Overview of Field Experiences

Each year, dozens of UMMS M1s seek international research experiences during their summer break. Global REACH developed faculty-led small group experiences to encourage stronger student mentorship by faculty, continuity of engagement with our international partners, and team-based learning. The following pages describe the faculty-led small group experiences from Summer 2012.

Kenya Summer Clinical Research Program

Faculty Mentors
Dan Clauw, MD, Professor of Anesthesiology, Professor of Internal Medicine, Professor of Psychiatry, UMMS

Jeff Punch, MD, Jeremiah and Claire Turcotte Professor of Transplantation Surgery and Professor of Surgery, UMMS

This student-learning program is integrated into the existing NIH-funded Multidisciplinary Clinical Researchers in Training (MCRIT) Program directed by Dr. Dan Clauw. One element of the MCRIT program is a summer immersion program offered to medical, dental, pharmacy, and nursing students to expose them to clinical research early in their training. UMMS students use the same NIH-approved structured curricula and evaluation tools that are required for the MCRIT Summer Immersion students.

The project is co-led by two UMMS faculty who are passionate about the partnership they have been building with this community and the Kenyan Ministry of Health for seven years. Students travel to a rural village in Kenya for three weeks to perform a research practicum. Students may choose to work on an aspect of research designed by former participants, or they may work with faculty mentors to identify their own research questions within the larger annual community health survey that is conducted annually by U-M and Kenyan faculty and students. The long term goal is that this — and other planned partnership efforts in this region of Kenya — will create a ‘platform’ for a much broader exchange between U-M faculty and students from many different schools and colleges and two local universities in this region.

In 2012, five UMMS students participated in the Kenya Summer Clinical Research Program: Jonathan Awori, Zieanna Chang, John Donkersloot, Josh Hammond, and Harriet Huang.
Clinic- and Population-Based Survey and Needs Assessment for Metabolic Syndrome Diagnosis and Management in Quito, Ecuador

Faculty Mentors

Michele Heisler, MD, MPA, Associate Professor of Internal Medicine, UMMS; Associate Professor of Health Behavior and Health Education, School of Public Health

David Serlin, MD, Assistant Professor of Family Medicine, UMMS

The Quito Project (TQP) is a University of Michigan-based non-governmental organization that – over the past eight years – has established a strong working relationship with community health centers in the under-resourced Area 19, located in the south of Quito, Ecuador. TQP has worked closely with medical leaders in charge of the network of community health centers in Area 19 region to identify local health needs and ways to improve prevention and care efforts through the community health centers.

In past years, teams of U-M and Pontifical Universidad Catolica of Ecuador (PUCE) medical faculty and students have worked closely with community health center leadership to design and conduct a range of community health center-based prevention and chronic disease management interventions.

Local collaborators have identified metabolic syndrome as a significant and increasing problem in their environment. Little is known about the prevalence of the constellation of conditions that – when occurring together – significantly increase the risk of Cardiovascular Disease (CVD) and Type 2 Diabetes Mellitus (DM). In addition, little is known about patient characteristics that increase the risk of metabolic syndrome, patient beliefs and attitudes, and most effective programs to help these patients prevent progression to CVD and/or DM.

In Summer 2012, five UMMS students traveled to Quito: Jessica Bloom, Stephen Colon, Roopa Pandit, Colin Parker, and David Schrock. Together, they worked to design and refine a survey instrument, conduct the survey in local health centers and schools, and analyze and interpret the results for presentation to local partners and publications. The survey was supplemented with other in-depth qualitative interviews. The project provided students with important exposure to key methods for global health research, program development, and clinical realities in governmental-supported health care centers serving low-resource communities in Ecuador.
Perinatal Maternal Mental Health in Ghana, West Africa

Faculty Mentor
Dr. Katherine Gold, MD, MSW, MS, Assistant Professor of Family Medicine and Assistant Professor of Obstetrics and Gynecology, UMMS

Maternal psychiatric disorders have been well documented in developed countries and have been shown to have potentially devastating effects on pregnancy, maternal health, and the health, behavior, and development of the newborn infant. Unfortunately, the vast amount of research in this area has been in developed nations, even though preliminary research suggests that the prevalence of perinatal mood disorders may be far higher in low-income countries and may have negative effects on infant health and nutrition. There has been virtually no research on perinatal mental health in Ghana, the risk of postpartum depression, or the potential opportunities for help-seeking from both lay and professional health care workers.

In 2012, Vivian Lam*, Anna Meyer, Alissa Petrites*, and Aditi Ramakrishnan* collected primary data to determine the prevalence of postpartum depression among mothers presenting with a sick infant for care. Additionally, they followed-up to assess longitudinal outcomes for mother and baby, and assessed the coping mechanisms and mental health of bereaved mothers whose babies did not survive.

Dr. Gold’s colleague on this project is Kathryn Spangenberg, DFFP, FGCP (Family Medicine), Kwame Nkrumah University of Science and Technology.

*Molecular Epidemiology of Helicobacter Pylori in Lima, Peru

Faculty Mentor
Dr. Manuel Valdivieso, MD, Clinical Professor of Internal Medicine, UMMS

Helicobacter Pylori causes gastric pathology that can lead to gastric cancer. It is a major cause of morbidity and mortality due to gastric cancer in Peru, other sites of Latin America, and the world. This project provided UMMS students opportunities to study the molecular epidemiology of H pylori infection while focusing on the potential role of drinking water contamination with H pylori, the factors that represent risk for the infection, and the clinical manifestations of such infection.

In 2012, Thomas Filardo*, Sarah Gray*, and Bao Tram (Cassie) Nghiem applied molecular microbiology techniques learned in the laboratory of Dr. Chuanwu Xi, Associate Professor of Environmental Health Sciences, U-M School of Public Health. Onsite, students had a wide range of experiences related to the bacteria. Opportunities included: measuring water properties in sampled water and learning H pylori culture techniques; interviewing community members and recording socio demographic data; evaluating risk factors for infection and the patterns of drinking water by different populations at risk; and observing gastric endoscopies and evaluating patients with H pylori infection.

*UMMS Global Health & Disparities Path of Excellence Student
Cognitive Rehabilitation With HIV-Affected Ugandan Children

Faculty Mentors
Bruno Giordani, PhD, Professor of Psychiatry, Professor of Neurology, UMMS; Professor of Psychology, College of Literature, Science, and the Arts, U-M
Michael J Boivin, PhD, MPH, Adjunct Associate Professor of Psychiatry, UMMS; Associate Professor of Psychiatry and Neurology/Ophthalmology, Michigan State University

For African children with HIV, enhanced access to Antiretroviral Therapy (ART) and its increased effectiveness has changed the prognosis from a uniformly deadly disease early in childhood to one in which survival well into adolescence is not uncommon. As such, pediatric HIV illness is increasingly becoming a sub-acute, chronic disease marked by developmental lag and progressive encephalopathy. ART alone, however, has been shown to be insufficient in reversing the neurodevelopmental consequences of HIV infection. For example, previous studies by this team have shown that children with HIV have significantly lower working memory, visual-spatial function, and executive cognitive function when compared to children without HIV. These areas of cognitive concern are often accompanied by behavioral problems that can significantly affect schooling and home life.

This ongoing National Institute of Mental Health-funded project represents the first study to systematically evaluate the effectiveness of Computerized Cognitive Rehabilitation Therapy (CCRT) in improving cognitive performance and behavioural outcomes in Ugandan children with HIV. There is also a systematic evaluation of how HIV subtypes and the corresponding immunological status of the child modify neurocognitive performance gains and psychiatric symptom reduction that may be seen as this intervention proceeds.

UMMS students Moona Arabkhazaeli, Rebecca Bickham, Andrew Gardner,* and Kathleen Kruse* traveled to Uganda during the summer of 2012. They assisted medical officers and nurses in all aspects of their work, including clinical evaluations of study children and in-home healthcare programs, as well as analyzing laboratory work. Students had short placements at the large University-based Mulago Hospital and in the rural-based Kanginima Hospital, including ward experiences and distribution of medical and other supplies in outlying Ugandan areas.

Drs. Boivin and Giordani have been collaborating in cross-cultural studies in African and Southeast Asian settings for over 20 years. Their partners in Uganda include: Drs. Robert O Opoka, Paul Bangirana, and Noeline Nakasujja, Makerere University Medical School; Dr. Patrick Mutono, Kanginima Hospital, Pallisa District.

*UMMS Global Health & Disparities Path of Excellence Student
Faculty-led Small Group Experiences

Overview of Field Experiences

Each year, dozens of UMMS M1s seek international research experiences during their summer break. Global REACH developed faculty-led small group experiences to encourage stronger student mentorship by faculty, continuity of engagement with our international partners, and team-based learning. The following pages describe the faculty-led small group experiences from Summer 2013.

Clinical Research Training in Meru, Kenya

Faculty Mentors

Dan Clauw, MD, Professor of Anesthesiology, Professor of Internal Medicine, Professor of Psychiatry, UMMS

Jeff Punch, MD, Jeremiah and Claire Turcotte Professor of Transplantation Surgery and Professor of Surgery, UMMS

The clinical research training program in Kenya is integrated into the existing NIH-funded Multidisciplinary Clinical Researchers in Training (MCRIT) Program directed by Dr. Dan Clauw. The MCRiT program was originally funded as a NIH T32 Roadmap grant in 2005, and one element of this program is a “summer immersion” program that is offered to medical, dental, pharmacy, and nursing students to expose them to clinical research early in their training. Students selected for this project help implement a community health survey in the rural Kenyan region of Meru, contributing to the ultimate goals of establishing educational, research, and clinical care partnerships between Kenyan universities and various U-M schools and faculty.

The 2013 students had an opportunity to create their own smaller projects in relationship to the survey. These projects included: performing a menstrual hygiene assessment and developing and implementing a health education curriculum for a secondary school, examining the relationship between in-home cooking facilities and pulmonary diseases, and compiling a digital histology curriculum to share with two local Kenyan universities.

Seven UMMS students were funded by Global REACH to participate in the Kenya Summer Clinical Research Program: Leeanne Fygt*, Elise Gelston*, Kaoru Harada, Adam Markovitz, Chelsea Tafoya*, Matt Tafoya*, and Sara Vanarendonk. An additional three medical students were funded by the Summer Biomedical Research Program (see Page 35).

*UMMS Global Health & Disparities Path of Excellence Student
Faculty-led Small Group Experiences

Chronic Disease Management in Quito, Ecuador

**Faculty Mentor**
**David Serlin, MD,** Assistant Professor of Family Medicine, UMMS

The Quito Project (TQP) is a University of Michigan-based nongovernmental organization (NGO) that, for nearly 10 years, has established a strong working relationship with community health centers in the under-resourced Area 19, located in the south of Quito, Ecuador. TQP has worked in close collaboration with faculty and medical students at the Pontifical Universidad Catolica of Ecuador (PUCE) Medical School in developing, implementing, and evaluating projects. Teams of U-M and PUCE medical students work closely with community health center leadership under the mentorship of U-M and PUCE medical school faculty to design and conduct a range of community health center-based prevention and chronic disease management interventions. The projects provide students with important exposure to program development, clinical care, and key research methods for global health research.

The 2013 teams designed and refined a survey instrument to measure the impact of small-group empowerment workshops for patients with Type II diabetes. Working in rural health centers they administered surveys to diabetic patients from different sub-centros in southern Quito, led empowerment classes using a variety of teaching styles and activities, and interviewed the patients to determine if the empowerment workshops had an effect on their views of their own autonomy, knowledge of diabetes, and their ability to manage their illness.

In Summer 2013, four UMMS students traveled to Quito to work on this project: **Kashif Ahmed, Jose Davila*, Alexandria Dulchavsky, and Leigha Winters**.

*UMMS Global Health & Disparities Path of Excellence Student

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**The Quito Project (TQP)** is one of the longest-running student-initiated projects at UMMS.

Started in 2005 by UMMS student **Bina Valsangar (MD/MPH, 2009)**, TQP serves as a model for thoughtful global student engagement.

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*Dr. Serlin arranged a diabetes empowerment seminar by Dr. Robert Anderson, Professor Emeritus of Medical Education, UMMS, for students, physicians, and other Ecuadorian professionals.*

*M1 students (left to right) Kashif Ahmed, Jose Davila, Alexandria Dulchavsky, and Leigha Winters*
Molecular Epidemiology of Helicobacter Pylori in Lima, Peru

Faculty Mentor
Manuel Valdivieso, MD, Clinical Professor of Internal Medicine, UMMS

Helicobacter Pylori causes gastric ulcers and can lead to gastric cancer, a major cause of morbidity and mortality in Peru and throughout the world. This project offered medical students the opportunity to study the molecular epidemiology of H pylori, the factors that represent risk for the infection, and the clinical manifestations of such infection. Students learned molecular microbiology techniques with U-M School of Public Health faculty Dr. Chuanwu Xi prior to departure, and then put these to use at both the Environmental Control Laboratory, Division General de Salud Ambiental (part of the Ministry of Health) and the Hospital Cayetano Heredia. Dr. Valdivieso has been collaborating with these institutions for the past three years.

The student team collected, filtered, and cultured water in addition to collecting food samples from local homes. They interviewed community members and recorded sociodemographic data, evaluated risk factors for infection and the patterns of drinking water by different populations at risk, observed gastric endoscopies, and examined patients. Under the microscope, they looked at food and water samples to evaluate Helicobacter pylori.

2013 medical students on this project were: Katherine McDonald*, Samuel Shopinski*, and Adriana Wilkinson*
*UMMS Global Health & Disparities Path of Excellence Student

M1 students Katherine McDonald and Adriana Wilkinson process food samples at the Ministry of Health
Faculty-led Small Group Experiences

Hepatitis C Virus Awareness and Factors Affecting Clinical Research Participation in Beijing, China

Faculty Mentor
Anna Lok, MD, FRCP, Alice Lohrman Andrews Research Professor of Gastroenterology and Professor of Internal Medicine, UMMS

Over the past two decades, biomedical research has increased steadily in China with an increasing focus in clinical research. However, there is little information in the literature on Chinese patients’ perspectives on informed consent or the factors that motivate patients to participate in clinical research.

Students on this project observed clinical practice by shadowing physicians and conducted a team-based research project examining Hepatitis C Virus patients’ attitudes toward clinical research and the factors that influence the decision whether to participate. Students interviewed patients at two community hospitals in Beijing as part of a collaboration with Peking University Health Science Center Second Hospital, collecting more than 300 surveys. The data will be used in a cross-cultural comparison with the same information collected from patients at the U-M East Ann Arbor Clinics.

Two students participated in the HCV project in 2013: Tammy Lin* and Tianyi (Elizabeth) Wang.
*UMMS Global Health & Disparities Path of Excellence Student

Summer 2013 HCV awareness project members (left to right) M1 Elizabeth Wang, Dr. Ming Yang (Second Hospital), Dr. Anna Lok (UMMS), M1 Tammy Lin, Dr. Zhi Peng Wang (Vice President of Shahe Hospital)

M1 Tammy Lin (in white) interviews a patient at Shahe Hospital to ascertain HCV awareness
Faculty-led Small Group Experiences

Developing Effective Disease Management Programs for Low-Income Patients in La Paz, Bolivia

Faculty Mentor
John Piette, PhD, Professor of Internal Medicine, UMMS

The Program on Quality Improvement for Complex Chronic Conditions, directed by Dr. John Piette, develops resources for chronically-ill patients and their clinical teams and supports telehealth services in low/middle income countries, as well as across national boundaries. Student summer projects include rigorous implementation science methods and collaboration with experts in international health research to ensure a stimulating experience for students and the development of a service delivery model that has the greatest possible impact on the health of chronically-ill patients around the globe. The program emphasizes community engagement, experiential learning, and work on specific, results-oriented research project. It also offers an opportunity for students to practice medical Spanish.

The 2013 diabetes project in Bolivia was conducted in collaboration with local community clinics and the Ministry of Health and with the support of experts in mobile health throughout the region. Diabetes is a central area of interest for the country due to its high prevalence rate. The team spent the summer administering surveys and enlisting patients for a telemedicine system. Patients were interviewed in four different clinics in the La Paz area. Selected patients were given a cross-sectional survey, which explored demographic information, access to healthcare, past medical history, tobacco and alcohol use, chronic care management, and medical adherence. Students also took measurements of height, weight, and blood pressure. They compiled the data and then used the surveys to screen patients for inclusion in a telemedicine system, which allowed them to receive automated calls that ask about items such as their current overall status, medication adherence, and blood pressure—all in an effort to improve their health conditions. The team enrolled almost 200 diabetic and hypertensive patients, who they trained to use blood pressure monitors and the call system.

Five students were member of the first cohort of this project: Zahra Dawson, Elizabeth Feenstra*, Gregory Powell*, Cody Schultz, and Jonathan Waldmann.*

*UMMS Global Health & Disparities Path of Excellence Student
Cognitive Rehabilitation With HIV Affected Children in Kampala, Uganda

Faculty Mentors
Bruno Giordani, PhD, Professor of Psychiatry, Professor of Neurology, UMMS; Professor of Psychology, College of Literature, Science, and the Arts, U-M
Michael J Boivin, PhD, MPH, Adjunct Associate Professor of Psychiatry, UMMS; Associate Professor of Psychiatry and Neurology/Ophthalmology, Michigan State University

For African children with HIV, enhanced access to antiretroviral medications has changed the prognosis from a uniformly deadly disease early in childhood, to one in which survival well into adolescence is not uncommon. As such, pediatric HIV illness is increasingly becoming a sub-acute, chronic disease marked by developmental lag and progressive encephalopathy. Antiretroviral treatment alone, however, has been shown to be insufficient to reverse the neuro-developmental consequences of HIV infection. This ongoing research project, funded through the National Institute of Mental Health, represents the first study to systematically evaluate the effectiveness of computerized cognitive rehabilitation therapy in improving cognitive performance and behavioral outcomes in Ugandan children with HIV. Another important component of this study is a systematic evaluation of how the HIV subtype and the corresponding immunological status of the children modify neuro-cognitive performance gains and psychiatric symptom reduction that may be seen as this intervention proceeds. Students on this project assisted medical officers and nurses in all aspects of their work, including clinical evaluations of study children and in-home healthcare programs, as well as analyzing laboratory work. Students had short placements at the large University-based Mulago Hospital and in the rural-based Kanginima Hospital, including ward experiences and distribution of medical and other supplies in outlying Ugandan areas.

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*UMMS Global Health & Disparities Path of Excellence Student