



EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Surgery

[ANNUAL REPORT 2020]

**DEDICATION,
MODIFICATION,
AND PROGRESSION**

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FROM THE CHAIR

When SARS-CoV-2 first appeared in China, it was half a world away and easy to relegate to being out of sight, out of mind. Of course, that ended quickly, and by March the pandemic began changing everything everywhere. “Unprecedented” became one of the words to characterize 2020.

For me, the truth of the pandemic arrived when one of Emory University Hospital's first COVID-19 patients was intubated.



Almost immediately, I was entrusted with convening a multidisciplinary group to recommend adjustments to the perioperative arena in response to this new threat. After considering both the short supply of PPE and the limitations of COVID testing, we endorsed such measures as pausing elective procedures.

All of us in Emory Surgery had a pivot moment when we saw what lay ahead. We began

revising our routines and recalibrating our systems so we could continue delivering the care our patients required while trying to keep everyone safe. As we devised measures to handle the curveballs that kept coming our way, we found that some of our solutions could remain relevant after the virus.

An early challenge for surgeons was rethinking our use of anesthesia. After learning that general anesthesia could create aerosolized COVID particles in the operating room, we designed new protocols for protecting the surgical team during intubation and/or extubation, one of which was pre-procedure patient testing. As a PPE conservation solution and to save time, many of us started using local anesthesia combined with IV sedation for certain procedures because it worked just as well as general anesthesia. Many of us will probably continue to do so beyond the virus.

This type of flexibility is thoroughly in evidence throughout our ORs, clinics, and offices. Reliable systems may move these processes along, but our people have been the final drivers of our success. After witnessing the ability of the department's faculty, staff, and trainees to maintain our clinical, research, and academic commitments during these extraordinary times, I have never been more proud to be part of the Emory Surgery team.

John F. Sweeney, MD

Joseph Brown Whitehead Professor of Surgery and Chair
Department of Surgery
Emory University School of Medicine



Members of the surgical adjudicator teams of the Surgical and Interventional Services Group: Scott Davis, Tyler Reynolds, LynnMarie Verzino, Nimesh Shah, Field Willingham, Augustine Conduah.

[PATIENT CARE]

SWIMMING WITH THE TIDE

On February 11, 2020, the World Health Organization announced “coronavirus disease 2019” as an official name for the outbreak initially identified in Wuhan, China. By then, the Emory Department of Surgery was already several weeks into monitoring the progress of the disease and considering response strategies. When infection rates began spiking worldwide in March, the department began restructuring the parameters of its mission to maintain the safety of personnel and patients.

“We knew that COVID-19 would inherently resist our control, and that only heightened vigilance, awareness, and adaptability would allow us to continue serving our community in the manner that has become expected of us,” says John Sweeney, chair of Emory Surgery.

The ad hoc Executive Surgical and Interventional Services Leadership Working Group — led by Sweeney and composed of representatives from the School of Medicine and clinical, ambulatory, and perioperative surgical services — had been formed to design and enact best practices and operating procedures capable of consistently responding to the unfolding pandemic and potential surges across the system.

One of the group’s first steps was to name surgical adjudicator teams at each facility. These partnerships



Additional members of the surgical adjudicator teams of the Surgical and Interventional Services Group: Joseph Johns, Allan Pickens, John Sweeney, David Kooby, and Charles Staley. Team members not pictured: Scott Boden and Seth Rosen.

of surgeons, anesthesiologists, and nursing leaders were responsible for reviewing and approving operative cases at their particular sites.

The interventional services group also appointed multidisciplinary combinations of experts known as guideline development teams to develop evolving internal best practices and policies in such categories as patient communication and documentation, trainee oversight, and surgical prioritization score development.

After the postponement of all elective procedures at Emory Healthcare facilities in mid-March, the adjudicator teams had to assess scheduling for time sensitive, essential, urgent, and emergent surgeries. Urgent cases that needed to be completed within 24 hours were top priority, followed by consid-

eration of the timing, location, and personnel for emergent procedures that had to be done ASAP due to threat of loss of life. Essential interventions critical for preventing premature death, disease progression, and long term disability were reviewed next, with final deliberations spent on the details of time sensitive cases that should be done within four weeks.

To make these decisions, the teams had to calculate availability of anesthesia and nursing personnel, length of the procedure, availability of intensive care unit and regular beds if either were needed, risk of prolonged hospitalization/ICU or use of critical supplies such as blood and/or PPE, the degree of patient-likely survival if surgery was successful, and the potential for adverse clinical outcomes if surgery or intervention was delayed.



“As with the rest of the world, we had to determine when, where, and how patients that absolutely needed surgery to survive could receive it, and how long those that didn’t could wait,” says surgical oncologist David Kooby, lead adjudicator at Emory Saint Joseph’s Hospital. “It was challenging and stressful, but we got it done, and I am honored and humbled to have served as part of the great team at Emory during the turbulence of the past several months.”

By mid-April, the community spread of COVID-19 began to threaten the stability of critical care services. Craig Coopersmith, director of the Emory Critical Care Center and one of three Emory faculty that joined experts from across the country in establishing and contributing to the National Institutes of Health’s Coronavirus Disease 2019

Treatment Guidelines, helped the repurposing of ICUs at all Emory hospitals to create specialty ICUs for patients with confirmed or suspected COVID-19. He also participated in working to conserve PPE and to redeploy Emory providers to support and assist ICU staff.

Cardiologist Wendy Book and surgical oncologist Ken Cardona, members of the provider redeployment strategy guidelines team, developed a jeopardy moonlighting call schedule for physicians and providers to volunteer for ICU shifts. When Emory’s ICU census climbed dramatically in July, this scheduling tool contributed to amassing a multi-specialty, cross-departmental call list of professionals with ICU experience to reduce staffing shortfalls.

In order to maintain enough ICU beds for both COVID and non-COVID post-op patients, surgeons were advised that procedures requiring ICU stays would be evaluated daily by site teams of surgical chiefs, lead adjudicators, ICU directors, and other staff for possible rescheduling depending on space availability. If necessary, surgeries could be canceled when patients were about to be rolled into the OR, though this type of sudden postponement began lessening by late August.

“We had to cautiously schedule operations while being mindful of the limited resources available, and always had to be ready to adjust to doing urgent and emergent cases with short notice,” says cardiothoracic surgeon Allan Pickens, lead adjudicator for Emory University Hospital Midtown. “It was trial by fire, but it increased our ability to shift course 360 degrees if necessary.”

Despite continued postponement of elective procedures in May, adjudicator teams began to work with guideline development teams to implement a phased increase of procedures based on hospital capacity and resources as well as clinical importance by specialty. Within a few weeks, the preliminary goal of reaching 50% of Emory’s historical clinical volume was met.

This gradual expansion of services was aided by the perioperative evidence review guideline development team, led by Emory Surgery quality leader Joe Sharma. The team developed and codified various perioperative protocols, including standards for operating room personnel during and immediately after intubation and extubation of patients due to aerosolizing risk of virus transmission; policies for the types of PPE to be worn by surgeons, anesthesiologists, and nursing/tech personnel according to type of procedure being performed and the patient’s COVID status; and the recommendation that post-surgery COVID+ patients be discharged with pharmacologic and nonpharmacologic means to prevent venous thromboembolism, a dangerous complication found to increase in these patients.

Sharma and the perioperative evidence team also oversaw the expansion of pre-procedural and preoperative COVID testing to address the capacity of the virus to contribute to poor outcomes following surgery. In late May, the team

advised that all patients with a planned or potential admission after their procedure be tested preoperatively, as well as all patients undergoing general anesthesia.

“Ideally, all patients should be tested before an operation,” Sharma says. “However, if testing availability becomes limited, only the highest risk patients should be tested, with universal precautions applied to all others.”

A few months into the pandemic, the deployment of telemedicine was accelerated across the clinical enterprise to facilitate non-emergent patient visits, consults, and follow ups while minimizing COVID exposure for patients and personnel and preserving PPE. Between mid-March through July, more than 215,000 virtual visits were conducted between patients and providers throughout the Emory Health-care system, and the numbers have only increased since then.

Through the early months of the onslaught of the virus into the present and beyond, a prevailing constant is that modifications and revisions of systems, policies, and procedures will continue to preserve safety and quality until the pandemic winds down.

“The fluidity of this situation makes for a dynamic clinical environment where projections and plans can shift at a moment’s notice, so we have to be on our toes and hyper alert,” says Sweeney. “The key to our efficacy has been developing a tiered operational surge response to ensure surgical and procedural balancing to optimize use of operating rooms, ambulatory surgery centers, ICU’s, staffing models, and the overall financial health of the organization in tandem with the physical health of our staff and patients.”

FROM APPRENTICE TO MASTER

Shortly after joining the Emory Department of Surgery in 2003, Juan Sarmiento, professor of surgery and W. Dean Warren Distinguished Chair of Surgery, performed his first Emory-based Whipple procedure at Emory University



The refinements Juan Sarmiento has made to the Whipple procedure have been shown to reduce postoperative stays, readmissions, and extend survival.

Hospital. Fast forward 17 years to July 23, 2020, and he achieved the spectacular milestone of performing his 1000th Whipple at Emory.

“Only a handful of surgeons in the world have done this many pancreaticoduodenectomies,” says Edward Lin, chief of the Division of General and GI Surgery. “Juan is a master of this complex operation, and both Emory and his patients have benefited from his expertise.”

The procedure bears the name of Allen Whipple, who developed and championed the operation in the 1930s. Over time the Whipple has become generally viewed as the best way to remove pancreatic cancer when found in the head of the pancreas. This aggressive operation — which can take four-to-six hours to perform — removes a third of the pancreas, the first part of the small intestine known as the duodenum, a portion of the bile duct, and the gallbladder.

During Sarmiento's two years of training as a GI surgical scholar in hepatopancreatobiliary surgery at the Mayo Clinic under the mentorship of David Nagorney and Michael Farnell, mastering the Whipple was one of his ambitions. Nagorney and Farnell were early advocates of the procedure, the validity of which had been questioned periodically throughout the 1980s and early 1990s due to its complexity and then-high rates of morbidity and mortality.

"By the early 2000s, my mentors at Mayo found that improved diagnostic techniques allowed for more appropriate selection of candidates, as well as refinements in surgical methods, anesthesia support, and postoperative care, all of which had made the Whipple a more reliable resection approach for pancreatic tumors and certain benign conditions," says Sarmiento. "Working with them in the operating room and observing their tricks of the trade inspired me to move forward with my own work to refine the Whipple procedure."

At Emory, Sarmiento has continued to evaluate, test, and modify methods of performing pancreaticoduodenectomy, with his specific innovations including minimizing invasive perioperative monitoring, using smaller incisions, and developing simplified clinical pathways for achieving the necessary resections.

Sarmiento has also overseen the process of strengthening and streamlining the patient evaluation system for pancreaticoduodenectomy and spearheaded collaborative protocols with Emory radiology and pathology physicians and staff to determine the best course of treatment for patients.

"Whichever way it is done, I believe that the Whipple procedure generally offers patients with pancreatic and periampullary cancers the best chance for a cure," he says.

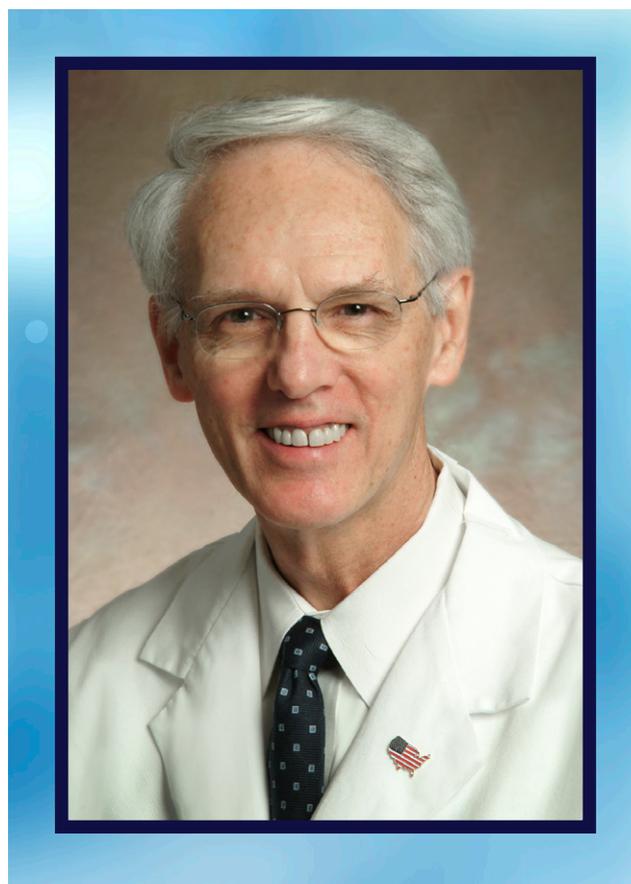
REMEMBERING DOUG MURRAY

On July 21, 2020, the Department of Surgery lost a beloved colleague, friend, and mentor with the passing of Douglas R. Murray, professor emeritus of the Division of Surgical Oncology, due to complications from cancer. We will deeply miss his ever-present smile, generosity, intelligence, and wit.

"Doug Murray was a gifted surgeon and highly skilled in treating soft tissue tumors," says Charles Staley, who often worked alongside Murray after joining Emory as chief of the Division of Surgical Oncology in 1995. "He was cherished by his patients, staff, and collaborators, and was the kindest person I ever knew."

Murray received his MD degree in 1959 at University of Michigan Medical School, completed his general surgery residency at Saint Luke's Hospital in 1964, and finished his surgical oncology fellowship at Memorial Sloan Kettering Cancer Center in 1969, after which he joined Emory Surgery.

By the time he retired in 2006, his impassioned commitment to teaching, training, and patient care had left an indelible effect on hundreds of residents, fellows,



Following Douglas Murray's retirement, Emory Surgery established the Doug Murray Academic Professionalism Award for surgical residents in recognition of his remarkable demeanor and gracious temperament towards colleagues, patients, and families alike.

and faculty. He visited the campus regularly, was a familiar face at Surgical Grand Rounds, and continued to co-author publications with his colleagues through 2014.

During his tenure at Emory, Murray became known as an attentive and warmhearted physician to his patients, and was considered an expert in the continuum of surgical and medical strategies for treating melanoma, soft tissue sarcomas, head and neck carcinomas, breast carcinoma, and hepatic and gastrointestinal tumors.

Doug Murray was survived by his wife Judith, four children, and six grandchildren. Emory Surgery and the family invite donations in his honor to the Judith J. and Douglas R. Murray Surgical Oncology Melanoma Research Fellowship Endowment, Emory University, Office of Gift Records, 1762 Clifton Rd. NE, Suite 1400, Atlanta, GA 30322. Donations can be made online by visiting the Winship Cancer Institute Honor or Memorial Giving web page, clicking "other" in the "Please designate my gift" field, and typing in Murray Fellowship Endowment. ■



“Our residents’ contributions to shoring up the department’s clinical operations this year, from routine to Herculean, have made me even more proud to be part of their training process,” says **Jahnvi Srinivasan**, shown here with administrative chief resident **Caitlin Fitzgerald**.

[EDUCATION]

RESPONDING TO THE DOMINO EFFECT

The learning curve associated with combating COVID-19 began disrupting Emory Surgery’s training rotations and other curricular activities by early spring 2020, with persistent revision of policies and standards becoming the new constant.

Shortly after trainees learned they had to be certified in the proper use of PPE, medical students were restricted from providing direct care to patients under investigation for possible infection and prohibited entirely from any part in treating confirmed COVID cases. Meanwhile, the cancellation of elective surgeries led to the reassignment of residents and fellows to ICUs and emergency rooms across Emory.

The department’s academic environment contracted further as travel was curtailed and cadaver labs and the surgical anatomy and operative techniques course were suspended.

Medical students doing surgical clerkships were sent home for three months beginning in mid-March. Barbara Pettitt, Emory Surgery’s director of medical student education, assembled more than 60 faculty, fellows, residents, and M4s into the Virtual Surgery Education Group at Emory (ViSEGE) to develop web-based electives for these displaced students. She also worked with assistant professor of surgery Dominic Papandria, chief residents, several ViSEGE members, and others to coordinate an online roster of multispecialty lectures, small group sessions, reviews of operative videos, and basic technical skills workshops.

The M4s who assisted with online teaching learned the principles of surgical education in a one-month seminar with Pettitt. They also translated their teaching experiences into scholarship by writing commentaries on the courses for publication.

On campus, case reductions in non-COVID-related services left gaps in residents and fellows' clinical schedules. Jahnvi Srinivasan, program director of the general surgery residency, marshaled the process of salvaging this potentially lost time.

"Supplemental training options became more primary," she says. "We directed residents to several online forums, including the auxiliary curriculum developed by the Resident and Associate Society of the American College of Surgeons, and the American Board of Surgery's learning module on the Surgical Council on Resident Education website."

Srinivasan, associate program director Ravi Rajani, and associate professor of surgery Maria Russell led the design of a "quarantine curriculum" consisting of Zoom-based oral board preparatory sessions, weekly journal clubs, and auxiliary didactic sessions. Residents were encouraged to occupy themselves further by practicing technical skills with senior residents and faculty in the Office of Surgical Education's simulation lab, reviewing telehealth modules, participating in quality improvement projects and other research, and contributing to the Apparent Cause Analyses of low-risk operational errors being conducted by Emory Healthcare.

In March and April, residents and fellows were in high demand on clinical services with provider shortages and COVID+ patients throughout Emory Healthcare and at Grady Memorial Hospital. Their broad skillsets allowed them to move between a variety of rotations, from ICUs to emergency departments to labor and delivery units.

Soon thereafter, residents were approved to conduct telemedicine, leading Eric Knauer, chief of the general surgery service at Emory University Hospital Midtown, to design a GME-compliant telehealth certification process that allowed residents to perform telehealth appointments after they had completed training and done two supervised sessions.

As postgraduate trainees resumed routine, pre-COVID operative caseloads in late summer, coinciding with a significant increase in hospitalized COVID+ patients and ICU admissions, they had to become familiar with such measures as inpatient COVID testing requirements and timely discharge protocols to limit patients' exposure in the hospital and safeguard the availability of beds.

"Joe Sharma, the department's quality and safety expert, was instrumental in educating residents in best practices for COVID care, which included doing debriefs with the OR teams before and after COVID patient procedures to maintain infection control guidelines," says Srinivasan.

Due to travel restrictions, Emory Surgery's training programs were forced to conduct recruitment events and

interviews online. Despite major constraints on media production on campus, the general surgery and plastic surgery residencies managed to create and post professional-quality videos about their programs. General surgery's video was directed by PGY-3 Emma Crichton and assisted by various other residents, while plastic surgery's was created by faculty member William Knaus and PGY-6 Ryan Burke.

WIDENING ACCESS TO COVID-FIGHTING DATA

Having reliable information is essential to any endeavor of critical consequence, such as dealing with a pandemic. Alarmed by the potential danger posed by the spread of COVID-19 to low resource settings throughout the world, a partnership of Emory residents, medical students, and faculty leaders from the multidisciplinary Emory Global Perioperative Health Group (EGPHG) developed a comprehensive, interactive, and downloadable COVID-19 Community & Healthcare Facility Checklists manual for healthcare facilities and individuals in these regions.

"When we started this project in March, a roadmap outlining how to best respond to COVID-19 did not exist," says general surgery resident Erica Ludi. "Then other COVID-19 response documents began appearing, and we saw that they were providing questions or an overview of topics without supplying answers and/or resources. Our document does both, and is designed as a needs assessment and organizational tool for communities to prepare for, prevent, and manage the virus."

Ludi and medical students Abigail Hatcher, Ben Magod, Alexandra Medline, and Danielle Mustin assembled the manual, and EGPHG members Steven Roser, Theresa Gillespie, Jahnvi Srinivasan, Barbara Pettitt, Joe Sharma, and Johanna Hinman reviewed and vetted it. Roser, professor of surgery, founded the EGPHG, which aims to coordinate Emory's efforts to address gaps in perioperative and emergency services in low resource environments with an emphasis on training, education, and research.

The checklists manual consists of a series of pertinent questions paired with concise answers and relevant resources, guidelines, and infographics, many of which were sourced from such healthcare and public health organizations as the Centers for Disease Control and the World Health Organization. Once users clarify their needs through the checklist, they can focus on the corresponding explanations to strengthen their individual or community-based protocols. The free download, available at www.covid-checklist.org, includes an introductory video that orients readers and facilitates efficient interaction with the document.

With the endorsement of the G4 Alliance, a multinational partnership dedicated to advocating for access to safe surgical, obstetric, trauma, and anesthesia care for patients in need, the team published the manual electronically in July, sharing it with a wide variety of institutions and



A. Alfred Chahine began receiving teaching awards as a medical student at St. Louis University and a surgical resident at Vanderbilt University.

after serving in an interim capacity since his 2019 arrival from The George Washington School of Medicine and Health Sciences. His full appointment was unsurprising considering his vast experience as an exceptional educator and mentor to trainees, faculty, and surgical program directors alike across the country, a stellar record emphasized by dozens of academic awards and numerous organizational memberships and administrative positions involving surgical education.

However, even he did not foresee how his responsibilities would be tested when the pandemic hit.

“Nothing in my prior career prepared me for COVID,” he says. “Neither I nor my colleagues had ever experienced anything like it before, but we quickly came together to work our way through it.”

Initially, Chahine focused on advising and assisting Emory Surgery’s division chiefs and program directors as they transitioned the department’s educational programs

from in-person to distance-based learning, and making those adjustments as smooth as possible.

“I have to cite the resilience and skill of my colleagues as they created a viable remote curriculum mixed with compliant, on-site training options, particularly Dr. Barbara Pettitt’s work on behalf of the medical students, Dr. Jahnvi Srinivasan’s efforts for the residents, and the dedication of all of the fellowship directors,” he says. “They did a superb job of keeping the ship afloat while maintaining the safety of the residents and trainees, and their work was so successful that components of it will probably last beyond the pandemic. We suspect that the flexibility and efficiency of these electronic formats could be advantageous considering trainees’ hectic schedules.”

As Chahine continues to support and consult with faculty on issues both COVID-related and otherwise, he has found that his own experience as a mentee has given him invaluable insight into conducting these interactions, particularly his time as a pediatric surgery fellow at Emory when his mentor was then-chief of the Division of Pediatric Surgery and current professor of surgery emeritus Richard Ricketts.

“Even though he set very high standards for himself and others, Dr. Ricketts taught me that we are only human and must accept the struggles we will inevitably encounter, for through these struggles we recalibrate our expectations of ourselves and come to realize the path we are most attuned for. He also understood that the mentor-mentee dynamic was about putting the trainee’s interests first, and that displaying fairness as a guiding principle in relationships was essential for maintaining a healthy working environment.” ■



TRAINEE KUDOS



TRAINEE	AWARD	FACULTY MENTOR(S)
KIRSTEN BAECHE , MD, General Surgery Resident	Nell W. and William Simpson Elkin Fellowship	MANDY FORD , PhD MICHAEL LOWE , MD, MA
ELISSA FALCONER , MD, General Surgery Resident	Winner, NEJM QI Resident 360 Challenge	JONATHAN POLLOCK , MD
KATHERINE FAY , MD, General Surgery Resident	Outstanding MIS Resident Award, Society of Laparoscopic & Robotic Surgeons	JAHAVI SRINIVASAN , MD
ADRIANA GAMBOA , MD, General Surgery Resident	ASCO Merit Award	SHISHIR K. MAITHEL , MD
BEN HAZEN , MD, General Surgery Resident	Georgia Society of the American College of Surgeons Fellowship	JAHAVI SRINIVASAN , MD
AILEEN JOHNSON , MD, General Surgery Resident	American Society of Transplant Surgeons-Natera Jon Fryer Resident Scientist Scholarship	CHRISTIAN LARSEN , MD, DPhil
KANIKA KALRA , MD, Cardiothoracic Surgery Resident	Best Resident Abstract Presentation Award, Society of Thoracic Surgeons/European Association for Cardio-Thoracic Surgery, STS 56th Annual Meeting; Council on Cardiovascular Surgery and Anesthesia (CVSA) Resident Prize, AHA 2020 Scientific Sessions	EDWARD CHEN , MD (Retired 12/2020)
JESSICA KEILSON , MD, General Surgery Resident	Nell W. and William Simpson Elkin Fellowship	SHISHIR K. MAITHEL , MD
RACHEL LEE , MD, MSPH, General Surgery Resident	ASCO Merit Award; Best Visual Abstract Award, 2020 Annual Scientific Meeting of the Southeastern Surgical Congress	SHISHIR K. MAITHEL , MD
BRENDAN LOVASIK , MD, General Surgery Resident	ATC Young Investigator Travel Award	ANDREW ADAMS , MD (Transitioned from Emory)
ABRAHAM MATAR , MD, General Surgery Resident	AASLD Emerging Liver Scholar Award; ATC Young Investigator Travel Award	ANDREW ADAMS , MD
PARTH PATEL , MD, Cardiothoracic Surgery Resident	Thoracic Surgery Foundation Resident Research Fellowship Award	JOREN C. MADSEN , MD, DPhil (Director, MGH Transplant Center)
CONSTANCE SHRECKENGOST , MD, PhD, General Surgery Resident	Global Outreach Traveling Resident Award to Visit, Experience and Learn, Emory SOM Alumni Board	STEVEN ROSER , DMD, MD
MICHAEL TURGEON , MD, General Surgery Resident	ASCO Merit Award; Nell W. and William Simpson Elkin Fellowship	SHISHIR K. MAITHEL , MD



[RESEARCH]

WORKING TOWARDS A BREAKTHROUGH

In August 2020, cardiothoracic surgeon **Bradley Leshnow** and anesthesiologist **Milad Sharifpour** began participating in the international **ACTIV-3: Therapeutics for Inpatients with COVID-19 Phase 3 clinical trial** as the Emory site's principal investigator and co-investigator, respectively. **Kim Baio**, director of clinical trials for the Department of Surgery, manages the trial's patient enrollment, clinical coordinator oversight, allocation of resources, regulatory and compliance adherence, and day-to-day operations.

The new study is one of four trials in the National Institutes of Health's Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) program, a public-private partnership for facilitating development of the most promising treatments and vaccine candidates for the virus. The trials are also receiving support from Operation Warp Speed, the federal government's multi-agency effort to develop, manufacture, and distribute medical countermeasures to fight COVID-19.

In October, the team received correspondence from **Janet Woodcock**, director of therapeutics for Operation Warp Speed, and **Francis Collins**, director of the NIH, congratulating them on their performance. In particular, **Kim Baio's** organizational and recruiting skills were praised.



Kim Baio, Milad Sharifpour, and Bradley Leshnowar. Emory was one of the first sites to open the ACTIV-3 trial and start randomizing enrollees.

“This randomized controlled study is looking at the safety and effectiveness of drugs known as monoclonal antibodies in treating COVID-19 in patients who have been hospitalized with the infection,” says Baio. “Participants will be treated with either a study drug plus current standard of care (SOC) including the antiviral drug remdesivir, or with placebo plus current SOC.”

Monoclonal antibodies (mAB) are synthetic versions of antibodies that can be reproduced in a laboratory, and could assist naturally produced immune molecules in deflecting coronavirus before it can cause severe harm. ACTIV-3 is designed with the capacity to expand to examine multiple types of mAB treatments. The investigators can enroll additional volunteers in the middle of the trial if a specific treatment shows promise. Conversely, as the study proceeds, any investigational therapeutic that is found to be unsafe or ineffective will be dropped, then replaced by another lab-developed mAB as it becomes available.

“If a particular investigational treatment appears to be safe and effective, we will also begin enrolling sicker patients, including those with end-organ dysfunction,” says Leshnowar. “The primary endpoint of the trial will be the participants’ sustained recovery for 14 days after release from the hospital.”

DECIPHERING CONNECTIONS TO FUEL PREVENTION

Ever since receiving her MPH at Johns Hopkins Bloomberg School of Public Health, Randi Smith has dedicated herself

to understanding and reducing the circumstances that lead to violence and those that persist in its wake, particularly for victims and perpetrators in underserved communities. As she moved through her general surgery residency and trauma and surgical critical care fellowship, she began participating in projects and authoring publications concerned with the physical and psychological effects of gun violence and other human-inflicted trauma.

“During my clinical rotations, I learned that terrible violence can be committed between family members and friends as well as complete strangers, given certain conditions and scenarios,” she says. “The more I had to treat the results of this violence, the more my passion grew for addressing it as a public health problem.”

In 2017, Smith became an Emory trauma surgeon, emergency/elective general surgeon, and surgical critical care intensivist at Grady Memorial Hospital, a public facility where the statistical frequency of violence in medically underserved areas is encountered regularly. She joined the Violence Prevention Task Force, based out of the Injury Prevention Research Center at Emory, and became a core member of the Program to Interrupt Violence through Outreach and Treatment (PIVOT) at Grady, an evidence-based and data-driven initiative focused on reducing gun violence by preventing repeat victimization/hospitalization and retaliatory incidents through community outreach and intervention.

In June 2020, as Smith was collating data on the rise in

violence accompanying the COVID-19 pandemic, she was invited to join the newly formed Working Group on the Social Determinants of Health of the American College of Surgeons Committee on Trauma (ACS COT). This multidisciplinary team of health care providers, community members, and public health specialists share expertise and experience in examining social determinants — the conditions in which people are born, grow, live, work, and age — and their impact on chronic diseases, including trauma, and how they intersect with inequity and health care disparities.

By articulating how the medical community and the ACS

a 2020 Synergy Research Award from Emory's Woodruff Health Sciences Center as co-principal investigator with her colleagues Dabney Evans of the Rollins School of Public Health and Amy Zeidan of the Emory Department of Emergency Medicine. Proposals for this round of Synergy Awards focused on issues related to COVID-19. Smith, Evans, and Zeidan's project will investigate the impact of the pandemic on the incidence, injury type, and severity of trauma encountered at Grady.

"We share a special interest in intimate partner violence, and will combine forces to dive deeper into the contextual

factors that have influenced it during this time," says Smith. "We expect to find that restrictions on movement in Georgia resulted in a related increase in this type of violence, and plan to use the data we generate to inform service provisions and other prevention strategies."

PRECISION REVISION FOR SAFETY

General and endocrine surgeon Snehal Patel — who typically performs six-to-eight surgeries per week — realized early on that it wouldn't be long before the patient on the operating room table could become potentially hazardous to the surgical team in the era of COVID-19.

"We've rarely had to balance our welfare with the patient's," he says. "But with COVID, we had to adapt to the reality that the patient could pose a viral threat to the team." Patel's colleagues in the Co-management of Operating Room Emergencies (CORE) simulation program shared his concerns.

Founded in 2016 by Sharon

Muret-Wagstaff, director of the School of Medicine's ExCEL Simulation Center, CORE is a cooperative effort of Emory's departments of surgery and anesthesiology and Emory University Hospital's patient care and nursing services. The program develops and provides immersive sessions for interdisciplinary OR teams to train for emergency scenarios during procedures.

"The worldwide surge of COVID-19 infections confronted us with the challenge of quickly developing and launching a simulation approach for surgical teams to be able to safely adjust to caring for COVID patients in the operating room," says Muret-Wagstaff. "The session design had to be malleable enough to accommodate constant change in data and conditions related to the disease, and simple enough to be able to be replicated across virtually any healthcare system."



 **Randi Smith is an advocate for injury and violence prevention for under-resourced populations through hospital-based intervention programs.**

COT in particular can play a proactive role in addressing the determinants that can harmfully impact communities, the committee will recommend methods and protocols for affecting and reversing these root causes at hospital and systems levels so that medical and public health personnel can better serve their patients.

"Providers are traditionally reactive to the disease processes that are influenced by social determinants, such as the trauma cases resulting from violence encountered in emergency departments and trauma centers," says Smith. "We are working to develop a type of vigilance that will detect and address problem areas before they explode, thereby having a greater impact on the long-term health of our patients and their communities."

Shortly after joining the committee, Smith received

Anchored by the CORE nucleus of Muret-Wagstaff; Patel; Joe Sharma, Emory Surgery's vice chair for quality, patient safety, and care innovation; colorectal surgeons Virginia Shaffer and Seth Rosen; anesthesiologists Jeremy Collins, Michele Sumler, and Darlene Mashman; and OR nurse educator Kate Pettorini; the development team was augmented with frontline staff, administrators, and subject matter experts. There was also a data group that systematically scanned daily changes and aggregated local and national data, peer-reviewed literature, professional society guidance, and governmental agency website postings.

The team devised a 10-day timeline for designing, prototyping, executing, and duplicating an iterative simulation that would integrate rapid cycle quality improvement for managing the non-intubated, non-aerosol-generating procedure COVID-19 patient — simulations for additional types of patients would come later. CORE's reliance on the use of checklists, closed loop communication, and crisis resource management techniques was incorporated into the process.

During the first three days, the team designed a simulation facilitator guide and packet for distribution to leaders at each participating hospital. The packets included a detailed facilitator guide describing the purpose, components, and steps involved in conducting an effective simulation; a single-page team guide highlighting perioperative roles for OR personnel involving the COVID

patient; a readiness checklist for clinical teams to use in 30-minute case pre-briefings; an in situ simulation safety checklist; and a failure modes and effects analysis template.

"All the documents were formatted to be easily revisable as the process moved from simulations through actual procedures, debriefing sessions, and more simulations," says Sharma. "I facilitated the first simulation session with an interdisciplinary OR team as participants and others as observers, subject matter experts, and CORE faculty who would facilitate future simulations."

The group worked quickly. The process and tools were prototyped, then tested in the first hospital with a pre-briefing, an actual procedure, and a debriefing. After the simulation materials were revised, the first simulation was conducted at the same hospital. The clinical processes and simulations were modified further, then used in an additional five hospitals. The entire sequence took 14 days.

The team documented the process for its paper "In Situ Simulation Enables Operating Room Agility in the COVID-19 Pandemic," published in the August edition of *Annals of Surgery*. The study is available online, and has become a valuable reference tool for designing safety protocols for OR personnel internationally.

"We consider the Team Guide and tools as models to adapt and not final products," says Muret-Wagstaff. "Simulations and surgeries will change as more evidence emerges and as the environment changes."



CORE members Joe Sharma, Sharon Muret-Wagstaff, and Snehal Patel. "Our primary hope is that our process will be a helpful catalyst for other surgical teams in accelerating their development of effective ways to safely manage the COVID-19 patient in the OR," says Muret-Wagstaff.

PARTNERS IN INNOVATION AND BUSINESS

Lily Yang's surgical oncology nanomedicine research lab in Winship Cancer Institute is at the forefront of creating technologies that focus on the delivery of targeted cancer nanotherapeutics to tumor cells for difficult to treat cancers. She has been developing multifunctional, tumor-targeting

collaborative work has led them to a new stage: going into business together.

Over the past two years, Yang and Zhu have developed an effective drug delivery system that directs drug carriers or therapeutic T cells to tumors and is capable of penetrating such barriers as dense fibrous tumor stroma to reach tumor cells, and could be used to overcome therapy resistance in pancreatic and colon cancers. To facilitate clinical translation, the two scientists have initiated a biopharma company with the assistance of the Emory Office of Technology Transfer called MIGRA-Therapeutics, LLC, and successfully applied for NIH Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards.

SBIR and STTR awards, also known as America's Seed Fund, are one of the largest and most highly competitive sources of early-stage capital for technology commercialization in the US.

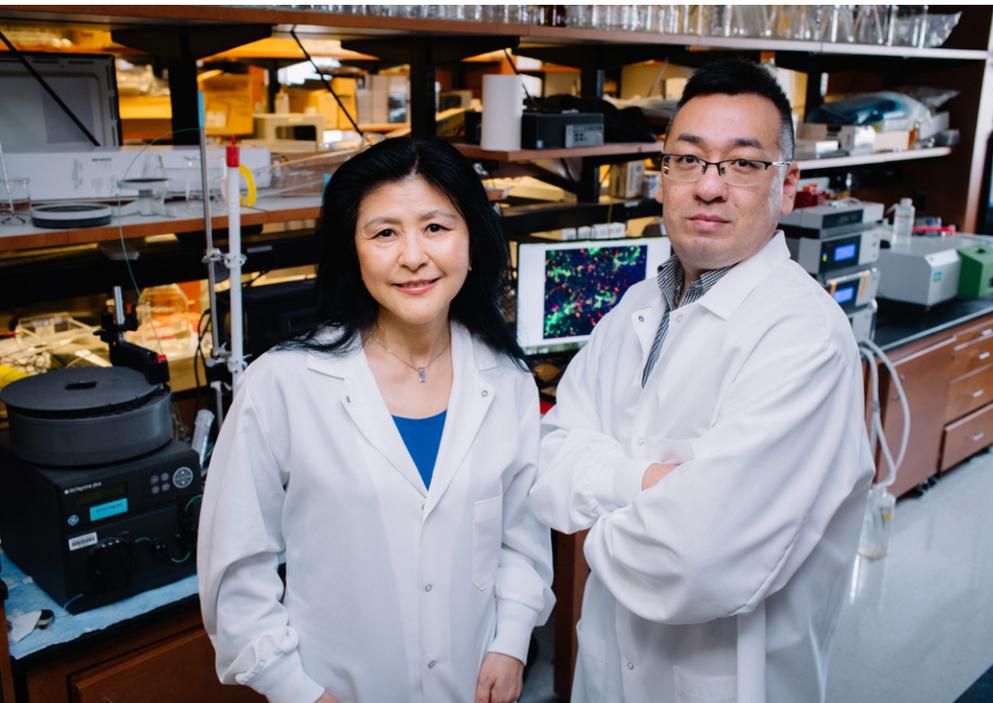
"Both Phase I awards will allow us to further establish the technical merit, feasibility, and commercial potential of our targeted polymeric nano-drug and universal therapeutic T cell delivery system," says Yang. "We will be collaborating with the Nanotechnology

Characterization Laboratory at the NCI, colleagues in several biotechnology companies, and Emory University to conduct preclinical studies in human cancer patient tissue-derived xenograft models and mouse tumor models."

If these projects go well, MIGRA will then advance to SBIR/STTR Phase II awards, which will provide larger budgets for more advanced preclinical research and development of pharmaceutical grade nanotherapeutics that are necessary for translational development and future clinical trials.

"Additional success should pave the way for the submission of the Investigational New Drug application for FDA approval of Phase I clinical trials for the treatment of pancreatic or colon cancer," says Zhu.

The Emory translational team for this prospective phase would include clinical investigators and surgical oncologists Charles Staley, David Kooby, and Shishir Maithel; general and GI surgeon Juan Sarmiento; and medical oncologist Bassel El-Rayes. ■



The SBIR and STTR awards received by Lily Yang and Lei Zhu allow US-owned and operated small businesses to engage in research and development of groundbreaking technologies to improve health that could be highly marketable.

nanoparticles to create molecular imaging probes and drug-carriers for in vivo delivery for 15 years, and is one of Emory Surgery's most consistently well-funded NIH investigators.

"I'm fascinated by the basic components of nanotechnology that drive its potential as a clinical tool, such as being able to create nanoscale devices that can be conjugated with other functional molecules like anti-cancer drugs, the fact that they can be 100 to 1,000-times smaller than cancer cells and easily transferred through tumor micro-environments, and that the precision of their delivery could alleviate damage and toxicity to surrounding tissue," she says.

Lei Zhu, a faculty scientist who joined Yang's group in 2019, is one of her former mentees. During his four year research fellowship at Winship, he contributed to Yang's efforts to develop novel nanoparticles engineered to both identify cancer and then deliver chemotherapeutic and immunotherapeutic agents for image-guided and targeted treatment. Since becoming colleagues, Yang and Zhu's

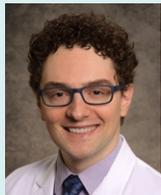
NEW FACULTY



ELIZABETH BENJAMIN, MD, PhD, is the new trauma medical director at Grady Memorial Hospital. Prior to joining Emory, she was associate trauma medical director at the Los Angeles County + University of Southern California Medical Center, Keck School of Medicine.



JAMES MIDDLETON CHANG, MD, completed his vascular surgery fellowship at Emory in 2020. His clinical interests include endovascular and minimally invasive surgical techniques, aortic aneurysm and dissection, cerebrovascular disease, and peripheral arterial disease.



OCTAV CRISTEA, MD, specializes in kidney and pancreas transplantation, with a special interest in urologic issues in the transplant population. He completed his urology residency at the University of Ottawa and his abdominal transplantation fellowship at the Emory Transplant Center.



MAGGIE DILLER, MD, completed her clinical fellowship in advanced gastrointestinal, minimally invasive, and bariatric surgery at Cedars Sinai Medical Center. Her general surgery residency and research sabbatical, mentored by Mandy Ford, PhD, and Keith Delman, MD, was completed at Emory.



The clinical focus of **WOODROW FARRINGTON, II, MD**, is adult cardiac surgery, particularly complex aortic disease and aortic aneurysms.

He completed his cardiothoracic surgery and advanced cardiovascular/aortic aneurysm surgery fellowships at New York Presbyterian/Weill Cornell Medical College.



PAUL GHAREEB, MD, completed his plastic and reconstructive surgery residency at Emory, and a fellowship in hand surgery at the Department of Orthopedics of UCLA. His clinical specialties are hand and wrist surgery, peripheral nerve surgery, microvascular surgery, and reconstructive plastic surgery.



The clinical practice of Emory alumnus **STUART HURST, MD**, is divided between being a trauma surgeon, emergency/elective general surgeon, and surgical critical care intensivist at Grady Memorial Hospital and working as a critical care surgeon at Emory's Critical Care Center.



The additional certification of **M. ASHRAF A. KHAN, MD, RVPI**, as a Registered Physician in Vascular Interpretation complements his endovascular and traditional open surgery skills with non-invasive vascular ultrasound, which helps to provide his patients with highly individualized treatment plans.



After completing her acute care surgery/surgical critical care fellowship at Grady Memorial Hospital/Emory, **DEEPIKA KOGANTI, MD**, joined the trauma center at Grady, specializing in pelvic fractures, traumatic vascular injuries, and pancreatic injuries. Her research focuses on education and global surgery and healthcare.



Pediatric surgeon **ALLISON LINDEN, MD, MPH**, specializes in neonatal surgery, minimally invasive surgery, surgical critical care, ECMO, and global surgery. She has trained surgical postgraduates in Rwanda and Uganda, where she also performed disparities research involving access to surgical care.



TAKKI MOMIN, MD, offers the latest techniques in both open and endovascular surgery. His clinical practice is located at Emory's Decatur, Hillandale, and Snellville facilities. He completed his general surgery residency at Emory, and a vascular and endovascular surgery fellowship at Georgetown University Hospital.



LAUREN POSTLEWAIT, MD, is a specialist in breast cancer surgery and the treatment of breast disease. She received numerous honors for her research during the research sabbatical portion of her Emory general surgery residency, including 2015 and 2016 ASCO Merit Awards.



JOSHUA ROSENBLUM, MD, PhD, completed his general surgery residency, cardiothoracic surgery residency, and congenital cardiothoracic surgery fellowship at Emory. He specializes in treating congenital heart disease in patients from their newborn years through adulthood, connective tissue disorders in children, and pediatric heart failure and transplantation.

2020 FACULTY AWARDS AND DISTINCTIONS

SHELLY ABRAMOWICZ, DMD, MPH

- Chair, Temporomandibular Joint Clinical Interest Group, American Association of Oral and Maxillofacial Surgeons

I. RAUL BADELL, MD

- 2020 Editors' Pick, *American Journal of Transplantation*

GLEN BALCH, MD, MBA

- Emory SOM Excellence in Patient Care Award 2020, The Emory Clinic

GARY BOULOUX, MD, DDS, MDSc

- Chair, Special Committee on Temporomandibular Joint Care, American Association of Oral and Maxillofacial Surgeons

KENNETH CARDONA, MD

- Adolescents and Young Adults Sarcoma Working Group, National Clinical Trials Network

- mCODE Executive Committee, American Society of Clinical Oncology

ANGELA CHENG, MD

- American Society of Plastic Surgery: COVID Task Force, In-Service Examination Committee, Education Committee

CRAIG COOPERSMITH, MD

- Master of Critical Care Medicine, American College of Critical Care Medicine

- Co-Author of one of *JAMA's* Top Articles of the Decade

- Emory SOM 2020 Site Based Award, The Emory Clinic, "In recognition of leadership during the COVID-19 pandemic"

S. SCOTT DAVIS, MD

- Board of Governors, Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

KEITH DELMAN, MD

- Parker J. Palmer Courage to Teach Award, ACGME

- Emory School of Medicine 2020 Mentorship Award

- 2020 Inductee, Emory Millipub Club

JOHN GALLOWAY, MD

- Emory SOM Excellence in Patient Care Award 2020, The Emory Clinic

THERESA GILLESPIE, PhD, MA, BSN

- 2020 Top Five Papers Award, *Journal of the Advanced Practitioner in Oncology*

- Chair, Scientific Research Hub, Africa BIO Consortium Innovation Hub

APRIL GRANT, MD

- Manuscript and Literature Review Committee, Eastern Association for the Surgery of Trauma

WENDY GREENE, MD

- Distinguished Service Award, Society of Critical Care Medicine

CARLA HAACK, MD

- Hidden Gem Award, Emory Medicine Recognitions Committee

MICHAEL HALKOS, MD, MSc

- Robotics Committee, Society of Thoracic Surgeons/Thoracic Surgery Foundation

- Surgical Robotics Scholarship Committee, American Association for Thoracic Surgery

KURT HEISS, MD (EMERITUS PROFESSOR)

- Emory SOM Excellence in Patient Care Award 2020, Children's Healthcare of Atlanta

JEFFREY JAVIDFAR, MD

- Education Committee, Extracorporeal Life Support Organization

ONKAR KHULLAR, MD

- Taskforce on Patient Reported Outcomes, Society of Thoracic Surgeons

WILLIAM KITCHENS, MD, PhD

- Chair, Translational Scientific Review Committee, American Society of Transplantation Research Network

DAVID KOOBY, MD

- Editorial Board, *Annals of Surgery*

EDWARD LIN, DO, MBA

- Associate Editor, *The American Surgeon*

JOSEPH MAGLIOCCA, MD

- National Liver Review Board, United Network for Organ Sharing

SHISHIR K. MAITHEL, MD

- Vice-Chair, Clinical Trials Committee, Americas Hepato-Pancreato-Biliary Association

- Clinical Practice Guidelines Committee, American Society of Clinical Oncology

JONATHAN MEISEL, MD

- Emory SOM Excellence in Patient Care Award 2020, Children's Healthcare of Atlanta

ROHIT MITTAL, MD

- Government Affairs Committee, American Burn Association

SHARON MURET-WAGSTAFF, PhD, MPA

- Board of Governance, Fellows Academy, Society for Simulation in Healthcare

GAETANO PAONE, MD, MHSA

- Workforce on Quality, Society of Thoracic Surgeons

RACHEL PATZER, PhD, MPH

- Chair, Data Advisory Committee, United Network for Organ Sharing

RICHARD RICKETTS, MD (EMERITUS PROFESSOR)

- 2020 Arnold Salzberg Mentorship Award, American Academy of Pediatrics Section on Surgery

MONICA RIZZO, MD

- Editorial Board, Breast Oncology Section, *Annals of Surgical Oncology*

SETH ROSEN, MD

- Operative Competency Evaluation Committee, American Society of Colon and Rectal Surgeons

MARIA RUSSELL, MD

- Emory School of Medicine 2020 Dean's Teaching Award

MANU SANCHETI, MD

- Cardiothoracic Surgery Section Editor, *Journal of Robotic Surgery*

NEIL SAUNDERS, MD

- Endocrine/Head and Neck Disease Site Working Group, Society of Surgical Oncology

JASON SCIARRETTA, MD

- Acute Care Surgery Fellowship Milestones Development, AAST Acute Care Surgery Fellowship

MARTY SELLERS, MD, MPH

- President's Award, LifeLink of Georgia

- Donation after Cardiac Death Policy Review Subcommittee, Organ Procurement and Transplantation Network/United Network of Organ Sharing

FEDERICO SERROT, MD

- Safe Cholecystectomy Task Force, SAGES

VIRGINIA SHAFFER, MD

- Clinical Practice Guidelines Committee, American Society of Colon and Rectal Surgeons

- Colorectal Committee, SAGES

- Editorial Board, *The American Journal of Surgery*

MIHIR SHAH, MD

- Editorial Board, *Journal of Case Reports and Clinical Study*

JOE SHARMA, MD

- Common Formats Expert Panel, National Quality Forum

- Emory SOM Excellence in Patient Care Award 2020, The Emory Clinic

RANDI SMITH, MD, MPH

- Hidden Gem Award, Emory Medicine Recognitions Committee

ROBERT B. SMITH, III, MD (EMERITUS PROFESSOR)

- Lifetime Achievement Award, Society for Vascular Surgery

JAHNAVI SRINIVASAN, MD

- Philip J. Wolfson Outstanding Teacher Award, Association of Surgical Education

TONCRED STYBLO, MD, MS

- Breast Synoptic Operative Report Focus Group, Commission on Cancer, American College of Surgeons

JOSHUA WINER, MD

- Association for Surgical Education: Clerkship Directors Committee; Membership Committee; Assessment, Curriculum, and Evaluation Committee; Surgical Residency Preparation Subcommittee; Learner Engagement During Covid-19 Subcommittee; Education Technology Committee



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