

Pennsylvania HIV Epidemiology Collaboration Unit (HECU) Applied HIV Epidemiology Fellowship

1) Information about the program area:

The HIV Epidemiology Collaboration Unit (HECU), within the HIV Surveillance & Epidemiology Section (in the Division of Infectious Disease Epidemiology) of the Pennsylvania Department of Health is responsible for providing Epidemiology support for HIV prevention and care programs as follows:

- a) Epidemiology Consultation for Planning (incl. Planning Data Analyses Support); Support for prevention and care policy planning through analysis, interpretation and dissemination of the Epidemiologic data collected for use in planning and targeting of HIV prevention and care intervention activities.
- b) Support for HIV/AIDS intervention program development, implementation and evaluation of outcomes through conducting HIV surveillance, epidemiologic research studies and consultation.
 - Design and Conduct of Special Disease Burden/Risk Assessment Studies and Surveillance;
 - Design and Conduct of Intervention Epidemiology Research and Development Studies (incl. Outcome Evaluation and Health Services Utilization/Service Gaps);
- c) Applied, Problem-based and In-Service Epidemiology Training/Capacity Development.

The fellowship is primarily tenable in Harrisburg, Pennsylvania, the state capitol city with collaborative field work in other cities in PA, e.g. as Pittsburgh, Philadelphia, Allentown, etc.

About Harrisburg, PA: This capitol city of PA boasts the country's most majestic state capitol dome, office complex and overlooks the beautiful Susquehanna River valley (see Harrisburg visitor info at <http://www.harrisburgpa.gov/visitors/>).

Harrisburg is within driving distance of other regional cities, cultural and academic centers: 105 miles west of Philadelphia (Drexel SPH), 175 miles southwest of from New York City (Columbia SPH), 75 miles north of Baltimore (Johns Hopkins SPH), 120 miles north of Washington DC (GWU SPH), and 204 miles east of Pittsburgh (U.Pitt SPH). In addition to bustling city center nightlife with many regional attractions, Harrisburg has a diverse community of young professionals (www.hyp.org). Also within only 10 miles of Harrisburg is the Penn State College of Medicine-Hershey Medical Center which has a distinguished and stimulating seminar series in the Health Sciences research (<http://www.hmc.psu.edu/calendar/>) including Public Health sciences such as Epidemiology & Biostatistics in the Graduate Program of the Department of Health Evaluation Sciences: (<http://www.hmc.psu.edu/hes/index.htm>).

2) The fellows' anticipated day-to-day activities:

Although the fellow will be primarily assigned to do mentored applied epidemiology work on a jointly conceptualized specific project or a series of specific projects during the 2-year duration of the fellowship, a broad range of experiences beyond the primary assignment will be provided through 10% release time for rotations through public health grand-rounds and seminar series on other HIV-related program areas outlined below under item #3 on interdisciplinary work.

Day-to-day applied epidemiology work on specific primary projects will include the following range of work experiences depending on the specific assigned project:

- Conduct public health reviews and situation analyses
- Conceptualize surveillance/research strategies, surveillance data needed or research questions.
- Design surveillance systems to assess health problems.

- Evaluate surveillance systems and understand the limitations of surveillance data.
- Design an epidemiologic study to address/investigate a public health problem or evaluate the impact/effectiveness of public health interventions.
- Understand the different basic types of study design, the advantages & limitations of each type.
- Develop a surveillance procedures manual, a research study protocol/proposal/research plan.
- Design a questionnaire or other data collection tool to address a health problem.
- Creating a collaborative research team and preparing an application for research funding.
- Collect health data from appropriate sources (e.g., case interviews, medical records, vital statistics records, laboratory reports, or pathology reports).
- Create a database for a health data set.
- Use statistical software to analyze and characterize epidemiologic data.
- Interpret surveillance data.
- Interpret findings from epidemiologic studies, including the ability to recognize the limitations of the data and potential sources of bias or confounding.
- Publish, disseminate findings to planning committees and recommend control measures, prevention programs, or other public health interventions based on epidemiologic findings.

3) Examples of potential projects that demonstrate opportunities for data analysis, outbreak field investigations, and opportunities to work on interdisciplinary teams:

3.1) Data Analyses Projects:

In support of HIV program planning, development and implementation, the HECU is currently conducting a variety of HIV surveillance data analyses projects such as:

- a) Development of a series of supplemental update analyses for the 'Integrated Epidemiologic Profile for HIV/AIDS in PA'; the primary mentor for fellows, Dr. Muthambi, is a *contributor* to the development of CDC-HRSA National Guidelines for Integrated Epidemiologic Profile for HIV/AIDS; see document and contributors at: http://www.cdc.gov/hiv/epi_guidelines.htm
- b) Revision of an evidence-based model for prioritization of target populations for HIV prevention. An abstract of this project is online at: <http://www.dsf.health.state.pa.us/health/lib/health/hiv/hecc/reprioritization2005.pdf>
- c) Analyses of laboratory-reported indicators of disease progression and treatment with antiretroviral therapy as an indicator of unmet need for basic medical care. Abstract is at: <http://www.dsf.health.state.pa.us/health/lib/health/hiv/hecc/unmetneed.basicmedcare.pdf>
- d) Analyses of HIV co-morbidities such as Hep C, TB and STIs.

Past examples of projects that the HECU conducted with mentored applied Epidemiology fellows under Dr. Muthambi (primary mentor) include:

- a) An analysis of survival after diagnosis with AIDS in Southwestern PA sponsored by a Departmental contractor, the Southwest HIV/AIDS Planning coalition (see letter of support): University of Pittsburgh Epidemiology doctoral dissertation project under Dr. Muthambi's mentorship): < <http://www.health.state.pa.us/hiv-epi/extranet1.1/DOWNLOAD/EpiResources/download/app1-absQ4-01.pdf> > .
- b) A mapped analysis of gaps in services in the AIDSNET coalition area sponsored by another Departmental contractor: East Stroudsburg University graduate program project under Dr. Muthambi's mentorship. In book of Abstracts # T1-B15-06, 2003 National HIV Prevention Conference, Atlanta, Georgia, USA. <http://www.2003hivprevconf.org/AbstractBookFinal.pdf>

3.2) Outbreak Field Investigations (and Surveillance):

The fellows will interact with and participate in HIV field investigations and the unique outbreak investigations of HIV and related conditions as described under interdisciplinary work in the next paragraph. In addition, the fellow will participate in evaluations of the accuracy of field surveillance investigation case reports through coordinating gold standard reabstractions of data.

3.3) Interdisciplinary Work:

a) The fellows will participate in cross-program work between HIV Surveillance, Epidemiology and Public Health Interventions on HIV and related conditions to further develop effective linkage of case surveillance to early intervention programs and in various aspects of Epidemiology support for HIV/AIDS prevention and care program planning, implementation, outcome evaluation, service monitoring, linkage of case surveillance to early intervention programs, social network investigation, and early outbreak detection of HIV and related diseases such as other Sexually Transmitted Diseases, Tuberculosis, etc. Abstracts of the main HIV case surveillance project(i), the HIV incidence project(ii), and on linkage of HIV surveillance to early public health interventions are at:

i) <http://www.dsf.health.state.pa.us/health/lib/health/hiv/hecc/HIVcasesurveillance.pdf>

ii) <http://www.dsf.health.state.pa.us/health/lib/health/hiv/hecc/HIVincidence.pdf>

b) Further interdisciplinary work will be facilitated under the provision for 10% release time for rotations through public health grand-rounds and seminar series on other HIV-related program areas, the fellow will be exposed to a broad range of applied public health topics from HIV-associated projects in other program areas such as infectious disease outbreak investigations on STIs, TB, (even some waterborne and food-borne diseases); and HIV-related chronic disease programs such as Cancer. Networking opportunities at the Penn State University College of Medicine at Hershey Medical Center (only 10 miles from Harrisburg city center) include: a stimulating academic Health Sciences research seminar series (<http://www.hmc.psu.edu/calendar/>), including Epidemiology/ Biostatistics adjunct faculty/visiting fellow opportunities in the Graduate Program at the Department of Health Evaluation Sciences: (<http://www.hmc.psu.edu/hes/index.htm>).

4) Program or surveillance system evaluation component

Evaluation of HIV surveillance data used to support HIV programs, viz validation of data used for assessment of needs for basic medical services for persons living with HIV; this will include evaluating surveillance performance attributes such as completeness, timeliness and accuracy of laboratory and field reports. An abstract of this project is online at:

<http://www.dsf.health.state.pa.us/health/lib/health/hiv/hecc/HIVelreval.pdf>

5) Role of fellows in State Emergency Preparedness Plan:

The fellow will participate in projects such as the development and piloting of a model regional plan for public health preparedness for vulnerable populations such as HIV patients, the elderly and the very young. As outlined above under outbreak investigations and interdisciplinary work, the fellow will also interact with and participate in HIV field investigations and outbreak investigations of HIV and related conditions as part of emergency preparedness.

Assignment Location: Harrisburg, PA

Primary Mentor: Benjamin Muthambi, DrPH, MPH

State HIV Epidemiologist (Disease Control and Prevention)

Advanced Degree: DrPH, Columbia University, Mailman School of Public Health (1998)

MPH, Columbia University, Mailman School of Public Health (1994)

Secondary Mentor: Oladoyin Desalu, DrPH, MPH

Executive Director, Southwestern Pennsylvania AIDS Planning Coalition

Advanced Degrees: DrPH, University of Pittsburgh

MPH, University of Pittsburgh