Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): The project is being carried out in partnership with the School of Public Health and Tropical Medicine of Tulane University and the Caribbean Public Health Agency, within the framework of the Caribbean Consortium for Research in Environmental and Occupational Health. This agency is funded by the Fogarty Center of the National Institutes of Health, and investigates, among others, public health issues associated with Surinamese plant-derived nutraceuticals.

Summary/Conclusion: So far, 500 candidate plants have been identified, 90 plants have been collected, and extraction facilities have been set up, producing eight extracts per month. The above-mentioned cell culture studies have been delayed by extended delivery times of laboratory materials due to the absence of local representatives in Suriname. Nevertheless, up to now, 45 plant extracts have been evaluated, although so far with negative results.

Evaluation of a comprehensive HIV prevention program in North West Province, South Africa: Results from the pilot

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Background: South Africa, where there are more people living with HIV than in any other country, has an urgent need for evidence-based HIV prevention. The University of Washington and the University of California, San Francisco, are implementing a comprehensive HIV prevention program in South Africa's high-prevalence North West Province. Although multicomponent and comprehensive prevention programs are now being widely promoted, there have been few rigorous evaluations to date. Through collaboration with the Centers for Disease Control and Prevention, Statistics South Africa, and local government, an evaluation is underway to determine the impact of this comprehensive prevention model.

Structure/Method/Design: The overall evaluation is a pre-post-test comparison group design with delayed community entry in one of two geographical areas where the comprehensive program is being implemented. Data collection will include a series of cross-sectional, population-based community surveys with biological sample collection, conducted to monitor changes in outcomes: uptake of HIV testing and services as well as community viral load. A pilot study of the data collection was conducted in September 2013 where fieldworker and community health worker teams administered a computer-based survey, conducted HIV rapid testing, point-of-care CD4 testing, and collection of dried blood spots (DBS) in participants' households.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): Of the 71 eligible individuals in the random sample, 46 (65%) were located and participated in the pilot study. All 46 participants (100%) consented to and completed the behavioral survey, 37 (80%) consented to rapid HIV testing and a CD4 test if positive, and 36 (78%) agreed to DBS collection if requested. Eight participants (22%) tested HIV positive, all of whom knew their positive status prior to testing; 6 currently on ART. DBS cards were requested from those testing positive and a random sample of negatives; 15 were collected and used for laboratory quality assurance purposes.

Summary/Conclusion: The study pilot proved acceptable and feasible, preparing the team for the full impact evaluation roll out, scheduled for early 2014 and including data collection with 1200 randomly selected people from 46 census areas. Community interest and participation rates were high, including consent to point-of-care CD4 and DBS collection for viral load testing. While population-based samples are problematic due to high rates of mobility (34% of the selected sample had moved 2 months following the census exercise), they are the most rigorous means of evaluating wide-scale community programming. The prodigious start of this impact evaluation was a result of successful university collaboration with local government. The results of this collaboration will lead to rare population-based data on sensitive markers for HIV prevention, valuable for both program evaluation and planning for local health officials.

Biomedical research capacity building in Mozambique through the MEPI

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Background: Locally developed and conducted research can be a major catalyst for sustainable national development. Universidade de Eduardo Mondlane and University of California San Diego are partners in Mozambique's U.S. NIH/PEPFAR-funded Medical Education Partnership Initiative (MEPI) program. A major aim of the UEM/UCSD MEPI is to develop infrastructure, expertise and human resources to implement sustainable country-aligned biomedical research programs to both enhance public health and attract and maintain medical faculty in the public medical schools in Mozambique.

Structure/Method/Design: We conducted a directed interview needs assessment and comprehensive analysis of the biomedical research capacity within the Faculties of Medicine in Mozambique's major public universities to identify barriers to building research capacity and establishing country-led research programs. Based on this analysis, we developed an integrated plan to overcome these barriers, to implement basic and applied research programs within Mozambique focused on locally identified research priorities, and to build faculty capacity to sustain such programs.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): We implemented the following key research activities: 1) basic, translational, clinical, and public health didactic research training programs; 2) a robust research administration support center; 3) multiple collaborative research projects that have emphasized local research priorities; 4) bioinformatics infrastructure to support research programs; 5) an institutional review board that serves biomedical research within the UEM Faculty of Medicine and Maputo Central Hospital; and 6) a newly renovated and equipped laboratory for communicable disease research. The research administration support center provides services and personnel to support grant application development and submission, fiscal management of grant funds, and mentored training for research staff. Approximately 32 pilot multidisciplinary research projects and grant applications were developed focused on HIV/AIDS, tuberculosis, sepsis, stroke, and other communicable and noncommunicable diseases have been developed; to date 12 of these have been funded through NIH or

other sponsored research organizations. Courses focused on patient-oriented research, grant and manuscript writing, research budget management, and laboratory-based research training have been conducted jointly with UEM/UCSD faculty; these have been facilitated through bioinformatics investment to create distance and electronic learning and digital reference material. We have actively engaged with relevant stakeholders within government and universities to align research development with national priorities.

Summary/Conclusion: The investment in the MEPI program in Mozambique has resulted in significant progress in establishing sustainable research capacity to conduct basic, translational, and clinical/public health research aligned with national priorities. This will enhance the ability of Mozambique to address critical locally relevant biomedical priorities with the goal of improving public health and maintaining faculty within Mozambique's public medical schools.

First report of multiple mixed-subgenotype infections of *Acanthamoeba* spp. from clinical isolates of human keratitis cases in Japan

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Background: *Acanthamoeba* has a worldwide distribution in the environment. Nowadays, the cases of Acanthamoeba keratitis (AK) have surged all over the world along with its disease burden due to increasing use of contact lenses, not only for vision correction but also for cosmetic purposes. In this study, we aimed to reveal the genetic diversity of *Acanthamoeba* spp. existing in clinical keratitis patients using both the nuclear small subunit ribosomal RNA (18S rRNA) and mitochondrial small subunit ribosomal RNA (16S rRNA) gene loci and to evaluate the incidence of mixed-genotype infections.

Structure/Method/Design: Twenty-seven corneal scraping and preserving solution samples were obtained from patients with visual complaints in Japan. To evaluate the genotype distribution, all samples were characterized based on partial sequences of approximately 550bp of the 18SrRNA gene and 1540bp of the 16SrRNA gene loci. Where mixed-genotype infection profile was suspected, a subcloning strategy was adopted to determine the sequences.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): In this study, the results of 18S and 16S rRNA genotyping were found to match perfectly with each other. We also confirmed two cases of subgenotype s mixed sequence profile of *Acanthamoeba* in a single clinical sample of AK. In the 18S rRNA gene analysis, subcloning was adopted for the sample that showed mixed electropherogram. Sequencing and alignment of the clones gave unique genotypes that did not overlap with the other genotypes. To evaluate the contamination risk with other strains, we tried single trophozoite PCR after years of cultivation and got the same results for both strains. Differences were observed between nuclear and mitochondrial genetic characteristics; the mixed haplotype profiles from two individual strains were detected only in the nuclear gene analysis, but not in the mitochondrial gene analysis. Taken these results together, these strains are considered to possess heterozygous nuclear 18S rRNA genes and homozygous mitochondrial 16S rRNA genes.

Summary/Conclusion: To the best of our knowledge, this is the first report of subgenotypes mixed infections of T4 from AK cases in Japan. After considering the subcloning results acquired in this study, it seems that the incidence of different genotypes mixed infections is underestimated possibly due to the technical limitations of methods. However, there are few reported cases of mixed infection with different genotypes or subgenotypes of *Acanthamoeba* spp. from AK patients throughout the world. This is also the first-time adoption of a subcloning technique to detect mixed infection of *Acanthamoeba* spp. in Japan. The detection of multiple clone samples opened an important investigative point concerning mixed infections versus multi-copy and heterozygosity theories.

Diabetes in Armenia: Assessing population knowledge and awareness of type 2 diabetes

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Background: Diabetes is a rising health disparity in former Soviet countries. Armenia, one of these countries, reported that diabetes accounted for 8.9% of the country's overall mortality in 2011. Armenia's age-adjusted mortality rate of type 2 diabetes is 76.3 per 100,000 of the population; more than three times the United States (20.8 per 100,000). There is little to no data on the level of knowledge and awareness of type 2 diabetes in Armenia. Because of this, it is difficult to determine the underlying cause of this high mortality rate. The object of this study was to assess the knowledge, awareness, and preventive practices of type 2 diabetes, among the Armenian population, in order to develop effective diabetes prevention programs.

Structure/Method/Design: A multiple site, cross-sectional, descriptive survey of the Armenian population was performed from June 22 to July 5, 2013. Eligible participants (N = 455) were aged 18 to 80, and were recruited using random-intercept sampling from four regional health centers in the Yerevan, Kotayk, Shirak, and Armavir provinces. Eligible participants completed a 42-item survey administered by research assistants with the assistance of local interpreters. The survey was coded, and descriptive statistics and chi-square tests were calculated using Stata 12.0.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): The average participant age was 40.4 (SD 14.6) years. Of the participants, 65.4% were from rural areas. The majority was female (77%), and 66% had completed secondary schooling. Although 19% of participants reported being diagnosed with diabetes; knowledge of diabetes was limited, with 55% of participants having little to no diabetes knowledge. While 47% knew that diabetes had signs and symptoms, only 12% of the population knew at least one correct sign. Few knew that limiting sugar intake (33%) and smoking cessation (28%) could help prevent and manage diabetes. Meeting with a diabetes educator increased knowledge of diabetes and risk factors ($P = 0.02$).

Summary/Conclusion: A high proportion of participants reported risk factors for diabetes; yet knowledge of diabetes, and diabetic risk factors, was limited. Almost half of participants reported knowing the signs and symptoms of diabetes, but few could provide examples. Diabetes educators may be one avenue for providing tailored education to those at risk for developing diabetes.

Prevalence and characteristics of pruritic HIV patients in Mangalore, India

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Background: The development of highly advanced antiretroviral therapy in the late 1990s has dramatically improved AIDS-associated morbidity but has also increased comorbidities. Pruritus has become one of the most commonly associated complaints of HIV patients.