THE FIGHT AGAINST COVID-19

It’s common knowledge that coughing or sneezing when sick can spread illness to others, nevertheless humans also shed viruses in our waste, which means the things we flush down our toilets contain clues to what ails us.

By collaborating with the Great Lakes Water Authority and Detroit Water & Sewerage Department to collect and analyze samples of metro Detroit wastewater, researchers hope to detect new COVID-19 outbreaks before sick people even realize they’ve been infected. “If our prediction models are showing early warning signals of a problem, we could sound the alarm for state and federal authorities to prepare for an outbreak,” Irene Xagoraraki, associate professor in environmental engineering at MSU who is leading the study, said in a news release. “The medical community needs to be armed with resources to help these communities and early action might be one of the answers.”

The study builds upon Xagoraraki’s, Kaneene, Cunningham Initial work in Uganda (USA-UGANDACenter for Viral Disease Surveillance” NSF, Grant approved: 02/11/2020). Most recently Dr. Xagoraraki is researching viruses among Detroit’s population by analyzing past research tracking viruses among Detroit’s population by analyzing the city’s wastewater in 2017 and 2018. During that study, researchers detected a spike in hepatitis A infections seven to nine days before health

continues on page 2
COVID AND THE VIRTUAL INSTITUTES: ONE HEALTH APPROACH

Dean Amalfitano

As I think about all the incredible educational and research experiences the Institute of Global Health (IGH) has provided our students and faculty on a global scale, 2020 finds us in the midst of a global pandemic. COVID-19 has not only affected the health of countless millions, but unfortunately, has curtailed many of the collaborative efforts of IGH and the College of Osteopathic Medicine. Indeed, the COVID-19 pandemic is a sobering reminder that our health is interconnected across our planet and how the efforts of IGH are needed now more than ever.

Despite the pandemic and our restrictions on travel, we continue to reach out to our global partners, albeit virtually. Earlier this year, we launched our fully online Global Health Studies program, which offers a Master in Global Health Studies (MSGH), as well as a Graduate Certificate in Global Health. Additionally, as students make their way in the program and as travel restrictions subside, many will have the option to participate in educational study abroad experiences in over 15 countries. These experiences are the product of decades of working with international faculty and universities so that students can work with established faculty and curriculums.

You can read more in the following pages about the MSGH program, as well as our Virtual Research Institutes that continue to support international faculty and researchers. You also will learn more about a novel approach to detecting viruses in wastewater from the Water Quality Institute. This work is helping MSU researchers and other partners develop a predictive model that can alert public health officials and clinicians before another COVID surge.

While the pandemic has been difficult in so many ways, we will continue our work to bring health and hope to our communities. We look forward to the coming days when we can safely resume all of our activities and continue to expand upon our mission to promote global health through our partnerships around the world.

Stay well and be safe.

Armored with that information, local public health officials could take measures to prevent further spread, such as advising area residents to limit their face-to-face interaction and ramping up local testing and contact tracing efforts. Hospitals, meanwhile, could brace for a coming surge in patients.

If Detroit could have received such a warning before the first Michiganders tested positive for COVID-19, “hundreds if not thousands of lives could have been saved,” said William Cunningham, Associate Dean for global health in the MSU College of Osteopathic Medicine.

Although the effort to apply the MSU team’s research method to the COVID-19 pandemic is still in its infancy, researchers say it will soon be ready for public health officials. They are collecting samples weekly and working to establish a baseline level of COVID-19 in wastewater, Cunningham said, which will enable them to spot any spikes that indicate a new outbreak. That early detection capability is particularly useful given that Michigan’s COVID-19 testing capabilities remain low. Tracking the virus through widespread testing requires not only the cooperation of residents willing to get tested, but also access to reagents, swabs and other medical equipment that is in short supply after the pandemic fueled a global spike in demand. The MSU team’s viral forecasting system requires only access to a community’s wastewater and the ability to analyze the samples.

“Say you have 5,000 people in a square mile,” Cunningham said. “Think of the resources it would take to test every one of those 5,000 people and wait for results to come back, versus those 5,000 people are disgarding waste into the same sewer, so you analyze aggregate data by running one sample.”

Researchers around the globe are using similar methods to track COVID-19, with promising results. Preliminary findings from a study in Massachusetts, for example, showed that COVID-19 volumes in a metropolitan area’s wastewater indicated a far higher infection rate than had been officially reported in that area at the time.

In addition to assisting with Michigan’s COVID-19 response, Xagoraraki and her team hope their methodology can help detect and contain other infectious disease outbreaks around the globe. They are working with the Institute for Global Health and the MSU College of Osteopathic Medicine to apply their research outside the United States, particularly in developing countries where medical care is more difficult to access. “It could be part of a larger solution across the country and world,” Xagoraraki said, to “predict hot spots and critical moments for the onset of outbreaks prior to full-blown demonstration of disease.”

From left to right: Dr. Rene Hinojosa, Prof. Leidy Cortezaga Avila, Universidad Central del Este and Dr. Irene Xagoraraki at the wastewater treatment utility in San Pedro de Macoris, Dominican Republic.
INSTITUTE FOR GLOBAL HEALTH
RESEARCH ACTIVITIES
2019-2020

The Institute for Global Health facilitates research by supporting faculty members and students through engagement with potential international research partners, funding efforts to develop global health research proposals, and providing student research experiences during education abroad.

RESEARCH PRESENTATIONS:

- Amalfitano, A. Adenoviral Vectors as Next-Generation Cancer Therapeutics: From Bench to Bedside, Presentation to the Armed Forces Medical College, Cairo, Egypt, December 9, 2018.
- Aldhamen, Y. Establishing and Fostering Research Culture at AFCM: Opportunities and Challenges, Presentation to the Armed Forces Medical College, Cairo, Egypt, December 9, 2018.
- Xia Q. Research Collaboration with the Institute for Global Health, presentations to South East University, Shantou University Medical College, Sun Yet Sen University, Tianjin Medical University, and Huaxi Medical College of Sichuan University, China, December 18-027, 2019.

RECENT PUBLICATIONS:


STUDENT PROJECTS:

- Associate Dean Gary Willyerd, D.O. with assistance from Shane Sergent, D.O. and Ruben Kenny Briceno, M.D. led the OST 687 Global Health: Peru elective, a 2 credit elective offered in Iquitos, Peru. In 2019, 42 medical students participated in the following research projects:
  - Elizabeth Barrett: Antibiotic Resistance in Peru
  - Ida Ahmady: Difference in Access to Clean and Portable Drinking Water in Peru along the Amazon in Rural Populations versus in the City of Iquitos
  - Alicia Speak: Understanding Health Care Access and Health Care Seeking Behavior in Underserved Populations
  - Brian Barnett: Respiratory Illness and Cooking Practices of the People in the Amazon
  - Ronald Te and Zachary Ohs: Assessing Prevalence of Dehydration Using Caval Index
  - Mikayla Depuydt and Katherine Woods: Categorization of Dermatological and Neurological Findings Associated with HTLV-1
  - Gina Ruggirello, Erin Vitale and Rachel Eaton: Diabetes Education and Barriers to Care in Iquitos, Peru
  - Chase Waynick, Megan Czmer and Rebecca Bremer: Determining the Relationship between Knowledge and Prevalence of Human Papillomavirus among Women in Two Regions of Peru

PROJECTED PUBLICATIONS:

MASTER OF SCIENCE IN GLOBAL HEALTH

The Global Health Studies Program includes both the online Master of Science in Global Health and the Graduate Certificate in Global Health. The faculty and courses within the programs represent different colleges and disciplines within the university, such as agriculture and natural resources, arts and letters, communication arts and sciences, human medicine, nursing, osteopathic medicine, social sciences, and veterinary medicine, as well as non-governmental organizations and other agencies with a focus on global health. A key feature of the program is the multi-disciplinary faculty and student bodies, focusing on the inter-relatedness and importance of human, animal and environmental health summarized in the concept of One Health. The Master of Science in Global Health is a one-year program designed to empower graduates with the tools and skills to address global health challenges. Students complete 30 credits, including nine core courses focusing on competencies in management, ethics, evidence-based practice, globalization of health and healthcare, strategic analysis, capacity strengthening, collaboration and communication. Students are invited to participate in an existing global health course in one of nine countries or an independent elective at a location of their choice. Prior to completing the degree, students will develop a capstone project as a synthesis and application of the knowledge, tools, and skills acquired throughout the program. The Graduate Certificate in Global Health is a nine-credit program consisting of three courses. Credits from the Graduate Certificate are transferable for students applying to the Master of Science program.

Core courses in the Global Health Studies Program include:

- OST 821 One Health – Transdisciplinary Collaboration in Global Health
- OST 822 Introduction to Global Health Practice
- OST 823 Global Burden of Disease
- OST 824 Emerging Topics in Global Health
- OST 825 Ethical Issues in Global Health
- OST 827 Global Health Management
- OST 828 Global Health Capstone
- OST 829 Global Health Community Assessment
- OST 831 Evidence-Based Practice in Global Health

MSGH Faculty and Staff:

- John Bonnell, Ph.D.
- William Cunningham, D.O., M.H.A.
- Jaime Caravaca-Morera, Ph.D.
- Fred Gifford, Ph.D., M.A.
- Rene Hinojosa, Ph.D.
- Maria Lapinski-LaFaive, Ph.D.
- Rebecca A. Malouin, Ph.D., M.P.H., M.S.
- Amelia Odo, Ph.D., M.P.H.
- John Richter, Ph.D.
- Jacob Rowan, D.O.
- Eric Sarriot, M.D., Ph.D.
- Mohamed Satti, Ph.D., M.Sc.
- Mieka Smart, Dr.P.H., M.H.S.
- Mary Kay Smith, Ph.D., M.S.N., R.N., C.H.S.E.
- Melinda Wilkins, D.V.M., Ph.D., M.P.H
- Lauri Winter, M.S.N., M.P.P.
- Jay Loftus, ED.D,
- Mark Hodgins, M.A., B.A.,
- Stephanie Six, M.S.A.
- Wendi Winston, MLIS
- Abe Wheeler, MLIS

For more information, please visit globalhealth.msu.edu
TRAVIS GORDON, DO
OSTEOPATHIC RESEARCH
IN YUCATAN

One of the best things about my job is that it requires living in Yucatan, Mexico. Home to the Mayan civilization and all its relics, the meteorite Chicxulub that hit some 66 million years ago and killed the dinosaurs, amazing food and currently boasts being the second safest city in the Americas. I haven’t heard of a student having a bad experience yet.

Another great thing is the flexibility my position offers; within our three main objectives set forth since 2011—outreach work, collaborative research and student exchange—the opportunities abound.

In a typical day I might start out treating trauma patients with Osteopathic Manipulative Medicine (OMM) in the OHoran Hospital ICU and brush up on critical care knowledge, see outpatients in the MSU OMM clinic within the hospital, then stop by the research center for a meeting for our ongoing osteopathic research on post-cholecystectomy bile acid diarrhea in animal and human models. Then I might finish the afternoon on a Zoom meeting with a DOCARE International regarding survey-based research on student participants in international medical outreach trips and consequent changes in empathy toward patients. Just as easily it could be a meeting to help coordinate MSU-Yucatan research involving honey bees, water quality, forestry or rapid detection nanotechnology. As is common among family practice docs, I tend to like everything.

Sometimes I even get to travel to other places to do research. Probably the most interesting project I’ve been involved in was a clinical OMM study done in Peru on the 2019 MSUCOM OST 687 Global Health trip. This essentially involved five minutes of myofascial release technique applied to C-section scars of women living in Amazonian Iquitos, Peru. Our intervention showed significant decrease in scar pain and low back pain, increased scar mobility evidenced by an “adheremeter” and increased low back range of motion, demonstrated by an iPhone goniometer app that is on par with the gold standard. We were able to use sophisticated clinical technology in the Amazon and worked together as a team to pull it off. I am very proud of the students for their dedication to the project, which will soon be published.

This experience has made us more determined than ever about promoting student experience in international outreach-based research. I believe this model has great potential as it stimulates the students’ learning in so many ways that they are able to have a deeper humanistic grasp of a concept and take advantage of a much richer experience. In fact, this is not by any means MSUCOM’s first go at international outreach research. Dr. Shane Sergent has already made MSUCOM Assistant Dean Gary Willyerd’s “Peru Trip” an international sensation since 2010 with more than 100 posters and abstracts submitted and 25 winning awards.

Yucatan has something to offer everyone at MSU—students, residents, researchers, administrators...especially a family practice doc who loves everything. Down here the future is so bright, we gotta wear shades.

A Global Outlook
Dr. Cunningham

This issue of Spartan Traveler details the global health outreach and opportunities that our faculty, researchers and students have immersed themselves in to build a better world. For over thirty years the Institute for Global Health has addressed health related problems linked to inequity of the world’s most vulnerable populations. Our mission is to promote a culture of research, education and capacity building that will be sustainable in the communities and countries in which we have partners.

For the past decade the Institute for Global Health (IGH) has been integrating the principle of One Health into our education and research opportunities. The One Health approach to addressing global health issues has been adopted by many prominent international organizations: United States Center for Disease Control and Prevention (CDCP), World Health Organization (WHO), World Animal Organisation (OIE), The World Bank and the Food and Agricultural Organization of the United Nations (FAO), and many more. These organizations realize that utilizing the One Health lens of addressing global health issues through the interdependence of human, animal and ecosystems health will contribute to more sustainable solutions for our planet.

Most recently, the Institute for Global Health has developed an online Master in Global Health (MSGH) with each of the courses integrating the One Health discipline into its curriculum. It is prophetic that one of the textbooks used in the MSGH curriculum (Herrmann &Johnson-Walker (2018), “Beyond One Health, From Recognition to Results”) describes the increasing incidence of zoonotic diseases and their impact on society. The authors detailed the impact that severe acute respiratory syndrome (SARS) had on the world in 2002 – 2003 with an eventual worldwide death toll of 774 deaths in 29 countries. SARS is a member of the coronaviridae family, a close cousin of the COVID -19 virus that has ravaged the world in 2020 with economic losses in the trillions affecting every country in the world and as of this writing the global death toll is 826,591 . As health care advocates, we need to ask ourselves what prevented us from studying the sequelae of the SARS epidemic and incorporating preventive measures for the eventual next epidemic/pandemic Our students will be repeatedly challenged to examine the determinants of health through a scientific approach. A continued spirit of inquiry is fostered in them to question past practices and theories. In addition to the MSGH, we have also developed a three course, nine credit introductory certificate for the learner to be introduced to the principles of One Health/GLOBAL health. Our goal for the graduate is for them to be advocates for people, animals and the environment utilizing their One Health approach to issues and therefore, improve on the current health care inequities in the world. For more information on this program you can go to: https://globalhealth.msu.edu/

Stay Well, Be Safe,
William Cunningham, D.O., M.H.A.
Associate Dean for Global Health
Director of the MSU Institute for Global Health.
The week I spent in Guatemala was one of the most eye-opening and humbling service experiences I have ever taken part in. I learned a lot about how local culture and socioeconomic status tie into health care delivery. The city of Antigua is an architecturally gorgeous city filled with bustling streets and restaurants serving delicious authentic cuisine. While on this trip we did some sightseeing around Antigua and also took a boat ride around Lake Atitlan which is surrounded by volcanos. Each morning of clinic we drove 30 minutes outside of the city to a smaller town, Santa Maria De Jesus. We set up our clinic in the local school and treated over 800 patients in just 4 clinic days. As students we rotated through the different specialties that included cardiology, OMM, dermatology, OG/GYN, radiology, and primary care. Many of our patients walked into Santa Maria from neighboring towns due to limited access to healthcare. They presented with conditions that would have been cared for by primary care physicians if they had access to this level of care. Many of these conditions were secondary to the lifestyle in Guatemala where access to clean water is limited, and many hours each day are spent making tortillas or carrying heavy loads long distances in the hot sun. We were able to share our knowledge on preventative measures to have a positive impact on the long-term health of our patients. I also took part in caring for patients with serious conditions that had progressed to advanced disease states, such as diabetes mellitus, cardiovascular disease, and neurodevelopmental delays. The week in Guatemala was an incredible study abroad where I got hands-on experience with performing history and physical exams, developing critical thinking skills, establishing a differential diagnosis and deciding a plan of care for patients with limited access to resources. Through this experience I gained skills, knowledge and cultural competency to bring back home and incorporate into my delivery of health care as a student doctor.
I had the opportunity to travel to Tehran, Iran to do an elective rotation at one of the largest hospitals in the country. As a fourth year student in the College of Osteopathic Medicine and Master of Public Health program, this opportunity provided me significant practical insight into the healthcare system both at home and abroad. Tehran is one of the largest cities in the Middle East, with greater than 13 million residents. As such, healthcare delivery can be a challenge when there is such a high population demand. I spent four weeks at Milad Hospital, a 1000-bed, multi-specialty hospital and the largest in the city. Milad is a health service provider in Iran’s Social Security Organization, which means millions of people in this system rely on this hospital for complimentary care. There are many other hospitals in Tehran, most of which are privately owned and cash pay.

Going into this experience I had an idea of what to expect. Simply put, it was busy. I had never previously seen a hospital where people form lines in front of elevators; where patient families provide the wheelchair or gurney transportation from department to department, or in the extreme case of seeing family members bag ventilate a patient when there are no available ventilators. I knew that it was indeed a privilege to train in the United States with any and all resources at our disposal. I was embraced, in particular, for being an American training physician. Providers from different specialties, nurses, administrators, and especially patients where all extremely gracious and thankful for me having traveled from the United States to spend the month with them. I was happy to find that they do have all the same technology and resource as far as medical procedures and treatments as we do here at home. However, the rate limiting step for this hospital was the volume. Milad Hospital sees far more patients than its capacity allows. While there is an abundance of hospitals in the area, they are private cash pay and most local citizens rely on the care their Social Security Organization provides to them. The wait times some of these patients experience can be long, but surprisingly, they do not complain.

This was a very enlightening experience for me to see how healthcare is operated in a different country. It certainly makes me grateful for the environment that we have the privilege to work in. It was particularly humbling to witness the high regard we as American trained health professionals are given internationally. I certainly hope to have the opportunity to go back and do this again in the future. Most of all, I would encourage my colleagues to seek international opportunities and experience their profession in a different setting—it can be truly enlightening.

Arshia Vahabzadeh, D.O., M.P.H., Iran Clerkship
RIDA KHAN: YUCATAN EXPERIENCE

As we traverse forth into the fields of health, it is increasingly important for students to experience and understand medicine in diverse settings. The Institute of Global Health not only emphasizes this importance, it allows students to take part in these experiences. This past spring break, our small group of undergraduates and medical students traveled to Merida, Yucatan, Mexico for an exciting journey. We were essentially sponges; we soaked up medical knowledge, witnessed extraordinary surgeries, and connected health back to the Yucatan population.

Each morning we went to a different hospital; the settings ranged from private to public to rural. In each setting we not only observed medicine but were able to gain a closer interaction. This ranged from standing five feet away from a neurosurgery to applying pressure to a patient’s body for osteopathic manipulative medicine. From these diverse interactions, our day continued to lectures from practicing physicians in Merida. These lectures held an evenly important role to highlight and connect the role of medicine to the local population.

Further, with our full cultural immersion, IGH truly knew how to provide us with a holistic experience. We enjoyed meals and excursions alongside our new friends in Merida, building bonds both personally and professionally. It is amazing to see how our university has established cross-border relationships with physicians in Merida, and I have come to appreciate the value and potential of these bonds. In one week, I brought my appreciation for the Yucatan’s culture and people beyond a superficial perspective, which enhanced my view of Mexican healthcare systems and the local patients’ experience. With its applicative nature, this beyond textbook experience is valuable for students at all levels interested in medicine and global health.

Rida Khan, Undergraduate Junior at MSU

VRAJ TRIPATHI: SAN PEDRO DE MACORIS

During this past spring break, I was fortunate to travel to San Pedro de Macoris, Dominican Republic to participate in my first medical service elective on the island nation. While in the Dominican Republic, I contributed alongside fifteen osteopathic medical students and four physicians from Michigan State University College of Osteopathic Medicine to help diagnose, treat, and educate patients in rural communities. During our tenure there, we were able to serve upwards of 400 patients, most of whom lived in bateys. Most of the individuals we helped treat in the bateys were of Haitian origins and were brought over to the Dominican Republic to work in the sugarcane fields. When brought over, many were stripped of citizenship and left in desolate conditions with fewer public health resources as compared to the rest of the population. This experience helped open my eyes to realize that so many individuals in countries abroad are unequipped with the same resources that the United States is fortunate to have. While patients in the United States may be looking forward to their next routine physical, MRI, or CT scan, in other countries, individuals are struggling to find their next meal, let alone worry about having adequate access to healthcare. This opportunity gave me great insight into the healthcare system in the Dominican Republic and allowed me to do a comparative analysis of it with that of the United States. I hope to be able to return sometime again during my medical education or residency training.

One of the foremost reasons I chose to pursue my graduate education at MSUCOM was due to the expansive global health opportunities offered by the Institute for Global Health. My passion and drive in medicine is to work towards lessening health care disparities that exist both within my local community and in underdeveloped nations abroad. This experience over my spring break helped reassure why I chose to become a physician in the first place—to serve and help heal others. Now, as the newly elected president of our International Osteopathic Medicine Organization (IOMO) at MSUCOM, I will continue to be an advocate for global health alongside other osteopathic medical students in an effort to mitigate disparities in healthcare that exist around the world.

Vraj Tripathi, OMS I, Dominican Republic, 2020
FCM 640 and FCM 650: Adding International Experiences for Students—Global Preceptorships

FCM 640 and 650 are courses in principles of family medicine for the second-year COM students. In both classes, students are placed in the offices of primary care physicians. The students observe and participate in the delivery of quality and evidence-based primary healthcare. Students can practice and refine skills in data gathering, communication, physical examination, medical documentation, differential diagnoses development, physician-patient relationships, clinical problem solving, ethical decision making, patient education, and lifelong learning.

In the past, all students had domestic rotations. As more students are interested in global health, medical experiences and the Department of Family and Community Medicine (FCM) have decided to add an international component to these two courses, as global Preceptorship. The students will be able to complete these two courses in selected countries.

IGH is collaborating with FCM to implement the global Preceptorship as early as in spring 2021. Students can choose from five countries: Belize, Cuba, Dominican Republic, Guatemala, and Mexico. There will be more countries for students to choose from in the future, such as Costa Rica and Germany.

IGH will implement the programs in each country with a high quality of learning that meets the COM curriculum requirement and standard. All the programs will be led by COM faculty. IGH will select local doctors and provide proper support to guarantee a quality program of sound experiences in medical skills and cultural learning for our students. The global preceptorship will lay a foundation for those who plan to take COM global clerkship rotations down the road.

IGH recently surveyed second-year students to understand students’ needs better and plan the programs in 2021. Results showed 24% of the students want to participate in the international preceptorship programs in 2021. However, with the continuing disruption of COVID-19 globally, international travel remains a big question for international activities. Nevertheless, IGH will continue to work on program details and prepare for the program’s inception.

AFCM-MSU Work Towards a World-Class Military Medical School and International Accreditation

AFCM-MSU is an academic five-year cooperative project that was established in 2017 between Michigan State University College of Osteopathic Medicine (MSUCOM) and the Armed Forces College of Medicine (AFCM) in Egypt.

The primary goal is to revise their medical curriculum to achieve a world-class military medical school with international accreditation. The AFCM of Egypt is pursuing the development of the best practices in medical education that will result in the training of high-quality physicians and researchers for the Egyptian Armed Forces. The broader goal of the project is to achieve five objectives: medical education curriculum revision, technology enhancement, and learning (ET/IT), in addition to the professional faculty development, accreditation readiness, and clinical and diagnostic medical skills. Such goals require the following approaches:

1. A Five-year consultative agreement with AFCM to provide medical school curricular revision; and to support AFCM’s desire to transform from the current “Legacy Curriculum” (6+1) to a new curriculum, (5+2).

2. Updating the medical education curriculum to meet the needs of AFCM and to position AFCM graduates to excel on the United States Medical Licensing Examination (USMLE), which enables AFCM medical students and graduates to access Accreditation Council for Graduate Medical Education (ACGME) programs in the USA for residency training.

3. Enhancing information technology for faculty and students with technical support through development of a learning management system.

4. Supporting AFCM leadership in developing the pedagogy for a world-class faculty in medical education, public health, and research.

5. Supporting AFCM’s efforts to gain international accreditation by National Authority for Quality Assurance and Accreditation in Education (NAQAAE).

Accreditation will ensure graduates to access ACGME training in the US and to be recognized as conforming to the USA standards for medical school graduates. The Educational Commission for Foreign Medical Graduates (ECFMG) requires medical schools outside the United States to be accredited by their national accrediting authority by 2023 for graduates of that university.
In September 2019, seven countries from Latin and South America were invited to Michigan State University (MSU) by the Institute for Global Health (IGH) for a three-day conference. The results of the research conference were the establishment of four online Virtual Institutes for continuing to partner in education and research. Research partners decided upon four Virtual Institutes: Psychosocial Determinants of Health, Tropical Medicine/Infectious Diseases, Water Quality/Waste Management and Ecology.

Over the first months of 2020, IGH worked on developing infrastructure and designating a chair for each of the Institutes. To ensure the virtual institutes has administrative support, IGH has designated Sabrina Vieyra as the Project Coordinator.

Dr. Robert Paulino, from Universidad Iberoamericana is chairing the Infectious Disease/Tropical Medicine Virtual Institute. He is an M.D, a researcher, a specialist in virology and Director of the Institute for Tropical Medicine and Global Health at UNIBE in Dominican Republic. Dr. Mieka Smart, in the College of Human Medicine at MSU is chairing Psychosocial Determinants of Health. She is an assistant professor in the College of Human Medicine at MSU, with appointments in the Division of Public Health and the Department of Epidemiology and Biostatistics. She is also the director of the College of Human Medicine Leadership for the Medically Underserved (LMU) certificate program with broad experience in study abroad programs in Latin America. Dr. Irene Xagoraraki, from the College of Engineering at MSU is chairing the Water Quality/Waste management Institute. She is an Associate Professor for Environmental Engineering. Her research program is focused on water quality engineering, emphasizing protection of public health and prevention of waterborne disease. Finally, Dr. David Macfarlane, from the MSU College of Agriculture and Natural Resources, will be leading the Ecology Virtual Institute with a focus on Forestry and Bee-keeping and other environmental/ecological issues. Dr. Macfarlane is a Professor of Forest Measurements and Modeling and Director of Undergraduate Studies in the Department of Forestry.

These virtual online institutes will bring together researchers in Latin and South America with MSU faculty to collaborate on some of the most vexing problems that confront society today.

Gobierno de Yucatan (SIIES), Universidad Cesar Vallejo, Universidad Autónoma de Yucatan, Universidad Iberoamericana, Universidad Marista and Armed Forces College of Medicine in Egypt are among the first members to join the Consortium to collaborate the Virtual Institutes.

In the midst of the global pandemic, COVID-19 research has developed into one of the projects focusing on water virology. During the first virtual meeting of the Water Quality Institute on June 25th, Dr. Xagoraraki presented a path for research to identify COVID-19 and other viruses utilizing wastewater sampling in urban and rural areas. The goal? To predict the next outbreak and prevent the spread of Covid-19. After education on the needed knowledge, sampling activities and laboratory requirements, researchers from Mexico, Peru and Dominican Republic are utilizing their research facilities to apply the same collection and detection process in their communities.

During the coming months, additional meetings for the virtual institutes of Psychosocial Determinants of Disease, Ecology and Tropical Medicine/Infectious Disease took place to define the research and education opportunities the members will likely work on.

The virtual institutes are essential for the ERCA to reach new heights on regional collaboration. These are exciting projects, as the tools they provide will help all the member institutions to develop research focused teams to address complex problems.

The Consortium is in its first year with many potential research opportunities moving forward.

If you would like to know more about how to participate in our virtual institutes contact us at igh@msu.edu or visit us at https://ighealth.msu.edu/
The leadership of IGH, Dr. Cunningham and Mr. Chung, visited Somaiya Medical School in Mumbai and Bibada Trust Hospital in Gujarat, India in January 2020. This visit was collaborated with Prof. Wilkins in College of Vet. Med. (CVM), Dr. Chandra in James Medicine College (JMC), and Ms. Chembathi with Office for Education Abroad (OEA) at MSU. During this visit, there were discussions of possible collaborations related to medical training for MSU students, community service efforts, and possible research projects at Bibada Trust Hospital. Opportunities with Somaiya Medical School in global health, biomedical engineering, and infectious disease were also discussed. In addition, Department of Physical Medicine at Somaiya Medical School expressed their interests in a possible training program at IGH.
UPCOMING EVENTS (C.U.G.H)

12th Annual CUGH Conference: Addressing Critical Gaps in Global Health and Development

The 12th Annual CUGH Global Health Conference | Virtual
Main Conference March 12-14, 2021 | Satellite Sessions March 1-11, 2021

Conference Tracks
- Addressing the Social Determinants of Health
- Covid-19, Emerging Infectious Diseases, & Other Communicable Diseases
- Politics, Law, Corruption, Human Rights, Governance, Diplomacy, Strengthening Public Institutions
- Planetary Health, One Health, Environmental Health, Climate Change and Pollution
- Strengthening Health Systems, Public Health, Primary and Surgical Care
- Non-Communicable Diseases
- Translation and Implementation Science, High Impact Development Initiatives, Bridging Research to Policy, Reforming Academia

The conference virtual platform will feature:
- live and taped presentations by speakers from around the world
- the ability to question speakers and engage with other registrants in real time
- the ability to break out into discussion groups
- live engagements with exhibitors
- Our virtual poster platform will enable high-resolution posters to be uploaded and presenters to record a video presentation. Conference attendees will be able to engage poster presenters. Once a poster is accepted, a presenter will have to register for the conference.
- a film festival, communications training and more

Keynote speaker:
- Dr. Anthony Fauci, Director National Institute of Allergy and Infectious Diseases

Visit https://www.cugh2021.org for more information