Executive Officers of Michigan Medicine: Marschall S. Runge, M.D., Ph.D., Executive Vice President for Medical Affairs University of Michigan, Dean, U-M Medical School, CEO, Michigan Medicine; Eric Barritt, Senior Associate Vice President for Development; David Brown, M.D., Associate Vice President and Associate Dean for Health Equity and Inclusion; Paul Castillo, C.P.A., Chief Financial Officer; Amy Cohn, Ph.D., Chief Transformation Officer; Matthew Comstock, M.B.A., M.H.S.A., Executive Director for Administration, Chief Operating Officer; T. Anthony Denton, J.D., M.H.A., Senior Vice President and Chief Operating Officer, U-M Health System; Keith Dickey, Chief Strategy Officer; Rose Glenn, Chief Communications & Marketing Officer; Keith Gran, C.P.A., M.B.A., Chief Patient Experience Officer; Deloris Hunt, Chief Human Resources Officer; Steven Kunkel, Executive Vice Dean for Research and Chief Scientific Officer; David C Miller, M.D., M.P.H., President, University of Michigan Health System, Executive Vice Dean for Clinical Affairs; Kara Morganstern, J.D., M.P.H., Associate Vice President and Deputy General Counsel, University of Michigan; Andrew Rosenberg, M.D., Chief Information Officer; Kimberly Ross, Chief Government Relations Officer; Jeanne Strickland, Chief Compliance Officer, Privacy Director & U-M HIPAA Officer; Quinta Vreede Chief Administrative Officer, UMHS Chief of Staff, Office of the EVPMA; and Debra Weinstein, M.D., Executive Vice Dean for Academic Affairs, Medical School, Chief Academic Officer, Michigan Medicine.

The Regents of the University of Michigan: Jordan B. Acker; Michael J. Behm; Mark J. Bernstein; Paul W. Brown; Sarah Hubbard; Denise Iltch; Ron Weiser; Katherine E. White; and Santa J. Ono (ex officio).

Nondiscrimination Policy: The University of Michigan, as an equal opportunity/affirmative action employer, complies with all applicable federal and state laws regarding nondiscrimination and affirmative action. The University of Michigan is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight, or veteran status in employment, educational programs and activities, and admissions. Inquiries or complaints may be addressed to the Senior Director for Institutional Equity, and Title IX/Section 504/ADA Coordinator, Office for Institutional Equity, 2072 Administrative Services Building, Ann Arbor, Michigan 48109-1432, (734) 763-0235, TTY (734) 647-1388, institutional.equity@umich.edu. For other U-M information call (734) 764-1817.

© 2022, The Regents of the University of Michigan.
Table of Contents

Director’s Letter 2
Overview 3

Collaboration 4-11

U-M Global Health Community 5
Collaboration Platforms 6-7
Establishing a pediatric cardiology program in Rwanda 8
Lay first responder training in Sierra Leone 9
Novel laparoscopy training for LMIC settings 9
New partnership with India’s Aravind Eye Care System 10
Joint Institute collaborations with PKUHSC 11

Education 12-19

Student project in Kenya combines health, photography 13
Interviewing, advocating for asylum seekers in Mexico 14
Woll Scholarships 15
Student engages in remotely on projects in Africa 15
Global Health Research Certificate Program 16
Visiting students learn research at UMMS 17
Fogarty International Center Fellowships 18-19

Research 20-37

Publications with foreign co-authors: overview 20-21
Select publications: China and Taiwan 22-24
Studying depression among residents in the US, China 25
Select publications: Ghana and Ethiopia 26-28
A new family planning fellowship in Ethiopia 29
Select publications: Brazil 30
Select publications: India 31
Select publications: other countries 32-37
UMMS study: Statins use lags in LMICs 35
Study team: Africa needs artificial intelligence for health 37

Leadership

Joseph C. Kolars, MD, MACP
Senior Associate Dean for Education & Global Initiatives

Kevin C. Chung, MD, MS
Global REACH Associate Director

Michele Heisler, MD, MPA
Global REACH Associate Director

Amy Huang, MD, MHSA
Global REACH Director for Asia Programs

Cheryl Moyer, PhD, MPH
Global REACH Associate Director

Tania Piotrowski, MHSA
Global REACH Administrative Director

Brent Williams, MD, MPH
Director, Global Health & Disparities Path of Excellence

Contact

Email
globalreach@umich.edu

Mail
Global REACH
240 Victor Vaughan
1111 East Catherine St.
Ann Arbor, MI 48109-2054
Colleagues, collaborators and friends,

What an exciting time to be engaged in global health. After nearly three years of pandemic-related lockdowns, travel restrictions are easing and partners are beginning to gather again in person. Personally, I made visits this past year to Kenya, Zimbabwe, Ghana, Uganda and Rwanda. In each case, I’ve returned home feeling energized by my colleagues and enthused about our partnerships.

I know I am not alone. The pages of this report are evidence of new and renewed global health activity across our institution. From a project to expand pediatric cardiology services in Rwanda, to a new research training partnership with India’s preeminent Aravind Eye Care Center, our faculty and their collaborators overseas are engaged in meaningful projects with the potential for vast impact.

Similarly, more of our learners are able to seek educational opportunities abroad. While student travel has yet to return to pre-pandemic levels, the trends are moving in the right direction and the level of enthusiasm for educational exchange – both to and from UMMS – is highly encouraging. Finally, when we look at research publications with foreign co-authors, engagement remains strong. Our Global REACH faculty members authored a record 361 publications with international collaborators in 2021-22, research that spans many disciplines and appears in some of the top journals in the respective fields.

All of which is to say that our global health community at UMMS remains vibrant. I am grateful as ever to our faculty, students and partners for their resilience and hard work, and thankful to be part of an institution that values health equity at home and abroad.

Joseph C. Kolars, MD, MACP
Director, UMMS Global REACH
Director, U-M Center for Global Health Equity
Josiah Macy, Jr., Professor of Health Professions Education
University of Michigan Medical School
About Global REACH

Global REACH was founded at the University of Michigan Medical School (UMMS) in 2001 to leverage and expand international activities. ‘REACH’ stands for Research, Education, and Collaboration in Health.

Collaboration

Global REACH facilitates institutional partnerships with medical schools, hospitals, and research institutions abroad. On the U-M campus, symposia, faculty networks, and more help cultivate a global health community that spans Michigan Medicine and connects UMMS with the broader institution.

Education

We believe that today’s learners – and tomorrow’s patients – benefit from engagement in global health. While yet to return to pre-pandemic levels, student travel abroad for educational purposes is increasing. Global REACH sponsored a handful of such experiences in 2021-22. We also continued to offer our global health research course to help UMMS post-graduate trainees pursue international collaborations, in addition to welcoming students and scholars visiting Ann Arbor from abroad.

Research

Sometimes discovery is as much about new perspectives as it is about new technology, which is why researchers have much to gain by partnering with international collaborators. Global REACH offers forum events on campus that help faculty connect with like-minded colleagues to expand their international networks. Once the groundwork is laid, we offer small pilot grants that help faculty initiate meaningful research with new international collaborators.

U-M faculty in our Global REACH Faculty Associates/ Affiliates networks engaged in partnerships around the world

217

U-M medical students enjoyed international educational experiences in 2021-22 despite the COVID-19 pandemic

4

Papers with foreign co-authors published in 2021-22 by faculty in our Global REACH network

361
Collaboration

How We Partner

Founded at the University of Michigan Medical School (UMMS) in 2001, Global REACH is a key partner to faculty and learners seeking to engage international collaborators. We facilitate these partnerships in a number of ways, offering pilot grants to help faculty develop meaningful research projects with new collaborators overseas, as well as funding for students engaging in meaningful global health experiences. We provide logistical support to many of the international students and scholars who visit Michigan Medicine each year. We also share collaborative success stories across the U-M campus and beyond. Collectively, these activities not only extend Michigan Medicine to advance health in other settings, we also generate scholarship to improve healthcare delivery here at home.

Institutional Partnerships Abroad

Partner Institutions

- University of São Paulo Faculty of Medicine (Brazil)
- University of São Paulo Faculty of Medicine at Ribeirão Preto (Brazil)
- Peking University Health Science Center (China)
- Peking Union Medical College (China)
- Shanghai Jiao Tong University (China)
- Pontificia Universidad Católica del Ecuador (Ecuador)
- Saint Paul’s Hospital Millennium Medical College (Ethiopia)
- Kwame Nkrumah University of Science and Technology (Ghana)
- University of Cape Coast (Ghana)
- University of Ghana (Ghana)
- All India Institute of Medical Sciences (India)
- AllMS – TCI Scholar Program (India)
- University College Dublin (Ireland)
- Technion – Israel Institute of Technology (Israel)
- University of Florence (Italy)
- University of Tokyo Graduate School of Medicine (Japan)
- Okayama University Graduate School of Medicine (Japan)
- Nara Medical University (Japan)
- Ss. Cyril & Methodius Faculty of Medicine (Macedonia)
- The Macedonian Academy of Sciences and Arts (Macedonia)
- Universidad Peruana Cayetano Heredia (Peru)
- Rwandan Ministry of Health (Rwanda)
- National Taiwan University (Taiwan)
- Mbarara University of Science and Technology (Uganda)
UMMS faculty maintain 1:1 partnerships with colleagues all over the world. Those engaged in global health are encouraged to become part of our Global REACH network of Faculty Associates (Medical School faculty) or Affiliates (from other U-M colleges or schools).

Members receive our Global REACH newsletter, are eligible for unit-sponsored grants, and more. These programs foster a global health community across UMMS, bringing together colleagues with shared interests to maximize the impact of our collective activities.

**Our Network: By the Numbers**

<table>
<thead>
<tr>
<th>Department</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine</td>
<td>43</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>30</td>
</tr>
<tr>
<td>Ob-Gyn</td>
<td>16</td>
</tr>
<tr>
<td>Surgery</td>
<td>14</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>12</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>9</td>
</tr>
<tr>
<td>Learning Health Sciences</td>
<td>9</td>
</tr>
<tr>
<td>Family Medicine</td>
<td>9</td>
</tr>
<tr>
<td>Radiology</td>
<td>8</td>
</tr>
<tr>
<td>Molecular &amp; Integrative Physiology</td>
<td>8</td>
</tr>
</tbody>
</table>

**Top UMMS Departments**

**Medical School**

- **190**
  - Medical School faculty in our Global REACH network

**Medical School clinical and basic science departments represented**

- **28**
  - Faculty from other U-M schools in the network

**Faculty Engagement Around the World***

- **North America excl. US**: 9
- **Central America**: 25
- **South America**: 84
- **Europe & Central Asia**: 54
- **Middle East**: 22
- **South Asia**: 63
- **Sub-Saharan Africa**: 149
- **East Asia & Pacific**: 134

*Many faculty engaged in multiple countries*
Individual partnerships within a country can over time expand to include multiple colleagues engaged in cross-disciplinary activities, sometimes with multiple partner institutions. In these cases, Global REACH designates these robust partnerships to be Collaboration Platforms and provides administrative support. Platforms represent those countries where there is diverse activity (i.e., research and education); multiple departments and/or units are engaged; collaborations exhibit a strong potential for growth; and the partnership(s) demonstrate clear, mutual benefit for both U-M and the partner institution.

Global REACH also prioritizes funding opportunities for faculty and learners alike to engage collaborators in Platform countries.

**ETHIOPIA PLATFORM**

**Partner Institution**
St. Paul’s Hospital Millennium Medical College

**Primary Focus Areas**
- Anesthesiology
- Gastroenterology
- Ophthalmology
- Obstetrics & Gynecology
- Pediatrics
- Transplant Surgery

**Activities**
- Capacity Building
- Student Exchange
- Collaborative Research

**Lead**
Joseph C. Kolars, MD, MACP
Senior Associate Dean, UMMS
Professor of Internal Medicine
jckolars@umich.edu

**BRAZIL PLATFORM**

**Partner Institutions**
- University of São Paulo Medical School
- University of São Paulo, Ribeirão Preto

**Primary Focus Areas**
- Adrenal Cancer
- Molecular Physiology
- Palliative Care
- Physical Medicine & Rehabilitation
- Substance Abuse

**Activities**
- Student Exchange
- Faculty Exchange
- Collaborative Research

**Lead**
Denise Tate, PhD
Professor of Physical Medicine and Rehabilitation
dgtate@umich.edu

**TAIWAN PLATFORM**

**Partner Institutions**
Chang Gung Memorial Hospital

**Primary Focus Areas**
- Surgery
- Otolaryngology
- Emergency Medicine

**Activities**
- Faculty Exchange
- Student Exchange
- Collaborative Research
- Research Training

**Lead**
Kevin Chung, MD
Professor of Surgery
kecchung@med.umich.edu
Collaboration Platforms

**GHANA PLATFORM**

**Partner Institutions**
- Kwame Nkrumah University of Science & Technology
- Komfo Anokye Teaching Hospital
- University of Cape Coast
- Family Health Medical School
- University of Ghana College of Health Sciences
- Ghana College of Physicians and Surgeons

**Primary Focus Areas**
- Emergency Medicine
- Obstetrics & Gynecology
- Otolaryngology
- Psychiatry
- Pathology

**Activities**
- Capacity Building
- Student Exchange
- Collaborative Research

**Lead**
- Cheryl Moyer, PhD, MPH
  Associate Professor of Learning Health Sciences, Obstetrics & Gynecology
  cmoyer@med.umich.edu

**CHINA PLATFORM**

**Partner Institutions**
- Central South University
- Chinese University Hong Kong
- Peking Union Medical College
- Peking University Health Science Center
- Shanghai Jiao Tong University

**Primary Focus Areas**
- Bioinformatics
- Cardiology
- Emergency Medicine
- GI/Liver
- Nephrology
- Psychiatry
- Pulmonology

**Activities**
- Capacity Building
- Faculty Exchange
- Student Exchange
- Collaborative Research

**Lead**
- Amy Huang, MD, MHSA
  Director of Asia Programs, Global REACH
  Adjunct Clinical Assistant Professor of Cardiovascular Medicine
  yanhuang@med.umich.edu

**INDIA PLATFORM**

**Partner Institutions**
- All India Institute of Medical Science
- Amrita Vishwa Vidyapeetham University
- Manipal University
- Christian Medical College
- Kovai Medical Center and Hospital Research Foundation
- GVK Emergency Management & Research Institute

**Primary Focus Areas**
- Infectious Diseases
- Trauma & Surgery
- Genetics

**Activities**
- Capacity Building
- Research Training
- Collaborative Research

**Lead**
- Krishnan Raghavendran
  MD, FACS
  Professor of Surgery
  kraghave@med.umich.edu
Faculty Fulbright scholarship will support pediatric cardiology training in Rwanda

A faculty member has garnered a Fulbright scholarship to spend the upcoming year in Rwanda developing the nation’s first pediatric cardiology training program.

Professor of Pediatrics David Bradley, MD, will spend 10 months at University of Rwanda starting in July to implement a curriculum that he has been developing over the past year with Rwandan partners.

“I’m extremely grateful for this opportunity,” Bradley said. “Having made great advances in primary care, Rwanda is ready and eager to work with academic specialists to improve training pathways and expand specialty programs.”

Bradley’s curriculum, written in collaboration with Ministry of Health officials, Rwandan physicians, and leaders at the University of Rwanda, has been designed for young physicians who have completed pediatrics residency. It is modeled on US programs but adapted to the setting with an increased focus on diseases like rheumatic fever that are far more prevalent in sub-Saharan Africa than they are in the US.

Much of the initial clinical training will need to be done outside of Rwanda because of the limited workforce. The Aswan Heart Centre, in southern Egypt, has already been identified as a likely host location for the Rwandan trainees.

During his time at the University of Rwanda, Bradley will be working with his collaborators to refine the program logistics and details for the both the on- and off-site aspects of the program, as well as delivering guest lectures to the University’s medical students.

Some of Bradley’s Michigan Medicine teammates have provided support and advice on the work through the project’s initial phases, conducted largely via videoconference because of the COVID-19 pandemic. Moving forward, he is hoping to further engage his colleagues.

“…and eager to work with academic specialists to improve training pathways and expand specialty programs.”

- David Bradley, Professor of Pediatrics

Rwanda

Partner: University of Rwanda

Site: Kigali
Collaboration

Capacity Building

Global REACH support expands first responder training program in Sierra Leone

A project started by UMMS students to teach citizens basic first responder skills is growing rapidly, thanks in part to a grant from Global REACH.

Since garnering a Partnership Development Grant in 2020, third-year student Peter Delaney and his mentor, Professor of Surgery Krishnan Raghavendran, have been able to more than double the number of first-responders trained in Sierra Leone to more than 3,500. The organization Delaney founded, Lay First Responders (LFR) International, focuses on training motorcycle and taxi drivers first responder skills in several countries across sub-Saharan Africa, places where road accidents are prevalent and pre-hospital emergency services are scant. “The funding allowed us to accelerate our collaboration and expand training from the municipal to the district level,” Delaney said. “It also helped us conduct rigorous program evaluation studies and was a perfect bridge to begin seeking larger funding opportunities.”

In just 2021-22, the team’s work has been highlighted in several journals, including Injury, the World Journal of Surgery, and the Journal of Surgical Research.

Inside the box: A laparoscopy trainer for LMIC settings

A DIY laparoscopic training simulator developed by a team of U-M faculty and international collaborators could be a game-changer for teaching the surgical technique in low-resource settings.

Called ALL-SAFE (African Laparoscopic Learners – Safe Advancement For Ectopic pregnancy), the project has advanced through two rounds of initial funding in the Global Surgical Training Challenge Competition and is among four finalists in the running for a $1 million grand prize, to be announced early in 2023.

At the center of the initiative is the low-cost simulator, designed using common materials (a cardboard box and smartphone) that trainees can assemble themselves. The device is paired with companion software that helps users test and evaluate themselves and each other. Collaborators at hospitals in Ethiopia and Cameroon are working on clinical validation, ensuring that the skills learned in the DIY box translate to the OR.

“What’s novel about the project is how autonomous it is,” said Associate Professor of Surgery Grace Kim, MD, a co-lead on the project. “The learners build the simulator themselves, practice on their own, and assess one another. From start to finish, it is entirely learner driven.”
A new NIH-funded project supports partnership between Kellogg Eye Center and Aravind Eye Hospital to develop a clinical research training program.

The first trainees from India’s Aravind Eye Care System are expected to arrive at Michigan Medicine in the spring of 2023. The initiative, led by Professor of Ophthalmology and Epidemiology David Musch, PhD, MPH, and Assistant Professor of Ophthalmology Joshua Ehrlich, MD, MPH, in partnership with Aravind’s Director of Operations, Thulasiraj Ravilla, MBA aims to create a self-sustaining research training program anchored at Aravind by the end of the five-year grant.

“The goal is for the people we train here to go back and be trainers at Aravind themselves, benefitting not only their institution, but eventually other institutions across India.”

- David Musch, Professor of Ophthalmology

population and to 25% of those who are blind or visually impaired worldwide.

Over 90% of vision loss in India is due to non-communicable eye disease, the majority of which is avoidable. With this in mind, the training curriculum will emphasize research to improve detection, prevention, and treatment of non-communicable eye disease.

The $1.1 million NIH award will allow two Aravind ophthalmologists to visit U-M each year to enroll in courses and work alongside Kellogg Eye Center and other University of Michigan faculty engaged in research. The grant will also provide seed funding for the participants to jump-start their own mentored research once they return to Aravind.

“This is a wonderful opportunity, both for our friends and colleagues at Aravind and for us as well. Invariably, such projects lead to a rich two-way exchange of perspectives, knowledge, and ideas” Musch said.
Michigan Medicine-PKUHSC Joint Institute

New agreement renewal reaffirms long-running research partnership in China

A collaboration with one of China’s top medical schools will continue following a partnership renewal and re-investment.

Signed in June 2022, the new agreement will mean a five-year extension for the Michigan Medicine - Peking University Health Science Center Joint Institute (JI). The extension—the second since the JI was launched—reaffirms U-M Medical School’s longest-running partnership in China. Since 2010, the JI has funded nearly 70 projects, resulting in 130-plus high-impact publications and some $55 million in extramural funding.

“The Joint Institute is a wonderful example of international research collaboration and a reminder that we can often accomplish so much more when we work together than when we work alone,” said UMMS Dean Marschall Runge, MD, PhD.

The partnership renewal comes in a period of transition for the JI. As the coronavirus pandemic curtailed international travel, JI leaders designed programs around virtual meetings and seminars to connect investigators. Topical “Bridging Conference” sessions throughout 2021-22 brought together experts on a variety of subjects, including COVID vaccination campaigns, cancer immunology, artificial intelligence, and more.

New JI research, including many of the 10 projects awarded in 2021, will target one of four areas of mutual interest that cater to both institutions’ strengths: cancer research, reproductive health, precision medicine, and neuroscience.

“I’m particularly grateful to be renewing our agreement with my colleagues at PKUHSC. It’s never been more important for us to be cultivating our relationships with colleagues in China,” Global REACH Director Joseph Kolars, MD. “We look forward to deepening and broadening our collaborations in the years ahead.”

“The Joint Institute is a wonderful example of international research collaboration and a reminder that we can accomplish more together than when we work alone.”

- UMMS Dean Marschall Runge
Global REACH supports the mission of the University of Michigan Medical School by providing opportunities for students to participate in educational experiences abroad, connecting students to faculty mentors, and in some cases providing funding to travel abroad for both clinical and research experiences. Travel restrictions related to the ongoing COVID-19 pandemic have made in-person international engagement quite challenging, particularly for medical students. Despite these limitations, some UMMS students did travel abroad in 2021-22 for experiences in Mexico, Kenya and Ghana.

Sites for student experiences abroad, 2021-22

A variety of awards through Global REACH support students’ participation in international educational experiences.

**M4 Clinical Electives:** For upper-level medical students looking to conduct a clinical elective at a UMMS partner institution.

**FMUSP Winter School Travel Grants:** Supporting student participation in the University of São Paulo Medical School’s unique Winter School program.

**Faculty-Student Travel Grants:** Travel awards to help faculty engage UMMS student mentees in ongoing collaborations with partners abroad.

**Global REACH Scholars:** Funding a variety of student-developed international educational experiences on a case-by-case basis.

**Donor-Funded Experiences:** Global REACH administers funds set aside by generous donors for student experiences abroad. Douglas and Margo Yellin Wolf Scholarships support clinical clerkships in low-resource areas for select students, while Cho Family Scholarships are based on financial need.

Global Health & Disparities

Global REACH works in tandem with the Global Health & Disparities (GHD) Path of Excellence to engage students in global health. Unique to UMMS, eight interdisciplinary “Paths” offer students mentorship, networking, and immersive experiences in particular areas of interest beyond the clinical curriculum. GHD is the longest-running Path of Excellence and enrollment among students is robust; as of 2021-22, 182 UMMS students across all classes were enrolled in GHD, making it the largest of the eight available Paths.

Total Paths of Excellence Enrollment, 2021-22
**Feature**

**Visual storyteller: Student research project in Kenya combines health, photography**

A UMMS student’s research project in Kenya found him viewing health through a new lens: the one in his camera. Kevin McCawley’s research combined aspects of community health, photography and film as he partnered with the Aga Khan University to explore whether storytelling can effectively deliver public health messages in isolated rural communities.

“Two things I love are photography and helping others feel entitled to their health,” said McCawley, an M4. “I came into medical school with the idea that maybe I could combine these passions—supplementing medicine with my interest in photography and storytelling.”

For 10 months, he and his team worked with mothers and newborns who are impacted by—and adapting to—climate change. Behaviors surrounding everything from breast feeding and infant swaddling to collecting clean drinking water have been impacted by warmer temperatures and less predictable weather. How are families and communities managing these changes?

“We want to create a space where these women feel safe to problem solve beyond their communal or familial norms. Documenting the process, and then sharing it within similar communities is a way of saying, ‘Hey, if they can do it, why can’t we?’” McCawley said.

“It’s an alternative to handing someone a brochure in a place where most news is passed by mouth, or by story anyway.”

The goal of the project is to test the feasibility of the stories and workshops as practical, impactful public health interventions. Among McCawley’s U-M mentors are Professor of Internal Medicine Akbar Waljee, who has extensive partnerships at Aga Khan University, and Joel Howell, Elizabeth Farrand Professor of the History of Medicine and the co-founder and director of the UMMS Medical Arts Program.

“Climate change may be the most critical issue confronting humankind,” said Howell, MD. “While Kevin is making use of an impressive range of techniques to document the quotidian lives of many of the most vulnerable residents of Kenya, his results may help enlighten us at the University of Michigan Medical School as to the ways in which specific cultures inform our own lived existences.”

Among his techniques is a deliberate decision to hand the camera over to his Kenyan collaborators whenever possible.

“It was clear to me it should really be local voices telling the community’s story,” he said. “That meant getting the community on both sides of the camera.”
Academic Advocacy: Student interviews asylum seekers through Physicians for Human Rights

Michigan Medicine’s burgeoning relationship with Physicians for Human Rights (PHR) is creating new kinds of educational opportunities for medical students and residents.

Fourth-year medical student Alana Slavin spent a month in Juarez and Tijuana, Mexico, meeting with and interviewing asylum seekers who’ve been separated from family members at the US border as a result of federal policies.

“I got a very holistic picture of how the asylum process intersects with health,” Slavin said. “At the same time, I’m able to advocate for those who’ve been excluded from society because of COVID.”

She was the first UMMS student to engage with PHR since Professor of Internal Medicine and Health Behavior and Health Education Michele Heisler became PHR’s Medical Director last year.

“Often it’s hard as a clinician to figure out what advocacy looks like. What can you do?” Heisler said. “Showing people that path early in their career makes a huge difference.”

Slavin helped produce a PHR report (available in both English and Spanish) that helped raise awareness about family separation as a result of Title 42, which called for the deportation of anyone who entered the US from a country considered high-risk for COVID-19.

“It was maybe the most impactful experience of my medical school career,” said Slavin of her month in Mexico. “It felt rewarding to have used my medical expertise in a real-world scenario and participate in something that will hopefully have an impact.”
Woll Scholarship funds experience in Ghana

Medical student Namratha Atluri traveled to Ghana in early 2022 on a Woll Scholarship intended to support UMMS student clinical experiences in LMIC settings.

Atluri shadowed in the obstetrics and gynecology department of Korle Bu Teaching Hospital and also participated in ongoing research under the mentorship of Clinical Assistant Professor Emma Lawrence. Their project explored the potential of home blood pressure monitoring among pregnant women in Ghana. Atluri helped interview and survey nearly 100 Ghanaian physicians on their perceptions; such technology has been helpful in the early diagnosis of pre-eclampsia in high-income settings but is untested in other parts of the world. Some of the team’s work appeared in the *International Journal of Obstetrics and Gynecology* in the summer of 2022.

“I feel extremely grateful to have had this experience,” Atluri said. “I have always known global health would be an important part of my future career in medicine, but this trip has helped me to gain new perspectives in a different cultural setting, additional skills in developing global health projects, and a wide network of Ghanaian physicians whom I plan to stay in touch with.”

Woll Scholarship funds experience in Ghana

Namratha Atluri (right) with her two mentors, Emma Lawrence from U-M and Titus Beyou from the University of Ghana Medical School

Ghana

**Partners:** Korle Bu Teaching Hospital

University of Ghana Medical School

**Site:** Accra

---

Global health at a distance: Student engages in projects remotely in Africa

Travel restrictions prevented Chelsea Finkbeiner from traveling abroad in 2021-22, but the UMMS student spent much of the year engaged in global health work nonetheless. Working remotely from Ann Arbor under the mentorship of Assistant Professor of Learning Health Sciences and Ob-Gyn Cheryl Moyer, Finkbeiner helped with several ongoing research projects. Among them were a pair of studies to analyze the benefits of qualitative social autopsy tools in understanding infant deaths in both Ghana and Uganda.

Global REACH funded Finkbeiner’s involvement, which was extensive and produced two publications and a presentation at the annual meeting of the Consortium of Universities for Global Health.

“This fellowship laid a foundation for me in academic global health research and taught me teamwork and collaboration on a global scale,” Finkbeiner said. “It challenged me to break down massive global health equity problems into addressable targets.”

Global REACH funded Finkbeiner’s involvement, which was extensive and produced two publications and a presentation at the annual meeting of the Consortium of Universities for Global Health.

Global health at a distance: Student engages in projects remotely in Africa

Travel restrictions prevented Chelsea Finkbeiner from traveling abroad in 2021-22, but the UMMS student spent much of the year engaged in global health work nonetheless. Working remotely from Ann Arbor under the mentorship of Assistant Professor of Learning Health Sciences and Ob-Gyn Cheryl Moyer, Finkbeiner helped with several ongoing research projects. Among them were a pair of studies to analyze the benefits of qualitative social autopsy tools in understanding infant deaths in both Ghana and Uganda.

Global health at a distance: Student engages in projects remotely in Africa

Global health at a distance: Student engages in projects remotely in Africa

Global health at a distance: Student engages in projects remotely in Africa

Travel restrictions prevented Chelsea Finkbeiner from traveling abroad in 2021-22, but the UMMS student spent much of the year engaged in global health work nonetheless. Working remotely from Ann Arbor under the mentorship of Assistant Professor of Learning Health Sciences and Ob-Gyn Cheryl Moyer, Finkbeiner helped with several ongoing research projects. Among them were a pair of studies to analyze the benefits of qualitative social autopsy tools in understanding infant deaths in both Ghana and Uganda.

Global health at a distance: Student engages in projects remotely in Africa

Global health at a distance: Student engages in projects remotely in Africa

Travel restrictions prevented Chelsea Finkbeiner from traveling abroad in 2021-22, but the UMMS student spent much of the year engaged in global health work nonetheless. Working remotely from Ann Arbor under the mentorship of Assistant Professor of Learning Health Sciences and Ob-Gyn Cheryl Moyer, Finkbeiner helped with several ongoing research projects. Among them were a pair of studies to analyze the benefits of qualitative social autopsy tools in understanding infant deaths in both Ghana and Uganda.

Global health at a distance: Student engages in projects remotely in Africa

Travel restrictions prevented Chelsea Finkbeiner from traveling abroad in 2021-22, but the UMMS student spent much of the year engaged in global health work nonetheless. Working remotely from Ann Arbor under the mentorship of Assistant Professor of Learning Health Sciences and Ob-Gyn Cheryl Moyer, Finkbeiner helped with several ongoing research projects. Among them were a pair of studies to analyze the benefits of qualitative social autopsy tools in understanding infant deaths in both Ghana and Uganda.

Global health at a distance: Student engages in projects remotely in Africa

Travel restrictions prevented Chelsea Finkbeiner from traveling abroad in 2021-22, but the UMMS student spent much of the year engaged in global health work nonetheless. Working remotely from Ann Arbor under the mentorship of Assistant Professor of Learning Health Sciences and Ob-Gyn Cheryl Moyer, Finkbeiner helped with several ongoing research projects. Among them were a pair of studies to analyze the benefits of qualitative social autopsy tools in understanding infant deaths in both Ghana and Uganda.
Global Health Research Certificate Program

Intended to help advanced research trainees and early-career researchers incorporate global health into their portfolios, our Global Health Research Certificate Program combines mentorship with monthly seminar events led by experienced faculty across a variety of disciplines in the medical school and beyond.

Tessa Adzemovic, MD, MS
Internal Medicine
House Officer

Anton L.V. Avanceña, MS
School of Public Health
PhD Candidate

Melissa Elafros, MD, PhD
Neurology
Clinical Instructor

Chelsea Finkbeiner, BS
U-M Medical School
MD Candidate

Phillip J. Hsu, MD, PhD
Surgery
Resident

Thomas J. Klein, MD, MPH
Ob-Gyn
Global Women’s Health Fellow

Lu Qu, PT
Kinesiology
PhD Candidate

Victor C. Rentes
Learning Health Sciences
PhD Candidate

Jiawei Ribaudo, PhD
UMMS Global REACH
Program Manager

Lee Schroeder, MD, PhD
Pathology
Assistant Professor

Melissa K. Zochowski, MBA
Health Infrastructure and Learning Systems
PhD Candidate

2021-22 Graduates

Lu Qu, PT
Kinesiology
PhD Candidate

Victor C. Rentes
Learning Health Sciences
PhD Candidate

Jiawei Ribaudo, PhD
UMMS Global REACH
Program Manager

Lee Schroeder, MD, PhD
Pathology
Assistant Professor

Melissa K. Zochowski, MBA
Health Infrastructure and Learning Systems
PhD Candidate

There is an incredible community of individuals at Michigan working on impactful global health projects. I saw the program as an opportunity to learn from leaders in the field and hopefully collaborate in the future.  
- Phillip Hsu
“My passion for research overrides the waiting. To finally be here feels amazing.”

- Hongyu Liu, Xiangya Medical School

It took more than a year, a lot of paperwork and even more patience, but the first two participants in a new PhD-level research training partnership with China’s Xiangya School of Medicine have at last arrived in Ann Arbor.

Hongyu Liu and Jiaao Su were expected to arrive at UMMS in 2020 to begin their five-year program. Then came COVID-19 with its myriad travel restrictions and related disruptions.

“I watched many of my classmates prepare to graduate and enter the workforce. I had opportunities to do that also,” said Liu, who is in the final year of his medical program at Xiangya School of Medicine, part of Central South University. “There was plenty of time to doubt whether coming to U-M was the right choice. But the extra time also helped me focus and understand my motivations better.”

Liu and fellow student Su, were among the first to apply for the new program after its announcement in 2019. They will take courses through the UMMS Program in Biomedical Sciences (PIBS) and spend five years in the research lab of a UMMS faculty mentor, earning their PhD from U-M before returning to China to complete their MD.

“Everyone can see how great this opportunity is (to come to U-M) and how I should cherish it,” said Su. “When I met my mentors, the way they talk about research — their eyes light up. Their passion is clear and I want to learn from them.”

The two were among seven visiting students from Xiangya in the last year—all of them delayed by COVID. The other five students are participating in a long-running two-year research training program.

“I’m very proud of Michigan Medicine for supporting this program through what has been a difficult period, and grateful to our participants and their mentors for their trust and patience in us while we worked through the details,” said Eugene Chen, Professor of Cardiovascular Medicine, one of the faculty leaders behind the partnership with Xiangya.

After more than 12 long months of delays, both students arrived in late November—in time to experience two firsts: American Thanksgiving and snow.

“I always have had this dream to combine the clinical and research skills. This passion for research overrides the waiting,” said Liu. “After all of the obstacles, to finally be here feels amazing.”
Fogarty Fellowships

Fogarty research project explored at-home BP monitoring for pregnant women in Ghana

A maternal health research project piloted the use of self-blood pressure monitoring among expecting mothers in Ghana.

The initiative takes the same home-based technology that has become routine in the US in the wake of the COVID-19 pandemic and applies it in an entirely new setting, said principal investigator Emma Lawrence.

“The frequent prenatal visits in the third trimester are almost solely about checking blood pressure. At Michigan, since COVID it’s been really effective to have women check their BP at home,” said Lawrence MD, a Clinical Lecturer in Obstetrics and Gynecology. “The Fogarty project brings those aspects together.”

Funded through the NIH Fogarty International Center and based at Korle Bu Teaching Hospital, Lawrence’s project piloted blood pressure monitoring for women at risk of hypertensive disorders, which account for 10-15% of maternal deaths in low-income countries.

Study participants were issued automatic blood pressure cuffs, given some training, and asked to log their blood pressure once a day for four weeks. An initial paper resulting from the project appeared in July 2022 in the International Journal of Gynaecology and Obstetrics.

“Women who monitor their blood pressure at home derive an immediate benefit, especially in times where, thanks to COVID, there are greater barriers to care.”

- UMMS Fogarty Fellow Emma Lawrence

“Early detection is so important. We think that women who monitor their blood pressure at home will derive an immediate benefit, especially during times where, thanks to COVID, there are greater barriers to getting prenatal care,” Lawrence said.
Fogarty Fellowships

NIH grant renewal to allow international research training program to continue, expand

A program that provides U-M trainees with opportunities for extended mentored research experiences abroad will continue following a recent federal grant renewal. The Northern Pacific Global Health fellowship program, a collaboration among five US universities and a slate of international partners, has provided experiences for more than 200 trainees in the last decade. Funded through the NIH Fogarty International Center, the nearly $1 million renewal grant will provide resources for an estimated 60 trainees over the next five years.

The revised program, now called NPGH LEADERs (Northern Pacific Global Health Leadership, Education, And Development for Early-career Researchers), will build on 10 years of program success with a few new elements, including a more formalized curriculum to supplement participants’ in-country experiences and, importantly, expanded opportunities for early-career researchers from LMIC settings to spend time learning in the United States.

“This has always been open to trainees from outside the United States, but we wanted to be more intentional about creating those opportunities for international researchers moving forward,” said Associate Professor of Learning Health Sciences and Obstetrics & Gynecology Cheryl Moyer, PhD, a co-PI on the program.

NPGH LEADER partner institutions include the universities of Washington, Michigan, Minnesota and Hawaii, along with Indiana University and numerous international institutions across nine countries. Many U-M fellows work in Ghana, including medical student Anne Wolski, whose Fogarty project explored neonatal jaundice.

“I learned so much about doing research in a global setting, maintaining partnerships, and also what good mentorship looks like,” said Wolski. “It confirmed what I was hoping would be my career path in terms of global health.”

- UMMS Fogarty Fellow Ann Wolski

“- UMMS Fogarty Fellow Ann Wolski
Research is central to the core mission of Michigan Medicine. Discoveries can come from anywhere and have an impact everywhere. That is why Global REACH coordinates collaboration Platforms in places like China, India, and Ghana, helping connect our U-M researchers with partner investigators across the world on projects that transcend language, culture, and geography.

For faculty, Global REACH offers Partnership Development grants to facilitate these connections and help forge new areas of collaboration. For students, funding opportunities through Global REACH often engage learners in research abroad, sometimes resulting in publications.

In addition, international students and scholars from around the globe come to UMMS each year to learn research best practices from some of the world’s top scientists, and many of those trips are coordinated through Global REACH. Finally, Global REACH helps our UMMS physician scientists celebrate their discoveries by promoting their findings both at U-M and throughout the global health research community.
U-M Medical School faculty are engaged with collaborators across the globe. In 2021-22, more than 100 Global REACH Faculty Associates (from the medical school) and Faculty Affiliates (from other health science disciplines) published 361 papers with foreign co-authors. These collaborators come from around the world including Global REACH Platform countries like Ghana (20 publications), Brazil (32), and India (27). Our members published more research with co-authors from China (78) than any other country.

Their collaborative scholarly works touch on nearly every field and appear in top-tier journals including PLoS One, Scientific Reports, Lancet, Nature, and many others. Many Global REACH faculty are engaged in pandemic-related research, publishing more than two dozen articles on aspects on COVID-19 with foreign collaborators in 2021-22. This work included various clinical studies, as well as research on healthcare worker burnout, trends in medical education, and much more.

Top countries for publications with international co-authors

<table>
<thead>
<tr>
<th>Country</th>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>78</td>
</tr>
<tr>
<td>Canada</td>
<td>63</td>
</tr>
<tr>
<td>UK</td>
<td>62</td>
</tr>
<tr>
<td>Germany</td>
<td>38</td>
</tr>
<tr>
<td>Italy</td>
<td>34</td>
</tr>
<tr>
<td>Brazil</td>
<td>32</td>
</tr>
<tr>
<td>Netherlands</td>
<td>30</td>
</tr>
<tr>
<td>France</td>
<td>28</td>
</tr>
<tr>
<td>Australia</td>
<td>27</td>
</tr>
<tr>
<td>India</td>
<td>27</td>
</tr>
<tr>
<td>Japan</td>
<td>23</td>
</tr>
<tr>
<td>Spain</td>
<td>22</td>
</tr>
<tr>
<td>Ghana</td>
<td>20</td>
</tr>
<tr>
<td>Belgium</td>
<td>15</td>
</tr>
<tr>
<td>South Africa</td>
<td>13</td>
</tr>
</tbody>
</table>

*Many publications include more than one international co-author
Select Publications

The following represents a small sampling of the depth and breadth of global health-related publications authored by Global REACH Faculty Associates (medical school) or Affiliates (other colleges and schools with one or more co-authors from abroad in 2021-22. Much of this section focuses on our Platform countries, with meaningful collaborations from other areas highlighted as well. Only Global REACH network member authors are listed.

China and Taiwan Platforms

83 Papers with co-authors from China and Taiwan published by members of our Global REACH faculty network in 2021-22.

Maternal Overweight and Obesity during Pregnancy Are Associated with Neonatal, but Not Maternal, Hepcidin Concentrations

- Journal: The Journal of Nutrition
- Network Author: Margit Burmeister, PhD
- Department: Computational Medicine & Bioinformatics
- Partner Institution: Peking University Health Science Center

Differential COVID-19 Symptoms Given Pandemic Locations, Time, and Comorbidities During the Early Pandemic

- Journal: Frontiers in Medicine
- Network Authors: Oliver He, PhD & J. Brian Byrd, MD
- Department: Computational Medicine & Internal Medicine
- Partner Institution: Guizhou University School of Medicine

Intra-hematomal White Matter Tracts Act As a Scaffold for Macrophage Infiltration After Intracerebral Hemorrhage

- Journal: Translational Stroke Research
- Network Author: Neeraj Chaudhary, MD
- Department: Neurosurgery
- Partner Institution: Zhejiang University Second Affiliated Hospital
Select Publications: China & Taiwan

**Valproic Acid-induced Changes of 4D Nuclear Morphology in Astrocyte Cells**
- **Journal:** Molecular Biology of the Cell
- **Network Author:** Brian Athey, PhD
- **Department:** Computational Medicine & Bioinformatics
- **Partner Institution:** Chinese University of Hong Kong-Shenzhen

**Does Surgical Intensity Correlate With Opioid Prescribing? Classifying Common Surgical Procedures**
- **Journal:** Annals of Surgery
- **Network Author:** Kevin Chung, MD
- **Department:** Surgery
- **Partner Institution:** Chang Gung Memorial Hospital, Taiwan

**Feasibility of a Deep Learning-based Method for Automated Localization of Pelvic Floor Landmarks Using Stress MR Images**
- **Journal:** International Urogynecology Journal
- **Network Author:** John DeLancey, MD
- **Department:** Obstetrics and Gynecology
- **Partner Institutions:** Shanghai Jiao Tong University
  Peking University

**Endothelial Cell-Activating Antibodies in COVID-19**
- **Journal:** Arthritis and Rheumatology
- **Network Author:** Jason Knight, MD, PhD
- **Department:** Internal Medicine
- **Partner Institutions:** Shanghai Jiao Tong University
  Shanghai University of Sport

**Metabolic Abnormalities, Liver and Body Fat in American Versus Chinese Patients with Non-alcoholic Fatty Liver Disease**
- **Journal:** JGH Open
- **Network Author:** Anna Lok, MD
- **Department:** Internal Medicine
- **Partner Institutions:** Peking University Health Science Center

**Quantitatively Assessing Port-wine Stains Using a Photoacoustic Imaging Method: A Pilot Study**
- **Journal:** Journal of the American Academy of Dermatology
- **Network Author:** Xueding Wang, PhD
- **Department:** Radiology
- **Partner Institutions:** Tongji University
Select Publications: China & Taiwan

Improving Cardiac Reprogramming for Heart Regeneration in Translational Medicine
  Journal: Cells
  Network Author: Zhong Wang, PhD
  Department: Cardiac Surgery
  Partner Institutions: Shanghai Jiao Tong University
                      Central South University

Peptidylarginine Deiminase 2 in Host Immunity: Current Insights and Perspectives
  Journal: Frontiers in Immunology
  Network Author: Yongqing Li, MD, PhD
  Department: Surgery
  Partner Institutions: Central South University

Rapid Identification of Pathogens Associated with Ventilator-associated Pneumonia by Nanopore Sequencing
  Journal: Respiratory Research
  Network Author: Robert Dickson, MD
  Department: Microbiology and Immunology
  Partner Institutions: Peking University Health Science Center

Should Treatment Indications for Chronic Hepatitis B Be Expanded?
  Journal: Clinical Gastroenterology and Hepatology
  Network Author: Anna Lok, MD
  Department: Internal Medicine
  Partner Institutions: Chang Gung Memorial Hospital, Taiwan

Efficacy and Acceptability of Using Wearable Activity Trackers in Older Adults Living in Retirement Communities: A Mixed Method Study
  Journal: BMC Geriatrics
  Network Author: Bruno Giorandi, PhD
  Department: Psychiatry
  Partner Institutions: Peking University

Family History of Cancer is Associated with Poorer Prognosis in Oral Squamous Cell Carcinoma
  Journal: Oral Diseases
  Network Author: Brent Ward, MD, DDS
  Department: Surgery
  Partner Institutions: Capital Medical University
U-M study: Depression incidence and factors among residents are similar in China and US

Though a world apart, first-year residents in the United States and China have more in common than they might imagine, including bouts of depression.

More than one third of first-year residents in both China and the United States report significant depression during their training, with strong parallels between the incidence rates and underlying factors in both countries, a team of U-M faculty and Chinese collaborators found. Published in Scientific Reports, the study marks the first-of-its-kind longitudinal comparison of depression among new residents between China and US.

The international research team was led by Drs. Margit Burmeister, Srijan Sen and Joan Zhao from the U-M Neuroscience Institute, as well as Weidong Li and Lihong Chen from Shanghai Jiao Tong University. Chen spent three months at U-M near the end of 2018, working in the lab of Dr. Sen.

The collaborators surveyed thousands of first-year residents across many hospitals in both China and the US in the 2017, 2018 and 2019 academic years. Participants took a baseline and demographic survey prior starting their residency program, with follow-up assessments at the 3-, 6-, 9- and 12-month marks.

While findings showed similarities between the two settings, there were important differences. Incoming residents in the United States reported a much lower prevalence of depression on their baseline assessment (3.9%) than their Chinese counterparts (9.1%).

The study holds important implications for how both systems approach medical trainees’ mental health in a time when the pandemic has only increased demands on physicians.

“Despite cultural and structural differences, we find striking parallels in prevalence and system predictors of depression between China and the US,” note the authors. “Given the ongoing COVID-19 risk worldwide and the crucial role of residents in fighting against the pandemic, it is of great importance to call for public attention to their mental health and reveal the driving factors of depression among them.”

“Given the ongoing COVID-19 risk, it is of great importance to call for public attention to residents’ mental health and reveal the driving factors of depression among them.”

- UMMS-Shanghai Jiao Tong study team
Select Abstracts: Ghana & Ethiopia

Ghana and Ethiopia Platforms

Obstetric Capacity Strengthening in Ghana Results in Wide Geographic Distribution and Retention of Certified Obstetrician/Gynaecologists: A Quantitative Analysis

- Journal: BJOG
- Network Author: Timothy Johnson, MD
- Department: Obstetrics and Gynecology
- Partner Institutions: Kwame Nkrumah University of Science and Technology, Ghana College of Physicians and Surgeons

Bimodal Expression Patterns, and Not Viral Burst Sizes, Predict the Effects of Vpr on HIV-1 Proviral Populations in Jurkat Cells

- Journal: mBio
- Network Author: Alice Telesnitsky, PhD
- Department: Microbiology and Immunology
- Partner Institutions: University of Ghana

Danger and Sexuality: Exploring Negotiations in Romantic and Sexual Relationships Among University Students in Ghana

- Journal: Culture, Health and Sexuality
- Network Authors: Michelle Munro-Kramer, PhD and Sarah Compton, PhD
- Department: School of Nursing, Obstetrics and Gynecology
- Partner Institutions: University of Cape Coast

The Introduction of Genetic Counseling in Ethiopia: Results of a Training Workshop and Lessons Learned

- Journal: PLoS One
- Network Author: Shane Quinonez, MD
- Department: Pediatrics
- Partner Institutions: Saint Paul’s Hospital Millennium Medical College
Select Abstracts: Ghana & Ethiopia

Post-abortion Contraceptive Adoption in Ethiopia
Journal: International Journal of Gynaecology and Obstetrics
Network Author: Sarah Compton, PhD, MPH
Department: Obstetrics and Gynecology
Partner Institutions: St. Paul’s Hospital Millennium Medical Medical College

"Once You Get One Maternal Death, It’s Like the Whole World is Dropping on You": Experiences of Managing Maternal Mortality Amongst Obstetric Care Providers in Ghana
Journal: BMC Pregnancy and Childbirth
Network Author: Emma Lawrence, MD
Department: Obstetrics and Gynecology
Partner Institutions: Kwame Nkrumah University of Science and Technology

Human Norovirus Triggers Primary B Cell Immune Activation In Vitro
Journal: mBio
Network Author: Costas Lyssiotis, PhD
Department: Molecular and Integrative Physiology
Partner Institutions: University of Ghana

Perspectives on Resuscitation Decisions at the Margin of Viability among Specialist Newborn Care Providers in Ghana and Ethiopia: A Qualitative Analysis
Journal: BMC Pediatrics
Network Author: Cheryl Moyer, PhD, MPH
Department: Learning Health Sciences, Obstetrics and Gynecology
Partner Institutions: Komfo Anokye Teaching Hospital, Suntreso Government Hospital, St. Paul’s Hospital Millennium Medical College

A Behavior Change Communication Intervention, but Not Livelihood Interventions, Improves Diet Diversity and Animal-source Food Consumption Among Ghanaian Women
Journal: Food and Nutrition Research
Network Author: Andrew Jones, PhD
Department: School of Public Health, Nutritional Sciences
Partner Institution: University of Ghana

Stigma Associated with Sickle Cell Disease in Kumasi, Ghana
Journal: Journal of Transcultural Nursing
Network Author: Cheryl Moyer, PhD, MPH
Department: Learning Health Sciences, Obstetrics and Gynecology
Partner Institutions: University of Cape Coast, Kwame Nkrumah University of Science and Technology
Select Publications: Ghana & Ethiopia

A Novel 12-hour Versus 24-hour Magnesium Sulfate Regimen in the Management of Eclampsia and Preeclampsia in Ghana (MOPEP Study): A Randomized Controlled Trial

- Journal: International Journal of Gynaecology and Obstetrics
- Network Author: Emma Lawrence, MD
- Department: Obstetrics and Gynecology
- Partner Institution: University of Ghana

Promoting Respectful Maternity Care: Challenges and Prospects from the Perspectives of Midwives at a Tertiary Health Facility in Ghana

- Journal: BMC Pregnancy and Childbirth
- Network Author: Jody Lori, PhD
- Department: School of Nursing
- Partner Institution: Kwame Nkrumah University of Science and Technology University of Cape Coast, Ghana

What is Global Health Equity? A Proposed Definition

- Journal: Annals of Global Health
- Network Author: Joseph Kolars, MD, MACP
- Department: Internal Medicine
- Partner Institutions: Ministry of Health, Ethiopia University of Global Health Equity, Rwanda

Viability of an Urban Maternity Waiting Home in Kumasi, Ghana: A Qualitative Needs Assessment

- Journal: Midwifery
- Network Author: Cheryl Moyer, MD, MPH
- Department: Learning Health Sciences, Obstetrics and Gynecology
- Partner Institution: Kwame Nkrumah University of Science and Technology, Ghana

Perceptions and Beliefs About Anaemia: A Qualitative Study in Three Agroecological Regions of Ghana

- Journal: Maternal and Child Nutrition
- Network Author: Andrew Jones, PhD
- Department: School of Public Health, Nutritional Sciences
- Partner Institution: University of Ghana

Self-reported Medicinal Plant Use by Ghanaian Women During Pregnancy is Associated with Poor Neonatal Health

- Journal: Journal of Public Health
- Network Author: Cheryl Moyer, PhD, MPH
- Department: Learning Health Sciences, Obstetrics and Gynecology
- Partner Institution: Suntreso Government Hospital, Ghana
Study: New UMMS-led Family Planning Fellowship in Ethiopia having an impact

Established with help from Michigan Medicine, a new fellowship program in Ethiopia for family planning and reproductive health is improving maternal care and increasing options for women.

The training program—a first not just in Ethiopia but indeed in all of East Africa—was launched in 2018. Its progress and successes to date are detailed in a Contraception article by Ethiopian and U-M collaborators.

“The fellowship has introduced several new initiatives and skills to the existing reproductive health care training options,” the team write. “This program is a stirring example of successful collaboration between a U.S. university and a college in a low- or middle-income country.”

In recent decades, expanded access to abortion services in Ethiopia has increased the need for specialized providers, both to offer quality services and train other professionals. A collaboration between St. Paul’s Hospital Millennium Medical College and the Center for International Reproductive Health Training at U-M, the two-year Family Planning fellowship builds on an Obstetrics and Gynecology collaboration established years earlier.

Three fellows have completed the program to date, with an additional five in training. While the program has produced just a handful of trainees so far, their collective impact is already being felt across the country.

They are helping to improve multidisciplinary patient care by training medical students, ob-gyn resident physicians and providers in other specialty units all across the country. Because data on family planning use and outcomes is not readily available from rural communities, the fellows conduct and publish research in these fields and use their findings to improve services; since the beginning of the program, more than 30 fellow-authored articles have been published in peer-reviewed journals.

“We believe graduates of this fellowship will expand access to quality, evidence-based abortion, family planning, and other SRH services just as much through their involvement with education, policy, and advocacy as they do in their direct clinical work,” the authors note. “These experts will continue serving the country ... and will provide important sexual and reproductive health and research expertise at a national and global level.”

“These experts will continue serving the country and will provide important sexual and reproductive health and research expertise at a national and global level.”

- University of Michigan-St. Paul’s Hospital study team
Select Publications: Brazil

Brazil Platform

Allelic Variants in Established Hypopituitarism Genes Expand Our Knowledge of the Phenotypic Spectrum

- Journal: Genes
- Network Author: Sally Camper, PhD
- Department: Human Genetics
- Partner Institution: University of São Paulo

Novel 3D MRI Technique to Measure Perineal Membrane Structural Changes with Pregnancy and Childbirth: Technique Development and Measurement Feasibility

- Journal: International Urogynecology Journal
- Network Author: John DeLancey, MD
- Department: Obstetrics and Gynecology
- Partner Institution: University of São Paulo

DDX58(RIG-I)-Related Disease is Associated with Tissue-specific Interferon Pathway Activation

- Journal: Journal of Medical Genetics
- Network Authors: Lev Prasov, MD, PhD and Shahzad Mian, MD
- Department: Ophthalmology
- Partner Institution: University of São Paulo

Clinical and Demographic Factors Associated with Delayed Diagnosis of Bipolar Disorder: Data from Health Outcomes and Patient Evaluations in Bipolar Disorder (HOPE-BD) Study

- Journal: Journal of Affective Disorders
- Network Author: Sagar Parikh, MD
- Department: Psychiatry
- Partner Institution: Federal University of Santa Catarina

Brazil’s Community Health Workers Practicing Narrative Medicine: Patients’ Perspectives

- Journal: Journal of General Internal Medicine
- Network Author: Rogerio Pinto, PhD, MSW
- Department: Social Work
- Partner Institution: Estadual Paulista University
Select Publications: India

India Platform

Long-Term Surgical Outcomes of Primary Congenital Glaucoma in a South Indian Population
- Journal: Ophthalmology. Glaucoma
- Network Author: Joshua Ehrlich
- Department: Ophthalmology
- Partner Institution: Aravind Eye Hospital

Clinical and Genetic Spectrum of 104 Indian Families with Central Nervous System White Matter Abnormalities
- Journal: Clinical Genetics
- Network Author: Stephanie Bielas, PhD
- Department: Human Genetics
- Partner Institution: Manipal Academy of Higher Education

Current Status and Barriers in Pulmonary Hypertension Care Delivery in India: A Qualitative Analysis
- Journal: Pulmonary Circulation
- Network Author: Victor Moles, MD
- Department: Internal Medicine
- Partner Institution: Apollo Institute of Medical Sciences and Research

The Utility of Routine Fundus Photography Screening for Posterior Segment Disease: A Stepped-wedge, Cluster-randomized Trial in South India
- Journal: Ophthalmology
- Network Author: David Musch, MD, MPH
- Department: Ophthalmology
- Partner Institution: Aravind Eye Hospital

Targeting SWI/SNF ATPases in Enhancer-addicted Prostate Cancer
- Journal: Nature
- Network Authors: Arul Chinnaiyan, MD, PhD and Xiaoju Wang, PhD
- Department: Pathology
- Partner Institution: Aurigene Discovery Technologies
Select Publications: Other Countries

**Longitudinal Respiratory Subphenotypes in Patients with COVID-19-related Acute Respiratory Distress Syndrome: Results from Three Observational Cohorts**

- **Publication**: Lancet Respiratory Medicine
- **Network Author**: Robert Disckson, MD
- **Department**: Microbiology & Immunology
- **Partner Institutions**: Colleagues around the world

**Clinical Characteristics and Outcomes After New-onset Seizure Among Children with HIV During the Antiretroviral Therapy Era**

- **Publication**: Epilepsia Open
- **Network Author**: Melissa Elafros, MD, PhD
- **Department**: Neurology
- **Partner Institution**: Zambian College of Medicine & Surgery

**Association of Serum PUFA and Linear Growth Over 12 Months Among 6-10 Years Old Ugandan Children with or without HIV**

- **Publication**: Public Health Nutrition
- **Network Author**: Bruno Giordani, PhD
- **Department**: Psychiatry
- **Partner Institution**: Kampala Capital City Authority

**Relationship, Partner Factors and Stigma are Associated with Safer Conception Information, Motivation, and Behavioral Skills Among Women Living with HIV in Botswana**

- **Publication**: BMC Public Health
- **Network Author**: Okeoma Mmeje, MD
- **Department**: Pediatrics
- **Partner Institutions**: University of Botswana
  University of Cape Town

**Maximising Use of Population Data on Cardiometabolic Diseases**

- **Publication**: The Lancet, Diabetes Endocrinology
- **Network Author**: David Flood, MD, MSc
- **Department**: Pediatrics
- **Partner Institutions**: Colleagues around the world
Select Publications: Other Countries

Comprehensive Characterization of mRNAs Associated with Yeast Cytosolic Aminoacyl-TRNA Synthetases

Publication: RNA Biology
Network Author: Anthony Antonellis, PhD
Department: Human Genetics
Partner Institution: Technion - Israel Institute of Technology

Practices and Perspectives of Primary Care Physicians in Japan and the United States about Diagnosing Dementia: A Qualitative Study

Publication: BMC Geriatrics
Network Author: Michael Fetters, MD, MPH
Department: Family Medicine
Partner Institution: Hamamatsu University School of Medicine

Availability of Essential Diagnostics in Ten Low-income and Middle-income Countries: Results from National Health Facility Surveys

Publication: The Lancet. Global Health
Network Author: Lee Schroeder, MD, PhD
Department: Pathology
Partner Institutions: Aga Khan University
University of Toronto

The Impact of the COVID-19 Pandemic on Healthy Lifestyle Behaviors and Perceived Mental and Physical Health of People Living with Non-Communicable Diseases: An International Cross-Sectional Survey

Publication: Int’l Journal of Environmental Research and Public Health
Network Author: Mark Peterson, PhD
Department: Physical Medicine and Rehabilitation
Partner Institutions: Colleagues around the world

Cost-Effectiveness of Lay First Responders Addressing Road Traffic Injury in Sub-Saharan Africa

Publication: Journal of Surgical Research
Network Author: Krishnan Raghavendran, MD
Department: Surgery
Partner Institutions: LFR International
Select Publications: Other Countries


- Publication: American Journal of Infection Control
- Network Author: Sanjay Saint, MD, MPH
- Department: Internal Medicine
- Partner Institution: Thammasart University Hospital

Muscle Weakness is a Prognostic Indicator of Disability and Chronic Disease Multimorbidity

- Publication: Experimental Gerontology
- Network Author: Mark Peterson, PhD
- Department: Physical Medicine & Rehabilitation
- Partner Institution: Universidad de Santiago de Chile

Association of SARS-CoV-2 Seropositivity and Symptomatic Reinfection in Children in Nicaragua

- Publication: JAMA Network Open
- Network Author: Aubree Gordon, PhD
- Department: Public Health
- Partner Institution: Ministry of Health

Safety Evaluation of Photoacoustic Tomography System for Intraocular Tumors

- Publication: Translational Vision and Science Technology
- Network Author: Hakan Demirci, MD
- Department: Ophthalmology
- Partner Institution: Abdulaziz University for Health Science

Towards a More Standardized Approach to Pathologic Reporting of Pancreatoduodenectomy Specimens for Pancreatic Ductal Adenocarcinoma: Cross-continental and Cross-specialty Survey From the Pancreatobiliary Pathology Society Grossing Working Group

- Publication: American Journal of Surgical Pathology
- Network Author: Jiaqi Shi, MD, PhD
- Department: Pathology
- Partner Institutions: Koç University, Turkey
  Sungkyunkwan University School of Medicine, South Korea
Study: The use of statins, an important drug to prevent heart disease, lags in LMICs

Inexpensive and effective, cholesterol-lowering statins are ubiquitous in the United States to reduce the risk of heart disease. But a UMMS-led study published in Lancet Global Health finds infrequent use in low-resource countries.

Analyzing data from 41 LMICs, a research team led by Clinical Instructor of Internal Medicine David Flood found that, among patients with identified risk factors or a history of heart disease, fewer than 1 in 10 is on a statin. The World Health Organization, as part of a growing emphasis on noncommunicable diseases, has set a goal that half of these eligible patients should be taking statins by 2025. Yet not a single country in the study approached the 50% mark for primary prevention (where risk factors have been identified). Just one country, Iran, met the target for secondary prevention (where the patient has already had a heart attack or stroke).

“The numbers are pretty striking. Statins are one of the most important medicines we have for preventing heart disease. Generic versions of these drugs have been available for 15 years, so it’s not only a matter of their cost. Something else is going on,” said Flood, MD, MSc.

He is first author on a paper that included 20-plus researchers from a dozen countries: the US, Germany, South Africa, Nepal, Uganda and more.

In addition to the low overall statins usage, the team found a wide discrepancy across different regions. African countries in the study averaged 4.5% use for primary prevention, compared 10.7% in the Americas and 13.7% in the Eastern Mediterranean. There was a strong positive correlation between economics and overall use. Eligible patients from the upper-middle income countries in the survey were seven times more likely to be on a statin than those living in low-income countries.

Flood hypothesizes that a chief factor could be recent changes in the way the drugs are typically prescribed. Regardless of their impact on cholesterol, and the drugs have gradually been decoupled from use only among people with high cholesterol—at least in the United States. Flood believes this disassociation has yet to take root everywhere.

“One thing is certain: as populations age and countries become wealthier, there is going to be more heart disease. It’s a pressing problem,” Flood said. “I’m really interested in implementing care and exploring policies to address this gap.”

“Generic versions of these drugs have been available for 15 years, so it’s not only a matter of cost. Something else is going on.”

- David Flood
Clinical Instructor of Internal Medicine

“For a long time, we only used statins if we could regularly measure cholesterol. That was the traditional model, and it required lab access and resources that may not be as widely available in these settings,” Flood said.

More recently, the growing body of research has shown statins to be effective for people at high risk of cardiovascular disease.
Select Publications: Other Countries

**Outcomes in Temporary ICUs Versus Conventional ICUs: An Observational Cohort of Mechanically Ventilated Patients With COVID-19-Induced Acute Respiratory Distress Syndrome**
- Publication: Critical Care Explorations
- Network Author: Robert Hyzy, MD
- Department: Internal Medicine
- Partner Institution: Instituto Nacional de Ciencias Médica

- Publication: Diabetes Research and Clinical Practice
- Network Author: William Herman, MD, MPH
- Department: Internal Medicine
- Partner Institution: Colleagues around the world

**B Cell Signatures Distinguish Cutaneous Lupus Erythematosus Subtypes and the Presence of Systemic Disease Activity**
- Publication: Frontiers in Immunology
- Network Author: Celine Berthier, PhD
- Department: Internal Medicine
- Partner Institutions: Cleveland Clinic Abu Dhabi

**Efficacy and Safety of Teprotumumab in Thyroid Eye Disease**
- Publication: Therapeutics and Clinical Risk Management
- Network Author: Terry Smith, MD
- Department: Ophthalmology
- Partner Institution: St. Luke’s Medical Center Eye Institute

**Systematic Review and Meta-analysis of Depression, Anxiety, and Suicidal Ideation Among Ph.D. Students**
- Publication: Scientific Reports
- Network Author: Srijan Sen, MD, PhD
- Department: Psychiatry
- Partner Institutions: University of Edinburgh, UK, Queens University, UK, Stellenbosch University, South Africa
Is Africa ready for Artificial Intelligence? Collaborators from the University of Michigan and the Aga Khan University (AKU) in Kenya believe so. In a paper in Gut, they propose that AI and machine learning could be deployed to address the continent’s emerging colorectal cancer (CRC) problem.

“Recent technological advances and developments in AI have the potential to transform global health, particularly for early detection and diagnosis of CRC,” writes the research team led by Mansoor Saleh, MD, Chair of Haematology-Oncology at AKU Hospital, Nairobi, and Akbar Waljee, MD, UMMS Professor of Gastroenterology.

The paper is the first produced through a new institutional partnership between U-M and AKU. Appearing in Gut, it offers CRC screening as a test case for AI-driven solutions to some of the continent’s health issues.

“While data science applications are largely underdeveloped in Africa, many enabling factors are already in place,” the researchers note.

The prevalence of CRC is growing in Africa. Limited colonoscopy screening capacity means most cases go undetected for too long; more than 60% of patients in sub-Saharan Africa present with stage-4 CRC. When detected this late, their five-year survival rate is less than 1%.

Artificial Intelligence and Machine Learning might play a role in ways that alleviate—rather than exacerbate—the screening scarcity. Computer algorithms could examine population-level data to determine which patients are at the highest risk and should be prioritized for screening. Once screened, other algorithms designed for pattern recognition can quickly scan the images to identify abnormalities that warrant a closer inspection by trained pathologists.

While such tools have shown promise in the US and other high-income countries, advancements in cloud computing, decreasing costs, the penetration of mobile phones, and other factors have primed parts of Africa for AI health applications.

“Given the growing investments in data science infrastructure, the demonstrated openness to embracing technological change, and the urgent need to develop more efficient approaches to cancer screening … sub-Saharan Africa is poised to drive innovative AI-based solutions,” the team writes.