Field Course in Public Health, Kingston Jamaica
Infectious Diseases Surveillance and Control

Submitted by Stephanie Brodine, Division of Epidemiology and Biostatistics, Graduate School of Public Health

Course dates: August 9 – 19, 2008

Overview: This was the 5th year SDSU participated in the Kingston, Jamaica summer course in Infectious Diseases Surveillance and Control, with the support of the Office of International Programs (OIP). The course is hosted on the University of West Indies (UWI) campus by the Department of Community Health and Psychiatry and is sponsored by the Sparkman Center for Global Health, at the University of Alabama. Faculties from these 3 institutions support the course, with a broad international student participation from neighboring Caribbean countries. There continues to be a strong student demand for this course, necessitating a competitive application process. Ultimately 11 SDSU GSPH graduate students, including 3 doctoral students (2 global health and 1 epidemiology) participated, with 2 of these students taking lead roles in the field teams. All of the students received at least partial scholarship support – primarily from the OIP at the University level. For the second year a Mexican student participated (in global health PhD). A masters' student (dual Geography and Epidemiology), returned for the 3rd time as a Teaching Associate and played a major role in the vector borne disease team. He also received partial funding from the Sparkman Center for Global Health, and so was fully funded.

As with the previous 4 years, the course is structured with core lectures, primarily from Jamaican faculty from UWI and the local Ministry of Health, but also from the U.S. faculty; daily field trips; and cultural experiences. The core public health areas are water and sanitation; vector control; and HIV/AIDS. This was the third year that the field activities were project oriented with our students working along with the Ministry of Health programs. This has also contributed to use of the project data for thesis (2 of the students for the 2008 course). Integration of the Jamaican graduate students across the 3 student teams continues to maximize the benefit of a multi-national experience, but also ensured community engagement and successful completion of the teams' projects. The Jamaican students also greatly add to the teaching component, as the majority of them are public health professionals that have enrolled in the UWI Masters of Public Health program, so they already have extensive experience and are well networked.

Importantly, the content and setting (e.g., clean water, sanitation, vector borne disease) are relevant to disaster response and addresses a growing demand for Schools of Public Health (and the GSPH) to strengthen curriculum that addresses the application of basic public health skills, required in disaster mitigation and response. This is a good match across all of the Public Health disciplines and degrees. The addition of GIS mapping and

data collection/analysis is another important evolving field that students and faculty get experience with.

The student feedback was extremely positive and as a faculty member it continues to be an enriching experience. There is high interest from UWI and the Sparkman Center for Global Health to have a continued SDSU presence. As with previous years, I was able to meet with the leadership of the Department and University – and there is interest in expanding the program ultimately to include joint research and grant opportunities.

Faculty: Course Masters included myself for SDSU; Dr. Madhov Bhatta, Deputy Director of the Sparkman Center of Global Health and an Epidemiologist with expertise in International Health; and Dr. Henroy Scarlett, the UWI Course Director, and an Environmental Health professional with extensive experience with the Jamaican MOH. Additional course faculty on-site included: Professor Brendan Bain, director of the UWI MPH program and Department Head for Community Health and Psychiatry at UWI, with a Caribbean wide reputation in infectious diseases; Dr. Peter Figueroa, a senior physician who is primarily responsible for defining the HIV epidemic in Jamaica and Chief of Epidemiology and HIV/AIDS for the country; Dr. Tina Hilton-Kong, Chief of the MOH Sexually Transmitted Diseases Department; Dr. Huntley of the MOH Vector-borne diseases, Spanish Town; and Ms Althea Bailey of Community Health and Psychiatry at UWI.

Participating Students: The 11 SDSU students included 1 doctoral student in Epidemiology, 2 doctoral students in Global Health, a dual masters in Epidemiology and Latin American studies and 7 additional MPH students (5 in Epidemiology and 2 in Health Promotion). The additional 30 students in the course were from the UWI (public health graduate students and working public health professionals from Jamaica and the neighboring Caribbean countries) and from UAB. In the future this course would be suitable for a variety of students interested in international health, including medicine, nursing, or other allied graduate programs. Advanced upper-division undergraduate students with a strong background in biology or ecology could also be considered.

Course Content: The integration and application of classroom, laboratory, and field experiences are utilized to foster *problem solving skills* for infectious diseases ecology, surveillance, and control. The 3 primary field projects were Arthropod-borne Disease; Water & Sanitation; and HIV and Sexually Transmitted Infections (STI) Control. Internet lectures and readings across the 3 disciplines are available in advance of the course, and an examination of this material is taken on the day of arrival to Kingston. During the course experience there is a field journal to maintain and turn in, and a culminating project to prepare, which is prepared and presented as a team - based on their fieldwork and data collected.

Field work included mosquito trappings and larvae surveys, water and sewage treatment plant evaluations, assessment of rodent control, and analysis of Jamaican MOH surveillance data. Teams used field techniques to generate and analyze data. Site visits to STI and HIV clinics and service centers, laboratories, rodent control sites, rural zones,

water and sewage treatment facilities, and the Jamaican MOH provided an in -depth look at applications of multi-factorial approaches to disease control in resource limited settings A new trend has been to have the exam which is based on required readings and internet lectures, taken at SDSU and UAB prior to arrival in Kingston - to allow more time for field work and cultural experiences during the course.

Cultural immersion and team building were encouraged by having all students and visiting faculty live on the UWI campus, having the full time participation of Jamaican students and public health practitioners, and through a number of cultural enrichment activities.

Specific activities for the STI/HIV teams that increased community engagement, included participated in Jamaican run HIV prevention programs with an outreach component. Students received briefing on the programs, and then accompanied staff to the varying work sites, to include shopping malls, city streets, and clubs. They were able to observe and ultimately participate in the prevention activities. Students were also able to shadow health care practitioners at the Comprehensive Care Clinic, in the sexually transmitted infections section. The community service piece was a ½ day workshop for Jamaican HIV seropositives, in which students researched and designed talks and activities to reinforce importance of adherence to drug therapy, safer sex, and stigma. A number of the Jamaican men and women who participated had been to the workshop that we held the previous year, and were quite enthusiastic about our group's interest and return.

Logistics: Students paid $2100 in expenses to cover air flights, room and board, local transportation, and field trips. Lodging was provided in the UWI dormitories in single and double rooms, with the majority of meals served on campus. Days were typically 8 – 12 hours in duration with lectures and site visits. Cultural activities were also included, and 1 day was set aside for a visit to Ochos Rios. Students were awarded 3 units through PH 783, or in some cases through PH 750 (graduate level field practice).

Assessment: This remains an extraordinary opportunity for SDSU to gain access to an international field site, where substantial infrastructure and administrative support is provided by the 2 participating universities. The Jamaican faculty that participate are among the most prominent in the West Indies. SDSU does make independent contributions, particularly in Infectious Diseases and Epidemiology – at the faculty and graduate student level. Our students consistently emerge as leaders of the teams in organization and data analysis, and are genuinely appreciated. For many students this was a first time experience out of the U.S., and many were challenged by the intensity of the work and the requirement for interaction. Some were challenged and stimulated by very different cultural beliefs and practices.

There is a recognized need for our students in public health undergraduate and graduate education to grow cross-cultural skills – which this course directly addresses. There is a growing need for an international work force that has applied knowledge in basic public health in resource contained environments. The topics covered - vector borne disease,

clean water and sanitation, and sexually transmitted diseases – all represent major high impact public health areas. More recently, intentional and non-intentional disasters have also pointed out the need for a public health work force in disaster preparedness, which is also relevant to the course experience.

Speaking to the high quality of field work that can be conducted within the scope of the course, Justin Stoler was recognized with a Dean's Award for his presentation at the SDSU Student Research Symposium, entitled "Exploring the Relationships Between Dengue Fever Knowledge and Aedes aegypti Breeding in St. Catherine Parish, Jamaica: A Pilot of Enhanced Surveillance". He also successfully defended this as his masters thesis in Epidemiology (MPH), and a manuscript has been submitted for publication. This work was a significant contribution as it documented poor knowledge of Jamaican community members regarding dengue fever and vector control. Additionally, high mosquito larvae density was documented in water drums and miscellaneous containers, which correlates to intense exposure (and is a rationale for the recent major dengue epidemic in Jamaica).

In closing, this continues to be a highly valued international field experience, and matches the curricular directions of the GSPH with the recent addition of a masters' degree in Emergency Preparedness and a doctoral program in Global Health. The funding from the OIP has been instrumental in a number of critical ways, including providing support for myself as the SDSU faculty; widening the pool of students that are able to compete for the course; and enhancing the quality of the course experience with course materials and additional support.