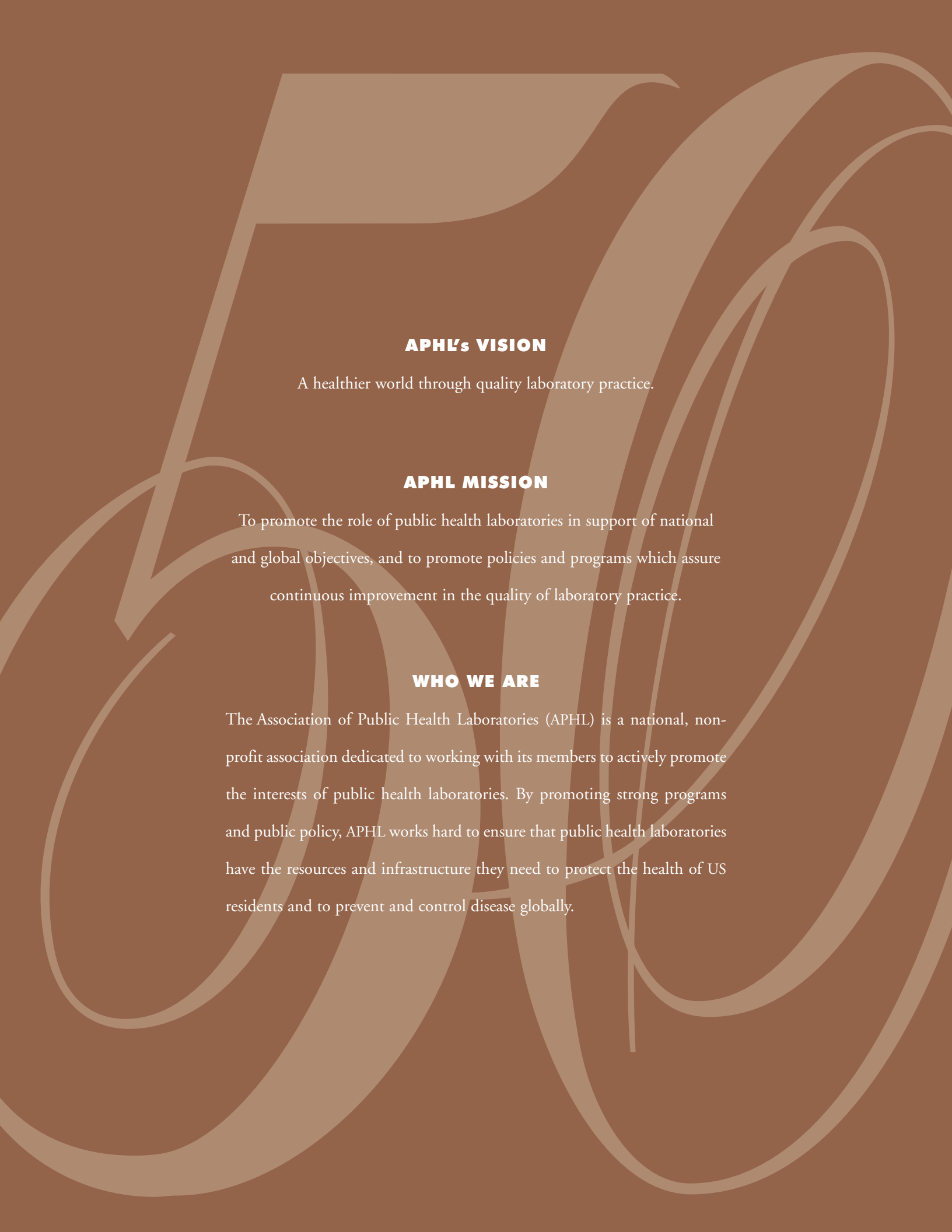


Fiftieth Anniversary
LOOKING BACK • LOOKING FORWARD



APHL's VISION

A healthier world through quality laboratory practice.

APHL MISSION

To promote the role of public health laboratories in support of national and global objectives, and to promote policies and programs which assure continuous improvement in the quality of laboratory practice.

WHO WE ARE

The Association of Public Health Laboratories (APHL) is a national, non-profit association dedicated to working with its members to actively promote the interests of public health laboratories. By promoting strong programs and public policy, APHL works hard to ensure that public health laboratories have the resources and infrastructure they need to protect the health of US residents and to prevent and control disease globally.



Fiftieth Anniversary
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This commemorative was made available in part through a generous educational grant from **Aventis Pasteur** and through support from the **Division of Laboratory Systems, PHPPO/CDC**.

ASSOCIATION OF PUBLIC HEALTH LABORATORIES

Fiftieth Anniversary LOOKING BACK • LOOKING FORWARD

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APHL would like to acknowledge the following persons without whom this history of APHL and the public health laboratories could not have been compiled:
Carl Blank, David Adcock, Nathan Schneider, Stan Inhorn, Charles Sweet, and Bill Beck.
We also thank the many members and staff who agreed to share their experiences.
We hope you will find this booklet both enlightening and enjoyable.

**On our 50th anniversary, we pay tribute to a friend, mentor
and member emeritus who helped to shape APHL as we grew.**



CARL H. BLANK, DrPH

1927–2002

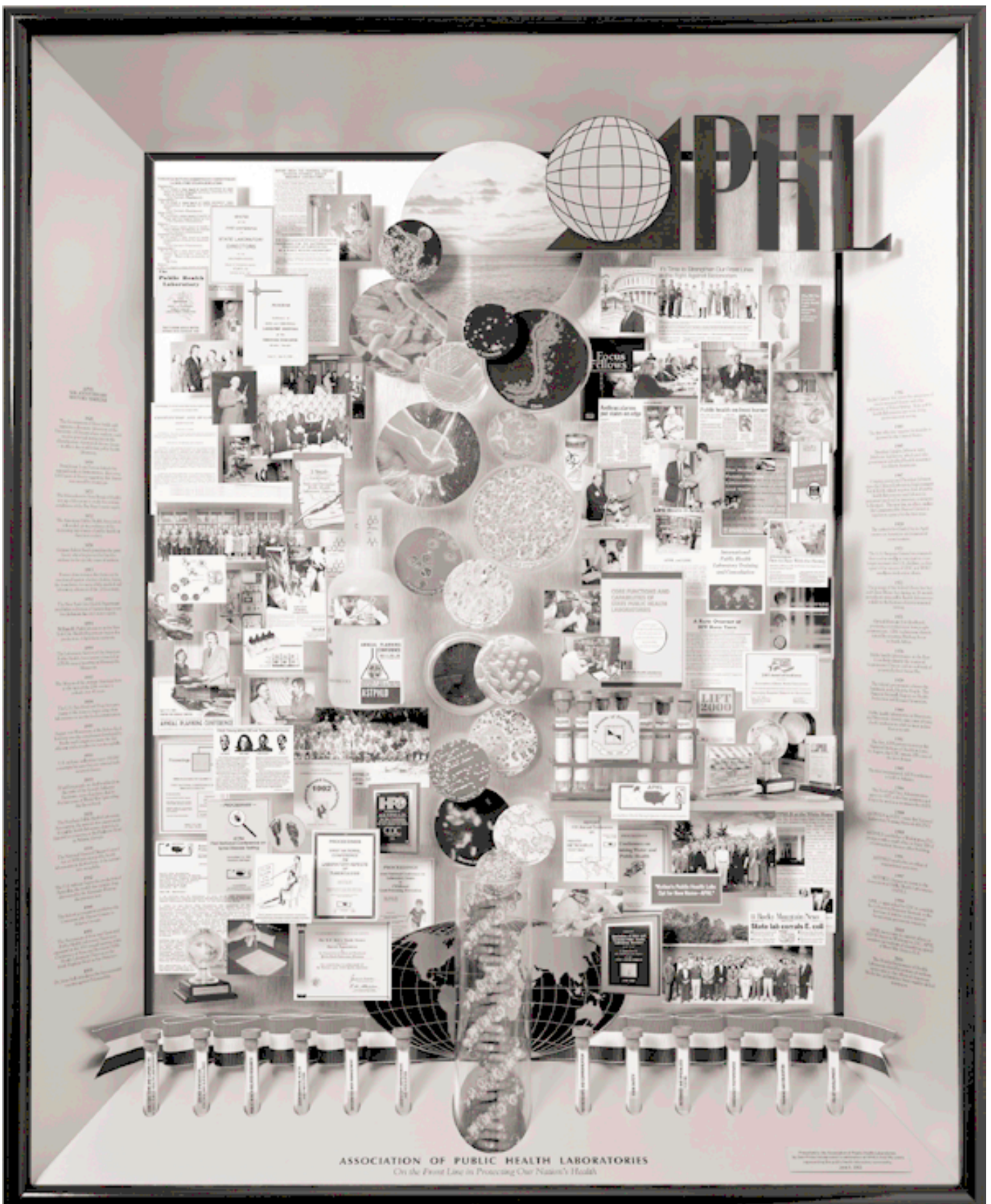
Wyoming Public Health Laboratory Director

ASTPHLD Board Member

ASTPHLD/APHL Committee Chair

ASTPHLD Interim Executive Director

Carl Blank was instrumental in the writing and compilation of this historical review of the Association of Public Health Laboratories, our predecessor organizations and public health laboratories in general. He spent many long hours relating his experiences to the writer, making arrangements so other lab directors could share their experiences, pouring over old Consolidated Annual Reports for interesting facts and documentation, and proofing the chapters for accuracy. It became a labor of love for him. Without his expertise and willingness to share his time and energy this booklet would not have been possible. It is with great appreciation and respect that we dedicate this 50th Anniversary booklet to Dr. Carl Blank.



Artist's collage reviewing APHL's 50 years.

**AMERICA'S FIRST LINE OF DEFENSE:
THE PUBLIC HEALTH LABORATORY
1850-1950**

Take interest, I implore you, in those sacred dwellings which are designated by the expressive term: laboratories. Demand that they be multiplied; that they be adorned. These are the temples of the future...temples of well being and happiness. There it is that humanity grows greater, stronger, better."

— Louis Pasteur¹



The public health laboratory in the US and its territories has long been the first line of defense in American society's centuries-long battle against disease.

Public health laboratorians have been unsung heroes in the war to identify and eradicate bacterial, viral, water and food-borne illnesses. Since the 1870s, when states and territories first began to establish public health laboratories, the microscope, microbial cultures, serologic testing and human intuition have been among the weapons employed to keep Americans safe from disease and sickness.

The evolution of the public health laboratory has not been without its starts and stops. Prior to the 1880s and 1890s, medical science was still struggling with the origin of disease. In many ways, the medical community of the mid-19th century was no better able to identify and isolate disease vectors than the physician of the 17th century. Hundreds of thousands of Union and Confederate Army combatants during the Civil War died of infectious disease or of infection from survivable battlefield wounds.²

Childhood disease took a fearsome toll in 19th century America. Infants and toddlers died routinely and quickly when scourges such as measles, mumps, diphtheria, whooping cough and scarlet fever swept through a community. Sepsis was an ever-present handmaiden to the midwives attending women in childbirth. Cities dumped their sewage untreated into rivers and streams, and other communities downstream experienced the all-too-frequent ravages of typhoid fever. In 1900, the three leading causes

of death in the United States were pneumonia, tuberculosis and diarrhea. Tuberculosis alone killed 194 of every 100,000 residents at the turn of the last century. In 1900, nearly one-third of all deaths in the US occurred among children five years of age or younger.³

As late as the winter of 1918-1919, more Americans died in a worldwide influenza pandemic than had been killed in World War I.⁴

Without an effective public health laboratory system, there was literally no warning when disease struck an American community. And without warning, there was no prevention.

Creation of Public Health Laboratories

The first major breakthrough in the war against disease came in the 1880s when medical scientists in Europe and the US began to discover the microbes that caused infectious diseases such as tuberculosis, cholera, typhoid fever and diphtheria.⁵ The groundbreaking work done by Louis Pasteur in the 1850s and Robert Koch in the 1870s proved that germs and microorganisms were responsible for many of the diseases that threatened human health.⁶

Champions of the germ theory of disease on both sides of the Atlantic Ocean gradually took charge of medical science during the last two decades of the 1800s. But industrialization and urbanization in America and Europe had created conditions in which disease could spread much faster than in a rural, non-industrial society. What was clearly

lacking in the late 19th century was a public health infrastructure that could deliver timely warnings to a population that was increasingly at risk.

The roots of the public health laboratory movement in the United States and its territories were seeded in 1887 in New York City. In the 1870s, the Marine Hospital Service had been formed as a relief organization to tend to the needs of sick American seamen. In 1878, Congress enacted a law to check the spread of infectious and communicable diseases, such as cholera, smallpox and yellow fever.⁷ In 1887, the re-named Public Health Service opened the nation's first bacteriological laboratory at the Marine Hospital on Staten Island in New York's Harbor.⁸ In 1892, the hospital laboratory facilities would be moved to the Washington, DC area, and the laboratories would become the precursor to the National Institutes of Health (NIH).

The creation of a microbiological laboratory at the Marine Hospital was quickly followed by state action establishing public health laboratories. As early as 1886, Kansas became the first state in the US to create a public health laboratory as part of its public response to the spread of infectious disease. Minnesota followed in 1888, and Ohio was the third state to establish a public health laboratory in 1889.⁹ By 1900, two-thirds of the states and territories had established public health departments, and a total of 14 states had moved to form full-time, fully-staffed public health laboratories. The first county health departments were established in 1908.¹⁰



Sterility examination at the Antitoxin Laboratory opened in 1901 by the New York State Department of Health.

The Government of Hesse builds and supports a chemistry laboratory at the University of Giessen
—in effect, the world's first public health laboratory.

The public health laboratory at the turn of the last century was just one tool in a coordinated societal response in the fight against disease. A combination of public health initiatives, growing engineering and scientific expertise, and aggressive public policy decisions concerning community health contributed to dramatic victories in the war against infectious disease.

As early as 1887, the Massachusetts Board of Health founded its Lawrence Experimental Station to fashion an interdisciplinary approach to public health problems. The first task of the innovative new station and its staff of young engineers, chemists and biologists was to examine ways to purify the Bay State's water and to treat its sewage.¹¹

Armed with the knowledge from scientists working in public health laboratories that disease was often spread by contaminated water and food, federal, state and local governments moved swiftly during the 1890s and early 1900s to enact legislation and establish public health initiatives to protect the American people. In 1906, Congress passed, and President Theodore Roosevelt signed into law the Pure Food and Drug Act, in the wake of journalist Upton Sinclair's expose of the nation's meat-packing industry.¹²

The rise of a progressive political movement in many of the nation's states and cities led to the municipalization of thousands of the country's water supply systems. Communities from one end of the US to the other created safe water supply and sewage treatment systems during the waning years of

the 19th century and the first decades of the 20th century. In Superior, Wisconsin, intake pipes were laid out into Lake Superior and filters were installed in a new pumping station in 1889-1890 to replace contaminated water that had previously been taken from a shallow bay adjacent to the city.¹³ The city's neighbors across the bay in Duluth, Minnesota experienced a typhoid epidemic that killed 100 residents in 1895; five years later, voters swept in a reform ticket that extended the city's intake water pipes much further out into Lake Superior.¹⁴

The board of trustees elected in Muscatine, Iowa in 1900 came into office with a simple policy:

Good Water. More Water. Foresightedness. Equitable Rates. They bonded the city to the tune of \$100,000 to buy the existing waterworks from a private concern and upgrade it to contemporary safety standards.¹⁵ In 1905, the Moorhead Water & Light Department in Minnesota's Red River Valley drilled a well 300 feet into an artesian aquifer beneath

the city.¹⁶ The citizens of Cedarburg, Wisconsin northwest of Milwaukee voted in 1920 to spend \$186,000 to build six miles of water and sewer pipes, 60 fire hydrants, a water tower and equipment capable of pumping nearly 150,000 gallons of clean water a day.¹⁷

For most American communities, clean water became a standard in the early part of the 20th century. A key component of that standard was the bacteriological testing of water that was carried on in most state public health laboratories.



Water examination at the New York State Department of Health Sanitary Chemical Laboratory in the early 1900s.

Louis Pasteur defends his seminal work on fermentation, disproving 1,000 years of theory suggesting that disease was caused by swamp gas.

The Emergence of Public Health Laboratory Practice

The gradual elimination of water-borne disease and contaminated food in the early years of the 20th century was accompanied by huge strides in the laboratory development of vaccines effective on previous childhood killers. The 1901 discovery that bacteriolysis by immune serum required a heat labile serum—today referred to as a complement—opened the way for diagnostic tests for many infectious diseases.¹⁸

Diphtheria antitoxins developed in laboratories in the US and Europe were available to physicians as early as 1891.¹⁹ The discovery that diphtheria serum could be injected into sick children and literally make the difference between life and death did not immediately spread to the public health and medical community as a whole. In Illinois, the State Board of Health equipped a bacteriological laboratory in 1901 to diagnose diphtheria, tuberculosis and typhoid fever. Six years later, the Illinois General Assembly appropriated \$15,000 to provide for the distribution of diphtheria antitoxin to the state's children. By World War I, vaccination had become such an accepted practice that the by then renamed Illinois Department of Public Health initiated a program to vaccinate every Illinois soldier and sailor against smallpox and typhoid fever.²⁰

Some of the clinicians who manned the early state public health laboratories, like their colleagues in the private medical and hospital sector, were typically educated in Europe. Medical schools in London, Paris, Vienna and Berlin were early propo-

nents of the philosophy that “a thoroughly equipped laboratory for the scientific investigation of clinical problems” was a legitimate, necessary and critical component of medical and public health practice.²¹

Public health laboratories in the states and territories were frequently an afterthought to the then more glamorized clinical practice of medicine during the first quarter of the 20th century. The evolution of a professional staff sometimes proceeded in fits and starts. And, states often initially presented a fragmented response to public health threats during the early 1900s.

Texas serves as a good example. As early as 1896, the state's health officer requested an appropriation of \$2,000 a year “to employ an expert in microscopy and a chemist to analyze drinking water and perform bacteriological examinations.”²² In 1904, the state opened the Texas Pasteur Institute as a branch of the Austin Lunatic Asylum. The laboratories of the institute were used to prepare rabies vaccine until 1934.

The state's Bacteriological Laboratory, located across town on the third floor of the State Capitol, was opened in 1912 when

the State Legislature appropriated \$3,600 to employ a full-time bacteriologist and chemist. Prior to that time, the State Health Department had obtained the services of the pathologist of the University of Texas Medical Department.

During the first decade of the century, the State Health Department and its Bacteriological Laboratory were primarily concerned with testing water for typhoid bacteria. Vic Ehlers, who joined the staff of



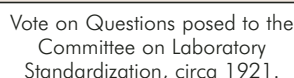
Bleeding a horse immunized with diphtheria toxin, New York State Department of Health Antitoxin Laboratory, circa early 1900s.

In the past four years more soldiers in the US Civil War have died of disease than on the battlefield.

In the early 1920s, the Bacteriological Laboratory and the Food and Drug Laboratory were combined in office space located southeast of the Texas Senate. The Texas Legislature brought all three laboratories together in 1928 when they consolidated the state's laboratory facilities into the Bureau of Laboratories of the State Health Department.²⁶

[illegible]

Another professional society that was organized at about the same time as the predecessor of the American Microbiological Society was the Laboratory Section of the American Public Health Association (APHA). Founded in 1872, APHA was



The Massachusetts State Board of Health sets up a laboratory to study the sanitary conditions of the Bay State's water supply.

initially a forum for physicians to discuss issues of public health concern. But the increasing presence of bacteriologists in the public health field led the association to open membership to non-medical doctors.

At APHA's 1899 meeting in Minneapolis, Minnesota, the newly formed Committee of Laboratories held a one-day meeting at the Laboratory of Medical Sciences at the University of Minnesota. Out of that one-day meeting arose the predecessor of the Laboratory Section of APHA.²⁹

Up until the years immediately following World War I, the Society of American Bacteriologists and the Laboratory Section of the APHA were the only organizations in the US that represented public health laboratory professionals. But many of the members of the two organizations were then associated with university laboratories and hospital clinical practices. Those working in the field of directing state and territorial public health laboratory practice really had no mechanism where they could gather and talk about the huge number of issues they faced every day.

In 1921, T.F. Sellers, the director of the Georgia State Board of Health Laboratory, stepped up to a podium in the Piedmont Hotel in Atlanta and gavelled to order the first meeting of what would become the Southern Public Health Laboratory Association, and later the State Laboratory Directors' Conference. In attendance were public health laboratory directors from eight southern states, as well as the director of the Savannah, Georgia public health laboratory

and representatives from the International Health Board in New York and the Georgia State Board of Health.³⁰

Unlike the bacteriologists, the public health directors' interest was in the practical application of public health laboratory administration. Topics of papers presented at that first meeting covered such topics as the relation of the city laboratory to the state laboratory; the proper function of the state board of health laboratory; the standardization of laboratory technique; the proper way to fill out a specimen information blank; and the feasibility of establishing sub-laboratory systems.³¹

Dr. F.F. Russell, general director of the International Health Board in New York, gave the keynote address to end the first meeting of the then Southern Public Health Laboratory Association. Russell urged his audience to think big.

"The field of the public health laboratory should not be narrow," he said. "It should not be confined to diagnosis of infectious diseases... Not many laboratories are able to do tissue work. On the other hand, if a laboratory is so favorably situated that it can have a pathologist on its staff, I do not see why the laboratory should not do tissue work."³²

Dr. Russell's address was prophetic. By the time the US entered World War II 20 years later, the state and territorial public health laboratory had become a key part of America's first line of defense in the war against infectious disease and contaminated food and water.



The American Public Health Association (APHA) is founded, giving evidence of the increasing importance of public health in American society.

1872

THE WAR AGAINST VENEREAL DISEASE: THE PUBLIC HEALTH LABORATORY 1915-1960



uring two world wars in the first half of the 20th century, state and territorial public health laboratories served on the front lines in the fight against sexually-transmitted diseases. The battle against syphilis, gonorrhea, chlamydia and a host of other venereal diseases put the nation's public health laboratories in the forefront of a scientific and public relations offensive that would mark the careers of a generation of public health laboratory directors. The offensive also would prepare American public health laboratories for the fight against other health threats in the second half of the 20th century. Many of the public health laboratory personnel who learned their trade in the war against sexually

transmitted diseases applied those lessons to breakthroughs in testing for food-borne illnesses, tuberculosis, childhood diseases and HIV outbreaks in the years to come.

The development of the Wasserman and other tests in the years following World War I, and the vast increase in state-required premarital blood testing during the 1920s and 1930s gave state and territorial public health laboratories new tools in the war against sexually transmitted diseases. America's participation in World War II gave the nation's public health community ample opportunity to practice the tools of their trade.

Venereal Disease: The Wartime Threat

Whenever large numbers of young men gather for wartime military duty, disease is an ever-present threat. High on the list of pathogens that can incapacitate an army are sexually transmitted diseases. Since the time of the armies of the Caesars, venereal disease in the ranks has diminished a nation's fighting forces.

Prostitution has always flourished in close proximity to military encampments. Contrary to Victorian mythology, venereal disease was a serious problem for the medical corps of both armies of combatants fighting



German Robert Koch postulates the germ theory when he proves that bacillus anthracis is the specific cause of anthrax.

1876

in the Civil War. Union Army doctors treated more than 73,000 cases of syphilis and almost 96,000 cases of gonorrhea. Countless thousands of other Union soldiers were marked “absent sick” on company rolls without ever being diagnosed. The open genital sores of syphilis were as fully incapacitating to the Union Army as were the minie balls and shrapnel of the Army of Northern Virginia. It is little wonder that historian Jared Diamond linked “guns, germs and steel” in his essay on the fate of human societies.¹

The American entry into World War I during the spring of 1917 created conditions that were again ripe for the transmission of syphilis and gonorrhea. A measure of the severity of the problem during the World War I years is the simple fact that military authorities rejected nearly 200,000 draftees because they were infected with venereal disease.² Conscripts diagnosed with syphilis or gonorrhea were assigned to holding units prior to discharge.³

Regular conscripts were housed in camps that were frequently crowded and lacking in sanitation facilities. Camp Dix in New Jersey was built to house 38,000 trainees; in 1918, its roster counted more than 54,500 conscripts. At Camp Sherman, Ohio, recruits produced nearly one million pounds of garbage a month. The camp’s horses produced 120 tons of manure a day.⁴

Army Commanders waged war against prostitutes and venereal disease. In Paris, General John J. “Blackjack” Pershing personally inspected the venereal disease returns for the American Expeditionary

Force (AEF) each morning. Pershing instituted vigorous patrols of French red-light districts, and any soldier returning drunk to his camp was considered to be infected with venereal disease.⁵ American military leaders consistently resisted the suggestion of French authorities that bordellos be licensed and inspected, a practice the French army high command had adopted in 1914.

For those soldiers infected with venereal disease, treatment was often draconian. As early as the Renaissance, infected soldiers had been treated with mercury rubs, which led American Doughboys to ruefully observe that they had spent “one night with Venus, and the rest of your life with Mercury.”⁶ A

treatment that came into vogue during World War I involved multiple injections of Salvarsan, an arsenic compound that often left the treated sicker than if they had been left untreated.⁷

Military and civilian public health laboratory personnel did have one new tool in identifying the presence of syphilis. The Wasserman Test, introduced in 1906, was the first effective blood serum test capable of identifying venereal disease in the laboratory. Discovered by bacteriologist August von Wasserman of the Robert Koch Institute in pre-war Germany, the Wasserman Test provided a simple and cost-effective laboratory blood procedure: using a cardiolipin beef-heart antigen, the laboratory technician could quickly identify the presence of syphilis.⁸

World War I provided the public health laboratory community with training and experience in combating a specific public health threat that would



Pasteur demonstrates that hens can be vaccinated against chicken cholera, laying the foundation for many of the medical and laboratory advances of the 20th century.

become the preoccupation of many state public health departments during the 1920s and 1930s. Thousands of public health personnel gained invaluable experience with the Army Medical Corps in the fight against venereal disease during World War I. Many of those military public health personnel returned to civilian life in 1919, and they brought their expertise in battling venereal disease and other public health threats back to state health departments and their laboratories. At the beginning of World War I, only one-third of state public health laboratories had facilities to perform Wasserman Tests.⁹ By the time the US entered World War II a quarter-century later, syphilis serology would be the leading activity—by volume—of nearly every state and territorial public health laboratory in the nation.

Premarital Testing

The US Army's experience in fighting venereal disease during World War I, and the widespread introduction of the Wasserman, Kahn, Kline and Hinton Tests in the years following the war led to the passage of numerous federal and state syphilis serology statutes during the 1930s. Known collectively as premarital testing, the statutes generally required couples to submit a blood sample to the state public health laboratory for testing of venereal and other diseases.

For most states in the 1920s, premarital serological testing in state and territorial public health

laboratories was sporadic and voluntary. Most state and territorial public health laboratories concerned themselves with testing for contagious diseases such as tuberculosis and diphtheria, testing community water and wastewater systems for bacteriological and chemical contaminants, and testing the community's milk supply.¹⁰ Most public health laboratories in the South provided fecal testing for intestinal parasites, primarily hookworm.¹¹

Texas was typical of the workload faced by state

and territorial public health laboratories by the 1930s. The Bureau of Laboratories' focus included bacteriology, mycology, virology, parasitology, entomology, biological production and environmental chemistry. The bureau began producing smallpox vaccine in 1936, and the volume of tests increased dramatically during the decade of the Great Depression.¹²

Much of the increased volume stemmed from the bureau's syphilis serology division. It began conducting premarital Wasserman

Tests in 1922.¹³ By the mid-1930s, the bureau was supplementing its Wasserman Tests with the equally accurate and less labor intense Kahn, Kline and Hinton Tests. And syphilis serology would take on far greater importance in the decade ahead, not only for Texas but also for the entire public health laboratory community in the US.

Syphilis serology was not without its controversies. Critics charged that premarital blood



Joseph Kinyoun establishes the bacteriology laboratory at the Marine Hospital on Staten Island, NY.
Five years later, the laboratory is relocated to Washington, D.C.

screening was an invasion of privacy and that the public health and medical communities had no business in enforcing public morality.¹⁴ Nevertheless, public support, especially at the state level, created a significant public health laboratory mechanism for the growth of syphilis serology programs.

When President Franklin Delano Roosevelt signed the Social Security Act of 1935, it provided the first significant federal government funding of state public health initiatives. Title VI of the act “established a permanent machinery for distributing Federal funds for health purposes and recognized special needs for allocating these funds.”¹⁵ Those “special needs” included grants-in-aid to the states—administered by the US Public Health Service—to established beefed-up syphilis serology programs to identify and contain venereal diseases.

Three years later, Congress passed the National Venereal Disease Control Act of 1938, a landmark federal legislation for the nation’s public health community. In little more than five years, the federal funding that flowed into state and territorial public health laboratories caused syphilis serology testing on the state and territorial level to jump three-fold.¹⁶ The act appropriated \$3 million for distribution to the states under the direction of the Surgeon General.¹⁷

The federal legislation unleashed a wave of state laws mandating premarital, and in some cases mater-

nal testing. In the two years following the passage of the 1938 act, 19 states passed legislation requiring marriage partners to be tested for venereal diseases. All but two of the 19 states also required venereal disease serology testing for pregnant mothers.¹⁸

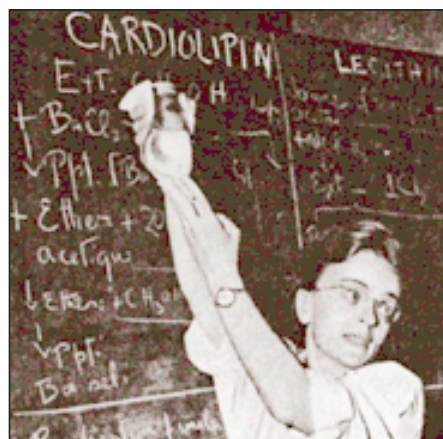
Dr. Verne K. Harvey, director of Indiana’s State Health Board, reported in the summer of 1938 that the state was using nearly \$60,000 of US Public Health Service grants—an immense amount at a time when the average state worker made less than \$1,200 a year—to supplement its ongoing anti-syphilis campaign. Harvey noted that

the money would be used for epidemiological follow-up of active cases of syphilis to prevent spread of the disease; an extension of laboratory facilities to rural areas of the state; provision for an educational campaign; and creation of a consultation service for physicians to acquaint the state’s medical community with new methods of diagnosis and treatment.¹⁹

Results of the testing in Indiana were mixed, to say the least. During the first 12 months

of the new law, nearly 65,000 Hoosiers submitted to premarital testing. The 1.6 percent syphilis rate was well below the estimated 10 percent rate that supporters of the law had predicted. During that first year, the state tested more than 31,000 expectant mothers, and only one percent tested positive for syphilis.²⁰

Supporters of the law defended the legislation, noting that couples suspecting one or both partners



Mary C. Pangborn, Ph.D., describes her cardiolipin isolation method at the International Symposium on Syphilis at Pasteur Institute in Paris, 1950. Photo courtesy New York State Department of Health.

The New York City Health Department establishes a division of bacteriology to test for cholera in the city’s water supply.

were infected with syphilis could go to one of the 25 states that did not require premarital testing and get their marriage license. Supporters also noted that syphilis was a far greater problem in the state's big cities than in rural areas and small towns. The Indianapolis Medical Society and the Indiana State Health Board reported in 1940 that upwards of 30,000 residents of the state's largest city were infected with syphilis.²¹ The report noted that almost one-quarter of the residents admitted to the state's mental hospital during the previous fiscal year had syphilis, as did 15 percent of the inmates of the Marion County Jail.²²

Syphilis serology and the accompanying wave of state laws mandating premarital and prenatal testing dominated the programs of the State Laboratory Directors Conference from 1937 to 1939. The 1937 conference in New York featured a round table on syphilis serology that discussed preliminary findings from a US Public Health Service survey on state and territorial public health laboratories.²³ A follow-up study by the US Public Health Service in 1940 found that "serologic tests for syphilis represent approximately two-thirds of the entire diagnostic laboratory work of state health departments for all communicable diseases."²⁴

Moral questions aside, syphilis serology sharply increased the volume of testing at state and territorial public health laboratories during the 1930s. And the workload was to get even heavier in the war years to come.

World War II and Beyond

The December 7, 1941 Japanese attack on Pearl Harbor found the US public health laboratories in an expansionist mode, thanks mostly to the increase in syphilis serology. Armed with the 1938 National Venereal Disease Control Act, the federal government began concentrated efforts in 1939 to reduce the incidence of venereal disease among draftees and enlistees for the war that Washington knew was coming. In that year, the Army, Navy and

Federal Security Agency promulgated an eight-point plan to combat syphilis at US Army and US Navy installations.²⁵

The plan recommended aggressive cooperation between military police and local law enforcement agencies to close down houses of prostitution. It also envisioned increased funding for public education programs to warn against the danger of venereal disease. Finally, it mandated syphilis serology testing for all inductees to the nation's armed forces.

State and territorial public health officers adopted the military recommendations in mid-1941.²⁶ For the bulk of the war, the state and territorial public health laboratory was the primary responder for syphilis serology testing.

The volume of testing increased dramatically following Pearl Harbor. In the spring of 1942, the Bureau of Laboratories of the Texas Department of Health tested as many as 3,000 specimens a day at its Central Laboratory in Austin.²⁷ The sheer volume of testing soon overwhelmed the Texas laboratory, and in late 1942, Dr. S.W. Bohls and Dr. J.V. Irons,



The New York State Department of Health's Division of Laboratories and Research was one of the first public health laboratories to utilize an electron microscope, in 1946.

William H. Park's laboratory at the New York City Health Department begins the production of diphtheria antitoxin.

the director and associate director of the laboratory, used federal funds to set up 15 regional laboratories around the state to lessen the load on the Central Laboratory. Laboratories were established from Abilene to Corpus Christi, and local communities were only required to furnish a building and pay monthly utilities.²⁸

The war stretched the public health laboratory community to the limits. Besides the problem of coping with millions of syphilis serology tests, the community had to cope with shortages of both manpower and material. At the 1943 annual meeting of the Conference of State and Provincial Public Health Laboratory Directors, Conference Chairman Dr. C.A. Hunter of Kansas reported that hundreds of laboratory technicians and bacteriologists from around the country had already joined the armed services. Hunter also noted that the US Army had approached the conference with a request for an additional 200 bacteriologists with public health experience.²⁹

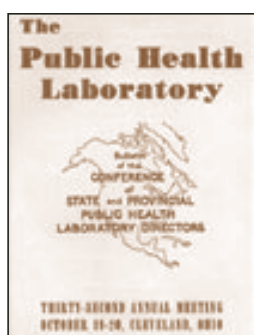
The technique that wartime public health laboratories used for detecting the syphilis spirochete had changed little from Wasserman's original tests nearly 40 years before. The tests were effective, and inexpensive. When Dr. Carl Blank went to work at the Utah Department of Public Health in 1951, fresh out of college at the University of Toledo, syphilis serology still comprised the biggest volume of work at the department's laboratory. "We had a large volume of those tests, somewhere in the neigh-

borhood of 400 tests a day," Blank recalled. "And it cost less than 50 cents a test to run these."³⁰

By the time Blank started his public health laboratory career, however, the public health community's focus on premarital testing began to wane. World War II ended in 1945 with the lowest incidence of syphilis among military personnel in American history. That was due in part to federal, state and local efforts to identify and eradicate syphilis. The public health laboratory community did its part in identifying venereal disease, but the widespread introduction of penicillin and sulfa-based antibiotics during the war proved to be the first truly effective treatment for syphilis and gonorrhea.

Federal interest in funding the war on syphilis dropped off rapidly in the postwar years. The technology transfer that saw antibiotic prophylaxis treatment for venereal disease become standard practice in the 1950s, coupled with society's increasing opposition to government-imposed morality, rendered most of the state premarital testing laws ineffective by the 1960s. In addition, an increasing number of couples were cohabitating without going through formal marriage ceremonies.

By then, states had new public health issues to confront. But syphilis serology had provided a valuable training ground for a new generation of public health laboratory personnel. They would use those lessons to lead the public health community in new directions in the years ahead.



Colorado becomes the 14th US state to establish a public health laboratory in the past 20 years. The Laboratory Section of the American Public Health Association is founded at APHA's annual meeting in Minneapolis, Minnesota.

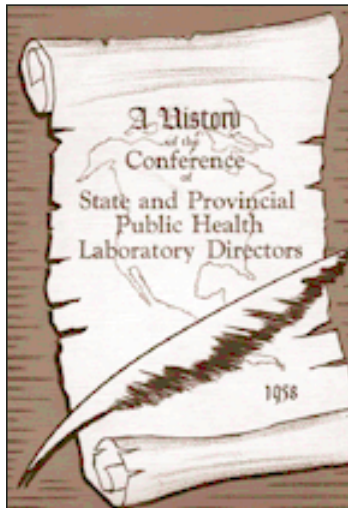
THE CONFERENCE BECOMES ASTPHLD: PUBLIC HEALTH LABORATORY LEADERSHIP



The 1951 formation of the Association of State and Territorial Public Health Laboratory Directors (ASTPHLD) from the old Conference of Southern Public Health Laboratory Directors was a sign that the emerging field of public health laboratory science had gained a national, if not international, focus.

ASTPHLD brought together laboratory directors from 48 states and US territories in a collegial atmosphere, allowing the executives to share scientific, administrative and financial expertise at annual meetings and in refereed publications. Until the association changed its name in the late-1990s, ASTPHLD represented the interests of public health laboratories nationwide.¹

The 1946 formation of the Communicable Disease Center (CDC) in Atlanta, Georgia would have an immense impact on ASTPHLD during its first 20 years of existence. Congress had charged CDC in the immediate postwar years to serve as a laboratory clearinghouse for investigation of communicable disease. The far-flung battlefronts of World War II had exposed American GIs, sailors and Marines to a host of microorganisms and insect-borne diseases that military and civilian doctors and laboratory



scientists had not seen in decades, or had simply never seen.² The development of DDT during the war as an effective insecticide lessened the threat of insect-borne disease, a fact that caused CDC to almost immediately shift its focus to combating zoological vectors of disease. Within a few years of its establishment, CDC and its scientific staff were spending a large part of their time studying and preparing against outbreaks of malaria, dengue fever, yellow fever, filariasis, amoebic dysentery, plague and typhus.

CDC's concentration on essentially tropical and

Walter Reed reports at the APHA Annual Meeting that mosquitoes carry yellow fever.
The lifespan of the average American born at the turn of the 20th century is a shade over 47 years.

sub-tropical disease left ASTPHLD members to deal with many of the native scourges that state and territorial laboratories had faced since the turn of the century. Identification and treatment of venereal disease, the laboratory community's main nemesis for more than 30 years, continued to be a major priority in the 1950s and 1960s. The incidence of tuberculosis, a disease that was found to be treatable by the antibiotics that came into wide circulation during World War II, gradually diminished in importance as the 1960s wound down. The postwar outbreaks of poliomyelitis, and the resultant public hysteria, also diminished in importance for the laboratory community after the mid-1950s when the Salk and Sabin vaccines came into wide use.

Public health laboratories continued during the postwar period to serve as a first line of defense in the always-critical fight against food- and water-borne illness. The 1962 publication of Rachel Carson's indictment against insecticides and chemical pollution of America's water supply, *Silent Spring*, set the stage for increasing public health laboratory involvement in water toxicology efforts during the 1960s and 1970s.³

For much of the first 20 years of its history, however, ASTPHLD worked hand-in-glove with the scientists and staff of the CDC. In many ways, CDC handled the "big picture," while ASTPHLD members attended to the details on the state and

local level. For much of the late 1950s and all of the 1960s, the ASTPHLD annual meeting each year took place in Atlanta. The relationships formed allowed public health laboratories to stay current with the latest developments in the fight against communicable diseases. Many state public health laboratory directors got valuable experience during the 1950s and 1960s with a stint as the CDC staff in Atlanta.

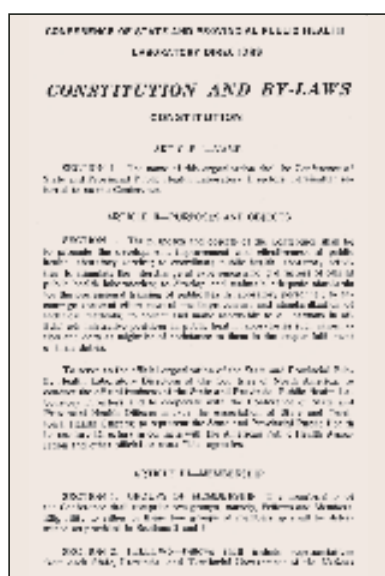
ASTPHLD Emerges

ASTPHLD held its founding annual meeting at the Mark Hopkins Hotel in San Francisco during the first week of November in 1951. Truce talks were going on in far-off Korea, and Americans were falling in love with redheaded Lucille Ball in "I Love Lucy," the first blockbuster television situation comedy.⁴

Against that backdrop, a group of 19 state public health laboratory directors gathered in a ballroom at the Mark Hopkins for the 31st annual meeting of the Conference of State and Provincial Public Health Laboratory Directors.

Their task was to begin planning a new organization exclusively for the nation's state and provincial public health laboratory directors.

The conference itself had outgrown the original Southern Public Health Laboratory Association back in the late 1920s. Public health laboratory directors from states outside the South had been



Constitution and By-Laws, 1954.

In France, Bordet and Gengou demonstrate the efficacy of complement as the basis for diagnostic tests for many infectious diseases.

clamoring to join the organization during the 1920s. In 1927, the conference changed its name to the State Laboratory Directors Conference and widened its membership to include public health laboratory directors from the United States.⁵

Ten years later, in 1938, Dr. M.H. McCrady opened the 18th annual meeting in Kansas City by suggesting that the members reflect about the need for a constitution and by-laws.⁶ McCrady's suggestion was received enthusiastically by the membership. The next year, at the annual meeting in Pittsburgh, the members unanimously adopted a new constitution and by-laws reorganizing the conference and changing the name of the organization to the Conference of State and Provincial Public Health Laboratory Directors.⁷

The reorganized conference became much more of an activist organization, publishing its annual meeting *Transactions* in 1938 and the initial *Bulletin of the Public Health Laboratory* in 1942. The *Transactions* and *Bulletin* were combined in 1946. The conference continued to hold its annual gathering in conjunction with the American Public Health Association's (APHA) annual meeting.

The 1946 creation of the CDC and the nearly simultaneous establishment of the Venereal Disease Research Laboratory and the Sanitary Engineering Center assigned new importance to the public health

laboratory. "In the postwar years," historian Charles Duffy noted, "the white-coated medical researcher came to symbolize all that was good and noble in the brave new world of science, and the vast amounts of money awarded for research in the health sciences were devoted primarily to basic research and medical technology."⁸ Public health laboratories

shared in American society's fascination with the "white-coated medical researcher."

That fact became stunningly clear in September 1946 when the US Public Health Service, at the request of the Association of State and Territorial Health Officers (ASTHO), called together the nation's public health laboratory directors to discuss ways the federal health apparatus could work together with the state laboratories. It was the first time the Public Health Service had asked to meet with the laboratory directors. Two members of the Conference of State and Provincial Public Health Laboratory Directors were on the planning committee for that landmark meeting.⁹

The conference worked with the US Public Health Service—primarily through its Committee to Study Ways and Means by which the US Public Health Service Can Assist Public Health Laboratories—through 1949. According to the conference historian, the Committee "was primarily responsible for the development of a better understanding



Lab equipment advertisements, circa 1951.

The US Pure Food and Drug Act spurs many of the states to begin using their laboratories to test for food contamination.

of the programs of the federal laboratories and the fuller utilization by the state laboratories of the services and facilities available from the US Public Health Service Laboratories.”¹⁰ The Committee’s work with the Public Health Service would in many ways be a precursor of the relationship that ASTPHLD established with the CDC in the 1950s and 1960s.

The conference’s relationship with the booming federal health community in the late 1940s was one of the principal reasons that state laboratory directors began pushing for creation of a separate organization within the conference to represent their interests. The membership increase that had accompanied the reorganization of the conference after 1939 had been heavily weighted toward associate memberships, to the extent that by the postwar years, two-thirds of the members were associate or non-voting members. Many of those members were county and municipal public health laboratory officials, an increasingly important voice in the conference’s affairs.

The Conference board of directors understood the need of the state and territorial laboratory directors to have a forum to discuss pressing matters involving administration, policy and relations with the quickly expanding federal public health presence. Since at least the mid-1930s, the conference and its predecessors had concerned themselves primarily with providing members a forum for discussing scientific and technical issues. At conference meetings, policy and administrative questions usually took a back seat to the reading of scientific papers.¹¹

The first meeting of what would become ASTPHLD took place on Friday, November 2, 1951, when members appointed a planning committee consisting of M.E. Koons (ND), S.R. Damon (IN), William Levin (OR), F.L. Mickle (CT) and C. Hunter (KS). The five-member committee promised to set up an organization plan for the new association and to report on that plan at the conference’s 1952 annual meeting in Cleveland.¹²

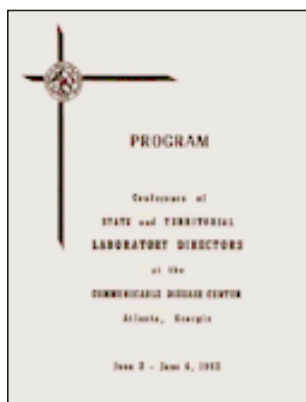
With a mechanism in place for reorganizing into two separate associations—the conference serving the broader interests of the public health laboratory community and ASTPHLD representing state

and territorial laboratory directors exclusively—events soon took another turn. The CDC, which wanted a high-level association of state and territorial public health laboratory directors in place, stepped in.

Dr. Ralph Hogan, who had taken over the CDC’s laboratories in 1950, had made it a priority to increase CDC’s relations with the state laboratory directors. Hogan felt that both

the centers’ laboratories and the state laboratories spent far too much time on routine diagnostic and blood serology work. Hogan wanted to refocus laboratory efforts at the federal and state level on disease control research.¹³ To do that, he needed to gain the trust of the state and territorial laboratory directors.

Hogan got his chance in the spring of 1952 when he invited nearly 40 state and territorial public health laboratory directors to Atlanta to participate in a seminar on identifying and dealing with typhus.



August von Wasserman of the Robert Koch Institute uses the complement developed by Bordet and Gengou to create the first efficient and cost-effective test for syphilis.

Hogan had at least one thing in common with the vast majority of state laboratory directors. Much of his career with the federal government had been spent in the Public Health Service's Venereal Disease Division. Like most of the state laboratory directors, his research efforts had been grounded in blood serology studies.¹⁴

Hogan's matchmaker efforts yielded results. At the typhus seminar, the planning committee appointed the previous November in San Francisco completed its work on a constitution and by-laws. At a meeting on June 6, 1952, the final day of the seminar in Atlanta, the 38 state laboratory directors in attendance voted to formally establish ASTPHLD.¹⁵

Indiana's Samuel R. Damon was named the organization's first president, and E.J. Sunkes of Georgia would serve as the initial vice president. Members elected the popular Mel Koons of North Dakota as ASTPHLD's first secretary, an office he had held with the conference since 1945. Minnesota's Henry "Hank" Bauer, William Levin of Oregon and George Cameron of Tennessee were elected to ASTPHLD's first executive committee.

Damon, an urbane Hoosier, was a protégé of John N. Hurty, the dynamic leader of the Indiana State Board of Health, perhaps the best-run state department of public health from the 1920s to the 1940s.¹⁶ Koons, with his work as secretary of the conference since the end of World War II, was probably the best-known public health laboratory director in the US, albeit from one of the smallest

states in the union. Dapper, balding and always the first one on the dance floor at conference and ASTPHLD functions, Koons' friendly manner and commitment to professional organizations for laboratory directors made him uniquely suited to serve as ASTPHLD's ambassador for the next 15 years.¹⁷

ASTPHLD's first annual meeting was held on October 16-17, 1952, the two days preceding the conference's annual meeting in Cleveland on October 18-19, 1952. The conference, which had served as the midwife to ASTPHLD's birth, would continue in existence for most of the rest of the 20th century. But after the 1952 reorganization, the voice of state and territorial public health laboratory directors in the US

most definitely would be through ASTPHLD.



1953 winners of the Kimble Methodology Research Award.

The Public Health Laboratory in the 1950s and 1960s

One reality that ASTPHLD would face during its first 10 years in operation was the efficiency of antibiotics against many of the public health threats that their laboratories had primarily been concerned with for most of the last 30 years. Syphilis serology programs—the mainstay of most state public health laboratories during the 1930s and 1940s—were downgraded in importance during the 1950s as sulfanilamide and penicillin wreaked havoc on syphilis and gonorrhea. The death rate for syphilis—still 14.4 per 100,000 in 1940—plummeted to 2.5 per 100,000 deaths in 1955.¹⁸

Tuberculosis, which had been a major con-

1914
World War I begins.

cern of public health laboratories during the 1930s and 1940s, all but evaporated as a significant health threat in the immediate postwar years. In 1949, chemists at Reilly Tar & Chemical isolated a synthetic isonicotinic acid. The next year, chemists at Roche Laboratories turned the compound into the first effective treatment for tuberculosis.¹⁹ Deaths from tuberculosis declined from 113.1 per 100,000 in 1920 to 9.1 per 100,000 in 1955.²⁰

When Carl Blank joined the Utah Public Health Laboratory in 1952, he was the 18th employee in the department. At that time, the laboratory in Salt Lake City “was still doing a lot of tuberculosis testing. We did 50 specimens a month, and most of the TB we saw was from migratory workers and Native Americans. At that time, we were the only facility in the state doing the TB tests.”²¹

Polio had captured the attention of many public health laboratory staffs in the years following World War II. Outbreaks were widespread, and the resulting public hysteria presaged a trend that would become more common in the second half of the 20th century.²²

The eradication of poliomyelitis that was set in motion with the 1954 pilot distribution of the Salk vaccine began diminishing the role that public health laboratories had played in identifying the polio virus, although many of the state laboratories had gained valuable virology experience during the polio crisis. Traditional childhood killers such as

whooping cough and diphtheria all but disappeared from the public health community’s memory during the postwar years. Only 89 US children died of whooping cough between 1950 and 1954.²³

The installation of electricity into every American household was essentially complete by 1950, a phenomenon which had implications for the public health laboratory’s traditional role in guarding against food and milk contamination. Electricity in both food plants and homes made refrigeration a way of life by 1950, virtually eliminating spoiled food and milk.

Despite the near total decline of many traditional health threats, public health laboratories in the 1950s and early 1960s found themselves with much to do. The continued existence of marital testing laws meant that many state public health laboratories had a seemingly endless chain of syphilis serology samples to attend to during the period. “We had received a lot of funding from the US Public Health Service to work on syphilis serology,” noted Nathan Schneider, retired lab director of the Florida Department of Public Health in Gainesville. “In a lot of ways, that determined what our budget was.”²⁴

Stan Inhorn, retired director of the Wisconsin State Laboratory of Hygiene in Madison, recalled that when he started with the laboratory in the 1950s, “Our lab was doing a lot of other primary testing, mostly parasitology and mycology. We were seeing a



The Society of American Bacteriologists, formed in New Haven, Connecticut in 1899, begins publication of the *Journal of Bacteriology*.

lot of changing workloads in the 1950s and 1960s.”²⁵

The Wisconsin Laboratory was one of the first in the nation to initiate a trend that would become widespread during the 1970s and 1980s. Inhorn recalled that in his early days at the Madison laboratory, the state was dotted with small hospitals that had very limited laboratory services. “They sent a lot of their primary reference cultures to the state laboratory,” he said. “Wisconsin was one of the first states to start charging for those services.”²⁶

Charles Sweet, who succeeded Dr. J.V. Irons as the head of the Bureau of Laboratories of the Texas State Health Department in Austin, remembered the small volume of specimens in the 1960s compared to the number in 1993 when he retired.

“In 1962,” Sweet said, “we had 183,000 specimens in the Central Laboratory in Austin and about that many in the bureau’s 23 regional laboratories.”²⁷ Thirty years later, he added, the number would exceed five million specimens. Sweet also recalled the Bureau’s attempts in the 1950s and 1960s to acquire new instrumentation. “The instruments back then were so complicated and so unique,” he said. “It seems like none of them ever survived and cut the mustard.”²⁸



Participants at the 1953 Conference of State and Provincial Public Health Laboratory Directors.

One of the topics that state laboratory directors inevitably discussed at every get-together was training and licensure. It was a subject that would consume a great deal of ASTPHLD’s time and effort in the 1960s and 1970s.

US military authorities reject 200,000 conscripts because they are infected with venereal disease.

APHL OFFICERS 1951-2002

<i>Meeting Date/ Location</i>	<i>President</i>	<i>V. Pres. (thru '75) President Elect</i>	<i>Treasurer</i>	<i>Secretary/ At Large</i>	<i>At Large</i>	<i>At Large</i>
11-02-51 San Francisco, CA	Samuel Damon, IN		M.E. Koons, ND			
06-02-52 Atlanta, GA	Samuel Damon, IN	E.J. Sunkes, GA	M.E. Koons, ND	Henry Bauer, MN	William Levin, OR	George Cameron, TN
10-18-52 Cleveland, OH	Samuel Damon, IN	E.J. Sunkes, GA	M.E. Koons, ND	Henry Bauer, MN	William Levin, OR	George Cameron, TN
10-18-53 New York, NY	Francis Lawler, VT	J.V. Irons, TX	M.E. Koons, ND	Elmer Shaffer, NJ	William Levin, OR	George Cameron, TN
04-25-54 Atlanta, GA	C.J. Gentzkow, PA	Irma Adams, MO	M.E. Koons, ND	Elmer Shaffer, NJ	I.H. Borts, IA	C.A. Perry, MD
05-20-56 Washington, DC	I.H. Borts, IA	H. Shaughnessy, IL	M.E. Koons, ND	H.G. Crecelius, AZ	F.R. Hassler, OK	Eric Borman, CT
04-13-58 Cincinnati, OH	E.J. Sunkes, GA	Elmer Shaffer, NJ	M.E. Koons, ND	H.G. Crecelius, AZ	C.A. Hunter, KS	Francis Lawler, VT
06-12-60 Atlanta, GA	Elmer Shaffer, NJ	Howard Bodily, CA	M.E. Koons, ND	George Hauser, LA	Victor Thomkins, NY	Ben Diamond, SD
06-11-62 Atlanta, GA	Howard Bodily, CA	Earle Borman, CT	M.E. Koons, ND	George Hauser, LA	Victor Thomkins, NY	Nathan Schneider, FL
08-25-64 Atlanta, GA	Earle Borman, CT	Nathan Schneider, FL	David McGuire, CO	George Cameron, TN	Ralph Hogan, PA	Robert MacCready, MA
08-14-66 Atlanta, GA	Nathan Schneider, FL	George Hauser, LA	David McGuire, CO	Inhorn, WI, Adams, MO	Charles Croft, OH	Martin Goldfield, NJ
05-20-68 Atlanta, GA	George Hauser, LA	David McGuire, CO	Thomas Hosty, AL	Stan Inhorn, WI	Walvin Geidt, WA	R.L. Cavanaugh, MD
04-13-70 Atlanta, GA	George Hauser, LA	David McGuire, CO	Thomas Hosty, AL	Stan Inhorn, WI	Walvin Geidt, WA	R.L. Cavanaugh, MD
08-23-71 New Orleans, LA	David McGuire, CO	Charles Okey, ME	Thomas Hosty, AL	Howard Barrick, TN	Walvin Geidt, WA	R.L. Cavanaugh, MD
08-06-72 Atlanta, GA	David McGuire, CO	Charles Okey, ME	Thomas Hosty, AL	Howard Barrick, TN	Walvin Geidt, WA	R.L. Cavanaugh, MD
08-13-73 Scottsdale, AZ	Charles Okey, ME	Charles Croft, OH	Howard Barrick, TN	David Lackman, MT	B.F. Brown, KY	Henry Bauer, MN
04-02-74 Atlanta, GA	Charles Croft, OH	Thomas Hosty, AL	David McGuire, CO	Stan Inhorn, WI	David Lackman, MT	B.F. Brown, KY
04-01-75 Mobile, AL	Thomas Hosty, AL	Henry Bauer, MN	Robert Milliner, NH	Arthur DiSalvo, SC	Stan Inhorn, WI	David Lackman, NT
04-26-76 Atlanta, GA	Henry Bauer, MN	Martin Goldfield, NJ	Robert Milliner, NH	William Ullman, CT	Arthur DiSalvo, SC	Stan Inhorn, WI
04-04-77 Atlanta, GA	Martin Goldfield, NH	Elmer Spurrier, MO	Robert Milliner, NH	Kenneth Wilcox, MI	William Ullman, CT	Arthur DiSalvo, SC
04-10-78 Atlanta, GA	Elmer Spurrier, MO	Arthur DiSalvo, SC	Robert Milliner, NH	Robert Howell, AR	George Anderson, MI	James Mason, UT
04-01-79 RTC, NC	Arthur DiSalvo, SC	Stan Inhorn, WI	Robert Milliner, NH	Charles Sweet, TX	James Mason, UT	George Anderson, MI

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APHL OFFICERS 1951-2002

<i>Meeting Date/ Location</i>	<i>President</i>	<i>V. Pres. (thru '75) President Elect</i>	<i>Treasurer</i>	<i>Secretary/ At Large</i>	<i>At Large</i>	<i>At Large</i>
04-07-80 Atlanta, GA	Darrell Brock, ID	Earle Long, GA	Robert Milliner, NH	J. Mehsen Joseph, MD	Charles Sweet, TX	George Anderson, MI
04-21-81 Cincinnati, OH	Earle Long, GA	George Anderson, MI	Robert Milliner, NH	B.F. Brown, KY	Vern Pidcoe, PA	Charles Sweet, TX
03-24-82 Atlanta, GA	George Anderson, MI	Vern Pidcoe, PA	Ray Lundgren, RI	C. Dwayne Morse, MN	B.F. Brown, KY	James Holston, AL
04-11-83 Atlanta, GA	Vern Pidcoe, PA	Charles Sweet, TX	Ray Lundgren, RI	Mildred Kerbaugh, NC	C. Dwayne Morse, MN	James Holston, AL
05-07-84 Atlanta, GA	Charles Sweet, TX	William Hausler, IA	Ray Lundgren, RI	Mahadeo Verma, DE	Mildred Kerbaugh, NC	C. Dwayne Morse, MN
06-16-85 Carefree, AZ	William Hausler, IA	Fran Urry, UT	Ray Lundgren, RI	Charles Hartwig, FL	Mahadeo Verma, DE	Mildred Kerbaugh, NC
04-06-86 Charleston, SC	Fran Urry, UT	Ray Lundgren, RI	Michael Kimberly, TN	J. Mehsen Joseph, MD	Charles Hartwig, FL	Mahadeo Verma, DE
04-26-87 Atlanta, GA	Ray Lundgren, RI	J. Mehsen Joseph, MD	Michael Kimberly, TN	Henry Bradford, LA	Roger Carlson, KS	Charles Hartwig, FL
08-05-88 Nashville, TN	J. Mehsen Joseph, MD	Mahadeo Verma, DE	Michael Kimberly, TN	Katherine Kelley, VT	Henry Bradford, LA	Roger Carlson, KS
04-01-89 Vail, CO	J. Mehsen Joseph, MD	Mahadeo Verma, DE	Michael Kimberly, TN	Katherine Kelley, VT	Henry Bradford, LA	Roger Carlson, KS
06-16-90 Orlando, FL	Mahadeo Verma, DE	Loris Hughes, NM	Michael Kimberly, TN	Michael Skeels, OR	Katherine Kelley, AK	Henry Bradford, LA
08-17-91 Seattle, WA	Loris Hughes, NM	Jon Counts, AZ	Michael Kimberly, TN	Gary Davidson, OH	Phillip Haines, ME	Katherine Kelley, AK
08-22-92 Gatlinburg, TN	Jon Counts, AZ	Michael Kimberly, TN	Ronald Cada, CO	David Carpenter, IL	Veronica Malmberg, NH	Phillip Haines, ME
06-13-93 Minneapolis, MN	Michael Kimberly, TN	Roger Carlson, KS	Ronald Cada, CO	Carl Blank, WY	David Carpenter, IL	Veronica Malmberg, NH
06-25-94 Atlanta, GA	Roger Carlson, KS	David Carpenter, IL	Ronald Cada, CO	Robert Martin, MI	Carl Blank, WY	Veronica Malmberg, NH
06-17-95 Burlington, VT	David Carpenter, IL	Robert Martin, MI	Eric Blank, MO	Charles Hartwig, FL	Kathleen Meckstroth, OH	Carl Blank, WY
06-16-96 Grand Rapids, MI	Robert Martin, MI	Burton Wilcke, VT	Eric Blank, MO	Frank Lambert, WV	Charles Hartwig, FL	—
06-01-97 San Diego, CA	Burton Wilcke, VT	Michael Skeels, OR	Eric Blank, MO	Pauline Bouchard, MN	Frank Lambert, WV	Charles Hartwig, FL
06-15-98 Breckenridge, CO	Michael Skeels, OR	Eric Blank, MO	Pauline Bouchard, MN	James Pearson, VA	Lou Turner, NC	Frank Lambert, WV
06-27-99 Washington, DC	Eric Blank, MO	James Pearson, VA	Lou Turner, NC	Barbara Erickson, AZ	Mary Gilchrist, IA	Garry McKee, WY
06-11-00 St. Louis, MO	James Pearson, VA	Ronald Cada, CO	Lou Turner, NC	Paul Kimsey, CA	David Mills, NM	Mary Gilchrist, IA
06-10-01 Portland, OR	Ronald Cada, CO	Mary Gilchrist, IA	Norman Crouch, MN	Jane Getchell, DE	Paul Kimsey, CA	David Mills, NM
06-09-02 Albuquerque, NM	Mary Gilchrist, IA	David Mills, NM	Norman Crouch, MN	William Becker, OH	Jane Getchell, DE	Paul Kimsey, CA

OFFICERS BY STATE, 1951–2002

President and Vice Presidents/Presidents Elect who went on to become President

Alabama	Thomas Hosty
Arizona	Jon Counts
California	Howard Bodily
Colorado	David McGuire, Ronald Cada
Connecticut	Earle Borman
Delaware	Mahadeo Verma
Florida	Nathan Schneider
Georgia	E.J. Sunkes, Earle Long
Idaho	Darrell Brock
Illinois	David Carpenter
Indiana	Samuel Damon
Iowa	I.H. Borts William Hausler Mary Gilchrist
Kansas	Roger Carlson
Louisiana	George Hauser
Maine	Charles Okey
Maryland	J. Mehsen Joseph
Michigan	George Anderson Robert Martin
Minnesota	Henry Bauer
Missouri	Elmer Spurrier Eric Blank
New Hampshire	Martin Goldfield
New Jersey	Elmer Shaffer
New Mexico	Loris Hughes David Mills
Ohio	Charles Croft
Oregon	Michael Skeels
Pennsylvania	C.J. Gentzkow Vern Pidcoe
Rhode Island	Ray Lundgren
South Carolina	Arthur DiSalvo
Tennessee	Michael Kimberly
Texas	Charles Sweet
Utah	Fran Urray
Vermont	Francis Lawler Burt Wilcke
Virginia	James Pearson

Vice Presidents/ Presidents Elect who did not become President

Illinois	H. Shaughnessay
Missouri	Irma Adams
Texas	J.V. Irons
Wisconsin	Stan Inhorn

Secretary/Treasurers

Alabama	Thomas Hosty
Colorado	David McGuire Ronald Cada
Minnesota	Pauline Bouchard Norman Crouch
Missouri	Eric Blank
New Hampshire	Robert Milliner
North Carolina	Lou Turner
North Dakota	M.E. Koons
Rhode Island	Ray Lundgren
Tennessee	Howard Barrick Michael Kimberly

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Arkansas	Robert Howell
Arizona	H.G. Crecelius Barbara Erickson
California	Paul Kimsey
Connecticut	Eric Borman William Ullman
Delaware	Mahadeo Verma Jane Getchell
Florida	Nathan Schneider Charles Hartwig
Illinois	David Carpenter
Iowa	I.H. Borts Mary Gilchrist
Kansas	C.A. Hunter Roger Carlson
Kentucky	B.F. Brown

continued, next column

At Large Members of the Board of Directors

continued

Louisiana	George Hauser Henry Bradford
Maine	Phillip Haines
Maryland	C.A. Perry R.L. Cavanaugh J. Mehsen Joseph
Massachusetts	Robert MacCready
Michigan	Kenneth Wilcox George Anderson Robert Martin
Minnesota	Henry Bauer C. Dwayne Morse Pauline Bouchard
Missouri	Irma Adams
Montana	David Lackman
New Hampshire	Veronica Malmberg
New Jersey	Elmer Shaffer Martin Goldfield
New Mexico	David Mills
New York	Victor Thomkins
North Carolina	Mildred Kerbaugh Lou Turner
Ohio	Charles Croft Gary Davidson Kathleen Meckstroth William Becker
Oklahoma	F.R. Hassler
Oregon	William Levin Michael Skeels
Pennsylvania	Ralph Hogan Vern Pidcoe
South Carolina	Arthur DiSalvo
South Dakota	Ben Diamond
Tennessee	George Cameron Howard Barrick
Texas	Charles Sweet
Utah	James Mason
Vermont	Francis Lawler Katherine Kelley
Virginia	James Pearson
Washington	Walvin Geidt
West Virginia	Frank Lambert
Wisconsin	Stan Inhorn
Wyoming	Carl Blank Garry McKee

CLIA AND ITS ROLE IN THE EVOLUTION OF THE PUBLIC HEALTH LABORATORY COMMUNITY



The 1960s was a critical decade for ASTPHLD and the nation's public health laboratory community. In little more than 10 years, the federal government undertook a key regulatory role in enhancing the professionalism of public health laboratory personnel, while the mission of the typical state and territorial laboratory broadened considerably to include food safety and environmental issues. Private clinical laboratories expanded dramatically during the decade. ASTPHLD became an effective communications conduit between the federal Communicable Disease Centers and its membership.

The State of Public Health

A measure of the increased sophistication of the public health laboratory community in the US in the early 1960s can be appreciated by reviewing the topics of the Brown-Hazen Fund Lectures, sponsored by the Division of Laboratories & Research at the New York State Department of Health in Albany from 1958 to 1964.

In 1958, Roger M. Herriott, head of the biochemistry department, School of Hygiene and Public Health at Johns Hopkins University, spoke on “the elements of proteins and nuclear acid chemistry.”¹ The next year, David M. Bonner, professor of microbiology at Yale Univer-

sity, discussed “microbial genetics.” In 1960, James V. Neel, chairman of the department of genetics at the University of Michigan Medical School, lectured on “human genetics.”²

Other topics of the popular lectures during the early 1960s included “cellular, humoral and drug-induced mechanisms of anti-bacterial defense,” “chemistry and biology of bacterial surfaces: newer aspects of antimicrobial agents,” and “endotoxins.”³



New York State Department of Health's
Division of Laboratories and Research,
now the Wadsworth Center.

Victor Tompkins, M.D., the head of New York's Division of Laboratories and Research during the late 1950s and 1960s and an influential voice in the senior councils of ASTPHLD, reflected the new

Twenty million people are dead worldwide in the wake of the Spanish influenza pandemic.

1919

complexity of laboratory research. A 1934 Cornell University graduate who did residencies in pathology after earning a degree from Albany Medical College of Union University in 1938, Tompkins started with the division in 1947 as a senior pathologist. Over the next decade, Tompkins helped develop a clinical laboratory investigation through a study of chronic non-tuberculosis pulmonary disorders. He was also instrumental in forging a strong bond between the division and the teaching program of the Albany Medical College.⁴

Tompkins and his immediate predecessor, Gilbert Dalldorf, established a strong presence for the division in many different fields of scientific research, including virology, micromorphology and antibiotics. Under Dalldorf, the division established the Antitoxin, Serum and Vaccine Laboratories. Tompkins after 1958 helped steer the division in the direction of investigating environmental sanitation issues.⁵

Tompkins believed that public health laboratories had to move beyond simple identification of disease vectors and do more to analyze the root cause of disease.

“With the conviction growing that the genetic endowment of man will one day require an emphasis equal to that accorded to his environment,” Tompkins said in 1960, “the later years have found the laboratory seeking skills and insights for the future. The influence of genetic factors in disease

susceptibility and other factors in the epidemiology of health certainly merit study. Already in diabetes, cystic fibrosis, hemoglobinopathies and some mental disorders, genetic factors are measurable. Detection of traits, the great problem of the heterozygote, is no longer a matter solely for eugenicists, but for proper assessment of morbidity and mortality.”⁶

If Tompkins and the New York Division of Laboratories and Research represented cutting-edge thought and technologies during the early 1960s, then the reality was that many of the nation’s public health laboratories were still fulfilling the missions they had been charged with

since the 1930s. Pre-marital testing for venereal disease remained a top priority for many state and territorial public health laboratories. A national survey by the American Social Health Association in 1963 revealed that even with premarital testing, venereal disease continued to be a virtual epidemic in the US. The association estimated that the number of venereal disease cases in the coun-

try was approaching 1.5 million, although fewer than 400,000 cases were actually reported.⁷

At the end of the 1950s, Florida’s public health laboratories were handling nearly 700,000 serology specimens a year. Most of the states which conducted premarital testing for syphilis at the time were located in the South, although Michigan and Massachusetts both handled more than 400,000 specimens in 1959. Even



In 1950, Elizabeth L. Hazen, Ph.D. (left) and Rachel Brown, Ph.D. of the New York State Department of Health, isolated an antifungal substance known as Nystatin, named after the state.

The Southern Public Health Laboratory Association, the nation’s first organization for public health laboratory directors, is founded.

North Dakota with its small population sent nearly 50,000 specimens to its laboratories in Bismarck and Grand Forks.⁸

As late as 1964, immunology tests—the bulk of which consisted of tests for syphilis—accounted for more than half of the just over 13 million specimens reported in ASTPHLD’s first Consolidated Annual Report.⁹ Approximately one percent of the more than seven million immunology tests conducted by ASTPHLD members in 1964 were rickettsia specimens, and most of those samples were reported from laboratories in the Rocky Mountain states.

Still, state and territorial public health laboratories handled a wide variety of specimens other than serology tests in 1964. Bacteriology specimens remained an important function of the typical laboratory. Of over 1.9 million specimens reported, just less than one-third were naso-pharyngeal swabs for influenza. Mycobacteriology specimens accounted for more than 470,000 specimens, while laboratories reported 261,000 enteric samples and nearly 320,000 gonococcus specimens. There were only 11,800 mycology specimens reported in 1964, the bulk of those from the New York laboratories.¹⁰

Intestinal parasitology tests totaled 370,000 specimens, while virology was an emerging area of interest in 1964. The 86,000 virology specimens reported were about evenly divided between rabies tests and viral isolations tests.¹¹

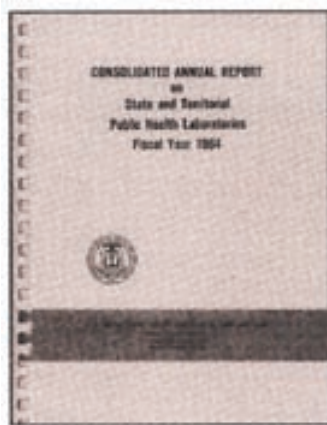
Public health laboratories had increased fund-

ing for virology specimens in the late 1940s and early 1950s as the poliomyelitis scare swept America. Laboratory personnel had gained valuable experience in tracking down polio outbreaks, although the introduction of the Salk and Sabin vaccines in the mid-1950s had all but eradicated the incidence of polio by the mid-1960s.¹²

In 1964, only 10 state public health laboratories were conducting tests for hematology specimens. More esoteric tests in the fields of immunohematology and hemoglobinopathy were being conducted by a handful of states, including New York.

Clinical chemistry was a growing area of public health laboratory interest in 1964. More than 1.1 million chemical chemistry samples were handled that year, with the great majority of the testing consisting of screening for inborn errors of metabolism.¹³ Already by 1964, environmental microbiology was a staple of many state and territorial public health laboratories, with a predominant number of the specimens consisting of water samples.

The next largest batch of specimens were dairy-related, corresponding to laboratories’ longtime tradition of testing for food-borne illnesses. In the environmental chemistry field, water samples made up nearly half of the 407,000 specimens. Significantly, several state laboratories processed about 20,000 radiological samples in 1964, an indication of the increasing prevalence of the peaceful use of the atom for electric power and health care initiatives in the 1960s.¹⁴



1929
Wall Street Crash.

Perhaps the most interesting statistic from the 1964 Consolidated Annual Report concerned annual expenditures of the 50 laboratories responding to ASTPHLD's survey. Total lab expenditures came to just over \$35 million, an average of \$700,000 for each of the 50 laboratories.¹⁵ An earlier 1962 ASTPHLD survey revealed that only three states had an annual budget of more than \$1 million.¹⁶ And, state laboratory director salaries averaged about \$9,000 a year in the early 1960s.¹⁷

From a facilities standpoint, state and territorial public health laboratories were relatively modern in 1964. The post-World War II economic boom coincided with a societal interest in medical and scientific research. As a result, 40 US states either built new or remodeled existing public health laboratories between 1950 and 1960.¹⁸ Colorado, Delaware, Georgia, Hawaii and Kentucky all built new public health laboratories in 1960 alone.

ASTPHLD's member laboratories were doing much with little in 1964. Laboratory science was becoming increasingly complex, and society was primed to expect miracles from the personnel in the white coats. The federal government was soon to make a major change in the public health and health care field.

The Great Society

On July 30, 1965, President Lyndon B. Johnson flew to Independence, Missouri to sign Medicare into law.¹⁹ With him at the public ceremony were former President Harry Truman and Vice President Hubert H. Humphrey. Medicare and its companion

legislation, Medicaid, illustrated the triumph of politics in the field of public health. Johnson had been impressed by the plight of elderly and poor Americans during his campaigns for the vice-presidency in 1960 and presidency in 1964. His Great Society pledged to place the federal government whole-heartedly behind providing patient care as well as strengthening public health initiatives.²⁰

Johnson and his Great Society congressional lieutenants crafted the Medicare and Medicaid legislation as an amendment to the Social Security Act of 1935. "That was politically the most feasible way to create a trust fund and create a program that would get health care to old people," recalled Joseph Califano, a longtime Johnson intimate, "but Medicare was basically buying health services. And Medicaid was hooked on to the welfare system, because that was the only way we could pass Medicaid in 1965."²¹

The passage of the Medicare amendments had immense implications for the public health community. The official inauguration of Medicare on July 1, 1966 meant that the federal government now had a hand in regulating the nation's health care industry. The Medicare Joint Commission that the Johnson administration had set up in the summer of 1965 to examine the efficient implementation of Medicare had suggested scores of hospital health and safety requirements, including medical standards for laboratories, X-rays and anesthesiology departments.²² The next year, those standards were applied to the nation's public health laboratories.

The passage of the Clinical Laboratory Improvement Act in 1967 brought about sweeping

The National Venereal Disease Control Act of 1938 puts state public health laboratories in the forefront of the nation's war on syphilis.

changes for the public health laboratory community. Known by its acronym, CLIA '67 basically provided for federal regulation of all laboratories in the US involved in interstate commerce and that received Medicare reimbursement.

“CLIA is very important for the understanding of the history of public health laboratories in the US,” explained Dr. Carl Blank.²³

For Blank and the nation’s other public health laboratory directors, the most important facet of the federal regulation brought about by CLIA was the licensure requirement for public health laboratory directors.

“Under CLIA,” Blank said, “you could not direct a laboratory unless you had a doctorate in biological, physical or chemical science, an MD, or a doctorate of science in laboratory science.”²⁴

Many of the ASTPHLD members in the 1960s already had doctorates or were MDs, but some of the directors, especially in the smaller states, often only had master’s degrees. Blank’s boss at the Utah Department of Health laboratories, Russell Fraser, MA, ran the day-to-day operations of the laboratories for 13 years. “He never asked to speak to the pathologists or the medical technicians,” Blank recalled. “And in those days, MDs wouldn’t talk to you if you weren’t a doctor.”²⁵

Part of the problem with licensure of laboratory directors stemmed from the fact that a state or territorial public health laboratory director in the 1960s frequently had to possess more finely-honed

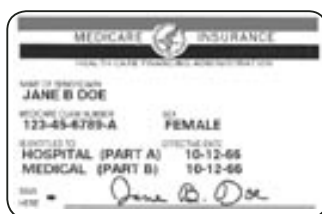
political skills than medical or scientific expertise. “There were 56 states and territories back then,” Blank said, “and there were 56 different ways of organizing a public health laboratory.”²⁶

Utah was typical in the way it set up its public health laboratories. The Utah Department of Health in 1964 consisted of units, sections, subdivisions and divisions, with each reporting to a higher-up in the chain of command. Public health laboratory employees, including department and division heads, were typically merit employees, with the commissioner of the board of health most frequently a gubernatorial appointment. The commissioner usually answered to a state board of health, also appointed by the governor.²⁷

Licensure had been an issue in the public health laboratory community long prior to the passage of CLIA. As early as 1940, Howard Bodily, the genial director of the California State Public Health Laboratories, had

developed a laboratory licensure program in Sacramento. Bodily, who went on to become one of CDC’s most influential laboratory consultants, built the California program into a model for the rest of the nation during the 1950s.²⁸ New York and Pennsylvania were two other states that had established effective licensure programs before the 1965 passage of Medicare legislation.

Some states anticipated the licensure changes. Nathan Schneider, Florida’s laboratory director, had attended the Medicare signing ceremony in Independence. When he returned to Tallahassee,



The US military begins the production of penicillin, the world’s first wonder drug, discovered by Sir Alexander Fleming the previous year.

Schneider's first priority was to work with the Florida Legislature, which passed a laboratory licensure law in 1965.

During the next two years, Schneider worked to bring his laboratories into compliance with the Florida law and the expected 1967 CLIA requirements. "Labs could do testing for Medicare under CLIA," Schneider explained. "But it involved a lot more than the inspection of laboratories. We had to set up proficiency testing, the examination of licensees, and workshops for laboratory personnel."²⁹

The Wisconsin State Public Health Laboratories "were involved heavily with CLIA," recalled Stan Inhorn, longtime director of the Madison laboratories. "Laboratory practice, in general, was unregulated at the time. Medicare defined three categories of laboratories: private, hospitals and doctors' offices."³⁰

Inhorn, who served on the Medical Laboratories Service Advisory Committee, noted that CLIA "did put public health laboratories into regulation for the first time. We had to develop a cadre of personnel to maintain all of the testing programs. That was a big change in the 1960s."³¹

When CLIA took effect, "Texas had never had a laboratory licensure law," recalled Charles Sweet, former director of the Texas State Health Department Laboratories. "There were three things we had to do."³²

The first task Sweet and his staff undertook was getting its regional laboratories licensed in one

year following the passage of CLIA. "And many of those laboratories were located in dumpy buildings," he pointed out.³³

Number two on the priority list was to establish procedures to "begin to do tests we had avoided in the past," Sweet said. "We got into clinical chemistry tests we had never considered before."³⁴ The third and final change brought about by CLIA in Texas involved the establishment of fees.

"We had always avoided fees like the plague," Sweet noted. "But after CLIA, we started charging for the first time. Since then, fees have become part of public health laboratories."³⁵



Some smaller and more rural states that were less equipped to deal with the changes brought about by CLIA licensure requirements observed the letter, if not the spirit, of the law by hiring a figurehead pathologist as director of the laboratory. More often than

not, the figurehead director rarely had to be on the scene to direct affairs at the laboratory.³⁶

Those laboratory directors who had already implemented licensure programs offered their expertise to help laboratories in their states and surrounding states comply with licensure requirements. Morris Schaeffer, director of the Bureau of Laboratories of the Department of Health for the City of New York, was particularly helpful in developing licensure statutes for neighboring Mid-Atlantic states.³⁷

The federal government establishes the Communicable Disease Centers in Atlanta, Georgia.

1946

Finally, the CLIA regulations magnified the importance of the Doctor of Public Health program at the University of North Carolina—Chapel Hill. Established in 1961, the program filled a prime need for the nation's public health community. During its 20 years of existence, it provided the opportunity for dozens of state and territorial public health laboratory directors to get the hands-on and theoretical experience they needed to head an increasingly complex public health laboratory system.

“One of the things that led to the need of the North Carolina program was that the 1960s were a transition era,” said Dr. Carl Blank, a 1967 gradu-

ate of the program. “Laboratory directors needed more administrative work. There was a lot more federal money around with Medicare. Ironically, many of the old-timers fought it. They said that an MBA could manage a lab, but the director often had to be the buffer between the employees and state politics.”³⁸

For the nation's public health laboratory community, the 1960s were a decade of both tumult and change. ASTPHLD and its members emerged from the 1960s with both increased prestige and professional credentials. They would need both to meet the public health challenges of the 1970s.

The United Nations establishes the World Health Organization (WHO).
Fluoridation of community water supplies begin.

YEAR STATE/TERRITORIAL PUBLIC HEALTH LABORATORY WAS ESTABLISHED

Alabama	1908	Louisiana	1894	Oklahoma	1908
Alaska	1936	Maine	1917	Oregon	1904
Arizona	1912	Maryland	1910	Pennsylvania	1905
Arkansas	1942	Massachusetts	1895	Rhode Island	1894
California	1905	Michigan	1907	South Carolina	1909
Colorado	1899	Minnesota	1888	South Dakota	1911
Connecticut	1905	Mississippi	1910	Tennessee	1914
Delaware	1898	Missouri	1906	Texas	1903
District of Columbia	1878	Montana	1917	Utah	1928
Florida	1903	Nebraska	1913	Vermont	1898
Georgia	1905	Nevada	1909	Virginia	1908
Hawaii	1891	New Hampshire	1906	Washington	1898
Idaho	1911	New Jersey	1896	West Virginia	1898
Illinois	1904	New Mexico	1914	Wisconsin	1903
Indiana	1905	New York	1914	Wyoming	1939
Iowa	1904	North Carolina	1908	Puerto Rico	1909
Kansas	1886	North Dakota	1907	Virgin Islands	1931
Kentucky	1911	Ohio	1889		

Summary

	<i>Before 1900</i>	<i>1900-1910</i>	<i>1911-1920</i>	<i>1921-1930</i>	<i>1930-1945</i>
Number of States/Territories	14	24	8	2	4

NEW CHALLENGES



he environmental movement burst into the nation's consciousness on April 22, 1970. Before that spring day was over, millions of Americans from Berkeley to Boston had participated in community clean-ups, marches and university teach-ins.

The media dubbed it Earth Day, and the loosely-knit amalgam of celebrations across the country signified a new awareness of the toll that air and water pollution were taking on American communities.¹ One writer called Earth Day “the continental congress of the American environmental movement.”²

As US forces continued to withdraw from Vietnam and Cambodia, it was a time of intense upheaval in the American body politic. In Ohio, four Kent State University students were killed by National Guard troops who fired on a student demonstration protesting the recent US incursion into Cambodia, raising antiwar passions to new heights. All defendants in the chaotic Chicago Seven conspiracy trial were acquitted of inciting riots at the 1968 Democratic National Convention in the Windy City.³



1971 Multichannel Analyzer system used for environmental particle counting and size distribution studies.

As the US wound down its involvement in Vietnam during the early 1970s, environmental activism became for many young people the anti-war movement of the decade. Ironically, the US President that a generation of anti-war activists had grown to hate became the founding father of much of today's federal environmental legislation.

From 1969 until his resignation in 1974, Richard M. Nixon signed into law the National Environmental Policy Act, the

The Association of State and Territorial Public Health Laboratory Directors (ASTPHLD) is organized at the 1951 annual meeting of the Conference of State and Provincial Public Health Laboratory Directors in San Francisco.

Water Pollution Control Act, the National Pollutant Discharge Elimination Act, the Clean Air Act, the Safe Drinking Water Act, the Energy Supply and Environmental Coordination Act and the Endangered Species Act.⁴ In 1972, the Nixon administration elevated environmental policy to cabinet level when it created the Environmental Protection Agency.

The codification of environmental laws on a national and state level during the 1970s had significant implications for the nation's public health laboratory community. To determine compliance with the newly-enacted laws, air and water samples from power plants, manufacturing facilities, sewage treatment plants, oil refineries and the like had to be tested.

At the beginning of the 1970s, the only facilities equipped to handle a dramatically increasing volume of air and water samples were public health laboratories.

"The 1970s was the time when we really got into pesticide testing and technology," recalled Dr. Carl Blank, then a public health consultant for the CDC.

"All of a sudden, there was more money available for environmental and toxicology laboratories. A lot of those labs were able to purchase infra-red spectrophotometers with that federal pesticide funding."⁵

Some of the early pesticide and environmental testing was diverted to state agricultural laboratories, which also enjoyed a windfall of government funding for new testing procedures. Dr. Stan Inhorn, retired director of the Wisconsin State Laboratory of Hygiene, pointed out that the jump in environmen-

tal samples broadened the world of the public health laboratory director.

"Many of the lab directors recognized, especially as environmental activities increased, the need to try to develop relationships with other federal agencies," Inhorn said.⁶

The workload did increase as public health laboratories were called upon to test pesticide and environmental samples during the 1970s. In 1969, US public health laboratories handled just over 1.5 million environmental microbiology samples, with the lion's share—almost 1.2 million samples—consisting of water samples.⁷ Five years later, in the wake of the passage of federal clean water and safe drinking

water legislation, the number of environmental microbiology samples nearly doubled. Public health laboratories in 1974 handled 2.55 million environmental microbiology water samples.⁸

The testing of environmental chemistry samples showed steady gains during the 1970s.

In 1969, public health labora-

tories reported to ASTPHLD that they had handled just over 446,000 environmental chemistry specimens. Almost half of the samples—just over 206,000 samples—were water samples.⁹ In 1974, the number of environmental chemistry samples jumped by more than 50 percent, to slightly more than 693,000 samples.¹⁰ In the five years between 1969 and 1974, the number of environmental chemistry air specimens increased 650 percent, reflecting the impact that the Clean Air Act of 1970 had on the nation's



1971 Hetrol Slide Set for the detection of infectious Mononucleosis

Dr. Jonas Salk introduces the first successful vaccine against poliomyelitis.

1953

public health community.¹¹ By 1979, environmental chemistry samples had jumped 50 percent again, thanks mostly to a doubling of water specimens to 444,000 samples.¹²

The growth in environmental microbiology and chemistry specimens during the 1970s was accompanied by corresponding growth in all public health laboratory work. In fact, total specimens handled nearly doubled during the decade, from 13.46 million in 1969 to 26.85 million in 1979.¹³ More importantly, the flow of federal money into the nation's public health laboratories increased even more dramatically during the decade. State and territorial public health laboratories reported to ASTPHLD in 1969 that total lab expenditures exceeded \$47.35 million. Ten years later, in 1979, total lab expenditures had increased more than 125 percent to \$115.63 million.¹⁴ The increased funding also meant significant jumps in laboratory personnel. Between 1969 and 1979, the average state and territorial public health laboratory staff grew from 46 people to 290 people.¹⁵

The growth in both environmental microbiology and environmental chemistry specimens dropped off dramatically after 1980. In their recent analysis of ASTPHLD Consolidated Annual Reports, Dr. Carl Blank and the CDC's David Adcock attributed the decrease to a number of factors.

"This is probably due to the fact that some states transferred these tests to newly-created environmental department laboratories," they wrote in 2001. "State agricultural departments have assumed a larger part of this workload, and/or more commer-

cial laboratories have found it advantageous to enter this testing area, which can be highly profitable."¹⁶

Blank and Adcock also pointed out that the upsurge in environmental chemistry programs during the 1970s, primarily in response to the need for increased pesticide testing, "led to the expansion of state laboratory toxicology programs" in the 1980s and 1990s.¹⁷

"Like Two Brothers Constantly Fighting"

In many ways, the 1970s were the golden age of cooperation between the nation's public health laboratory community and the CDC. The renamed Center for Disease Control served as mentor, sounding board and source of funds for public health laboratory directors. For much of the decade, the biennial meetings of the ASTPHLD were held in Atlanta.¹⁸

"The association had its executive committee," recalled Dr. Stan Inhorn, "but the meetings were always held in Atlanta. We were heavily dependent on the CDC. Essentially, the annual meeting was 'what's new at CDC?' It was pretty much all scientific, and we would take copious notes. At the annual meetings, the only social event was the annual banquet."¹⁹

For Inhorn, the exchange was usually productive. "CDC's primary focus at the meetings was reporting on new technology," he said. "But for us, that was a transfer of information and technology."²⁰

The reality was that ASTPHLD in the 1960s and 1970s barely had enough money in the treasury



Dr. Robert Guthrie develops a screening test for phenylketonuria (PKU).

at any given time to send out annual meeting mailings. “The association back then had a budget of a few thousand dollars a year,” Inhorn explained. “Our annual banquet was underwritten by equipment manufacturers.”²¹

State and territorial public health laboratory directors from the 1960s and 1970s speak fondly of the social aspect of the meetings in Atlanta. There was an informality that allowed laboratory directors and vendors to get together and discuss the latest laboratory apparatus at Atlanta restaurants.

Nathan Schneider, longtime director of Florida’s public health laboratories and 1966 president of ASTPHLD, was thankful that CDC covered so much of the association’s expenses in those days. “We relied a lot on workshops that CDC provided,” he said. “We were always sending people to courses that CDC offered. And they were deeply involved with keeping all of the records. The Consolidated Annual Report wouldn’t have been possible without the CDC.”²²

Blank can remember assignments to the ASTPHLD committee that worked with the CDC to publish the Consolidated Annual Report. “That Consolidated Annual Report made you assess what you were doing,” he said. “And CDC also helped us put out a comprehensive salary survey every five years.”²³ Jess Norman of the CDC staff worked

closely with ASTPHLD members during the 1970s in compiling the Consolidated Annual Report.

CDC also provided supplies for many of the nation’s public health laboratories in the 1970s. “At one time, CDC provided reference and identification services,” Blank said. “And CDC also used to provide standardized reagents.”²⁴

CDC’s own laboratories were a valuable resource that ASTPHLD members could always draw upon. They were headed for most of the 1960s and early 1970s by Dr. U. Pentti Kokko, a genial Finn who had graduated from the University of Helsinki and then did graduate work at Johns Hopkins University

before joining CDC. The laboratories in Chamblee outside Atlanta, Phoenix and Kansas City provided the state and territorial laboratories technical advice on laboratory design and construction.²⁵ Kokko’s assistant, Dr. Jim Mason,

and his successor, Dr. Roslyn Q. “Robbie” Robinson, were always strong advocates for the system of state and territorial public health laboratories.²⁶

Blank, who worked at the Utah Department of Health Laboratories from 1951 to 1972, explained that during that period, “CDC would often pay expenses for training sessions. CDC paid for everything for us in Utah. At least 90 percent of the people attending CDC training courses were state employees.”²⁷



ASTPHLD membership outside of CDC headquarters in 1970.

Rachel Carson raises awareness of environmental threats in the *Silent Spring*.
State public health laboratories are soon doing environmental testing.

That started to change after 1975 when private and clinical laboratories began to compete with public health laboratories on a broader scale. “In the late 1970s and early 1980s,” Blank, who had joined CDC as a consultant in 1972, said, “we noticed that we were getting fewer people from state labs attending our courses. We were down to 40 percent of the class load in the early 1980s. It eventually got down to 20 percent of the class load.”²⁸

CDC and ASTPHLD went through a period of strained relationship during the late 1980s and early 1990s, primarily because of the centers’ decision to back away from its longtime mission of providing laboratory training. Even during the years of greatest cooperation during the 1970s, friction was not unheard of.

“I came to Texas back in 1973,” said Charles Sweet, longtime director of the Texas Department of Health Laboratories. “I guess I was young and naïve, but my perception of the CDC was similar to the perception I had of the FBI. It astounded me that some of the older directors were so bitterly critical of the CDC. ASTPHLD and CDC were like two brothers constantly fighting, finding anything to gripe about.”²⁹

In retrospect, some of that friction stemmed from states’ rights issues that had emerged during the 1960s. The passage of Medicare legislation in 1965 created the perception in the minds of many in the public health community that CDC had a regulatory role to play. In reality, CDC served as a consultant to the Health Care Financing Authority (HCFA) in the wake of the Medicare passage. “CDC never had a regulatory authority for Medicare,” explained Dr. Carl Blank.³⁰ But the perception among some old-

line laboratory directors at the time—who resented the federal government inspecting their laboratories as part of licensure requirements—was that CDC was orchestrating a takeover of the state and territorial public health laboratory community.

Blank and other former ASTPHLD directors dispute that perception and note that “there’s a need for regulation. The great majority of labs want to do good work. But there’s a certain percentage that try to take shortcuts. There’re a certain number of people who don’t belong in the lab business.”³¹

Swine Flu and Legionnaires’

By the mid-1970s, many Americans believed that medical science and laboratory research had all but eliminated the threat of serious infectious disease in the United States. Typhoid had effectively disappeared with the onset of water treatment techniques. Smallpox was such a rarity that the US surgeon general no longer required that newborns be vaccinated. A host of childhood diseases such as mumps, measles and diphtheria had been banished, thanks to near universal vaccination in the wake of the federal Vaccine Assistance Act of 1962.³² Widespread use of nicotinic-acid pharmaceuticals meant that tuberculosis had all but disappeared, and antibiotics and other microbial medicines were slowly eradicating deaths from syphilis and streptococcal infections.

State and territorial public health laboratories continued to be the nation’s front line of defense for potential bacterial and viral infections. Labs in the Mountain West tested for rickettsial fevers, and the odd case of pellagra turned up in southern public health laboratories. Salmonella and E. coli—the

First voluntary PKU screening test established in Massachusetts.

1962

culprits in food poisoning -frequently were identified by laboratories around the nation in the 1970s. Prenatal testing laws in a majority of the states meant that rubella identification was a typical part of a lab's workload at the time.

Laboratories in the Northeast, particularly the New York State Department of Health, performed groundbreaking work in medical mycology and fungal samples during the 1970s.³³ PKU testing was just beginning to emerge at the time, laying the basis for full-scale genetic testing in state and territorial laboratories during the 1980s.³⁴

Public health laboratory directors and other health care professionals could perhaps be forgiven

if they thought in 1975 that modern medicine had finally achieved victory in the fight against infectious disease. Any sense of complacency, however, was shattered early in 1976 when US Army recruits at Fort Dix, New Jersey began to exhibit symptoms consistent with the influenza pandemic of 1918-1919 that had killed half-a-million Americans and more than 20 million people worldwide.³⁵

What came to be known as the 1976 swine flu epidemic engendered calls for producing 200 million units of flu vaccine that would be used to vaccinate every American in preparation for what was feared to be a pandemic the following winter.³⁶ The vaccination program was beset by problems from the

THE TAFT CENTER

One federal agency that assisted state and territorial public health laboratories in the emerging area of environmental health testing was the Robert A. Taft Sanitary Engineering Center, located in Cincinnati, Ohio. Named for the influential US Senator from the Buckeye State, the center was a division of the US Public Health Service.¹

With its Stream Pollution Investigations Station and Water and Sanitation Investigations Station, both located in suburban Cincinnati, the Taft Center was a key link in the Public Health Service's mission to help public health

laboratories guard the nation's water supply. Long before Congress passed the landmark Clean Water Act of 1972, Taft Center personnel were working to pinpoint the source of water-borne contamination. Taft Center personnel began studying household sewage disposal systems in 1949, and its 1961 study on stream pollution is still in print.²

In the 1950s and 1960s, the Taft Center's Dr. Luther Black worked with and inspected state and territorial public health laboratories for the effectiveness of water testing procedures.

"They would come to your laboratory,"

The first effective vaccine for measles is licensed in the United States.

1963

start. Pharmaceutical companies doubted that they could produce the vaccine on the fast-track schedule demanded by the government. Insurance companies refused to write blanket liability policies for the pharmaceutical manufacturers. The national media charged that the vaccination program was a government boondoggle designed to win votes for the November reelection of President Gerald Ford.³⁷

Ford lost the November 1976 election to Jimmy Carter, the governor of Georgia. The incoming Carter administration quickly moved to scale back the vaccination program. The predicted swine flu epidemic had never materialized, and to make matters far worse, the vaccine caused a sharp up tick

in the incidence of Guillan-Barré Syndrome, a rare, paralytic nervous disease.³⁸

The denouement of what many were openly calling the swine flu fiasco provided an uncomfortable illustration of the sometimes perilous conjunction of public health and politics. In February 1977, incoming Secretary of Health, Education and Welfare Joseph Califano demanded the resignation of Dr. David Sencer, head of CDC for the past 11 years.³⁹

The Carter administration had sought a public health scapegoat for the swine flu affair. Ironically, Sencer and his staff had the month before recorded one of CDC's finer moments. Legionnaires attending the July 1976 Pennsylvania state convention of the

said Dr. Carl Blank, who recalled first working with Taft Center staffers when he was the assistant director of the Utah state laboratories in the mid-1950s, "but only upon your invitation. They would inspect water testing procedures, approve the methodologies in use and suggest new technologies."³

Blank also remembered that the Taft Center was "very helpful. They preceded the Environmental Protection Agency. They were very interested in stream pollution and clean water supply."⁴

In the early 1960s, under the leadership of

Conrad P. Straub, PhD, the Taft Center worked closely with state and territorial public health laboratories, sending out proficiency and testing samples and offering training courses on testing methodologies at its Cincinnati headquarters.⁵ Blank recalled that Taft Center personnel put on programs at ASTPHLD annual meetings, particularly when the Association visited Cincinnati for annual conferences in 1958 and 1981.⁶

"The Taft Center was helping us long before the CDC got into the environmental area," Blank said.⁷

President Lyndon Johnson signs Medicare legislation which provides government-subsidized health insurance for elderly Americans.

American Legion in Philadelphia had come down with respiratory symptoms consistent with swine flu. Within a week, three Pittsburgh Legionnaires were dead, and dozens more were deathly ill with fever and lung congestion.⁴⁰

City and state public health officials notified CDC. Two days later, CDC investigators were in Philadelphia, Pittsburgh and Harrisburg collecting samples. By Thursday, August 4, CDC laboratories had ruled out swine flu. The bug was bacterial rather than viral, although it took laboratory staff most of the fall to make that determination.

In mid-January 1977, CDC announced it had found the bacteria responsible for causing what the

media had quickly dubbed Legionnaires' disease.⁴¹ The culprit was a poorly staining, Gram-negative, water-borne bacillus called *Legionella pneumophila*.⁴² The method of transmission was traced back to the hotel's heating, ventilation and air-conditioning system, and the disease was discovered to be eminently treatable with such antibiotics as erythromycin.⁴³

For ASTPHLD and its members, the 1970s were years both of growth and challenge. The challenges would accelerate sharply in the 1980s as the nation's state and territorial public health laboratory community dealt with the AIDS epidemic and the unraveling of its decades-long relationship with CDC.

Congress passes and President Johnson signs the Clinical Laboratory Improvement Act (CLIA), which requires that all public health laboratories and laboratory personnel involved in interstate commerce be licensed. The new law, in effect, gives the Communicable Disease Centers a regulatory function for the first time.

RISE OF HIV AND CDC REORGANIZATION

1980s



he nation's public health laboratory community could have been forgiven in 1980 if it believed that the scourges of infectious disease were finally behind them. Increasingly sophisticated medical and laboratory technology had helped the public health community eradicate, minimize or all but eliminate such age-old torments as smallpox, measles, mumps and diphtheria. New genetic testing techniques gradually were replacing much of the newborn serology screening that the public health laboratory community had pioneered early in the century.

But that was before AIDS. The onset of what would become the most virulent infectious disease of the last quarter of the 20th century began in 1980. Before Acquired Immune Deficiency Syndrome would become a household word, the nation's public health laboratory community would be drawn into a political, economic and social maelstrom that has continued to this day.



The AIDS epidemic created a significant influx of federal money into state public health laboratory testing protocols during the 1980s. But two other factors during the decade shaped new challenges for state public health laboratorians. Private health laboratories began to play an increasing role in

testing for antibiotic-resistant organisms, dairy testing and other areas that had long been the province of state public health laboratories. And the decades-long relationship between the CDC and state public health laboratories began to unravel, driven by political philosophies that emphasized a lesser role for government in the daily affairs of society. The reorganization of CDC in the early 1980s resulted in a pullback of federal funding for training, a vacuum that the state public health laboratory community was compelled to seek ways to fill.

Congress establishes the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH).

The nation's first Earth Day in April creates an American environmental consciousness.

Dying Like Flies

Dr. Carl Blank, then a training program director with CDC's Public Health Practices Program Office (PHPPO), remembered the theme of the 1986 ASTPHLD annual conference in Charleston, South Carolina. "Speaker after speaker said, 'We have infectious diseases under control. Now, we must treat chronic diseases,'" Blank said. "A year later, HIV broke out and landed in the public health laboratory. Antibiotic-resistant strains of tuberculosis broke out and landed in the public health laboratory. We've learned that the adaptability of the microorganism is amazing."¹

The AIDS crisis had been simmering for nearly a decade before it finally reached in the nation's state public health laboratories. Researchers at the National Institutes of Health (NIH) had diagnosed the first American case of AIDS in June 1980.² That same month, researchers at UCLA wrote an article on *Pneumocystis Pneumonia* that appeared in the CDC's *Morbidity and Mortality Weekly Report*.³ The description of an exceedingly rare form of pneumonia that was beginning to manifest itself in gay men on the West Coast was the first mention of AIDS reported in American medical literature.

By July, CDC had formed a task force on Kaposi's sarcoma and opportunistic infections.⁴ Physicians in 1979 and 1980 were seeing an increasing number of gay men in California and New York showing symptoms of Kaposi's sarcoma, an

extremely rare cancer that normally afflicted Jewish and Italian men in their late 50s and 60s. It typically was benign, and the victims usually died 10 or 20 years later of something completely different.⁵

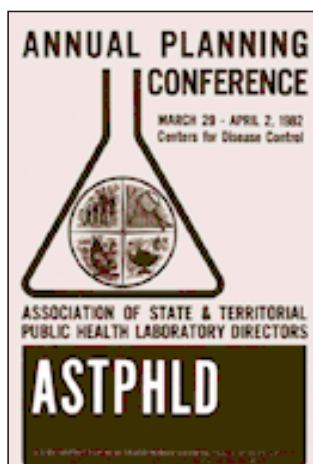
Unlike the typical Kaposi's sarcoma cases, however, the disease affecting gay men in their 20s and 30s was accompanied by rashes, fatigue, rapid weight loss and enlargement of the victim's lymph glands. It was almost as if something was attacking the patient's immune system.

As it turned out, that was exactly what was happening. By August 1981, CDC was reporting more than 100 cases of the new disease in the US, the vast majority of them young gay men.⁶

In March 1982, the US Public Health Service held a conference at CDC's headquarters in Atlanta to review what was known of the disease. At the same time, the National Cancer Institute established an epidemiological working group on Kaposi's sarcoma, primarily because cases were increasingly common in places such as

San Francisco and New York.

Epidemiologists and public health laboratory staff spent the remainder of 1982 studying the new disease and its manifestations. Using increasingly sophisticated serological testing, epidemiologists already were concluding that the disease was a blood-borne virus. New proof of that hypothesis came late in the year when CDC reported a case of AIDS in a previously healthy infant who had



The US Surgeon General recommends against routine smallpox vaccination for children, a clear signal of the success of CDC and WHO smallpox eradication efforts.

received a blood transfusion.⁷ By early 1983, laboratory researchers had identified intravenous drug users as another at-risk community for contracting the disease, further strengthening the suspected link between AIDS and the transfer between human hosts of blood, saliva and semen.

It also was obvious by 1983 that the disease was deadly. In September, CDC reported 2,259 cases of AIDS, almost 1,000 of which resulted in the victim's death.⁸ The mortality rate at the time was approaching 40 percent.

In April 1984, the National Cancer Institute reported that AIDS was caused by a blood-borne retrovirus.⁹ What would become known as the Human Immunodeficiency Virus (HIV) was an insidious killer, destroying white blood cells and exposing the victim to attacks by dozens of cancers, bacteria and viruses that overwhelmed the patient's immune system. In May 1985, CDC reported that there were nearly 10,000 cases of AIDS in the US, and the mortality rate was fast approaching 50 percent.¹⁰

Privately, CDC researchers estimated at the time that there were more than one million Americans infected with HIV. In retrospect, that number in 1985 was closer to half-a-million Americans, but it was clear to epidemiologists and public health laboratory researchers that AIDS had become a full-blown pandemic.¹¹

From the start, HIV was a political and social minefield for the nation's public health laboratory community. Since state public health laboratories had been in the forefront of syphilis serology testing for half-a-century, blood samples were often routed to state public health laboratories for initial testing for HIV. But because HIV primarily infected those in the gay community, the disease rapidly took on political overtones.

Activists in the gay community charged that the Reagan administration and the federal health bureaucracy were ignoring the most significant disease outbreak in the US since the influenza pandemic of 1918-1919.¹² CDC and other medical researchers countered that the disease was easily preventable, that the gay community needed to alter its lifestyle and practice "safe sex." Complicating the matter was that the disease also afflicted hemophiliacs, blood transfusion patients and drug addicts who shared needles. The

public health laboratory community was caught in a crossfire that raged across the political landscape during the mid- and late 1980s.

For the then-retired Dr. Carl Blank, the AIDS crisis was a painful issue. State public health laboratory directors received criticism from both sides in the AIDS debate. Money flowed into state laboratories from the federal government for AIDS testing, but there were strings attached. State public health



The passage of the federal Clean Air Act and Clean Water Act during an 18-month period puts state public health laboratories solidly in the business of environmental testing.

laboratories were required to segregate AIDS testing from their traditional sexually transmitted disease testing programs.

“I’m still not sure AIDS-HIV should have been spun out from the STD program,” Blank said. “Under the old VD programs, if you got a positive serology, the VD trackers would get out there and find the persons affected.”¹³ But in the supercharged political atmosphere surrounding AIDS, STD investigations were seen as unwarranted intrusions into private sexual practices.

Many state public health laboratories never got involved in full-scale HIV testing, due to geography. States in the sparsely populated Mountain West, for example, had minuscule gay populations. Gays in rural areas of the West, the South and the Midwest typically left for large urban gay communities on both coasts.

Dr. Burt Wilcke was named head of the San Bernardino County Public Health Department Laboratories in 1983. He recalled that many of his laboratory colleagues in the California Association of Public Health Laboratory Directors (CAPHLD) were working on HIV protocols as early as 1984 and 1985.¹⁴

Dr. Eric Blank recalled that the AIDS crisis had at least one silver lining for the public health laboratory community. Blank, the son of Dr. Carl Blank and a 1982 graduate of the University of North

Carolina doctorate of public health program, took over as head of Missouri’s public health laboratory in 1987 just as AIDS began to appear in the Show-Me State.

“AIDS had a hell of a lot to do with making public health laboratories visible,” Blank said. “It gave us a little bit of confidence. We were pushed out front. We responded. We responded well. We set down the testing algorithms still used today.”¹⁵

The State of the Laboratories—1984

AIDS testing was not the only concern of state public health laboratories during the 1980s. Anti-microbial resistance became an increasing public health concern. The laboratory community also saw its toxicology testing programs rise dramatically, due in large part to society’s increased focus on drug use in the workplace.¹⁶

“Many state medical examiners choose to use public health laboratories rather

than law enforcement labs for such testing because defense attorneys challenge these latter labs as being ‘biased,’” explained Dr. Carl Blank. “This is a time-consuming and costly program for public health laboratories because of chain-of-command requirements and court time required of analysts.”¹⁷

Clinical chemistry was another major component of the public health laboratory’s workload in



Secretary-Treasurer Dr. Eric Blank (right) presents his father, Dr. Carl Blank with the first ASTPHLD Lifetime Achievement Award.

CDC technicians identify naturally-occurring Marburg Fever in South Africa.

1975

the 1980s. The number of specimens increased from just over 4 million in 1979 to 7.5 million in 1984, and to 10 million in 1987.¹⁸

“Most of this increase has been in the area of screening for inborn errors of metabolism,” explained Dr. Blank. “Initially, funding for PKU served as the basis for development of expanded clinical chemistry capacity and expertise in the public health laboratories, which worked and works closely with the maternal and child health programs of the various state health departments.”¹⁹

Although the numbers weren’t particularly large, virology sampling showed a large percentage increase during the 1980s. Virology samples more than doubled from 1979 to 1984 and increased another 15 percent by 1987.²⁰ Most of the increase was reflected in viral isolations—Arbo, which encompassed both human and animal cytomeglia virus [check spelling] (CMV), genital lesions, herpes, pox and chlamydia.²¹ State privacy laws caused a corresponding decrease in public health laboratory syphilis serology testing programs, but the public health laboratory community remained on the front lines of the fight against sexually transmitted diseases during the 1980s.

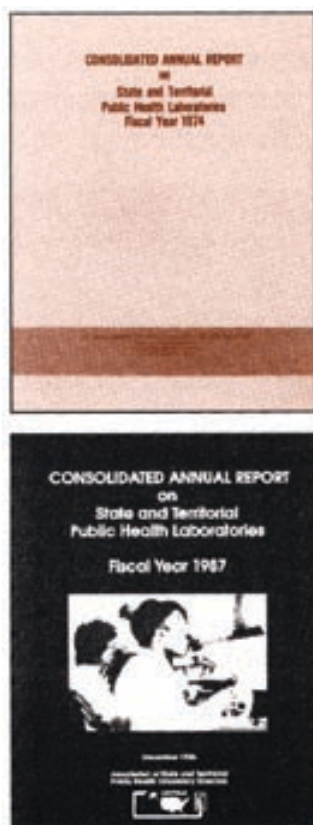
Environmental chemistry was another area in which sampling by state public health laboratories

showed a steady increase during the 1980s. Nearly 1 million specimens were tested in 1987, up 17 percent from the 1984 figures.²² Environmental microbiology specimens actually dropped throughout the decade, plummeting from 3 million specimens in 1974 to just under 2.3 million specimens in 1987.²³

The volume of environmental samples could have been much higher. The fact that they were not primarily was due to increasing competition in the public health laboratory business. Many states transferred environmental tests to newly created environmental department laboratories. Other states assigned the specimens to agricultural department laboratories. And commercial, private laboratories entered the environmental testing business, mainly because it was so profitable.²⁴

The rise in private laboratories was a sometimes uncomfortable fact of life for ASTPHLD members during the 1980s. When ASTPHLD and CDC statisticians surveyed the nation’s public and private health laboratory community for the Consolidated Annual Reports (CAR) in 1979, 1984 and 1987, they found a large, vibrant and growing clinical laboratory community.

By 1987, there were 15,865 clinical laboratories reporting to the CAR, compared with 439 state, territorial, city and county public health laboratories. There were an additional 308 private dairy and



Public health laboratories on the East Coast help identify the source of Legionnaire’s Disease and an outbreak of potentially fatal Swine Flu.

food laboratories, as well as 2,306 private water and environmental laboratories.²⁵ During an era when political philosophies emphasized less government rather than more, debate increasingly turned to the question of whether government should be involved in the public health laboratory business at all.

“Things became political when talk started of privatizing public health laboratories,” recalled Charles Sweet, then head of the Texas Department of Public Health Laboratories. “We went through a period in the 1980s when efforts were made to remove the chemistry component in Texas. “Fortunately, we had a lot of support in the Texas Senate. ASTPHLD put out publicity to help laboratories that were under fire. That was a real threat at the time.”²⁶

Dr. Stan Inhorn, then chief of the Wisconsin State Laboratory of Hygiene in Madison, said that state public health laboratories have always been “small potatoes” when compared to private laboratories, hospitals and clinical laboratories. Inhorn noted that the commercialization of public health laboratories in the 1980s is a trend that has continued to the present day.

“Politics is important in any form of human activity,” Inhorn pointed out. “Most of the laboratories today simply have to change. The conflict with the private environmental and clinical laboratories that began in the 1980s brought pressure on the state legislatures. Like it or not, we’re political ani-

mals, and we have to be aware of potential threats to our very existence.”

CDC Reorganizes

A far greater threat to the status of the public health laboratory community during the 1980s involved structural changes at CDC. Since ASTPHLD had been founded in San Francisco in 1952, CDC had been a fairy godmother for the public health laboratory community. CDC had provided state public health laboratorians with material, expertise, consultation and training.

The HIV workshops established by CDC for state public health laboratory personnel after 1986 were only the latest manifestation of a training regimen that CDC had provided state public health laboratories for more than 40 years. State public health laboratory directors could

send staffers to Atlanta for week-long workshops on the latest techniques and technology, often at no cost to the public health laboratory.²⁷ CDC personnel would travel to Denver, Minneapolis, or Seattle to conduct workshops and seminars for public health laboratory personnel from the surrounding region.

“At one time, CDC provided reference and identification services to the state public health laboratories,” said Dr. Carl Blank. “The CDC also used to provide all the standardized reagents we used.”²⁸ Through most of the 1970s and early 1980s, CDC made available financial support for



The federal government releases the landmark study, *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*.
First national meeting on Neonatal Screening Programs, Atlanta, GA.

the biennial conferences of ASTPHLD. Without CDC's support, ASTPHLD would never have been able to publish the Consolidated Annual Report between 1964 and 1987.

A new wind was blowing through the corridors of power in Washington. In 1976, President Jimmy Carter had captured the White House as an outsider. The former Georgia governor had entered office on a platform of reducing the size of the federal government and returning funding and jurisdiction for many government programs to the state.

Bob Kingon was a section chief responsible for training when the first Carter budget hit CDC's offices in Atlanta. It was obvious to longtime CDC staffers that the spare-no-expense way of doing business during the Kennedy, Johnson and Nixon administrations was about to end.

"There was pressure since 1977-1978 for us to collect reimbursements for training," Kingon recalled. "Previously, most training had been done for free. We went out to the states, and we brought people in to Atlanta. And we typically paid the bill."²⁹

CDC began to charge laboratories for its costs of conducting seminars and workshops. "We called them user fees," Kingon explained. "And we knew that laboratories had the largest training component of the CDC program."³⁰

The situation only worsened under Ronald

Reagan, the charismatic former California governor who had ousted President Carter from the White House in the 1980 elections. When the Office of Management and Budget (OMB) delivered President Reagan's first budget to Congress in the spring of 1981, the event sent tremors through CDC's Atlanta offices. The Reagan budget proposed cutting CDC's budget exactly in half, from \$320 million to \$160 million.³¹

"Under Reagan," Kingon noted, "there was all the more pressure to have training pay for itself."³² At CDC headquarters, the mantra became "We're getting out of the business of laboratory training," Kingon said. "We're also getting out of laboratory proficiency training."³³

A measure of what the cost-cutting meant to CDC came in 1983. For the first time since it had started publishing in the 1950s, the *Morbidity and Mortality Weekly Report* began charging subscription fees.³⁴

At the same time that the Centers were undergoing unprecedented funding pressures, CDC was embarking upon a long planned reorganization that had little to do with Reaganomics. In 1981-

1982, CDC's Bureau of Laboratories, Bureau of Epidemiology and Bureau of State Services were reorganized into one comprehensive Center for Infectious Diseases (CID). Three program offices—the Epidemiology Program Office, the Laboratory Program Office and the International Health



(Top) Dr. Nathalie J. Schmidt receives the 1977 Kimble Methodology Research Award from Kimble representative John L. Arkebauer. (Bottom) Dr. John B. Brooks (left) receives the 1978 award from Richard Calabro.

Public health laboratories in Minnesota and Wisconsin identify nine cases of toxic shock syndrome in adult women in less than a month.

Program Office—were grouped together under the CID’s umbrella.³⁵

The Program Laboratory Office later evolved into CDC’s Public Health Practice Program Office (PHPPPO), but it was clear by the mid-1980s to both CDC and the state public health laboratory directors that the centers’ role in training laboratory personnel rapidly was ending.

“You still had the need to train laboratory workers,” Kingon said. “But we absolutely had to

reduce the full-time equivalents (FTEs) we allotted to laboratory training.”³⁶

As President Reagan’s second term in office drew to a close in 1987, ASTPHLD members and CDC staffers agreed that a new laboratory training model had to be created. How that laboratory training model evolved would shape the future of ASTPHLD—and the direction the nation’s state and territorial public health laboratories would take in the 1990s.

The first AIDS patient is seen at the National Institute of Health in June;
by August, the CDC reports 108 cases of the new disease.

A DECADE OF CHANGES



he cutback in federal funding for CDC, as well as the organization's restructuring during the early 1980s, brought about significant change for the nation's public health laboratory community. The evolution of a Cooperative Agreement between the CDC and ASTPHLD in 1989 resulted in two momentous changes for the nation's public health laboratories: the creation of the National Laboratory Training Network (NLTN) and the conversion of ASTPHLD from a volunteer organization of state and territorial public health laboratory directors into a professionally staffed association with a Washington, DC presence.

The public health laboratory itself changed dramatically during the late 1980s and 1990s. Increasingly complex computerized technology invaded the laboratory, arming state and territorial public health laboratory leaders sophisticated new tools to wield in the never-ending battle against disease.

State and territorial public health laboratories continued to serve as the nation's first line of defense in the fight against known disease vectors such as contaminated food and water, influenza outbreaks and sexually transmitted disease. AIDS testing became increasingly



common as the scope of the disease widened dramatically during the late 1980s and early 1990s.

But laboratories faced a host of new challenges during the period. Tuberculosis made a strong comeback in the US during the 1990s. Antibiotic-resistant microorganisms began appearing in force. The rise in international travel brought exotic new diseases, such as West Nile Virus, Creutzfeldt-Jakob Disease and hemorrhagic fever, to American shores. Laboratory researchers began to see more home-grown killers including Lyme disease and hantavirus.

The first international AIDS conference is held in Atlanta.

1985

finally, the nation's public health laboratories took a lead role in the mid- to late-1990s in exploring ways to combat the very real threat of chemical and biological warfare on American soil.

The Cooperative Agreement

CDC devised the Cooperative Agreement approach in 1987-1988 as a way to support training of public health personnel. During the 30-year period from the mid-1950s to the mid-1980s, CDC had provided support and training to ASTPHLD and dozens of other public health associations. The budget and staffing cutbacks of the Carter and Reagan administrations had forced CDC to establish a new structure for public health training.

"The problem was really quite simple," said Dr. Eric Blank, who had joined ASTPHLD as Missouri's new public health laboratory director in 1987. "The CDC had money, but no staff. So they were trying to decentralize training."¹

CDC's Cooperative Agreement model was in line with the then current government dictum that money and responsibility for health care decisions be returned to the states. The Cooperative Agreement in effect established CDC as a clearinghouse for information and training support for the public health community. CDC would be funded for its time and expertise, and the public health community would gain autonomy in deciding how and where training dollars were to be allocated. Instead of dealing with each of the states, however, CDC elected to negotiate Cooperative Agreements with the leading public health associations.

"We asked ourselves a two-part question," said

Bob Kingon, at the time CDC's deputy director in the Office of Program Development. "How can we continue doing what needs to be done, but in a different way, while at the same time strengthening that individual association?"²

In 1987, CDC signed its first Cooperative Agreement with an affiliate of the Association of State and Territorial Health Officers (ASTHO).³ Early in 1989, CDC signed a Cooperative Agreement with ASTPHLD.

Two Immediate Tasks

Dr. Carl Blank was named the first project officer under the Cooperative Agreement between CDC and ASTPHLD. Blank and the committee he chaired had two immediate tasks under the terms of the Cooperative Agreement.

ASTPHLD had to shift its focus from an all-volunteer organization to a professionally staffed association. And the committee had to establish criteria for an association-funded training organization.⁴ Meetings between the ASTPHLD committee and CDC representatives in Stone Mountain, Georgia and Atlanta in February and December 1988 had hammered out the details of the Cooperative Agreement.⁵

The first goal was accomplished by the time the ASTPHLD held a joint meeting with ASTHO in Vail, Colorado in March 1989. The committee had hired Maribeth Winklejohn as ASTPHLD's first executive director. Winklejohn, an assistant to George Degnon, executive director of ASTHO, formerly had been with the Public Health Foundation.⁶ Because Degnon had experience with the first

First Consensus Conference on Testing for Human Retroviruses.
The Food and Drug Administration approves AZT as the first antiretroviral drug
to be used as a treatment for AIDS.

Cooperative Agreement with CDC, Winklejohn was a logical choice to run ASTPHLD. To ensure the benefits of Degnon's experience, ASTPHLD leased office space at ASTHO's building in McLean, Virginia.⁷

Dr. Burt Wilcke attended that joint 1989 ASTPHLD-ASTHO meeting. A native of upstate New York, Wilcke took his PhD in microbiology to the California Health Department in Berkeley in 1975. He then spent six years at the Michigan Department of Public Health in East Lansing. In 1983, Wilcke returned to California as director of the San Bernardino County Health Department Laboratory. In 1988, he was named director of the Vermont Health Department Laboratory and as the new state director, he assumed the state's membership in ASTPHLD.⁸

Wilcke recalled his first ASTPHLD meeting in Vail. He sat next to Maribeth Winklejohn on the bus ride to a meeting social function at a Vail ski resort. "I just shared a seat with the entire staff of the organization," Wilcke remembered thinking.⁹

There was "a mixture of feelings, both trepidation and excitement," about the Cooperative Agreement at the Vail meeting, Wilcke said. "There was the acknowledgement that CDC had suffered severe rescission in its budget during the 1980s. There was the feeling that we were losing a long-standing partner in public health. There wasn't

really any resentment, but there was clearly some sadness in seeing it go."¹⁰

At the same time, Wilcke noted, "there was a feeling of 'Can we really pull this off?' One of the first things we had to do was the creation of this entity called the National Laboratory Training Network (NLTN). It was the real focus of the Cooperative Agreement."¹¹

NLTN

The National Laboratory Training Network took shape during the remainder of 1989. Blank and his committee had determined from the beginning that a regional framework would be the best possible way to administer NLTN. Southerners had found-

ed the original Public Health Laboratory Directors' Conference back in the mid-1920s, and ASTPHLD members still referred to their Southern colleagues as the "boll weevils."¹² New Englanders

had banded together in a regional organization of environmental and public health laboratory directors, and Great Lakes laboratory directors met informally on a regular basis to discuss mutual concerns.

In the spring of 1989, ASTPHLD put the NLTN proposal out for bid. Nine states responded; seven were selected as sites for regional NLTN offices.¹³ The contracts with the states were renewable every five years. The program was to be coadministered and jointly operated by personnel



1985 ASTPHLD Conference attendees.

ASTPHLD and CDC create the National Laboratory Training Network (NLTN) and National Laboratory Partnership (NLP).

selected by CDC and personnel hired by ASTPHLD. The association membership had primary oversight for the program.¹⁴

“The ASTPHLD training committee for NLTN was made up of the laboratory directors from those seven states,” Wilcke explained. “It very much was a process that involved the membership. It was very much member-driven.”¹⁵

Pennsylvania, Massachusetts, Illinois, California, Louisiana, Tennessee and Colorado were selected as the original host state laboratories for NLTN. The various regions were designated Area Laboratory Training Alliances (ALTAs), and the regional offices in suburban Philadelphia, Boston, Chicago, Berkeley, New Orleans, Nashville and Denver were dubbed Area Resource Offices (AROs).¹⁶

In the spring of 1989, Barbara G. “Bobbi” Albert was working as a program director at Vanderbilt University marketing a laboratory outreach program for the medical technology department when a message came across her desk from Dr. Michael Kimberly, the director of the Tennessee Public Health Laboratory. Kimberly, who had been a member of the ASTPHLD committee that helped design the NLTN, was looking for a regional coordinator for the Nashville office.¹⁷

Albert, a Nashville native who had spent 20 years in her career field of medical technology, applied. “My background seemed to fit,” she said, “especially my education, work experience and marketing expertise.”¹⁸ Kimberly interviewed Albert and scheduled a phone interview for her with Dr.

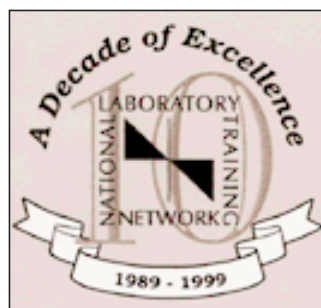
Michael Sherrill, the director of the West Virginia Public Health Department Laboratory and one of her former students at Vanderbilt. On September 1, 1989, Albert started work as the regional coordinator for the Nashville ARO. She was NLTN’s first hire.¹⁹

Joining Albert as the CDC coordinator in the Nashville ARO was Judy Delaney. In September, Albert and Delaney traveled to Atlanta for an orientation session at CDC headquarters. The two women frankly didn’t know what to expect. “What do you think we’re going to be doing?” Albert asked Delaney. “I don’t know,” Delaney replied. “We must be the biggest risk-takers in the world.”²⁰

Albert and Delaney returned to Nashville to begin setting up shop in a tiny cubicle at the reporting office of the Tennessee State Public Health Department Laboratory. “We had one computer,” Albert recalled, “and we didn’t know how to use it very well. We were merging letters to a sheet-fed printer, and the papers were flying everywhere.”²¹

By October, all seven AROs were up and running. That month, the ALTA coordinators met in Durango, Colorado to introduce themselves and plan a course of action.²² State laboratory training personnel at the meeting were skeptical that the new model would replace CDC’s expertise in laboratory training.

“Most of the states were upset that CDC was pulling back,” Albert said. “They were brutal. Judy and I were in tears. It was a real transitional period.”²³ Charlotte Billingsley, the state training coordinator from West Virginia, was instrumental in



ASTPHLD establishes a Washington, D.C. presence.
First National Conference on Lyme Disease Testing.

getting her fellow state coordinators on board with the program during the next year.

In December 1989, NLTN conducted its first course in Des Plaines, Illinois in a hotel just off the runway at O'Hare International Airport. The course on "Laboratory Safety and Health" drew 40 participants. In February 1990, 33 participants attended a three-day course on "Mass Spectral Interpretation" in Austin, Texas, and the next month 34 people attended a "PCR Overview" course in Anchorage, Alaska. In June 1990, NLTN sponsored its first wet workshop on "HIV Serology" in Raleigh, North Carolina with 20 participants.²⁴

"Once we started working on our first workshop," Albert said, "things just started to click."²⁵

NLTN proved to be one of the more popular and successful Cooperative Agreement programs CDC undertook with its association partners. By 1999, the end of its first decade of existence, NLTN had sponsored nearly 2,000 courses for almost 75,000 participants.²⁶

The partnership didn't always proceed smoothly. "It's like we had two parents fighting with each other all the time," Albert said. "ASTPHLD wanted us to be a moneymaker, and CDC often wanted us to do things that didn't make money."²⁷

But as the two sponsoring agencies matured, they managed to focus and agree on the ultimate goal of NLTN: to be the best possible laboratory training vehicle in the US.

"The NLTN in a short 10 years has surpassed everyone's expectations," Dr. Katherine "Kati"

Kelley, director of the Connecticut Public Health Laboratory and a member of the original ASTPHLD training committee, saluted the network on its 10th birthday in 1999. "It makes you wonder what the next 10 years will bring."²⁸

Dr. Michael Kimberly had no doubt about where the organization was headed. "Like McDonald's," he noted in 1999, "the NLTN continues to serve."²⁹

Painful Growth Years

With the NLTN framework firmly in place, Dr. J. Mehseu "Joe" Joseph, ASTPHLD's president from 1988 to 1990, and the association's board of directors set about cementing into place the goal of creating a Washington, DC staff. Maribeth Winklejohn had gone back to ASTHO after serving as half-time executive director of ASTPHLD. The association began searching for a new full-time executive director and in 1990 hired Jerome Cordts.

Cordts had been the first area resource director for NLTN's Eastern Office in suburban Philadelphia.³⁰ Joseph and the board charged Cordts with three tasks. He was to incorporate ASTPHLD as a non-profit 501(c)3 organization, find the association new office space in Washington, DC, and start building an association staff.

But before Cordts could proceed with his mission, the ASTPHLD board had to agree on the association's larger goals. Dr. Eric Blank, who had been attending ASTPHLD meetings as an observer since



ASTPHLD establishes an office of international activities.

1980 and a member since 1987, saw three changes facing the organization in 1990.

“There were several changes going on at several different levels,” Blank said. “Because we were becoming a professional organization with an actual mission, we finally had something to do. Before, we had been more of a networking organization with no other overarching objective. We came to a crossroads in 1990.”³¹

Blank credits Dr. Joe Joseph and Dr. Dave Verma, the ASTPHLD’s presidents during the transition period, with the vision “to see something bigger for the organization. We had some very good leadership on the board, but very little continuity. We never had a good grasp of what the board function was versus the staff function. Some of the members wanted to manage the association like they micro-managed their own laboratories.”³²

Finally, Blank said, the traditionalists among the membership questioned whether ASTPHLD should even change at all. “A lot of the old-time members still saw the activities as theirs,” he explained. “They understood the association was doing things, but they wanted to make sure they controlled what was done. It was very hard to discuss the business of the organization without things deteriorating into personal differences. Fractures were starting to occur in ASTPHLD.”

Dr. Burt Wilcke found the period “an exciting time. It was not threatening to me at all, but I didn’t have this long history with the organization. I could

see it was ready to take off, that it was beginning this immense growth stage.”³³

At the same time, Wilcke said he viewed the transition period between a membership organization and a professionally staffed association “as painful growth years. We knew that the association was going down a path that would lead to something much different than in the past. The membership and its influence were being folded in with the influence of some very good staff people. That was quite threatening for some of the members.”³⁴

Some of ASTPHLD’s early bylaws required votes taken at the annual meeting by the entire membership. In the early 1990s, the board moved to create an executive committee consisting of the president, president-elect and secretary-treasurer.

“That was viewed as a little too much power in the hands of too few people,” Wilcke said. “But it was necessary because of the flexibility of being able to respond quickly to various

situations. We needed to have a streamlined decision-making authority. Even our board was too large for that. We required a body that could be called together quickly and act quickly. We were moving to the equivalent of a New England town meeting.”³⁵

Creating a Staff

While ASTPHLD’s board was restructuring for the new challenges of the 1990s, Cordts was moving quickly to accomplish the three charges he had



First Conference on Laboratory Aspects of Tuberculosis.

1993

been given. In 1991, Cordts secured 501(c)3 status for the organization. Late in 1990, he had signed a lease for office space at 1211 Connecticut Avenue, Northwest, Suite 508. The suite of offices in the downtown Washington, DC commercial building would remain the association's headquarters for most of the next decade.

In the summer of 1991, Cordts made his first professional staff hire. Doug Drabkowski was a soft-spoken Marylander who joined the ASTPHLD staff in 1991 as director of international activities. "This was a new position," Drabkowski said, "and at the time there was nothing formalized within ASTPHLD as far as global health activities. This was the first opportunity for the association to work on a funded international or global health project. CDC received funds from the US Agency for International Development which were then passed on to us through a Cooperative Agreement."³⁶

The global health project involved assisting the government of India to develop HIV training and laboratory expertise. Details of the project had to be worked out from "square one," Drabkowski said. "Nothing was developed. We were kind of beginning with a clean slate, and one of the key leaders of this activity was Dr. Dave Verma from Delaware."³⁷

With the \$200,000 global health grant, Drabkowski was the envy of everyone else in Suite 508. "I was given a 386 computer," he said. Everybody had 286 computers, and there was quite a lot of jealousy about my 386."³⁸

Drabkowski's success with the global health project was recognized by additional assignments. Late in 1991, Cordts asked him to coordinate ASTPHLD's relationship with NLTN. It soon became obvious to Cordts and Drabkowski that the association needed more help, and late in 1991, ASTPHLD hired Eva Perlman.

Perlman said she was hired to help Drabkowski "provide logistical support, programmatic support and to help further develop some of the processes involved with supporting the NLTN. It included providing logistical and on-site support for a big conference that the association had received funding

to do. It was the Laboratory Initiatives for the Year 2000 Conference, which was held in Orlando, Florida."³⁹

At the beginning of 1992, the staff included three full-time employees: Cordts, Drabkowski and Perlman. Ann Ulm was the part-time office administrative assistant, and Vicki Gannon worked two days a week as a part-time bookkeeper.⁴⁰

In 1992, ASTPHLD hired Dr. Nancy Warren to serve as the association's science advisor. ASTPHLD's

members had become more and more involved in working with multi-drug resistant tuberculosis and other infectious diseases, and Warren's expertise was invaluable in coordinating the response of the nation's public health laboratories to the new threats.⁴¹

The expansion of the staff meant that Cordts had to find more office space. By late 1992, space was so tight in Suite 508 that whenever a staff member



Summit Award for ASTPHLD's training program in India, from the highest honor bestowed by the American Society of Association Executives (ASAE).

Establishment of ASTPHLD's Environmental Health Program through Cooperative Agreement with US Environmental Protection Agency, later through CDC cooperative agreement

had to meet with an outside vendor, contractor or program sponsor, Cordts had to vacate his office so it could be used as a conference room. In early 1993, ASTPHLD moved to new, larger offices one floor up—at Suite 608. For several years, the association also retained its offices on the fifth floor.⁴²

Another valuable addition to the staff was Lynn Bradley. A native Virginian, Bradley had worked or consulted with numerous agencies and associations involved in environmental health, including the Environmental Protection Agency (EPA), the Department of Energy (DOE) and ASTHO.⁴³ In 1994, ASTPHLD had started an environmental health program in its Washington, DC office. The program was staffed by an EPA employee in a Cooperative Agreement arrangement.

Bradley, who was hired in 1996, quickly expanded the program to cover federal environmental and food regulatory requirements. She

served as a liaison between the association and EPA, the Food and Drug Administration (FDA) and the US Department of Agriculture. Bradley's responsibility encompassed drinking water and food safety, water quality initiatives, and the public health laboratory community's response to the emerging issue of chemical and biological terrorism.⁴⁴

By 1996, ASTPHLD had established itself as a clearinghouse and coordinator for numerous government programs dealing with public health. The association was an increasingly respected voice for the public health laboratory community. But the complexities of administering an ever more sophisticated network of sponsored programs dictated the need for new leadership and an increasing focus on strategic planning. The latter half of the 1990s would be dedicated to taking the association to the next level of professionalism.



First Conference on Drinking Water and Public Health to establish how better to utilize drinking water monitoring data for public health assessments.

APHL AND THE 21ST CENTURY PUBLIC HEALTH LABORATORY COMMUNITY



PHL went through momentous changes in the late 1990s. The organization hired a new executive director with years of experience in the public health association community, changed its name in 1998, and broadened its membership. APHL expanded its professional staff and instituted new financial controls to monitor a dramatically increasing annual budget. The association began a comprehensive strategic planning process to allow APHL to cope with the emerging public health threats of the 21st century, which are increasingly global in nature.

The association's organizational, scientific and planning strengths came into play in October 2001 when the nation learned that the long-feared threat of bioterrorism was real. The anthrax scare that gripped the nation in the fall of 2001 put the public health laboratory community on the front lines of America's war against bioterrorism.

APHL and the US public health laboratory community responded with confidence and profes-



A Healthier World Through Quality Laboratory Practice

The APHL logo immediately after the name change in 1998 until a new logo was developed.

sionalism. The loose-knit organization of state and territorial public health laboratory directors that had formed in San Francisco a half-century before had grown into an organization encompassing nearly 400 state, territorial, county and city

public health laboratories, and laboratory leaders. Along the way, it had become an effective and respected voice for public health laboratory issues on the global, national, state and local levels.

PulseNet Update Conferences begin.

ASTPHLD changes its name to the Association of Public Health Laboratories (APHL).

New Blood

Scott J. Becker joined APHL as executive director in June 1997. A University of Maryland graduate, Becker brought 12 years experience in public health non-profit management to what was then still ASTPHLD. Becker had grown a Cooperative Agreement at the Association of Schools of Public Health (ASPH) from \$750,000 to \$14 million.¹ In 1989-1990, Becker had been selected by the World Health Organization (WHO) to administer a global conference on AIDS from their headquarters in Geneva, Switzerland.²

Becker's selection as executive director was part of a painstaking reassessment of the association, ongoing since the mid-1990s. Dr. Burt Wilcke, state public health laboratory director in Vermont, served as ASTPHLD president in 1996.

"It was clear to the board that a different style of leadership was needed to take the organization to the next level, and that's when the transition was made," Wilcke explained. "It was also obvious that the association needed to have somebody the entire association could rely upon, and that really was a new role for the executive director."³

Eric Blank was secretary-treasurer of the ASTPHLD board during the transition in staff leadership. The director of the Missouri state public health laboratories, Blank said that the decision to change association leadership was cumulative. "It is not like a light bulb went on in anybody's head," he said. "We did not all come to the same conclusion at the same time."⁴

For Blank, the new executive director had to be someone with association management experience who could also manage a rapidly growing budget. "The board had started looking at business practices and fiscal management," Blank said. "And that led to the question, 'What was the executive director responsible for?' That's what we focused on from 1994 to 1996."⁵

Becker recalled being asked during his half-day interview with the board in the spring of 1997 what he thought of moving the organization to St. Louis. "I said, 'Well, if that is the case ...,' and I closed up my interview book," Becker explained.

"I said, 'You found the wrong person. You have not given the fact that you have a Washington-based organization a chance. No one knows you exist. You are obscure. You are not well understood. No one knows you are here.'"⁶

Becker laid out several steps the association could take to increase its visibility, and the group politely broke up after lunch. Becker said he remembers thinking he would probably never

again hear from ASTPHLD. The interview committee, however, was impressed with Becker's experience—and his candor.

"I went back to my office," he said, "and lo and behold, they called and offered me the job."⁷

During the spring of 1997, Becker began splitting his time between the ASPH and ASTPHLD. He worked closely with Dr. Carl Blank and Carol Clark, the association's controller. The association had spent down half of its reserves, and the financial situation



1992 award from the International Health Program Office.

CDC invites APHL to establish the Laboratory Response Network as the first line of defense in the nation's bioterrorism prevention initiative.

wasn't improved that June when CDC cut \$250,000 from the 1997-1998 Cooperative Agreement with ASTPHLD.⁸ In addition, CDC was conducting a financial review of its Cooperative Agreement with the association.

"They were looking at the books," Becker said, "and I needed to spend a lot of time on image building, program development and instilling a new energy. But I also knew that we couldn't get very far if we were always to be the Association of State and Territorial Public Health Laboratory Directors. If we were going to represent 56 people, then we were always going to be a club. And that wasn't what I heard the selection committee or the association's leadership express that they were interested in."⁹

A Four-hour Train Ride to Seattle

In August 1997, Scott Becker attended his first National Laboratory Training Network (NLTN) meeting in Edmonds, Washington. Becker and Carol Clark flew to Portland, Oregon prior to the meeting to brief Dr. Mike Skeels, the head of the Oregon public health laboratories and then ASTPHLD president, on the association's dire financial straits.¹⁰

"I needed him to understand, face-to-face," Becker said, "that we would do everything we possibly could, but that, the organization needed to be transformed, and that was going to take resources. I wasn't quite sure how or what we were going to do, but I knew it needed to be done. He did not really

like hearing about the resource challenges, but he listened intently and heard it."¹¹

Becker and Clark left Skeels and took a four-hour train ride from Portland to Seattle for the NLTN meeting. As the Amtrak Metroliner passed Mount St. Helen's, Chehalis and Olympia, the two staffers methodically listed everything that needed to be changed in the association: a new name, a more inclusive membership, tools for increasing the association's public image, budgets, and importantly, increasing federal government financial support for the organization's mission.

By the board's October meeting, Becker had prioritized many of the items. At the top of the list was the need to change the association's name. "I can't get any visibility for the organization if I say we are ASTPHLD," Becker told board members. "By the time I say that to a Congressional staffer, we are out the door."¹²

The name change also implied a more inclusive organization with new membership categories. Mike Skeels chaired a January 1998 board meeting that began to examine

Becker's proposed changes. At that organizational meeting, opponents to the changes were numerous and vocal. They argued that county, local and private laboratory staffers could belong to any number of scientific organizations, and that ASTPHLD's very exclusivity made it an elite organization in the public health community.

But supporters of the proposed changes made



Cartoon from the March, 1993 PDK Magazine, adapted by Kapan.

West Nile Virus discovered in the US.

the case with equal passion that the organization was stretched too thin with its 56 members. “We had been talking for many years about bringing more people in,” Blank said. “We were talking about a broader perspective that was not restricted to state laboratories. The board needed to represent laboratories. It couldn’t restrict membership.”¹³

Between January and June 1998, President Mike Skeels and board members campaigned for the changes among the membership. When the association met in the Colorado mountain resort of Breckenridge for the June 1998 annual meeting, it was obvious that not all of the members agreed with the board.

Burt Wilcke recalled it as “one of the two most difficult meetings” he had ever attended.¹⁴

“The idea of expanding the membership preceded the name change,” he said, adding that the suggestion had first been made and voted down at the 1993 annual meeting in Minneapolis. “But it was obvious that we had to have the name change to attract new members.”¹⁵

Still, support for the changes was by no means unanimous. “Maybe it was the rarified air,” Wilcke explained. “There were people who were opposed to both changes. And there were people who opposed the name change but who weren’t against expansion.”¹⁶

The vote, as Scott Becker recalled it, “was very close. It was a real challenge. They kept voting—up,

down, up again—and it was one of these emotional, passion filled type of things.”¹⁷

Wilcke, who had campaigned hard for the changes, remembered the vote as a watershed. “At that meeting in Breckenridge,” he said, “we were at the bottom of the change curve. Let’s go forward. We had that sense in Breckenridge and soon thereafter. Once it was accomplished, people got used to it real quickly.”

Evolution

With the organizational changes in place following the June 1998 meeting, the newly named

APHL evolved into an association radically different from what it had been just five years before. Becker and the staff knew that if the association was to continue its growth, it needed flexible spending ability beyond the confines of the Cooperative Agreement. APHL continued to establish strong ties with CDC, and the organization

added to its already strong core staff.

APHL solidified the association’s traditional focus on infectious disease when Rosemary Humes joined the staff in 1997. Humes and Chicago CDC training advisor Valerie Johnson were both microbiologists, so much of the NLTN training that the team offered throughout the Midwest in the late 1990s focused on infectious disease. “We did training programs on HIV, on antibiotic resistance, the



Participants of the 1998 ASTPHLD meeting in Breckenridge, Colorado, during which the association’s name was changed to Association of Public Health Laboratories (APHL).

The American Academy of Pediatrics’ Newborn Screening Task Force publishes its report “Serving the Family From Birth to the Medical Home”.

emergence of Hepatitis C, and molecular diagnostics in infectious diseases,” Humes said.¹⁸

Humes brought 20 years of experience when she came to APHL as director of infectious disease programs. Dr. Nancy Warren, who had served as APHL’s advisor for tuberculosis and infectious diseases, had returned to the clinical TB laboratory in 1998. “The association was sort of in a point of transition,” Humes explained, “and I think Scott was identifying the need to expand the program to include more infectious disease.”¹⁹

Becker also strengthened the association’s commitment to global public health. In August 1998, he hired Kajari Shah, a native of India who immigrated to the US at the age of five, as the director of APHL’s global health program. The program had started back in 1991. When Shah arrived in 1998, it was ready for new leadership and growth.

“When I first started, we had a budget roughly of \$120,000, maybe a little less,” Shah said in a 2001 interview. “It was primarily focused on TB activities between the US and Mexican border states, and there was one other project to develop training materials for the Caribbean countries. In the last three years, I think it is safe to say that it has actually developed into a department with CDC and other international partners and organizations recognizing us and our members’ technical expertise.”²⁰

Between 1999 and 2002, APHL increased its annual global public health budget to more than

\$2.5 million. Instead of just focusing on Mexico, the program has helped laboratorians in more than 20 countries. “It was a change in perspective not just of our members, not just of our donors, but of society, almost to the point where disease has no borders,” Shah said. “That is the thing that is being more accepted and realized.”²¹

Like many of the association’s domestic programs, APHL’s global public health initiative focuses on infectious disease, with HIV, TB and anti-microbial resistance comprising the three main target areas. Shah and her staff find fellowship and training opportunities for overseas professionals and send APHL members to

consult on laboratory management and procedure in Africa and Asia. Members also help rehabilitate laboratory facilities in nations devastated by natural disaster. Additionally, the program develops and disseminates standard operating procedures

and training materials in English, Spanish and French. A video and training brochure on how to diagnose tuberculosis, for example, has been distributed around the world and recently has been translated and dubbed in Russian.

“I am under no false pretenses,” Shah said. “We are a national, domestic organization that has international activities. So balancing the national and global activities is always a challenge, especially when our state and some of our domestic programs want and need funding for workforce development or infectious disease training or whatever it is.”²²



The APHL Lifetime Achievement Award, with the new logo.



APHL moves into its current offices at 2025 M Street in Washington, D.C.;
APHL members in forefront of identifying spread of West Nile Virus in US.

The other challenge for APHL's involvement in global public health activities springs from the inherent nature of domestic state or local bureaucracy in which most APHL members must operate. Shah noted: "We had one member at a meeting we were presenting on the global health activities get up and say, 'How can I go to Zimbabwe when my governor or health commissioner won't let me go to New Jersey?'"²³

Anthrax

The US public health laboratory community in the US was thrust under a very bright media spotlight in early October 2001 when inhalation anthrax was diagnosed in a photo editor at a South Florida tabloid newspaper. Coming just three weeks after the World Trade Center and Pentagon terror attacks, the anthrax scare quickly escalated into public anxiety when postal workers in New Jersey and suburban Washington, DC were exposed to anthrax spores in mail sent to congressional leaders.

Overnight, APHL board members and staff became highly visible spokespersons for the public health community's response to the anthrax threat. Dr. Mary Gilchrist, APHL's president, head of the Iowa public health laboratory and a microbiologist for 37 years, testified eloquently before a US Senate subcommittee chaired by fellow Iowan Tom Harkin.²⁴ Katherine A. "Kati" Kelley, head of the Connecticut public

health laboratory, was the feature of a *USA Today* cover story,²⁵—including a half-page portrait at her bench—Scott Becker, APHL's executive director, took as many as eight to ten press calls a day from the national media, including *The Wall Street Journal*, *The New York Times*, and *The Washington Post*.²⁶

APHL board members played a key role in quieting the fears of the public in their local communities. In Minneapolis-St. Paul, Dr. Norman Crouch, head of the Minnesota public health laboratory, worked with his staff to assure jittery workers at the Twin Cities airport that a suitcase with an oily residue on it found abandoned at a luggage carousel

contained nothing more toxic than a shipment of curry butter from Ethiopia.²⁷ In Richmond, Dr. Jim Pearson, head of the Virginia public health laboratory, fielded a call from police who had confiscated green peppers with a white powder on them from a local grocery store. Pearson's staff was quickly able to determine that the white powder was dried salts from the hard water in the grocery store's produce misting system.²⁸

But for all the stories involving green peppers, powdered doughnuts and suitcases of curry butter, the reality was that public health laboratories

truly were on the front lines of the nation's defense against bioterrorism. Pearson's staff cultured the nasal swabs from postal workers at the Brentwood facility outside Washington, DC, making the definitive



December 26, 2001
USA Today "Lifestyles" front
page story featuring Katherine
Kelley, DrPH.



November 9, 2001 article in
The Washington Post.

All states, at a minimum, screen newborns for PKU and congenital hypothyroidism.
Most states test for many other diseases.

determination that several of the workers had been exposed to the virulent strain of inhalation anthrax.

In Florida, the staff of the state's public health laboratory were instrumental in detecting anthrax spores in the initial case of the tabloid photo editor from suburban Miami. Ming Chan, the head of the Florida public health laboratory in Jacksonville, explained that the sample from the affected worker arrived in an overnight mail package from the South Florida hospital that had taken the sample.

"Our guy immediately started working the procedure that he was trained to do," Chan said. "By Wednesday evening, October 10, he was pretty sure that it was anthrax, so he started calling the CDC."²⁹ The sample went to Atlanta that evening via Delta's Dash service. By Thursday afternoon, CDC staffers and FBI were swarming into Palm Beach County to search for the source of the anthrax.³⁰

The second reality was that the anthrax outbreak did not particularly surprise APHL and its members. The nation's public health laboratory community had been preparing for bioterrorism since at least the late-1990s.

"In 1999, we started to focus on bioterrorism," noted Rosemary Humes of the APHL staff. "All of the NLTN offices were actively involved in developing bioterrorism training, and so we did a couple of big courses, with one in Chicago and one in Michigan."³¹

Scott Becker added that at APHL's 1998 annual meeting, we "got a very small work group together to talk about something unknown to us, which was bioterrorism. We knew it was coming, we just did not know when."³²

APHL surveyed members on bioterrorism needs and used that information to successfully lobby Congress for the inclusion of \$13 million to help laboratories prepare for the possibility of bioterror threats.³³ In 1999, CDC tapped APHL to help establish the Laboratory Response Network

(LRN), the nation's first public health response to bioterror threats.³⁴

APHL Today and Tomorrow

APHL celebrates its golden anniversary with a renewed commitment to the association's half-century-

old mission of protecting the nation's public health. No longer an exclusive organization of state and territorial public health laboratory directors, APHL is a respected, Washington, DC-based association that represents the interests of public health laboratories on the state, territorial, county

and local levels. The nearly 400 members represent a cross section of public and private laboratories, as well as dozens of laboratory specialties.

The association has grown dramatically since signing a Cooperative Agreement with CDC in 1989 and incorporating as a 501(c)3 non-profit association in 1991. Much of the growth has been planned.



On October 23, 2001, APHL President, Mary J.R. Gilchrist, Ph.D. testified before a Senate Appropriation Subcommittee.



Evolution of the traditional Newborn Screening Symposia
to the Newborn Screening and Genetic Testing Symposium

Strategic planning had been occurring informally since 1993. APHL began a formal strategic planning process in 1996, even before the association changed its name and broadened membership. Doug Drabkowski, now the director of program development for APHL, explained that the 1996 plan experienced major revisions in 1998 under the leadership of Dr. Burt Wilcke. The association crafted a vision and mission statement, and the next year, APHL prioritized 36 objectives and eight goals in its strategic plan.³⁵

“The mission is to re-think the role of the board,” Dr. Mary Gilchrist, 2001-2002 president, told attendees at APHL’s strategic planning meeting in Atlantic Beach, Florida in January 2002. “Essentially, we want to start anew and come up with major goals.”³⁶ Those goals included advocacy issues, communications and marketing for public health laboratories, organizational effectiveness, leadership education and program development.

“I would rate APHL highly,” said Bob Kingon, a CDC retiree who now

works with public health associations as a planning consultant. “Number one, they have been doing it for nine years, which is kind of unusual. You can just see how they have evolved. So now, I think their strategic planning is more practical, more usable, and they are using it as a marketing tool as well as just driving the organization.”³⁷

It is unlikely that ASTPHLD founders like Sam Damon, Mel Koons, Henry Bauer and J.V. Irons would recognize some of the more esoteric components of the planning process. And it is unlikely that those pioneers would feel at home in the computerized laboratory of the 21st century, culturing exotic organisms from overseas that are often resistant to antibiotics.

What the pioneers would understand is the underlying dedication of the public health laboratory community to serve as America’s front line of defense in the never-ending battle against illness and disease. That is unchanging and will be the public health laboratory community’s primary mission when APHL celebrates its centennial in 2052.



The Florida Department of Health Laboratory identifies a strain of anthrax spores sent to the offices of a weekly tabloid newspaper; APHL members assist US Postal Service in testing facilities for anthrax contamination.

ENDNOTES

America's First Line of Defense: The Public Health Laboratory 1850-1950 (pp. 1-6)

- 1 Quoted in Roger O. Valdiserri, "Temples of the Future: An Historical Overview of the Laboratory's Role in Public Health Practice," Annual Review of Public Health, 1993, v.14, pp.635-648.
- 2 Patricia L. Faust, Editor, Historical Times Illustrated Encyclopedia of the Civil War. New York: Harper & Row, 1986, pp.484-485. Civil War historians estimate that diarrhea in its many forms took more soldiers' lives on both sides than battlefield casualties.
- 3 "Achievements in Public Health, 1900-1999: Control of Infectious Diseases," CDC MMWR Weekly, July 30, 1999, pp.621-629.
- 4 Estimates of the death toll for what became known here as the Spanish Influenza range from 20 million to more than 100 million worldwide. Nearly one-half million Americans died in the Pandemic during late 1918 and early 1919, and 25 percent of the nation's population was ill with the influenza during the course of its infection. Some 43,000 American soldiers and sailors died from the flu, slightly more than the number who died in combat or of wounds during US participation in World War I. In one year—1919—life expectancy in the US dropped 12 years, from 51 to 39. See Gina Kolata, Flu: The Story of the Great Influenza Pandemic of 1918 and the Search for the Virus That Caused It. New York: Farrar, Straus and Giroux, 1999, pp.4-9; See also Alfred W. Crosby, America's Forgotten Pandemic: The Influenza of 1918. Cambridge and New York: Cambridge University Press, 1989, pp.206-207.
- 5 "Biomedical Research," National Library of Medicine. Images from the History of the Public Health Service. US Department of Health and Human Services. Public Health Service. http://www.nlm.nih.gov/exhibition/phs_history/46.html.
- 6 Scott J. Becker, Eric C. Blank, Robert Martin, Michael Skeels, "Public Health Laboratory Administration," p.624, in Lloyd F. Novick and Glen P. Mays, Editors, Public Health Administration: Principles For Population-based Management. Gaithersburg, Maryland: Aspen Publishers, Inc., 2001.
- 7 "fighting the Spread of Epidemic Diseases," National Library of Medicine. Images from the History of the Public Health Service. US Department of Health and Human Services. Public Health Service. http://www.nlm.nih.gov/exhibition/phs_history/46.html. Ironically, nearly a century-and-a-quarter after Congress passed its landmark legislation to stop the spread of infectious disease, Americans are concerned about the public health threat of the spread of infectious disease through the expansion of global air travel. And in the wake of the World Trade Center attack on September 11, 2001, public health officials are on heightened alert to the possibility of chemical and biological warfare attacks by terrorists. See Gina Barton, "Experts focus on warfare by germ," Indianapolis Star, September 21, 2001, p.1A.
- 8 Becker, et. al., p.624.
- 9 Memo, Doug Drabkowski, Director of Member Services and Fellowships, ASTPHLD, to Dr. David Carpenter, Director, Division of Laboratories, Illinois Department of Health, Re: Listing of When State and Territorial Public Health Laboratories were Established. March 16, 1998. In the quarter-century between 1885 and 1910, two-thirds of the states and territories had established public health laboratories.
- 10 "Achievements in Public Health, 1900-1999: Control of Infectious Diseases," CDC MMWR Weekly, July 30, 1999, pp.621-629.
- 11 Ann Durkin Keating, Invisible Networks: Exploring the History of Local Utilities and Public Works. Malabar, Florida: Krieger Publishing Company, 1994, p.149.
- 12 "Sinclair exposes meat-packing 'jungle,'" Clifton Daniel, Editorial Director, Chronicle of America. Mt. Kisco, New York: Chronicle Publications, 1989, p.550. In a telling sign of the increased importance of public health laboratory work, the new law was administered by the Bureau of Chemistry in the US Agriculture Department. See "1906—Novel's Ideas Spark Food Laws," in Kenneth Morris, Marc Robinson and Richard Kroll, American Dreams: One Hundred Years of Business Ideas and Innovation from The Wall Street Journal. New York: Light Bulb Press, Inc., 1990, p.44.
- 13 Bill Beck, From the Foot of Winter Street: The History of Superior Water, Light & Power Company, 1889-1989. Superior, Wisconsin: Superior Water, Light & Power Company, 1989, p.10.
- 14 Ronald K. Huch, "Typhoid Truelson, Water and Politics in Duluth, 1896-1900," Minnesota History, Spring 1981, pp.190-193.
- 15 Bill Beck, "Muscatine Power and Water: An Illustrated History," Muscatine, Iowa: Muscatine Power and Water, 1992, pp.3-4. Although \$100,000 was an immense amount of money for a community to invest in 1900, the investment was often money well spent. In 1915, auditors for the city reported that the replacement value for the Muscatine Waterworks was in excess of \$500,000.
- 16 J.M. Witherow, "City of Moorhead was Pioneer in Use of Municipal Artesian Wells," The Country Press, September 1950, p.1.
- 17 Bill Beck, The People's Power: Cedarburg Light and Water—The first 100 Years. Cedarburg, Wisconsin: Cedarburg Light and Water, 2001, p.8.
- 18 Valdiserri, "Temples of the Future," p.641.
- 19 Charles E. Rosenberg, The Care of Strangers: The Rise of America's Hospital System. New York: Basic Books, Inc., 1987, p.159. The introduction of serological tests for typhoid and syphilis followed in 1897 and 1906.
- 20 "Public Health in Illinois: A Timeline of the Illinois Department of Public Health," <http://www.idph.state.il.us/about/timeline.htm>.
- 21 Valdiserri, "Temples of the Future," p.637. Between 1860 and 1914, more than 15,000 American medical students studied at German-speaking universities, mostly in Berlin and Vienna. Rosenberg, The Care of Strangers, p.206.
- 22 Texas Department of Health, "Bureau of Laboratories: A Brief History," <http://www.tdh.state.tx.us/lab/Labhist.htm>.
- 23 Ibid.
- 24 Ibid.
- 25 Ibid.
- 26 Ibid.
- 27 John J. Clemmer, MD, "The Approved Public Health Laboratory System in New York State," New York Journal of Medicine, October 15, 1960, p.3221-3222.
- 28 Barbara Hyde, "Society Founded by 'Lost Souls' Among Naturalists," ASM News, v.65, no.5, 1999, p.266. In 1916, the Society founded the Journal of Bacteriology. Dues were \$5 a year, with \$4 of that total designated for the journal.
- 29 Joel R. Cohen, PhD and Elizabeth D. Robinton, PhD, "The Laboratory Section of the American Public Health Association, 1899-1999: 100 Years of Research, Development, Environmental and Diagnostic Services," Unpublished Paper, 1999, pp.5-6. Papers at that first session discussed diphtheria bacillus, drinking water bacteria, anti-streptococcus serum, and laboratory work on tuberculosis and infection by milk. The members had lunch at the new Pathological Laboratory of the University Medical School, which also doubled as the laboratory for the Minnesota State Board of Health. On the luncheon menu, each food was expressed in bacteriological terms.
- 30 A History of the Conference of State and Provincial Public Health Laboratory Directors. Burlington, Vermont: Shelburne Press, 1958, pp.3-4. One of the constitutional discussions held during that first meeting involved the question of whether the organization should admit only directors of state and city public health laboratories. After debating the question much of that first day, the members passed an amendment that "the membership of the Conference be confined to state and city laboratory directors and that invitation be extended to the engineers and other laboratory men to be present at the meeting."
- 31 Ibid., pp.5-6. Members did pay attention to laboratory science, with talks scheduled that first meeting on diphtheria carriers, the Wassermann Test, pneumonia vaccine, and the Schick Test.
- 32 Ibid., p.6. Russell, however, cautioned the state laboratory directors not to spread their facilities too thin. The then emerging science of cancer research, he noted, "should not be done by any laboratory save that which is well qualified to do this work."

The War Against Venereal Disease: The Public Health Laboratory 1915–1960 (pp. 7-12)

- 1 Warren Wilkinson, *Mother, May You Never See The Sights I Have Seen: The fifty-seventh Massachusetts Veteran Volunteers in the Last Year of the Civil War*. New York: Harper & Row, 1990, p.357.
- 2 Jared Diamond, *Guns, Germs and Steel: The Fates of Human Societies*. New York: W.W. Norton & Co., 1997.
- 3 Meirion and Susie Harries, *The Last Days of Innocence: America At War, 1917-1918*. New York, Random House, 1997, p.134. Draftees had other health problems. US Army dentists reported that one in four conscripts at one camp—more than 10,000 draftees—had infected root canals.
- 4 *Ibid.*, p.134. Foot problems, however, dwarfed all other disease problems. At Ft. Devens, there were nine soldiers with orthopedic problems for every case of venereal disease.
- 5 *Ibid.*, p.139.
- 6 *Ibid.*, p.140. Pershing's campaign against venereal disease was not without its unintended consequences. The AEF's adjutant general's office later determined that the Military Police units that patrolled the French red-light districts had the highest incidence of venereal disease of any unit in the American army.
- 7 "Prevalence of Venereal Disease," <http://www.biology.lsa.umich.edu/courses/bio118/syphilis2.htm>, p.3.
- 8 *Ibid.*, p.3.
- 9 "Masters of the Healing Arts," <http://www.dorledor.org/advan19to24.htm>. Thousands of pre-war public health laboratory personnel were trained at the Wasserman Laboratory, which was attached to the Harvard Medical School. In 1915, the Laboratory was transferred to the Massachusetts Department of Public Health. The Laboratory's World War I chief, Dr. William August Hinton, went on to become the first African-American professor at Harvard Medical School. During the 1930s, Dr. Hinton introduced his Hinton Test for Syphilis, an improvement to the Wasserman Test. See "Faces of Science: African-Americans in Science," <http://www.princeton.edu/~mcbrown/display/hinton.htm>.
- 10 The early Wasserman tests sought the presence of reagin, which reacted positive to the cardiolipin beef-heart antigen. People with secondary or tertiary syphilis produced reagin in quantities sufficient to show up in the Wasserman test. Telephone Interview with Dr. Carl Blank, Cheyenne, Wyoming, November 16, 2001. The introduction of the TPI test in the 1950s allowed public health laboratories to test for an antibody to the actual syphilis spirochete.
- 11 Ronald O. Valdiserri, "Temples of the Future: An Historical Overview of the Laboratory's Role in Public Health Practice," *Annual Review of Public Health*, 1993, v.14, pp.644-645.
- 12 Joel R. Cohen, PhD and Elizabeth D. Robinton, PhD, "The Laboratory Section of the American Public Health Association, 1899-1999: 100 Years of Research, Development and Diagnostic Services," 1999, Chapter VII, Annual Meetings, p.10.

- 13 Valdiserri, "Temples of the Future," p.643.
- 14 "Texas Department of Health, Bureau of Laboratories: A Brief History," <http://www.tdh.state.tx.us/lab/Labhist.htm>.
- 15 *Ibid.*
- 16 Valdiserri, "Temples of the Future," p.645.
- 17 Quoted in Valdiserri, "Temples of the Future," p.645.
- 18 *Ibid.*, p.645.
- 19 Wendell C. Kelly, "Venereal Disease Control in Indiana," *Monthly Bulletin Indiana State Board of Health*, August 1940, p.232.
- 20 "Public Health in Illinois: A Timeline of the Illinois Department of Health," <http://www.idph.state.il.us/about/timeline.htm>.
- 21 "State Extends Venereal fight With New Fund," *Indianapolis Times*, June 28, 1938.
- 22 "1.6 Per Cent Syphilis Shown in Pre-Marital Blood Tests," *Indianapolis News*, April 17, 1941.
- 23 "Social Hygiene Study Facts Cited," *Indianapolis Star*, January 29, 1940.
- 24 *Ibid.*
- 25 "A History of the Conference of State and Public Health Laboratory Directors," 1958, pp.18-19. Program topics in 1938 and 1939 included: "Should Evaluation Studies as Carried Out on Syphilis be Extended to Other Types of Laboratory Work?"; "Should State Laboratories Approve Other Laboratories Within Their State for Work on Syphilis, Pneumococcus Typing, etc.?" "Laboratory Attitude Towards Pre-Marital Examination Laws for Syphilis."; "Relative Importance of Spread and Culture Diagnosis of Gonococcal Infections."
- 26 Quoted in Valdiserri, "Temples of the Future," p.644. The 1940 US Public Health Survey also reported that most state and territorial public health laboratories performed chemical and biological testing of water, supplies, food and drugs. The second most prevalent test for communicable disease in 1940 was for tuberculosis.
- 27 Julia Mae Hamilton, "Our War Against Hazards on the Health Front," *Public Welfare in Indiana*, October, 1943, p.3.
- 28 *Ibid.*, p.3. When statistics on the incidence of syphilis among the first one million draftees and enlistees tested were compiled in 1943, North Dakota reported the lowest percentage of syphilis per 1,000 population. Some in the public health community attributed that fact to the work of Melvin E. Koons, the director of the state's public health laboratory. Others suggested that North Dakota was a remarkably homogenous state with a conservative Scandinavian population.
- 29 "Texas Department of Health, Bureau of Laboratories: A Brief History."
- 30 "A History of the Conference of State and Public Health Laboratory Directors," 1958, p.24. Hunter bemoaned the difficulty his members were having in obtaining supplies and equipment for their laboratories. "Orders placed a year ago for both equipment and supplies are still undelivered," he said, "and it is a question as to when they will be received."
- 31 Interview with Dr. Carl Blank, Cheyenne, Wyoming, at the APHL Office, Washington, DC, July 18, 2001.

The Conference Becomes ASTPHLD: Public Health Laboratory Leadership (pp. 13-21)

- 1 The acronym was always a source of amusement to members. The combination of ST and PH consonants made the acronym all but unpronounceable. Oral History Interview with Scott Becker, at the APHL Office, Washington, DC, July 18, 2001.
- 2 CDC was an outgrowth of one of the unsung success stories of World War II. Malaria Control in War Areas (MCWA), a federal agency, was established in the spring of 1942 to help protect American servicemen and women overseas, as well as US citizens in the Southeast and Puerto Rico, from the ravages of one of mankind's most intractable insect-borne enemies. MCWA established its headquarters in Atlanta in 1942, partly because of shortage of office space in wartime Washington, DC and partly because of the Georgia city's proximity to the malarial zone in the American South. By the end of the war, MCWA employed more than 4,000 people. See Elizabeth W. Etheridge, *Sentinel for Health: A History of the Centers for Disease Control*. Berkeley: University of California Press, 1992, pp.1-17.
- 3 Clifton Daniel, Editorial Director, *Chronicle of America*. Mount Kisco, NY: Chronicle Publications, 1989, p.796. Carson's landmark environmental work, however, was tromped in the 1962 Best-Seller sweepstakes by Helen Gurley Brown's *Sex and the Single Girl*.
- 4 *Ibid.*, p.757.
- 5 "A History of the Conference of State and Provincial Public Health Laboratory Directors," 1958, pp.14-16. The new organization held its meetings annually in conjunction with the meeting of the American Public Health Association (APHA).
- 6 *Ibid.*, p.21. Dr. McCrady's suggestion was one of the few items on the agenda that the members could agree to that year. Members were in the midst of what a historian of the Conference called "tense discussion" about a proposal that would have made an MD degree mandatory for public health laboratory directors.
- 7 *Ibid.*, pp.21-22. The reorganized Conference quickly took on a new lease on life. By 1943, the Conference reported 59 full numbers and nearly 100 associate and non-voting members. Dr. McCrady's leadership at the 1938 annual meeting and his insistence on allowing Canadian members to join the organization increased Canadian participation to 20 percent of the full and associate membership by 1943.
- 8 John Duffy, *The Sanitarians: A History of American Public Health*. Urbana and Chicago: University of Illinois Press, 1990, pp.273-274.
- 9 "A History of the Conference of State and Provincial Public Health Laboratory Directors," p.25.
- 10 *Ibid.*, pp.26-27.
- 11 Oral History of Dr. Carl Blank, APHL Offices, Washington, DC, July 18, 2001.
- 12 "A History of the Conference of State and Provincial Public Health Laboratory Directors," p.28.

- 13 Etheridge, *Sentinel For Health*, p.52. Hogan standardized diagnostic reagents in the CDC's laboratories and began breeding mice so the laboratories would have a standard breed that reacted identically to tests.
- 14 *Ibid.*, p.53.
- 15 "A History of the Conference of State and Provincial Public Health Laboratory Directors," p.28.
- 16 Jeff Bennett and Richard D. Feldman, "The Most Useful Citizen of Indiana," *Traces of Indiana History*, Summer 2000, pp.34-43.
- 17 Oral History Interview with Dr. Carl Blank, APHL Headquarters, Washington, DC, July 18, 2001.
- 18 Duffy, *The Sanitarians*, pp.280-281.
- 19 Beck, *Good Chemistry: The Story of P.C. Reilly and Reilly Industries*. Indianapolis: Reilly Industries, 1996, p.127. Roche Laboratories later changed its name to Hoffman-LaRoche, in honor of Fritz Hoffman-LaRoche, the Swiss scientist who founded the company in 1896.
- 20 Duffy, *The Sanitarians*, p.280.
- 21 Oral History Interview with Dr. Carl Blank, APHL Headquarters, Washington, DC, July 18, 2001.
- 22 Minneapolis Mayor Hubert H. Humphrey took to the airwaves on WCCO Radio in 1946 to read the Sunday newspaper comics to the thousands of Twin Cities children quarantined by a polio outbreak. Beck, *Methodist Hospital: A Tradition of Caring*. Minneapolis: Methodist Hospital, 1992, p.141.
- 23 Duffy, *The Sanitarians*, p.280.
- 24 Telephone Interview with Nathan Schneider, July 19, 2001.
- 25 Telephone Interview with Stan Inhorn, July 19, 2001.
- 26 *Ibid.*
- 27 Telephone Interview with Charles Sweet, July 19, 2001.
- 28 *Ibid.*

CLIA and Its Role in the Evolution of the Public Health Laboratory Community (pp. 23-30)

- 1 Anna M. Sexton, *The First Fifty Years, 1914-1964: A Chronicle of the Division of Laboratories & Research*, New York State Department of Public Health. Lunenburg, Vermont: The Stinehour Press, 1967, p.239.
- 2 *Ibid.*, p.239.
- 3 *Ibid.*, p.239.
- 4 *Ibid.*, pp.199-200.
- 5 *Ibid.*, p.197.
- 6 *Ibid.*, p.203.
- 7 "Only 5% of VD Cases Reported," *Indianapolis News*, May 16, 1963. In some states which had been strong proponents of pre-marital testing legislation, the number of actual VD cases reported was estimated to be five percent or less of the actual number of cases. Indiana public health officials estimated as late as 1969 that VD

ranked second only to the common cold and influenza in the number of cases reported to state health officials. See, Michael P. Tarpey, "Little Being Done To Curb Venereal Disease Over US," *Indianapolis Star*, April 20, 1969.

- 8 "Services and Workloads—Serologic Tests for Syphilis," ASTPHLD, *Tabulation of Information From State and Territorial Health Department Questionnaires*, March 14, 1962, pp.75-76.
- 9 ASTPHLD, "Consolidated Annual Report," 1964. The 50 states and territories reporting in 1964 handled 7,280,376 immunology specimens in 1964, out of a total of 13,112,714 specimens. As part of the celebration of the 50th Anniversary of the Association of Public Health Laboratories, Dr. Carl Blank and David Adcock compiled the Consolidated Annual Reports—first published in 1964 by the Association under the auspices of the CDC—into a summary document that reviews public health laboratory practices for the years 1964, 1969, 1974, 1979, 1984 and 1987. See, Blank and Adcock, "Consolidated Annual Reports—1964-1987, Summary."
- 10 Blank and Adcock, "Consolidated Annual Reports—1964-1987, Summary."
- 11 *Ibid.*
- 12 "Polio's Little Brother," *Time*, October 19, 1959.
- 13 Blank and Adcock, "Consolidated Annual Reports—1964-1987, Summary."
- 14 *Ibid.* Most large electric power utilities had created atomic power departments in the 1950s to explore the feasibility of nuclear power plants. See Beck, *PP&L: 75 Years of Powering the Future*. Allentown, Pennsylvania: Pennsylvania Power & Light Co., 1995, pp.382-383. The nation's first commercially viable atomic power plant was Duquesne Light Company's Shippingsport plant near Pittsburgh, which was dedicated in the spring of 1958. See Beck, *The Energy to Make Things Better: NSP—An Illustrated History of Northern States Power Company*. Minneapolis, Minnesota: Northern States Power Company, 1999, p.139.
- 15 Blank and Adcock, "Consolidated Annual Reports—1964-1987, Data Sheet."
- 16 New York spent \$2.37 million on its public health laboratories in 1962, just ahead of the \$2.19 million laboratory expenditure in Michigan. Nebraska spent \$11,600 on laboratories in 1962. See "General Information," ASTPHLD, *Tabulation of Information From State and Territorial Health Department Questionnaires*, March 14, 1962, pp.4-5.
- 17 State and Territorial Laboratory Director salaries ranged from a low of \$6,000 a year in Arkansas to a high of \$20,000 a year in Michigan. "Position Information—Director," ASTPHLD, *Tabulation of Information From State and Territorial Health Department Questionnaires*, March 14, 1962, pp.28-29.
- 18 "Date Laboratory Built or Last Remodeled," ASTPHLD, *Tabulation of Information From State and Territorial Health Department Questionnaires*, March 14, 1962, pp.1-3.
- 19 Social Security Administration Chronology, www.ssa.gov/history/chrono.html.
- 20 Etheridge, *Sentinel For Health*, p.135.
- 21 Califano went on to explain that Johnson purchased the support of Wilbur Mills, the powerful Arkansas Congressman, by agreeing to add

Medicaid as a Social Security Act amendment. Mills had been stumping for his own health care bill which would have provided the bulk of its benefits to destitute residents in the American South. See Edward Berkowitz Oral History Interview with Joseph Califano, New York, New York, August 31, 1995, Health Care financing Administration Oral History Interview Program.

- 22 The health and safety standards weren't particularly onerous for big city hospitals and university medical centers. They did present major challenges, however, for the hundreds of rural hospitals built during the 1950s and 1960s with the assistance of Hill-Burton grants. The Johnson Administration solved the problem by issuing "access" certification to hospitals that were making good-faith progress toward complying with the Medicare licensure requirements. See Edward Berkowitz Oral History Interview with Arthur Hess, Charlottesville, Virginia, July 8, 1996, Health Care financing Administration Oral History Interview Program.
- 23 Carl Blank Interview, July 18, 2001.
- 24 *Ibid.*
- 25 *Ibid.*
- 26 *Ibid.*
- 27 *Ibid.*
- 28 *Ibid.*
- 29 Nathan Schneider Interview, July 19, 2001.
- 30 Stan Inhorn Interview, July 19, 2001.
- 31 *Ibid.*
- 32 Charles Sweet Interview, July 19, 2001.
- 33 *Ibid.*
- 34 *Ibid.*
- 35 *Ibid.*
- 36 Carl Blank Interview.
- 37 Harlyn O. Halverson, "ASM: Rich History of Public Policy Involvement," *ASM News*, v.65, no.5, May 1999, p.378.
- 38 Carl Blank Interview.

New Challenges (pp. 31-38)

- 1 Clifton Daniel, Editorial Director, *Chronicle of America*. Mt. Kisco, New York: Chronicle Publications, 1989, p.830.
- 2 Beck, *The Energy To Make Things Better—NSP: An Illustrated History of Northern States Power Company*. Minneapolis: Northern States Power Company, 1999, p.159.
- 3 Bill Beck's Chronology, 1970 (copy located in author's chronology file, 1965-1995) Indianapolis.
- 4 Beck, *The Mondakonians—Energizers of the Prairie: An Illustrated History of MDU Resources Group, Inc.*, Bismarck, North Dakota: MDU Resources Group, Inc., 1992, p.281. Nixon was a man years ahead of his time in developing an environmental awareness. And although conventional wisdom depicts Republicans as being soft on the environment, the Clean Water and Clean Air Act amendments that strengthened the original legislation were signed into law on the watches of Presidents Ronald Reagan and George H.W. Bush.

- 5 Oral History Interview with Dr. Carl Blank, Washington, DC, July 18, 2001.
- 6 Oral History Telephone Interview with Dr. Stan Inhorn, Madison, Wisconsin, July 19, 2001.
- 7 ASTPHLD, "Consolidated Annual Report," 1969.
- 8 ASTPHLD, "Consolidated Annual Report," 1974.
- 9 ASTPHLD, "Consolidated Annual Report," 1969.
- 10 ASTPHLD, "Consolidated Annual Report," 1974.
- 11 ASTPHLD, "Consolidated Annual Reports," 1969, 1974.
- 12 ASTPHLD, "Consolidated Annual Report," 1979.
- 13 ASTPHLD, "Consolidated Annual Reports" 1969, 1974, 1979. Environmental specimens weren't the only samples to record healthy increases during the decade. Bacteriology specimens more than doubled during the 1970s, while hematology specimens handled by the nation's public health laboratories tripled from 1969 to 1979. The percentage leader in samples tested, however, was toxicology, which went from an almost non-existent 35,000 specimens in 1969 to more than half-a-million samples in 1979.
- 14 ASTPHLD, "Consolidated Annual Reports" 1969, 1974, 1979.
- 15 ASTPHLD, "Consolidated Annual Reports" 1969, 1974, 1979. There were 18 people on the staff of the Utah Department of Health Laboratories in 1951 when Carl Blank was hired. When Blank left Utah in 1972, the laboratory staff had grown to 72 people. See Blank Interview.
- 16 Blank and Adcock, "Consolidated Annual Reports—1964-1987, Summary."
- 17 Ibid.
- 18 Elizabeth W. Etheridge, *Sentinels of Health: A History of the Centers for Disease Control*. Berkeley: University of California Press, 1992, p.224. The Communicable Disease Center was renamed the Center for Disease Control in 1970. The plural "Centers" was adopted during the organization's 1977 restructuring.
- 19 Inhorn Interview.
- 20 Ibid.
- 21 Ibid.
- 22 Oral History Telephone Interview with Dr. Nathan Schneider, Tallahassee, Florida, July 19, 2001.
- 23 Blank Interview.
- 24 Ibid.
- 25 Etheridge, *Sentinels of Health*, p.117.
- 26 Blank Interview.
- 27 Ibid.
- 28 Ibid.
- 29 Oral History Telephone Interview with Dr. Charles Sweet, Austin, Texas, July 19, 2001.
- 30 Blank Interview.
- 31 Ibid.

- 32 The introduction of an effective measles vaccine in 1963 reduced the cases of childhood measles from 500,000 a year during the early 1960s to 75,000 a year during the early 1970s. See John Duffy, *The Sanitarians: A History of American Public Health*. Urbana: University of Illinois Press, 1990, p.297.
- 33 Richard S. Baldwin, *The Fungus fighters: Two Women Scientists and Their Discovery*. Ithaca, New York: Cornell University Press, 1981, pp.132-137.
- 34 Blank Interview.
- 35 Paul Mickle, "1976: Fear of a great plague," *The Trentonian*, in www.capitalcentury.com/1976.html.
- 36 Joel Warner, "The Sky is Falling: An Analysis of the Swine Flu Affair of 1976," in www.haverford.edu/biology/edwards/disease/viral_essays/warnervirus.htm.
- 37 The New York Times called the vaccination program an "election year gimmick." See Duffy, *The Sanitarians*, p.298.
- 38 Etheridge, *Sentinels of Health*, pp.247-267.
- 39 Ibid., pp.268-269.
- 40 Ibid., pp.257-258.
- 41 Ibid., pp.265-267.
- 42 "Legionnaire's Disease (Legionellosis)," www.tdh.state.tx.us/legion.htm.
- 43 Ibid.; See also, "Achievements in Public Health, 1900-1999: Control of Infectious Diseases," CDC MMWR Weekly, v.48, no.29, July 30, 1999, pp.621-629.

The Taft Center (pp. 36-37)

- 1 "Robert A. Taft Sanitary Engineering Center," <http://einsys.einphg.org:888/MARION/ADR-7953>.
- 2 Ibid.
- 3 Telephone Oral History Interview, Dr. Carl Blank, Cheyenne, Wyoming, March 26, 2002.
- 4 Ibid. Dr. Alan S. Josephson, longtime chief of the Division of Allergy and Clinical Immunology at the Downstate Medical Center in Brooklyn, New York, did a two-year tour with the Taft Center as part of his draft obligation from 1961-1963. At the time, the Taft Center assigned the young doctor from the Bronx to its newly-formed Division of Air Pollution, but the focus remained water contamination.
- 5 Dr. Straub spent the last 15 years of his career as Professor of Environmental Health and as Director of the Environmental Health Research and Training Center in the School of Public Health at the University of Minnesota in Minneapolis. He retired in 1981. During his 25 years with the Robert A. Taft Sanitary Engineering Center, Straub was instrumental in involving the Center in air pollution studies and low-level radioactive waste investigations. See, "Conrad P. Straub, PhD, Professor Emeritus," <http://www1.umn.edu/eoh/straub.html>.
- 6 Blank Interview; See also, "APHL, Listing of Officers, 1952-2001."
- 7 Blank Interview. The Center is currently known as the Robert A. Taft Water Research Center. "Robert A. Taft Sanitary Engineering Center," <http://einsys.einphg.org:888/MARION/ADR-7953>.

Rise of HIV and CDC Reorganization: 1980s (pp. 39-46)

- 1 Oral History Interview with Dr. Carl Blank, Washington, DC, July 18, 2001.
- 2 "Timeline, 1981-1988," <http://aidshistory.nih.gov/timeline/index.html>.
- 3 Dr. Michael Gottlieb, et. al., *Morbidity and Mortality Weekly Report*, v.30, June 5, 1980, pp.50-52.
- 4 "Timeline, 1981-1988."
- 5 Randy Shilts, *And the Band Played On: Politics, People and the AIDS Epidemic*. New York: St. Martins Press, 1987, pp.20, 22, 37.
- 6 "Timeline, 1981-1988."
- 7 Ibid.
- 8 Ibid.
- 9 Ibid.
- 10 Ibid.
- 11 Associated Press, "Improved AIDS treatment pushes total of HIV-infected Americans to 1 million," *The Bloomington (Indiana) Herald-Times*, February 26, 2002, p.A5.
- 12 Shilts, *And the Band Played On*, pp.xxi-xxiii.
- 13 Blank Interview.
- 14 Tape Recorded Telephone Oral History Interview with Dr. Burt Wilcke, Burlington, Vermont, February 18, 2002.
- 15 Telephone Oral History Interview with Dr. Eric Blank, Jefferson City, Missouri, March 1, 2002.
- 16 Carl Blank and David Adcock, "Consolidated Annual Reports, 1964-1987: Summary," APHL: 2001, p.2.
- 17 Ibid., p.2.
- 18 Blank and Adcock, "Consolidated Annual Reports, 1964-1987," APHL: 2001, n.p.
- 19 Blank and Adcock, "CAR: Summary," p.2.
- 20 Blank and Adcock, "CAR."
- 21 Blank and Adcock, "CAR: Summary," p.1.
- 22 Blank and Adcock, "CAR."
- 23 Ibid.
- 24 Blank and Adcock, "CAR: Summary," p.2.
- 25 Blank and Adcock, "CAR."
- 26 Telephone Oral History Interview with Charles Sweet, Austin, Texas, July 19, 2001, p.6.
- 27 Blank Interview.
- 28 Ibid.
- 29 Tape Recorded Telephone Oral History Interview with Bob Kingon, Atlanta, Georgia, February 22, 2002.
- 30 Ibid.
- 31 Shilts, *And the Band Played On*, p.55.
- 32 Kingon Interview.
- 33 Ibid.
- 34 Ibid.
- 35 Ibid.
- 36 Ibid.

A Decade of Changes (pp. 45-54)

- 1 Telephone Oral History Interview with Dr. Eric Blank, Jefferson City, Missouri, March 1, 2002.
- 2 Tape Recorded Telephone Oral History Interview with Robert J. Kingon, Atlanta, Georgia, February 22, 2002.
- 3 Ibid.
- 4 Oral History Interview with Carl Blank, Washington, DC, July 18, 2001.
- 5 NLTN Organizational Milestones, "Happy Anniversary: National Laboratory Training Network," Salt Lake City, Utah: NLTN, September 1999, n.p.
- 6 Blank Interview.
- 7 Ibid.
- 8 Tape Recorded Telephone Oral History Interview with Burton Wilcke, Burlington, Vermont, February 18, 2002.
- 9 Ibid.
- 10 Ibid.
- 11 Ibid.
- 12 Ibid.
- 13 Blank Interview.
- 14 Wilcke Interview.
- 15 Ibid.
- 16 Barbara G. Albert, Regional Coordinator, National Laboratory Training Network, "The National Laboratory Training Network: A Bold New Direction in Laboratory Training," September 1999, p.9.
- 17 Telephone Oral History Interview with Barbara G. Albert, Nashville, Tennessee, December 12, 2001.
- 18 Ibid.
- 19 Ibid.
- 20 Ibid.
- 21 Ibid.
- 22 "Happy Anniversary: National Laboratory Training Network."
- 23 Albert Interview.
- 24 "Happy Anniversary: National Laboratory Training Network."
- 25 Albert Interview.
- 26 "Happy Anniversary: National Laboratory Training Network" A 1993 satellite conference, "Fundamentals of TB/TB Control," attracted 1,242 participants. The course on "Clinically Relevant, Cost Effective Community Hospital Microbiology" was given 49 times in less than a decade.
- 27 Albert Interview.
- 28 Quoted in Albert, "The National Laboratory Training Network: A Bold New Direction in Laboratory Training," p.8.
- 29 Quoted in "Happy Anniversary: National Laboratory Training Network."
- 30 Ibid.
- 31 Eric Blank Interview.
- 32 Ibid.

- 33 Wilcke Interview.
- 34 Ibid.
- 35 Ibid.
- 36 Tape Recorded Oral History Interview with Doug Drabkowski, Washington, DC, December 11, 2001, p.2.
- 37 Ibid.
- 38 Ibid., p.3.
- 39 Tape Recorded Oral History Interview with Eva Perlman, Washington, DC, December 11, 2001, p.4.
- 40 Ibid.
- 41 Ibid., p.11.
- 42 Drabkowski Interview, p.4.
- 43 Oral History Interview with Lynn Bradley, Washington, DC, December 12, 2001, p.1.
- 44 Ibid.

APHL and the 21st Century Public Health Laboratory Community (pp. 55-62)

- 1 Tape Recorded Oral History Interview with Scott Becker, Washington, DC, December 12, 2001, p.2.
- 2 Ibid., p.2.
- 3 Tape Recorded Telephone Oral History Interview with Burt Wilcke, Burlington, Vermont, February 18, 2002.
- 4 Telephone Oral History Interview with Eric Blank, Jefferson City, Missouri, March 1, 2002.
- 5 Ibid. Cordts left ASTPHLD in December 1996 to enroll in graduate school, and Becker assumed his duties as executive director immediately following the June 1997 association annual meeting in San Diego. Dr. Carl Blank came out of retirement to serve as interim executive director during the transition. See Oral History Interview with Dr. Carl Blank, Washington, DC, July 18, 2001, p.21.
- 6 Becker Interview, p.6.
- 7 Ibid., p.6.
- 8 Ibid., p.6.
- 9 Ibid., p.7.
- 10 Ibid., p.7.
- 11 Ibid., p.7.
- 12 Ibid., p.8. In the early days at Suite 508, staffers answered the phone "association headquarters" to avoid using the initials. But then, management decreed that the proper telephone greeting was "Good afternoon, ASTPHLD. How may I help you?" Eva Perlman of the APHL staff recalled the day her five-year old daughter heard the greeting for the first time and asked, "Mommy, why did you answer the phone ABCDEFG?" See Tape Recorded Oral History Interview with Eva Perlman, Washington, DC, December 11, 2001, p.2.
- 13 Eric Blank Interview.
- 14 Wilcke Interview.
- 15 Ibid.
- 16 Ibid.
- 17 Becker Interview, p.9.

- 18 Tape Recorded Oral History Interview with Rosemary Humes, Washington, DC, December 12, 2001, p.3.
- 19 Ibid., p.8.
- 20 Tape Recorded Oral History Interview with Kajari Shah, Washington, DC, December 12, 2001, p.2.
- 21 Ibid., p.2.
- 22 Ibid., p.4.
- 23 Ibid., p.5.
- 24 Oral History Interview with Mary Gilchrist, Atlantic Beach, Florida, January 18, 2002.
- 25 Oral History Interview with Katherine A. "Kati" Kelley, Atlantic Beach, Florida, January 18, 2002.
- 26 "APHL: An Unlikely Media Darling Brings A Serious Message to America," The APHL Minute, January-February 2002, p.2. APHL board members were extraordinarily busy giving interviews to their local media. Michael Skeels, director of Oregon's Center for Public Health Laboratories, appeared on all five Portland-area television stations and gave interviews to local reporters as far away as Seattle. Jane Getchell, director of the Delaware public health laboratory, said the most important thing she could do in the anthrax crisis was "to take pressure off the laboratory staff by handling administrative and media spokesperson duties." Oral History Interview with Jane Getchell, Atlantic Beach, Florida, January 18, 2002.
- 27 Oral History Interview with Norm Crouch, Atlantic Beach, Florida, January 18, 2002.
- 28 Oral History Interview with Jim Pearson, Atlantic Beach, Florida, January 18, 2002.
- 29 Tape Recorded Telephone Oral History Interview with Ming Chan, Jacksonville, Florida, February 15, 2002, p.10.
- 30 Ibid., p. 11. Chan noted that the sample didn't get to Atlanta until 11 a.m. because the courier at Hartsfield International Airport didn't realize the urgency of the delivery. In the meantime, Chan had gotten a request from the Palm Beach County Health Department not to release the results to anyone except the CDC. But the laboratory staffer who had identified the anthrax spores had worked late the night before and had come in late Thursday morning. He hadn't gotten the confidentiality message and when the doctor from suburban Miami who made the original diagnosis called, the staff member confirmed anthrax.
- 31 Humes Interview, p.4.
- 32 Becker Interview, p.10.
- 33 Ibid., p.10.
- 34 Scott Becker, Remarks to American Society of Association Executives, Washington, DC, December 12, 2001.
- 35 Doug Drabkowski presentation, APHL Strategic Planning Mission, Sea Turtle Inn, Atlantic Beach, Florida, January 19, 2002.
- 36 Mary Gilchrist presentation, APHL Strategic Planning Mission, Sea Turtle Inn, Atlantic Beach, Florida, January 19, 2002.
- 37 Tape Recorded Telephone Oral History Interview with Bob Kingon, Atlanta, Georgia, February 22, 2002, p.8.



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