



**2023-2024 Update
From Dr. Roger Härtl**

A New Era for Our Tanzania Project

This year marked the beginning of a new era for our neurosurgical project in Tanzania. The pandemic is in our rearview mirror, allowing us a full return to in-person training in-country. For 2023-2024 we have a new Global Neurosurgery Fellow, Dr. Magalie Cadieux, who maintains a full-time presence on the ground, training doctors and other health professionals on a daily basis. Dr. Cadieux picks up from our 2022-2023 Global Fellow, Dr. Julie Woodfield, who organized our hands-on Global Neurosurgery Course there in March (more about our fellows on page 2). We now have a robust program bringing Tanzanian staff to New York to work with me. They then bring that learning back home after several months of intense study here (more about that on page 3).

This year's course was our ninth, and our largest yet in terms of both faculty and attendees. We were honored to have 76 international faculty members come in for the course, traveling not only from within Tanzania and nearby Kenya and Uganda, but also from Turkey, Malaysia, Pakistan, Switzerland, the United Kingdom, the Netherlands, Austria, Belgium, Canada, and, of course, our team from the United States.

We presented two full days of lectures and classroom learning, followed by three days of surgeries. Our faculty members work right in the ORs with local surgeons and support staff, teaching new procedures and adapting techniques to be effective using locally available instruments and supplies.

Our attendees filled the classroom to capacity, with 122 participants primarily from Tanzania, Uganda, Nigeria, Egypt, and Malawi. I feel so gratified to think of all our teachings spreading

out across the continent, improving health care and saving lives in multiple countries.

It was especially exciting to be able to bring some advanced technologies to the course, including virtual reality (VR) training and a new intraoperative monitoring (IOM) system. IOM gives real-time feedback to surgeons in the operating room as we maneuver around sensitive nerves near the spine. The data we receive prevents complications and leads to better outcomes. We are extremely grateful for the industry support that allows us to bring these innovations to a place where they can do so much to improve patient care. See the box on page 4 for more about the companies that support us.

We were also delighted to be able to initiate a new scoliosis program in Dar es Salaam this year (see page 3 for more on that), and to bring epilepsy education to Muhimbili National Hospital Mloganzila (see page 2.)

We are planning our 2024 trip right now and can't wait to bring another year of training to our colleagues in East Africa. Thank you!

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Neurosurgical Director, Ochs Spine at NewYork-Presbyterian/Weill Cornell Medical Center



Top to bottom: The opening of our ninth Global Neurosurgery Course; hands-on training in the OR; our chief resident Maricruz Rivera, MD, PhD, leads a virtual reality training session.

New Global Neurosurgery Fellow Now On Board

In September 2023, our 2022-2023 Global Neurosurgery Fellow, **Dr. Julie Woodfield**, concluded her yearlong experience at MOI. Stepping into her shoes is a new fellow, **Dr. Magalie Cadieux**, originally from Montreal, Canada. Dr. Cadieux earned her medical degree at Université Laval in Quebec and completed her residency training at the University of Calgary. She also holds a Master of Medical Sciences in Medical Education from Harvard University, which she pursued during her residency years. She recently completed her spine fellowship at Washington University School of Medicine and then began her Global Neurosurgery Fellowship in July 2023. Dr. Cadieux has a deep passion for medical education and global health, and she is a welcome addition to our team.

In May 2023, **Dr. Chibuikem (Anthony) Ikwuegbuenyi** completed his time with the MOI team. As a Weill Cornell Medicine-sponsored research associate, Dr. Ikwuegbuenyi maintained the traumatic brain and spinal injury databases, which are critical for researching patient outcomes. He expanded the spinal injury database to include long-term outcomes, which is vital for seeing how well people recover and live after a spinal injury. **Dr. Romani Sabas**, a medical graduate from the Kilimanjaro Christian Medical Centre, joined us in July 2023 and is continuing the work of



Above left: Dr. Woodfield and Dr. Ikwuegbuenyi with Dr. Härtl at the March 2023 Global Neurosurgery Course in Tanzania. Above right: Dr. Sabas and Dr. Cadieux with Dr. Hamisi Shabani of Muhimbili Orthopaedic Institute (MOI) in Dar es Salaam.

Dr. Ikwuegbuenyi, who is currently in New York working on research with Dr. Härtl.

Beyond Surgery: New Nursing Fellowship

As anyone who has ever been in a hospital will tell you, the inpatient experience depends heavily on the quality of the nursing care. In addition to surgical training, our program in Tanzania now includes a nursing component to further improve patient outcomes. To that end, Tanzanian nurse **Sylvia Massawe** recently spent some time in New York with us on a nursing fellowship. In addition to providing bedside care in a neurosurgical ICU, Sylvia spent her time learning details of patient clinical workup, communication with patients and families, pain management to help get patients out of bed faster, and more.

As funding allows, the Neuroscience Nursing Program will help improve outcomes for neurosurgical patients not only in Tanzania but in other low- and middle-income countries where it is greatly needed.



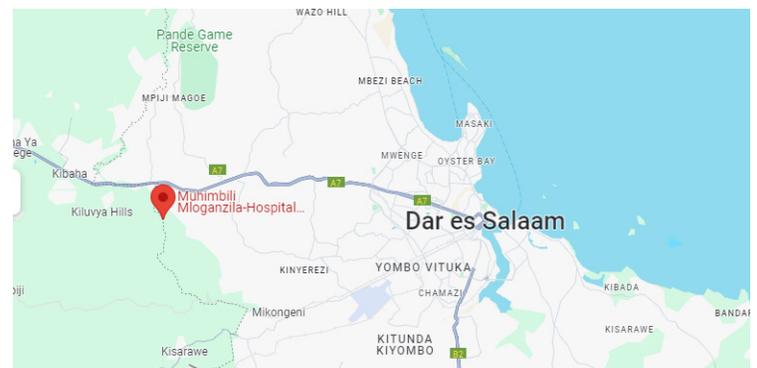
Sylvia Massawe with Ali Cronin (left) and with Dr. Härtl

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Epilepsy Surgery Training Day

Our efforts in Tanzania have always focused on how to save lives and improve quality of life most effectively. That's why we initiated our project with neurotrauma (getting otherwise healthy young accident victims back to productive lives) and pediatrics (saving the youngest patients from lifetimes of pain). In addition to expanding into scoliosis correction (see opposite page), we have also been working on a new epilepsy program spearheaded by **Dr. Caitlin Hoffman**. Epilepsy is poorly understood and stigmatized in many areas of the world, which affects the ability of patients to lead productive, healthy lives.

In 2023 Dr. Hoffman, an expert in epilepsy surgery, traveled to Muhimbili National Hospital Mloganzila for a daylong course in understanding and treating seizure disorders. In a day of lectures and case presentations, participants learned new skills in epilepsy diagnosis and medical management, surgical evaluation, and nursing. The course was co-chaired by Dr. Japhet Ngerageza, who trained with us in New York several years ago.



Mloganzila is more than an hour's drive west from central Dar es Salaam

Scoliosis Camp 2023

One of our most exciting new initiatives has been a focus on scoliosis surgery. With the endorsement of the Tanzanian government, in 2021 we launched a new course on spinal deformity correction, designed for medical providers in regions of Africa that had limited or no access to this type of treatment. The Tanzanian government is particularly interested in building local capacity in this field, as it will greatly alleviate the economic burden currently assumed by the state.

Because of the pandemic, our course originated with online learning, so it was very rewarding to conduct the first in-person Tanzania Scoliosis Camp in Dar es Salaam this year. We were grateful to have a distinguished panel of visiting surgeons, including **Dr. Alaa Ahmad** from the Palestine Polytechnic University in Hebron, **Dr. Massimo Balsano** from the University and Hospital Trust in Verona, and **Dr. Alexander Schupper** from Icahn School of Medicine at Mount Sinai in New York. The weeklong course included lectures, patient evaluations, and hands-on training in the operating room.

More than 50 orthopedic surgeons and neurosurgeons from Muhimbili Orthopaedic Institute and Kilimanjaro Christian Medical Centre attended the camp. Lectures covered topics from how to establish a global scoliosis program to anterior vertebral body tethering. In clinic we evaluated more than 20 patients with

congenital scoliosis or adolescent idiopathic scoliosis who had traveled to Dar es Salaam from throughout Tanzania.



In the operating room, we performed surgeries to correct deformities of children with adolescent idiopathic scoliosis. Surgeons were instructed on the perioperative management of children with scoliosis as well as intraoperative surgical techniques. The surgical team created perioperative protocols for anesthesia and critical care teams to provide comprehensive care for children undergoing scoliosis surgery. As with our neurotrauma course, our focus was on training local surgeons to provide life-changing care to their patients, ensuring that the expertise we bring with us doesn't leave with us when we go home, but instead lives on in the skills we provide to local surgeons.

Highlights of this year's course include:

- The first scoliosis cases performed in sub-Saharan Africa using advanced intraoperative monitoring
- Innovative implant placement for adolescent idiopathic scoliosis cases

Top: A young scoliosis patient and her mom meet the operative team (Dr. Alexander Schupper, Dr. Balsano, Dr. Ahmad, and Globus Medical technician Matteo Zanirato). Bottom: Dr. Schupper (at left) leads the surgery team in the operating room.

Tanzania Comes to New York

For the past several years, we have been fortunate to be able to fund Tanzanian surgeons to travel to New York City, where they can spend several months with my team here, providing them

beyond spine procedures. These additional opportunities are another way we can spread lifesaving expertise to our African colleagues.



with invaluable training to take home with them. This year the visitors also attended some of our regular professional training courses, including one in spine, one in pituitary disorders, and one in craniostylosis repair. Our visitors will be called upon to treat more than just spine patients when they return to Tanzania, so it's especially gratifying to be able to provide them with these opportunities to learn neurosurgical techniques

Guest faculty Ibrahim Khansa, MD, teaches the art of craniostylosis repair to Dr. Consolata Shayo (left) and Dr. Zarina Shabhay (center) at our October hands-on craniofacial course; Dr. Chibuikem (Anthony) Ikwuegbuanyi gets hands-on training in minimally invasive spine surgery at our NYC-MISS 2023 cadaver course in December. Our visitors also attended a November symposium on pituitary disorders.

Moments From the 2023 Course

Our 2023 course had so many memorable moments. Here, we share a few with you. Top right: Weill Cornell Medicine chief resident **Maricruz Rivera, MD, PhD**, demonstrates surgical techniques. Second row, L-R: **Dr. Härtl, Dr. Shabani, and Nurse Ndege** with grateful family members of patients; **Dr. Härtl** with **Dr. Juma Mfinanga**, Emergency Medicine Specialist and Head of Emergency Medicine Department at Muhimbili National Hospital in Dar es Salaam; **Dr. Härtl** in the OR demonstrating his surgical plan using the new Brainlab navigation system. Third row, L-R: The OR team learns intraoperative monitoring; participants explore surgery in virtual reality.



Critical Support From Industry

In addition to the private philanthropy that allows us to continue our work in Tanzania, a number of companies have generously signed on to help by providing important support and training tools. We would especially like to thank a few here:

Cadwell Industries donated an intraoperative monitoring system, the very first IOM in sub-Saharan Africa. We performed three surgeries using it during our visit and trained local technicians on its use going forward.

Brainlab donated a 3D navigation system, which we used to perform the first navigated cases in sub-Saharan Africa, including the first navigated TLIF procedure.

Viseon donated a camera and tubular surgery set for minimally invasive procedures.

Non Nocere lent us virtual reality headsets and training materials for an innovative session that allowed us to teach surgical procedures and screw placement in a no-risk simulation environment.

UpSurgeOn donated a surgical simulation system that allows trainees to learn and practice techniques in a safe environment. This is critical for ongoing training that builds mastery.

DePuy Synthes donated \$1.5 million worth of spine implants for a study we are conducting to show effectiveness of spine trauma surgery.

Globus Medical donated implants for use in adolescent idiopathic scoliosis cases (see more about our Scoliosis Camp on page 3).

We are deeply grateful to these companies for supporting our work.

Keep up with our work by visiting us on Facebook or at neurosurgery.weillcornell.org/tanzania