

2022

Annual Report



**PROGRAM IN GLOBAL SURGERY
AND SOCIAL CHANGE**

Harvard Medical School

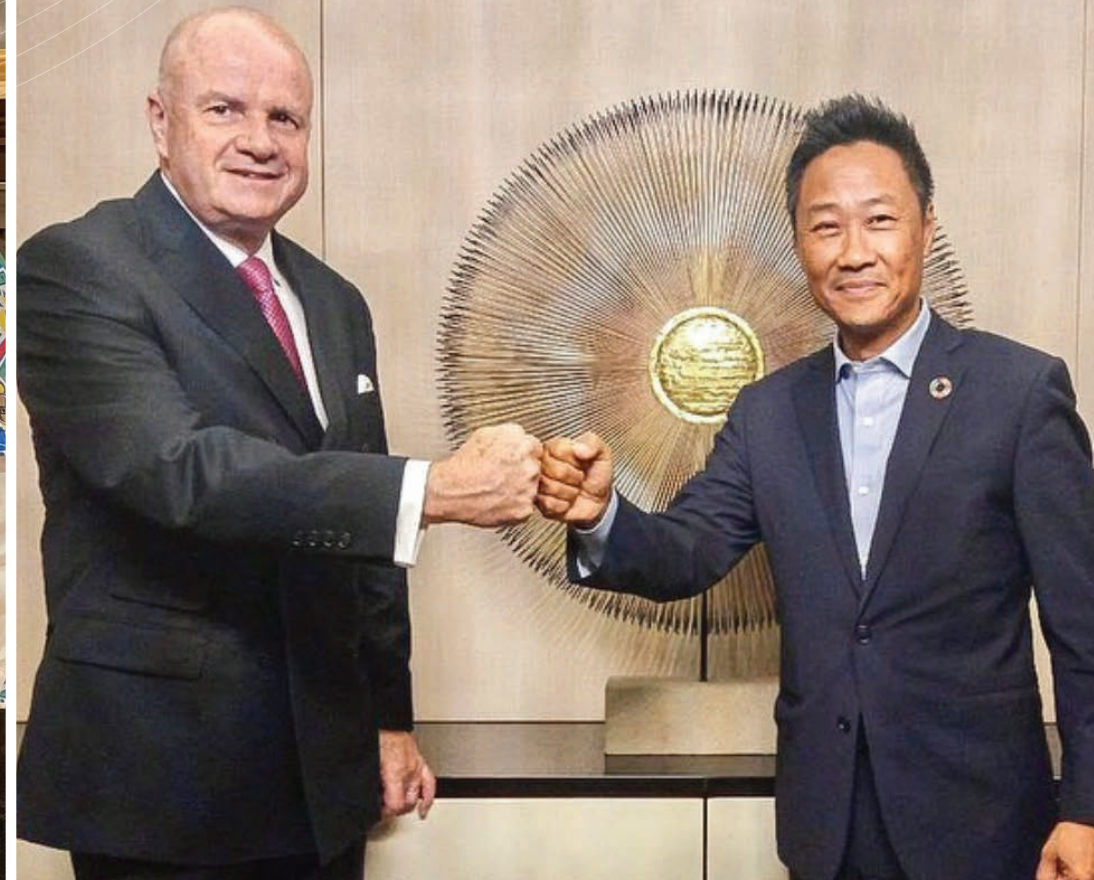


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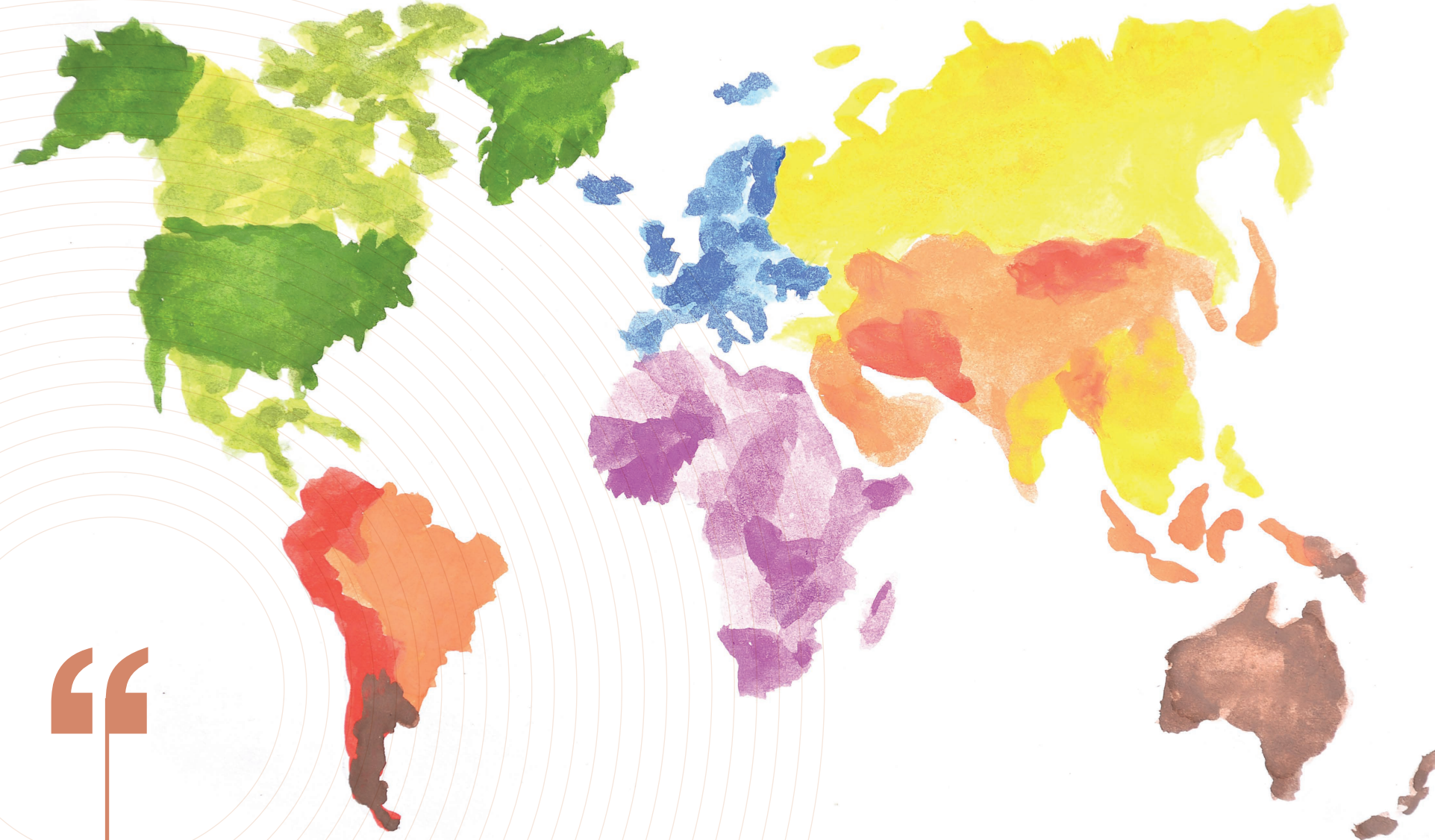
IMPACT



PROGRAM IN GLOBAL SURGERY
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MESSAGE FROM THE DIRECTOR



“

The PGSSC was born out of the need to advocate, promote, and enhance the efforts to ensure safe, timely, and affordable surgical access for all.”

Dear Colleagues and Friends,

As we reflect on our year at the Program in Global Surgery and Social Change (PGSSC), we acknowledge the pain and suffering we have endured alongside our global community, and continue to weather, due to the COVID-19 pandemic. As we search for some semblance of normalcy amidst this reality, our community also joined the rest of the country in confronting the deep-rooted structural racism that continues to impact our society. Now we also must address endeavors that would turn back the clock on climate change initiatives.

The PGSSC was born out of the need to advocate, promote, and enhance the efforts to ensure safe, timely, and affordable surgical access for all. We continue to strive to meet our goals of strengthening surgical systems as part of universal health coverage through research, policy development, advocacy, capacity building, and training leaders in global surgery.

The virtual era of COVID-19 redefined how we conduct our work and collaborate with our partners from a distance. By maintaining values of equity, accompaniment and solidarity, we continued to advance programs, agendas, and research where voices and priorities of in-country partners are not only supported, but elevated and amplified. All too often, socio-economic and geopolitical factors prevent participants from low-and-middle income countries from gaining a seat at the table during high profile global health conferences. We took advantage of the virtual platform to host a multitude of key conferences and panel discussions, reaching and engaging thousands of stakeholders from around the world, across different time zones. As we transition from our exclusively virtual platform to a hybrid and/or in-person model, we continue to value inclusivity and remain steadfast in our work in confronting and challenging the unjust barriers that limit access to information from the very communities for which we wish to advocate.

It is with great excitement that we embark on yet another year at the PGSSC. Our newest cohort of Paul Farmer Global Surgery Research Fellows and Research Collaborators represents immense diversity in thought, culture, perspective, and background. We are honored to host such enthusiastic change agents in the fields of surgery, anesthesia, and obstetrics and gynecology. With social justice and equity as our foundation, we vow to continue to push the needle forward in making safe, timely and affordable SOA care for all a paramount priority.

Kind Regards,

John G. Meara MD, DMD, MBA Program Director

Robert Riviello MD, MPH Deputy Program Director

IN MEMORIAM TO PAUL FARMER

Reimagining the future of global surgery, obstetrics, trauma, and anesthesia

On February 21, 2022 Dr. Paul Farmer died in his sleep at the University of Global Health Equity in Rwanda. He was the Chair of the Harvard Medical School Department of Global Health and Social Medicine, the Chancellor of the University of Global Health Equity, and the co-founder and chief strategist of Partners in Health. Most importantly he was a friend to all of us; that was his exceptionalism.

Paul's message to us - spoken, written, and lived - was the call to service of all humanity, to address the tragedy of human suffering, and to embrace the solutions found in equity and justice. He called us to hope through action; to pragmatic solidarity with the poor - a durable commitment to others based on active accompaniment.

As we have reflected on Paul's life and message, complex and nuanced, three realities rise to the surface.

First, Paul had a **special vision** to see deep into the nature of the human condition and its connection to our history that laid the groundwork for the social construction of our present world. He worked tirelessly to repair it, with moral clarity and urgency for forward-facing action.

Second, his sense of **compassion was limitless**. He taught us to enter into the suffering of the other person, to feel it and understand it; and to be called to action because of it. He taught us accompaniment. Paul spent his entire life in solidarity with human suffering, and his lifetime goal was devoted to its elimination.

Lastly, Paul had a unique **ability to bring out the "better angels of our nature"**. Whether it was with children, heads of state - or his favorite - with his patients, he was able to reach inside our souls to link us to our shared humanity. Paul reminded us that we belong to each other and inspired us to do more, always and for everyone.

In his memory, we commit to live what we learned from him: to reach out to, to be with, to help others, to always try, and to never give up.



“With rare exceptions all of your most important achievements on this planet will come from working with others, or in a word, partnership.”



STRATEGIC PLAN

Over a decade ago, the establishment of the PGSSC created a unique opportunity to bring together faculty and fellows across Harvard Medical School and affiliated hospitals from the clinical fields of surgery, anesthesia, obstetrics & gynecology with a health equity commitment. Housed within the Department of Global Health and Social Medicine, the PGSSC has benefited from multi-disciplinary and trans-sectoral collaborations. Researchers in the PGSSC pursue initiatives that integrate the social sciences, clinical specialties, and expertise in health care delivery. Through this approach the program is able to advance an empirical base relevant to care delivery for bio-socially complex diseases and settings across the full spectrum of surgical care, while also expanding the traditional scope of the surgical care provider.

In 2020, the PGSSC sought to review and revise our strategic priorities in light of the multitude of challenges we faced alongside the rest of our global community. From COVID-19, to climate change, to difficult and raw discussions around racial injustice and inequity, we recognized the need for a renewed approach to our mission of achieving universal access to safe, affordable, and timely surgical, anesthesia, and obstetric care. We created a new 5-year strategic plan focused around three pillars: Research; Policy and Advocacy; and Capacity Building. We additionally defined three new strategic priorities for the 5-year period: a focus on health equity through universal access to safe, timely and affordable SOA care; social change through equitable partnerships; and development of future leaders in the field of global surgery. Our work over the past year, described in the sections of the report to follow, is informed by and targeted toward the achievement of these goals.

We aim to:

- **Improve**
the collaborative nature of PGSSC's research work globally
- **Facilitate**
faculty collaborations within PGSSC
- **Support**
PGSSC faculty and partners' career development along research tracks
- **Provide**
more standardized research experiences for fellows and visiting graduate students
- **Increase**
research funding for PGSSC faculty and trainees
- **Leverage**
the PGSSC's convening power

We remain dedicated to the growth and development of the PGSSC with these goals in mind, and are thrilled to see these values materialize in real time.

VISION

Universal access to safe, affordable, and timely surgical, obstetric, and anesthesia care

MISSION

Strengthening surgical systems as part of universal health coverage through research, policy development, advocacy, capacity building, and training of leaders in global surgery

VALUES

- Social Justice and Equity
- Zero Tolerance of Discrimination
- Accompaniment and Solidarity
- Evidence-based Innovation
- Implementation and Solution

STRATEGIC PILLARS



RESEARCH



POLICY AND ADVOCACY



CAPACITY BUILDING

STRATEGIC PRIORITIES



Health equity through universal access to safe, timely, and affordable SOA care



Leadership in the field of global surgery



Social change through equitable partnerships

TRANSITION TO FACULTY LABS

In recognition of the PGSSC's growing size, complexity, and evolving needs for mentorship of its trainees and for effective collaboration between faculty, the PGSSC underwent significant structural change. Faculty-based mentorship and research groups, or "faculty labs", replaced geographically-focused teams. The faculty-based laboratory model generates direct faculty ownership over active projects and creates clear mentorship relationships between faculty and trainees.

Basing projects and collaborations in faculty labs provide a clear line-of-sight over old and new projects at PGSSC and promotes continuity for relationships between periods of transition. New initiatives in PGSSC spearheaded by fellows are initiated within the faculty lab structure. To reduce siloes of activity, fellows and faculty are encouraged to work across faculty labs on common projects, topics, and areas of interest to form cross-cutting "Topic-Content Units" such as the climate change-oriented Climate in Obstetrics, Anesthesia, and Surgery Team (COAST) or the trauma systems-oriented Surgery and Trauma Advocacy and Research (STAR) Cluster. PGSSC initiatives focused on several faculty labs working in the same geographic region may have geographically oriented meetings (i.e. Team India).

Most importantly, the faculty lab structure was designed to give PGSSC trainees of diverse backgrounds and complex work logistics due to the on-going COVID-19 pandemic a steady "home" within the PGSSC. Trainees are assigned to a single "primary" faculty lab and up to two "secondary" labs. The primary lab's faculty is responsible for overseeing mentorship for the trainee during his or her tenure at PGSSC. This begins with a mentor-mentee contract and development plan that outlines goals, objectives, and deliverables.

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The faculty-based laboratory model generates direct faculty ownership over active projects and creates clear mentorship relationships between faculty and trainees.”



GET TO KNOW THE TEAM

DIRECTOR: DEVELOPMENT / FUNDRAISING



John G. Meara, MD, DMD, MBA

Chief, Department of Plastic & Oral Surgery, Boston Children's Hospital

DEPUTY DIRECTOR: EXTERNAL PARTNERSHIPS



Robert Riviello, MD, MPH

Associate Professor of Surgery, Global Health, & Social Medicine, Harvard Medical School. Director of Global Surgery Programs, Center of Surgery & Public Health, Brigham and Women's Hospital.

CHIEF STRATEGY: HEALTH EQUITY / SOCIAL JUSTICE



William Bean, MPH, MBA, PhD

Instructor and Practicum Advisor for Field Practice & Leadership, Harvard T.H. Chan School of Public Health.



Michelle Joseph, MBBS, MSc, PhD

Instructor, Department of Global Health and Social Medicine, Harvard Medical School.

FELLOWSHIP DIRECTOR



Nakul Raykar, MD, MPH

Assistant Professor of Surgery, Division of Trauma, Burn and Surgical Critical Care Brigham and Women's Hospital.

EDUCATION



Craig D. McClain, MD, MPH

Co-director - Pediatric Neuroanesthesia, Department of Anesthesiology, Critical Care & Pain Medicine Director - Global Pediatric Anesthesiology Fellowship, Boston Children's Hospital Associate Professor of Anesthesia, Harvard Medical School.

RESEARCH



Bethany Hedt-Gauthier, PhD

Associate Professor of Global Health and Social Medicine, Harvard Medical School Associate Professor in the Department of Biostatistics, Harvard T.H. Chan School of Public Health.

POLICY & ADVOCACY



Kee B. Park, MD, MPH

Lecturer, Department of Global Health and Social Medicine, Harvard Medical School.

ADMINISTRATIVE COORDINATOR



Kiara Lindeborg



Scott Corlew, MD, MPH, FACS

Lecturer, Department of Global Health and Social Medicine, Harvard Medical School.



Adeline A. Boatin, MD, MPH

Assistant Professor of Obstetrics, Gynecology and Reproductive Biology, Massachusetts General Hospital, Harvard Medical School.

ASSISTANT FELLOWSHIP DIRECTOR



Geoffrey Anderson, MD, MPH

Assistant Professor of Surgery, Division of Trauma, Burn and Surgical Critical Care Brigham and Women's Hospital.



Kavitha Ranganathan, MD

Assistant Professor of Surgery, Division of Plastic Surgery Brigham & Women's Hospital, Director of Craniofacial Reconstruction.



Salim Afshar, MD, DMD, FACS

Attending Surgeon, Department of Plastic and Oral Surgery Boston Children's Hospital.

FACULTY



Sabrina Juran, PhD

Sr. Technical Specialist Population Census & Geospatial Data, United Nations Population Fund (UNFPA); Lecturer, Department of Global Health and Social Medicine, Harvard Medical School; Associated Researchers Epidemiology & Global Health, Technical University Munich, Germany.



Blake Alkire, MD, MPH

Otolaryngologist, Massachusetts Eye and Ear Infirmary Instructor in Otolaryngology, Harvard Medical School.



Pablo Tarsicio Uribe Leitz, MD, MP

Instructor in Surgery, Department of Global Health and Social Medicine, Harvard Medical School Investigator | Data Manager, Center for Surgery and Public Health, Brigham and Women's Hospital.



Mark G. Shrime, MD, MPH, PhD

Professor and Chair of the Institute of Global Surgery, Royal College of Surgeons in Ireland; Lecturer, Global Health and Social Medicine at Harvard Medical School.



Lauri Romanzi, MD, MScPH, FACOG, FPMR

Obstetrics, Gynecology and Urogynecology Previously Director of the Fistula Care Plus project at EngenderHealth, Washington D.C. Lecturer, Department of Global Health and Social Medicine, Harvard Medical School.




Benjamin C. Warf, MD

Director, Neonatal and Congenital Anomaly Neurosurgery; Associate Professor of Neurosurgery, Harvard Medical School.

Our Team

VISITING SCHOLAR



Sangchul Yoon, MD, PhD


Associate Professor of Global Health and Social Medicine, Harvard Medical School; Associate Professor in the Department of Biostatistics, Harvard T.H. Chan School of Public Health.

RESEARCH FELLOWS




**Meghan Lim
MBChB, MSc, MRCS, DPhil (Oxon)**

Meghan is a pediatric surgery resident from Singapore. She received her medical degree from the University of Edinburgh and her MSc in Surgical Science from the Royal College of Surgeons Edinburgh.




Callum Forbes, MBChB

Callum is an Anesthesia and Critical Care trainee who completed his medical degree from the University of Edinburgh, Scotland in 2013. He is a joint fellow with the Center for Equity in Global Surgery at the University of Global Health Equity, Rwanda.




**Barnabas Alayande,
MBBS, PgDTh, MBA, FMCS**

Barnabas is a General Surgeon originally from Nigeria. He is an assistant professor with the Center for Equity in Global Surgery at the University of Global Health Equity, Rwanda.




Manon Pigeolet, MD, MSc, MPH

Manon is a resident in orthopedic surgery at the University of Antwerp in Belgium.



Diana D. del Valle, MD, MP

Diana was born and raised in Mexico City where she completed her medical school training. She has recently earned a Master of Public Health at Harvard T.H. Chan School of Public Health.




Sarah Hill, MD

Sarah is a General Surgery resident from Toledo, Ohio and received her M.D. from Northeast Ohio Medical University in 2018.




Ahmed Negida, MBBCh, PhD

Ahmed is a physician-scientist who studied Medicine and Surgery in Zagazig University (Egypt), then did a neurosurgery research fellowship in Bahçeşehir University (Turkey).




Abbie Naus, MD

Abbie is a General Surgery resident at St. Elizabeth's Medical Center in Boston.




Belain Eyob, MD

Belain is a general surgery resident at New York Presbyterian/Columbia University in New York City, originally from Addis Ababa, Ethiopia.




Tarinee Kucchal, MD

Tarinee attended medical school at Monash University, Australia and then worked as a General Surgical Registrar and Medical Officer at the Austin Hospital, Melbourne, and Tan Tock Seng Hospital, Singapore.




Myron Rolle, MD, MSc

Myron is Bahamian-American, is a Rhodes Scholar, and is currently a Neurosurgery resident at the Massachusetts General Hospital.




Rennie Qin, MD

Rennie is a general surgery resident from Aotearoa New Zealand. She obtained an MBChB and a BMedSc(Hons) with First Degree Honours from the University of Auckland.



**Isioma Okolo,
MBChB, MPH, MRCOG, DTMH**

Isioma is a Nigerian Obstetrics & Gynaecology registrar in Scotland, UK. She graduated from the University of Edinburgh in 2011 and was elected to the Membership of the Royal College of Obstetrics & Gynaecology in 2018.




Rashi Jhunjunwala, MD, MA

Rashi was born and raised in Portland, Oregon, and is currently a general surgery resident at Beth Israel Deaconess Medical Center in Boston. She received her MD from Emory University and a Master of Arts in Bioethics & Society from King's College London.




Michael Baird, MD

Michael Baird is an orthopedic surgery resident at Walter Reed National Military Medical Center in Bethesda, Maryland. He is an active duty Captain in the US Army and the first military Paul Farmer Research Fellow in the Program for Global Surgery and Social Change (PGSSC).




Jennifer Hon, MBChB, BDS, MA

Jen is an oral & maxillofacial surgical trainee from London, UK. She obtained an MA from Cambridge University, completed her medical degree at Edinburgh University.




Carolina Torres, MD

Carolina was born and raised in Lima, Peru where she completed her medical school training at the Universidad Peruana Cayetano Heredia. She is currently a general surgery resident at Beth Israel Deaconess Medical Center in Boston, MA.



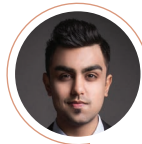
Selam Degu, MD, MSc

Selam is an anesthesia trainee from Ethiopia and a recent business graduate from the University of Notre Dame.



Radzi Hamzah, MBBS, MPH

Radzi is a neurosurgical trainee from Malaysia. He obtained his medical degree from Manipal University, India and completed his internship and medical officer training in Sarawak, Malaysia.

**Shreenik Kundu, MBBS**

Shreenik earned his MBBS degree from the West China School of Medicine, Sichuan University, China.

**Faith Odwaro, MD**

Faith is a Ukrainian trained general surgeon, working in rural Kenya at The Mazira Memorial Hospital.

RESEARCH COLLABORATORS**Hodan Abdi**

Hodan is a Somali Ethiopian, who is currently a 4th-year medical student at the University of Minnesota Medical School.

**Hassan Ali Daoud**

Hassan is a general physician from Somaliland and co-lead of the Partnership of Somaliland Surgical System Strengthening.

**Isabella Faria, MD**

Isabella is a medical doctor from Brazil and earned her MD from Universidade Federal de Minas Gerais.

**Edward Ham**

Eddie is currently an MD/MPH candidate at the Renaissance School of Medicine at Stony Brook, NY.

**Anam Noor Ehsan, MBBS**

Anam completed her medical school training from the Aga Khan University, Pakistan.

**Matthew Hey**

Matt is in his final year of medical school in Miami, Florida.

**Alence Therone, MD**

Alence is a medical doctor who studied medicine in Haiti.

**Anchelo Vital**

Anchelo is a medical doctor who studied at the State University of Haiti (UEH) School of Medicine and Pharmacy.

**Bonnie Wong**

Bonnie Wong is a resident at Brigham and Women's Hospital Department of Surgery and during her time at PGSSC was a medical student at Stanford School of Medicine.

**Eric K. Kim**

Eric Kim is a medical student at the University of California, San Francisco. He is pursuing a career in otolaryngology-head and neck surgery.

**Tayana Jean Pierre**

Tayana is a graduating medical student from Haiti and an aspiring pediatric surgeon.

**Shehnaz Alidina SD, MPH**

Shehnaz is the senior global health systems researcher in the Program for Global Surgery and Social Change. She received her MPH and her SD in health policy & management from the Harvard Chan School of Public Health.



WEBINARS AND IMPORTANT EVENTS

Trauma Injuries and Mental Health Webinar

The PGSSC, in partnership with Africa CDC (Center for Disease Control and Prevention), World Orthopedic Concern UK, Brigham and Women's Hospital, and Stepping Strong Center for Trauma Innovation held this live webinar in October 2021.

The webinar focused on:

- 1 The lived experience of a trauma survivor
- 2 The complexities of mental health sequelae
- 3 Trauma-informed care
- 4 Psychological first aid
- 5 Case studies.

Dr. Michelle Joseph and Professor Eric Bui co-moderated. Talks were delivered by expert panelists from across the globe. A pre-webinar Instagram live session, introducing the concept of mental health needs related to traumatic injuries for the lay public, was held by Gülşah Kurt (PhD Candidate, Koç University), Rashi Jhunjunwala (Research Fellow, PGSSC), and Matt Hey (Research Collaborator, PGSSC). The delivery of this webinar also involved the contributions of Carolina Torres, Research Fellow, and Research Collaborator, Tayana Jean-Pierre, Eric Kim, and Alence Therone.



Launch of Center for Equity in Global Surgery

The University of Global Health Equity (UGHE), based in rural Rwanda launched its Center for Equity in Global Surgery (CEGS) in February 2022.

The focus of the center is to contribute to solutions to the imbalance in surgical access through five key pillars;

- Fellowship
- Education and Training
- Global Convenings
- Research and Innovation
- Policy and Advocacy

The PGSSC partnered with UGHE in birthing the center with an on-site presence of 3 fellows (Dr. Callum Forbes, Dr. Barnabas Alayande, Dr. Selam Degu), 1 visiting student (Matthew Hey), 1 alumni (Dr. Yihan Lin), and 2 faculty (Dr. Robert Riviello, Dr. Geoffrey Anderson). Following a welcome and introduction to the Center by the co-chairs, a discussion titled "Beyond the OR - 15 years on: Reflections on Global Surgery" between Drs. Paul Farmer and Jim Y. Kim were moderated by Dean Abebe Bekele. An expert multi-professional, pan-African panel discussed innovations in equitable medical education around three major themes- dismantling barriers through inclusivity, a multidisciplinary, trans-sectoral approach to surgical education, and co-location of regional surgery training hubs. The PGSSC is thrilled to continue developing and strengthening our partnership with the UGHE through this new and innovative approach.

Pacific Heads of Health Meeting

The PGSSC currently supports five Pacific Island Countries (Fiji, Tonga, Vanuatu, the Cook Islands, and Palau) in developing National Surgical, Obstetric, and Anesthesia Plans (NSOAPs). The PGSSC assisted in reviewing the Tonga NSOAP and in compiling situational analysis reports for Vanuatu and the Cook Islands. Senior fellow Dr. Rennie Qin in conjunction with Lord Viliami Tangi delivered an update on the Pacific NSOAP project at the Pacific Heads of Health meeting in 2021. Dialogue on NSOAP development has also been initiated with additional Ministries of Health and partners across the South East Asia region.

World Congress on Neurosurgery, Bogota

In March 2022, members from the PGSSC's Global Neurosurgery Lab traveled to Bogota, Colombia for the World Federation of Neurosurgical Societies (WFNS) World Congress of Neurosurgery. Faculty members (Dr. Park), visiting fellows (Dr. Ahmed Negida) and visiting graduate students (Hodan Abid and Edward Ham) were actively participating throughout the week. They delivered oral presentations, and taught a research workshop in collaboration with the Journal of Global Neurosurgery and the Young Neurosurgeons Forum. Notably, Dr. Park participated as a panelist for the last plenary session; a session that was dedicated to Global Neurosurgery. Following this session, congress organizers awarded Dr. Park a plaque for his long-standing dedication to the global neurosurgery movement.

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In May 2022, members of our team were able to attend the 75th World Health Assembly (WHA) in Geneva. PGSSC, alongside the global surgery community, had considerable on-ground presence, contribution to highly-ranked events, and leading social media influence in the 75th WHA. ”



World Health Assembly

In May 2022, members of our team were able to attend the 75th World Health Assembly (WHA) in Geneva. PGSSC, alongside the global surgery community, had considerable on-ground presence, contribution to highly-ranked events, and leading social media influence in the 75th WHA. These efforts paved the way to not only highlight surgical care as indispensable to building robust health systems but also strongly advocated for improved funding and greater discourse at the policy level for global surgery.

Our team partnered with the Republic of Ecuador in hosting an event that brought together representatives from the WHO, the Pan American Health Organization, and ministries of health, as well as other global health experts to discuss surgical system strengthening in the Americas. The team also worked with the Global Surgery Foundation (GSF) to create a trans-sectoral panel that explored sustainable and innovative means of addressing surgical care shortfalls in LMICs. There were many other surgery-focused side events that were attended by our team. Notably, the PGSSC cohort, alongside GSF, met with Mr Nikil Seth, Executive Director of the United Nations Institute for Training and Research (UNITAR), to share progress and actionable plans for the global surgery movement.

Research Seminar/Symposium

The eight seminar PGSSC Global Surgery Research Seminar series kicked off in September 2021 with the goal of sharing research from a diverse group of global researchers. Each seminar was paired with a complementary journal club for where research collaborators and fellows had the opportunity to explore and discuss research methodologies with the guidance of faculty members Drs. Bethany Hedt-Gauthier and Adeline Boatin. Topics covered included the use of online surveys; healthcare financing; trauma care registries; surgical care and outcomes in Africa; Neurosurgery during the COVID-19 pandemic; safe surgery initiatives; use of geospatial analysis methods; and systematic reviews of the burden of surgical disease.

TEAM PROJECTS/PROFILES

Global Reproductive Surgery (GRS) Lab

Led by Dr. Adeline Boatin and Dr. Lauri Romanzi and based in Uganda and Ghana, the Global Reproductive Surgery (GRS) Lab conducts research to improve the quality of perioperative care for pregnant people and women who undergo surgery in low resource settings.

In the last year the primary projects included:

CRADLING Uganda

Which investigated the contribution of patient, provider, and facility factors to variation in cesarean delivery use in Uganda.

CRADLING Ghana

Which is an adaptation of the CRADLING Uganda study. It similarly aims to investigate factors driving variable usage of caesarean deliveries in Ghana

POPLING Ghana

Aimed to investigate burden and risk factors associated with pelvic organ prolapse in two communities.



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We work with teams in the United States and India, as well as the Global Surgery Foundation (GSF)/United Nations Institute for Training and Research (UNITAR).”

Opportunity Through Surgery (OTS) Lab

The Opportunity through Surgery (OTS) Lab, led by Dr. Kavitha Ranganathan, is a collaboration of medical and allied professionals.

The lab has three main pillars:

- 1 Designing solutions to prevent and alleviate poverty due to surgical healthcare costs
- 2 Advocating for equitable care distribution;
- 3 Building academic leaders in global surgery.

We work with teams in the United States and India, as well as the Global Surgery Foundation (GSF)/United Nations Institute for Training and Research (UNITAR).

Financial Risk Protection in India is a multi-site, longitudinal study assessing the risk of catastrophic expenditure and financial hardship for surgical trauma and burn patients in India.

Establishing the global cost of surgical care.

The OTS lab has engaged in a range of studies including systematic reviews and meta-analyses, and modeling studies examining the value of statistical life, in order to establish global trends in macroeconomic costs and available financial interventions for surgical diseases.

Creating equity in all arenas of surgical care.

Beyond financial metrics, the OTS lab investigates factors such as race, policy changes, politics, and medical journal requirements to identify inequity in surgical care and dissemination of academic surgical information worldwide.

The Kee Park Lab

The goals of the Kee Park lab are

- 1 To support policy development and advocate for surgical system strengthening
- 2 To address disparities in global neurosurgical care through research, education, and advocacy in the field of global neurosurgery.

Supporting the editorial team of the Journal of Global Neurosurgery; the world's first academic journal dedicated to the field of Global Neurosurgery. The journal aims to publish global neurosurgery-related articles, build the research capacity of LMIC-based neurosurgeons, and to advocate for universal health coverage.

Supporting the secretariat team of the Global Neurosurgery committee (GNC) of the World Federation of Neurosurgical Societies (WFNS). The GNC was established to bring together neurosurgeons around the world to collectively address, align, and coordinate all global efforts to address the unmet need for neurosurgical care.

Comprehensive policy recommendations of Hydrocephalus and Spina Bifida (CHYSR) is a set of policy recommendations crafted to provide healthcare workers, hospitals, ministries of health, governments, and other policymakers with a framework for strengthening their approach to hydrocephalus and spina bifida.



The Agaseke Lab

Led by Dr. Bethany Hedt-Gauthier, The Agaseke lab carries out a series of projects with the goal of improving access to high-quality surgical care in rural district hospitals. Our research is implemented in close partnership with Partners In Health (Inshuti Mu Buzima) Rwanda along with colleagues at the Ministry of Health. The team has focused on cesarean sections, image-based diagnostic work, and health systems research within 4 thematic areas:

- 1 Health tools for community health worker led postoperative follow-up**
Over the last year, the lab concluded an NIH-funded telemedicine study that measured the inter-rater reliability, sensitivity, and specificity of diagnoses.
- 2 Strategies to communicate discharge instructions for c-section patients**
With sponsorship from the HMS Dean's Grants, in collaboration with Ariadne Labs, we convened a technical advisory group and agreed on appropriate c-section discharge instructions and protocols based on best practices related to c-section care. Agaseke is currently developing and evaluating tools to effectively communicate discharge instructions to women following c-sections.
- 3 Team training and capacity building**
Intermediate Operational Research Training is deliverable-driven training and mentorship provided to Rwandan researchers with a focus on research questions of importance to the Rwandan Ministry of Health.
- 4 Establishing a district hospital-based surgical center of excellence**
Partners In Health Rwanda has designated Rwinkwavu District Hospital as a surgical center of excellence. This project will involve establishing protocols, integrating systems, and leading baseline and early evaluations of the program.

“Led by Bethany Hedt-Gauthier, The Agaseke lab carries out a series of projects with the goal of improving access to high-quality surgical care in rural district hospitals.”

The Systems for Trauma and Blood and Global Surgery (STAB) Lab



The STAB Lab, led by Dr. Nakul Raykar, has critical partners and active projects in Kenya, India, Guatemala and Chile. Dr. Nobhojit Roy and Dr. Anita Gadgil from The World Health Organization Collaborating Centre (WHO-CC) for Surgical Care Delivery in LMICs (Mumbai, India) are co-faculty in the lab.

Novel Strategies for Blood Transfusion in Low Resource Settings (Kenya and India) explores innovative strategies for blood transfusion in the world's most blood deficient areas. In 2021-2022, STAB Lab secured a \$100,000 grant from the Gillian Reny Stepping Strong Foundation to study the feasibility of implementing walking blood banks in Northwestern Kenya.

Trauma Registry Research Hub/Trauma Systems Comparison Project. STAB Lab works closely with the India-Sweden-Australia-USA-based Trauma Research Consortium, led by former Lancet Commissioner Dr. Nobhojit Roy. The consortium oversees one of the few multicenter trauma registries in an LMIC (TITCO Dataset, India). STAB Lab has also launched the Trauma Systems Evaluation Unit with the aim of serving as a hub for cross country dataset and registry analyses.

In 2021-2022, the STAB Lab won a second-stage MIT Solve/Nesta/Intuitive grant for \$500,000 in collaboration with Dr. Sabrina Asturias of Guatemala to develop a **low-cost hemorrhage control simulation for Guatemala pre-hospital providers**. The module combines virtual and augmented reality to teach Guatemalan firefighters how to manage life-threatening hemorrhage.

The STAB Lab is focused on:

- **Innovative**
ways to make blood transfusion available in the world's poorest settings
- **Enhancing**
trauma care through quantitative comparisons and education
- **Implementing**
The Lancet Commission on Global Surgery in India





Surgical Epidemiology, Trauma Systems & Geographic Inequalities Lab

This lab, led by Dr. Sabrina Juran and Dr. Tarsicio Uribe Leitz, aims to impact policy and create sustainable change by studying vulnerabilities and resilience, and identifying geographic and socioeconomic inequalities in health at a regional, subnational, and national level. The lab uses data analysis and geographic information systems to visualize surgical relationships and improve access to quality surgical care. The lab is currently involved in the following endeavors:

Global Surgery Metrics. Assessment of the Lancet Commission on Global Surgery Indicators for Mexico and the United States of America

Trauma systems. Collaboration with the Network for the Prevention of Gun Violence in the Americas

Inequalities and Vulnerabilities. Generate evidence to improve access to timely, effective surgical care with a specific focus on access for marginalized and vulnerable populations in Mexico and Guatemala.

Policy and Advocacy. Advocated for the integration of Surgical Health Care into National Health Policy in Ecuador and Mexico.

The Tiger Lab

The TIGER Lab's mission is to improve care and outcomes for the most vulnerable surgical and trauma patients in this world. The TIGER Lab is led by Dr. Geoffrey Anderson. Its current projects include:



Macroeconomic Factors and the Lancet Commission on Global Surgery Indicators. Assessment of which country-level economic and health spending factors are associated with improved surgical capacity

UGHE Simulation Center. Development of surgical simulations, curricula, and courses for East Africa. The goal is to turn the UGHE simulation center into a regional hub for surgical education and training

Social Determinants of Trauma. Series of projects to examine how trauma is experienced differently by the most vulnerable in the US and the cost to both individuals and society. This is done through examination of large databases, geospatial mapping, scoping reviews, economic modeling, policy modeling, and qualitative analysis

Long-Term Outcomes of Trauma Patients. Use of patient-reported outcomes of trauma survivors. Includes looking at violence recovery programs and a pathway for non-English speaking trauma survivors.

The McClain Lab

The objective of this lab is to further access and quality of anesthesia care globally. Our work primarily focuses on collaborations in Rwanda, India, and Mexico.

Scaling Spinal Anesthesia Training of Medical Officers in Rural India. We recently completed a randomized controlled trial in Southern India demonstrating the non-inferiority of medical officers in the delivery of spinal anesthesia after the completion of a three-phase training

program. The lab is due to publish a clinical handbook of spinal anesthesia based on the training program developed as part of this RCT.

Task Shifting and Task Sharing in Anesthesia in LMICs. We are conducting a scoping review of task-shifting and task-sharing practices and outcomes in anesthesia across LMICs.

Development of a contextualized undergraduate anesthesia and critical care curriculum in Rwanda. Through the conducting of a pan-African modified expert Delphi process, the McClain lab is working in collaboration with the Riviello lab to help develop and deliver a contextualized undergraduate anesthesia and critical care curriculum at the UGHE.

The Corlew Lab

The Corlew lab is largely focused on policy and surgical health care systems development in the sixteen countries that comprise the Southern Africa Development Cooperative (SADC).

NSOAP development and implementation. Working with key stakeholders and the Ministries of Health the Corlew lab helps to incorporate basic, essential surgical care into national health planning processes across the SADC region, as well as in Somaliland and Nepal.

Management of cervical cancer. This work undertaken with the Global Surgery Foundation aims to expand appropriate management of cervical cancer in both Rwanda and Zambia.

Examining the role of machine learning in cleft palate management at Boston Children's Hospital with possible applications for low-income countries (LICs), economic assessment of the effect of surgical care.

The Riviello Lab

With work centered on sub-Saharan Africa and fellows based in Rwanda, the Riviello Lab creates surgical equity, education, and research solutions for Africa’s local contexts. We have contributed to the development and delivery of novel undergraduate and postgraduate surgical and anesthesia curricula specific to sub-Saharan Africa

Development and delivery of undergraduate medical education curricula at the University for Global Health Equity, Rwanda. The Riviello Lab determined expert consensus on the approach to undergraduate education in surgery, anaesthesia, and critical care across sub-Saharan Africa through modified Delphi surveying. The team then delivered and iteratively assessed the inaugural surgery clerkship at UGHE.

The lab was key to the Launch of East Africa’s first **Center for Equity in Global Surgery** based at the UGHE.

Non-Technical Skills for Surgery in the Variable Resource Context (NOTSS-VRC). This educational program delivers Non-technical Skills training to multi-disciplinary surgical teams across Eastern and West Africa. In collaboration with the Rwanda Surgical Society, we are working to assess hospital readiness for NOTSS implementations using the Safe Surgery Organizational Readiness Tool, and to expand NOTSS across East Africa.

The Shrike Lab

Despite a limited understanding of how patients choose to—or not to—get surgery, global surgery interventions abound, the goal of which is to “increase access” for patients to surgery. The Shrike Lab focuses on this intersection between policy, patient choice, and outcome.

We have recently completed a randomized, controlled trial of a **financial intervention to incentivize surgical uptake, as well as a longitudinal patient-centered evaluation of the health, financial, and equity impacts of maxillofacial surgery** at three institutions in Guinea.

Ongoing projects include an assessment of the financial risk patients undertake for surgery worldwide, as well as a patient-centered impact analysis of the health, financial, and equity impacts of pediatric orthopedic surgery across 8 hospitals in as many countries.

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The lab was key to the Launch of East Africa’s first Center for Equity in Global Surgery based at the UGHE.”

The Joseph Lab

The Joseph Lab focuses primarily on addressing the burden of injury-related deaths in LMICs as well as assisting in the development of robust trauma systems through a number of projects.

PROTRA Haiti Study. This project aims to explore the epidemiology of trauma in Haiti through (1) the identification of triage acuity variations with presentation time for road traffic injuries, and (2) Geographic Information System (GIS) mapping of firearm injuries. This project simultaneously attempts to harness the opportunity for in-country research capacity development.

Haiti Disaster Response Analysis: Scoping Review. Medical Disaster Response: A Critical Analysis of the 2010 Haiti Earthquake. Published in Frontiers in Public Health, this study identifies key lessons to assist future coordinated disaster responses, highlights the barriers to surge capacity related to governance structures.

IMPACT Study- Integrated Military Partnerships and Civilian Trauma Systems. This is a multistudy project with the primary aim of developing an integrated framework for building trauma systems. Building on the findings of an initial case study evaluation, a second scoping review study was conducted to further systematically determine themes, drivers, and barriers to the integration of military and civilian trauma systems. Future projects include a mixed methods study to further inform the development of the framework.

The Brazil/David Mooney Lab

The Brazil Lab focuses on Brazilian-led research initiatives including projects on trauma, pediatric surgical care, gender disparities in surgery, and regional variation in surgical care delivery in Brazil. We design our projects with a lens of Brazil as a model for the world in several topical areas:

Gender Equity. These projects call attention to gender disparities in the surgical workforce, barriers for gender minorities in the health workforce and for patients accessing care, and gender discrimination at both the provider and patient levels.

Surgical Workforce and Medical Education. The group has conducted multiple surveys and data-based studies on topics such as the pediatric surgical workforce in Brazil and the perspectives of medical students and residents on specific issues in education and training.

Health Systems and Access. Brazil has a large public healthcare database that we utilize for country-wide studies including pediatric non-accidental trauma, regional variation in mortality in specific surgical diseases, and correlations of health indicators to other nationally reported variables related to economics, policy, and expenditure. We recently utilized this health database to calculate the surgical backlog for Brazil during COVID-19 published in The Lancet Regional Health Americas.

CROSS-CUTTING CONTENT TOPIC UNITS

COAST

Climate change is the biggest threat posed to human health in the 21st century. Yet, notably, emissions from the healthcare sector constitute up to 6% of global greenhouse gas emissions worldwide. The Climate in Obstetrics, Anesthesia, and Surgery Team (COAST) is a collaborative group of clinicians and researchers from the PGSSC and the Center for Surgery and Public Health, including PGSSC Faculty Lead Dr. Craig McClain and fellows Callum Forbes, Abbie Naus, and Rennie Qin. The group aims to address the challenging intersection of the high volume of global greenhouse gas emissions created by the healthcare sector (to which surgical care disproportionately contributes) with the need to massively scale up surgical services and access worldwide.

Over the past year, the team has contributed to a Global Consensus Statement from the WFSA on Principles of Environmentally-Sustainable Anesthesia, accomplished the peer-reviewed publication of a narrative review of opportunities to integrate climate change into national surgical planning in the Western Pacific Region, and conducted advocacy work through publication of work in Think Global Health and Bulletin as well as appearances from COAST members on the 'Global Scalpels' and 'Behind The Knife' podcast series. We aim to build international collaboration, and we are currently exploring projects with the Global Surgery Collaborative group in the UK, the One Health team at the University of Global Health Equity in Rwanda, researchers based in the WHO Western Pacific Region, and human security and climate change experts from the US. Our flagship project for the coming year will collate both geospatial analysis data and project sea level rises based upon heating scenarios to produce an investment prioritization list for Pacific Island communities and healthcare infrastructure based upon the impacts of climate change.



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ARC

The PGSSC Anti-Racism Curriculum (ARC), led by Dr. Michelle Joseph, was supported and delivered by senior fellows Rashi Jhunjhunwala, Isioma Okolo and Rennie Qin. For the duration of the academic year, 2021-2022, PGSSC faculty, fellows, and visiting graduate students completed the next iteration of ARC. Participants were able to advance their reflection, discourse, and practice of anti-racism by engaging with a broad curriculum featuring guest speakers: Professor Matt Clair on the definitions and types of racism, Professor Jesse Bump on neocolonialism, Dr. Jordan Cory speaking on indigenous health, Professor Jocelyn Chu on positionality, and Dr. Alex Keuroghlian on the intersectionality of race and LGBTQIA+ health, to name a few. Over the four terms (21 sessions), topics such as, the history of racism, whiteness as a system, and intersectionality were covered. Pre-session material took the form of various media-literature, podcasts, and talks. These were used as reference points during the sessions, which predominantly focused on active engagement of the participants. In June 2022, the ARC team presented “Evaluation of a Novel Antiracism Curriculum for Global Surgery” at the 2022 Bethune Round Table Conference, themed “Decolonization of Global Health”.

In November 2021, Dr. Michelle Joseph (Principal Investigator), ARC senior fellows (Co-investigators), and Boston Children’s Hospital Decolonizing Global Health Leads (Co-investigators) were awarded the inaugural American College of Surgeons Board of Regents Innovative Grant for Diversity, Equity and Inclusion and Anti-racism. This grant was used to develop the ARC-S – Anti-Racism Curriculum for Surgical residents/fellows – piloted at the Harvard-affiliated Surgery Programs based at Massachusetts General Hospital, Brigham and Womens’ Hospital, Beth Israel Deaconess Medical Center, and Boston Children’s Hospital. The curriculum will be delivered over three 1-hour sessions at each facility between July and November 2022.

“Over the four terms (21 sessions), topics such as, the history of racism, whiteness as a system, and intersectionality were covered.”

Global Neurosurgery Lab

In response to the unmet neurosurgical burden, the PGSSC at Harvard Medical School created the Global Neurosurgery (GNS) Initiative in 2018. This past year the GNS Initiative has evolved into the GNS lab, focusing on research, policy, and advocacy within the context of global neurosurgery. Prior research from our group has produced metrics about the global burden of neurosurgical pathologies and has also provided estimates about the global neurosurgical workforce density. Previous policy work includes the creation of the “Comprehensive Policy Recommendations for Head and Spine Injury Care in Low- and Middle-Income Countries” and the “Comprehensive Policy Recommendations for the Management of Spina Bifida & Hydrocephalus in Low- and Middle-income Countries”. In addition, the GNS Initiative collaborates with a wide range of organizations, such as the World Federation of Neurosurgical Societies (WFNS) and the National Institute for Health Research Global Health Research Group on Neurotrauma.

STAR (Surgery and Trauma Advocacy and Research) Cluster

In response to the proliferation of trauma registries and NSOAPs in the post-Lancet Commission on Global Surgery era, the PGSSC launched the STAR Cluster with the aim to be

- 1 A hub for the development, maintenance, and evaluation of trauma registries worldwide
- 2 A PGSSC base for mixed methods evaluation of the Lancet Commission on Global Surgery.

It meets bimonthly to host forums for expert speakers in a lecture format, as well as research-focus sessions to discuss research proposals. In addition to its launch in 2021-2022, STAR Cluster saw the completion of the combined T2 dataset, developed by the STAB (Raykar) Lab with the expertise of Dr. Tato Uribe-Leitz and the BWH Center for Surgery and Public Health and in conjunction with Mumbai’s WHO Collaborating Centre for Research in Surgical Care Delivery in LMICs. The T2 dataset will advance understanding of trauma system benchmarking between context and to provide participants with opportunities to improve quantitative research skills. The STAR Cluster is led by Drs. Nakul Raykar, Kavitha Ranganathan, Geoffrey Anderson, and Tarcisio Uribe-Leitz with participation from Drs. Scott Corlew, Bethany Hedt-Gauthier, and Michelle Joseph. It is supported by senior fellow Carolina Torres Perez-Iglesias.



IMPACT

Reach of Research Symposium



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PUBLICATIONS

24

CONFERENCES / PRESENTATIONS

3

VISITING SCHOLARS

18

FUNDING / GRANTS

From 2010 to 2022 we have trained:

- **60 research fellows**
- **80 research collaborators**
- **5 clinical fellows**



“

With rare exceptions all of your most important achievements on this planet will come from working with others, or in a word, partnership.”

-Dr. Paul Farmer