2011–2012 Assignment Opportunities

**Third- and Fourth-Year Medical and Veterinary Student Projects**
- Assessing Barriers to Use of Rapid HIV Tests — China
- Assessing Health Information Systems for Border Populations — Thailand
- China National Center for AIDS/STD Prevention and Control — China
- Descriptive Analysis of HIV/AIDS — Nigeria
- Field Development and Testing of a Manual to Measure the Burden of Severe Influenza-Related Lower Respiratory Infection — Thailand
- Pathogen Discovery Focused on Lyssaviruses and Other Emerging Zoonotic Pathogens; Knowledge, Attitude and Practice (KAP) Surveys and Risk Assessment within Population at Higher Risk of Exposure to Bats — Democratic Republic of the Congo, Guatemala or Peru

**Fourth-Year Medical and Veterinary Student Projects**
- Causes of Community-Acquired Pneumonia — Rural Thailand
- Surveillance System for Acute Respiratory Infection — Egypt

**Third- and Fourth-Year Medical Student Projects**
- Hospital Acquired Infections — Egypt
- Influenza Sentinel Surveillance — Kenya
- Population-Based Surveillance for Emerging Infectious Diseases — Kibera Informal Housing Settlement, Nairobi, Kenya
- Population-Based Surveillance for Emerging Infectious Diseases — Rural Lwak Area Kisumu, Kenya
- A Study of Absenteeism in the Kenyan Health Workforce — Kenya

**Fourth-Year Medical Student Projects**
- Validating Cotrimoxazole Coverage among People Living with HIV/AIDS — Ethiopia

**Third- and Fourth-Year Veterinary Student Projects**
- Surveillance for Influenza Viruses in Domestic Animals — Kenya
Project title: Assessing Barriers to Use of Rapid HIV Tests in China

Location (country): Beijing, China
Project duration: 8–12 weeks

Fellow requested (select all that apply):
Year: ☒ Third year ☒ Fourth year
Type: ☒ Medical student ☒ Veterinary student

Languages: English and Mandarin Chinese (speaking and some reading) required

Skills:
Experience with computer programs including Word and Excel (SPSS or SAS experience may be helpful but not required).

Student responsibilities:
The student will assist in the analysis and writing of a national report on rapid HIV test use in China in English. Student will work with staff from China's National AIDS Reference Laboratory (NARL) to present process and results from the June 2011 National Meeting on HIV Rapid Test Use as well as incorporate and present findings of subsequent surveys. The student will interact with NARL and China CDC staff with the potential for site visits to provincial HIV testing centers.

Project supervisor(s):
Marc Bulterys, MD PhD, US CDC GAP China Country Director


Project description:
The US CDC Global AIDS Program China office collaborates closely with the China CDC National AIDS Reference Laboratory on new laboratory methods and quality control. Rapid HIV tests are not used widely in China. In June 2011, a meeting with the National Center for AIDS/STD Control and Prevention and international organizations working in China will be held to determine potential barriers and challenges to rapid HIV test use. Follow-up surveys will be conducted among clinic and hospital staff to assess these challenges.

Objectives:
To understand the barriers and challenges for use of rapid HIV tests in China, particularly among Hospitals and Maternal Health Care Centers, in an effort to expand HIV testing uptake among high-risk groups.

Project design:
Operational research will be carried out to evaluate the current opinions and practices of field staff on the use of HIV rapid tests.
**Project title:** Assessing Health Information Systems for Border Populations

**Location (country):** Thailand  
**Project duration:** 6–8 weeks

**Fellow requested (select all that apply):**  
- ☑️ Third year  
- ☑️ Fourth year  
- ☑️ Medical student  
- ☑️ Veterinary student

**Languages:** English

**Skills:** Basic computer skills including MS Access.

**Student responsibilities:**  
Student will assist with observing and evaluating the operation of available health information systems. The student's time will be split between (1) time in the field evaluating health systems in operation in health clinics in up to nine refugee camps along the Thailand-Burma border as well as a processing center for US-bound refugees, and (2) in our Bangkok office both before the field visit, in preparation, and after, to collate findings. A critical component of time in the field will include observing patient exams conducted at health posts and clinics within the camps (operated and staffed by local NGOs) as well as components of the predeparture screening exams for US-bound refugees.

**Project supervisor(s):**  
Christina (Chris) Phares, PhD, Epidemiologist  
Luis Ortega, MD, Program Director, Asia Program, Div. of Global Migration & Quarantine, CDC

**Supervisor’s availability July 1, 2011–June 30, 2012:**  
October 1, 2011–June 30, 2012 (Chris Phares)  
July 1, 2011–June 30, 2012 (Luis Ortega)

**Project description:**  
Field observation of existing health information systems for migrant populations, such as refugees.

**Objectives:**  
To evaluate existing health information systems for migrant populations, such as refugees, living on the Thailand-Burma border to identify opportunities for harmonization among systems and improved disease detection.

**Project design:**  
Multiple health information systems currently exist for refugees and other migrant populations living along the Thailand-Burma border. The Asia Program in the Division of Global Migration and Quarantine at CDC-Thailand is working to harmonize and improve multiple reporting systems.
Project title: China National Center for AIDS/STD Prevention and Control

Location (country): Beijing, China  Project duration: 8 –12 weeks

Fellow requested (select all that apply):
Year: ☒ Third year  ☒ Fourth year  Type: ☒ Medical student  ☒ Veterinary student

Languages: English and Mandarin Chinese (speaking and some reading) required

Skills:
Experience with computer programs including Word and Excel (SPSS or SAS experience may be helpful but not required).

Student responsibilities:
The student will assist in the analysis and writing of a report on HIV treatment or HIV program evaluation in English. Student will work with staff from China CDC’s National Center for AIDS/STD Prevention and Control and/or National HIV/AIDS Planning, Monitoring and Evaluation Office to incorporate and present findings from previously collected data. The student will interact with US and China CDC staff and have the potential to visit provincial HIV centers.

Project supervisor(s):
Marc Bulterys, MD PhD, US CDC GAP China Country Director


Project description:
The US CDC Global AIDS Program China office collaborates closely with the China CDC National Center for AIDS/STD Prevention and Control. While data on HIV treatment is routinely collected and reported in Chinese, few of these reports are available to wider audiences in English.

Objectives:
To make existing data on the HIV program in China available to a wider, English speaking audience in an effort to better understand program gaps and challenges.

Project design:
Individual data on HIV treatment is collected at health centers and sent through a web-based system to the national level where it is analyzed and reports compiled.
Project title: **Descriptive Analysis of HIV/AIDS**

Location (country): Abuja, Nigeria  
Project duration: 8 weeks

Fellow requested:
Year: ☒ Third year  ☒ Fourth year  
Type: ☒ Medical student  ☒ Veterinary student

Languages: English

Skills:
Experience with basic computing skills (MS package including MS Access), analytical software packages (EpiInfo), basic epidemiologic analytical training

Student responsibilities:
The student will assist the CDC Nigeria Office of the Director in the descriptive analysis of HIV/AIDS datasets (disease trends, treatment sites, costing) from the Government of Nigeria's (GON) National Agency for the Control of AIDS (NACA). This opportunity will include analysis of existing datasets, documenting outcomes, and using data outcomes to inform HIV/AIDS activity planning discussions between the GON NACA and CDC Nigeria. Through this activity, the student will interact with GON staff and interagency PEPFAR representatives, and provide presentations on analysis outcomes and findings to CDC Nigeria technical staff. A considerable amount of the student's time will be spent working with GON colleagues in their NACA office.

Project supervisor(s):
Dr. Okey Nwanyanwu, Director, CDC Nigeria

Supervisor’s availability July 1, 2011–June 30, 2012:  
July 1 2011–June 30 2012

Project description:
As a PEPFAR implementing agency, CDC Nigeria works in partnership with the GON to implement the PEPFAR program in support of the GON's National HIV/AIDS strategy. This project aims to provide focused support and technical assistance to the GON to assist in skills building with evidence-based decision making and through this activity provide the GON with standardized analysis and outcomes of existing HIV/AIDS datasets.

Objectives:
To document and understand the determinants of the HIV/AIDS epidemic in Nigeria; to use activity to assist GON officials in learning best approaches to evidence-based decision making and activity planning.

Project design:
Close collaboration with GON officials, review of existing datasets, development of analytical plan, conduct analysis, prepare documentation and presentations, provide training to GON officials.
Project title: Field Development and Testing of a Manual to Measure the Burden of Severe Influenza-Related Acute Lower Respiratory Infection

Location (country): Thailand  Project duration: 6–8 weeks

Fellow requested (select all that apply):
Year: ☒ Third year  ☒ Fourth year  Type: ☒ Medical student  ☒ Veterinary student

Languages: English; Thai is a bonus

Skills: Good analytic skills, good writing skills, flexibility, good humor

Student responsibilities:
The student will spend the first two weeks collecting existing in-country data on influenza and respiratory disease for testing the model. These include data from the population-based surveillance for hospitalized pneumonia, sentinel surveillance for influenza, survey data on health utilization for influenza and pneumonia, pneumonia and influenza mortality data and national demographic and health survey data. This will require working with surveillance staff in the province at the ministry of health, looking at published and unpublished data and interfacing with CDC and John's Hopkins epidemiology staff. In the remaining 4 weeks, these data will then be used to test and refine the core components of the manual to measure the burden of severe influenza-related acute lower respiratory infection.

Project supervisor(s):
Sonja Olsen, PhD, Chief, Influenza Section, Thai MOPH - US CDC Collaboration


Project description:
CDC and John's Hopkins School of Public Health are collaborating to produce a manual to measure the burden of severe influenza-related acute lower respiratory infection in developing countries. The project is to field test and revise the manual in Thailand using multiple data sources.

Objectives:
To test the assumptions in a draft manual to estimate the burden of severe influenza-related acute lower respiratory infection and revise the manual accordingly.

Project design:
The manual aims to build national level data from sub-national level data. In many countries, certain assumptions are made when country-specific data are not available. Thailand is unique because it has many sources of good data, including population-based data on hospitalized pneumonia. The project will use multiple sources of surveillance and survey data in Thailand to test various assumptions and multipliers. Based on the findings, the manual and its assumptions will be adjusted. The result is a refined manual for countries to estimate their own burden of influenza-related acute lower respiratory infection.
Project title: Pathogen Discovery Focused on Lyssaviruses and Other Emerging Zoonotic Pathogens Circulating within Chiroptera; Knowledge, Attitude and Practice (KAP) Surveys and Risk Assessment within Population at Higher Risk of Exposures to Bats.

Location (country): Democratic Republic of the Congo or Guatemala or Peru

Project duration: 6–7 weeks: 1–2 weeks in CDC lab 4–6 weeks in the field

Fellow requested (select all that apply):
Year: ☒ Third year ☒ Fourth year
Type: ☒ Medical student ☒ Veterinary student

Languages: English; Spanish would be an asset, but it is not required

Skills:
Previous experience with animal capture, blood draw, swabbing, necropsy, sample collection as well as basic computer skills for data entry are essential requirements. In addition, familiarity with public health investigations via questionnaires and household surveys will be helpful. Basic biosafety training for work with pathogens of biosafety level 2–3 is needed, including respiratory training for use of N95 masks and PAPR and vaccination against rabies.

Student responsibilities:
Student will assist in capture and sampling of mammals (with the focus on Chiroptera) in selected zoonotic hot-spots and further assist in processing of captured animals. As a part of epidemiological survey Hubert fellow will be involved in collection of data in the field, such as household survey, estimation of dog population, database entry and limited analysis. Flexibility, self-motivation and understanding of teamwork (cooperation with others, team spirit) as well as the ability to live under rather austere field conditions in developing countries are prerequisites for perspective candidates.

Project supervisor(s):
Charles Rupprecht, VMD, MS, PhD
Ivan Kuzmin, MD
Richard Franka, DVM, PhD
Sergio Recuenco, MD


Project description:
Proposed study will focus on identifying emerging zoonoses with bats as hosts or vectors that constitute an immediate or prospective threat to human health in several high risk areas (hot-spots) of the world. The general strategic approach for developing bat sample schema will be based on geographic risk assessment and proximity to human populations. In addition, KAP surveys will be done and blood specimens collected from humans from the same areas where bat specimens are collected to assess transmission of these pathogens to humans, rabies epidemiology and public health risks. Evaluation of local laboratory capacity and potential for improvement of rabies prevention and control in particular country will be part of the mission. A computer modeling is the essential component of the study and hence field trip is also aimed to collect the data regarding ecologic and risk factors associated with pathogen transmission. These data will be assessed in order to develop and test forecasting models for emerging diseases.

Objectives:
To collect information on rabies prevalence in various host species. To assess population of dogs (including proportion of stray dogs) and their vaccination coverage. To collect available information on human rabies (incidence of exposures and the disease in different demographic groups and different districts of the country; sources of the exposure; deviation in postexposure prophylaxis). Survey of diagnostic capacity of laboratories, performing rabies diagnosis. Availability and accessibility of rabies biologics for veterinary and public health use. Sampling of animals for rabies testing.
Project title: Pathogen Discovery Focused on Lyssaviruses and Other Emerging Zoonotic Pathogens Circulating within Chiroptera; Knowledge, Attitude and Practice (KAP) Surveys and Risk Assessment within Population at Higher Risk of Exposures to Bats.

Project design:
A set of model districts (hot-spots) will be selected based on the suggestions of local collaborators, to ensure accessibility and representation of different socio-economic layers of the country. Data on human rabies cases, exposure rates, availability of post-exposure prophylaxis will be collected from the local public health officials and hospitals. Data on dog population and the proportion of stray dogs, as well as vaccination coverage of the dogs, will be estimated based on official records and investigation of a representative set of households. Animal rabies data will be retrieved from the reference veterinary diagnostic laboratory. A sampling of bats will be performed from available roosts. From these, various tissues, oral and fecal swabs, and serum will be collected. The collected information will be entered into a database, mapped, and further used for modeling purposes.
Project title: Causes of Community-Acquired Pneumonia in Rural Thailand

Location (country): Bangkok, Sa Kaeo, and Nakhon Phanom, Thailand  
Project duration: 8–12 weeks

Fellow requested:  
Year: ☐ Third year ☒ Fourth year  
Type: ☒ Medical student ☐ Veterinary student

Languages: English, Thai a bonus

Skills:  
Epidemiology, data analysis, writing. Experience in clinical infectious diseases or infectious disease epidemiology helpful

Student responsibilities:  
The student will be primarily responsible for analyzing the relevant data to meet project objectives and for developing clear summaries that can be shared with IEIP staff and MOPH partners. S/he will meet regularly with mentors to develop a sound analysis plan and timeline. Before analyzing the data, the student will need to understand the surveillance system. S/he will visit the surveillance provinces to review the pneumonia surveillance procedures, including case ascertainment, data collection and entry, and specimen collection. S/he will spend time in the provincial and IEIP laboratories to understand laboratory testing procedures and appreciate the importance of integrated epidemiologic and laboratory surveillance. The student will also assist with and oversee collection of supplemental data for the specific analyses. The student will gain experience in Thailand on clinical, laboratory, and epidemiological research, as well as exposure to the management of infectious disease in an international public health setting. The student will develop an understanding of surveillance systems, study design, data collection, clinical laboratory analysis, and the challenges in coordinating a project with language and/or cultural barriers. Candidates should be in excellent health, have a strong work ethic, be culturally astute, and not be averse to a tropical climate. For more information on the program, interested persons are referred to our website at http://www.cdc.gov/ncidod/global/ieip/index.htm.

Project supervisor(s):  
Dr. Kip Baggett, Chief, Epidemiology Section, International Emerging Infections Program-Thailand  
Dr. Julia Rhodes, Senior Epidemiologist, International Emerging Infections Program-Thailand


Project description:  
The International Emerging Infections Program (IEIP), part of the Thailand MOPH – U.S. CDC Collaboration (TUC) and CDC’s Global Disease Detection Program, conducts active, population-based surveillance for community-acquired pneumonia (CAP) requiring hospitalization in two rural Thai provinces, Sa Kaeo and Nakhon Phanom. Nasopharyngeal specimens are collected from a subset of pneumonia patients and tested for a panel of viral and bacterial respiratory pathogens by PCR. In 2005, a laboratory capacity-building project added bloodstream infection surveillance capabilities to both provinces, allowing identification of non-viral causes of pneumonia and sepsis through an automated blood culture system. This system has improved understanding of the burden and causes of CAP in Thailand and highlighted the need for more detailed understanding of the epidemiology of specific pathogens. IEIP will soon begin surveillance for hospital-acquired respiratory infections among health-care workers and patients to complement the current CAP surveillance. IEIP also uses the surveillance and laboratory infrastructure to evaluate new diagnostic approaches to important public health pathogens, including a study to evaluate novel diagnostic approaches for Streptococcus pneumoniae, which launched in 2010. Finally, the surveillance system allows in-depth investigations of new diseases, such as pandemic influenza A (H1N1), as well as evaluation of potential interventions, such as vaccines.
Project title: Causes of Community-Acquired Pneumonia in Rural Thailand

Objectives:

Depending on the timing of the fellow’s arrival and professional interests, at least one of the following projects would be available for consideration:

1. Active surveillance system for healthcare-associated respiratory infections among health-care workers and patients in Sa Kaeo and Nakhon Phanom, Thailand.
   Primary objective: The work would focus on assisting to establish this new system to understand the epidemiology and etiology of health-care associated respiratory infections.

2. Epidemiology of bloodstream infections caused by various pathogens.
   Primary objective: The fellow will analyze an existing dataset to describe the clinical, laboratory, and epidemiological characteristics of bloodstream infections caused by a specific pathogen or group of pathogens. Current interests include E. coli, Cryptococcus, Mycobacteria, non-typhoidal Salmonella.

3. Chest x-ray findings and pneumonia etiology.
   Primary objective: Using multiple years of pneumonia surveillance data, the fellow will describe the association between different CXR findings and pneumonia etiology. This analysis will also evaluate the utility of CXR in surveillance for pneumonia and certain respiratory pathogens.

In addition to these ideas, there are also potential opportunities to work with Thai Ministry of Public Health partners on analytic or field projects. We have had good success in the past tailoring projects to the fellow’s interests.

Additional overall project objectives:
- Develop a project summary and presentation to facilitate data sharing with CDC partners in the Ministry of Public Health (MOPH)
- Develop an understanding of the key attributes of a good surveillance system and how surveillance data are used for public health action.
- Draft a manuscript for publication in a peer-reviewed journal.

Project design:
The primary data for this project is collected through IEIP’s active, population-based surveillance for pneumonia. Viral etiologies of pneumonia are determined through a prospective research study enrolling a subset of the pneumonia patients. Bacterial and fungal pathogens are also identified through surveillance for bloodstream infections.
Project title: Surveillance System for Acute Respiratory Infection in Egypt

Location (country): Based in Cairo, with travel in rural Egypt

Project duration: 6–12 Weeks

Fellow requested:
Year: ☒ Fourth year ☐ Third year
Type: ☒ Medical student ☒ Veterinary student

Languages: English, Arabic a bonus

Skills:
Strong epidemiology and statistical background is preferred. MS Office computer skills, including MS Access. Familiarity with SPSS is not required, but helpful.

Student responsibilities:
The student will work with CDC, NAMRU-3, and Egyptian staff to assist with the population-based surveillance system. This will include participating in field and laboratory work as necessary, assisting with data entry, analysis, and summary of the results. The student will assist in training health care workers on basic ARI epidemiology, specimen collection (including blood culture techniques) and transport, data collection, and monitoring the surveillance system. The student is likely to spend significant hours working with CDC’s Ministry of Health collaborating partners in the field at the site. The student should be independent and self-motivated. Flexibility and a good sense of humor are paramount.

Project supervisor(s):
Erica Dueger, DVM, PhD, International Emerging Infections


Project description:
The International Emerging Infections Program (IEIP) is part of the overall Egypt Ministry of Health and Population – U.S. CDC – Naval Medical Research Unit 3 (NAMRU-3) collaboration. IEIP has established a population-based surveillance site in Damanhour, a city located near Alexandria, Egypt. The site currently collects epidemiological and virological data on Acute Respiratory Infection (ARI) in three hospitals and there are plans to expand surveillance to include Acute Febrile Illness, Diarrheal Disease, Acute Infectious Neurological Disease and Tuberculosis.

Objectives:
To understand the basic epidemiology of ARI in Damanhour and understand the challenges of implementing and maintaining a population-based surveillance site.
**Project title:** Hospital Acquired Infections  

**Location (country):** Based in Cairo, Egypt, with travel in rural Egypt  

**Project duration:** 6–12 weeks  

**Fellow requested:**  
- **Year:**  
  - ☑ Third year  
  - ☑ Fourth year  
- **Type:**  
  - ☑ Medical student  
  - ☑ Veterinary student  

**Languages:** English, Arabic a bonus  

**Skills:**  
- Strong epidemiology background is helpful. MS Office computer skills, including MS Access. Familiarity with SPSS is not required, but helpful.  

**Student responsibilities:**  
The student will work with CDC, NAMRU-3, and Egyptian staff to assist with the study on hospital acquired infections. This will include participating in field and laboratory work as necessary, assisting with data entry, analysis, and summary of the results. The student will assist in specimen collection, data collection, and the ongoing assessment of the surveillance protocol. The student is likely to spend significant hours working with CDC’s Ministry of Health collaborating partners in the field at the site. The student should be independent and self-motivated. Flexibility and a good sense of humor are paramount.  

**Project supervisor(s):**  
Maha Talaat, MD, MPH, International Emerging Infections Program, Egypt  

**Supervisor’s availability July 1, 2011–June 30, 2012:** September 2011–December 2011  

**Project description:**  
The International Emerging Infections Program (IEIP) is part of the overall Egypt Ministry of Health and Population – U.S. CDC – Naval Medical Research Unit 3 (NAMRU-3) collaboration. IEIP has established a protocol to conduct a 3-year study examining the prevalence of hospital acquired infections in Egypt. This project targets pediatric and adult hospital patients as well as hospital health-care workers in two cities within Egypt.  

**Objectives:**  
To understand the basic epidemiology of hospital acquired infections in Egypt and to understand the challenges of implementing surveillance while working in an international setting  

**Project design:**  
The study will take place in one pediatric and one adult hospital in both Cairo and Alexandria, Egypt. Teams will collect epidemiological information and specimens from inpatients who report new signs and symptoms of respiratory illness or diarrhea after 72 hours of hospital admission. Teams will also collect epidemiological information from healthcare workers who return to work after taking sick leave.
<table>
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<tr>
<th>Project title:</th>
<th>Influenza Sentinel Surveillance</th>
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<tr>
<td>Location (country):</td>
<td>Based in Nairobi, Kenya (with travel throughout Kenya)</td>
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<tr>
<td>Project duration:</td>
<td>8 weeks</td>
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<tr>
<td>Fellow requested:</td>
<td>Year: ☑ Third year ☑ Fourth year Type: ☑ Medical student ☐ Veterinary student</td>
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<td>Languages:</td>
<td>English</td>
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<td>Skills:</td>
<td>Experience with basic computer programs helpful, especially those programs similar to: Epi Info™ and Microsoft Access® (familiarity with statistical software like SAS would also be helpful, but is not required)</td>
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</table>
| Student responsibilities: | The student will assist in monitoring progress of the sentinel surveillance system by reporting on key indicators including: case definition adherence, case selection and sampling, laboratory cold chain management, data entry, and data analysis. This unique opportunity will include training healthcare workers on the following:  
  - Basic Seasonal Influenza and Pandemic H1N1 epidemiology with case studies  
  - Specimen collection and transport  
  - Data collection and data analysis  
  
The student is likely to spend considerable time working with CDC’s MoH collaborating partners in the field at the sentinel sites. The student may also be involved in data management and data analysis. This highly motivated student should be willing to be independent, flexible, and self-inspired. |
| Project supervisor(s): | Mark Katz, MD, Medical Epidemiologist, Chief, Influenza Section, CDC-Kenya  
Eric Gogstad, M.Ed. Deputy Director, Global Disease Detection, CDC-Kenya |
| Project description: | CDC is collaborating closely with the Kenya Ministry of Health (MoH) in establishing and maintaining a seasonal and pandemic influenza sentinel surveillance program focusing on influenza-like illness (ILI), severe acute respiratory illness (SARI), and suspected avian influenza (SAI). |
| Objectives: | To monitor the evolving seasonal influenza and pandemic H1N1 situation in Kenya and inform the development of effective and appropriate interventions and communications strategies. To detect any changes or mutations in Pandemic H1N1 influenza in Kenya through the development of a rapid response and early warning system. |
| Project design: | Specimens will be collected at 11 surveillance sites (eight provincial hospitals, two refugee hospitals, and one private hospital in Nairobi) and sent for virologic testing at the National Influenza Center (NIC). CDC-Kenya is providing resources for implementing this surveillance program with the intent of having surveillance expansion and integration into the existing surveillance system of Integrated Disease Surveillance and Response (IDSR). |
**Project title:** Population-based Surveillance for Emerging Infectious Diseases, Kibera Informal Housing Settlement (Nairobi)

**Location (country):** Nairobi, Kenya  
**Project duration:** 8 weeks

**Fellow requested:**
- Year: Third year / Fourth year  
- Type: Medical student / Veterinary student

**Languages:** English

**Skills:** Experience with basic computer programs helpful, especially Epi-Info

**Student responsibilities:**
The student will work on a special project within the population-based surveillance area. Possibilities include developing protocols for taking, digitalizing and reading x-rays taken in the facilities, evaluating the accuracy of symptom reporting on biweekly home visits, evaluating the clinical spectrum of illness for people coming into the clinic, and implementing and evaluating the success of active case-finding for tuberculosis. The student's activities will be field-based in an urban slum. The student should be willing to be independent, flexible, and self-motivated.

**Project supervisor(s):**
Dr. Joel Montgomery, PhD, MS, Director, International Emerging Infections Program (IEIP), CDC-Kenya

**Supervisor's availability July 1, 2011–June 30, 2012:** Will schedule fellow when mentor is available. Unable to predict travel schedule for this time period.

**Project description:**
The incidence of important infectious disease syndromes, like pneumonia, diarrhea, fever and jaundice, is unknown in Kibera which is one of the largest contiguous slums in Africa. More information is needed.

**Objectives:**
To define the burden of these infectious disease syndromes in Kibera and to eventually introduce interventions that might decrease their burden.

**Project design:**
- **Household visits.** Enrolled households located in two villages in Kibera are visited every two weeks to see if anyone is sick with one of the infectious disease syndromes. All family members in each enrolled household are administered a questionnaire using a PDA or smart phone. Anyone who is sick is encouraged to go to field clinic linked to the program.

- **Clinic visit.** Enrolled participants living in the two villages in Kibera are encouraged to visit the program field clinic for their illnesses. Clinic staff will provide free medical care, treatment or refer them for further follow up as needed for their illness. After receiving medical care, a short questionnaire will be conducted by Kibera clinic staff. Besides the routine laboratory tests done at the clinic, additional specimens will be taken to accurately diagnose illness. CDC will cover cost of consultation, laboratory testing and medications.

Persons who access the clinic but reside outside the study area will not have costs covered by CDC and will have to pay regular prices as determined by clinic management. However, these people can be seen by clinical staff paid for by CDC through the KEMRI cooperative agreement.
Project title: Population-based Surveillance for Emerging Infectious Diseases in Rural Lwak area (Kisumu)

Location (country): Kisumu, Kenya  Project duration: 8 weeks

Fellow requested:
Year: ☒ Third year ☒ Fourth year  Type: ☒ Medical student ☐ Veterinary student

Languages: English

Skills:
Experience with basic computer programs helpful, especially Epi-Info

Student responsibilities:
The student will work on a special project within the population-based surveillance area (described below). Possibilities include developing protocols for taking, digitalizing and reading x-rays taken in the facilities, evaluating the accuracy of symptom reporting on biweekly home visits, evaluating the clinical spectrum of illness for people coming into the clinic, and implementing and evaluating the success of active case-finding for tuberculosis. The student’s activities will be field-based in a rural area. The student should be willing to be independent, flexible, and self-motivated.

Project supervisor(s):
Deron Burton, MD, JD, MPH, International Emerging Infectious Program (IEIP), CDC-Kenya
Godfrey Bigogo, Deputy Branch Chief, IEIP, Kenya Medical Research Institute, Kisumu, Kenya

Supervisor’s availability July 1, 2011–June 30, 2012: Will schedule fellow when mentor is available. Unable to predict travel schedule for this time period.

Project description:
The incidence of important infectious disease syndromes, like pneumonia, diarrhea, fever and jaundice, is unknown in the rural study area. More information is needed.

Objectives:
To define the burden of these infectious disease syndromes in the rural Lwak area and to eventually introduce interventions that might decrease their burden.

Project design:
Household visits. Enrolled households located in the rural Lwak area are visited every two weeks to see if anyone is sick with one of the infectious disease syndromes. All family members in each enrolled household are administered a questionnaire using a PDA or smart phone. Anyone who is sick is encouraged to go to field clinic linked to the program.

Clinic visits. Enrolled participants living in the rural Lwak area are encouraged to visit the program field clinic for their illnesses. Clinic staff will provide free medical care, treatment or refer them for further follow up as needed for their illness. After receiving medical care, a short questionnaire will be conducted by clinic staff. Besides the routine laboratory tests done at the clinic, additional specimens will be taken to accurately diagnose illness. CDC will cover cost of consultation, laboratory testing and medications.

Persons who access the clinic but reside outside the study area will not have costs covered by CDC and will have to pay regular prices as determined by clinic management. However, these people can be seen by clinical staff paid for by CDC through the KEMRI cooperative agreement.
**Project title:** A Study of Absenteeism in the Kenyan Health Workforce

**Location (country):** Kenya  
**Project duration:** 8 weeks: 1 week at CDC in Atlanta, 6–7 weeks in Kenya, 1–2 days at CDC in Atlanta

**Fellow requested (select all that apply):**
- Year: ☒ Third year  ☒ Fourth year
- Type: ☒ Medical student  ☐ Veterinary student

**Languages:** English

**Skills:**
- Qualitative field research (structured and open ended survey design and delivery), quantitative analysis (ability to read data from SeQuel database); ability to work smoothly with multiple stakeholders, intercultural skills, strong written communication, and coordination/organization

**Student responsibilities:**
The student will be invited to assist a senior researcher from Wellcome Trust and 1–2 Kenyan research colleagues, to complete a study of absenteeism in the Kenyan health workforce. The student will be responsible for helping this senior researcher in qualitative survey design, field implementation, analysis, and writing of the draft manuscript for submission to a peer reviewed journal. The student will also be responsible for project coordination during the fellowship period to assure completion of the study (e.g. arranging site visits, questionnaire preparation, etc). The student will have the opportunity to engage with CDC Atlanta and CDC - Kenya officials, Kenyan researchers, Wellcome Trust researchers, and Kenyan health workers and Ministry of Health officials. The student is expected to be available for 8 weeks, approximately 6–7 of which should take place in Kenya.

**Project supervisor(s):**
Patricia Riley, MPH, CNM, FACOG, Team lead (acting), Health Systems and Human Resources

**Supervisor’s availability July 1, 2011–June 30, 2012:** July 1–August 31, 2011

**Project description:**
The global health community has recognized the shortage of human resources as one of the single greatest constraints to scaling up health services, including HIV/AIDS. One of the causes of HR shortages is degree of absenteeism among the existing health workforce. To better understand the extent of this program and its causes, the CDC is supporting Wellcome Trust and their network of Kenyan researchers to conduct a study of absenteeism in the Kenyan health workforce. The study will use as a baseline information data from the Kenyan human resource information system, which tracks health worker deployment in 6000 health facilities. The study protocol will be developed in advance, and the student will assist in questionnaire development, the field implementation of the study, analysis of the qualitative and quantitative data, and writing up the final manuscript for submission in a peer-reviewed journal. It is expected that the student will be present in Atlanta at the CDC Division of Global AIDS for 1 week for orientation, 2 weeks in Kenya to prepare for the field research, followed 4-5 subsequent weeks in Kenya for field work, analysis, and writing. The student will return to Atlanta for 1-2 days to present findings to the headquarters team.

**Objectives:**
The objective of the study is to detect if the health workers who are tracked in post are actually presenting for work routinely and for their full shift, and the causes for the findings. The goal of this information is to understand the extent of absenteeism in the Kenya health workforce and to make recommendations to the Kenyan MOH and global donors on how to support better workforce attendance, to improve service delivery (e.g. HIV/AIDS services). The student will work closely with a Wellcome Trust senior researcher and one or more Kenyan researchers. CDC and Emory University project offices in country as support.
Project title: A Study of Absenteeism in the Kenyan Health Workforce

Project design:

The study protocol will be developed in advance by CDC Atlanta, Senior Wellcome Trust researcher and 1–2 Kenyan researchers, in order to obtain appropriate human subjects and agency clearance. The study will use data from the national human resource information system to detect which health workers are reported to be working in specified facilities, and then use qualitative interviews through site visits to a select number of these facilities to verify if indeed these health workers are showing up in post. Study methods include open and structured interviews with health care providers and Ministry of Health officials, and review of secondary materials. Methods must include questions that provide value for the health workers themselves and will not under any circumstances provide any information that would help identify individuals not presenting at post. The sample population for the study will be health care providers at health facilities that represent district and provincial level health care facilities. Facilities will be selected from two provinces, which will be identified by the MOH as representing the areas of greatest and lowest expected absenteeism, and/or the provinces with the greatest or least shortage of health workers.
Validating Cotrimoxazole Coverage among People Living with HIV/AIDS in Specific facilities

Location (country): Ethiopia
Project duration: 8 weeks

Fellow requested:
Year: [ ] Third year  [x] Fourth year  
Type:  [x] Medical student  [ ] Veterinary student

Languages: English; Amharic would be helpful but not necessary

Skills:
- Epi Info data entry, design and analysis

Student responsibilities:
- Data collection/entry and analysis at 3 sites
- Presentation of findings to agency, workgroup, partners, and write up of report

Project supervisor(s):
- Seymour Williams, MD, MPH, Associate Director for Care and Treatment, CDC-Ethiopia
- Abubaker Bedir, MD, Branch Chief, Care and Treatment Branch, CDC-Ethiopia
- Samuel Tilahun, MD, MPH, Technical Officer, Care and Support, CDC-Ethiopia
- Sisay Alemayehu, MD, MPH, Monitoring and Evaluation Technical Officer, Strategic Information

Supervisor’s availability July 1, 2011–June 30, 2012: July 1–August 31, 2011

Project description:
Cotrimoxazole prophylaxis therapy (CPT) is a simple, well-tolerated and cost-effective intervention for decreasing morbidity and mortality among people living with HIV/AIDS (PLHIV). It is recommended as an integral component of the chronic care package of services for PLHIV. CPT must be continued even after antiretroviral therapy (ART) is initiated until there is evidence of immune recovery. Ethiopia endorsed and accepted the WHO recommendation for CPT and has incorporated the recommendation into the national guideline in February, 2006.

The national guideline states that, in adults, CPT should be started based on CD4 count ≤ 350/ml, WHO stages II-IV, TB/HIV co-infection and documented history of PCP. CPT should be discontinued among those on ART if the CD4 count increases to ≥ 350/ml for three or more months. Similarly, all infants born to HIV infected mothers should be put on CPT at 4-6 weeks of age until they are tested as negative, while infants and children found to be HIV infected should start and continue to receive CPT irrespective of age, clinical stages, CD4 count or maternal ART use.

About 93% of PLHIV in care in Ethiopia are eligible for CPT based on the national guideline, the CD4 and WHO stage profile of people currently infected with HIV. One small study done in Jimma University Specialized Hospital evaluating the use of CPT showed that initiation of CPT at the correct dose and frequency was consistent with the national guidelines, however were gaps including weak follow-up of patients and poor compliance with when to discontinue CPT when indicated. Routine programmatic performance reports indicate that the national coverage for CPT has been suboptima. More recently the Ethiopian government and its partners have initiated a TB/HIV surveillance system that aims at generating data on seven indicators. One of the indicators is CPT coverage. The system has generated a six months’ data that showed very low level of CPT coverage as well as problems in the quality of data.

This assessment is proposed as a validation exercise to evaluate coverage and follow-up of CPT at several specific facilities. The assessment will provide better information to improve CPT delivery as part of a comprehensive HIV/AIDS chronic care services that are in line with the national guideline and standard of care as well as to validate the data generated from the TB/HIV surveillance system.
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<th>Project title:</th>
<th>Validating Cotrimoxazole Coverage among People Living with HIV/AIDS in Specific facilities</th>
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| Objectives:   | 1) To measure the level of uptake for CPT at specific health facilities and compare to the routine CPT coverage report from these facilities  
2) To determine the level of adherence to national CPT guideline by health professionals in Pre-ART/ART setups at specific health facilities  
3) To identify gaps in the implementation of CPT and define recommendations ways to improve coverage to optimal level as per the national guideline |
| Project design: | Retrospective cohort study using pre-ART/ART registers and HIV Care/ART follow-up charts for all PLHIV ever enrolled into care at designated facilities. |
Project title: **Surveillance for Influenza Viruses in Domestic Animals in Kenya**

Location (country): **Based in Nairobi, Kenya (with travel throughout Kenya)**  
Project duration: **8 weeks**

Fellow requested:  
Year: ☒ Third year  ☒ Fourth year  
Type: ☐ Medical student  ☒ Veterinary student

Languages: **English**

Skills:  
Experience with basic computer programs helpful, especially those programs similar to: Epi Info™ and Microsoft Access® (familiarity with statistical software like SAS would also be helpful, but is not required)

Student responsibilities:  
The student will assist in collecting samples...The student will assist with data collection, analysis, and reporting. The student will identify strengths and weaknesses in the surveillance system and report recommendations.

The student is likely to spend considerable time working with partners at Kenya's Department of Veterinary Services in the field at the surveillance sites. The student may also be involved in data management and data analysis. This highly motivated student should be willing to be independent, flexible, and self-inspired.

Project supervisor(s):  
Mark Katz, MD, Medical Epidemiologist, Chief, Influenza Section, CDC-Kenya  
Eric Gogstad, M.Ed. Deputy Director, Global Disease Detection, CDC-Kenya


Project description:  
CDC is collaborating closely with the Ministry of Livestock, the Department of Veterinary Services in surveillance for influenza viruses in poultry in live bird markets and among pigs in farms and in slaughter houses in Kenya. The live bird market surveillance effort allows CDC and the Kenyan Ministry of Livestock to monitor and track avian influenza in poultry with close human contact and assess the risk of introduction of avian influenza into the human population in Kenya. The benefit of conducting surveillance for influenza viruses in pigs and other domestic animals at the production level is the ability to define the ecology and epidemiology of influenza viruses circulating in Kenya.

Objectives:  
To identify and characterize influenza viruses circulating in poultry, pigs and dogs in Kenya. To use the surveillance data to track and monitor potential changes and mutations to known circulating subtypes. To elucidate the threat of live market poultry in the influenza animal-human interface and to identify risk factors to influenza transmission in domestic animals.

Project design:  
Specimens will be collected from 5 live bird market sites in Nairobi and the surrounding areas, from pigs, poultry and dogs in farms in various sites in Kenya and from pigs presented for slaughter in a local slaughter house. Samples are tested for influenza A and influenza A subtypes.