

Department of Surgery

### ANNUAL REPORT 2023

# PROGRESS THROUGH LEADERSHIP

### FROM THE CHAIR

When the Department of Surgery was first imagined, almost a century ago, we were a much smaller organization. Since then, we've grown guite rapidly, requiring many changes and challenging decisions. Now, we stand as one of the best surgical departments in the country, thanks to a fortunate abundance of riches: clinical sites that provide top-notch training, over 180 master surgeons, and a wealth of talent and dedication within our faculty and staff.

Of course, navigating the changes of an evolving department requires strong leadership. When I look back on 2023, it's evident to me that what defines the year as both an exciting development

and a challenge is the slate of new senior leadership that has taken shape across organizations. Dr. Ravi Thadhani stepped into the role as Emory's new executive vice president for health affairs as well as the executive director of the Woodruff Health Science Center. Emory Healthcare also welcomed a new leader, Chief Executive Officer Dr. Joon Lee.

This shift in leadership has already begun a transition into a more unified approach across our departments and institutions. We are faced with the challenge of asking ourselves how we can operate as one well-functioning system, rather than a collection of operating units. This is a challenge I believe will usher us into a more efficient and impactful future, not only to ease the burden of cumbersome decision-making, but in crafting a service line around patient care to ensure that their needs are met in a convenient way.

Within the Department of Surgery, we have also been able to bring in new leaders and elevate a number of faculty members into leadership positions. Our new chief advanced practice provider, Martha Ryan, stands out as a shining example of an overall wonderful person who is doing fantastic work leading our APP team.

I constantly find myself blown away to be at the helm of such a strong department. Adapting often requires discomfort and creates some resistance, but on the other side, we find that we have broken through and achieved more than we could have imagined. Looking back over the last nearly 100 years, it's remarkable the impact we've made on American surgery and healthcare.

#### John F. Sweeney, MD

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



# PATIENT CARE



### EMORY UNIVERSITY SCHOOL OF MEDICINE

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On the cover: Chief of the Division of Cardiothoracic Surgery Michael Halkos, MD, in the operating room

Find the report online at surgery.emory.edu/about-us/ annual-reports.htm



## Giving the Gift of Life While Living

Department of Surgery transplant surgeons Dr. L. Raul Badell and Dr. Octav Cristea were honored during Donate Life Month alongside two of their patients to raise awareness of the importance of living organ donation.

On April 25, 2023, the Atlanta Braves and Atlanta Braves Foundation hosted the Living Liver Foundation and the Georgia Transplant Foundation during their game against the Miami Marlins. State Senator John Albers (R-Roswell) and his son Will Albers were both recognized at the game for Senator Albers' kidney donation to his son in 2021. The pair shared the story of this experience as a testament to the kind of life that can be made possible through the gift of organ donation.

Will Albers, then just 24 years old, was diagnosed with kidney failure in 2020. Once it was decided that he was in need of a kidney transplant, his father learned he was a match, and they were both admitted to Emory University Hospital the following summer. Dr. Badell served as Senator Albers' surgeon, removing one of his kidneys for transplantation, and Dr. Cristea served as the transplant surgeon for

### PATIENT CARE



A dialysis machine filters the patient's blood to remove excess water and waste.

"Kidney transplantation can dramatically improve a patient's quality of life, in large part by eliminating their reliance on dialysis."

Will. The younger Albers recalled being amazed at how much better he felt after waking up following the surgery.

According to Dr. Cristea, many transplant patients report feeling increased energy levels following their procedures, even during recovery. Living kidney donations not only provide the best chance for long-term success, but when a donor steps up to donate, they can significantly reduce the time a recipient may have otherwise waited.

"Kidney transplantation can dramatically improve a patient's quality of life, in large part by eliminating their reliance on dialysis," says Dr. Cristea.

Following his donation, Senator Albers sponsored the Giving the Gift of Life Act intended to protect

potential living organ donors from losing their life insurance coverage and increasing the tax deduction available to them. In 2022, the bill, known as House Bill 275, was signed into Georgia law by Governor Brian Kemp. Now, Senator Albers hopes that every state will pass the act to encourage more living organ donations.

- OCTAV CRISTEA

With over 100,000 people in the United States on the wait list to receive organ transplants, awareness and assistance is crucial.

"We cannot do our jobs without the many donors and their families who are willing to selflessly give of themselves to help others," says Dr. Badell.



The launch of the IVYY project was originally covered in the 2022 Department of Surgery Annual Report, on page 8.

### One Year Later: A Public Health Response to Violence

In January 2023, the Interrupting Violence in Youth and Young Adults (IVYY) program launched at Grady Memorial Hospital. The ground-breaking program began with a clear goal: breaking the cycle of gun violence in the community and reducing the risk of reinjury for victims.

When the program launched, they faced a daunting challenge, with research estimating a 40 percent likelihood of reinjury for victims of violence. However, according to Grady's patient data, only one percent of IVYY participants were reinjured in the year following the launch of the program.

### "This grant allows us to breathe, knowing that it will support our team and the circle of safety."

Randi Smith, MD, MPH, founder of IVYY and a trauma surgeon at Grady, credits the success of the project to the incredible team and their novel approach to treating violence. This "circle of safety" is comprised of stakeholders from local government, family services, schools, community organizations, and more. Together, they are treating violence as a public health crisis, rather than a law enforcement issue as it has traditionally been addressed.

In the fall of 2023, the innovative and effective work earned Dr. Smith a \$2 million Department of Justice (DOJ) Grant Award under the Office of Justice Programs Community Violence Intervention and Prevention Initiative. This notable award is a part of the DOJ's efforts to support public safety and community justice activities.

"It's a game-changer in a lot of ways," says Dr. Smith. "Our work is not done in soliciting funds, but this grant allows us to breathe, knowing that it will support our team and the circle of safety."

Now, after a successful first year, the IVYY team continues to make an impact, not just on the victims and their families, but on the communities from which they come. The program uses a three-pronged approach. First is a bed-side response to identify and assist with a patient's needs, from education, legal and mental health resources to housing, job security, and transportation challenges. As a testament to the need and effectiveness of this assistance, IVYY has seen a 65 percent enrollment rate when approaching patients with the opportunity to participate in the program.

In April 2023, IVYY then introduced a multidisciplinary clinical element to the program, holding one clinic day weekly to serve as a one-stop shop for patients. This clinic helps to ensure that patients are not only able to keep up with their physical care needs, but they are met again with advocates offering access to important resources.

Finally, the circle of safety brings the community stakeholders together to serve to further serve victims and educate and engage the community. IVYY holds a quarterly meeting to increase awareness and address the service gaps that exist for victims.

According to Director of IVYY Jacquel Clemons, this is what a public health response to gun violence looks like: empathizing with victims rather than stigmatizing them.

"In the absence of leadership around this subject, we are serving as thought leaders," says Jacquel. "We are engaging people and experts outside of the walls of Grady, helping them understand what is at stake and how we should be caring for patients."

# EDUCATION

### Comprehensive **Collaboration: Creating a Resource for Future Trainees**

Emory General Surgery graduate Benjamin Hazen, MD, remembers how work on "Anatomic, Physiologic, and Therapeutic Principles of Surgical Diseases" began as a simple study guide. During his first post-graduate year, he noticed faculty, like Jahnavi Srinivasan, MD, and Shishir Maithel, MD, keeping meticulous records of injuries and treatment.

"They had already accumulated this knowledge and algorithmic approach to surgical treatment," says Dr. Hazen. "I looked and said, 'That's what I want. That's what I need in the next five years."

Over three years later, with contributions from over 100 residents and Emory faculty members, the book evolved into a comprehensive resource for medical students, residents, and fellows pursuing surgical training.

The idea of expanding the project took off when Dr. Hazen presented the idea to Keith Delman, MD, his general surgery

"I hope that this becomes a book that the Emory Department of Surgery is able to foster and grow."



residency program director at the time. Dr. Delman suggested that Dr. Hazen bring in other residents and expand the scope of the work. With his support, Dr. Hazen began to reach out to other faculty and found eager participants.

Work began during Thanksgiving week in 2019 and took three and a half years to complete. What began as an idea to create a couple-hundred-page study guide for Dr. Hazen himself became a fully-fledged book with 795 pages, 35 chapters, and hundreds of useful medical illustrations. Contributions came from 55 residents and 50 Emory faculty members across six different departments: Anesthesiology, Internal Medicine, Obstetrics and Gynecology, Urology, ENT, and Surgery. In July 2023, the book was published by Springer.

It wasn't easy taking this on. Striking a balance became a daunting challenge, with the combination of Dr. Hazen's ongoing residency, demands from Springer, and family obligations, including a child on the way.

Throughout the editing process, Dr. Hazen saw unpredictable rotating seasons of extreme workloads and periods of lull. This included a week in July when he was taking written boards, part of the General Surgery Qualifying Exams. Scheduled to take the exam on July 13th, Springer reached out to Dr. Hazen on July 1st with all 35 chapters, giving him a deadline of July 5th to have them back. Motivated by his desire to see the project come to fruition, and become a useful tool for future residents, Dr. Hazen rose to the challenge and saw it through.

"I have to say, as a credit to Dr. Hazen, I don't think for any of the editors, it was as tough for us because he took the load on his shoulders," says Dr. Srinivasan, currently the program director of the

general surgery residency program. "It was his labor of love."

Dr. Hazen hopes that residents and faculty not only find the book useful but carry on the work in the future.

"I hope that this becomes a book that the Emory Department of Surgery is able to foster and grow," says Dr. Hazen. "I hope that they carry on the tradition, doing a second edition and a third edition and make this book better."

Dr. Srinivasan agrees, citing the ways "Mulholland and Greenfield's Surgery: Scientific Principles and Practice" has showcased the University of Michigan.

"Mulholland and Greenfield's book has, for generations, been seen as a [University of] Michigan product that has touched the world of surgery and education," says Dr. Srinivasan. "Similarly, for us. I feel like that this is an Emory product with the potential to grow."

Finally, Dr. Hazen hopes that this book provides readers with information in the same algorithmic approach to surgery that he once aspired to as a firstyear resident himself.

"I hope that when residents and fellows are in a pinch and they don't have a straightforward case, they know that there's a resource available."

### EDUCATION

### **High-Fidelity Trauma Training**

In April of 2023, Grady Hospital, along with Emory School of Medicine and **Morehouse School of** Medicine, opened its first Trauma Cadaver Lab. This project, multiple years in the making, was spearheaded by Dr. Elizabeth Benjamin, MD, PhD, who joined Emory's faculty in 2020. Dr. Benjamin currently serves as the Trauma Medical Director at Grady's Marcus Trauma Center.

"Cadaver training is not easy to come by. It's relatively expensive and difficult to do. But for trainees, it is the best modality for training," says Dr. Benjamin.

Since the Cadaver Lab opened, there are now monthly or twice-monthly labs, with approximately 20 trainees attending each session. The sessions are one-time only, lasting one or two days at most. As a result, lab sessions are held all day, with trainees scheduled to come in for specific simulations.

Additionally, the trainings themselves are school-agnostic, with trainees learning from a combination of Emory, Morehouse, and Grady instructors. This allows trainees to gain experience from instructors outside of their chosen schools, while also allowing them to work together as they would in hospital settings like Grady.

It should be noted that this isn't the first cadaver simulation lab available to Emory trainees. According to Dr. Benjamin, there are many resources that Emory provides. What makes the Trauma Cadaver Lab stand out, however, is the fidelity model of the lab, which provides trainees with opportunities that would be almost impossible to come by outside of live situations.



"These are fresh cadavers. The tissues very much approximate live human tissue. It is the highest fidelity model you can use," explains Dr. Benjamin. "It is the closest you can come to operating on a live human. As an educational opportunity, there is not a lot that's better than that. You can create scenarios if you perfuse the cadaver, the cadaver bleeds like a person bleeds, it can quantify patient improvement."

The value provided to trainees goes beyond the simulations and scenarios. The nature of the lab allows trainees to experiment, learn, and fail without the repercussions that would take place in a live setting. All of this ensures that trainees will have experience and are better prepared when the stakes become real.

"Every time we do a lab, we add something to it - a service scenario component," says Dr. Benjamin. "Ideally, I would like it to be as open and available as possible to as many different learners as possible. It really should be a multidisciplinary environment and the more we can open it to more people and involve more learners, I think the better it becomes."

## **Trainee Kudos**

TRAINEE	AWARD	FACULTY MENTOR
Vanessa Arientyl, MD Acute Care and Surgical Critical Care Fellowship	1st Place, Society of Critical Care Medicine Annual Zoom Competition for Surgical Critical Care Fellowships	Craig Coopersmith, MD; Jason Sciaretta, MD
Frances Bennett, MD General Surgery	Winship NCI T32 Training Program Position 2023 Winship Scientific Symposium Poster Competition	Shishir K. Maithel, MD Chrystal Paulos, PhD Gregory Lesinski, PhD, MPH
<b>Kevin Chow, MD</b> Acute Care and Surgical Critical Care Fellowship	2nd Place, Society of Critical Care Medicine Annual Quiz Show	Craig Coopersmith, MD; Jason Sciaretta, MD
<b>Goeto Dantes, MD</b> General Surgery	Southeastern Surgical Congree Sharks Research Grant; Best Oral Presentation at GSACS Resident Competition	Allison Linden, MD
<b>Mari Freedberg</b> Acute Care and Surgical Critical Care Fellowship	2nd Place, Society of Critical Care Medicine Annual Quiz Show	Craig Coopersmith, MD; Jason Sciaretta, MD
Zachary Grady, MD General Surgery	2022 HOPE Surgery Award	Randi Smith, MD
<b>Dustin Hanos, MD</b> Acute Care and Surgical Critical Care Fellowship	2nd Place, Society of Critical Care Medicine Annual Quiz Show	Craig Coopersmith, MD; Jason Sciaretta, MD
<b>Lucy Hart, MD</b> General Surgery	T32 Training Grant, College of Health Services Research Center	Randi Smith, MD
Amber Himmler, MD Acute Care and Surgical Critical Care Fellowship	1st Place, Society of Critical Care Medicine Annual Zoom Competition for Surgical Critical Care Fellowships	Craig Coopersmith, MD; Jason Sciaretta, MD
<b>Olivia Keane, MD</b> General Surgery	Leadership Award, University of Southern California Institute for Addiction Science Post-Doctoral Provost Scholars Program, University of Southern California	Lorraine Kelley-Quon, MD
<b>Phil Kim, MD</b> Trauma Critical Care Fellow	1st Place, Society of Critical Care Medicine Annual Zoom Competition for Surgical Critical Care Fellowships	Craig Coopersmith, MD; Jason Sciaretta, MD
Matt Machowsky, MD Acute Care and Surgical Critical Care Fellowship	2nd Place, Society of Critical Care Medicine Annual Quiz Show	Craig Coopersmith, MD; Jason Sciaretta, MD
Anthony Meena, MD Vascular Surgery	Top 3 in SAVS Moderated Poster Competition; Karmody ePoster Competition, Symposium for the Society for Clinical Vascular Surgery (SCVS)	Olamide Alabi, MD Ravi Rajani, MD Guillermo Escobar, MD
Courtney Meyer, MD General Surgery	2nd Place, ACS Advocacy Abstract Competition	Elizabeth Benjamin, MD, PhD
<b>Eli Mlaver, MD</b> General Surgery	Georgia Quality Improvement Research Fellowship; NIH/NCATS Georgia Clinical and Translational Science Alliance TL1 Training Award	Joe Sharma, MD Jordan Kempker, MD, MSc S. Rob Todd, MD

TRAINEE	AWARD	FACULTY MENTOR
Danny Mou, MD Minimally Invasive Surgery	Best Clinical Oral Presentation, 2023 William C. Wood Symposium	Edward Lin, MD Scott Davis, MD Elizabeth Hechenbleikner, MD
Rachel Niehuus, MD General Surgery	DEI Resident Award Winner	
Elizabeth Norton, MD Cardiothoracic Surgery	1st Place, SAVS Moderated Poster Competition; 1st Place in STS Critical Care and Perioperative Management Poster Competition	Bradley Leshnower, MD Brent Keeling, MD
Kailey Oppat, MD General Surgery	Georgia CTSA TL1 Training Program – MSCR	Shishir Maithel, MD Gregory Lesinski, PhD, MPH
<b>William Qu, MD</b> Cardiothoracic Surgery	1st Place, STS Critical Care and Perioperative Management Poster Competition	William Keeling, MD Joshua Chan, MD Michael Halkos, MD
<b>Tyler Reynolds, MD</b> Surgical Critical Care Fellowship	2nd Place, Society of Critical Care Medicine Annual Quiz Show	Craig Coopersmith, MD; Jason Sciaretta, MD
<b>Emma Rooney, MD</b> Vascular Surgery	2023 SAVS Founders Award Overall runner-up, 2022-23 House Staff Organization Professionalism Excellence (HOPE) Award	Guillermo Escobar, MD
Madeline Roorbach, MD General Surgery	Committee on Trauma Resident Paper Competition Winner, Georgia Society of the American College of Surgeons	John Lyons, MD
Matthew Stanley, MD Cardiothoracic Surgery	2022 HOPE Fellows Award	Seth Force, MD
<b>Stephanie Tom, MD</b> General Surgery	Best Basic/Translational Oral Presentation, 2023 William C. Wood Symposium	Robert Guyton, MD Kendra Grubb, MD
Victoria Wagner, MD Surgical Critical Care Fellowship	1st Place, Society of Critical Care Medicine Annual Zoom Competition for Surgical Critical Care Fellowships	Craig Coopersmith, MD; Jason Sciaretta, MD
Trace Walker, MD Acute Care and Surgical Critical Care Fellowship	1st Place, Society of Critical Care Medicine Annual Zoom Competition for Surgical Critical Care Fellowships	Craig Coopersmith, MD; Jason Sciaretta, MD
Emilie Warren, MD General Surgery	Cholangio2023 Cholangiocarcinoma Foundation Research Fellowship; 2023 Nell W. and William S. Elkin Fellowship in Oncology; 2023 ASCO Conquer Cancer Merit Award; 2024 ASCO Conquer Cancer Merit Award	Shishir K. Maithel, MD Chrystal M. Paulos, PhD Gregory B. Lesinski, PhD, MPH
Jeroson Williams, MD General Surgery Chief Resident	Travel Award for Conference on Shock	Craig Coopersmith, MD; Mandy Ford, PhD

# RESEARCH



## Cracking the **Cancer** Čode

With groundbreaking studies and critical collaborative efforts across departments, Emory leads the charge to treat and cure cancer.

### COLLABORATING TO IMPROVE CHECKPOINT INHIBITION RESPONSE

In a new study published in Science Translational Medicine, a team of Emory collaborators has identified a novel molecular pathway that impacts resistance to checkpoint inhibition in patients with melanoma. The paper titled "FcyRIIB expressed on CD8+ T cells limits responsiveness to PD-1 checkpoint inhibition in cancer," used mechanistic approaches in mouse models, as well as human samples isolated from melanoma patients, and serves as a shining example of work achieved through a diverse team of basic science and clinical investigators, general surgery residents, and PhD students.

The study's team included Department of Surgery faculty members Mandy Ford, PhD, scientific director of the Emory Transplant Center and leading Emory researcher focusing on T cell responses in transplantation and immunosuppression; Michael Lowe, MD, associate professor in the Division of Surgical

Oncology; and Chrystal Paulos, PhD, whose laboratory focuses on T cell-based therapies for melanoma patients.

According to Dr. Ford, a previous study published in 2020 identified a molecule that is expressed on CD8+ T cells that had not previously been appreciated to govern their function. This molecule is known as Fcy Receptor IIB (FcyRIIB) which, as revealed by the study, binds to antibodies in the Fc region and essentially tells the T cells to die.

These findings helped to form the basis of this new study, which asserts that checkpoint inhibitors, which are drugs given to cancer patients to turn on their CD8+ T cell response to kill the tumor, are actually antibodies that contain this Fc region.

"What we discovered is that essentially, it's an unintended consequence that this molecule can bind to FcyRIIB on the surface of CD8+ T cells and instead of telling the T cell to turn on and kill the tumor, it can actually tell it to turn off and die," explains Dr. Ford. "So, we showed that if we can cleave this region off of the end of the antibody, we can improve the CD8+ T cell response."

The therapeutic implication of this study is that when designing immune-therapeutics to be used in cancer treatment, the antibodies would need to be mutated so that they cannot bind to FcyRIIB, as it negatively regulates CD8+ T cells. With this in mind, the next step was to bring in clinical data using samples from patients being treated with these drugs.

Dr. Lowe, whose clinical practice and research focuses on cutaneous malignancies, was able to provide samples from melanoma patients that were treated with these checkpoint inhibitors in vivo. In one experiment, they found that in these patients, the frequency of FcyRIIB positive cells goes down in vivo. Consistent with their findings in vitro and in mouse models, the T cell was no longer present after the first three weeks of treatment.

Beyond procuring the patient samples, it was important to get more data on the outcomes of these patients, to understand how they fared during their treatment, and what their responsiveness was to checkpoint inhibition. When looking at how well a patient is doing, it can be a measure of how well their T cell response is killing the tumor.

"It's so important to have the clinical perspective," says Dr. Ford. "Understanding how a patient is doing clinically can help us correlate what we're seeing in our experiment and lab analyses."

Combining basic science, lab experience, and medical perspectives, the team leading this study demonstrated the cross-pollination made possible by Emory's vast and talented network. Joining Department of Surgery faculty members were general surgery research residents Marvi Tariq, MD, and Kirsten Baecher, MD. Driving the project under Dr. Ford's mentorship was Kelsey Bennion, a PhD candidate in the Emory Laney Graduate School Cancer Biology Program.

When reflecting on the challenges facing the group, Dr. Ford recalls the logistical challenges, namely obtaining samples from patients throughout their treatment schedules.

"It seems mundane, but it's absolutely missioncritical," she says. "It really emphasizes how important it is to have buy-in from clinical collaborators. Having Emory invest in that infrastructure really helps to drive the science forward."

### NOVEL FINDINGS IN T CELL THERAPY

The Emory 1% Award honors faculty members who have received scores in the top one percentile on a grant proposal. In 2023, Chrystal Paulos, PhD, associate professor in the Department of Surgery, was named a recipient of the award after achieving a perfect score on a grant from the National Institutes of Health (NIH) for her work studying T cell-based therapies for patients with melanoma.

Essentially, the project set out to manipulate T cells in such a way that it makes them more therapeutic. With Dr. Paulos as the leader, the team was a truly well-rounded collaboration that included faculty members across various departments and institutions, including Dr. Michael Lowe, who has collaborated with Dr. Paulos since she first arrived at Emory University in 2020.

Gregory Lesinski, PhD, MPH, a translational scientist and professor in the Department of Hematology and Medical Oncology, is another a long-time collaborator with Dr. Paulos. Dr. Lesinski has also been integral in studying the relationship of T cells with other immune cells, bringing his expertise in both clinical work and mouse model systems to the study. Joining the team from the Rollins School of Public Health was Yuan Liu, PhD, a research associate professor in Biostatistics and Bioinformatics. As an expert in statistics, Dr. Liu was able to help interpret the results and how meaningful they were. Rounding out the team of Emory faculty was Mary Jo Turk, PhD, a professor of microbiology

what it is fabulous."

- CHRYSTAL PAULOS, PHD

way, which is important for T cells to proliferate, and genetically engineer them in a way that they can better recognize tumors, they are very effective in killing tumors in mouse models.

"We wanted to understand what it is about these T cells that makes them so fabulous." said Dr. Paulos. "We found that they have these enhanced metabolic properties and so, we have this novel transcription factor that we're studying that's never been studied before in T cells."

The transcription factor, called REX02, is able to enhance mitochondrial transcription in T cells, and when the T cells are genetically engineered to express more of it, they become much better at killing tumors.

Now, the goal is to take the discovery from the mouse models into the clinic. Dr. Lowe provided clinical samples for the grant and began working with Dr. Paulos on clinical trial to manipulate T cells from patient tumors.

"The big picture dream is to treat patients with these T cells," says Dr. Paulos. "This is called adoptive T cell transfer therapy."

While there is still work to be done, the NIH grant score serves as a testament to the groundbreaking nature of the research. Dr. Paulos credits the grant's high score to the talent and expertise of the team, the novelty of the study, and her persistence.

"I had to submit six times, I didn't give up," she says. "Each time, I would get very close to a fundable score, but the NIH is very tough – rightfully so. Their critiques were fair. So, it took a lot of work to do all of the experiments needed to convince them that it was a 'perfect' score."

"We wanted to understand about these T cells that makes them so

and immunology at Dartmouth University. Dr. Turk is an expert in resident memory T cells in patients with melanoma, and was able to contribute sophisticated mouse models to the study.

The study led to the team's discovery that if they inhibit the phosphoinositide 3-kinase (PI3K) path-



Mandu Ford, PhD



Michael Lowe, MD



Chrystal Paulos, PhD

### RESEARCH

### RESEARCH



Christian Larsen, MD, PhD



lohn Luons, MD

## **Emory Chosen by** White House for Innovative **Research Project**

On August 23, 2023, President Joe Biden announced that a new federal agency in the Department of Health and Human Services has selected Emory University to be the very first recipient of funding to support transformative breakthroughs in health research.

The Curing the Uncurable via RNA-Encoded Immunogene Tuning (CUREIT) Project brings up to \$24 million in new funding from the Advanced Research Projects Agency for Health (ARPA-H). CUREIT is the first program to receive funding from ARPA-H, a three-year cooperative agreement intended to drive the development of an innovative, programmable approach to prevent, treat, and potentially even cure diseases from cancer to autoimmune disorders and infectious diseases. Basically, the aim is to create a "toolbox" of mRNA and related technologies that could be used to trigger essential immune responses.

"The whole model of the ARPA-H program is to go forward, move fast, and try new and exciting things."

- JOHN LYONS, MD

The funding will directly support the work of primary investigator Philip Santangelo, PhD, professor in the Wallace H. Coulter Department of Biomedical Engineering at Emory and Georgia Institute of Technology, as well as major programs run by Department of Surgery faculty members Christian Larsen, MD, PhD, and John Lyons, MD. The toolbox is applied to various disease models in which co-PIs have expertise.

Dr. Larsen, director of the Emory Transplant Center, currently runs a lab focused on transplant immunology utilizing this mRNA technology, while Dr. Lyons, assistant professor in the Division of General and GI Surgery, is using this toolbox to conduct his research in sepsis immunology.

"This is a huge collaboration between a lot of different PIs whose research might not otherwise have the chance to intersect or overlap," says Dr. Lyons. "So much of this is new and exploratory, so many of the insights from one sub-project will prove beneficial for the others."

Each co-PI was allocated their own dedicated funds from the grant to conduct their respective experiments. Given the sizeable budget, investigators have been given a lot of leeway to invest in various possibilities and push experiments through more quickly than was possible before.

Whereas a typical grant timeline may see funds distributed a year after the initial application, the ARPA-H funding was accelerated to a two-to-threemonth turnaround. For the project, the name of the game is innovation. Once funds were delivered, experiments began immediately.

"It's been really go, go, go," says Dr. Lyons. "The whole model of the ARPA-H program is to go forward, move fast, and try new and exciting things."

### **Uncovering the Potential** of the Unconventional

A study co-authored by Mani Daneshmand, MD, an associate

professor of surgery in the Division of Cardiothoracic Surgery, seeks to explore and compare the efficacy of heart transplantations with donors following circulatory death with those conducted with hearts obtained from donors after brain death. The study was published in the New England Journal of Medicine in June 2023.

Traditionally, heart transplantations have been limited to the use of organs received from donors following brain death, which is defined as the irreversible cessation of all brain activity. in which the brain dies from a lack of blood and oxygen. This method allows for the assessment of cardiac function and the suitability for transplantation of the donor allograft (transplanted tissue) before surgically obtaining the organ. Of course, there is a far greater need for heart transplants than there are suitable donor allografts available. The use of hearts obtained from donors following circulatory death could bridge this gap. Circulatory death is defined as the irreversible cessation of all circulatory and respiratory function.

#### According to the study titled

"Transplantation Outcomes with Donor Hearts After Circulatory Death," clinical data to assess the efficacy of this method has been lacking. So, they designed the Donors After Circulatory Death Heart Trial to determine whether clinical outcomes from this method were noninferior to outcomes in patients who received hearts from more traditional methods.

A total of 180 patients underwent transplantation as part of the trial. Adult candidates who were on waiting lists for heart transplants at participating centers were randomly assigned in a 3:1 ratio to a circulatory-death

group, or to a brain-death group. Of course, to protect a candidate's chances for transplantation, patients assigned to the circulatory-death group could also receive a heart from a brain-death donor if one was assigned to them first.

In order to preserve and assess potential donor hearts following circulatory death, extracorporeal machine perfusion was utilized to reanimate the heart and allow for its evaluation for transplantation suitability. The trial sought to assess the outcomes of these transplantation procedures compared to those of patients who received hearts that had been preserved and transported following the brain death of a donor.







Mani Daneshmand, MD

At the end of the trial. risk-adjusted survival rates at six months following patient procedures were 94 percent among patients of the circulatory-death donor group and 90 percent among patients of the brain-death donor group. Dr. Daneshmand and his co-authors were able to conclude that transplantation following circulatory death was noninferior to transplantation following brain death of a donor.

Given the great need for heart transplantations across the country and the wait times that often delay treatment for patients, this study adds crucial clinical data to the potential of a less-traditional alternative for transplantation.



Least-squares mean difference, -3 percentage points (90% CI, -10 to 3); P<0.001 for noninferiority



### RESEARCH

### Perseverance in Aortic Dissection Treatment

Emory Healthcare has played a leading role in a clinical trial that could have lifesaving implications in the operating room. A team of Emory faculty led by Bradley Leshnower, MD, and including Woody Farrington, MD, and Brent Keeling, MD, began implantation of AMDS hybrid prosthesis devices (formerly known as the Ascyrus Medical Dissection Stent) in patients with acute DeBakey Type I aortic dissections, a life-threatening condition with extreme mortality rates. The first device was implanted by Dr. Farrington on

May 10, 2023, followed by a second implantation on May 23 by Dr. Leshnower. Emory finished the trial as one of the top enrollers, with a total of five implanted devices.

The clinical trial, known as PERSEVERE, was a ProspEctive, Single ARm, Multi-Center Clinical InveStigation to EValuatE the Safety and Effectiveness of AMDS in the TREatment of Acute DeBakey Type I Dissection. The study was conducted by Artivion, Inc., an Atlanta-based medical device company that focuses on aortic technologies. Trials began in March 2022 and the study enrolled 93 patients by its end.

AMDS devices are fabric-less stent graft implantations put in place during a Type A dissection in patients with malperfusion, an abnormality with the blood flow to the brain or any of the abdominal organs. The device is implanted at the beginning of a surgical procedure, which expands the true lumen of the dissection, allowing blood to flow through its normal pathway, improving on downstream malperfusion. Implantation is fairly easy, with minimal added time to the



operation, and can be lifesaving for patients experiencing malperfusion.

"Type A dissection is a surgical emergency from the cardiac standpoint, and the mortality of a Type A dissection is about 50 percent if left untreated within the first 48 hours," says Dr. Farrington, an assistant professor in the Division of Cardiothoracic Surgey. "We know, based on our data, patients with malperfusion prior to this device had a much higher likelihood of compromised organ system failure or death."

At Emory, almost all negative outcomes related to Type A dissections were due to malperfusions at the time of surgery, further highlighting the positive impact the AMDS devices are having on patients. There are an average of 75 patients treated with acute Type A aortic dissections at Emory Healthcare hospitals.

Results at Emory have been positive, although the study's final data will not be

"It's a fairly easy device to deploy and we've gotten good short-term results."

- WOODY FARRINGTON

Image source: Artivion Inc

available for several more years. However, longer term data from studies in Europe and Canada have also been favorable.

"This device has real-world applicability for all cardiac surgeons treating patients with Type A aortic dissection and malperfusion," says Dr. Leshnower, director of Thoracic Aortic Surgery for Emory Healthcare. "It appears to be particularly helpful in select patients, particularly elderly patients, with malperfusion."

With just 20 centers working on the PERSEVERE study nationally, Emory was the only medical center taking part in Georgia and one of four centers across the South, with other regional centers in Florida, South Carolina, and Texas.

"It's a fairly easy device to deploy and we've gotten fairly good short-term results," said Dr. Farrington. "We haven't had any misdeployments and patients that have come in with malperfusions have benefited. Overall,

the long-term data evaluations are still very early, but I think that with the success in other countries, this is going to be a study that ultimately provides benefits to a very sick group of patients."

# DIVERSITY, EQUI AND INCLUSION

### A Historic New Lectureship Honors a Living Emory Surgery Legend

**On February 2, 2023, the Department of Surgery was proud to host the inaugural Rogsbert Phillips-Reed DEI Lectureship.** While the Surgical Grand Rounds program currently hosts over a dozen named lectureships, this is the first to be named after an African American.

The first lecture in the new series was presented by Dr. Rogsbert Phillips-Reed herself, a general surgeon and fellow of the American College of Surgeons with a specialization in breast surgery. After graduating from Columbia University's School of Physicians and Surgeons in 1977, she became the second woman and first African American woman to complete Emory University's surgical program in 1982.

"Dr. Phillips-Reed is clearly a part of the legacy of this department," says Department of Surgery Chair John Sweeney, MD. "It was remarkable to hear her stories and consider her accomplishments, especially making it through surgery residency at a time when women, especially African American women, were not well represented in American surgery."

Today, Dr. Phillips-Reed leads the Metro Surgical Association, a community-based surgical practice with offices in Atlanta and Lithonia, Georgia. Her work has been acknowledged with more than 60 awards and honors, including the American Society of Breast Surgeons Arnold P. Gold Foundation "Humanism in Medicine Award," Atlanta Medical Association's "Physician of the Year Award," Atlanta Medical Association for Access Equity and Diversity "Rosa Parks Award." She has also been recognized by the Georgia House of Representative, the Georgia Senate, and the Secretary of State's Office.

In 1989, Dr. Phillips-Reed founded Sisters by Choice, a nonprofit organization that works as a support group for women



Top photo: Dr. Rogsbert Phillips-Reed (left) signs her name into the book of guest Grand Rounds speakers, alongside Department of Surgery Chair Dr. John Sweeney (right).

Right photo: Members of the African American Women Collaborative attended the historic lecture.



and men diagnosed with breast cancer and their families. This multi-faceted organization aims to reduce the mortality and morbidity of breast cancer through awareness, educational programs, and early detection.

Dr. Phillips-Reed led her presentation on the topic, "Intraoperative Radiation Therapy for Early Breast Cancer." The event was met with a fantastic turnout, including several women from the African American Women Collaborative (AAWC) Faculty Affinity Group. The new DEI Lectureship will now be held annually at Emory University, and will help to shine a light on surgeons and physicians from various institutions.

## New Faculty













from the University of Kansas School of Medicine, completed a General Surgery Residency at MedStar Georgetown University Hospital, and received her Endocrine Surgery Fellowship at the University of Michigan. Dr. Jackson serves as a General Surgeon with expertise in Thyroid and Endocrine Surgery for the Division of GI and General Surgery within the Department of Surgery with an active inpatient and outpatient practice, based primarily at Emory University Hospital Midtown.

James Jeong, MD, DMD, Assistant Professor, Division Oral and Maxillofacial Surgery

Dr. Jeong completed his DMD degree at the Nova Southeastern University College of Dental Medicine and completed both his MD degree and OMFS residency at Emory University School of Medicine. He completed a microvascular fellowship at the University of Michigan Head and Neck Oncology. His articles have been published in a number of leading journals including the Journal of Oral Maxillofacial Surgery, Journal of Craniomaxillofacial Surgery and Craniomaxillofacial Trauma and Reconstruction.

Regional Medical Center.

of Transplantation

Dr. Kazimi completed his MD at Albert Einstein College of Medicine, residency in General Surgery at Tufts-New England Medical Center, and fellowship in Abdominal Transplant Surgery at Indiana University Medical Center/Clarian Health. Dr. Kazimi held positions at Henry Ford Health Systems, Piedmont Hospital, and Beth Israel Deaconess Medical Center. His articles have been published in a number of leading journals including Pediatrics, Cardiology, and Transplantation.

### Emory Surgery at Grady

Dr. Liu received her MD degree from SUNY University at Buffalo, a General Surgery Residency at Waterbury Hospital in Connecticut, an Acute Burn and Reconstructive fellowship at Massachusetts General Hospital and Shriners Hospital for Children, and a Surgical Critical Care Fellowship at Massachusetts General Hospital. Dr. Liu held a position as a Clinical Assistant Professor of Surgery at Upstate Medical University and a Staff Burn Surgeon at Grady Memorial Hospital in New York. Her articles have been published in Burns, Journal of Burn Care and Research, and Journal of Clinical Psychopharmacology.

### Division of General and GI Surgery

The Emory Clinic.



Manuel Garcia-Toca Anee Jackson

James Jeong





Fred Simo



### Anee Jackson, MD, Assistant Professor, Division of General and GI Surger



### Suniyah Ayub, MD, Assistant Professor of Surgery, Division of Surgical Oncology

Dr. Ayub received her MD from the University of Virginia School of Medicine, held her General Surgery Residency at the University of Florida, where she served as an administrative chief resident, and completed a fellowship in Breast Surgical Oncology at Northwestern University. Her articles have been published in several leading journals and has been inducted into the Gold Humanism Honor Society and Alpha Omega Alpha. Dr. Ayub serves as a breast surgeon for the Division of Surgical Oncology within the Department of Surgery.

#### Alicia Bonanno, MD, Assistant Professor, Division of Cardiothoracic Surgery

Dr. Bonanno completed her medical degree at the University of South Carolina in Columbia, South Carolina and her general surgery residency at Oregon Health and Science University. Following residency, she completed her cardiothoracic surgery fellowship at Emory University. Along with her role as assistant professor, Dr. Bonanno is also an associate program director for the cardiothoracic surgery residency at Emory University.

#### Sulemon Chaudhry, MD, Assistant Professor, Division of Transplantation

Dr. Chaudhry completed his MD degree at the University of North Carolina School of Medicine, General Surgery Residency at New York Presbyterian-Columbia University Medical Center, and his Abdominal Organ Transplant Fellowship at New York Presbyterian-Columbia/Cornell, Dr. Chaudhry's articles have been published in leading journals including Surgery, Kidney, and Current Transplantation Reports.

### Surgical Oncology

University School of Medicine, a General Surgery Residency at the Hospital of the University of Pennsylvania, and a fellowship in Complex General Surgical Oncology at MD Anderson Cancer Center. His articles have been published in leading journals including the Annals of Surgical Oncology, the American Journal of Surgery, and Transplantation.

#### Manuel Davila, MD, Assistant Professor, Division of Oral and Maxillofacial Surgery

University of Puerto Rico, School of Dentistry and completed his residency in Oral and Maxillofacial Surgery at the Walter Reed Army Medical Center. His articles have been published in leading journals including the Journal of Oral & Maxillofacial Surgery and Oral Medicine & Oral Pathology.

### Courtney Devin, MD, Assistant Professor, Division

Dr Devin received her MD from Tulane University School of Medicine in New Orleans before completing her general surgery residency at Thomas Jefferson University Hospital and her colorectal surgery fellowship at Emory. Dr. Devin serves on the Awards committee for American Society of Colon and Rectal Surgeons and the Resident and Fellow Education committee for Society of Surgery for the

### Katherine Fay, MD, Assistant Professor, Division of General and GI Surgery

Dr. Fay completed her MD degree, General Surgery Residency, and her GI and General Surgery Fellowship at Emory University. Her articles have been published in leading journals including The American Surgeon, Surgery, and American Journal of Surgery

#### Ryan Fransman, MD, Assistant Professor, Division of Emory Surgery at Grady Memorial Hospital

Dr. Fransman received his MD degree from Medical University of the Americas, completed a General Surgery Residency at The Johns Hopkins Hospital, and completed his Trauma, Acute Care Surgery and Surgical Critical Care Fellowship at R. Adams Cowley Shock Trauma Center - University of Maryland. Prior to joining Emory in 2023, he held a Medical Director position with the Baltimore Police Department Special Weapons and Tactics Team. His articles have been published in Journal of Patient Safety and Risk Management, Urology, and The American Surgeon.

#### Manuel Garcia-Toca, MD, FACS, Acting Associate Professor, Division of Vascular Surgery &

Endovascular Therapy, Division of Surgery at Grady Dr. Garcia-Toca completed his MD at the Universidad Anahuac in Mexico and MS in Health Policy at Stanford University. He completed his residency in General Surgery at Brown University

and a fellowship in Vascular Surgery at Northwestern University. Dr. Garcia-Toca serves within the Department of Surgery in the Division of Vascular Surgery and Endovascular Therapy and the Division of Emory Surgery at Grady based primarily at Grady Memorial Hospital.

Seth Concors, MD, Assistant Professor, Division of

Dr. Concors received his MD degree from New York

Dr. Davila received his DMD degree from the

### of Surgical Oncology

Alimentary Tract.

Dr. Scott received his MD degree from Meharry Medical College, completed a General Surgery Residency at Morehouse School of Medicine, and an Advanced Laparoscopic Fellowship at Atlanta Medical Center. He serves as a General Surgeon in the Division of General & Gastrointestinal Surgery within the Department of Surgery based primarily at

Jinu Kamdar, MD, Assistant Professor, Division of General and GI Surgery

Dr. Kamdar completed his undergraduate and medical education at the University of Wisconsin and his surgical residency training at the University of Arizona. Dr. Kamdar also served in the US Navy for 11 years as a surgeon, which included a deployment during the Iraq War. He was part of the original team that developed the trauma program at Wellstar Kennestone Hospital, and he also served as the Medical Director of General Surgery at Southern

Marwan Kazimi, MD, Assistant Professor, Division

Yuk Ming Liu, MD, Assistant Professor, Division of

Andre Scott, MD, FACS, Assistant Professor,

#### Fred Simonton, DMD, Assistant Professor, Division of Oral and Maxillofacial Surgery

Dr. Simonton received his DMD degree from Washington University, School of Dental Medicine and completed an Oral and Maxillofacial Surgery Residency at Henry Ford Hospital. He works as an Oral and Maxillofacial surgeon in the Department of Surgery at Grady Memorial Hospital.

#### Megan Urbanski, PhD, MSW, Assistant Professor, Division of Transplantation

Dr. Megan Urbanski received her MSW (clinical concentration) from the University of Pennsylvania and worked for nearly ten years as a clinical social worker with patients in need of a solid organ transplant. She received her PhD in Public Health (Social and Behavioral Sciences concentration) from Temple University and completed a postdoctoral research fellowship in the Health Services Research Center at Emory University.











### **New Leaders**

Olamide Alabi, MD, was appointed Assistant Section Chief for Vascular Surgery at The Atlanta VA Medical Center (VAMC). The Medical Center is dedicated to serving thousands of enrolled veterans living across Northeast Georgia and their healthcare needs. Dr. Alabi is an assistant professor in the Department of Surgery's Division of Vascular Surgery and Endovascular Therapy. She received her medical degree from the University of Nebraska College of Medicine, trained in general surgery at Loma Linda University Medical Center in Southern California, and completed a fellowship in vascular surgery at Oregon Health and Science University.

Yazan Duwayri, MD, MBA, has been appointed Chief of the Division of Vascular Surgery. Dr. Duwayri has been with Emory since 2011 and currently serves as the medical director of the Heart and Vascular Service Line at Emory University and co-director of the Emory Aortic Center. He received his medical degree from the University of Jordan, completed his surgical residency in the University of Toledo and his Vascular Surgery fellowship at Washington University in Saint Louis. He also has an MBA from Emory University Goizueta Business School.

Manuel Garcia-Toca, MD, FACS, was appointed Chief of Vascular Surgery at Grady. He joined the Emory Department of Surgery after six years at Stanford University. Dr. Garcia-Toca completed his general surgery residency at Brown University, his vascular fellowship at Northwestern University, and his master's degree in health policy at Stanford. Most recently, he was the Chief of Vascular Surgery at Santa Clara Valley Medical Center. While his clinical interests are broad, Dr. Garcia-Toca's research interests focus on cost-effective treatment strategies for the management of vascular trauma, dialysis access, and limb salvage.

Lauren Postlewait, MD, was named medical director of the Grady Breast Center, a role that she had been serving in as interim following the departure of Dr. Preeti Subhedar, MD. Dr. Postlewait is an assistant professor of surgery, and her clinical interests are providing comprehensive, multidisciplinary care for breast cancer and breast disease patients. She has received numerous awards for her research including the Merit Award in 2015 and 2016 from the Conquer Cancer Foundation of the American Society of Clinical Oncology as well as Best Clinical Research awards at Emory Department of Surgery Research Days in 2015 and 2017.

Maria Russell, MD, has been named Chief Quality Officer for Winship Cancer Institute. Dr. Russell, who holds the Wadley R. Glenn Chair of Surgery for Academic Programs, joined the Emory faculty in 2012. She completed her general surgery residency at Emory University and a two-year research fellowship in the Emory Transplant Immunology Lab. She completed a surgical oncology fellowship at the University of Texas MD Anderson Cancer Center. She is the chair of the Georgia State Commission on Cancer, working with programs, providers, and organizations to improve the quality of cancer care.

Martha Ryan, FNP, has been appointed Chief Advanced Practice Provider of Emory Surgical Services. Martha Ryan is a certified family nurse practitioner practicing at Emory Healthcare since 2011. Over the past three years she has been the operations clinician lead for the Winship Head & Neck Multidisciplinary Care Clinic. In this new position, Martha will expand her leadership with Surgical Services, leading and supporting our APP's in the Divisions of General Surgery, Plastic and Reconstructive Surgery, Colorectal Surgery, Surgical Oncology, and Oral and Maxillofacial Surgery, as well as the Departments of Otolaryngology and Urology. She officially stepped into her new role on January 9, 2023.

Virgina Shaffer, MD\*, has been appointed Vice Chair of Faculty Affairs for Department of Surgery. In this role, she will provide guidance and oversight in faculty affairs and development as a senior advisor to the chair and chair leadership team. Currently, Dr. Shaffer serves on the Emory School of Medicine Faculty Development Advisory Committee. the General Surgery Residency Clinical Competency Committee, and as program director for the Colorectal Surgery Fellowship. She is a Woodruff Leadership Academy graduate and previously served on the Emory University Senate and Faculty Council. \*Dr. Virginia Shaffer has since accepted an exceptional position as chief of colon and rectal surgery at the University of Chicago.

## **2023 Faculty Awards** and Distinctions

#### Olamide Alabi, MD Katherine Hekman, MD, PhD VISN7 RDA Award Association for VA Surgeons (AVAS) Faculty Research Award 2023 DEI Faculty Award Winner Onkar Khullar, MD Hanna Alemayehu, MD Accepted to 2023 Em-ProLEAD Cohort 1998 Society Grant, CHOA Steven Kim, MD Kenneth Cardona, MD, FACS Elected member of American Society Elected to Southern Surgical Association of Transplant Surgeon's (ASTS) Grants **Review Committee** Craig Coopersmith, MC, FACS, MCCM 2023 Department of Surgery Pilot Off-Service Teacher of the Year Award Research Award **Christopher Dente, MD** William Knaus, MD 2023 School of Medicine 2023 Emory at Grady Mentoring Award Best Colleague Award Allison Linden, MD, MPH Heather Faulkner, MD

Associate Professor of Surgery, Emory School of Medicine

Recipient of Women of Emory Circle of

Wendy Greene, MD

Elizabeth Heckenbleikner

Impact Grant

#### Denise Lo, MD

Selected to 2023 Women's Leadership Development Program

### John Lyons, MD

Editorial Board

Inaugural Georgia Bariatric Excellence Award, Georgia Society of the American College of Surgeons

1998 Society Grant, CHOA

Elected to "Frontiers in Immunology"

### Shishir Maithel, MD, FACS, FSSO

Named Editor-in-Chief of Surgical **Oncology** Insight

### Christopher Ramos, MD

Elected to "Annals of Vascular Surgery" Editorial Board

Selected to 2023 Under-Represented in Medicine Cohort

### Maria Russell, MD

Selected to 2023 Women's Leadership Development Program

Vice Chair of the Program Director's Committee of the Society of Surgical Oncology

### Randi Smith, MD

2023 Martin Luther King, Jr. Community Service Award

DOJ IVYY \$2 Million Grant

2023 recipient of the Emory at Grady Community Impact Award



**Department of Surgery** 

Department of Surgery

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### ESTABLISH A CONNECTION

to Emory Surgery's culture of service, innovation, education, and discovery by making a gift.

To arrange a donation, please contact Sarah E. Evans, associate vice president of development, Emory School of Medicine and Discovery Programs, at sarah.e.evans@emory.edu, 404-544-9352.

Alumni may make a donation to the Alumni Society Fund at together.emory.edu/GallowayMcKinnon.

