

2019-2020 INTERNATIONAL MEDICAL OUTREACH

== ANNUAL REPORT ==

Enhancing global access to healthcare services and educational opportunities



DEAR FRIENDS AND COLLEAGUES,

The partnership between the International Medical Outreach (IMO) program at Atrium Health and Heineman Medical Outreach, Inc. (HMO) provides much-needed healthcare and educational assistance to people in 45 countries on five continents.

This is one reason why the passing of Dr. Francis Robicsek this year was felt so deeply around the world. His achievements in the realm of cardiothoracic and vascular care were legendary, as was his fierce passion to help disadvantaged people gain access to an enhanced quality of life and healthcare. These characteristics embodied the man we all grew to love.

Fortunately, the programs he worked so hard to advance are strong and well-positioned for continued success. Heineman Medical Outreach remains on firm financial footing, and the collaboration between Atrium Health and Heineman has never been stronger. The leadership transitions have been smooth and seamless.

As the COVID-19 pandemic continues to affect our world, we are proud to report that IMO/HMO is continuing its work, both locally and internationally. This resolve and commitment is a genuine testament to the solid future that lies ahead.

In the pages that follow, you will read about an impressive array of initiatives that occurred during 2019 and 2020. These included a new cardiac catheterization laboratory in El Salvador and a new echocardiography and adult intensive care facility in Guatemala. We once again supported cutting edge medical research; sponsored valuable clinical education opportunities for foreign nationals; and facilitated critical public health screenings globally. IMO also recognized as “volunteers of the year” a team of nurses from a donor organization who brought critical care equipment, education and training to Belize.

As we look ahead, it is clear that our mission to close the global gap in healthcare and educational inequities has never been more important. Without private and industry backing, our mission would not be possible. We welcome and appreciate your continued interest and support.



Steven A. Robicsek, MD, PhD
President
Heineman Medical Outreach, Inc.



THERESA R. JOHNSON
Director
International Medical Outreach

FRANCHISE ROBBERIES





FRANCIS ROBICSEK, MD, PHD

Honoring his Legacy

Since April, tributes continue to be shared from all over the world, expressing gratitude for the life of Francis Robicsek. From early in his childhood, it was clear that this man had the foresight to set goals that would impact communities far from his hometown of Miskolc, Hungary. Dr. Robicsek held true to his mantra for “becoming the absolute best in your field of work, and then seeking other things to be the best at doing.” Committed to providing the best in cardiac and patient care throughout his more-than-66-year career in healthcare, Dr. Robicsek directly impacted the lives of more than 60,000 patients, their families, and the many communities they came from.

His reputation for providing the highest quality of care and compassion allowed Dr. Robicsek to use his talents, intelligence, and tireless determination on other projects he was interested in pursuing. He also excelled in healthcare administration, business and practice management, teaching, research, writing, publishing, inventing, mentoring, and sponsorship.

A master in problem-solving and finding the resources needed to accomplish the task, Dr. Robicsek triumphed in achieving his goals for healthcare. While Charlotte and the Carolinas became his “home base,” Dr. Robicsek was a devoted citizen of the world. His efforts to expand cardiac care at Atrium Health and

Heineman Medical Outreach led to the creation of Atrium Health’s department for International Medical Outreach (IMO). Together with Heineman, this partnership flourished.

A phrase used most frequently by his colleagues was that Dr. Robicsek was a true “Renaissance Man,” as well as a “cat with nine lives.” He is also revered for being a highly skilled clinician and surgeon, a compassionate caregiver for all, a loyal friend, an exceptional colleague, and a devoted and loving husband, father, and grandfather.

While Dr. Robicsek laid down his scalpel in 1998, at the “young” age of 75, he remained actively engaged in ensuring patient access to the best healthcare. He continued working full time, until his passing, to lead efforts to deliver this care at both Atrium Health IMO and Heineman Medical Outreach, Inc. Those efforts were recently validated by his colleagues at the American College of Surgeons. He was honored as the 2017 recipient of the “Humanitarian Award” for his lifelong dedication to caring for underserved populations in the U.S. and abroad. This was an honor he was most proud to receive.

As many of us look for ways to ensure Francis Robicsek’s legacy continues to inspire future generations, we are pleased to dedicate this report in his memory. He will be sorely missed, but his passion for caring for others will go on.



IMO AT A GLANCE

Mission

The International Medical Outreach (IMO) program is a collaborative partnership between Heineman Medical Outreach, Inc. and Atrium Health. IMO provides medical and educational assistance globally to promote sustainable healthcare services and enhanced standards of living in underserved communities.

Impact

Over a period of more than six decades, the IMO program has touched the lives of countless patients and families in 45 countries. IMO has operated in its current form since 2010, with core services that include the furnishing of new, used and refurbished medical equipment to hospitals and health clinics. IMO also provides equipment and technology to primary and secondary schools, while offering free educational opportunities that enable international medical personnel to enhance their knowledge and skills. All of this work is made possible by the generous financial and logistical support of individuals, businesses, charitable institutions and other non-profit partners around the globe.

Commitment

Unlike most charitable organizations, IMO spends 100% of its donated funds on designated projects. IMO does not use donor contributions for fundraising or administrative expenses.

9-Year Impact

>1 Million

adult and pediatric patient lives
touched

538,768 pounds

of medical and computer
equipment recycled

>\$36.2 Million

of medical and electronic
equipment donated



ECHO NETWORK EXPANDS

With a New Facility in El Progreso, Guatemala

IMO completed arrangements during 2019 to open the 14th echo station in the Central American Echo Network, this one located in El Progreso, Guatemala. Also, as the year 2019 drew to a close, three additional echo locations were in the planning stages.

The process of creating this network began in 2011. Since that time, more than 35,500 echo scans have been performed in facilities using IMO-donated equipment. The network has played a vital role in enhancing cardiac care, particularly in rural areas that lack access to these types of services. Heart disease is the number one non-communicable cause of death in Guatemala, where the network originated, and cardiac echo is a comprehensive, non-invasive test that can aid in the early detection of heart disease.

The echo station in El Progreso opened for business in August 2019. After only two days had passed, Julia Mercedes Cortéz,

the newest echo sonographer added to the network, detected a severe aortic stenosis in a 46-year old patient. Clinicians noted that if this patient had had to drive to Guatemala City to be examined, she likely would not have survived the trip.

Fernando Paiz, Vice President of Heineman International Outreach, Inc., says this is one more example of how IMO equipment and IMO-trained personnel are making a difference and saving lives, not only in Guatemala but throughout Central America.

“Every time we have an opportunity to open an echo station of this type,” he says, “we see firsthand how the expanded access to medical services can make a life or death difference for people living in surrounding communities. I couldn’t be prouder of the clinical personnel and technicians who help to bring these new facilities online, along with those who deliver face-to-face care on a daily basis.”

1. UNICAR - Guatemala City
2. Quetzaltenango
3. Escuintla
4. Cuilapa
5. Totonicapán
6. San Benito Petén
7. Quiché
8. Zacapa
9. Cobán
10. San Salvador
11. Copán Ruinas
12. Belize City
13. Antigua, West Indies (Vascular & Cardiac)
14. El Progreso
15. Carolinas Medical Center Charlotte, NC





“...we see firsthand how the expanded access to medical services can make a life or death difference for people living in surrounding communities.”



Johanna Markiewitz, Local Middle School Teacher, Travels to Guatemala with IMO

Atrium Health achieved a “first” during 2019, when it collaborated with Union County Public Schools to send a local teacher to Central America. Johanna Markiewitz, who works for the Health Sciences Academy at Monroe Middle School, was selected to participate in an IMO medical trip. The trip had a dual purpose of rewarding her for her ongoing interest in IMO’s



mission, while providing firsthand experiences that she can share with the students in her classroom.

In May 2019, Markiewitz traveled to Guatemala City, where she spent a day observing operations

at IMO’s partner hospital, UNICAR. She spent two days with FUNSEPA, the IMO partner organization that refurbishes and distributes computers for use in rural national

public schools. She also spent two days in the city of Escuintla, accompanying volunteers from Atrium Health who were providing on-site medical education and training.

Markiewitz is a credentialed science teacher who had previously traveled extensively in Peru, doing environmental research and programming. This was her first trip to Guatemala, however, and she said one of the best outcomes of her experience was “the opportunity to cultivate so many rich and valuable relationships in that country.”

Michael Lutes, President of the South Market, is pleased that Atrium Health enjoys such a positive working relationship with the Health Sciences Academy. He is thankful, as well, that one of the truly outstanding educators in Union County had an opportunity to see firsthand how healthcare services are delivered in Central America. “Our involvement in this joint initiative was an important milestone for both the school district and Atrium Health,” he said. “As we look for ways to enhance the quality of healthcare delivery in our own communities, it’s important to have civic leaders who can bring an international perspective.”



Critical Care Team from Edwards Lifesciences Named “Volunteer of the year”



Jennifer Henrikson and Victoria Crumpton

IMO has an annual tradition of naming an outstanding individual as “volunteer of the year.” During 2019, however, the most deserving “person” was not a person at all, but a team of volunteers from the critical care division of Edwards Lifesciences, a global company specializing in heart valve and critical care technologies.

The Edwards team traveled to Belize, along with volunteers from the Atrium Health cardiac team, to work on-site at Karl Heusner Memorial Hospital (KMH).

The 2019 trip was made possible by generous support from the Edwards Lifesciences Foundation, which also provided monitoring equipment for the hospital’s intensive care unit.

The combined group of six clinicians spent a week assisting Adrian Coye, MD, and his fellow clinicians. Dr. Coye currently serves as Consultant, Cardiothoracic Surgery and Oversight Administrator at KMH. The team also provided extensive training to clinical staff members at KMH who provide critical care for heart patients and high-risk surgical patients in the intensive care unit.

Both of the critical care nurses from Edwards Lifesciences, Victoria Crumpton and Jennifer Henrikson, described their time in Belize as a life-changing experience. And Crumpton related the following story in her correspondence with IMO:

“As we were preparing to do heart surgery on a 15-year-old girl, I looked down and realized she was scared to death. My immediate assignment was to help the heart team get prepared, but I changed focus as soon as I saw the fear in her eyes. I grabbed her hand and told her it was going to be all right.

When we took her off the ventilator, on the day following her surgery, her face lit up with a smile that warmed my heart. I’ll never forget her comment. She said, simply, “Thank you all for saving my life.”

Crumpton ended her thank you message to IMO saying, “Jennifer and I adored this experience and we were incredibly excited to be part of such an amazing team.”

EQUIPPING EL SALVADOR'S

Hospital Pro Familia to Handle Heart Catheterizations

One of IMO's most important new initiatives during 2019 was the opening of a new cardiac catheterization laboratory at the Hospital Pro Familia in San Salvador, the capital of El Salvador. This was IMO's second project in El Salvador, the first having been the start-up of an echo station in 2013.

The laboratory was set up in February, with generous assistance from Chiquita, which provided transport. In addition, personnel from the General Electric corporation and the Avante | Transtate Equipment Company teamed up to fulfill the exacting requirements of getting the necessary equipment assembled and tested on-site.

Volunteers from Atrium Health traveled to El Salvador to provide on-site training for the cardiac catheterization team at Pro Familia. The training included a comprehensive overview of cardiac catheterization procedures and equipment utilization. The volunteers focused in particular on the unique technical features of the equipment being deployed.

The Hospital Pro Familia in San Salvador is an outgrowth of a clinic founded in 1964, which has since expanded to include 11 healthcare facilities strategically located throughout the country. In addition to its cardiac catheterization capabilities, the hospital offers specialty services in general and pediatric surgery and endovascular therapy.

Pro Familia is regarded as one of the premier private, non-profit clinical networks in El Salvador.



IMO PARTNERSHIP WITH CHIQUITA IS A “MARRIAGE MADE IN HEAVEN”

If you mention the word “Chiquita” to the average person, they will probably think of tropical fruit. If you mention “Chiquita” to anyone at IMO, however, they will think of the immense value of the IMO-Chiquita Brands International Sàrl partnership.

IMO is blessed to have a close working relationship with Chiquita, one which takes advantage of the huge infrastructure the company has created to import food products into the United States. The company’s containers arrive full, of course, but must then be returned to Central America for re-use.

Many go back empty, but in recent years an increasing number have returned full of IMO medical equipment and computers. Since 2013, in fact, Chiquita has loaded and shipped no fewer than 90 containers for IMO, and the value of these in-kind donations is extraordinary. The commercial cost to send an equivalent container, for example, is roughly \$7,000. And the inland transportation cost from port of entry to the final destination can run another \$1,000 to \$2,000.




If you do the math, you can see the significance of Chiquita’s role in enhancing the quality of healthcare and education throughout Central America. For the leaders of this firm, the term “corporate social responsibility” is more than just a catchphrase. This company lives its values every day, going beyond the call of duty to support IMO’s mission and many other worthwhile civic initiatives. IMO has been able to expand its reach, completing many donations that would not have been possible without the support of Chiquita.

Raúl Gigena Pazos and the entire leadership team at Chiquita are making a huge difference for the people of Central America, and all of us at IMO are profoundly grateful for their efforts.

FERNANDO PAIZ

Vice President
Heineman Medical Outreach, Inc.





**The following letter
was addressed to IMO in care
of Dr. Geoffrey Rose and Theresa
Johnson. The writer, Atrium Health
nurse Angel Whitlow, pictured,
participated in the 2019 mission
trip to Karl Heusner Memorial
Hospital in Belize.**



NURSE DESCRIBES IMPACT OF MISSION TRIP TO BELIZE

I am writing to give thanks for the opportunity to be part of the heart screening in Belize. It was an experience I will not soon forget, and I hope to be part of this outreach for many years to come.

The clinicians we were working with were so thankful for our help and support. Hundreds of patients had lined up in the heat, with no air conditioning, in the middle of the summer, before 8 o'clock in the morning, to get their hearts checked. To see the level of patience they exhibited, as they waited for their numbers to be called, was unprecedented.

I saw a young child who was diagnosed with a heart murmur and congenital defect that will now go on to have a lifesaving procedure. I saw a mom who was immensely relieved to put her child in the hands of a caring and qualified cardiology surgeon.

I especially loved the patient education handouts we were able to provide, all written in their native language. As an educator, I know the value of being able to hand people personalized information, so that they can learn to manage their conditions.

My hope is that these screenings will continue on a regular basis. IMO needs to keep spreading the word, keep education moving forward, and keep checking the hearts of these beautiful people who don't have the privileges we take for granted.

It was an honor to represent Sanger Heart & Vascular Institute on this trip. I no longer feel like a visitor to Belize. I feel like a lifelong friend of Belize.

All my best,
ANGEL WHITLOW, MSN, FNP-C
Heart Failure & Hypertrophic Cardiomyopathy Clinic
Sanger Heart & Vascular Institute

IMO WORKS WITH FUNSEPA TO COLLECT USED COMPUTERS FOR RURAL PUBLIC SCHOOLS

Since 2013, IMO has been collecting used computers for shipment to the Sergio Paiz Andrade Foundation (Funsepa) in Guatemala City. Funsepa has been operating since 2004 to collect, donate and install refurbished desktops, laptops and tablets in Guatemalan public schools. The Foundation was set up to honor the memory of business leader Sergio Paiz Andrade, a passionate believer in the power of technology as a tool for economic development.

To date, more than 26,400 computers have been successfully refurbished for use in more than 1,600 rural schools. Based on known patterns of utilization in those schools, it is estimated that well over 550,000 students have been served by the program. According to Jocelyn Skolnik, Funsepa's executive director, the value of this equipment would total some \$12.1 million if purchased new.

Fewer than 10 percent of the teachers in the schools served by Funsepa have had any prior training or background in instructional technology. As a result, participating teachers undergo a five-week period of Funsepa-sponsored training, approved by Guatemala's Ministry of Education. Topics include basic computer maintenance, digital literacy, and instructional technology. Since the program began, more than 90,000 teachers have had an opportunity to benefit from Funsepa's different training courses.

Skolnik said Funsepa was pleased to establish another important partnership in Charlotte when it established an internship program at UNC Charlotte. Students there are now helping to collect used-but-usable computers that can be repurposed for use in Guatemalan schools.

"We owe a huge debt of gratitude to IMO for being a major supplier over the years," she said. "Since demand continues to outstrip supply, however, we were pleased to develop another dependable source for used computers and equipment."





Sulma Rosalva Rodas Carreto (on right)

ELEMENTARY PUPIL IN GUATEMALA ENJOYS HELPING HER CLASSMATES

"My name is Sulma Rosalva Rodas Carreto and I study at the EORM Caserio Toj Wabil school. Our school is located in the municipality of Palestina de los Altos which is in the department of Quetzaltenango. I currently in elementary school, in fifth grade. Now that our school has a computer lab and we are using it with my teacher, I feel much more encouraged to learn. Since I am good at my schoolwork, and since I can speak in the Mam language, I am helping my classmates learn to use the computer. My teacher cannot speak this Mayan language and the children in the younger grades do not understand the instructions in Spanish. I like giving the instructions to the children so they can learn to use the computer and review math on the computer. I like it because that way it is easier for them to learn."

(NOTE: EORM is short for "Escuela Oficial Rural Mixta," the nomenclature used to describe a rural coed public school in Guatemala. The school is located in "Caserio Toj Wabil," which means the village of Toj Wabil. Although the business language of Guatemala is Spanish, there are a total of 23 Mayan languages spoken throughout the country, of which "Mam" is one.)

IMO EDUCATION AND TRAINING PROGRAMS ENSURE PATIENTS A HIGH QUALITY OF CARE

One of the hallmarks of IMO's mission is that it not only donates healthcare equipment that would not otherwise be available, but also helps to ensure that clinicians on-site can sustain a high quality of care for their constituents.

To achieve this goal, IMO has long supported a variety of educational initiatives that take American clinicians to Central America and vice versa. Those traveling to the United States are hosted by Atrium Health's Carolinas Medical Center (CMC) in Charlotte NC.

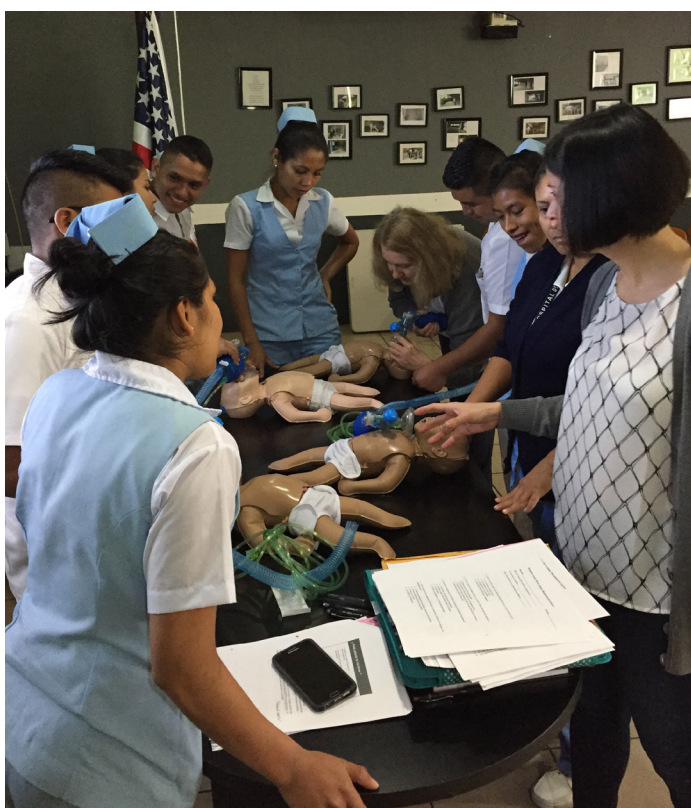
Atrium Health residents who wish to participate in one of IMO's programs abroad first attend a two-and-a-half-week intensive global health training course. After completing this prerequisite in 2019, four residents from the Levine Children's Hospital Department of Pediatrics attended a one-month elective at the National Public Hospital of Escuintla in Guatemala. They performed clinical duties in the hospital's Peggy Hynes Neonatal and Pediatric Intensive Care Units, as well as the adult and pediatric emergency departments.

The residents involved – doctors Olivia Francis, Mary Howell, Matt Pearce and Krista Sirois – also delivered presentations to their Guatemalan counterparts and participated in joint research projects.

Levine Children's Hospital in turn hosted three residents from Escuintla: Claudia Chaparro, Rebeca Mancilla and Roxana Martinez. Each had an opportunity to spend a month in Charlotte.

CMC's Department of Emergency Medicine also sent three residents to Escuintla for a one-month rotation during 2019. These included doctors Javi Andrade, Emily Lupez and Katie Lupez. Dr. Denise Fraga led a two-week "ultrasound boot camp" with the help of those residents.

In addition to these programs, volunteers from Atrium Health provided basic life support classes at UNICAR in Guatemala City and the national public hospitals in Cuilapa and Puerto Barrios. Clinical education and training programs of this nature are supported by the Tarr Family Foundation.





IMO OFFERS ANESTHESIA WORKSHOP IN ANTIGUA, WEST INDIES

IMO expanded its capabilities during 2019 by coordinating a two-day workshop at Mount St. John's Medical Center on the West Indies island of Antigua. Oversight for the Mount St. John's workshop was provided by volunteers from University of Florida Health, Shands Hospital.

The purpose of the workshop, held in February, was to demonstrate and teach the benefits of using "regional" rather than "general" anesthesia. In addition to added safety and reduced expenses, these benefits include:

- Patients have less nausea, vomiting, and drowsiness.
- General anesthesia is not necessary for these procedures when regional anesthesia is performed.
- Patients' post-surgical pain can be more easily controlled.
- Patients can typically be released from the hospital or surgical center faster.
- The lack of pain and reduction of side effects from the opioids can result in a shorter stay in the recovery room, and decreases the chance of an unplanned admission to the hospital.

Participants included anesthesiologists, nurse anesthetists, general surgeons and perioperative nurses. The instructors provided lectures, demonstrations and practice using gel models. They also guided the administration of appropriate blocks on actual surgical patients by local practitioners.

IMO also continues its support for cardiac diagnoses and complex vascular graft procedures at Mount St. John's. In 2019, more than 30 vascular access procedures were performed, which is lifesaving for patients with diabetic kidney failure requiring hemodialysis. IMO expresses its gratitude for the ongoing support of W.L. Gore and Associates throughout the year. Gore and Associates, a multinational manufacturing company, donates the Gore-Tex® vascular grafts utilized in the vascular surgeries at Mount St. John's. More than 110 vascular patients have been served since IMO began working in Antigua in 2015.



NEW ICU IN TOTONICAPÁN, GUATEMALA

ONE OF MANY INITIATIVES IN 2019

One of IMO's most important projects during 2019 was the opening of an adult intensive care unit at the Hospital Departamental de Totonicapán.

IMO's relationship at this hospital dates back to 2013, when a cardiac echo station was established there. Since that time, more than 1,000 patients have received scans, diagnoses and treatments, saving an estimated hundreds of lives.

Thanks to the generous support of George W. and Ruth R. Baxter Foundation, the new, eight-bed adult ICU will serve the surrounding region of approximately 600,000 residents, including indigenous Mayan and K'iche populations. The hospital did not previously have a dedicated ICU for adults, and was utilizing three post-operative beds for that purpose.

Three volunteer engineers from the U.S. — Roy Stuedemann, Jesus Velazquez and Michael Brown — installed the ICU equipment and assisted with on-site staff training. IMO staged a ribbon-cutting ceremony in August to enhance awareness of the new ICU and acknowledge the efforts of all who teamed up to complete the project.

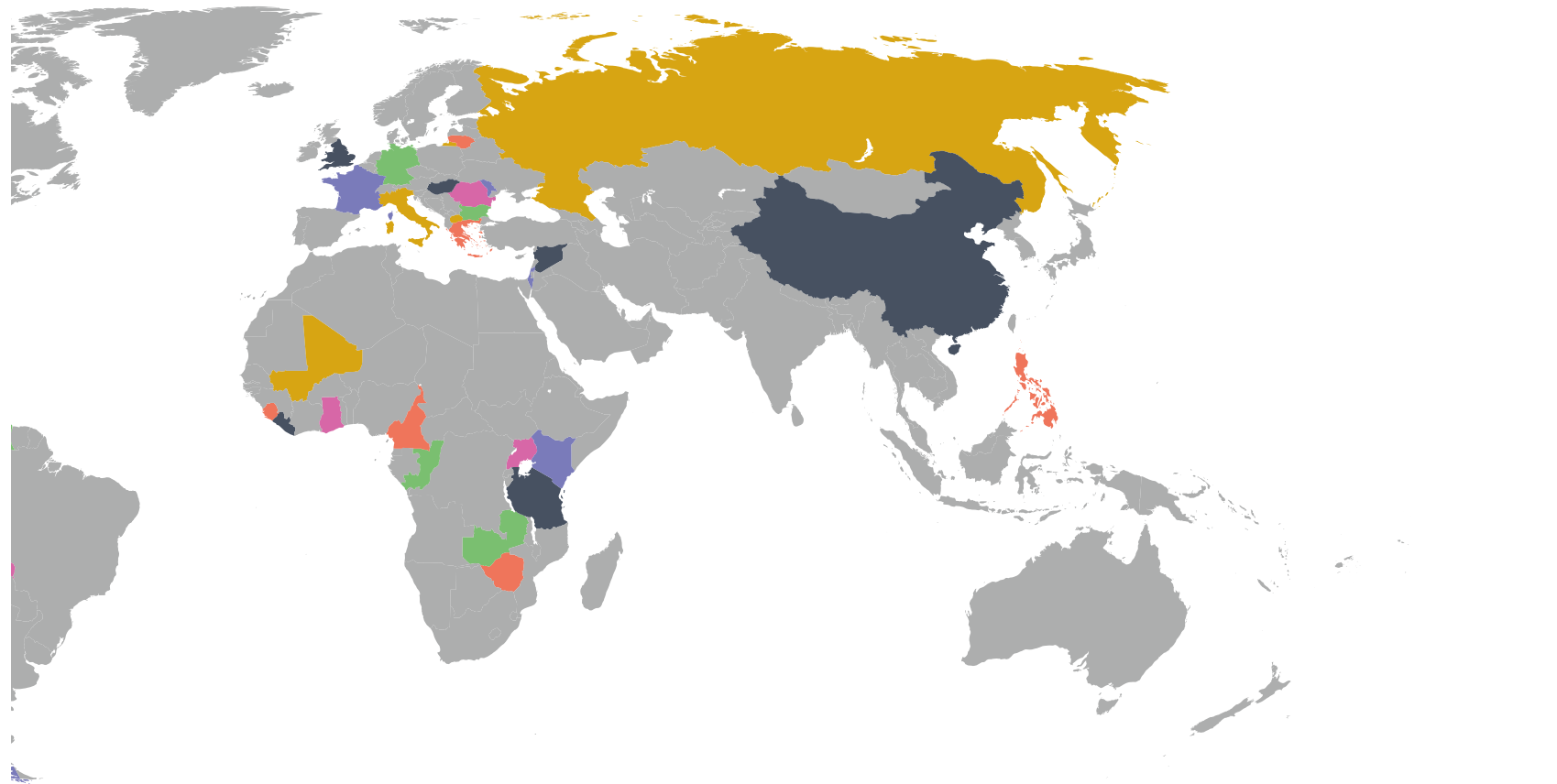


L-R, Michael Brown, Roy Stuedemann and Jesus Velazquez.

OUR GLOBAL REACH

Antigua	Dominican Republic	Haiti
Belize	Ecuador	Honduras
Bolivia	El Salvador	Hungary
Bulgaria	England	Israel
Cameroon	France	Italy
Chile	Germany	Kenya
China	Ghana	Liberia
Congo	Greece	Lithuania
Costa Rica	Guatemala	Macedonia
Cuba	Guyana	Mali
Dominica		Mexico
		Moldova
		Nicaragua
		Panama
		Philippines
		Romania
		Russia
		Sierra Leone
		Syria
		Tanzania
		Uganda
		United States
		Zambia
		Zimbabwe





ATRIUM HEALTH DOCTORS CONDUCT VITAL RESEARCH

BY JOHN M. FEDOR, MD

**CHAIRMAN OF THE BOARD OF MEDICAL AND TECHNICAL ADVISORS
HEINEMAN MEDICAL OUTREACH, INC.**



In addition to its many initiatives involving equipment and education, IMO is highly regarded for its enterprising approach to medical research.

This would not be possible without the generous support of the James H. Heineman Endowment; the Heineman Foundation for Research, Educational, Charitable and Scientific Purposes, Inc.; and the Tarr Family Foundation.

Highlighted here are three research projects that were particularly significant during 2019, given their potential for far-reaching impact. I should add that IMO's successes in research are another important part of Francis Robicsek's legacy. Dr. Robicsek was both a pioneer in cardiac care and a steadfast and dedicated researcher. His achievements in medical research provided inspiration to countless colleagues over the years.

Nilanjan Ghosh, MD, PhD



During 2019, Dr. Nilanjan Ghosh continued his efforts to find more effective ways to treat patients with Non-Hodgkin's lymphoma.

Dr. Ghosh's specialty is studying a type of lymphoma called "Diffuse Large B Cell Lymphoma." It is the most-commonly diagnosed and potentially curable type of Non-Hodgkin's lymphoma in the United States. One of the idiosyncrasies of the disease, however, is that a large proportion of patients show promising signs of recovery after initial treatments, but then later relapse.

Dr. Ghosh notes that approximately 40 percent of the people afflicted with this malady have normal PET-CT scans after an initial course of treatment, then experience another bout of illness. Unfortunately, he says, the outcomes of patients who relapse are poor.

In 2017, Dr. Ghosh began a pilot project to better understand the role that "immune biomarkers" play in predicting relapse among patients who seemingly respond well to standard chemotherapy. "We have preliminary evidence of biomarkers in these high-risk patients that may predict a future clinical relapse," says Dr. Ghosh, whose pilot study is being submitted for publication. "Early identification of an impending clinical relapse may allow timely intervention and improvement in clinical outcomes.

Jeko Madjarov, MD



Another beneficiary of foundation support during 2019 was Dr. Jeko Madjarov. Dr. Madjarov is a well-recognized expert in the field of complex aortic surgery and reconstruction of the

chest wall. Accordingly, he has worked for many years to assist patients suffering from “Marfan’s Syndrome.”

Marfan’s Syndrome is a genetically transmitted disease that frequently afflicts patients at a young age, often before age 40. Those who are candidates for medical intervention typically undergo a complex aortic procedure, which—despite sometimes being labeled as “routine”—carries considerable risks.

Dr. Madjarov has made significant progress in understanding the complexities of external aortic wall reinforcement. This means finding better ways to “wrap” the wall of the aorta, to make sure it doesn’t leak after a medical intervention. These techniques also benefit elderly patients who may not be candidates for more invasive forms of open-heart surgery.

As a result of his collaboration with Dr. Robicsek during 2019, Dr. Madjarov placed articles in two prestigious peer-reviewed medical journals. He also had an opportunity to present his findings at the 2019 annual meeting of the European Society for Vascular Surgery.

Lee Morris, MD, MSPH, DTM&H



Dr. Lee Morris, a highly regarded pediatrician at Atrium Health, continued her research to learn more about microbial resistance to antibiotic drugs. This is a matter of growing concern worldwide, particularly in countries like Guatemala,

which have welcomed outside help in developing antimicrobial stewardship programs

During 2019, Dr. Morris led a pilot project to reduce pediatric antibiotic resistance, in partnership with public hospitals in Escuintla and San Benito. The project included education, needs assessments and a detailed analysis of bacterial resistance rates. All aspects of her research were designed to help medical residents and faculty in Guatemala learn more about antimicrobial stewardship and the effectiveness of current treatment protocols.

As a testament to the timeliness and quality of Dr. Morris’s work, her research has been recognized by both the World Health Organization and the Pan American Health Organization. As a result, she is now actively collaborating with both of those groups, as well as the Guatemalan Ministry of Health. “These cooperative opportunities strengthen our work,” she said, “and will enable us to have an impact far beyond the borders of one individual country.”



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 Office of the President of Guatemala
 Paul and Elizabeth Younts Trust
 Philips Healthcare Solutions
 RESTORE
 Rise Against Hunger
 Rodriguez Family Foundation
 Rotary International, Guatemala
 Sisters of Mercy of the Americas
 Secretaría de Obras Sociales de la Esposa del Presidente (1st Lady of Guatemala Foundation)
 St. Jude
 Surgeons of Hope
 Tanzania EMC
 Tarr Family Foundation
 University of Florida, Gainesville
 University of Florida Health Shands Hospital
 University of North Carolina, Chapel Hill
 W. L. Gore and Associates

2020 PROJECTS: PROGRESS REPORT

COVID-19 RESPONSE

In response to a request for COVID-19 assistance by the Guatemalan Ministry of Health, Atrium Health generously donated to Heineman 250-new field hospital beds with mattresses. Heineman board member Fernando Paiz, Guatemalan volunteer Wendy Flores Montenegro, and Chiquita Brands International SÁrl coordinated the effort to ship three 40-foot containers to Conred, the disaster relief agency under the Guatemalan Ministry of Health. Students from the Charlotte Mayor's Youth Employment Program helped to prepare and load the Chiquita containers. These much-needed beds are being used to establish field hospitals in Guatemala that will care for COVID-19 patients. Conred will store the beds after the pandemic for future disaster relief efforts.

Additionally, in response to COVID-19, Heineman loaned equipment (pro bono) to local hospitals in North Carolina. The entire Heineman staff worked in an "all hands on deck" fashion to clean, inventory and assimilate the equipment. Engineers spent three weeks at the Heineman warehouse performing preventive maintenance and making any necessary repairs. The equipment on loan includes the following:

- Anesthesia machines
- Ventilators
- Infusion pumps
- Defibrillators
- Vital sign monitors and other life-saving equipment



PROJECTS COMPLETED

GUATEMALA

National Public Hospital Jalapa

- Shipped: Labor/Maternity and Intensive Care Unit Equipment

Technology to Educate – FUNSEPA

- Shipped: Computers

BELIZE

Karl Heusner Memorial Hospital

- Shipped/Installed: Cardiac Catheterization Laboratory
- Shipped: Operating Room Equipment
- Shipment Pending: Recovery/ICU Equipment

PROJECTS UNDERWAY

Central American Cardiac Echo Network Expansion Project

- Belize and Guatemala: Adding adult and pediatric stations

Mobile Clinic

- Serving rural communities in Guatemala

Clinical and Public Education

- Belize and Guatemala: Implementing virtual educational platforms

Technology to Educate – FUNSEPA

- Continue computer collection and shipments
- UNC Charlotte student internship program



Atrium Health

Atrium Health is a nationally recognized leader in shaping health outcomes through innovative research, education and compassionate patient care. Headquartered in Charlotte, North Carolina, Atrium Health is an integrated not-for-profit healthcare system with over 55,000 teammates at 36 hospitals and 900 care locations. With locations throughout the Carolinas as well as Georgia, Atrium Health is a leading-edge innovator in virtual care and mobile medicine. It provides top-ranked pediatric, cancer and heart care to patients, as well as specialized musculoskeletal programs and organ transplants. Ranked among U.S. News & World Report's "Best Hospitals" in eight different specialties, it has also received the American Hospital Association's Quest for Quality Prize. Its flagship hospital, Atrium Health's Carolinas Medical Center, is the region's only Level I trauma center and is consistently rated among the nation's best. With a commitment to every community it serves, Atrium Health seeks to improve health, elevate hope and advance healing – for all. In 2019, Atrium Health provided more than \$1.65 billion in free and uncompensated care and other community benefits.

AtriumHealth.org



HEINEMAN
MEDICAL
OUTREACH

Heineman Medical Outreach, Inc. (also known as The Heineman Foundation of Charlotte) was established in 1943. Heineman oversees a variety of research and humanitarian projects focused on providing medical assistance and public educational support throughout the world. Located on the campus of Carolinas Medical Center in Charlotte, NC, Heineman works closely with Atrium Health to provide medical equipment and supplies to countries in need. Heineman also provides medical clinical education and training, across all disciplines, to care teams based abroad. Heineman is a 501(c)(3) organization, and contributions are tax deductible.

Heineman.org

International Medical Outreach Program

P.O. Box 35457 | Charlotte, NC, 28235

Heineman.org | 704-374-0505