

SELF Symposium | August 21-23, 2023

The future of surgical training

Welcome from Dr. Catherine Mohr

In addition to avoidable disfigurement and disability, millions of people die every year because emergency services, critical care support, and surgical interventions were not available when and where they needed it. This issue is particularly acute in low- and middle-income countries, and back in the forefront of discussion with the 2023 WHO Resolution WHA 76.2 calling for "Integrated emergency, critical and operative care for universal health coverage and protection from health emergencies." The time is now, and the urgency has never been greater.

As the world's population increases past eight billion, we are challenged to find solutions to this deficit of care. Many groups are attempting to address this problem with different approaches, from working with governments on central planning to mission-based delivery of essential surgical services. We are all called to do our part.

An increase in infrastructure, facilities, and medical equipment is needed, but alone it does not address the critical lack of trained practitioners who will need to work in these communities. We need to increase capacity by training significantly more excellent emergency, critical care, and surgical practitioners at a far faster rate than we can with the existing global capacity of our classical, centralized medical education.

SELF: The Surgical Education Learners Forum evolved from the Global Surgical Training Challenge. SELF aims to sustainably change the paradigm of surgical and "procedural medicine" training, dramatically increasing access in low- and middle-income countries. Our goal is to empower any clinician to learn independently and self-assess specific procedural skill sets. They will do this by means of open-source training modules and simulators that are freely available at the point of care.

Our intention has been to build and launch a community and a platform upon which other innovators and makers can design and create their own modules to serve the millions of people in need of safe, competent emergency, surgical and critical care. This platform will also allow organizations to create integrated courses consisting of a curated set of high-quality training modules that meet the needs of that organization.

It's a complex challenge that will require all of us to work together to solve it. I hope you will join us in this innovative and bold endeavor.



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About SELF

The fundamental goal of the Surgical Education Learners Forum (SELF) is to create surgical skill training modules that will support and increase the skills of surgical and critical care practitioners worldwide. These modules are designed to allow clinicians to train themselves on the simple and complex psychomotor skills of surgical and interventional procedures at the point of care, on their own time, and without the need for a constant instructor.

SELF training modules combine online learning to review context and decision making for the targeted procedure, instructions for building a simulator out of locally available materials, and exercises for training with that simulator. An integrated, self-administered assessment framework allows for deliberate practice to mastery without picking up skills unique to the simulator that need to be unlearned when practicing the skill in real clinical situations. The endpoint of a learner engaging with a SELF module is that they should feel confident and competent to transfer their new skills directly into clinical practice.

The first modules of this type were created and deployed clinically as part of the Global Surgical Training Challenge (GSTC). The GSTC was created to spur innovation in the self-administered assessment framework for surgical skills. In 2021, 10 teams headed by principal investigators from low- and middle-income countries each created modules to teach a high-impact surgical skill. In 2022, the four finalist teams went on to successfully demonstrate the transition from self-learning to clinical cases in laparoscopy, long bone fracture management, Z-plasty and hemorrhage control. The Grand Prize winner created a low-cost laparoscopic trainer with peer-to-peer and artificial intelligence evaluation. The runner up created an external fixator training module for tibial fracture stabilization using a locally 3D-printed model and self-administered assessment by direct measurement of pin placement.

In 2023, building upon the successes of the Challenge, the focus has changed to building and deploying SELF modules that can use this self-assessment methodology to responsibly, ethically, and scaleably increase surgical capacity in low- and middle-income countries.



About Symposium

The SELF Symposium is a gathering of surgical and educational leaders aimed at accelerating progress toward a future where access to high-quality surgical and critical care skills training is universal. Featuring presentations, discussions, and working groups, the SELF Symposium aims to build a shared vision for and paths toward scalable clinical procedure training.

Opening Day: Monday, August 21

Participants will learn about a growing collection of <u>skills training modules</u> developed through the Global Surgical Training Challenge and SELF. Leaders who have developed training modules will present their work and detail their approaches to topics such as self-assessment, low-cost simulation, and self-directed learning. In-person participants will also interact with available simulators.

A live video stream will be listed on intuitive-foundation.com/symposium.

Consensus Conference: Tuesday, August 22 & Wednesday, August 23

Participants who have been invited to the Consensus Conference will collaborate in several working sessions that aim to build consensus on how to scale clinical procedural skill and surgical training. Over these two days, participants will share their perspectives across six working session topics: self-assessment, simulator fidelity, accessibility on digital platforms, procedure prioritization, evidence generation, and a roadmap for SELF deployment more widely.

The Consensus Conference is by invitation only. It will consist of a modified Delphi process run under Chatham House Rules. It is the intent to use the outputs of the working sessions to develop and publish individual consensus guidelines in the topic areas.

It is not expected that these working sessions will be sufficient for creating and refining publishable guidelines in the time allotted. The outputs of the working sessions will be the raw materials representing the consensus prioritization in each area, and they will form the basis for the guidelines.

A professional medical writer has been engaged to participate and record the proceedings. Individual invited participants may opt in to be part of the drafting of the different guidelines, and named authorship will be apportioned following <u>ICMJE Guidelines</u>.

Every participant will have the opportunity to review each finalized guideline prior to publication and may make a decision as to whether they authorize their name and professional affiliation to be included in the participants/endorsers list.

SELF Symposium 2024

Intuitive Foundation envisions the SELF Symposium as an annual convening of leaders who are dedicated to scaling surgical and critical care training. Intuitive Foundation expects to convene the next SELF Symposium during <u>International Surgical Week</u>, August 25-29, 2024, in Kuala Lumpur, Malaysia. In this second meeting, progression along the roadmap developed during the first meeting will be assessed, and key stakeholders missed in the first meeting will be brought to the table.

Principles for Discussion

The SELF Symposium convenes a broad and diverse group of leaders representing varied constituencies. Participants are clinicians, researchers, educators, technologists, and engineers. Many have traveled from diverse geographies across Africa, Central America, the Caribbean, India, Europe, and the United States.

To ensure that discussions are respectful, open, and creative, Consensus Conference participants are expected to honor and practice the following principles:

- I. Follow <u>Chatham House Rules</u>. You are free to use information from the discussion but are not allowed to reveal who made any particular comment. This rule also applies to the Intuitive Foundation.
- II. Respect and appreciate differences among participants, especially differences in backgrounds, knowledge areas, expertise areas, and lived experiences.
- III. Try to speak plainly by avoiding acronyms, jargon, or technical terms in order to make the conversation meaningful for our diverse group of participants.
- IV. Make space for everyone to participate. Be concise and judicious with time. Remember that people communicate ideas differently at various paces and in assorted forms.
- V. Encourage creative ideas and build on the ideas of others.
- VI. Be present and engaged by avoiding distractions and technology.

Additional space is available for side meetings during demo times, meals, and in the scheduled breaks. Symposium Staff can help arrange for space as needed.

Agenda for Sunday, August 20

All-day	Out-of-town guests arrive in California
2:00pm– 5:00pm	Simulator Setup <i>Only for presenters on Monday, August 21 (GSTC & SELF Grantees)</i> Meet in the lobby at 2:00pm for a shuttle to/from Hyatt and Intuitive
3:00pm	SELF Symposium check-in opens Hyatt Regency Santa Clara Bayshore Meeting Room (Mezzanine Level) 5101 Great America Parkway, Santa Clara, CA
6:00pm	Welcome reception (optional) Hyatt Regency Santa Clara Bayshore Meeting Room (Mezzanine Level)

Agenda for Monday, August 21

7:00am	Hotel guests meet in lobby
7:30am	Shuttle from hotel to Intuitive Headquarters 1020 Kifer Road, Sunnyvale, CA
8:00am	Welcome breakfast Building 108, Training Rooms 1 & 2
9:00am	 ALL-SAFE Training Modules Presentation Dr. Grace Kim & Dr. David Jeffcoach Grand Prize Winner of the Global Surgical Training Challenge, the ALL-SAFE team developed several training modules to help surgeons who already perform open surgery to learn and self-assess laparoscopic surgical skills. Each module is designed to self-teach specific laparoscopic skills in the following areas: Ectopic pregnancy Acute appendicitis Small bowel handling Penetrating Thoracoabdominal/Traumatic Diaphragmatic Injury Trocar placement
9:30am	Tibial Fracture Fixation Training Modules Presentation Dr. Habila UmaruRunner up of the Global Surgical Training Challenge, the Tibial Fracture Fixation team developed training modules to help non-orthopedic practitioners learn and self-assess the fundamentals of fracture fixation using 3D-printed bones.Each module is designed to self-teach specific fracture fixation skills in the following areas:• Tibial fracture fixation • Uniplanar external fixation • Pediatric distal forearm fractures • Humeral fracture fixation

Agenda for Monday, August 21 (continued)

10:00am	CrashSavers Trauma Training Module Presentation Dr. Sabrina Asturias, Dr. Amelia Levi, Mr. Ricardo Miranda PradoFinalist of the Global Surgical Training Challenge, the CrashSavers Trauma team developed a training module to help emergency responders manage prehospital hemorrhage control.The module self-teaches clinical decision-making and technical skills needed to prepare patients for transportation to a health facility.
10:30am	Break
11:00am	 AmoSmile Training Modules Presentation Pre-recorded presentation Finalist of the Global Surgical Training Challenge, a global team from Operation Smile and AmoDisc designed modules to expand surgeons' capacity to perform local flaps for treating burns, trauma, cancer, and congenital anomalies. Each module is accompanied by a smartphone application that facilitates learning on low-cost simulators for the following procedures: Z-plasty V-Y advancement flap Orthoplastic reconstruction
11:30am	 Pediatric Colostomy Training Module Presentation Dr. Emmanuel Ameh, Dr. Chisom Udeigwe-Okeke This team designed a <u>training module</u> to support physicians with no formal training in pediatric surgery to gently handle delicate infant tissues as part of neonatal colostomy procedures.
12:00pm	 AMPATH Surgical App Training Module Presentation Dr. JoAnna Hunter-Squires, Dr. Dimitrios Stefanidis This team created a training module to enable physicians to confidently and competently evaluate patients with right lower quadrant pain and perform an open appendectomy on an emergency basis.

Agenda for Monday, August 21 (continued)

12:30pm - 2:00pm	Lunch and Simulator Demonstrations
2:00pm	 OpenSurgiSim Training Module Presentation Dr. Vikas Karade, Dr. Manish Agarwal This team developed a surgical training module for orthopedic surgeons to learn how to correct deformities of the lower limb bones.
2:30pm	SELF-Training Module Presentation Dr. Marisa Seepersaud, Dr. Will Shu This team designed a <u>training module</u> for general surgeons and trainees to teach themselves how to repair congenital heart defects such as patent ductus arteriosus (PDA).
3:00pm	Traumatic Brain & Spine Injury Training Module Presentation Dr. Ronald Lett, Dr. Tsegazeab Laeke This team is currently developing a training module for general surgeons to treat patients with acute head or spine injuries.
3:30pm	Break
4:00pm	 Primary Trauma Care Modules Presentation Dr. Michele Joseph, Dr. Nigel Rossiter This team is currently developing a suite of training modules to enable medical professionals in austere environments to manage and treat severely injured patients. Primary Trauma Care's existing training materials have reached over 100,000 medical professionals in over 80 countries. This team is adapting existing materials for self-directed learning by trainees around the globe.

Agenda for Monday, August 21 (continued)

4:30pm	 Emergency Medical Technicians Training Modules Presentation Mr. Joshua Hantke This team developed several training modules that teach the psychomotor skills necessary to meet emergency medical technician certification standards in the state of California. The training also prepares learners to take the National Registry of Emergency Medical Technicians cognitive exam.
5:00pm	ETALO Bone Drilling Training Module Presentation Pre-recorded presentation This team developed a <u>training module</u> for non-orthopedic clinicians to learn to drill bone as a central part of the treatment of open fractures and osteomyelitis.
5:30pm	Shuttle from Intuitive Headquarters to Hyatt
6:30pm	Reception Light appetizers and bar Hyatt Regency Santa Clara Poolside Terra Courtyard
7:30pm	Buffet Dinner Hyatt Regency Santa Clara Bayshore Meeting Room (Mezzanine Level)

Agenda for Tuesday, August 22

7:00am	Hotel guests meet in lobby
7:30am	Shuttle from hotel to Intuitive Headquarters 1020 Kifer Road, Sunnyvale, CA
8:00am	 Breakfast & Icebreaker Building 108, Training Rooms 1 & 2 Facilitated by Dr. Catherine Mohr Participants engage in a series of short activities to understand who is in the room and what matters to them. In the process, participants will practice the key techniques they'll use in subsequent working sessions.
9:30am	 Working Session on Self-Assessment Facilitated by Dr. Catherine Mohr Expert Review by Dr. Carla Pugh and Dr. Deborah Rooney Self-assessment is the cornerstone of enabling learners to teach themselves surgical skills. This session is about understanding how to use this very new concept in medical training. Participants will explore how teachers and coaches use continuous assessment to teach. Then they'll dive into how self-assessment is different and how learners can use it to teach themselves: See one. Teach Yourself One. Do one. In this session, participants will focus on how self-assessment frameworks can be used to systematically anticipate learner questions and guide them toward mastery of skills. Participants will first use an exercise to identify those key learner questions, and then to envision both current and future self-assessment techniques that could be widely adopted as a means of learning surgical skills. This working session will build consensus on the most important elements for standards and guidelines on self-assessment best practices for developers creating self-assessment frameworks in training modules for the agreed-upon learner personas.

Agenda for Tuesday, August 22 (continued)

11:15am	 Working Session on Appropriate Fidelity of Simulator Materials and Fabrication Challenges. Facilitated by Dr. Catherine Mohr and Dr. Natnael Shimelash This session is about simulation. What degree of fidelity is necessary for learning psychomotor skills and not picking up "anti skills"? How do we make simulators with an appropriate level of fidelity? How do we make simulators simple enough for clinicians to fabricate? Having just discussed self-assessment frameworks, participants will shift their focus to the simulators that learners use to practice hands-on skills. This session asks participants to discuss the degree to which fidelity should be optimized to support a learner's skill acquisition. The standard for fidelity depends on the specifics of the self-taught skill — skills that focus on surgical planning and/or navigating anatomy require different methods than those that focus on tissue realism for physical feedback to the learner. Participants will consider defining what standards of fidelity look like across different simulations. They will also discuss how to consider material availability and writing instructions for building simulators that are appropriate for non-engineers. This working session will build consensus around the essential elements of guidelines for training module developers to achieve "appropriate fidelity" and sufficient "buildability" for the psychomotor skill at hand.
12:30pm	Lunch

Agenda for Tuesday, August 22 (continued)

 Working Session on Platforms and Searchability Facilitated by Dr. Catherine Mohr, Dr. Ana Maria Crawford, Mr. Eric O'Flynn, and Mr. Emilio Velis This session is about accessibility as the key to scale. The essential elements of immediate and durable accessibility are: findability, suitability, tailorability, credibility, reusability, and maintainability. Participants will discuss problems that prevent learners from finding and accessing the right training content and envision accessibility guidelines for training module developers. Participants will map the current state of finding such content and also envision an ideal future state where learners freely find and access training content. Participants will also hone in on gaps between these current and future states, and outline the ways in which the group thinks the future state can be realized. This working session will build consensus around principles for creating a fully accessible and continuously expandable ecosystem of training content. The later guidelines will describe best practices for ensuring accessibility, findability, credibility, suitability, maintainability, and reusability. It will also address the integration of existing content, commercial content, and the role of third-party organizations and endorsements.
Presentation on SELF: Riomedical Training Program
Presented by Mr. Patrick Diamond
The SELF: Biomedical Training Program uses the same principles of self-administered and self-assessed learning from the clinical program and applies them to expanding the skills and knowledge of biomedical technicians and engineers in resource-limited settings. Intuitive Foundation is running a pilot program providing no-cost access to Medical Aid International's self-administered biomedical training program, which includes a 13-unit online training course, a device documentation library, high-quality tools, and a laptop. Status of the pilot, and plans for the next year will be presented.

Agenda for Tuesday, August 22 (continued)

5:00pm	Shuttle from Intuitive Headquarters to Hyatt
6:00pm	Dinner Hyatt Regency Santa Clara Bayshore Meeting Room (Mezzanine Level) Participants will enjoy a plated dinner while also reflecting on the previous two days. The dinner will be facilitated, and participants will share reflections throughout the evening.
9:00pm	End of the day

Agenda for Wednesday, August 23

7:00am	Hotel guests meet in lobby
7:30am	Shuttle from hotel to Intuitive Headquarters 1020 Kifer Road, Sunnyvale, CA
8:00am	Working Breakfast Building 108, Training Rooms 1 & 2 Participants will share reflections from the previous days and make adjustments for the final day of the Symposium.
9:00am	 Working Session: Let's Talk Priorities Facilitated by Dr. Catherine Mohr, Dr. Abebe Bekele, Dr. Lukman Abdur-Rahman, Dr. Nobhojit Roy, Dr. Vanessa Moll, Dr. Nigel Rossiter, and Mr. Joshua Hantke This session focuses on building consensus around the criteria by which SELF module development should be prioritized, and then reviewing and prioritizing the clinical areas where self-directed surgical training is needed most. Participants will work toward consensus on a prioritized list of procedures that can guide the issuing of calls for proposals by Intuitive Foundation, surgical societies, ministries of health and philanthropic funding agencies for the development of new training modules.
10:00am	Break

Agenda for Wednesday, August 23 (continued)

10:30am	 Working Session: Evidence Generation & Clinical Study Protocols Facilitated by Dr. Catherine Mohr and Dr. Dimitrios Stefanidis This session focuses on what studies need to be conducted to prove the safety, ethics, effectiveness, and scalability of self-directed training modules. Participants will discuss opportunities and dangers related to deploying self-administered training modules in real-world settings. Working session exercises will generate insights into the key requirements of clinical study protocols for testing and evaluating this new way of training. This working session will build consensus towards standardized protocols for testing self-assessed training modules with variations for the target skills being taught.
12:00pm	Lunch
1:00pm	 Working Session: Theory of Change Facilitated by Dr. Catherine Mohr This ultimate working session builds upon all previous working group discussions, outputs, and areas of consensus. Participants will work to articulate a comprehensive description and illustration of how we will achieve this common vision of the future of surgical training. Participants will discuss the individual, professional, structural, economic, and organizational factors involved with fundamentally changing the ways in which clinicians add new skills to their repertoire once they are in practice. This working session will build consensus on a roadmap for bringing scalable training into common use for the benefit of patients everywhere.
2:30pm	Closing
3:00pm	Shuttle from Intuitive Headquarters to hotel Time is available for side meetings at either Intuitive or at the hotel.

Agenda for Wednesday, August 23 (continued)

3:30pm	Break
5:00pm	Hotel guests meet in lobby
5:15pm	Shuttle to Mohr Family Home for Farewell Reception
5:45pm	Farewell Reception Casual outdoor reception with food and beverages.
8:45pm	Guests gather for the shuttle
9:00pm	Shuttle from Mohr Family Home to hotel
	End of SELF Symposium

Participants



Abebe Bekele Zerihun, MD, FCS (ECSA), FACS

Deputy Vice Chancellor and Dean

University of Global Health Equity

abekele@ughe.org

Abebe Bekele Zerihun, MD, FCS (ECSA), FACS is the Deputy Vice Chancellor of Academic and Research Affaires, Dean of the School of Medicine, and Professor in the Department of Surgery at the University of Global Health Equity (UGHE) in Rwanda, specializing in thoracic and general surgery. Additionally, Dr. Bekele maintains full professorships at the Addis Ababa University and the University of Rwanda as well as being the Editor-in Chief of the East and Central Africa Journal of Surgery. He sits on the editorial board of the JAMA health forum and the Ethiopian Medical Journal.

Dr. Bekele is a fellow of the Ethiopian Academy of Sciences and the Academy of Master Surgical Educators of the American College of Surgeons, and the Secretary General of the College of Surgeons of East Central and Southern Africa (COSECSA) and serves as Chairman of the Examinations and Credentials Committee. Previously, Dr. Bekele operated as a senior advisor to the Ethiopian Federal Ministry of Health for the Saving Lives Through Safe Surgery (SaLTS) initiative. He has also served as the CEO of the Tikur Anbessa (Black Lion) Teaching Hospital as well as the Dean of the School of Medicine at the Addis Ababa University.

Dr. Bekele received his Doctorate of Medicine from Gondar College of Medical Studies and accomplished fellowships in Medical Education and Simulation Based Education from the FAIMER Institute in Philadelphia and the University of Washington, respectively. He is also certified in Surgical Leadership from Harvard Medical School.

Selected Publications

Assessment of resource capacity and barriers to effective practice of laparoscopic surgery in training hospitals affiliated with the College of Surgeons of East, Central and Southern Africa (COSECSA). *Surg Endosc* (2023). https://doi.org/10.1007/s00464-023-09985-w



Trends in Retention and Decay of Basic Surgical Skills: Evidence from Addis Ababa University, Ethiopia: A Prospective Case–Control Cohort Study. *World J Surg* (2019). https://doi.org/10.1007/s00268-018-4752-1

Identifying, Prioritizing and Visually Mapping Barriers to Injury Care in Rwanda: A Multi-disciplinary Stakeholder Exercise. *World J Surg* (2020). <u>https://doi.org/10.1007/s00268-020-05571-6</u>



Adam L. Kushner, MD, MPH, FACS



President

A.L. Kushner & Associates

adamkushner@yahoo.com

Adam L. Kushner, MD, MPH, FACS is a global surgeon and subject matter expert for human rights and humanitarian assistance. Dr. Kushner is the founder and director of the Society of International Humanitarian Surgeons/Surgeons OverSeas (SOS), and President and founder of A.L. Kushner & Associates, consulting on humanitarian assistance, international humanitarian surgery, human rights, landmine injury care, and public health.

His work as a general surgeon and educator has taken him to the Democratic Republic of the Congo, Colombia, Ecuador, Ethiopia, Haiti, India, Lebanon, Liberia, Malawi, Sierra Leone, South Sudan, Syria, and Tanzania. As part of Physicians for Human Rights, he led landmine, cluster munition, and human right assessments in Azerbaijan, Kosovo, and Iraq, and as a Medical Advisor, provided landmine injury and trauma training in Nicaragua, Ecuador, and Colombia. Together with the International Rescue Committee, he also worked as a health specialist as part of the 2005 Indonesia tsunami and earthquake response. He is also the Editor for the Johns Hopkins University Press *Operation Health* series, opening each chapter with stories from the field.

Dr. Kushner has previously held faculty appointments at Columbia University Departments of Surgery and International Health, Johns Hopkins Bloomberg School of Public Health, and the Center for Refugee and Disaster Relief. He has also participated in U.S. military training exercises as a subject matter expert in human rights and humanitarian assistance issues.

Dr. Kushner received his BA from Cornell University, MPH from Johns Hopkins, and medical degree (MD) from Mount Sinai School of Medicine. He completed his residency in general surgery at the University of Texas Health Science Center in San Antonio.

Selected Publications

Task Shifting in Surgery – What US Health Care Can Learn from Ghana. *JAMA Surg* (2019). <u>https://doi.org/10.1001/jamasurg.2019.1745</u>



The Golden Hour after Injury Among Civilians Caught in Conflict Zones. *Disaster Med Public Health Prep* (2019). <u>https://doi.org/10.1017/dmp.2019.42</u>

Are American Surgical Residents Prepared for Humanitarian Deployment?: A Comparative Analysis of Resident and Humanitarian Case Logs. *World J Surg* (2018). https://doi.org/10.1007/s00268-017-4137-x





Amelia Levi, MD

Resident Surgeon-Research Assistant

Roosevelt Hospital in Guatemala

amelia.levi@medstar.net

Amelia Levi, MD is a Resident Surgeon and Research Assistant as part of the MedStar Health–Georgetown/ Washington Hospital Center Residency Program in General Surgery.

She joins Dr. Sabrina Asturias at Roosevelt Hospital, the busiest trauma center in Guatemala, as part of the CrashSavers Team, one of the four finalists in the Global Surgical Training Challenge. Dr. Levi works on the CrashSavers team to improve upon the low-cost training module for first responders to teach bleeding control techniques.

Dr. Levi has research experience designing and implementing a novel collaborative hip fracture protocol that functions to expedite surgical intervention in isolated hip fracture patients. In a retrospective cohort study of the trauma registry, this protocol succeeded in reducing complications, length of stay, and time to operation.

Dr. Levi received her undergraduate degree from the University of York and completed medical school at the State University of New York (SUNY) Downstate Medical Center College of Medicine.

Selected Publications

Cracking the Hip: Does Protocol Matter? A Retrospective Cohort Study Investigating the Effect of Protocol Implementation. *Geriatr Orthop Surg Rehabil* (2022). <u>https://doi.org/10.1177/21514593221076614</u>



Ana María Crawford, MD, MSc



Associate Professor

Stanford University

anacrawford@stanford.edu

Dr. Crawford is an anesthesiologist, critical care medicine physician, and Clinical Associate Professor in the Department of Anesthesiology, Perioperative and Pain Medicine at Stanford University. She is also the Founder and Director of Global Engagement Strategy for the Anesthesia Global Health Equity (GHE) Division and GHE Fellowship. Dr. Crawford also serves on the Core Leadership Team of the Center for Innovation in Global Health as a Global Health Faculty Fellow. She holds an honorary Associate Professorship at the University of Rwanda and serves on several national and international healthcare committees.

Dr. Crawford has used her expertise as a leading advocate for global health equity to aid nonprofit organizations in the development of training programs for medical education and skill building. She is the creator and Editor-in-Chief of the online Global Anesthesia & Critical Care Learning Resource Center, a free and open-access online education platform for healthcare providers. In 2021, she received the Kevin Malott Humanitarian Service Award for her efforts in the COVID-19 response of the Oglala Lakota Native American reservation and Pine Ridge Hospital in South Dakota.

Dr. Crawford is board certified in both Anesthesiology and Critical Care Medicine and holds a Master's in Global Health Sciences from the University of California, San Francisco. She completed her medical education at the University of Alabama School of Medicine and residency at the University of Texas Southwestern Medical School.

Selected Publications

Global critical care: a call to action. *Crit Care* (2023). https://doi.org/10.1186/s13054-022-04296-3

A health systems approach to critical care delivery in low-resource settings: a narrative review. *Intensive Care Med* (2023). <u>https://link.springer.com/article/10.1007/s00134-023-07136-2</u>

Barriers to Effective Transfusion Practices in Limited-Resource Settings: From Infrastructure to Cultural Beliefs. *World J Surg* (2020). https://doi.org/10.1007/s00268-020-05461-x





Anders Sideris, MD, MBBS, MS, MSE

Otolaryngology Resident Surgeon – Research and Innovation Fellow

ARISE Johns Hopkins University Center for Bioengineering Innovation & Design (JHU CBID)

asideri1@jh.edu

Anders Sideris, MBBS, MS, MSE is an Otolaryngology Head and Neck Surgery Doctor, Entrepreneur, and Abell Innovation Fellow at Johns Hopkins Center for Bioengineering Innovation & Design. He also operates as CEO, Director, and Founder of Release Therapeutics, a clinically tailored drug delivery device as well as Co-Founder of SomnOSA, a novel solution to treat obstructive sleep apnea.

Previously, Dr. Sideris served as an Otolaryngology (ENT) Head and Neck Surgery Registrar at Northern Beaches Hospital and Wollongong Hospital in New South Wales, Australia. In 2019, he was awarded the Australian Government Research Training Program Scholarship. He also held an Associate Lecturer position at the University of New South Wales Prince of Wales Clinical School.

Dr. Sideris holds a Masters of Bioengineering, Innovation and Design from Johns Hopkins University and a Master of Science from the University of New South Wales. He completed his Bachelor of Medicine and Surgery and Bachelor of Medical Sciences at the University of Newcastle.

Selected Publications

Mean disease alleviation between surgery and continuous positive airway pressure in matched adults with obstructive sleep apnea. *Sleep* (2023). <u>https://doi.org/10.1093/sleep/zsad176</u>

Smart polymer implants as an emerging technology for treating airway collapse in obstructive sleep apnea: a pilot (proof of concept) study. *J Clin Sleep Med* (2023). https://doi.org/10.5664/jcsm.8946

A systematic review and meta-analysis of predictors of airway intervention in adult epiglottitis. *Laryngology* (2019). <u>https://doi.org/10.1002/lary.28076</u>









Carla Pugh, MD, PhD

Thomas Krummel Professor of Surgery

Stanford Medicine

cpugh@stanford.edu

Carla Pugh, MD, PhD is the Thomas Krummel Professor of Surgery at Stanford University School of Medicine specializing in Acute Care Surgery and Director of the Technology Enabled Clinical Improvement Center. She is also a member of the Wu Tsai Human Performance Alliance and the Stanford Cancer Institute.

Dr. Pugh is an internationally recognized expert on using sensors and motion-tracking technology for assessing and defining competency in clinical performance and procedural skill acquisition. She holds three patents on the use of sensor and data acquisition technology to record movements and translate them into quantifiable clinical skills.

In 2011, President Barack Obama awarded Dr. Pugh the Presidential Early Career Award for Scientists and Engineers. In 2014, she gave an invited TEDMED talk on her transformative research. In 2018, Dr. Pugh was inducted into the American Institute of Medical and Biological Engineering.

Dr. Pugh received her undergraduate degree in Neurobiology from U.C. Berkeley and completed her medical degree and residency at Howard University School of Medicine. After completing her medical training, Dr. Pugh went to Stanford University where, in 2001, she became the first surgeon in the United States to obtain a PhD in Education.

Selected Publications

Do Individual Surgeon Preferences Affect Procedural Outcomes? *Ann Surg* (2022). <u>https://doi.org/10.1097/SLA.000000000005595</u>



The Experienced Surgeon and New Tricks–It's Time for Full Adoption and Support of Automated Performance Metrics and Databases. *JAMA Surg* (2021). <u>https://doi.org/10.1001/jamasurg.2021.4531</u>

Sensors and Psychomotor Metrics: A Unique Opportunity to Close the Gap on Surgical Processes and Outcomes. *ACS Biomater Sci Eng* (2020). https://doi.org/10.1021/acsbiomaterials.9b01019





Catherine Mohr, MD, MS

President

Intuitive Foundation

catherine.mohr@intusurg.com

Catherine Mohr, MS, MD is the President of the Intuitive Foundation, which is the corporate Foundation of Intuitive Surgical—a high-technology, Silicon Valley-based company that is known for the da Vinci surgical robot. In this role, Dr. Mohr invests in research and development programs aimed at understanding and improving education of medical practitioners around the world and applying novel technologies aimed at reducing the global burden of disease. Previously, Dr. Mohr was the Vice President of Strategy for Intuitive Surgical where she held both research and strategy roles since 2006.

Prior to joining Intuitive Surgical, Dr. Mohr worked for many years developing high-altitude aircraft and high-efficiency fuel cell power systems, computer-aided design software, and medical devices. As such, Dr. Mohr brings extensive industry experience and deep insights into emerging opportunities, trends, issues, and challenges.

Dr Mohr is on the board of directors for FINCA International, and has been involved with several startup companies in Silicon Valley, the NCI SBIR program, and government technology development programs in her native New Zealand, and entrepreneurship programs worldwide.

Dr. Mohr received her BS and MS in mechanical engineering from MIT, and her MD from Stanford University School of Medicine.

Selected Publications

Early, intermediate and late effects of a surgical "boot camp" on an objective structured assessment of technical skills: a randomized controlled study. *J Am Coll Surg* (2010). <u>https://doi.org/10.1016/j.jamcollsurg.2010.03.006</u>

The Use of Laparoscopy Simulation to Explore Gender Differences in Resident Surgical Confidence. *Obstet Gynecol Int* (2017). <u>https://doi.org/10.1155/2017/1945801</u>

Filtration efficiency, breathability, and reusability of improvised materials for face masks. *Aerosol Sci Technol* (2021). https://doi.org/10.1080/02786826.2021.1898537



Chisom R. Udeigwe-Okeke, MD, MBBS



Senior Surgical Trainee National Hospital Abuja, Nigeria

adaobisom@yahoo.com

Chisom R. Udeigwe-Okeke, MD, MBBS is a Senior Surgical Trainee of the Division of Paediatric Surgery at the National Hospital of Abuja, Nigeria. Her training and practice is driven by a passion to bridge the gap between surgical diseases and access to optimal healthcare delivery in children in low- and middle-income countries. To this end, she is actively involved in implementation of the National Surgical, Obstetric, Anesthesia and Nursing Plan for Nigeria. She is working closely with the KidsOR to study the impact of creating dedicated children's surgery infrastructure in Nigeria. Additionally, she is a key member of the Colostomy in Newborns team, a recipient of the Discovery Award of the Global Surgical Training Challenge.

Selected Publications

Conjoined Sisters Successfully Separated. *Kids Operating Room* (2023). <u>https://www.kidsor.org/real-life-stories/conjoined-sisters-successfully-separated/</u>

Impact of new dedicated pediatric operating rooms on surgical volume in Africa: Evidence from Nigeria. *J Pediatr Surg* (2023). https://doi.org/10.1016/j.jpedsurg.2022.09.021

A global point prevalence survey of antimicrobial use in neonatal intensive care units: The no-more-antibiotics and resistance (NO-MAS-R) study. *EClinicalMedicine* (2021). https://pubmed.ncbi.nlm.nih.gov/33554094/









Daniel S. Oh, MD, FACS

Associate Professor of Surgery and Associate Medical Officer

University of Southern California and Intuitive Surgical

daniel.oh@intusurg.com

Daniel S. Oh, MD, FACS is a board-certified thoracic surgeon and Associate Professor of Surgery at the University of Southern California in Los Angeles. He serves as the medical director of thoracic surgery at Providence St. Jude Medical Center. In 2017, Dr. Oh joined Intuitive Surgical as VP and Associate Medical Officer, where he is involved in cross-functional research in clinical outcomes and surgical education. He continues to balance his roles simultaneously in the academic, clinical, and industry worlds.

Dr. Oh received his undergraduate degree from Wesleyan University and his medical degree from Loyola University Chicago. He obtained his surgical training in esophageal and lung surgery at the University of Southern California and Harvard Medical School (Brigham and Women's Hospital).

Selected Publications

A novel approach to quantifying surgical workflow in robotic-assisted lobectomy. *Int J Med Robot Comput Assist Surg* (2023). https://doi.org/10.1002/rcs.2546



Port Strategies for Robot-Assisted Lobectomy by High-Volume Thoracic Surgeons: A Nationwide Survey. *Innov: Technol Tech Cardiothorac Vasc Surg* (2019). <u>https://doi.org/10.1177/1556984519883643</u>

Robotic-Assisted, Video-Assisted Thoracoscopic and Open Lobectomy: Propensity-Matched Analysis of Recent Premier Data. *Ann Thorac Surg* (2017). <u>https://pubmed.ncbi.nlm.nih.gov/29054214/</u>



David R. Jeffcoach, MD, FACS, FCS(ECSA)



Co-Lead

ALL-SAFE

jeffcoach@gmail.com

David R. Jeffcoach, MD, FACS, FCS(ECSA) is a trauma and acute care surgeon from California who spent the past four years working full time at Soddo Christian Hospital in southern Ethiopia as the chair of surgery and program director for the Pan-African Academy of Christian Surgeons (PAACS) general surgery residency. Dr. Jeffcoach has a strong interest in global surgical education and is the co-lead for team ALL-SAFE, winners of the Global Surgical Training Challenge. He is now on faculty at the University of the California San Francisco Fresno as a trauma and acute care surgeon and assistant trauma medical director.

Dr. Jeffcoach received his undergraduate degrees at California Polytechnic State University and his Doctorate of Medicine from the University of California, Davis, School of Medicine. He completed his residency in general surgery at the University of Tennessee Graduate School of Medicine.

Selected Publications

ALL-SAFE Web-based learning platform. https://www.allsafe.education/

Evidence supporting performance measures of laparoscopic appendectomy through a novel surgical proficiency assessment tool and low-cost laparoscopic training system. *Surg Endosc* (2023). https://doi.org/10.1007/s00464-023-10182-y

Evidence supporting performance measures of laparoscopic salpingostomy using novel low-cost ectopic pregnancy simulator. *Global Surg Educ* (2022). <u>https://doi.org/10.1007/s44186-022-00044-x</u>









Deborah Rooney, PhD

Associate Professor

University of Michigan

dmrooney@med.umich.edu

Deborah Rooney, PhD is an Associate Professor of Learning Health Sciences and the Director of Education and Research for the Clinical Simulation Center at the University of Michigan Medical School.

She has served as the Chair for the American College of Surgery AEI Technologies and Simulation Committee and contributed to the development of a simulation-based training and assessment program for OB/GYN faculty at St. Pau's Hospital Millennium Medical College (SPHMMC) in Addis Ababa, Ethiopia. Dr. Rooney brings her expertise in medical education and simulation-based surgical education to her role as the Simulation Director and Evaluation Coordinator for ALL-SAFE, one of the winners of the Global Surgical Training Challenge.

Dr. Rooney received her undergraduate degrees in Biology and Art from Michigan State University. At the University of Illinois Chicago, she earned a Master of Medical Sciences, Master of Science in Biomedical Visualization, and a Doctor of Education degree in Measurement, Evaluation, Statistics, and Assessment.

Selected Publications

ALL-SAFE Web-based learning platform. https://www.allsafe.education/



Evidence supporting performance measures of laparoscopic salpingostomy using novel low-cost ectopic pregnancy simulator. *Global Surg Educ* (2022). <u>https://doi.org/10.1007/s44186-022-00044-x</u>

The Fundamentals of Vaginal Surgery Simulator pilot study: developing, validating, and setting proficiency scores for a vaginal surgical skills simulation system. *Am J Obstet Gynecol* (2021).

https://pubmed.ncbi.nlm.nih.gov/34464583/





Dimitrios Stefanidis, MD, PhD, FACS, FASMBS



Vice Chair of Education

Indiana University, Association for Surgical Education

dimstefa@iu.edu

Dr. Stefanidis, MD, PhD, FACS, FASMBS is a professor of surgery, Vice Chair of Education and Chief of MIS/bariatric surgery at Indiana University school of Medicine Department of Surgery. He is immediate past President of the Association for Surgical Education, President-elect of the Indiana chapter of the American College of Surgeons, and has served on the board of SAGES. He is founding Editor-in-Chief for Global Surgical Education –Journal of the Association for Surgical Education and a member of the ACS Master Educators.

Dr. Stefanidis has a passion for improving teaching methods to optimize skill acquisition in surgery and has published over 250 peer-reviewed papers in prestigious surgical journals, given over 300 scientific presentations on national and international stages, received more than 20 research awards including the 2021 Researcher of the Year Award by the Society for Simulation in Healthcare, and obtained over \$4 million dollars in funding.

Dr. Stefanidis received his medical school degree from the Aristotle University of Thessaloniki in Greece, and his doctoral degree at the University of Bonn in Germany. He completed his general surgery residency at the University of Texas Health Sciences Center, and Simulation and MIS/Bariatric fellowships at Tulane University School of Medicine and Carolinas Medical Center, respectively.

Selected Publications

AMPATH surgical app: Low-cost simulator for the open appendectomy. *Surgery* (2022). <u>https://pubmed.ncbi.nlm.nih.gov/36123174/</u>

What are the Top Research Priorities in Surgical Simulation and How Can They Be Best Addressed? Results From a Multidisciplinary Consensus Conference. *Ann Surg* (2022).

https://doi.org/10.1097/SLA.000000000004651

General surgery education across three continents. *Am J Surg* (2017). <u>https://pubmed.ncbi.nlm.nih.gov/29246406/</u>









Doruk Ozegdiz, MD, MsC

Director, Center for Global Surgery

University of San Francisco

doruk.ozgediz@ucsf.edu

Doruk Ozgediz M.D., MSc is Associate Professor of Surgery at UCSF, Director of the UCSF Center for Global Surgery and Health Equity, and in the leadership team of the Institute for Global Health Sciences. He trained in medicine at UCSF and completed a general surgery residency at UCSF before pursuing a pediatric surgery fellowship at the Hospital for Sick Children, University of Toronto. Dr. Ozgediz also completed a Master of Science in Public Health in Developing Countries at the London School of Hygiene and Tropical Medicine.

Dr. Ozgediz became involved in surgical collaborations in Uganda in 2003 and since then has been part of multiple collaborations to strengthen surgery and anesthesia care there and in the region, mostly through support of capacity-building initiatives.

He is a co-founder of the Global Partners in Anesthesia and Surgery (GPAS) collaboration, focused in Uganda, as well as the Global Initiative for Children's Surgery (GICS). He is also on the advisory board of KIDS OR, an international charity dedicated to strengthening surgery and perioperative care in low resource settings.

Selected Publications

Academic global surgical competencies: A modified Delphi consensus study. *PLOS Global Public Health* (2023). https://pubmed.ncbi.nlm.nih.gov/37450426/



Out-of-pocket costs and catastrophic healthcare expenditure for families of children requiring surgery in sub-Saharan Africa. *Surgery* (2023). <u>https://pubmed.ncbi.nlm.nih.gov/37385869/</u>





Emilio Velis

Executive Director

Appropedia Foundation

emilio.velis@appropedia.org

Emilio Velis is an industrial engineer based in El Salvador who currently serves as the Appropedia Foundation's Executive Director, promoting access to knowledge on sustainability and poverty reduction. He is a Professor of Innovation at the ESEN Business School in El Salvador.

He is also part of the advisory board of the Global Innovation Gathering, the Appropriate Technology Magazine editor, a Central America Leadership Institute Fellow as part of the Aspen Global Leadership Network, and a 2023 Post Growth Institute Fellow. Mr. Velis brings over 12 years of expertise in community development, open hardware, and open licensing to advocate for the responsible use of new technologies to solve global issues ranging from community violence to climate change. He is also an active member of various organizations and networks in these subjects. In 2015, he was awarded with the MIT Technology Review's Innovators Under 35 Central America Award.

Mr. Velis received his degree in Industrial Engineering from the Universidad de El Salvador.

Selected Publications

Documenting and assessing open innovation: co-creation of an open data model for surgical training. *J Res Technol Pol Eval* (2022). <u>https://doi.org/10.22163/fteval.2022.574</u>

Towards open source patents: Semi-automated open hardware certification from MediaWiki websites. *World Pat Inf* (2022). https://doi.org/10.1016/j.wpi.2022.102150

Craft and Artisan Initiatives of the Salvadoran Civil War (1980–1992). *Dig Cult Soc* (2021). https://doi.org/10.14361/dcs-2020-0103









Emmanuel A. Ameh, MBBS, FWACS, FICS

Professor of Paediatric Surgery and Chief Consultant Paediatric Surgeon

National Hospital, Abuja, Nigeria

eaameh@yahoo.co.uk

Emmanuel A. Ameh, MBBS, FWACS, FICS is a Professor of Pediatric Surgery and Chief Consultant Paediatric Surgeon at the National Hospital, Abuja, Nigeria. His global health work focuses on global surgery and access to children's surgical care in low-resource settings. He led the creation of the National Surgical, Obstetric, Anaesthesia and Nursing Plan for Nigeria, which is the first ever plan to prioritize children's surgery. He is involved in the development of educational programs for the West African College of Surgeons, Association of Paediatric Surgeons of Nigeria, and Pan-African Paediatric Surgical Association. He is the lead Editor for the 2020 textbook *Pediatric Surgery: A Comprehensive Textbook for Africa.* He was a Commissioner for Lancet Commission on Global Surgery and Lancet Nigeria Commission. Dr. Ameh has been a long-time advocate for scaling up children's surgical care in low-resource settings and continues to invest his time to train the next generation of pediatric surgeons in Nigeria and Africa.

Dr. Ameh obtained his medical degree from the Ahmadu Bello University, Zaria, Nigeria and undertook surgical training at the Ahmadu Bello University Teaching Hospital, subspecializing in Paediatric Surgery. He completed Pediatric Surgery Fellowships at Children's Hospital of Pittsburgh, Children's Hospital of New York, St. James's University Hospital, Leeds, and Great Ormond Street Hospital for Children, London.

Selected Publications

Aligning Global Surgical Research Collaborations with Local Priorities in Low- and Middle-Income Countries. *World J Surg* (2023). https://doi.org/10.1007/s00268-023-07119-w

National surgical, obstetric, anaesthesia and nursing plan, Nigeria. *Bull World Health Organ* (2021). https://doi.org/10.2471/BLT.20.280297

The pediatric surgery workforce in low- and middle-income countries: problems and priorities. *Semin Pediatr Surg* (2016). https://pubmed.ncbi.nlm.nih.gov/26831136/









Eric O'Flynn, MA

Programme Director - Education, Training and Advocacy

Royal College of Surgeons in Ireland

ericoflynn@rcsi.ie

Eric O'Flynn, MA is the Programme Director in Education, Training, and Advocacy at the Royal College of Surgeons in Ireland (RCSI). Here, he oversees projects and programmes that aim to expand and improve training in surgery, anaesthesiology and related specialties in low-resource settings worldwide through institutional capacity building and e-learning programs. In this role, he also leads global surgery teaching in the RCSI and represents RCSI on national and international global health and surgery fora.

Previously, Mr. O'Flynn joined and later served as Programme Director of the Surgical Training Collaboration Programme between the RCSI and COSECSA, facilitating the rapid growth of COSECSA surgical training programs. He is the Founder of The Rwandan Children's Project, a small nonprofit which built, equipped and supported a nursery and primary school in Rwanda, serving as President of the nonprofit from 2010-2019.

Mr. O'Flynn received his undergraduate degree from University College Cork, his Masters in Globalisation from Dublin City University, and his Masters in Leadership from the RCSI Institute of Leadership. He also holds a Project Management Professional Certificate from the Institute of Project Management.

Selected Publications

The Specialist Anesthesiology Workforce in East, Central, and Southern Africa: A Cross-Sectional Study. *Anesth Analg* (2023). https://doi.org/10.1213/ANE.000000000006134



Analysing the Operative Experience of Paediatric Surgical Trainees in Sub-Saharan Africa Using a Web-Based Logbook. *World J Surg* (2021). <u>https://doi.org/10.1007/s00268-020-05892-6</u>

The Specialist Surgeon Workforce in East, Central and Southern Africa: A Situation Analysis. *World J Surg* (2016). https://doi.org/10.1007/s00268-016-3601-3







Grace J. Kim, MD

Team Co-Lead

ALL-SAFE

gracejk@med.umich.edu

Grace J. Kim, MD is an Associate Professor in the Department of Surgery at the University of Michigan where she serves as an Associate Program Director of the General Surgery Residency as well as the Vice Chair for Education. Dr. Kim is also the Chair of the General Surgery Council for the Pan-African Academy of Christian Surgeons and serves on the Board of Directors. Dr. Kim's research interests lie at the intersection of global surgery and surgical education. As co-lead of ALL-SAFE, Dr. Kim has been able to combine her passions of surgical education and global surgery to serve learners, educators, and patients locally as well as around the world.

Dr. Kim obtained her medical degree at Weill Cornell Medical College, completed residency at St. Luke's-Roosevelt Hospital Center, and completed a fellowship in general surgery at the University of Texas.

Selected Publications

ALL-SAFE Web-based learning platform. https://www.allsafe.education/

Evidence supporting performance measures of laparoscopic appendectomy through a novel surgical proficiency assessment tool and low-cost laparoscopic training system. *Surg Endosc* (2023). https://doi.org/10.1007/s00464-023-10182-y

Mind the Gap: The Autonomy Perception Gap in the Operating Room by Surgical Residents and Faculty. *J Surg Educ* (2020). <u>https://pubmed.ncbi.nlm.nih.gov/32571692/</u>









Habila Umaru

Team co-lead

Tibial Fracture Fixation (TFF)

habilaumaru@yahoo.co.uk

Habila Umaru, MD is an Orthopaedics & Trauma Surgeon at the National Hospital Abuja and Royal Orthopedic Hospital & Medicare. He is also Team Co-Lead for the Tibial Fracture Fixation (TFF), one of the winners of the Global Surgical Training Challenge.

Selected Publications

Uniplanar External Fixation. *Appropedia* (2023). <u>https://www.appropedia.org/Uniplanar_External_Fixation</u>



Attitudes of Nigerian orthopaedic surgeons to the use of prophylactic antibiotics. *Int Orthop* (2015). https://doi.org/10.1007/s00264-015-2822-7



Epidemiology and management of head injury in paediatric age group in North-Eastern Nigeria. *Afr J Paediatr Surg* (2013). <u>https://pubmed.ncbi.nlm.nih.gov/24469487/</u>



JoAnna L. Hunter-Squires, MD, BA



Doctor, Surgeon Indiana University; AMPATH Consortium

Huntersq@iu.edu

JoAnna L. Hunter-Squires, MD, BA has been practicing surgery since 2017. She chose her specialty because it allows her the opportunity to help her patients in a real way. She enjoys getting to know her patients and helping them through the healing process while they recover and thrive. Her practice philosophy is to provide the highest level of care in a warm and genuine environment and tailor that care to each individual patient.

Dr. Hunter-Squires also worked at Moi University with the AMPATH Research Network, seeking to improve the health of Kenyan people. In this role, she has contributed to the development of a low-cost simulator and skills curriculum to effectively teach open appendectomy to trainees in low-resource settings who may otherwise have limited access to quality training material.

Dr. Hunter-Squires received her medical degree and completed her residency at Indiana University School of Medicine. She further trained at Cedars-Sinai Medical Center, Los Angeles, CA in a surgical fellowship.

Selected Publications

AMPATH surgical app: Low-cost simulator for the open appendectomy. *Surgery* (2022). <u>https://doi.org/10.1016/j.surg.2022.07.023</u>



Women Could Avoid Axillary Lymph Node Dissection by Choosing Breast-Conserving Therapy Instead of Mastectomy. *Ann Surg Oncol* (2021). <u>https://doi.org/10.1245/s10434-021-09674-9</u>

Gender Differences in Insurance, Surgical Admissions and Outcomes at a Kenyan Referral Hospital. *J Surg Res* (2021). https://doi.org/10.1016/j.jss.2021.06.014







John Ogunkeye, MS

Executive Vice President

Accreditation Council for Graduate Medical Education, Global Services

jogunkeye@acgme.org

John Ogunkeye, MS is an experienced healthcare industry executive with a 40-year track record. As the chief financial and administrative officer of the Accreditation Council for Graduate Medical Education (ACGME) and executive vice president of ACGME Global Services, he offers leadership, financial stewardship, and strategic planning for the leading accreditor of U.S. graduate medical education institutions and programs. Additionally, he has extensive experience working with foreign governments and international organizations to establish the American postgraduate medical accreditation system, giving him excellent insight into global healthcare issues and cross-cultural healthcare environments.

Before joining ACGME, Mr. Ogunkeye held leadership positions at several top U.S. academic medical centers, including Johns Hopkins University School of Medicine, Sidney Kimmel Medical College-Thomas Jefferson University Hospital, University of Chicago, and the University of Colorado. He also serves on the Board of Intealth (ECFMG) and has contributed his expertise to other nonprofit boards, including physician practices, governmental authority, and an international agency.

Mr. Ogunkeye holds Master of Science degrees in biology and health care administration.

Selected Affiliations

Accreditation Council for Graduate Medical Education (ACGME) <u>https://www.acgme.org/about/overview/</u>

ACGME Global Services https://www.acgme.org/initiatives/global-services/overview/

Intealth https://www.intealth.org/what-we-do/







Joshua Hantke, NREMT-P, FP-C



EMS Consultant

Intuitive Foundation

joshuahantke.ems@gmail.com

Joshua Hantke, NREMT-P, FP-C is a certified paramedic, flight paramedic, and American Heart Association ACLS and BLS instructor. He currently works as a ground paramedic for American Medical Response as part of their San Jose operations, providing ALS emergency medical care to the residents of Santa Clara County. Prior to this, he worked as an emergency medical technician in San Francisco as part of an emergency and nonemergency ALS, BLS, CCT, and NICU/PICU care system.

Mr. Hantke is a member of the EMS faculty at Foothill College teaching EMR, EMT, and paramedic students. He is also an EMS consultant with the Intuitive Foundation. Mr. Hantke is passionate about improving provider education for emergency responders so that they may deliver the highest level of care possible in the midst of unpredictable conditions.

Selected Accomplishments

Alertness and Orientation Assessment (A&O). *Appropedia* (2020-2023). <u>https://www.appropedia.org/Alertness_and_Orientation_Assessment_(A%26O)</u>

Sager Traction Splint Application. *Appropedia* (2020–2023). <u>https://www.appropedia.org/Sager_Traction_Splint_Application</u>

Seated Spinal Immobilization (KED). *Appropedia* (2020-2023). <u>https://www.appropedia.org/Seated_Spinal_Immobilization_(KED)</u>





Juan Carlos Puyana, MD, FRCSC, FACS, FACCP



Chair of Global Surgery Royal College of Surgeons in Ireland

jcpuyana@rcsi.ie

Juan Carlos Puyana, MD, FRCSC, FACS, FACCP is a trauma/acute care surgeon, global health educator, and the Chair of Global Surgery at RCSI University of Medicine and Health Sciences. In this role, he leads the Institute of Global Surgery to improve access to high-quality, essential surgical care for underserved populations.

Previously, Dr. Puyana was the Director of Global Health-Surgery at the University of Pittsburgh, Director of Surgical ICU program at Brigham and Women's Hospital in Boston, and Associate Professor of Surgery at Harvard University. As part of the Pan-American Trauma Society, Dr. Puyana has been a key figure in establishing international collaborations and educational programs in trauma and critical care, in the areas of trauma ultrasound, disaster and emergency response and trauma courses across Latin America. Many of his research grants have focused on international education and capacity building, and he has worked or published with international collaborations in many countries including Honduras, Guatemala, Colombia, Ecuador, Paraguay, Argentina, and Chile.

Dr. Puyama completed his medical degree in Universidad Javeriana Bogota, Columbia. He completed residency in general surgery at McGill University, a fellowship in Surgical Critical Care at State University of New York at Stony Brook School of Medicine, and a fellowship in Trauma & Acute Care Surgery at Yale University School Of Medicine.

Selected Publications

Global neurotrauma research challenges and opportunities. *Nature* (2015). <u>https://doi.org/10.1038/nature16035</u>

Academic Global Surgery: Creating Opportunities, Equity, and Diversity. *Ann Glob Health* (2023). https://doi.org/10.5334/aogh.3972

Geographical Disparity and Traumatic Brain Injury in America: Rural Areas Suffer Poorer Outcomes. *J Neurosci Rural Pract* (2019). https://doi.org/10.4103/jnrp.jnrp_310_18









Kara Neil, PhD, MA

Chief Education, Training, and Research Officer

King Faisal Hospital Rwanda Foundation

kara.neil@kfhkigali.com

Kara Neil, PhD, MA is the Chief Education, Training, and Research Officer at King Faisal Hospital Rwanda Foundation. In this role, she supports high-quality education and research opportunities for medical researchers through funding, training and facilitation in dissemination of research data, establishing academic and research-driven institutions.

The Foundation aims to enhance the quality of healthcare delivery and improve health outcomes by advancing knowledge and skills for healthcare professionals in Rwanda and the surrounding region. Previously, Dr. Neil has worked as a Consultant for the Kigali International Community School as well as the Manager of the Office of Admissions, Records, and Student Services, Lecturer, and Academic Programs Coordinator at the University of Global Health Equity, Kigali, Rwanda.

Dr. Neil received her undergraduate degree from the University of Maryland, College Park and Master's degree in International Business from Regent University. She completed her Doctorate in Education from the University of Liverpool and her Project Management Professional Certificate from the Project Management Institute.

Selected Accomplishments

Research Day at King Faisal Hospital. https://www.newtimes.co.rw/article/9895/news/featured/featured---research-day-ki ng-faisal-hospital-awards-best-scientists



The Rwanda delegation partnership with the University of Michigan Medical School aims to launch the first comprehensive kidney transplant program in Rwanda. <u>https://medicine.umich.edu/dept/globalreach/news/archive/202212/new-partnership-</u> <u>rwanda-explores-kidney-transplant-nephrology-programs</u>

King Faisal Hospital acquires a state-of-the-art catheterization lab <u>https://www.chubmagazine.com/2020/11/19/rwandas-king-faisal-hospital-kigali-can-</u> now-diagnose-and-treat-heart-conditions/







Lukman Abdur-Rahman, MD, MPH, FACS, MBBS, IIWCC-ZA

Lecturer and Consultant Surgeon

West African College of Surgeons

bolarjide@yahoo.com

Lukman Abdur-Rahman, MD is a Professor of Surgery and Dean-elect for the department of Clinical Sciences at the University of Ilorin, Honorary Consultant Paediatric Surgeon and Head of the Department of Surgery at the University of Ilorin Teaching Hospital (UITH), Nigeria, and Chairman of the Medical Audit Committee of the UITH. He is a member of the West African College of Surgeons' Clinical Skills and Simulation Committee, Vice President of the Association of Paediatric Surgeons of Nigeria, and also Site Principal Investigator for NIHR Global Surg Unit, ASOS paed, and Tetfund sponsored studies.

Previously, Dr. Abdur-Rahman held the positions of Director of the Unilorin Medical Screening Centre, Chairman of the UITH Theatre Users' Committee, Pioneer Coordinator of the Clinical Skills and Simulation Laboratory, Coordinator of the Medical Educational Resources Unit, Pioneer Director of the Centre for Injury Research and Safety Promotion, and Coordinator of the Basic Surgical Skills Course for the llorin Centre for West Africa College of Surgeons. In 2021, he led the effort for the first successful separation of Conjoined twins at UITH and in 2019, he devised the ARISE tube for suction in esophageal atresia patients.

Dr. Abdur-Rahman received his Bachelor of Medicine, Bachelor of Surgery from the University of Ilorin and his MPH through the McGill University as a Global Health Simulation Fellow. He is certified as a Fellow of the West African College of Surgeons (FWACS), Fellow of the Medical College of Surgeons (FMCS) in Paediatric Surgery, Fellow in Minimal Access Surgery (FMAS), Fellow of the American College of Surgeons (FACS), and in the International Interdisciplinary Wound Care Course (IIWCC-ZA).

Selected Publications

Arise Tube- A Novel Double-Lumen Suction Tube for Oesophageal Atresia. *Afr J Paediatr Surg* (2023). https://doi.org/10.4103/ajps.ajps_112_21

Reducing the environmental impact of surgery on a global scale: systematic review and co-prioritization with healthcare workers in 132 countries. *Br J Surg* (2023). https://doi.org/10.1093/bjs/znad092

Analysis of Presentations and Outcomes of Care of Children with Disorders of Sexual Development in a Nigerian Hospital. *J Pediatr Adolesc Gynecol* (2019). <u>https://doi.org/10.1016/j.jpag.2018.08.005</u>





Manish G. Agarwal, MD, DNB, D.Ortho, MBBS



Director & Head, Orthopaedic Oncology Nanavati Max Super Speciality Hospital

mgagarwal@gmail.com

Manish Agarwal, MD, DNB, D.Ortho, MBBS is the Director & Head of Orthopaedic Oncology at Nanavati Max Super Speciality Hospital where he oversees the Nanavati Max Institute of Cancer Care, Cancer Reconstructive Surgery Program and Paediatric Cancer Program. He is also a Consultant Orthopaedic Oncosurgeon at Sir H. N. Reliance Foundation Hospital. Dr. Agarwal is the Founder & Trustee of the International Society of Limb Salvage, and a member of the Indian Musculoskeletal Tumor Society (IMSOS), the Education Committee of the Indian Association of Surgical Oncology, the Indian Orthopaedic Association, and the Bombay Orthopaedic Society.

Dr. Agarwal has over 20 years experience as an Orthopaedic Oncosurgeon and previously held appointments as Head of the Section of Surgical Oncology at P.D. Hinduja National Hospital & MRC, and as an Associate Professor and Consultant Orthopaedic Oncologist at Tata Memorial Hospital. He has been awarded the 2004 Gold Medal for Orthopaedic Surgery, conferred by the Special Executive Magistrates Society.

Dr. Agarwal received his Bachelor of Medicine, Bachelor of Surgery from the University of Bombay, Diploma in Orthopaedics from the College of Physicians & Surgeons, and Master of Surgery in Orthopaedics from the University of Bombay. He also holds a Diploma of National Board (DNB) in Orthopaedics from the National Board of Examinations, New Delhi and a Diploma in Tissue Banking from the National University of Health, Singapore.

Selected Publications

World-Class Tumor Knee Prosthesis: Made in India. *Indian J Orthop* (2020). <u>https://doi.org/10.1007/s43465-019-00033-1</u>



Is vitamin D deficiency behind the scenes for high incidence of Giant cell tumor amongst the Indian population? Unraveling the vitamin D – RANKL association. *Med Hypotheses* (2019).

https://doi.org/10.1016/j.mehy.2018.12.010

Does Extracorporeal Irradiation and Reimplantation After Acetabular Resections Result in Adequate Hip Function? A Preliminary Report. *Clin Orthop Relat Res* (2018). <u>https://doi.org/10.1007/s11999.0000000000000103</u>





Marisa Seepersaud, MD, MBBS



Pediatric Surgeon

Georgetown Public Hospital Corporation

marisa_seep@yahoo.com

Marisa Seepersaud, MD, MBBS is the Head of Pediatric Surgical Unit at Georgetown Public Hospital in Guyana and an Assistant Professor in the Guyana University School of Medicine. She has been working to improve surgical care for children with limited resources for over twelve years and until 2021, Dr. Seepersaud was the only pediatric surgeon in Guyana.

To minimize the amount of time children spend in hospitals, she has implemented "daycare" surgeries where the patients are admitted and discharged within 24 hours. Furthermore, Dr. Seepersaud has partnered with the Baby Heart as part of the International Children's Heart Foundation to provide free heart surgeries around the world for children. In 2019, she was honored with the Canadian Association of Paediatric Surgeons Global Scholar Award. She is currently working to introduce new specialized pediatric services, such as laparoscopic surgery, cardiology, and urology, to her patients as well as develop training programs to grow the Pediatric Surgical Unit.

Dr. Seepersaud graduated from President's College (Guyana) and the University of Guyana School of Medicine. She completed her medical training at the University of the West Indies in Jamaica where she specialized in pediatric surgery. She enhanced her global understanding of pediatric surgery by training at SickKids in Toronto, Royal Manchester Hospital for Children in the UK, and again at the University of West Indies Jamaica Children's Hospital.

Selected Publications

Where There Is No Paediatric Intensivist: Building Critical Care Capacity And Implementing A Pandemic Response Team In Guyana. *Pediatr Crit Care Med* (2022). <u>https://doi.org/10.1097/01.pcc.0000899868.50335.7e</u>

Non-operative Management of High-grade Renal Injuries in Children: A Review of Two Cases Seen at the Georgetown Public Hospital Corporation. *J Adv Med Med Res* (2019). https://doi.org/10.9734/jammr/2019/v30i1230263



Impact of a Pediatric Cardiology Clinical Program on Congenital Heart Disease Outcomes in Guyana. *Glob Pediatr Health* (2017). <u>https://doi.org/10.1177/2333794X17731667</u>



Martin D. Smith, MB BCh, FCS(SA)

Professor of Surgery and Academic Head of Surgery University of the Witwatersrand, Johannesburg, South Africa

martin.smith@wits.ac.za

Martin D. Smith, MB BCh, FCS(SA) currently serves as a Professor of Surgery and Academic Head of the Surgery Department at the University of the Witwatersrand, Johannesburg, and the Clinical Head of Surgery at Chris Hani Baragwanath Academic Hospital (CHBAH) in Soeto. In 2001, he established the Hepato-Pancreato-Biliary (HPB) Unit which has grown to be one of the major training units in South Africa.

Previously, Dr. Smith has served as the President of the Pan-African Association of Surgeons, the European-African Hepato-Pancreato-Biliary Association (E-AHPBA), and the International Hepato-Pancreato Biliary Association (IHPBA). In 2013, he was awarded an honorary Fellowship of the European Board of Surgery in Hepato-Pancreatic-Biliary Surgery and in 2020 a Fellowship ad hominem from the Royal College of Surgeons of Edinburgh.

His research interests include chronic pancreatitis and pancreatic cancer. Dr. Smith is actively involved in Global Surgery initiatives and research which serve to improve access to quality surgical care especially in low- and middle-income countries.

Dr. Smith holds a Bachelor of Medicine & Bachelor of Surgery (MBBCh) from the University of the Witwatersrand Medical School and Fellowship of the College of Surgeons of South Africa (FCS(SA)).

Selected Publications

https://doi.org/10.1371/journal.pone.0221169

South Africa and the Surgical Diaspora—A Hub for Surgical Migration and Training. *World J Surg* (2023). https://doi.org/10.1007/s00268-023-06990-x

Inflammatory cytokines and combined biomarker panels in pancreatic ductal adenocarcinoma: Enhancing diagnostic accuracy. *PLoS ONE* (2019).



Setting the research and implementation agenda for equitable access to surgical care in South Africa. *BMJ Glob Health* (2017). https://doi.org/10.1136/bmjgh-2016-000170





Michelle N. Joseph, MBBS, MSc, PhD, FRCS

Instructor in Global Health and Social Medicine

Department of Global Health and Social Medicine, Program in Global Surgery and Social Change, Harvard Medical

michelle_joseph@hms.harvard.edu

Michelle N. Joseph, MBBS, MSc, PhD, FRCS is an Orthopedic Trauma Surgeon specializing in trauma systems and health equity research and an Instructor of Global Health and Social Medicine and Chief Strategy and Health Equity Officer for the Program in Global Surgery and Social Change (PGSSC) within the Department of Global Health and Social Medicine at Harvard Medical School. She is also an Adjunct Associate Professor in the Department of Surgery at the Uniformed Services University, Walter Reed, and sits on the Global Clinical Advisory Committee at the Primary Trauma Care Foundation. Dr. Joseph is the Founder and Director of the Equity Research Hub, leader of the Trauma and Injury Working Group, and an Honorary Clinical Lecturer at the University of Warwick. As Principal Investigator, she leads a body of research on civilian-military trauma systems Integrated Military Partnerships And Civilian Trauma Systems (IMPACT Study), and (PROTRA_ Project Trauma – epidemiology, quality improvement, implementation science, and innovation.

Dr. Joseph is a Hope Health Action (UK/USA NGO) Trustee, a member of the British Orthopaedic Association, and a fellow of the Royal College of Surgeons of England, the American College of Surgeons, and the Academy of the Asian Collaboration for Trauma.

Dr. Joseph received her Bachelor of Science and Bachelor of Medicine, Bachelor of Surgery from the University College London and was awarded her Master's and Doctoral degrees from the University of Warwick, training within the Orthopedic Program.

Selected Publications

Scaling Surgical Resources: A Capacity Analysis of C-arm Machines in Haiti Following the 2021 Earthquake. *World J Surg* (2023). https://doi.org/10.1007/s00268-023-06958-x



What's Important: The Individualism Excuse and the Myth of Meritocracy in Orthopaedics. *J Bone Joint Surg* (2022). https://doi.org/10.2106/JBJS.21.01316

Conference equity in global health: A systematic review of factors impacting LMIC representation at global health conferences. *BMJ Glob Health* (2021). <u>https://doi.org/10.1136/bmjgh-2020-003455</u>





Sir Murray Brennan, GNZM, MD, FACS, MAMSE

Senior Vice President of International Programs

Memorial Sloan Kettering Cancer Center

Brennanm@mskcc.org

Dr. Murray Brennan is an oncologic surgeon-scientist. He was Chairman of the Department of Surgery at Memorial Sloan Kettering Cancer Center from 1985 until June 2006, and from 2010 served as Vice President of International Programs and Director of the Bobst International Center and since 2018 as Senior Vice President of International Programs. Dr. Brennan has lectured throughout the world and authored or co-authored more than 1,200 scientific papers and book chapters, and three books on soft tissue sarcoma.

He has served as Director of the American Board of Surgery, Vice President of the American College of Surgeons, Chairman of the American College of Surgeons Commission on Cancer, and President of the Society of Surgical Oncology, the James IV Association of Surgeons, the Society of Clinical Surgery, the International Gastric Cancer Association, and the American Surgical Association.

He has been awarded Honorary Fellowships in the Royal College of Surgeons in Ireland, Edinburgh, England, Australasia, and the Royal College of Physicians and Surgeons of Glasgow and Canada. Dr. Brennan has received Honorary Doctorates from the Universities of Edinburgh, Otago, Goteborg and University College of London.

In 1995, Dr. Brennan was honored with membership in the Institute of Medicine of the National Academy of Sciences, and in 2000 he received the American College of Surgeons' highest award, the Distinguished Service Award, and in 2012 received the ACS distinguished philanthropist award. In January 2015, he was appointed by Her Majesty The Queen as Knight Grand Companion of the New Zealand Order of Merit.

Selected Publications

Academic Partnerships in Global Surgery: An Overview American Surgical Association Working Group on Academic Global Surgery. *Ann Surg* (2020). <u>https://doi.org/10.1097/SLA.00000000003640</u>



Global Surgery: Effective Involvement of US Academic Surgery: Report of the American Surgical Association Working Group on Global Surgery. *Ann Surg* (2018). <u>https://doi.org/10.1097/SLA.00000000002934</u>

Global cancer surgery: Delivering safe, affordable, and timely cancer surgery. *Lancet Oncol* (2015). https://doi.org/10.1016/S1470-2045(15)00223-5





Natnael Shimelash, MD, MSc



Head of Biodesign Program University of Global Health Equity

Nshimelash@ughe.org

Natnael Shimelash is the Head of the East African Biodesign (EAB) Program and an Academic Faculty at the University of Global Health Equity (UGHE) School of Medicine (SOM) in Rwanda. At EAB, Dr. Shimelash contextualizes, designs, and teaches the Biodesign process to a multidisciplinary team of local Health Technology innovators and manages the overall program. In his role as a faculty member of SOM, he assists in designing, testing, and implementing clinical scenarios for medical students, as well as participating in the dissemination of the UGHE simulation programs. Additionally, he conducts simulation research to advance medical education delivery in low-resource settings.

Before joining UGHE, Dr. Shimelash served in various leadership, clinical, and education roles. He worked as a clinician, deputy medical director, head of quality and clinical governance, and clinical systems mentor in a remote district hospital in Ethiopia. He also worked as a basic sciences lecturer and conducted clinical simulations for nursing students.

Dr. Shimelash earned his Bachelor of Medicine from Addis Ababa University in Ethiopia and his Master's in Global Health Delivery, specializing in the One Health Track, from UGHE.

Selected Publications

Simulation-Based Breast Biopsy Training Using a Low-Cost Gelatin-Based Breast Model in Rwanda. *World J Surg* (2023). https://doi.org/10.1007/s00268-023-07038-w

The Use of Simulation for Undergraduate Surgical Education in Sub-Saharan Africa: A Scoping Review. *Preprint* (2022). https://doi.org/10.21203/rs.3.rs-2242593/v1

Developing a Surgical Simulation Curriculum for the Rwandan Context. *J Surg Educ* (2023). https://doi.org/10.1016/j.jsurg.2023.06.007









Nigel D. Rossiter, MB, BS, FRCSEd, FRCSEd(Tr&Orth), FFSTEd, FIOTA

Medical Director & Chair

Primary Trauma Care Foundation

chair@primarytraumacare.org

Nigel D. Rossiter, MB, BS, FRCSEd(Tr&Orth), FFSTEd, FIOTA is a Trauma & Orthopaedic Surgeon at the Hampshire Clinic in Basingstoke, UK. He is the Medical Director and Chair of the trustees within the Primary Trauma Care Foundation and a member of the Faculty Advisory Board for Faculty of Remote Rural and Humanitarian Healthcare at the Royal College of Surgeons of Edinburgh. He is a member of the Oxford University Global Surgery Group, WHO Global Alliance for Care of the Injured (GACI), and permanent council G4 Alliance.

Dr. Rossiter has set up England Trauma Networks, he was the Founding President of Orthopedic Trauma Society (OTS) and the Founding and Emeritus Fellow of the International OTS. Dr. Rossiter has been a panelist for the International Consensus, NICE VTE, and NIHR. He has chaired SAC Open Medical, AO Trauma, and the Incision Medical Indemnity. He co-authored the original STEP course for RCSEng and has been a reviewer for several journals including BJJ, Injury, Bone & Joint Research journals. Furthermore, Dr. Rossiter has been Orthopedic Trainer of the Year for the Wessex area twice, NHS Inspiring Educator of the year finalist twice, and recipient of an Hippocrates Award for excellence in the field of medicine from Who's Who.

Previously in the British Army as a Trauma Orthopaedic surgeon, Dr. Rossiter received his Bachelor of Medicine, Bachelor of Surgery from Stowe & London Hospital Medical College, and completed Basic Surgical Training in London and Belfast. He has undergone orthopedic training in Gosport, Plymouth and Oxford, and completed fellowships in Trauma ballistics at London and Porton, Orthopedic Trauma in San Antonio, Dallas, Baltimore and Seattle, and Limb Reconstruction at Oxford and Kurgan.

Selected Publications

Levelling up: prioritisation of global health. *Eur J Orthop Surg Traumatol* (2023). https://doi.org/10.1007/s00590-022-03394-w



Mechanical prophylaxis, early mobilisation and risk stratification: as effective as drugs for low risk patients undergoing primary joint replacement. Results in 13,384 patients. *Surgeon* (2021).

https://doi.org/10.1016/j.surge.2019.11.002

"Don't shoot the messengers.....": The new NICE guidance for the prevention of venous thromboembolism in adults - fake news or a real opportunity? *Bone Joint J* (2018).

https://doi.org/10.1302/0301-620X.100B9.BJJ-2018-0587



Nobhojit Roy, MD, MPH, PhD

Technical Officer (Surgery and Operative Care)

WHO Headquarters, Geneva

nroy@who.in

Nobhojit Roy, MD, MPH, PhD is a trained General and Trauma surgeon, and the Technical Officer (Operative Care) with the Clinical Services and Systems unit at the WHO HQ, Geneva. Prior to this, he has been the Professor & Chief of Surgical Services at HBNI university in Mumbai, India; the National Advisor, Public Health Planning and Evidence to the Indian Ministry of Health & Family Welfare and Director of Health Systems Strengthening at the Bihar state level. He was one of the Lancet commissioners for Global Surgery (2015) and for NCD and Injuries in the poorest billion (2020).

Dr. Roy received his Bachelor of Medicine, Bachelor of Surgery from Maharashtra University of Health Sciences, where he also completed the General Surgery Residency Program. He holds a MPH from Johns Hopkins University and a PhD from the Karolinska Institutet, Stockholm, Sweden.

Selected Publications

Estimation of the National Surgical Needs in India by Enumerating the Surgical Procedures in an Urban Community Under Universal Health Coverage. World J Surg (2021).

https://doi.org/10.1007/s00268-020-05794-7

An Analysis of 30-Day in-Hospital Trauma Mortality in Four Urban University Hospitals Using the Australia India Trauma Registry. World J Surg (2021). https://doi.org/10.1007/s00268-020-05805-7

Association between architectural parameters and burden of tuberculosis in three resettlement colonies of M-East Ward, Mumbai, India. Cities Health (2020). https://doi.org/10.1080/23748834.2020.1731919









Ricardo Miranda Prado

Electronics Engineer

CrashSavers Trauma

miranda.prado.ricardo@gmail.com

Ricardo Miranda Prado is an electronics engineer and Chief Information Officer for Digital Strings. He specializes in the post-processing of medical images, 3D Printing, and Artificial Intelligence. His past research has studied the feasibility of using medical images as a tool for the digitization of hearts in three dimensions. Holding a pivotal role, Ricardo served as the Lead Engineer of the CrashSavers Trauma team, one of the four finalists in the Global Surgical Training Challenge. His primary focus revolved around the development of circuitry for the Tourniquet Simulator with the objective to teach healthcare providers methods to stop bleeding before a patient arrives at the hospital using a low-cost alternative. Within the project, he also assumed the responsibility of coordinating the mechanical aspects of other simulators and generating each simulator's corresponding 3D models.

Mr. Miranda Prado holds a Bachelor of Engineering in Electrical and Electronics Engineering from Del Valle University in Guatemala as well as a minor in Data Engineering.

Selected Publications

Global Surgery Training Challenge: Crash Savers Trauma team <u>https://www.appropedia.org/Crash_Savers_Trauma</u>

DIY Tourniquet Simulator https://www.appropedia.org/CrashSavers_DIY_Tourniquet_Simulator

3D Models of CrashSavers simulators: iterations and components https://sketchfab.com/digital.strings/models







Robert T. Ssekitoleko, PhD



Head of Biomedical Engineering

Makerere University

rsseki@gmail.com

Robert T. Ssekitoleko, PhD is a lecturer, researcher and the head of the Biomedical Engineering Program at Makerere University in Uganda. His main interest is in removing barriers to Global Health technologies, with knowledge, experience and skills in medical device design, prototyping, devices trials as well as capacity building. He is keen on developing effective, affordable, and easy-to-use innovative biomedical devices that can advance diagnostics, interventions and disease monitoring in low- and middle-income countries, especially the Sub-African region. He is currently a PI on a number of projects aimed at improving access to medical devices and technologies. He is a mentor and judge at the Big Ideas hosted by University of California, Berkley and a former Judge on the Global Surgical Training Challenge.

Dr. Ssekitoleko holds an MEng Degree in Medical Engineering from Queen Mary, University of London and an Engineering doctorate in Biomedical Engineering from Strathclyde University, UK.

Selected Publications

The lived experience of people with upper limb absence living in Uganda: A qualitative study. *Afr J Disabil* (2022). https://doi.org/10.4102/ajod.v11i0.890

The role of medical equipment in the spread of nosocomial infections: a cross-sectional study in four tertiary public health facilities in Uganda. *BMC Public Health* (2020).

https://doi.org/10.1186/s12889-020-09662-w

Part II: U.S.—Sub-Saharan Africa Educational Partnerships for Medical Device Design. Ann Biomed Eng (2017). https://doi.org/10.1007/s10439-017-1898-1







Ronald Lett, MD, MSc, FRCSC, MS



CEO and Director of Curriculum Development

Canadian Network for International Surgery

lett@cnis.ca

Ronald Lett, MD, MSc, FRCSC, MS is the Vancouver CEO and Director of Curriculum Development for the Canadian Network for International Surgery (CNIS). He has published over 30 peer-reviewed articles and raised more than \$12 million for project implementation. Since 1995, he has completed 16 Canadian government-funded African projects focused on surgical and obstetrical skills training and injury prevention. Since 2021, he has been contracted by the WHO to assess the utilization of WHO guidelines in Uganda and Nigeria, digitized three WHO Trauma Guidelines, and prepared digital referral guidelines for Zanzibar.

Under his leadership, CNIS has entered its 28th year of operations and is building on its strength, including 12 programs and extensive partnerships in Africa and the Caribbean. 2023 programming highlights are the Trauma Team Training of front-line workers in Kenya, Midwifery Training in Nigeria Skills Training of Medical, Clinical and Nursing students in Tanzania and the annual Bethune Round Table to be hosted in Ethiopia in 2024. With Rotary support, implementing a clinical skills lab and Medical, Obstetrical, Midwifery and Trauma training in Dodoma, Tanzania, will commence in late 2023. Three of 12 CNIS skills programs are digitized, and the fourth program, Traumatic Brain and Spine Injury (TBSI), is in process and tested with the support of the Intuitive Foundation.

Dr. Lett did his undergraduate medical and post-graduate surgical training at the University of Alberta and completed his Master in Injury Epidemiology at McGill University.

Selected Publications

Identification and mitigation of high-risk pregnancy with the Community Maternal Danger Score Mobile Application in Gboko, Nigeria. *PLoS ONE* (2022). <u>https://doi.org/10.1371/journal.pone.0275442</u>

Clinical guideline utilization in Uganda: A scoping review and comparison. *Trop Doct* (2022). https://doi.org/10.1177/00494755221094167

Examining perception and actual knowledge change among learners in a standardized burn course. *Can J Plast Surg* (2015). https://doi.org/10.1177/229255031502300404









Sabrina Asturias, MD, MS

Chief of Trauma and Emergency Surgery

Roosevelt Hospital

sabrinaa@ufm.edu

Sabrina Asturias, MD, MS is the Chief of Trauma and Emergency Surgery at Roosevelt Hospital, the busiest trauma center in Guatemala and a National Institute of Health (NIH)-funded investigator in trauma systems. As a Co-Principal Investigator on an NIH Fogarty Institute grant, she developed and implemented the first electronic emergency registry in the emergency room of the San Juan de Dios Hospital, Guatemala.

Through an NIH R25 mechanism, she used information and communication technologies to further advance Guatemala's capacity for trauma information systems. Recently, she was invited to speak at the World Health Organization about her experience as a frontliner in a LMIC. She leads the CrashSavers Hemorrhage Control team funded by the Global Surgery Training Challenge and is actively working to continue this endeavor to improve trauma care in Guatemala and similar communities.

Dr. Asturias conducted her medical and surgical training, including a Master's in Medical Science, at the Universidad Francisco Marroquín in Guatemala. She completed an internship at the University of Pittsburgh in collaboration with Dr. Juan Carlos Puyana at the largest emergency center in Pennsylvania followed by a Fellowship in Trauma Surgery at the Los Angeles County Trauma Center.

Selected Publications

Use of geospatial analysis for priority setting in surgical system investment in Guatemala. *Lancet Reg Health - Am* (2022). https://doi.org/10.1016/j.lana.2021.100145

Selective versus nonselective embolization versus no embolization in pelvic trauma: A multicenter retrospective cohort study. *J Trauma Acute Care Surg* (2017). <u>https://doi.org/10.1097/TA.00000000001554</u>

Re-evaluating the need for hospital admission and observation of pediatric traumatic brain injury after a normal head CT. *J Pediatr Surg* (2015). https://doi.org/10.1016/j.jpedsurg.2015.03.067







Sherry M. Wren, MD, FACS, FCS(ECSA), FISS



Secretary

American College of Surgeons

swren@stanford.edu

Sherry Wren MD, FACS, FCS(ECSA), FISS is a Professor of Surgery at the Stanford School of Medicine, Director of Global Surgery at the Center for Innovation and Global Health, and Director of Surgery at the Palo Alto Veterans Health Care System.

She is the current Secretary of the American College of Surgeons, Professor Extraordinary at the Centre for Global Surgery, Stellenbosch University, South Africa, former Honorary Professor in the Centre for Trauma at the London School of Medicine, Queen Mary University of London, and Adjunct Professor at Uniformed Health Services University in Bethesda, Maryland.

Dr. Wren is a member and in leadership of numerous national and international organizations and has served on the boards of the Society of American Gastrointestinal and Endoscopic Surgeons, American College of Surgeons, and other surgical societies. She is an editorial board member of JAMA Surgery, and associate editor of the World Journal of Surgery and East and Central African Journal of Surgery. Her clinical focus is gastrointestinal malignancy and surgical robotics.

Her research interests are in surgical outcomes, robotics, cancer, and global/humanitarian surgery. Dr. Wren has also worked with Doctors Without Borders/Médecins Sans Frontières.

Dr. Wren received her undergraduate degree in Biology from Carleton College and her medical education at Loyola University Stritch School of Medicine. She completed an internship and residency at Yale-New Haven Hospital followed by a fellowship and residency at the University of Pittsburgh, later completing a fellowship at Los Angeles County and University of Southern California Medical Center.

Selected Publications

Characterization of Humanitarian Trauma Care by US Military Facilities During Combat Operations in Afghanistan and Iraq. *Ann Surg* (2022). <u>https://doi.org/10.1097/SLA.000000000005592</u>



Exploration of Clinician Perspectives on Multidisciplinary Tumor Board Function Beyond Clinical Decision-making. JAMA Oncol (2022). https://doi.org/10.1001/jamaoncol.2022.1763

Perceptions of Gender Disparities in Access to Surgical Care in Malawi: A Community Based Survey. *Am Surg* (2023). https://doi.org/10.1177/00031348221101522



Tony Jarc



Senior Director, Data & Analytics

Intuitive Surgical

Anthony.Jarc@intusurg.com

Anthony (Tony) Jarc is Senior Director Digital Solutions & Machine Learning at Intuitive, where he leads a diverse team building digital solutions that leverage surgical computing and AI to improve surgeon performance and patient outcomes. He has also contributed to the emerging field of surgical data science by collaborating with surgeon scientists to leverage objective metrics from the da Vinci surgical platform. Anthony joined Intuitive Surgical in 2011 as a Surgical Data Scientist.

He received a BS in Mechanical Engineering from Cornell University and a PhD in Biomedical Engineering from Northwestern University in 2011.

Selected Publications

Utilizing Machine Learning and Automated Performance Metrics to Evaluate Robot-Assisted Radical Prostatectomy Performance and Predict Outcomes. *Journal of Endourology* (2018). https://pubmed.ncbi.nlm.nih.gov/29448809/

Ethical Implication of AI in Robotic Surgical Training: A Delphi Consensus Statement. *European Urology Focus* (2022). <u>https://doi.org/10.1016/j.euf.2021.04.006</u>

A Probabilistic Approach to Surgical Tasks and Skill Metrics. *IEEE Trans Biomed Engineering* (2022). https://ieeexplore.ieee.org/document/9667312







Tsegazeab Laeke Teklemariam, MD



Neurosurgeon

Injury Prevention Initiative for Africa

Tselaeke@yahoo.com

Tsegazeab Laeke Teklemariam, MD a neurosurgeon by profession and Fellow of the College of Surgeons of Eastern, Central and South Africa. He is working at Addis Ababa University as an Associate Professor of neurosurgery at the College of Health Sciences, Division of Neurosurgery. He is involved in clinical research with his main interest being trauma related research and neuro-oncology. He is currently pursuing his PhD on *Neurotrauma Care in Ethiopia: Building for the Future*.

Dr. Laeke Teklemariam is the current President of the Society of Ethiopian Neurological Surgery Professionals. He is also a board member of Injury Prevention Initiative for Africa, a nongovernmental organization engaged in trauma prevention, surveillance, and acute care. He is a board member of Canadian Network for International Surgery, a nonprofit organization that promotes the access of essential surgical care to patients in low-income countries.

Dr. Laeke Teklemariam completed his medical degree and residency at Addis Ababa University School of Health Sciences.

Selected Publications

Prospective Study of Surgery for Traumatic Brain Injury in Addis Ababa, Ethiopia: Trauma Causes, Injury Types, and Clinical Presentation. *World Neurosurg* (2021). <u>https://doi.org/10.1016/j.wneu.2021.02.003</u>

Profile of Head Injuries: Prehospital Care, Diagnosis, and Severity in an Ethiopian Tertiary Hospital. *World Neurosurg* (2019). <u>https://doi.org/10.1016/i.wneu.2019.03.044</u>

An Ethiopian Training Program in Neurosurgery with Norwegian Support. *World Neurosurg* (2017). https://doi.org/10.1016/j.wneu.2016.12.051







Vanessa Moll, MD, PhD, FCCM, FASA



Anesthesiologist; Intensivist

Essential Emergency and Critical Care (EECC)

drvanessamoll@gmail.com

Vanessa Moll, MD, PhD, FCCM, FASA is an Intensivist and Anesthesiologist at the Essential Emergency and Critical Care Network. She is also the Chief Medical Officer at Potrero Medical where she partners with the CEO, Board, and executive team to oversee medical and clinical strategy, develop medical/clinical programs, ensure regulatory approval, and support the company's product development pipeline to drive market competitive advantage. As a board-certified intensivist and anesthesiologist, she has published over 100 articles and given invited lectures nationally and internationally. Dr. Moll is passionate about Global Health equity and capacity building and uses her talents as a scientific communicator and curious innovator to develop policy and clinical strategies to better healthcare experiences and revolutionize the healthcare system for patients and the clinical community.

Dr. Moll studied Medicine at the Universität Rostock and completed both a PhD in Neuroscience and a Doctorate of Medicine from Universität Leipzig. She worked as a Postdoctoral Research Fellow at the University of Denver and then completed an Anesthesiology and Critical Care Medicine residency at Stanford University School of Medicine. In 2020, Dr. Moll achieved Habilitation (vena legendi) from the University of Zurich.

Selected Publications

Building regional anesthesia capacity in limited-resource settings: A pilot study evaluating a 4-week curriculum. *Pain Manag* (2022). https://doi.org/10.2217/pmt-2020-0044



Use of Regional Anesthesia/Neuraxial Anesthesia in Ambulatory Surgery Centers. *Pain Control Ambul Surg Cent* (2021). https://doi.org/10.1007/978-3-030-55262-6_14



Erector Spinae Regional Anesthesia for Robotic Coronary Artery Bypass Surgery Is Not Associated With Reduced Postoperative Opioid Use: A Retrospective Observational Study. *J Cardiothorac Vasc Anesth* (2021). https://doi.org/10.1053/j.jvca.2020.09.112





Vikas Karade, PhD, M.Tech

CEO

AlgoSurg Inc.

vikas@algosurg.com

Vikas Karade is a founder of a Y-combinator backed startup company AlgoSurg Inc. He has over 10 years of experience in orthopedic surgery simulations. He is a technology inventor who has been awarded by the President and Prime Minister of India as well as many world-renowned institutions. He has won many national/international grant funding awards and has been invited as an innovation/motivation speaker at many reputable events and conferences. He is very enthusiastic to team up with passionate thinkers to build innovations and leadership for the better future of surgeries using simulations and robotics.

Dr. Karade received his Bachelor of Technology (Mechanical), Master of Technology (Computer-Integrated-Manufacturing) and Doctorate (Medical Image Processing and 3D Reconstruction) from the Indian Institute of Technology, Bombay.

Selected Publications

OpenSurgiSim: a surgical training system https://www.appropedia.org/User:OpenSurgiSim



A Study of Surgical Accuracy with X-Ray-Based Patient-Specific Instrument (X3DPSI®) vs Conventional Instrument in Total Knee Arthroplasty Surgeries. *Indian J Orthop* (2021). https://doi.org/10.1007/s43465-022-00623-6







Will Wenmiao Shu, PhD



Professor in Biomedical Engineering

University of Strathclyde

Will.shu@strath.ac.uk

Will Wenmiao Shu, PhD is the Hay Professor in Biomedical Engineering at the University of Strathclyde, Glasgow. He is also the co-founder of Organlike Ltd, which specializes in 3D printed organs for surgical simulation and training. He is part of the team-"Set Every Little-heart Free by Training" (SELF-training) which was awarded with the Global Surgical Training Challenge's Discovery Award by Intuitive Foundation to develop the surgical training kits for congenital heart diseases. He held a visiting position at Stanford University in 2011. He serves as an editorial board member for a number of leading journals including Biofabrication, Nature Bone Research, Regenerative Biomaterials, Frontiers in Bioengineering and Biotechnology, BioDesign and Manufacturing and Biomaterials Translational.

Dr. Shu pursued a dual engineering degree in Polymer Materials and Computer Engineering from Dalian University of Technology. He completed a Master's in Polymer Materials and Advanced Materials for Micro/Nano Systems from the National University Singapore and the Singapore/MIT Alliance for Research and Technology, respectively. He earned his PhD in Electrical Engineering and Nanotechnology from the University of Cambridge.

Selected Publications

Stratified tissue biofabrication by rotational internal flow layer engineering. *Biofabrication* (2023). <u>https://doi.org/10.1088/1758-5090/ace2ed</u>

Engineered periosteum-diaphysis substitutes with biomimetic structure and composition promote the repair of large segmental bone defects. *Compos B Eng* (2023).

https://doi.org/10.1016/j.compositesb.2023.110505

A Bioprinted Heart-on-a-Chip with Human Pluripotent Stem Cell-Derived Cardiomyocytes for Drug Evaluation. *Bioengineering* (2022). <u>https://doi.org/10.3390/bioengineering9010032</u>







Intuitive Staff & Facilitators



Cassidi Goll

ESG Outreach and Publications

Intuitive Surgical

Cassidi.Goll@intusurg.com

Cassidi Goll is the Environmental, Social & Governance (ESG) Outreach & Publications at Intuitive. Ms. Goll leads content creation and aligns initiatives for Intuitive's annual ESG report, advancing sustainability, responsibility, and transparency through programs which serve Intuitive customers and communities. She also manages stakeholder communication related to ESG topics.

In her previous roles as a Research Operations & Program Manager at Stanford University School of Medicine, Ms. Goll managed a team of engineers, postdoctoral researchers, and surgical residents in order to focus the research activities related to the use of sensor technology and machine learning toward quantifying surgical performance. She has also conducted Journal Reviews, overseen several successful sensor technology grants.

Ms. Goll has a philanthropic mindset with over 12 years of community service. She has served on multiple committees at Stanford University including the Presence Racial Justice Lab, Justice, Equity, Diversity & Inclusion (JEDI) Council, and Wellness Committee. In 2021, she was awarded the Stanford Department of Surgery Diversity, Equity, & Inclusion award.

Ms. Goll has a Bachelor of Arts in Journalism, Strategic Communications & Public Relations with a minor in Entrepreneurship from the University of Wisconsin-Madison.

Cortney Jansen, MS

Technical Program Manager

Intuitive Surgical

cortney.jansen@intusurg.com

Cortney Jansen, MS is the Technical Program Manager at Intuitive Surgical where she has over six years experience managing and coordinating research projects.

Ms. Jansen brings over ten years of industry expertise as Optical and Medical device engineering to her role at Intuitive Surgical. Ms. Jansen also manages the SELF: Training Evaluation Program, which tests the effectiveness of clinical skills training modules in real-world settings. Ms. Jansen received her Bachelor of Science from the University of Rochester specializing in Biomedical optics, and her Master of Science in Biomedical Engineering from Duke University.



Dale Bergman

Grant Program Manager and Manager of Research Programs

Intuitive Foundation and Intuitive Surgical

Dale.Bergman@intusurg.com

Dale Bergman is Grant Manager of the Intuitive Foundation and has been the manager of Research Programs for Intuitive Surgical since 2012. Ms. Bergman has a diverse background, which spans across grant management, pre-clinical/clinical trials, ultrasound and research activities.

Prior to joining Intuitive, Ms. Bergman was the research manager for Hansen Medical, managing preclinical and clinical trials. Ms. Bergman has also previously held a variety of roles at Acuson and Siemens Healthcare, focused on cardiac and vascular ultrasound projects.

Ms. Bergman holds registry credentials in Adult Echography and Vascular Sonography as well as in A.S. in cardiopulmonary technology from Santa Fe Community College and A.A. from Ocala Community College.



Faye Routledge, PhD, RN, FAHA

Clinical Research Consultant

Intuitive Surgical

faye.routledge@outlook.com

Faye Routledge, PhD, Rn, FAHA is a Clinical Research Consultant in the Clinical Affairs department at Intuitive Surgical. Dr. Routledge has worked in academic and research settings including as a clinical research scientist developing a program of independent clinical research focused on cardiovascular and sleep disorders. Dr. Routledge has a Doctor of Philosophy and Master's degrees in Nursing from Dalhousie University.



May Liu, PhD, MS

Principal Medical Research Scientist

Intuitive Surgical

May.Liu@intusurg.com

May Liu, PhD, MS is a Principal Medical Research Scientist at Intuitive Surgical. As a program Manager for the da Vinci Skills Simulator, she oversaw the development of the virtual reality simulation for surgeon training. As a Surgical Training Research Analyst, she identified opportunities to improve measures of effectiveness for Intuitive's customer training program.

As the Manager of the Surgical Training & Metric Analysis research teams, she worked to improve the efficiency, effectiveness, and enjoyment of the da Vinci training programs and as a Medical Scientist, she identified these qualitative and quantitative measures of customer proficiency. Now, as the Principal Medical Research Scientist, Dr. Liu leads an interdisciplinary team to investigate artificial intelligence, machine learning, the Internet of Things (IoT), and emerging technologies to push the da Vinci SimNow user experience forward.

Dr Liu received her Bachelor of Science in Biomedical Engineering from Case Western Reserve University and her Master of Science in Biomedical Engineering from Northwestern University. She completed her PhD in Mechanical Engineering at Stanford University where she explored the relationship between walking speed and muscle function.



Mimi Wainwright

Principal Consultant

Wainwright Medical Communications

mimi@mimiwainwright.com

Mimi Wainwright received her undergraduate degree as a Wellesley Scholar in Modernist Literature and Poetry and the Life Sciences.

She has served as an editor for more than 200 peer-reviewed journal articles and 1 surgical atlas and, as a medical writer, developed 70 journal articles, 63 meeting abstracts, and 4 book chapters. Subject areas include cardiothoracic and endovascular surgery, orthopedics and joint reconstruction, general and reconstructive surgery, women's reproductive health, and of course robotic-assisted surgery.

Mimi recently contributed editorial, research and writing expertise in the preparation of two consensus documents: one on robotic surgical training for residents and fellows and the other on declining global fertility rates in developed and middle- and low-income countries. Both papers are in their second round of peer review.



Patrick Diamond, MPA

Program & Partnerships

Intuitive Foundation & Laurel Studio

patrick.diamond@intuitive-foundation.org

Patrick Diamond manages several programs as a consultant to the Intuitive Foundation. He is owner of <u>Laurel Studio</u>, a practice that designs strategies for leaders of social change.

He is a founding team member of MIT Solve, a unique program that finds and funds innovations from around the world. At Solve, Patrick co-designed the Intuitive Foundation's Global Surgical Training Challenge. Prior to MIT Solve, Patrick managed partnerships at a community health center in Baltimore, Maryland, that provides integrated healthcare services to unhoused people. This work inspired him to achieve a graduate degree in public policy and health innovation.

He earned his Bachelor of Arts in Global Studies from Loyola University Maryland, and a master's degree in public policy and health innovation from the University of Pennsylvania. Patrick is working towards a Climate Change and Health Certificate from the Yale School of Public Health.

Volunteer Facilitators



Bunmi Fariyike

Medical Student Stanford University School of Medicine <u>bfariyik@stanford.edu</u>

Bunmi Fariyike is a third-year medical student at Stanford University School of Medicine interested in pursuing a career in global surgery. Prior to beginning medical school, he completed his BS in Biomedical Engineering with a Minor in Hispanic Studies at Columbia University.

He has extensive experience in global health work, including designing potable water systems in rural Ghana, aiding in sexual health program development in the Dominican Republic, and leading neurotrauma device research in Colombia.



Jacqueline Yao, BS Medical Student Stanford University School of Medicine jyao1@stanford.edu

Jacqueline Yao is a medical student at Stanford University School of Medicine with a concentration in microbiology and immunology. She holds a Bachelor of Science in Microbiology and Immunology from McGill University.



Mehdi Baqri, BS Medical Student Stanford University School of Medicine mbagri@stanford.edu

Mehdi Baqri is a medical student at Stanford Medicine, where he is concentrating in bioengineering and cancer biology. He holds a B.S. in Biomedical Engineering from Yale University, as well as a certificate in Global Health Studies. He is interested in human-centered biodesign for cancer, specifically in conflict and crisis contexts.



Selam Degu, MD, MsC

Global Clinical Study Lead selamdequwolde@gmail.com

Selam Degu, MD, MsC is an anesthesia trainee and a recent business graduate from the University of Notre Dame's ESTEEM (Engineering, Science, and Technology Entrepreneurship Masters) program. She is a joint fellow and visiting faculty at the University of Global Health Equity (UGHE) in Rwanda, she gives classroom and simulation-based lectures for MBBS students during their clerkship in the Department of Surgery and anesthesia. Selam holds a MD from St. Paul's Hospital Medical College in Ethiopia.

Event Staff



Michael Lenihan, MA Laurel Studio Event Producer michael.w.lenihan@gmai l.com



Macayla Liford Tangerine Travel Production Assistant Macayla@tangerinetrav el.com



Juliana Trujillo Mesa Laurel Studio Production Assistant j@laurelstudio.me



Mitchell Corwin, MS Laurel Studio Educational Design m@laurelstudio.me