



FOCUS

on

FELLOWS

2014



APHL-CDC Fellowship Programs



PARTNER INFO



About APHL

The **Association of Public Health Laboratories (APHL)** is a national nonprofit dedicated to working with its members to strengthen governmental laboratories with a public health mandate. APHL's mission is "Shape national and global health outcomes by promoting the value and contributions of public health laboratories and continuously improving the public health laboratory system and practice."

APHL's core membership is comprised of public health, environmental and agricultural laboratories. Representatives from federal agencies, nonprofit organizations, corporations and interested individuals also participate in the association. APHL is a nonprofit, 501(c)(3) organization with a history of more than 50 years.

APHL works collaboratively with a diverse array of national, international, public and private partners to formulate and advocate for sound public health and environmental policies. APHL offers training and fellowship programs designed to prepare future leaders in public health laboratory practice. APHL is recognized nationally and internationally for excellence in cost-effective training and continuing education programs offered through its National Laboratory Training Network, a collaborative effort with CDC.



About CDC

The **Centers for Disease Control and Prevention (CDC)** is one of the major operating components of the Department of Health and Human Services. CDC works 24/7 to protect America from health, safety and security threats, both foreign and in the US. Whether diseases start at home or abroad, are chronic or acute, curable or preventable, human error or deliberate attack, CDC fights disease and supports communities and citizens to do the same.

CDC increases the health security of our nation. As the nation's health protection agency, CDC saves lives and protects people from health threats. To accomplish our mission, CDC conducts critical science and provides health information that protects our nation against expensive and dangerous health threats, and responds when these arise.

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National Center for Immunization and Respiratory Diseases (IP)
Office of Surveillance, Epidemiology and Laboratory Services (OSELS)
National Center for HIV, Viral Hepatitis, STDs and TB Prevention (PS)
National Center for Zoonotic, Vector-borne, and Enteric Diseases (CK)
National Center for Environmental Health (NCEH)
Coordinating Office for Terrorism Preparedness and Emergency Response (CTPER)

PROGRAM DETAILS

APHL Fellowship Programs train and prepare scientists for careers in public health laboratories and support public health initiatives related to infectious diseases. The **Centers for Disease Control and Prevention (CDC)** and the **Association of Public Health Laboratories (APHL)** are pleased to present the 2014 EID Fellows associated with the Emerging Infectious Diseases (EID) Laboratory Fellowship, the Environmental Public Health (EPH) Laboratory Fellowship and the Bioinformatics in Public Health (BPH) Fellowship.

Emerging Infectious Diseases (EID) Laboratory Fellowship

This is a one-year program designed for bachelor's and master's level scientists, with emphasis on the practical application of technologies, methodologies and practices related to emerging infectious diseases. Fellows participate in an orientation session at CDC in Atlanta to gain a general understanding of the public health laboratory system and how it relates to infectious disease surveillance, prevention, research and control. Fellows are placed in local, state, and federal (CDC) public health laboratories and receive advanced infectious disease laboratory-related training. The training is customized for each fellow based upon areas of infectious disease interest, high priority laboratory personnel needs and host laboratory capabilities. A specific objective-based curriculum is developed for each fellow focusing on areas such as: vaccine-preventable diseases, drug-resistant pathogens, molecular methods, vector-borne or zoonotic diseases, foodborne and waterborne illnesses, sexually transmitted diseases, imported infections, computer and systems support, applications of vector or animal control, and diagnostic testing methods and instrumentation.

Environmental Public Health (EPH) Laboratory Fellowship

The Environmental Public Health (EPH) Laboratory fellowship gives APHL member laboratories the opportunity to host a fellow for 1-2 years. It is designed to accomplish one of CDC's defined prevention strategy goals of "strengthening local, state and federal public health infrastructures to support surveillance and implement prevention and control programs." The EPH Laboratory Fellowship Program aims to attract and prepare laboratory scientists for careers in environmental public health. The fellowship program recruits and trains qualified candidates to support public health initiatives and provide opportunities for young scientists to gain experience in a public health laboratory. Proposals for the EPH Laboratory Fellowship focus on analyzing clinical samples for environmental health or exposure studies.

Bioinformatics in Public Health (BPH) Fellowship

The Bioinformatics in Public Health (BPH) Fellowship aims to train and prepare bioinformaticians to apply their expertise within public health and design tools to aid existing public health personnel in the use of bioinformatics. The BPH fellowship program was developed to meet the need for expertise in the analysis of the vast amounts of genetic data that are generated through molecular sequencing techniques and to harness that data to solve public health problems. In the fellowship's current form, fellows will be paired with a complimentary CDC infectious disease laboratory which will serve as a host laboratory. In future iterations, the fellowship will be expanded to provide the opportunity for public health laboratories to serve as host laboratories.



For more information about APHL's Laboratory Fellowship Programs, see www.aphl.org/fellowships or email fellowships@aphl.org.

EID FELLOWS



Vanessa Burrowes

Highest Degree: MSPH, Environmental Health and Epidemiology, Rollins School of Public Health, Emory University, Atlanta, GA

Host Laboratory: North Carolina State Laboratory of Public Health, Raleigh, NC

Primary Mentor: Dee Pettit, PhD

Fellowship Project: My fellowship will entail various projects in the Bioterrorism and Emerging Pathogens Unit and molecular epidemiology. I will be: 1) Developing risk assessments and writing state laboratory guidelines for receiving/handling/testing clinical specimens suspected of containing Ebola virus, 2) Performing DoHS PCR assay validation studies on select agents, and 3) Building a MALDI-TOF reference database for rapid, accurate identification of BSL-3 organisms of public health concern, with emphasis on detecting protein profile differentiation between *Brucella* spp.

Future Plans: *"Following my fellowship year, I intend to pursue research in the infectious disease field of public health as a lifelong career goal. I hope to obtain a PhD in either disease ecology or environmental health engineering and complement these aspects of public health with my background in epidemiology and global health experiences. Ultimately, I would like to continue working at either the state level or at the Centers for Disease Control and Prevention in applied public health research."*



Lindsey B. Coulter

Highest Degree: MS, Biology, Texas State University, San Marcos, TX

Certification: MLS (ASCP)^{CM}

Host Laboratory: Infectious Diseases Pathology Branch, Division of High-Consequence Pathogens and Pathology, National Center for Emerging and Zoonotic Infectious Diseases, CDC, Atlanta, GA

Primary Mentor: Julu Bhatnagar, PhD

Fellowship Project: My research will focus on the development and validation of syndrome-based PCR panels and pyrosequencing assays for rapid detection of various pathogens in formalin-fixed, paraffin-embedded tissues. I will be also involved in the development of in-situ hybridization assays for bacteria causing granulomatous inflammation.

Future Plans: *"Following the completion of the EID Fellowship, I hope to continue my career in public health and research at the CDC as well as to obtain a PhD in microbiology and molecular genetics."*



Elizabeth LeMasters

Highest Degree: MSc, Infection and Immunity, Erasmus University, Rotterdam, Netherlands

Host Laboratory: Immunology and Pathogenesis Branch, Division of Influenza, National Center for Immunization and Respiratory Diseases, CDC, Atlanta, GA

Primary Mentor: Zhunan Li, PhD, MD

Fellowship Project: Continuous immunological pressure impacts epitope-binding conformation on the influenza hemagglutinin (HA) surface glycoprotein, resulting in a diverse influenza virus population and antibody repertoire. I will optimize and validate a novel fusion inhibition antibody detection assay utilizing HA to detect cross-subtype broadly neutralizing antibodies (BnAbs) in human sera. This test will be further used to investigate sera of naturally infected and vaccinated populations contributing to improved serological techniques and future vaccine development.

Future Plans: *“Upon completion of the EID Fellowship, I plan to pursue a doctorate in microbiology and develop a career protecting the public from infectious diseases in the form of scientific research and outbreak investigation.”*



Keri Robinson

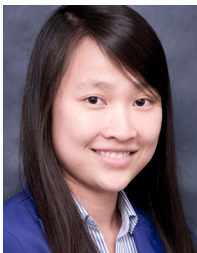
Highest Degree: BS, Biology, College of Saint Rose, Albany, NY

Host Laboratory: Washington State Public Health Laboratory, Shoreline, WA

Primary Mentor: William A. Glover II, PhD, D(ABMM), MT(ASCP)

Fellowship Project: I will be implementing molecular detection assays for two different projects: 1) Carbapenem-resistant Enterobacteriaceae infections are a significant public health concern and are associated with high mortality rates and few effective antibiotic treatment options. This assay will determine the genetic mechanisms of carbapenem resistance; 2) Prompt malaria detection and speciation is imperative for effective treatment of disease. This molecular assay will allow for speciation from human blood samples when blood smear microscopy results are not definitive.

Future Plans: *“Following my fellowship I plan to use the knowledge, experience and networking skills I’ve gained to pursue a career in infectious disease parasitology. Ultimately I would like to work for the Centers for Disease Control and Prevention and integrate my interests in infectious disease and travel to make a difference in global public health.”*



Yan Chun Zhu

Highest Degree: MS, Laboratory Sciences, Wadsworth Center, New York State Department of Health, Albany, NY

Host Laboratory: Wadsworth Center, New York State Department of Health, Albany, NY

Primary Mentor: Lisa Mingle, PhD

Fellowship Project: Fellowship projects include: 1) Outbreak investigation involving Enterovirus D68 in the virology laboratory; 2) Rotation through the mycology laboratory learning classical methods used to identify fungus and a project involving the construction and validation of a mold library for mold identification by MALDI-TOF mass spectrometry; and 3) Project in the bacteriology laboratory involving whole genome sequencing of *Staphylococcus aureus* or antibiotic resistance determination by MALDI-TOF.

Future Plans: *“After completing the EID Fellowship, I would like to pursue a career in public health with a focus on infectious diseases and perhaps further my education and training in the field of infectious diseases.”*

EPH FELLOWS



Nathan Bullock

Highest Degree: MS, Chemistry, Arkansas State University, Jonesboro, AR

Host Laboratory: State Hygienic Laboratory at the University of Iowa, Ankeny, IA

Primary Mentor: Brian Wels, PhD

Fellowship Project: I am currently working on developing a serum based method for the detection of lead using ICP-MS as a counterpart to the blood lead testing that is currently being done in public health labs. I plan to conduct a bio monitoring survey of Cerro Gordo County, Iowa, looking at population background levels for heavy metals

such as Hg, Cd, Pb, using ICP-MS with a urine matrix.

Future Plans: *"My tentative plans involve seeking careers in industrial analytical laboratories and government agencies."*



Lisa C. Strong

Highest Degree: PhD, Chemical Engineering, University of Minnesota, Minneapolis, MN

Host Laboratory: Minnesota Department of Public Health, St. Paul, MN

Primary Mentor: Carin Huset, PhD

Fellowship Project: Minnesota Department of Health has recently added to the laboratory an Inductively Coupled Plasma with Mass Spectroscopy (ICP-MS) instrument that has an Ion Chromatography inlet that is used to separate chemicals. This combination is relatively new in analytical chemistry, and is rapidly gaining importance in human clinical diagnosis. I have been bringing that instrument on-line, and using it to adapt and validate a method for speciating mercury in whole blood samples.

Future Plans: *"After my APHL fellowship is complete, I hope to continue pursuing a career as a chemical analyst in the public health laboratories. I've gained excellent general experience in quality control that is generally missing in academia. I've also gained specific experience in and knowledge of mercury chemistry that I hope will make me an asset in the quest for achieving and maintaining public health."*



Leah Wingard

Highest Degree: PhD, Inorganic Chemistry, University of North Carolina, Chapel Hill, NC

Host Laboratory: Delaware Public Health Laboratory, Smyrna, DE

Primary Mentor: Tara Lydick, BS

Fellowship Project: In coordination with the CDC's Laboratory Readiness Network for Chemical Threats, I will be working to expand the testing of trace elements in human samples in Delaware. This will include method development for new analytes by ICP-MS and expanding the range of analyzable concentrations to allow for both biomonitoring samples and preparedness samples following unusual exposure events. Speciation of arsenic and chromium will help us to better understand the presence of these elements in samples.

Future Plans: *"Following my fellowship, I will begin a postdoctoral appointment at the Army Research Laboratories in the field of energetic materials."*



Kelley Bullard

Highest Degree: MS, Bioinformatics, Georgia Institute of Technology, Atlanta, GA

Host Laboratory: Division of Parasitic Diseases, Center for Global Health, CDC, Atlanta, GA

Primary Mentor: Venkatachalam Udhayakumar, PhD

Fellowship Project: I have participated in two projects. The first project was to identify novel protein targets for inclusion in the next generation Rapid Diagnostic Test (RDT) for malaria. I also participated in the malaria genome project in which *Plasmodium malariae* and *Plasmodium brazilianum* were sequenced and assembled. I was able to assemble the mitochondrial genome and apicoplast genome, and I have produced acceptable contigs for the nuclear genome.

Future Plans: *"I was hired through IHRC to the Polio and Picornavirus Laboratory Branch at the CDC. Now that the end is in sight for the poliovirus, the team is looking at their long term research questions and meaningful use of their large amount of data collected over the years. Some of the questions focus on the evolutionary and geographical movement of the virus. This will help to finally end polio as well as help develop methods for the elimination of other viruses."*



Heta P. Desai

Highest Degree: BS, Biochemistry and Molecular Cell Biology, University of California, Los Angeles, CA

Host Laboratory: Division of Bacterial Diseases, National Center for Immunization and Respiratory Diseases, CDC, Atlanta, GA

Primary Mentor: Jonas Winchell, PhD

Fellowship Project: Our laboratory currently works on detection and prevention of atypical respiratory pathogens that cause a large burden of community-acquired pneumonia. One of the major challenges is to understand the nature and variability in disease course and outbreaks associated with *Mycoplasma pneumoniae*. My project goal is to analyze whole-genome-sequencing data to assess the metagenomics profile of respiratory specimens to gain an understanding of variability in disease states as well as variant analysis for functional gene annotation.

Future Plans: *"After my fellowship, I plan to finish my graduate degree in computer science with focus on bioinformatics. Due to fast growing technologies, the way we investigate research in bioinformatics lacks some standardization and protocols, especially in public health. I want to help in associating research in public health with bioinformatics to analyze and visualize the next generation sequencing data."*



Jenna N. Kelly

Highest Degree: PhD, Microbiology and Immunology, Western University, London, ON, Canada

Host Laboratory: Division of High-Consequence Pathogens and Pathology, National Center for Emerging and Zoonotic Infectious Diseases, CDC, Atlanta, GA

Primary Mentor: Jonathan Towner, PhD

Fellowship Project: My research project focuses on investigating the Egyptian fruit bat's immune response to infection with Marburg and Ebola viruses. Unlike in humans and non-human primates, these viruses induce little or no pathology in bats. Using RNA-seq, mass spectrometry, and proteomics, I plan to compare the human and bat immune responses to Marburg/Ebola infection. My studies will likely uncover key components of the bat immune response that distinguish it from the human immune response and allow it to overcome these viruses.

Future Plans: *"After the fellowship I will continue to pursue infectious disease research in a public health setting. Specifically, I hope to combine the areas of virology, bioinformatics, and public health and use an integrated approach to identify, monitor, and control new, emerging, and re-emerging infectious agents."*



Thomas Stark

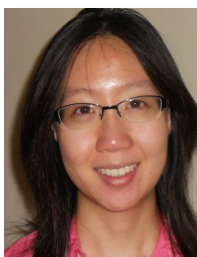
Highest Degree: PhD, Biological Sciences, University of California, San Diego, CA

Host Laboratory: Influenza Division, National Center of Immunization and Respiratory Diseases, CDC, Atlanta, GA

Primary Mentor: Elizabeth Neuhaus, PhD

Fellowship Project: Next-generation sequencing analysis has become an integral component of surveillance efforts within the CDC Influenza Division. This technology has afforded sensitive detection of influenza genome mutations, contributing to antiviral resistance studies and seasonal vaccine development. I am providing informatics support for influenza sequencing workflows, including data processing and curation of genome assemblies. Additionally, my projects encompass analysis of antiviral-resistant strains, and also analysis of clinical samples from previous outbreaks of human infection with avian influenza.

Future Plans: *"After this fellowship I hope to continue working at the CDC in bioinformatics supporting virology research and surveillance. I am interested in leveraging my hybrid background in bioinformatics and experimental biology to advance genomics-level public health research."*



Amanda Sue

Highest Degree: MS, Public Health, University of Alabama at Birmingham, Birmingham, AL

Host Laboratory: Division of Viral Hepatitis, National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention, CDC, Atlanta, GA

Primary Mentor: Michael A. Purdy, PhD

Fellowship Project: Hepatitis C virus (HCV) is a serious global public health issue. It is estimated approximately 170 million individuals are chronically infected, and a range of 3 to 4 million new cases of hepatitis C occur every year. I am involved in a study using HCV genotypes 1a and 1b to trace the possible origins of the virus in Vietnam to better understand the viral evolution that can help us understand transmission of the disease.

Future Plans: *"After my training fellowship, I plan to continue working in computer analysis to further my knowledge in the field of bioinformatics. Ultimately, I want to obtain a doctorate degree in bioinformatics to study molecular evolution."*



A. Jo Williams-Newkirk

Highest Degree: MS, Biological Sciences, University of Southern Mississippi, Hattiesburg, MS

Host Laboratory: Division of Vector-borne Diseases, National Center for Emerging and Zoonotic Infectious Diseases, CDC, Atlanta, GA

Primary Mentor: Gregory A. Dasch, PhD

Fellowship Project: My primary responsibility has been to analyze 16S rRNA gene data from Next Generation Sequencing to describe and compare the whole bacterial communities of six tick species from the United States. The analysis involved the writing of several Python scripts for data manipulation and novel analyses, as well as many R scripts for statistical analysis and manuscript figures. I have also analyzed the first complete mitochondrial genome sequence for the tick species *Amblyomma americanum*.

Future Plans: *"I will be defending my PhD dissertation in the spring in the Population Biology, Ecology and Evolution graduate program at Emory University and am currently exploring employment opportunities."*



Xiaojun Xu

Highest Degree: PhD, Chemistry, Georgia State University, Atlanta, GA

Host Laboratory: Division of Viral Hepatitis, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, CDC, Atlanta, GA

Primary Mentor: Yury Khudyakov, PhD

Fellowship Project: My project involves two components. The first is using computational methods including homology modeling, molecular dynamics (MD) simulation, and docking to probe the molecular basis for Hepatitis drug resistance. The current focus is on a group of representative HBV reverse transcriptase (RT) variants those were clinically identified with different susceptibility to the treatment of Tenofovir. The second involves conducting MD simulation on the HCV ion channel, p7, in bilayer membrane system to probe the dynamic structural characteristics for new anti-viral drug design.

Future Plans: *"I'll further extend my research capability and experience in the field of anti-viral drug design with the hope of coming up with new drugs that would be less susceptible to the drug resistance of the viruses, given a great deal of knowledge would be obtained on the detailed molecular mechanism of these drug resistance through our effort."*

EID FELLOWS

STATS & ACTIVITIES

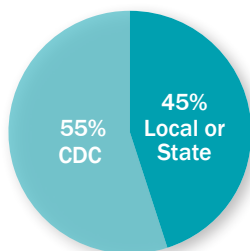
(1995–2014)

Since its inception in 1995, 498 scientists have participated in the EID Laboratory Fellowship Program, assigned to local, state, and CDC laboratories nationwide. Following is a profile of the fellows, including their background, assignments, highlights of activities and accomplishments.

SUMMARY STATISTICS

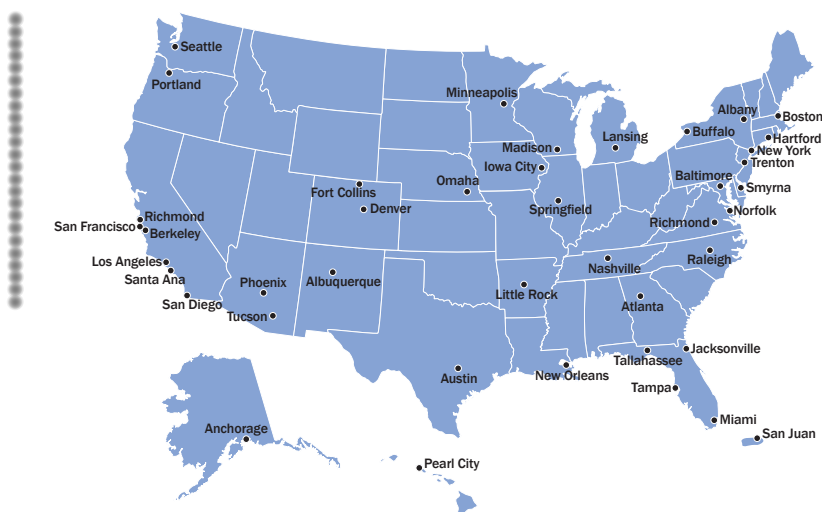
Fellow Laboratory Assignments

Of the 498 scientists who have participated in the EID Laboratory Fellowship Program:



- 272 (55%) were assigned to CDC laboratories (Atlanta, Georgia; Fort Collins, Colorado; Anchorage, Alaska; San Juan, Puerto Rico)
- 226 (45%) were assigned to local or state public health laboratories

Fellows have been placed in public health laboratories in the following locations:



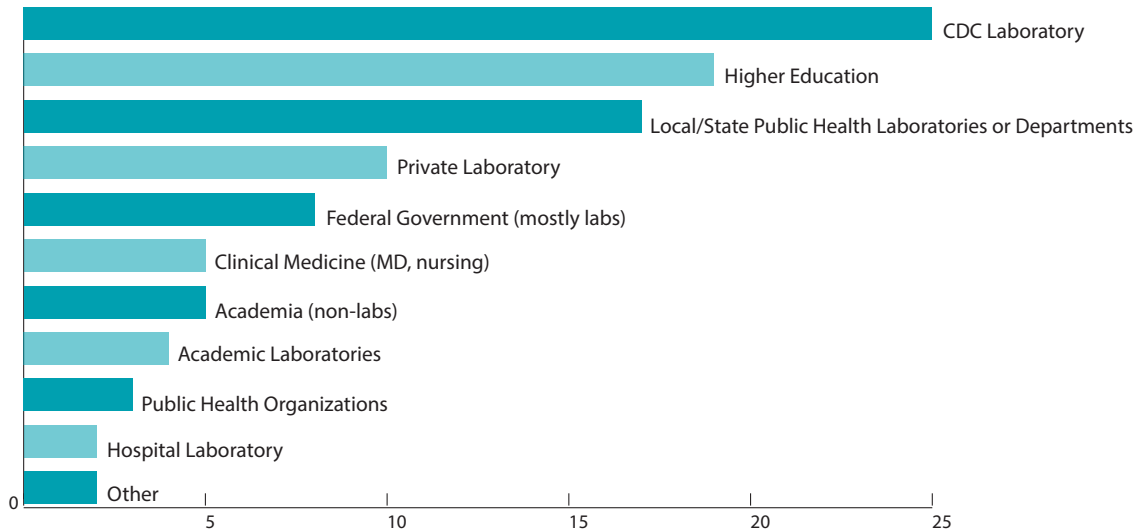
FELLOW ACTIVITIES

Fellows have participated in the following:

- 934 publications in journals including: *Emerging Infectious Diseases*; *American Journal of Tropical Medicine and Hygiene*; *Clinical Infectious Diseases*; *Applied and Environmental Microbiology*; *Journal of Molecular Diagnostics*; *Journal of Bacteriology*; *Journal of Vector Ecology*; *Trends in Parasitology*; *Journal of Clinical Microbiology*; *Journal of Food Protection*; *Infection, Genetics and Evolution*; *Journal of Eukaryotic Microbiology*; *Journal of American Veterinary Medical Association*; and *Pediatric Infectious Disease Journal*
- 217 outbreak investigations
- Domestic and international meetings including: American Society of Microbiology (ASM), American Society of Tropical Medicine and Hygiene (ASTMH), American Society of Virology (ASV), International Conference on Emerging Infectious Diseases (ICEID), International Association of Food Protection (IAFP), International Conference on Travel Medicine and Infectious Diseases, International Meeting of Rabies in the Americas (RITA), Ecology and Evolution of Infectious Diseases (EEID), International Society of Infectious Diseases (ISID), International Conference on Human Retrovirology, American Water Works Association (AWWA), International Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Infectious Diseases Society of America (IDSA), International Conference of Diseases in Nature Communicable to Man (INCDNCM), and the International Symposium on Avian Influenza
- Short-term international assignments in the countries of American Samoa, Bangladesh, Botswana, China, Egypt, Ghana, Guatemala, Guinea, Haiti, Honduras, India, Liberia, Kenya, Kyrgyzstan, Madagascar, Mexico, Mozambique, Peru, Singapore, Spain, Suriname, Tanzania, Uganda, Uzbekistan, and Vietnam
- Environmental Protection Agency (EPA) training courses
- National Laboratory Training Network (NLTN) Public Health Series Courses

STATUS OF FELLOWSHIP PROGRAM PARTICIPANTS

Past fellows who completed a 2014 survey identified their current positions as:



- 25% accepted temporary or permanent positions at a CDC laboratory
- 19% accepted temporary or permanent positions in higher education
- 17% accepted temporary or permanent positions at local/state public health laboratories or departments
- 10% accepted positions at private laboratories
- 8% accepted positions with the federal government (mostly labs)
- 5% accepted positions in clinical medicine (MD, nursing)
- 5% accepted positions in academia
- 4% accepted positions at academic laboratories
- 3% accepted positions at public health organizations
- 2% accepted positions in hospital laboratories
- 2% other

EDUCATION LEVEL

Of the 498 fellows, 393 (79%) were predoctoral fellows, and 105 (21%) were postdoctoral fellows.

Predoctoral Fellows

Of the 393 predoctoral fellows:

Education: 265 (67%) had bachelor's degrees
128 (33%) had master's degrees

Assignment: 211 (54%) were assigned to CDC laboratories
182 (46%) were assigned to local or state laboratories

Postdoctoral Fellows

Of the 105 postdoctoral fellows:

Education: 96 (91%) had PhD degrees
3 (3%) had MD degrees

5 (5%) had DVM degrees
1 (1%) had both DVM and PhD degrees

Assignment: 61 (58%) were assigned to CDC laboratories
44 (42%) were assigned to local or state laboratories

FELLOWS IN ACTION

STORIES

In addition to their activities in their host laboratories, the fellows have been involved with APHL's activities, as participants at the APHL annual meeting, writing blog posts about their experiences and more. The association's quarterly magazine *Lab Matters* also features highlights of fellows activities. Following is a snapshot of the stories from the field.

Lab Matters

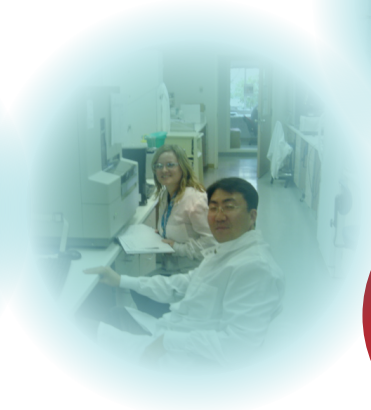
APHL EID Laboratory Fellows Respond to Ebola Outbreak
EID Laboratory Fellows Find New Positions in Public Health Laboratories
EID Lab Fellows in the Spotlight
Recruiting for the 20th Class of EID Laboratory Fellows
NEW WORK from APHL/CDC EID Laboratory Fellows
APHL Initiates New Class of EID Fellows
EID Lab Fellows Present at National Meetings
Recruiting for the 2013 Class of EID Laboratory Fellows

Blog Posts

From The Lorax to the Laboratory
Public Health Laboratory Internship: Keeping an Eye Out for Drug-Resistant Influenza
HIV Testing Where Ice Melts Fast: EID Fellow Reports from Botswana
Where are they now? APHL/CDC Emerging Infectious Disease Fellow Looks Back
Are Girls Being Nipped in the STEM?
Into the Wild: Lab Edition
The Difference between County and State Health Departments
Former EID Training Fellow Shares: Why Public Health
The track to becoming a public health laboratory director

Former Fellow Class Bios

EID Fellows Class 19
EID Fellows Class 18
EID Fellows Class 17



FELLOWS SPEAK

“The EID training fellowship program has far exceeded my original objectives. In the brief span of a year I have accomplished more in the field of research than I thought possible.”

– Katy Hamlin, Class 16 Training Fellow, CDC Division of Parasitic Diseases and Malaria

“I significantly improved my knowledge in the areas of virology and immunology since joining the program.”

– Juan De La Cruz, Class 16 Training Fellow, CDC Influenza Division

“The fellowship program was an invaluable experience for me in helping me develop my career in public health.”

– Ellen Luecke, MPH, Class 13 Training Fellow, California Department of Public Health

“I wanted to see what a public health lab was all about.”

– John Feltner, Class 16 Training Fellow, Hawaii State Department of Health

“In addition to allowing me to participate in public health related research, working in the HIV drug resistance unit has taught the importance of quality control, which is an essential part of being a public health laboratory scientist.”

– Erin Rottinghaus, Class 15 Research Fellow, CDC Division of Global HIV/AIDS