

Temple Health

SPRING 2020

Magazine

CHEST GAMBIT

Opening Moves in Thoracic Surgery

MAGNET RECOGNITION FOR NURSING:
MEET FIVE NURSES WITH POWERFUL DRAW

BETA BLOCKERS: SOON OUT OF BIZ?
ASK THE GRK2 MASTER, WALTER KOCH, PHD



—
Russell H. Conwell (1843-1925),
minister, orator, lawyer, and
founder of Temple University



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Temple Health Magazine

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Temple ReadyCare

Temple Physicians, Inc.

Temple Faculty Practice Plan

Temple Transport Team

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Mission Blueprint

An organization’s founders must decide what it should be — a school or a hospital, for example. But perhaps more important, why it should be, and for whom. Russell Conwell (1843-1925), creator of Temple University and its health enterprise, understood this quite clearly.

In 1892, when affluent people had hospitals and the “lesser classes” had almshouses, Conwell founded a hospital with a single set of standards — the highest possible — for all. In 1901, when medical schools catered to the sons of elite society, Conwell created a “midnight medical school” that gave working men and women of all backgrounds an unprecedented opportunity to become physicians.

These were radical enterprises for their time. Founded on moxie, not money — making them riskier still. Yet more than 125 years later, Temple’s academic medical center continues to thrive.

Why, and for whom?

Patients so medically complex, they’ve run out of options at other hospitals.

A local community so lacking in basic resources, average life expectancy is one of the shortest in America.

Medical professionals and researchers who, through challenging and difficult work, find their own lives elevated.

And students with provocative insights that keep us on our toes.

Conwell didn’t just create a hospital or a medical school. He built something far greater. That can happen when social conscience is your blueprint.

Giselle H. Zayon

Editor



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ON THE COVER: Robotic approaches are revolutionizing thoracic surgery. It's practically a whole new game of chest. Illustration by Spooky Pooka.

ILLUSTRATION: DANNY SHANAHAN; LUNG MAP: L.J. DAVIDS; GRACE MA: CARDONI

CURRENTS

Traumatic Brain Injury Treatment

Every 15 seconds, someone in the U.S. suffers a traumatic brain injury (TBI). It's the leading cause of death and disability in people aged 44 and younger.

To improve outcomes, Temple is participating in a multi-center clinical study called BOOST (Brain Oxygen Optimization in Severe TBI). The purpose of the study is to evaluate two different TBI treatment strategies.

"In one strategy, we focus on preventing

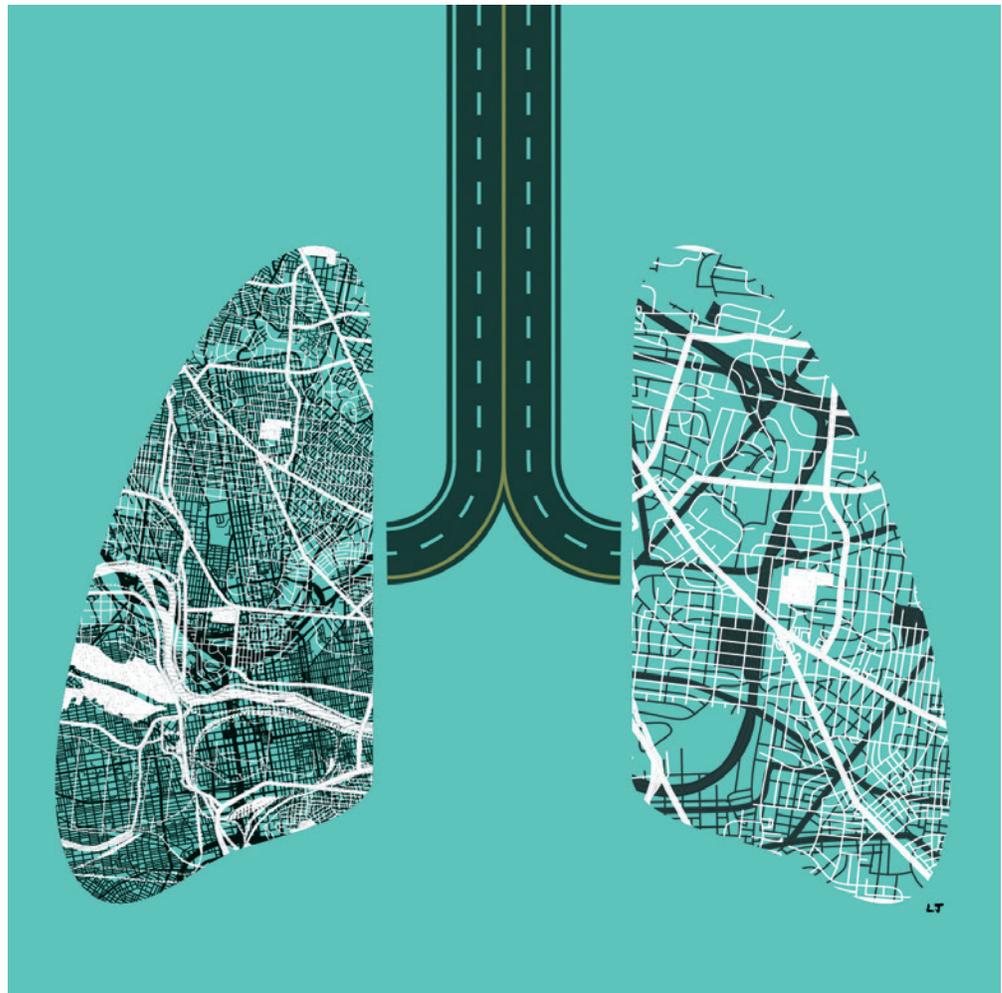
intracranial pressure from getting high. In the other, we do likewise while also striving to maintain brain oxygen at a normal level," says Michael Weaver, MD, Chair of Neurosurgery at Temple, the local principal investigator for the NIH-funded study, which is based at the University of Michigan.

"While both strategies are considered standard-of-care, BOOST will help determine if one method is safer and more effective than the other," Weaver says.



Prostate Cancer News

Generally, tumor-suppressor genes stop working when mutations affect both gene copies. But a Temple research team studying a suspected tumor-suppressor gene called PPP2R2A found that most prostate tumors have only one functional copy. The team reconstituted the gene in defective prostate cancer (PCa) cells — and it blocked its growth in culture and in an animal model, indicating that these PCa cells have become hypersensitive to normal levels of the gene. “This is a very common genetic defect in PCa. If we could develop a drug to leverage this hypersensitivity, many patients could benefit,” says Xavier Graña, PhD, Professor at the Fels Institute for Cancer Research. The research, supported in part by the NIH, was published in *Oncogenesis*. Fox Chase Cancer Center and Uppsala University (Sweden) researchers contributed.



New Affiliation for Lung Transplant

Temple University Hospital and St. Luke's University Health Network (in Pennsylvania's Lehigh Valley), have developed a strategic affiliation for lung transplantation and advanced lung disease services that gives patients in the Lehigh Valley streamlined access to Temple's lung transplant team and pulmonologists close to home, reducing much of the travel typically required of patients seeking highly specialized care. The program builds on a previously established affiliation between Temple and St. Luke's for heart, liver, kidney, pancreas, and bone marrow transplantation.

“This program offers many benefits to patients, including an experienced transplant team and a robust research program pioneering

methods to make donor organs more available and to reduce post-transplant complications,” says Michael Young, MHA, FACHE, Temple University Health System CEO.

Temple's lung transplant team includes internationally renowned pulmonologist Gerard Criner, MD, FACP, FACCP, and transplant surgeons Yoshiya Toyoda, MD, PhD, and Norihisa Shigemura, MD, PhD. Toyoda developed the antero-axillary approach in lung transplantation, a minimally invasive surgery that can help avoid many complications of the standard procedure.

St. Luke's University Health Network, which houses a regional campus of the Lewis Katz School of Medicine, includes ten hospitals and 300 outpatient sites across ten counties.

IN
2017
2018
AND
2019

TEMPLE PERFORMED
MORE LUNG
TRANSPLANTS THAN
ANY OTHER HOSPITAL
IN THE U.S.

Young Appointed CEO

Michael A. Young, MHA, FACHE, has been named the new President and CEO of Temple University Health System. An experienced hospital administrator who has served as President and CEO of Temple University Hospital since 2019 (and retains the role), Young will continue to build the Health System's stability and competitiveness following a successful restructuring initiative initiated by the University in 2018 with the Alvarez & Marsal (A&M) Healthcare Industry Group.



Michael A. Young, MHA, FACHE

A fellow of the American College of Healthcare Executives, Young is a health care CEO with more than 30 years of leadership experience at large academic medical centers, including the Pinnacle Health System (Harrisburg, PA) and Grady Memorial Hospital (Atlanta, GA). He joined Temple in 2018 as Chief Operating Officer of Temple University Hospital.

"Michael Young is a highly skilled and experienced administrator who has done an outstanding job," said Temple University President Richard M. Englert.

As CEO, Young succeeds A&M Managing Director Stuart McLean, Chief Restructuring Officer, who was named Acting Health System CEO in September 2019, when Larry R. Kaiser, MD, FACS, announced his intent to resign at the end of the year. Kaiser, who had been Health System President and CEO since 2011, also served as the University's Executive Vice President for Health Affairs and Dean of the Lewis Katz School of Medicine. John M. Daly, MD, FACS, FRCSI, FRCSG, was appointed Interim Dean. A member of the American College of Surgeons Academy of Master Surgical Educators, Daly is Emeritus Dean of the Lewis Katz School of Medicine (2002-2011) and the Harry C. Donahoo Professor of Surgery.

McLean remains Chief Restructuring Officer in a strategic effort that, to date, has transitioned the University's physician practice plan to a non-profit Health System entity; merged Jeanes Hospital into Temple University Hospital; and developed an agreement with Thomas Jefferson University to purchase Fox Chase Cancer Center and the Health System's interest in Health Partners Plans. "The restructuring has brought financial stability and the opportunity for the Health System to make additional capital investments," Englert said.

"I want to thank Stuart McLean for the outstanding work that he has done," said Englert, also acknowledging Kaiser. "Larry's years at Temple were transformative. His leadership enabled the Health System to emerge in a far stronger and more stable position. I want to thank Larry for his outstanding service."

Technology: Tiny but Mighty



Unique Catheters

The U.S. Food and Drug Administration has granted premarket clearance to seven new catheters designed by Riyaz Bashir, MD, FACC, RVT, Professor of Medicine and Director of Vascular and Endovascular Medicine at Temple, in collaboration with Thrombolytic, Inc., a company founded in partnership with Temple University to develop catheter-based clot-dissolving devices. FDA clearance authorizes Thrombolytic to commercialize the catheters.

One, the **Bashir™ Endovascular Catheter**, is designed to control and selectively infuse clot-dissolving medications into the veins and arteries of the peripheral vasculature. "It is the only catheter that, once advanced into the clot, can be expanded by the physician into six expandable mini-catheters to deliver medications in precise locations," Bashir says.

Another, the **Bashir N-X™ Endovascular Catheter**, controls and selectively infuses medication into both the peripheral and pulmonary vasculature. Unlike the first catheter, it is not expandable.

"My inspiration is to develop devices to provide better thrombolytic therapy — treatment to dissolve

Time to Join Time's Up

The Lewis Katz School of Medicine has become a signatory member of Time's Up Healthcare — which insists on safe, fair, and dignified work environments for women in health care. Signatory members pledge to combat harassment, discrimination, and gender-based inequity in the health care workplace. "By signing on, we are sending a strong statement that we are committed to achieving gender equity," says Heather Clauss, MD, Senior Associate Dean of Faculty Affairs and Professor of Clinical Medicine at the Katz School.

dangerous clots in blood vessels, improve blood flow, and prevent damage to tissues and organs,” Bashir says.

The team has also received FDA clearance to use the catheters in clinical studies.



Pump up Survival

The National Cardiogenic Shock Initiative shows that patients with a potentially deadly heart attack complication called cardiogenic shock survive at significantly higher rates when treated with a specific protocol offered at 65 selected sites around the country, including Temple University Hospital.

“In cardiogenic shock, the heart is too weak to pump blood to vital organs and the rest of the body,” explains Associate Professor of Medicine Brian O’Neill, MD, who led the study at Temple.

Typically, about 50 percent of people with cardiogenic shock survive. But when a tiny pump (called the **Impella pump**, an FDA-approved device) is placed in the heart (via catheter) to keep the blood flowing as soon as the patient arrives at the hospital, 72 percent survive.

The study, based at Henry Ford Hospital in Detroit, is the first large-scale clinical trial of a cardiogenic shock treatment protocol.



An Apple a Day

Food insecurity is a major public health issue across the United States. It leads to higher rates of chronic disease and increased health care spending — as much as \$77.5 billion annually. In the United States, 12.9 percent of people are food-insecure. In Philadelphia, 19.3 percent are.

“But in North Philadelphia, Temple’s service area, the percentage is even higher: 27 percent, according to a survey of recently discharged patients,” says Ronni Whyte, MS, BSN, RN, Temple’s Director of Population Health.

The most profound and equally disappointing discovery for Whyte is that 66 percent of the people who identified as food-insecure were already receiving Supplemental Nutrition Assistance Program (SNAP) benefits. “We’ve always

assumed that the benefit covered the needs, but that’s not necessarily the case,” she says.

In 2017, to help combat food insecurity, Temple began screening and referring patients from North Philadelphia zip codes to one of two resources for help. However, less than 25 percent of them took advantage, citing various barriers. Whyte and colleagues are working on strategies to address those barriers.

Meanwhile Temple continues to offer various types of food assistance to patients, such as “Farm to Families,” which offers fresh, low-cost produce that North Philadelphians can purchase weekly with SNAP benefits and a “fruits and vegetables prescription” from a Temple physician.

These findings were published online in *Population Health Management*.

Temple Joins “All of Us”

The Lewis Katz School of Medicine has joined the National Institutes of Health and the University of Pittsburgh as an open enrollment site for the All of Us Research Program — a national effort to devise more targeted approaches to predicting, preventing, and treating a variety of health conditions among people of all backgrounds.

“All of Us will advance precision medicine, an approach that takes into account differences in people’s lifestyles, environments, genetics, and biological characteristics,” says Arthur M. Feldman, MD, PhD, FAHA, Laura Carnell Professor of Medicine and Lead Investigator at Temple for All of Us.

More than one million participants nationwide, including 100,000 Pennsylvanians, will

be enrolled in the study, with a special focus on participation by individuals in groups historically under-represented in research. “This will enable us to address important health disparities,” Feldman says.

Co-Lead Investigator Susan G. Fisher, MS, PhD, Chair of the Department of Clinical Sciences at Temple, calls All of Us “an investment in future health. Every individual in our diverse Philadelphia community who participates — Blacks, Latinos, and other minority groups — will be making a valuable contribution to scientific discoveries that will lead to better health for all of us in future generations,” she says.

NIH has funded more than 100 organizations throughout the U.S. to be partners in the program.

To learn more, visit JoinAllofUsPA.org.

Another HIV-1 Breakthrough

Researchers at the Lewis Katz School of Medicine and the University of Nebraska Medical Center (UNMC) have, for the first time, eliminated the DNA of HIV-1, the AIDS virus, from the genomes of living animals.

The study, reported in *Nature Communications*, marks a critical step toward a possible cure. Kamel Khalili, PhD, of Temple, and Howard Gendelman, MD, of UNMC, were senior authors.

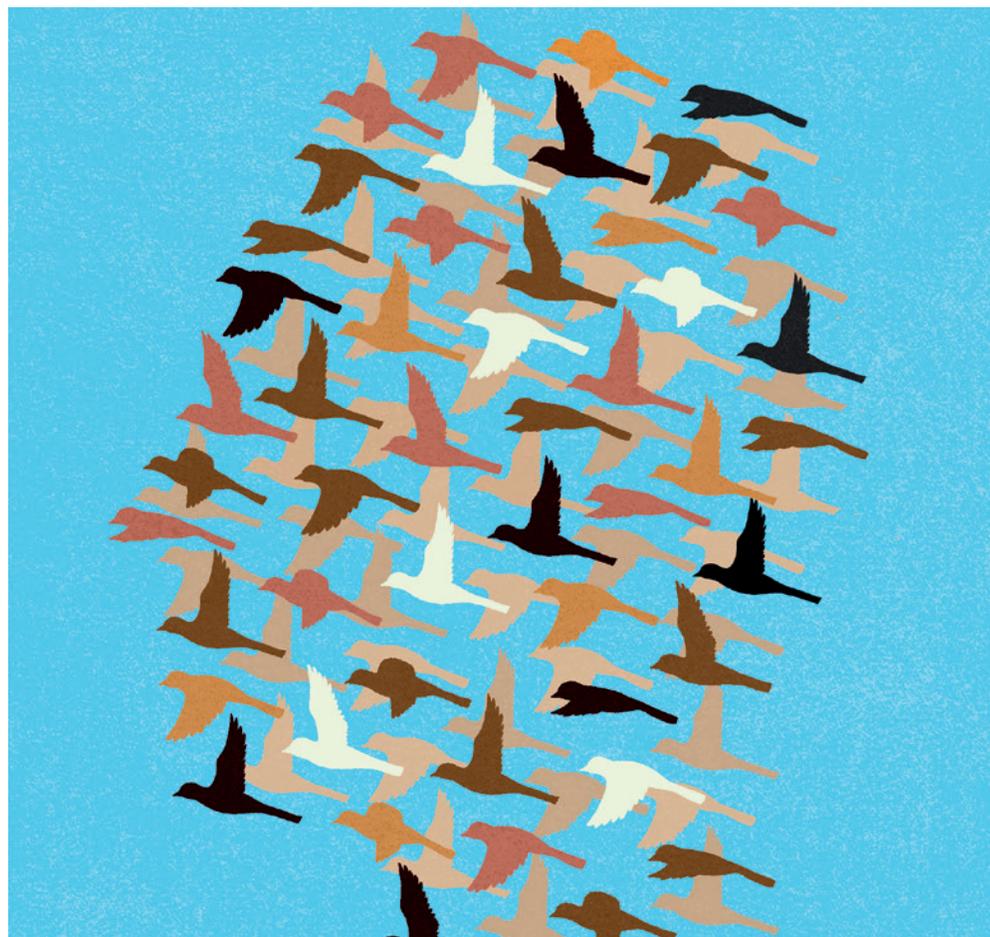
Current HIV treatment, antiretroviral therapy (ART), suppresses HIV replication but doesn’t eliminate the virus. Likewise, a gene editing process called CRISPR-Cas9, as proven by Khalili’s previous work, excises large fragments of HIV DNA, but cannot completely eliminate HIV.

For the new study, Temple and UNMC combined gene editing with a method developed at UNMC called long-acting slow-effective release (LASER) ART, which targets viral sanctuaries, maintaining HIV replication at low levels for extended periods.

“We wanted to see whether LASER ART could suppress HIV replication long enough for CRISPR-Cas9 to completely rid cells of viral DNA,” Khalili says. The approach eliminated HIV DNA in about one-third of HIV-infected mice.

“CRISPR-Cas9 has the potential to permanently inactivate HIV-1,” Khalili says.

The research, supported in part by the National Institutes of Health, will proceed toward human trials.



Leading and Lauded

Daniel Eun, MD, Professor of Urology and Chief of Robotic Surgery, and Ziho Lee, MD, chief resident in Temple's Department of Urology, won first place in the "Video Abstract" category at the 30th World Congress of Video-urology and Advances in Clinical Urology. Their abstract describes a new appendix bypass procedure developed at Temple.

Jamie Garfield, MD, Associate Professor of Thoracic Medicine and Surgery, is one of six new national volunteer medical spokespeople for the American Lung Association.

Enrique Hernandez, MD, FACOG, FACS, FCPP, has been inducted into the American College of Surgeons Academy of Master Surgeon Educators™, a global and exclusive roster. Hernandez is the Abraham Roth Professor and Chair of Obstetrics, Gynecology and Reproductive Sciences at Temple.

Laurie E. Kilpatrick, PhD, Professor in the Center for Inflammation, Translational and Clinical Lung Research at Temple, has been elected President of the Shock Society, a national association of clinicians and researchers dedicated to improving the care of patients with trauma, shock, and sepsis. Her term as president begins in June 2020.

Margot Savoy, MD, MPH, Chair and Associate Professor of Family and Community Medicine at Temple, has been named to the board of directors of the American Academy of Family Physicians.

Tara Thompson-Felix, MD, Chief Resident, Psychiatry, has been awarded the George Ginsberg Award and Fellowship of the American Association of Directors of Psychiatry Residency Training. The honor acknowledges excellence among residents pursuing careers as clinician-educators.

Susan Wieggers, MD, FACC, FASE, Professor of Medicine, has been named Senior Associate Dean of Clinical Affairs and CEO of Temple Faculty Practice Plan, a new nonprofit subsidiary of Temple University Health System. Wieggers, who joined Temple in 2012 as Senior Associate Dean of Faculty Affairs, is a past president of the American Society of Echocardiography and the recipient of its Richard Popp Excellence in Teaching Award.



Institutional Honors

Temple's **Continuing Medical Education Program** has earned Accreditation with Commendation, the highest level of accreditation granted.

Temple University Hospital's **Palliative Care Team** recently received the inaugural Award for Team Excellence from the Pennsylvania Hospice and Palliative Care Network.

Temple University Hospital earned "**Top Performer**" status, scoring 100 percent on the 2019 Human Rights Campaign Healthcare Equality Index Survey.

Temple University Hospital's **Dermal Defense Team** was honored with the 3M Award for Excellence in Skin Care in 2019 from the Wound, Ostomy and Continence Nurses Society and 3M.

Temple University Hospital achieved first place among hospitals in the 2019 Hospital and Healthsystem Association of Pennsylvania's Donate Life Hospital Challenge, an initiative to raise awareness about organ donation.

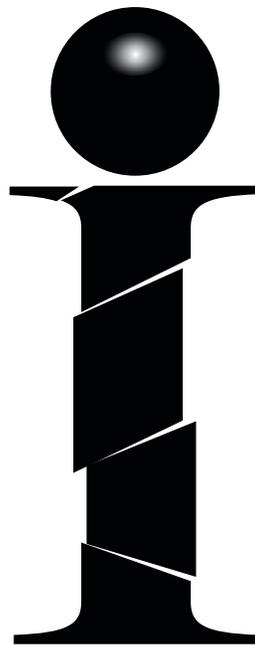
Temple University Hospital's **Jeanes Campus** received the 2019 American Heart Association/American Stroke Association's Get With The Guidelines® Stroke Gold Plus Quality Achievement Award for best practices in stroke care. Jeanes also received an "A" from the Leapfrog Group, the leading hospital safety assessor; and made Healthgrades' list of America's 250 Best Hospitals (2019), placing it in the top five percent of more than 4,500 hospitals assessed nationwide.

Five Temple pre- and post-doctoral researchers in heart failure and diabetic cardiomyopathy were honored with Basic Cardiovascular Science awards at the 2019 Scientific Sessions of the American Heart Association.

—
Susan Wieggers, MD, FACC, FASE

CHEST GAMBIT

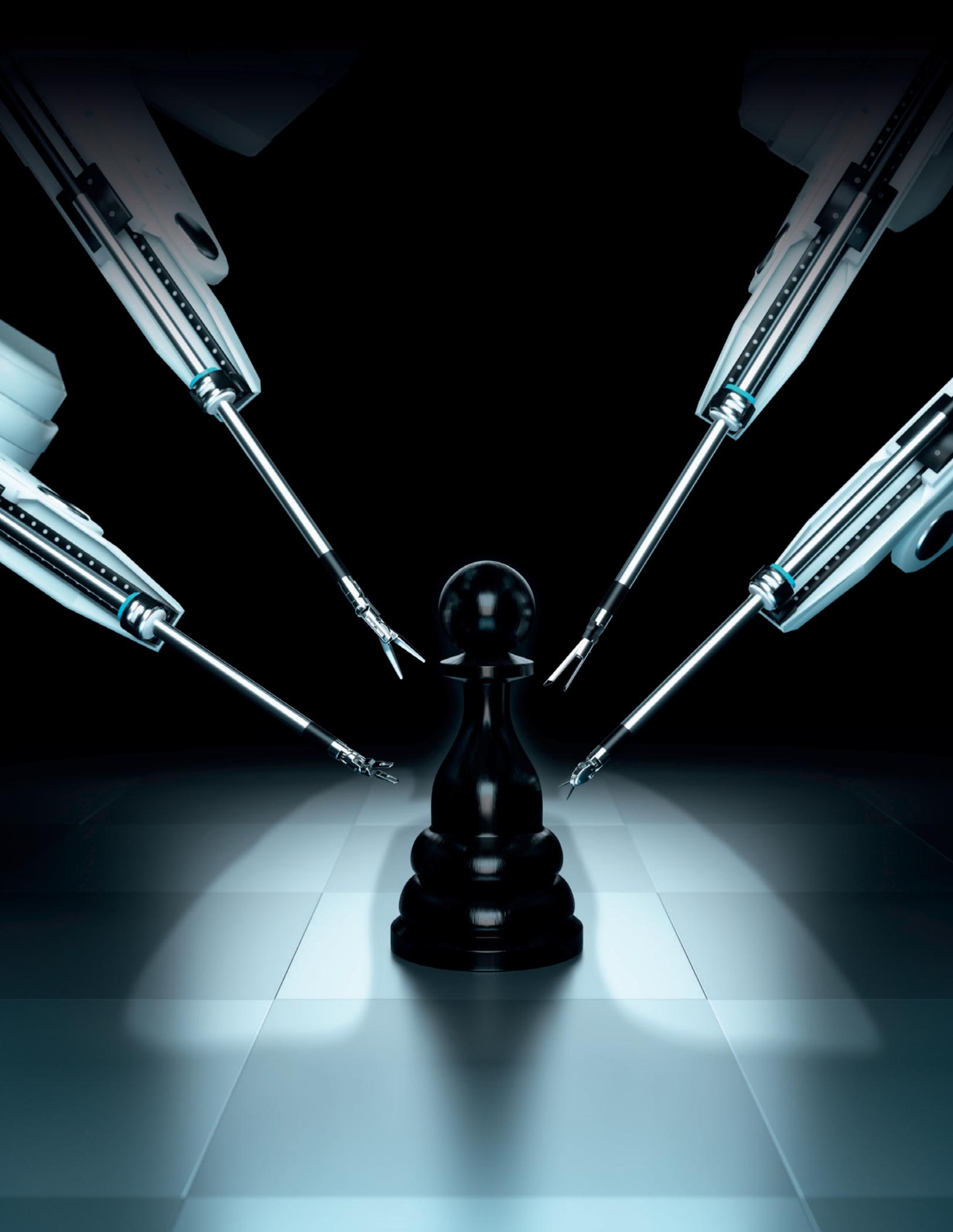
Opening Moves in Thoracic Surgery



In 2017, Mr. Wynn, a 48-year old teacher from a small town, learned that he had a cancerous lung tumor. Physicians at his local hospital planned to remove it, along with, perhaps, a lobe of his lung. This operation, called thoracotomy, would entail making a long incision in his chest, then retracting the ribs to expose the lung. “My uncle had a major operation like this, and was in pain for a long time afterward,” Wynn recalls. However, the tumor could be removed in a minimally invasive procedure if Wynn were willing to travel to another hospital. Go to Philadelphia; see Dr. Abbas at Temple, the physicians advised. So Wynn did. Two years ago. “Those trips were totally worth it — to walk away with tiny scars, no sign of cancer — and still have 98 percent of my lung,” he says.

By GISELLE ZAYON

Photo illustration by SPOOKY POOKA



With the aid of a surgical robot, Abbas El-Sayed Abbas, MD, MS, FACS, Temple's Thoracic Surgeon-in-Chief, worked through four small incisions, each one-third of an inch, in Wynn's chest to perform an anatomical posterior basilar segmentectomy. He removed the tumor, along with its blood supply and lymphatic drainage, and a margin of tissue surrounding it — leaving most of the healthy lung in place.

Within weeks, Wynn was back to work — even playing basketball with his friends. Not at all his uncle's experience, thanks to minimally invasive thoracic surgery.

OPENING GAMBIT

In chess, there's a move called an opening gambit. A move calculated to gain strategic advantage.

Minimally invasive thoracic surgery (MITS) has a similar goal: to gain advantage with the literal opening move. The incisions are tiny.

"By operating through small incisions, we are minimizing the trauma of surgery," says Abbas, who is also Surgical Director of Temple's Lung Cancer, Thoracic Malignancy, and Foregut Disease Programs.

In an opening gambit in chess, the player risks sacrificing a piece up front for long-term gain. Is there a sacrifice in MITS? "No. Just the sacrifice of tradition — open surgery," says Abbas. "Which *should* be sacrificed whenever possible in favor of MITS, which almost invariably results in fewer complications, less pain, faster recovery, and faster discharge from the hospital."

MITS has much to recommend it.

"With smaller incisions comes less pain — enabling patients to breathe more deeply — which lessens the risk of lung infection," says Abbas. "And with less pain, far less use of narcotics, which are potentially addictive pain killers."

For cancer patients, faster healing can mean a sooner chance to begin radiation treatment or another adjuvant therapy.

Even from a purely cosmetic viewpoint, we're talking about a few small scars compared to a big one following thoracotomy.

"Most important is that MITS can be a lifeline. It makes surgery an option for thousands of people who could never withstand the risks of open surgery," Abbas says.

In 2017, the American Board of Thoracic Surgery began requiring candidates for board certification to be trained in MITS. This means all board-eligible thoracic surgeons will be MITS-fluent someday. But, meanwhile, about 50 percent of all lung surgeries in the U.S. are still done the open way — with MITS remaining the province of academic medical centers.

What Abbas did for Wynn, lung resection for cancer, is the most frequently performed MITS procedure. But MITS can also address other conditions of the lung, chest wall, esophagus, mediastinum, and diaphragm (cancer-related and not).

At Temple, MITS is even used for highly complex procedures like total lung removal, chest wall resection, and other indications

traditionally addressed by open surgery. As a result, Temple is the region's major regional referral center for MITS — and employs Philadelphia's largest thoracic surgery team.

"These are the aims Larry Kaiser, MD, FACS, recruited me to pursue," says Abbas, who joined the leadership team at Temple in 2012 and had worked with Kaiser at the University of Pennsylvania in the 1990s. Kaiser, who just stepped down after nine years as head of Temple Health, is a thoracic surgeon and MITS master himself, internationally known for advancing a technique called video assisted thoroscopy (VATS). Abbas, too, is VATS-fluent, but is best known for his pioneering work in adapting the surgical robot to thoracic surgery.

"Abbas was one of the first thoracic surgeons in the world to operate with a surgical robot," says Kaiser. "His expertise is virtually unmatched — as is his commitment to advancing the thoracic surgery field."

When Abbas is not operating, he's teaching (nationwide, not just at Temple). Or leading conferences (he just completed his tenure as president of the Eastern Cardiothoracic Surgical Society). He writes, publishes, and serves on the editorial boards of several leading journals, including the *Journal of Thoracic and Cardiovascular Surgery* and the *Journal of Thoracic Disease*. Numerous Top Doc and Best Doctors in America® citations have come his way, along

with awards and commendations from the Mayo Clinic, the American College of Surgeons, and other organizations.

In all that he does, Abbas has a singular goal: to promote better, safer thoracic surgery — at his own hospital and across the globe.

Temple's thoracic surgeons perform more procedures than any program in the region — routinely helping patients who've been told that they're out of options.

A CONTINUUM

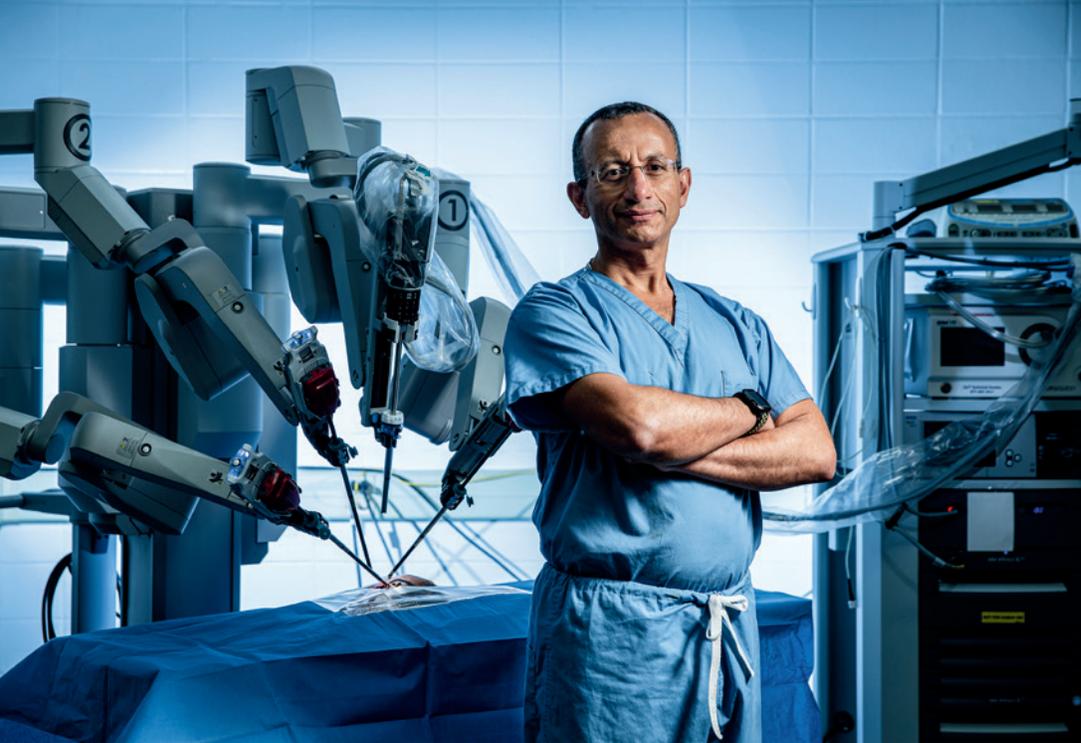
When deciding how best to surgically address a patient's condition, Abbas and colleagues have much to consider. The patient's medical history, co-occurring conditions, age, weight, ambulatory status. The results

of advanced diagnostic and prognostic tests like navigational bronchoscopy and pulmonary function testing. The patient's life circumstances are essential considerations, too. What's the home environment like? Are family caregivers available to provide support?

"We look at all possible alternatives, with their related benefits and risks, and make our recommendation to the patient," Abbas says. "If cancer is the problem, it's even possible we'll recommend postponing surgery pending a round of chemotherapy to help shrink a tumor first. Every case is unique."

Simple procedures that do not require extensive dissection can be performed rapidly and efficiently with VATS, which requires making small incisions in the chest and inserting long-handled surgical instruments and a video camera. The surgeon operates by viewing the patient's internal anatomy on a screen.

But for more complicated cases, the new-generation robot — Temple has five of them — offers superior technical capabilities. Three-dimensional, high-definition visualization. Magnification up to ten times the actual size of the patient's anatomy. The ability



Abbas E. Abbas, MD, MS, FACS,
Thoracic Surgeon-in-Chief

It's the only department of its kind in the nation. And at its hub is the Temple Lung Center, a national leader in diagnosing and treating lung problems, both common and complex, with 23 specialty programs targeting specific lung conditions.

Temple is a premier research center — giving patients access to leading-edge clinical trials and innovative treatment options. “We have one of the most active, wide-ranging pulmonary research programs in the country,” says Abbas. “Our research has led

to use small tools with meticulous control.

“When operating on pulmonary vessels or removing lymph nodes, the fine surgical precision made possible by robotics cannot be surpassed,” says Abbas.

Sleek and small, robotic tools have a greater dexterity and range of motion than human hands. They can rotate 360 degrees. They can access remote anatomical crevices that real hands can't. They are steadier than human hands, too — immune to tremors. Such advantages are especially important when operating in the confined, rigid space of the chest.

All this said, no technology can confer benefit automatically. That depends on the experience and judgment of the surgeon using it. To operate with nuanced expertise requires investment over time.

“Dr. Abbas is truly a world-class expert,” says Deric Savior, MD, Associate Professor of Medicine, a medical oncologist who has worked with the thoracic surgery team at Temple for seven years.

“I am beyond confident in our surgeon's abilities,” Savior says. “We're not talking competence. We're talking mastery.”

Temple thoracic surgeries *do* have excellent outcomes.

“But it takes more than technically excellent surgery to produce a good outcome,” says Abbas. “Good outcomes also depend on the quality of pre- and post-operative care.”

To this end, Temple develops a comprehensive plan of care on each patient's behalf — with pulmonologists, oncologists, interventional radiologists, respiratory therapists, physical therapists, pharmacists, specially trained physician assistants and nurse practitioners, social workers — all working together to provide well-rounded care throughout the course of treatment.

“Quality is not a moment; it's a continuum,” says Abbas.

ONE OF A KIND

Abbas is Vice Chair of Temple's Department of Thoracic Medicine and Surgery. The structure of the department and its model of care coordination are unique — integrating medical care, surgical care, medical education, and basic and clinical research related to diseases of the lung and thorax.

JOSEPH V. LABOLITO

to effective therapies for COPD, emphysema, alpha 1-antitrypsin deficiency, asthma, lung cancer, pulmonary hypertension, sarcoidosis, pulmonary fibrosis, and more.”

Temple's thoracic surgeons perform more procedures than any program in the region — routinely helping patients who've been told that they're out of options. Following surgery, patients recover on a dedicated thoracic surgery floor with private rooms, on-site physical and respiratory therapy, and excellent nursing care. These factors are part of the reason that Temple emerged as America's busiest lung transplant center in 2017, 2018, and 2019. Its team has performed more than 1,000 lung transplants.

“I've never worked anywhere where I felt so supported by my colleagues, where we could so readily give patients so much help,” says Abbas.

Savior concurs. He also says he does not miss the old thoracotomy days. “Those were rough surgeries with long periods of incapacitation. MITS has made my patients' lives—and my job — so much easier,” he says. “I'm grateful to Temple's amazing surgical team.”

IMPORTANT POSITIONS

In robotic surgery, one surgeon working alone at a console — and one assistant who stays with the patient — perform all the tasks that three to four people do in open surgery.

According to Abbas, while intraoperative problems are rare — and can be managed by the surgeon at the console — a full surgical team should be prepared to step in should it be necessary to convert a procedure to open surgery. “You must be prepared for any possible emergency,” he says.

When Abbas operates, he relies on operative assistants like Kimberly Muro, MS, PA-C, Senior Physician Assistant, and Chloe Beiler, PA-C, Physician Assistant.

They prepare the operating room, get the instruments ready, get the sedated patient ready, and dock the robot — preparing it to make its opening move.

In robotic surgery, the positional requirements for the patient and the robot are exacting. Though they differ from case to case, there's no room for error. They must be spot on.

Chloe Beiler, PA-C, Physician Assistant

This means Muro and Beiler have in-depth knowledge of every patient's case. They understand the operational plan, the angles required by the robotic arms, the clearances required inside the patient, taking into account the target site of the surgery relative to the position of the patient's ribs, arms, diaphragm, and scapula. If anything is off, the robotic instruments could interfere with one another. It's all part of a meticulous plan crafted for every surgery. "Our team members have enormous knowledge of human anatomy and robotics," Abbas says.

During surgery, assistants stay with the patient while Abbas manipulates the robot from the console in an adjoining room, 20 feet away. A glass wall separates them, but monitors in the OR show them exactly what Abbas is seeing and doing. "And the rooms are miked so we can talk to one another," Muro says.

After using trocars to make the ports through which the surgery will be performed, Abbas will retract the arms so Muro can exchange the trocars for the camera and robotic instruments.

Throughout the surgery, Muro manages the tasks associated with the passage of gauze rolls, hemostats and clips, and specimen extraction. Sometimes she moves the camera from one port to another to give Abbas a clearer view. "The ability to reassign tasks for each robotic arm is helpful," Muro explains. "Robotic technology is amazing – and Dr. Abbas is even more so."

He's got all the moves planned out, like a chess master.

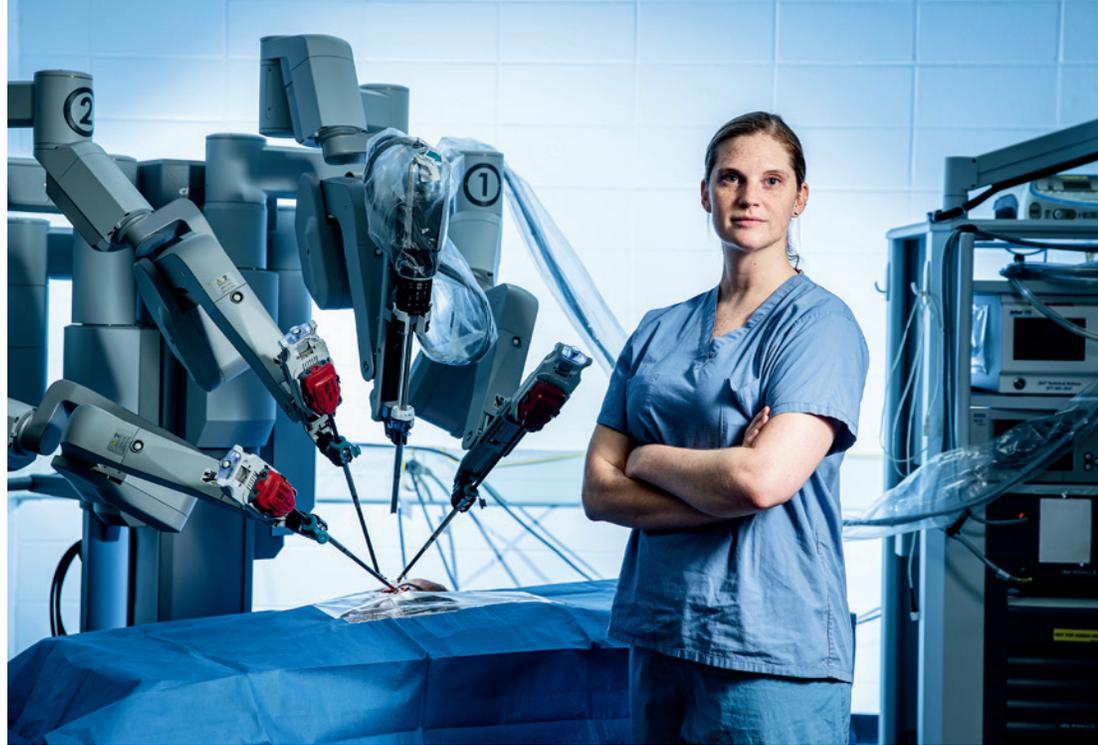
He knows how to anticipate every difficulty that might be encountered – in order to minimize them. He knows exactly what to do when a tumor is close to vital structures, precisely how to approach a patient with hilar lymph node metastases.

"He knows the intersegmental planes of the lung like I know the back of my hand. He has taught me so much," Muro says.

The surgeons that Abbas has trained over the years say so, too.

EXPERIENCE COUNTS

Before ever touching a patient in surgery, medical students and residents train on surgical skills simulators in the William Maul Measey Institute for Clinical Simulation and Patient Safety at Temple, accredited by the American College of Surgeons. Beginners use box trainers to develop ambidextrous agility and visual-spatial



judgment – the skills needed for basic laparoscopic surgery, a minimally invasive technique. As trainees demonstrate increasing proficiency, the exercises get harder – like virtual reality simulations enabling trainees to "perform" full operations. "We're teaching surgical skills in a safe modality. Errors can be made without consequence to patients," Abbas says. "Patient safety is top priority."

Training also includes video-based coaching. Actual robotic procedures are recorded for review by a teacher and a trainee. Video review is very effective for teaching operative strategy and demonstrating technique.

In addition, dual robotic consoles can be used during actual surgery to safeguard patients as residents develop their skills. The attending surgeon and resident see the same things and essentially share the same hands – but only one console is in control at a time. Therefore, if the resident falters, the attending surgeon will instantly assume control to show the resident what to do.

Abbas says *patient* education is equally important. He advises patients planning to undergo robotic surgery to ask questions. Questions help patients and families make informed decisions about medical care.

Is your surgeon credentialed to use the robot? What about the training and experience of other members of the operative team?

Not all procedures are approved for the robot at all hospitals. Is yours?

Will your procedure entail use of advanced robotic instruments like staplers and vessel sealers? Has your surgeon fulfilled the training requirements for them?

How does your hospital ensure that the robot and robotic tools are sterilized and fully mechanically maintained?

It's wise to find out what model robot your surgeon will use, Abbas says. The first robots, made by a company called Intuitive Surgical, came to market in the U.S. in 1999. Since then, several new-generation models have been released, each with technical

"The trend in surgery is toward smaller and sleeker – minimizing invasiveness to levels once thought impossible," Abbas says.

improvements that can help reduce operative time, complications, and length of stay. Only the newest model, the Xi, features 360-degree arm rotation and vascular stapling, for example.

“Ask your surgeon about patient outcomes. Find out how many procedures like yours the surgeon and the hospital have done. Higher volumes are associated with better patient outcomes,” Abbas says.

Experience counts.

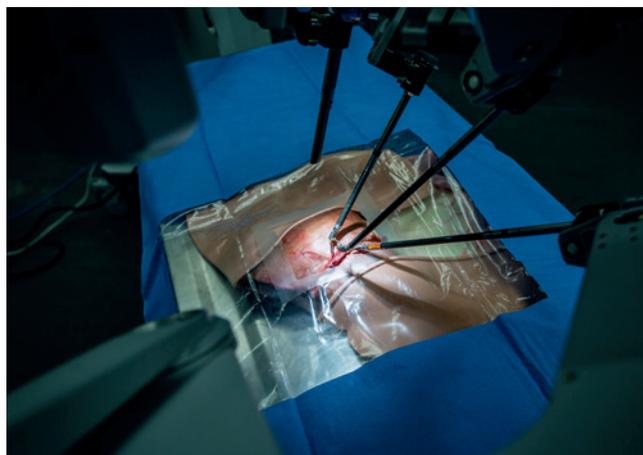
THORACIC SURGERY OF TOMORROW

Over the course of his career, Abbas has trained more than a dozen thoracic surgeons. In addition to teaching at Temple, he travels the world to lecture and to teach master classes in robotics. He teaches surgeons how to approach complex, difficult cases. How to use robotic tools to perform procedures that normally require open surgery.

He’s also taught surgeons how to use Firefly — a robotic innovation that entails injecting the patient with a harmless dye called indocyanine green. The dye glows in the camera’s near-infrared light, illuminating nodules and vessels that would be difficult to see otherwise.

“In robotics, visual tools help compensate for lack of tactile feedback,” Abbas says.

Robotic technology is wonderful. But providing tactile feedback is one thing it cannot yet do. Since the instruments are not actually in your hand, you cannot assess the texture of tissue you’re operating on. Is it soft and pliable? Fibrotic and tough? “The resistance of tissue against instruments is important feedback in surgery,” Abbas says. And tactile feedback might be available soon.



The instruments are real. The patient is not. It’s artificial tissue — ideal for training.

New robotic instruments, equipped with pressure sensors, will relay haptic information to surgeons at the console — helping them “feel,” not just see, what they’re operating on.

Moreover, the excellent visuals of robotics could soon get even better. Wireless video systems featuring a network of tiny cameras mounted on the inner chest wall can give surgeons multiple views of the patient’s anatomy.

Navigation and mapping advancements are in progress, too. Simply put, this means being able to overlay a patient’s CT scan or MRI over the patient’s actual anatomy on the screen, helping to identify important anatomical structures below the pleural surface — like a deeply embedded nodule or the pulmonary arterial branches.

“As ever, the trend in surgery is toward smaller and sleeker — minimizing invasiveness to levels once thought impossible,” Abbas says.

For example, robotic trocars (the tools that make the portals into the chest) were originally 12 millimeters wide. Now they’re just eight. Likewise, while robotic surgeries have utilized three or four ports historically, single-port surgeries are possible today.

“And soon, it may be possible to perform thoracic surgery with no outside incisions at all,” says interventional pulmonologist Mark Weir, MD, Assistant Professor of Medicine, a member of Temple’s team since 2017.

Weir is talking about bronchoscopy, a technique that utilizes the lung’s bronchi, its natural pathways.

“Minimally invasive techniques such as bronchoscopic biopsy lower the risk of lung collapse and bleeding compared with CT-guided needle biopsies. Reducing the trauma of intervention is a plus — especially for patients with multiple health problems,” he says.

According to Weir, bronchoscopic tools and techniques are already revolutionizing diagnosis — and have the potential to transform treatment too.

Weir uses thin, flexible bronchoscopes equipped with retractable snipping devices to biopsy suspicious nodules in narrow parts of the airway.

But what about nodules that don’t happen to sit inside an airway? Until now they’ve been impossible to reach bronchoscopically. But thanks to image-guided methods like the Archimedes system and cone beam CT — emerging technologies being tested in clinical trials at Temple — previously inaccessible nodules can now be reached. The idea is to get a bronchoscope as close to the nodule as possible, and then deploy tiny trocars to tunnel through the lung to reach the nodule and biopsy it.

“Temple probably performs more procedures using the Archimedes System than any other center. It is revolutionizing our ability to evaluate tumors that are difficult-to-reach,” Weir says.

If a tumor can be reached and biopsied, it can be treated too — with a variety of modalities, such as radiofrequency ablation, or vapor- or cryo-ablation.

“Ingenuous minimally invasive devices are opening new doors, new approaches to diagnosis and treatment,” Weir says.

We’re not quite there yet, but it’s definitely happening: nonsurgical approaches to surgery.

“That’s all in the future, but the future is looking closer than ever,” Weir says. 

For more information, visit templehealth.org/thoracic-surgery

21

Temple Health's GREATEST HITS

Temple Health *makes the news every day. Whether it's the New York Times, a scientific journal, or a segment on TV news, it's great to get press for achievements and programs like these.*

By GISELLE ZAYON • Cartoons by DANNY SHANAHAN

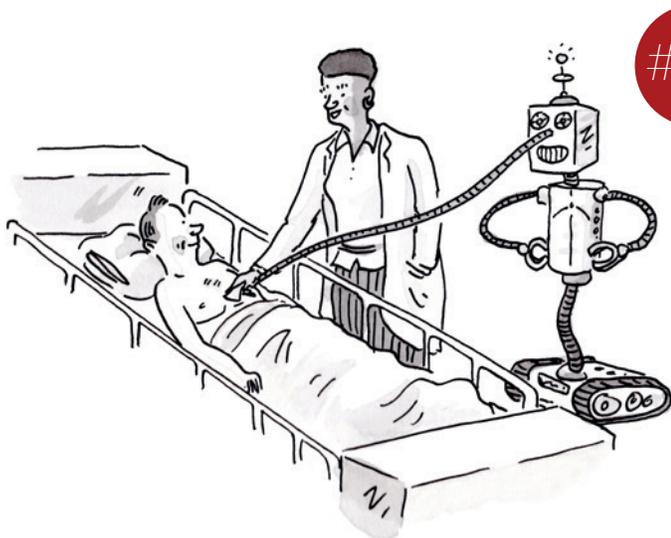
#1



HEART TRANSPLANT
Why Wait? Temple has one of the fastest list-to-transplant rates in the nation. We get donor hearts to 71.2 percent of patients within one year (the national average is 52.5 percent).

Region's Best Survival Rate: Temple's one-year heart transplant survival rate is 94 percent — the best in the Philadelphia region.

More Hearts, Too: Because Temple surgeons know how to optimize organs with slight imperfections, we use more donor hearts than the average transplant center. Which helps save more lives.



#4

ADVANCING ROBOTIC SURGERY

Temple surgeons are redefining what's possible with a minimally invasive approach, pioneering new surgical techniques for patients with complex conditions. And they're getting excellent outcomes, even for patients who've been told they're out of options. Surgeons come from all over to learn from Temple's masters. We're a major site for robotic surgery training in the U.S.

2. SCOURING SEPSIS

Sepsis is a raging infection that kills a quarter-million patients yearly. Temple ranks 13th out of 167 academic medical centers in the nation for lowest Sepsis Mortality Index (0.88 in fiscal year 2019). Moreover, our researchers are advancing sepsis treatment. One team discovered the mechanism that drives sepsis-related heart failure, and another team used an antioxidant to reduce it. In addition, the next president of the national organization dedicated to sepsis, the Shock Society, is a Temple faculty member.

3. LEADING LUNGS

Most Transplants in America: With more than 1,000 lung transplants under our belt, Temple is the nation's busiest lung transplant center. We performed more lung transplants than any other hospital in the nation in 2017, 2018, and 2019.

America's First: In 2019, Temple became the first hospital in the United States to offer two different newly FDA-approved devices to treat severe emphysema. We led the national research behind them — and now we're training physicians throughout the country how to use the new technology.

We're Golden: Temple is the leading member organization of GOLD, the Global Initiative for Chronic Obstructive Lung Disease — a collaboration with the National Institutes of Health and the World Health Organization. Our faculty host GOLD's yearly international conference and serve as lead authors on GOLD's international guidelines for COPD treatment.

5. ONE OF FORBES' FINEST

In 2019, *Forbes* magazine named Temple University Hospital one of "America's Best Employers." And the City of Philadelphia named us the "Health Care Employer of Choice." With a \$1 billion payroll that produces about 8,000 jobs for City residents, Temple makes a positive regional economic impact of \$1.7 billion yearly.

6. OTHER WAYS WE STOP CLOTS

A Unique Catheter: In 2019, the FDA granted pre-market clearance to seven catheters that were invented by a Temple faculty member. One, the Bashir™ Endovascular Catheter, is the only catheter that can be expanded into six parts to deliver clot-dissolving medications.

8. TOP CTEPH/PTE CENTER IN THE EASTERN U.S.

Temple has performed more than 200 Pulmonary Thromboendarterectomy (PTE) surgeries to remove life-threatening blood clots from the lungs of patients with an often-fatal condition called Chronic Thromboembolic Pulmonary Hypertension (CTEPH). Just a handful of American hospitals are capable of doing this highly specialized surgery. Temple's CTEPH/PTE program is the largest in the Eastern U.S., and our patients have a 96 percent survival rate.

#7

FRUIT & VEGGIE SCRIPTS

Temple physicians write "prescriptions" for low-cost, locally grown fresh fruit and vegetables for low-income patients to pick up at the hospital every week. Food is medicine.



9. TOP-FLIGHT TRAUMA & CRITICAL CARE

Temple serves as a clinical hub for the NIH's national Emergency Medicine Clinical Trials Network, aimed at improving outcomes for patients with neurologic, cardiac, respiratory, hematologic, and trauma emergencies. Five Temple intensive care units (SICU, MRICU, IICN, Neuro ICUs, and CICU) hold Beacon Awards for Excellence. And Temple MedFlight provides 24/7 critical care transport, inter-hospital transfers, and organ retrievals in the Eastern Pennsylvania, New Jersey, Delaware, New York, and Maryland regions.

10. INCLUSIVITY CITY

We Speak Your Language: In 2019, Temple's 373 language-proficient staff conducted 77,000 interpretations for patients who don't speak English.

All in for Patients: Temple is an open enrollment site for the NIH "All of Us" research program, redressing underrepresentation of minority populations in genomic-based research.

All in for Students: Our medical school's Office of Health Equity, Diversity & Inclusion promotes health equity through culturally responsive modes of education, care delivery, workforce development, and research.



CHAMPION OF EQUALITY

The Human Rights Campaign Foundation, the nation's most powerful LGBTQ civil rights advocacy group, named Temple University Hospital a "Leader in LGBTQ Healthcare Equality" in 2018 and 2019.

12. AMERICA'S TOP 250 Healthgrades, one of the nation's leading hospital quality assessors, named Temple University Hospital and its Jeanes Hospital Campus two of America's 250 Best Hospitals, 2019. And Temple University Hospital holds Healthgrades' Distinguished Hospital Award for Clinical Excellence, a distinction achieved by just five percent of America's hospitals.

13. A TOP SCIENCE STORY *Discover* magazine named Temple's HIV-1 research collaboration with the University of Nebraska Medical Center one of the Top Science Stories of 2019. The team eliminated, for the first time, replication-competent HIV-1 DNA from the genomes of living animals, a critical step toward a possible cure for human HIV infection.

14. TOP ORGAN DONATION HONORS Temple University Hospital earned Top Performer Status in the 2019 Hospital and Healthsystem Association of Pennsylvania Donate Life Pennsylvania Hospital Challenge.

15. REGIONAL LEADER IN BURN CARE

Temple is Philadelphia's leading regional burn care center, a Level 1 trauma center that's certified by the American Burn Association and the American College of Surgeons — and holder of the American Nurses Credentialing Center's Beacon Award for Excellence.

16. WE TAKE THE TOUGHEST CASES

Every day, hospitals throughout the region transfer their most acutely ill, medically complex patients to Temple — counting on our trauma care teams and specialized ICUs. Temple's Case Mix Index, a measure of acuity, is in the top quartile among America's academic medical centers.

17. STELLAR STROKE CARE

Temple holds Joint Commission Comprehensive Stroke Center Certification — and is recognized year after year by the American Heart Association/American Stroke Association for our strict adherence to nationally recognized, research-based stroke care guidelines, which improves patient outcomes.



#18

WE LOVE MOMS & BABIES

Temple is a Baby Friendly USA facility — a designation conferred by the World Health Organization and the United Nations International Children’s Fund recognizing facilities that uphold the highest standards for infant-feeding care. We’re also part of the Perinatal Research Consortium, a network of health care institutions engaged in the highest-quality research in perinatal and women’s health.



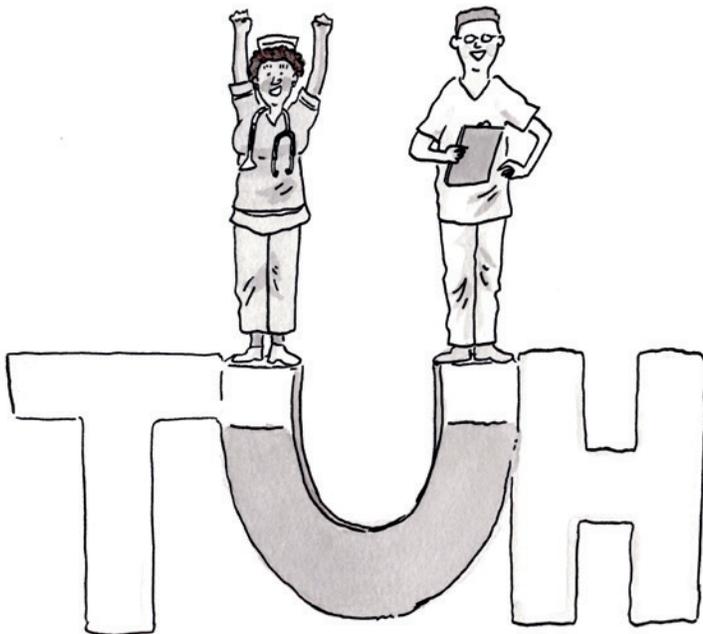
19. HIGH HEART HONORS

Temple faculty can’t be beat (pun intended). The American College of Cardiology 2019 Distinguished Scientist Award in basic research. The American Heart Association 2019 Edward S. Cooper Award. One of two American Heart Association 2018 Merit Funding awards. And the 2018 American Society of Nuclear Cardiology Distinguished Service Award. All these (and more) went to Temple faculty members.

20. BIG GIVERS, BIG GETTERS

Federal and state grant support keeps Temple in the top tier of the Carnegie Classification of Institutions of Higher Education (the top research universities in the nation). Recent grants include

\$20 million to study traumatic brain injury; \$13.5 million to reduce cancer disparities; \$11.6 million to explore approaches to heart repair. And, in 2019, alumni, faculty, and friends donated \$32 million to support education, patient care, research, and community service.



#21

MAGNET NURSING: TOP EIGHT PERCENT IN NATION

The highest possible recognition for nursing excellence is Magnet designation, conferred by the American Nurses Credentialing Center. Temple earned it last year. Only eight percent of U.S. health care organizations are Magnet-designated. 

Head & Heart

MAGNET NURSES OF TEMPLE UNIVERSITY HOSPITAL

The ultimate credential for nursing, Magnet Recognition® is the gold standard of nursing excellence. Conferred by the American Nurses Credentialing Center (ANCC), Magnet is the most prestigious nursing distinction an organization can achieve — awarded to just eight percent of the nation's hospitals. Temple University Hospital earned Magnet recognition last year.

Magnet hospitals routinely rank among the nation's best and are required to meet rigorous quality standards. They have a higher percentage of satisfied registered nurses, lower RN turnover and vacancies, greater nurse autonomy, and improved patient satisfaction. Their unrelenting focus on clinical outcomes means their patients experience fewer complications, lower mortality rates, and shorter hospital stays.

“Magnet recognition signifies our commitment to quality patient care and nursing

excellence. The nurses are transforming the patient experience,” says Chaudron Carter Short, EdD, MHA, MHEd, MSN, NE-BC, Assistant Vice President of Professional Practice, Magnet, & Nursing Education.

“Temple is a multi-time earner of Healthgrades’ Distinguished Hospital Award for Clinical Excellence. Just five percent of America’s hospitals get this honor — and it’s a direct reflection on nursing care,” says Michael Young, MHA, FACHE, Temple University Health System and Hospital President and CEO.

In addition to caring for patients in every clinical service, Temple nurses address preventable hospital readmissions — and serve one of the nation’s most medically and socioeconomically challenged patient populations. North Philadelphia is a federally designated Medically Underserved Area where 35 percent of residents live below the federal poverty level. Life expectancy is almost 20 years shorter here than in

neighborhoods just a 20-minute drive away. Temple nurses treat the region’s most critically ill and severely injured patients — who are transferred to Temple every day by hospitals near and far.

“High-acuity programs like transplant, pulmonology, heart and vascular, cancer, and neurosurgery depend on nursing of unsurpassed excellence,” Young says. “Temple nurses rise to these challenges around the clock — and still devote themselves to community service.”

In fact, the ANCC awarded Temple Exemplar status for community health outreach. “Temple nurses go far beyond the usual and immerse themselves in their community. They conduct outreach at the ground zero level and do so bravely, consistently, and with significant impact,” the ANCC reviewers said.

Magnet Recognition is exceedingly difficult to achieve. Meet five of the nurses who helped us achieve it.

By Giselle Zayon + Photography by Peter Freed



Melieka Young, MSN, RNC-OB

LABOR AND DELIVERY

HOMETOWN: Philadelphia, PA

YEARS IN NURSING: 21

YEARS AT TEMPLE: 19

My brother was born via C-section when I was 18, and I was right next to my mom in the operating room. She still laughs about how fascinated I was, firing questions at the nurses nonstop. I knew then that I wanted to be a labor and delivery nurse. Two years into my career, Temple gave me the opportunity to become one, and I've been here ever since.

We see a lot of high-risk patients and teen moms. Some haven't had any prenatal care at all, but our team is equipped to handle anything. Many of the moms need reassurance — their babies' fathers often aren't around — and they can be overwhelmed. I make every one of my patients feel special and I tell them all that they are beautiful roses who are destined to do wonderful things. I refuse to count these women out just because other people might have.

The labor and delivery unit is perceived as a place of joy, and that is mostly accurate. But people don't talk about the other side. Sadness fills the room when there is a stillbirth. Seeing those tiny hands and feet reminds you how precious life is. When a mom experiences a loss, I can make a difference by supporting her in her grief. My faith keeps me grounded — even during the toughest moments, I know that if I had to do it all over again, I would absolutely still be a nurse.



Celso-Ramon (Chip) Garcia, MSN, RN, CCRN

SURGICAL INTENSIVE CARE UNIT

HOMETOWN: Philadelphia, PA

YEARS IN NURSING: 35

YEARS AT TEMPLE: 28

My father was a physician and my mother was a scrub nurse, so I grew up knowing that working in health care affects your whole family. Thanksgiving dinner might not happen on Thanksgiving, and you might not celebrate Christmas on Christmas Day, but helping others for a living makes it worth it. There are easier ways to make money, but in nursing, you're getting paid in karma.

Temple nurses rise to every occasion. A good example is the big Amtrak train accident that happened in Philadelphia in 2015. Our nurses — the ones fresh out of school along with the ones nearing the end of their careers — all showed up early for their shifts because they'd heard about the accident on the news and knew people with injuries were coming in. That's our culture: we come together, and we overcome.

Being "essential personnel" can be hard. No matter how bad the winter weather gets or how many states of emergency are declared, there I am, digging my car out of the snow. I've had to show my Temple ID to convince a police officer to let me onto Roosevelt Boulevard when it was closed. I love my job, but I do look forward to the first snowstorm that happens after I retire. That day, you'll find me in a chair by my window, coffee in hand, watching the snow until it stops falling.





Kamolwan (Kam) Wattanodom, BSN, RN

MEDICAL-SURGICAL UNIT

HOMETOWN: Washington, DC

YEARS IN NURSING: 4

YEARS AT TEMPLE: 4

Sudden tragedies are heartbreaking, but in med-surg, we encounter a less visible kind of heartbreak. Most of our patients have a chronic condition that they are forced to confront every single day. Life goes on for them, but they are stuck managing an illness that interferes with virtually everything they do. I make sure they know that they are seen and heard.

Med-surg nurses see a broad range of diagnoses and don't specialize in any one area, and the variety keeps me on my toes. I had just graduated when Temple hired me. Its nurse residency program was amazing — much more comprehensive than at any other hospital I applied to. For my first 12 weeks, I had a preceptor who took me under her wing and did on-the-job training. She taught me everything I needed to know and made sure I was safe in my practice as a new nurse. That level of support and guidance is not something every institution offers.

I'm part of the Philadelphia Medical Reserve Corps, a large group of volunteers who serve the City during public health emergencies and large-scale events like marathons and outdoor concerts. I try to participate whenever there is an emergency shelter situation. Most recently I volunteered in West Philly, doing medical assessments and triage when residents in an apartment building were displaced by a fire. When these things happen, I do my best to show up.





Emily Guinan, BSN, RN

EMERGENCY DEPARTMENT,
TEMPLE UNIVERSITY HOSPITAL
EPISCOPAL CAMPUS

HOMETOWN: Hallstead, PA

YEARS IN NURSING: 3

YEARS AT TEMPLE: 3

I think people underestimate me because I'm young and an outsider from a small town — but I'm resilient. The day I found out I got into Temple's nursing school, I also found out I was pregnant and going to be a single mom. I enrolled in the program anyway, finished my first year as a psychology major and started my nursing journey that fall. When my doctor put me on bed rest, I still went to class. It took an extra year to finish my degree, but I did it. I was determined.

I knew this job wasn't going to be easy, and the challenges are what I like about it most. Kensington holds a huge homeless population, and many people are suffering from substance use disorder. These people need help in ways that others don't. Patients who aren't in their right mind can become combative, and their verbal abuse can be exhausting; but no matter what happens, our patients are in need and we are there for them.

Each morning on my way home, I call my mom; we talk through my shift — what I could've done better, what bothered me that night — then once we hang up, that's it. To survive in this profession you need to be able to leave the hurt behind when you walk out the door, especially when you're walking into a house with a now six-year-old.



Tyrone Muns, MSN, BS, RN

POST-ANESTHESIA CARE UNIT

HOMETOWN: Haddon Heights, NJ

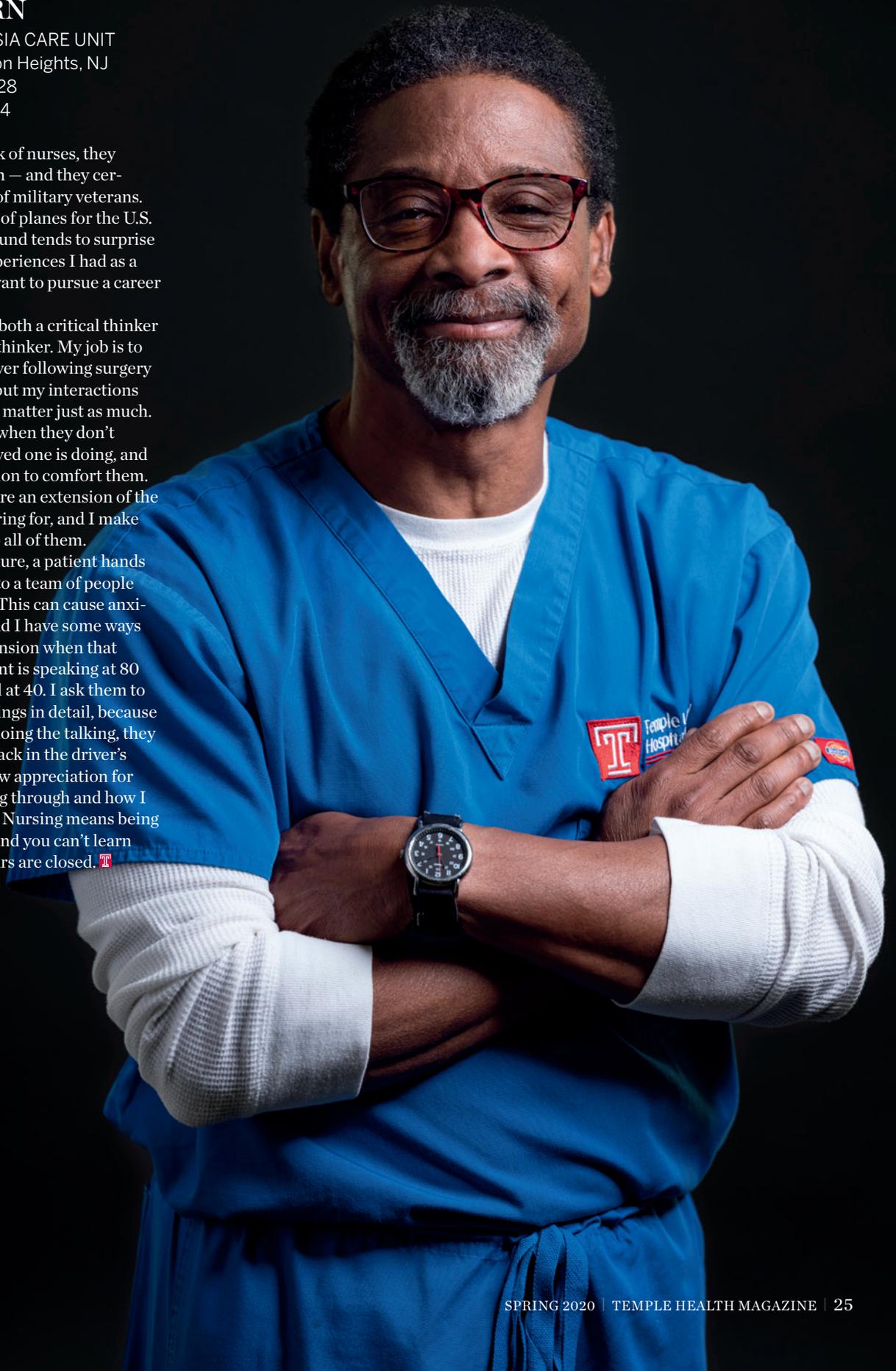
YEARS IN NURSING: 28

YEARS AT TEMPLE: 24

When people think of nurses, they rarely think of men — and they certainly don't think of military veterans. I used to jump out of planes for the U.S. Army. My background tends to surprise people, but the experiences I had as a soldier made me want to pursue a career helping others.

A great nurse is both a critical thinker and an emotional thinker. My job is to help patients recover following surgery and anesthesia — but my interactions with their families matter just as much. People are scared when they don't know how their loved one is doing, and I use communication to comfort them. Family members are an extension of the individual I am caring for, and I make myself available to all of them.

During a procedure, a patient hands total control over to a team of people they barely know. This can cause anxiety or agitation, and I have some ways of de-escalating tension when that happens. If a patient is speaking at 80 decibels, I respond at 40. I ask them to describe their feelings in detail, because when a patient is doing the talking, they feel like they are back in the driver's seat, and I get a new appreciation for what they are going through and how I can make it easier. Nursing means being a good listener — and you can't learn anything if your ears are closed. 



Stories of the Human Side of Medicine

“ALONG WITH THE PHYSICIAN’S TOUCH, stories are at the core of the patient-physician relationship,” says Michael Vitez, Pulitzer Prize-winning author and Director of Temple University’s Narrative Medicine Program. “Stories like these, written by physicians, staff, and students at the Lewis Katz School of Medicine, have the power to heal, inspire, build relationships, and change the world,” Vitez says.

Lisbeth

White clouds marbled the blue skies above. Our van made its way to the top of a hill, overlooking the dozens of houses carved into the hillsides of Patillas, Puerto Rico. As we climbed out, a woman came out to greet us. Her name was Lisbeth. She smiled, but creases around her eyes signaled exhaustion. She invited us into her home.

“This is my mother,” she said. I had barely noticed the frail woman lying in bed. She was covered with layers of blankets and was so thin that you could barely make out her shape beneath the fabric. It was evident from the start how capable Lisbeth was in caring for her mother, and our discussion soon turned towards admiring Lisbeth’s efforts. She was an emergency room nurse working towards becoming a nurse anesthetist when her mother fell ill. She had four strokes over a two-year period that left her with an immobile left side and a feeding tube. Its bulge was just slightly visible to us beneath the layers of her covers.

“I could’ve continued studying,” Lisbeth stated, wrapping her arms around her mother’s petite frame. “But she’s my mother. She’s always taken care of me. How could I leave her?” She showered her mother with kisses as they rocked back and forth.

Lisbeth taught herself to care for her mother using her experience as a nurse. She was proud that her mother remained ulcer-free despite becoming bedbound. Lisbeth was in constant communication with doctors to find the right balance of medication to help her mother long term yet keep her alert enough to discern new neurological changes. She even trained with a physical therapist and learned how to keep her mother’s functional side strong. In a graceful sloop, Lisbeth lifted and balanced her mother’s hemiplegic side on top of her own feet, allowing her mother’s good foot to walk free. They slow danced around the room.

As we left their house, I thought of my past year on the floors and in the clinics. The third year of medical school brings a lot of change. We grow from eager students to budding doctors-in-training. On the outside, it seemed like I was blooming, but underneath I felt like I was just going through the motions. I took histories and examined patients, came up with differentials, and regurgitated algorithmic plans to my attendings. The days went by in a blur and I could barely remember who or what I saw. It felt like an imposter who could mimic the steps had taken over my body. I lost sight of why I came to medicine in the first place. I came to care for people, but in the stress of rounds and chaos of clinic, my focus

was on being a good student and impressing my attendings by remembering obscure labs and facts.

Seeing Lisbeth’s devotion to her mother and the care and love she gave reminded me of why I chose medicine. Lisbeth sought us out, the “overseas doctors,” to help her mother. But her impact on me was far greater than any impact I could have had on her. I only hope that in the future, I can show the same devotion and compassion to my patients that I witnessed that day.

— KHEA TAN

Candidate, MD Class of 2020

A Shave and a Haircut

I questioned my decision to become a nurse all the way through nursing school, but once I stepped foot in the hospital, I couldn’t imagine doing anything else. I don’t think I could get the satisfaction I get from any other profession.

As a nurse, I’m able to develop intimate relationships with my patients and advocate for them. The right treatment isn’t always what is easiest or fastest. But serving as the voice of patient care, especially for an underserved population, is extremely rewarding.

I recently had a patient who was in our unit for about three months. Due to the severity of his illness, he wasn’t expected to thrive. He was also a bit difficult and frequently agitated, but I was always patient with him.

By the end of his time on our unit, he was looking quite scruffy. A colleague and I gave him a shave and a haircut, carefully supporting his head to avoid getting hair in his tracheostomy. He was so touched he began crying when we finished.

A few days later when I visited him, we shared a cupcake and he held my hand and thanked me for always being there for him even when he was hard on me. It was amazing to be able to provide the care and compassion he needed and see him make a full recovery.

— NADINE KAZAZ, BSN, RN, CCRN

Neuroscience Intensive Care Unit



Getting Back Home

“Doctora, no puedo ver! Doctor, I can’t see!”

With that, Rosa grew increasingly drowsy, collapsing on my office floor, incontinent of urine. In 1984, hospitals did not have rapid response teams, so I scrambled to find a wheelchair and got her to the emergency department myself. Hours later, when the radiologist showed me the ring-enhancing lesions on her

brain CT scan, I knew this was one more catastrophic check mark on her list of complications.

Rosa was one of my first patients as a young attending on the teaching service at New York’s Columbia Presbyterian Hospital. Not unlike other travelers from the Dominican Republic to this community in Washington Heights, she had gotten off the plane and presented to the emergency room febrile and sick. Typhoid fever. How exotic.

The house staff were initially excited about this patient. By the third episode of recurrent typhoid fever, however, Rosa was becoming less exotic and more a frustration. Was she not taking her meds? Why was she not clearing the infection? What was the story behind this 19-year old who should be improving but was not? We knew that she had a three-year-old son back in the Dominican Republic but had traveled to New York with an older guy.



When she then returned to the emergency room with weight loss, inability to swallow, and an exuberant growth of candida throughout her mouth, we suspected that she may have been immune-deficient like the burgeoning number of patients being admitted to New York City hospitals.

This was 1984, before we had any HIV test, before we called it HIV, before the Centers for Disease Control classified disseminated salmonella or esophageal

candidiasis as AIDS, before there were PICC lines and home care and any support services for young Latina women.

I admitted Rosa 22 times that year to the hospital. I admitted her to my private nonteaching service where I gave her amphotericin every one to two weeks for a couple of days – just enough to enable her to go home and get sick all over again. She was somewhat of a pariah for the nursing staff. Besides their generalized anxiety about these patients with bizarre

conditions that might be contagious, Rosa had to have had some unsavory parts to her social life – maybe she was a secret drug-user or a sex worker. Why else would she be in the same immune-deficient boat as the men who filled the hospital rooms in 1984?

Now on this visit when she couldn't see, she also had a severe case of cerebral toxoplasmosis. While she responded somewhat to the antibiotics, it was clear that her prognosis was grim.

I called her family in the Dominican Republic and told them she was gravely ill and might not survive. In a very clear response, her sister said that if she died in New York, no one could afford to send her body back home. We had to get her well enough to make her final flight to see her son and family.

Rosa, of course, had no insurance to get the multiple antibiotics she needed to be well enough to make a plane flight. In an act of collaborative larceny, a ward clerk and his pharmacy buddy and I reallocated some toxoplasmosis meds for her going-home package. This was 1984 — no bar codes, no locked meds — just some creative reshuffling of bottles into a paper bag.

Rosa made it home. I called two months later and found out that she died with her family. They wanted to know if we understood why she was so sick. In this pre-HIPAA era, I still couldn't disclose the name of her illness because no one gave it a name for a 19-year-old woman.

I think about Rosa every time I offer a newly diagnosed patient a single-tablet option for HIV. "Take this," I say, "and you will live for decades."

— ELLEN TEDALDI, MD, MACP, FCCP
*Professor of Medicine
Director, HIV Program*

The Last Four Hours

"Hey, it's me again. I gave her Haldol. it's not working."

"Give her one dose of morphine."
Twenty minutes pass.

"Hey, it's Ghazal! Nothing is working. She is suffering. She is gasping for air. She can't breathe. What should I do? She is suffering! Where are you? What should I do? She is suffering."

"I am on my way," says the home hospice nurse. "Go ahead, give her a full syringe of morphine."

"Okay."

"Mamaan, it's gonna be okay. I am here. I just talked to the nurse. I am giving you medicine. You'll feel better. I love you so much. Just stay calm. It's gonna get better. I love you my angel. You are gonna feel better. I love you so much."

I give her the full syringe of morphine. Suddenly, in a few seconds the body that woke up right at midnight

after being asleep for three days went back to sleep again. This time it was different. Right before she went back to sleep, her beautiful eyes, searching for something in the room that our eyes couldn't see, fixed on one point right in front of her.

She is breathing. I can see it. I have to look very closely, but she is breathing.

My cousin the cardiologist arrives. Listens to her heart.

I look at him. I see the pain in his face. He doesn't have to say anything. But he does.

"Sorry, she is gone."

Her face looks so calm. No pain, no suffering. God she is so beautiful. A true angel.

I couldn't bear to wait for the nurse to arrive at our home. But it is such a heavy burden to carry.

"Mamaan! Did you see what happened? I took your life away with my own hands. The hands that tried so hard to save you. The ones that held you so tight for hours. I took away the life that I tried so hard to save."

My brain knows this is not true. But my heart doesn't accept it.

My cousin tells me: "I did the same thing for my dad. You didn't kill her. The cancer killed her. So many loved ones feel guilt. But you freed her from pain. She would have died in minutes, hours."

They tell me people from the funeral home are coming. We start removing the orange nail polish I put on her hands just a few days ago. Her beautiful soft hands. One of them is in a fist.

"How much did you suffer and said nothing, Mamaan?"

I lie down with her. It is just the two of us, on her bed cuddling. Like every other day. I kiss her, hold her hand and feel her soft skin. The warmth is leaving her arms and her body is getting stiff. I feel it happening. I touch her head and give her a kiss but it strikes me so that she doesn't feel like my mom anymore. She feels just like the body I worked on in the anatomy lab.

She isn't there anymore. Then where is she?

Two years ago while we were sitting in the hospital, holding hands, and she was getting chemo, I looked at my phone with my free hand and there was the email.

"OMG, Mamaan, I got accepted to medical school." We were crying, nurses

were crying, and everyone was so happy.

I didn't realize it then, but my first patient was my mom. Early on, she let me give her injections in the stomach. The first few times I hurt her, but after a few tries and some guidance from her I got faster and less scared. "Remember, I taught you how to give shots," she told me once. Of course you did, Mom. Like you taught me how to walk, how to love and how to be strong, everything.

"When life knocks you down," you said, "get right back up and wear your red lipstick."

The two big guys with their red bag come from the funeral home. They don't let me go with her to make sure everything is fine and she gets everything she needs. I get reminded that she doesn't need me anymore. This time I have to carry on without her.

— GHAZAL KHORRAMI
Candidate, MD Class of 2021

Editor's Note: This essay was originally published in the Philadelphia Inquirer.

The ABCs of Being an Alien

Awful aroma
Bare branches
Cold concrete
Darkness never comes
Empty ethanol
Frequent flyer
Going going
Home away from here
Itching
Juvenile judgment
Knock knock my name is
Lorena, I'm a first-year
Medical student
Nausea? Nerve?
Occurrence is 1 in 300,000
Put it to memory
Quiet never comes either
Restlessness is recycled
Sob every other Sunday
Tuesdays are better
Urban urine
Vain but virtuous
Whining won't work
Xyz

Philadelphia is an alien
Or maybe I am

— LORENA WALKER
Candidate, MD Class of 2022

The GRK2 Master

“Most people know the big-picture symptoms of heart failure — shortness of breath, fatigue and weakness, edema in your feet and legs — but few are familiar with heart failure’s molecular events. A rising level of an enzyme called GRK2 is one of the first,” says **Walter J. Koch, PhD, FAHA**, the William Wikoff Smith Chair in Cardiovascular Medicine at Temple.

Koch probably knows more about GRK2 and the heart than anyone else in the world. It’s played the starring role in his research for 25 years, funded by more than \$40 million in grants from the NIH, the American Heart Association, and the W.W. Smith Foundation, among others.

“Something else most people don’t know is heart failure’s link to the body’s fight-or-flight response,” says Koch, who also chairs Temple’s Department of Pharmacology and directs its Center for Translational Medicine. “In response to stress, the adrenal glands pump out adrenaline, preparing the body to fight or flee. The heart *should* beat faster. But when excess GRK2 is present, it can’t. Because GRK2 shuts off the heart’s adrenaline receptors. So the adrenals then crank out more adrenaline — making GRK2 continue to increase — further suppressing the heart.” Koch says this endless loop is really damaging.

One class of drugs on the market for heart failure today is called beta blockers. They work by blocking the actions of stress hormones on the heart. But GRK2 has inspired Koch to work on an entirely different approach. “If we can reduce or inhibit GRK2, the heart will be able to respond to stress hormones in a

normal way, which will make hormonal bombardment go away, improving the function of the failing heart,” he says. GRK2 therapy will be an entirely new class of drugs.

Dozens of Koch’s 482 publications detail GRK2’s roles in the molecular mechanisms of cardiac injury and repair. “The proof is overwhelming. Reducing GRK2 is a novel way to go. In several preclinical models, it even *reverses* heart failure,” says Koch, who is working on a couple of chemical compounds that are showing exciting potential to pharmacologically inhibit GRK2.

A native of Bryan, Ohio, Koch earned his PhD in pharmacology and cell biophysics at the University of Cincinnati. He completed a Howard Hughes Medical Institute fellowship at Duke University and served on the faculties of Duke and Thomas Jefferson University before joining Temple in 2012.

At Duke he worked with Robert Lefkowitz, MD, who went on to win the Nobel Prize in Chemistry in 2012. “It was under Bob’s mentorship that I established my career path in GRK signaling and regulation in the heart,” says Koch, who’s earned prestigious honors

himself, including the American Heart Association 2017 Basic Research Prize. Koch’s research has revealed some surprising things, such as the heart’s ability to “talk” to fat. “We discovered that the heart functions like an endocrine organ, secreting substances that regulate the size and number of fat cells in the body,” says Koch, who received an American Heart Association Merit Award in 2018 to study the phenomenon.

Koch’s laboratory is among the largest at Temple. He has trained more than 60 fellows in the last 20 years. He is a past Associate Editor of *Circulation Research*. He’s invited to lecture all over the world. He recently chaired the American Heart Association’s Basic Cardiovascular Sciences Council and currently chairs the Association’s Council Operations Committee. He’s headed several NIH study sections as well.

In addition to studying GRK2, Koch studies GRK5. He was the first to clone it and to discover that it enters the nucleus of heart cells, contributing to pathological cardiac hypertrophy. “It’s too soon to say if GRK5 is a true target of therapy for the heart, but GRK2 definitely is,” Koch says. He smiles, and you can almost picture him as he must have looked in junior high when he won the top prize in the Ohio state science fair.

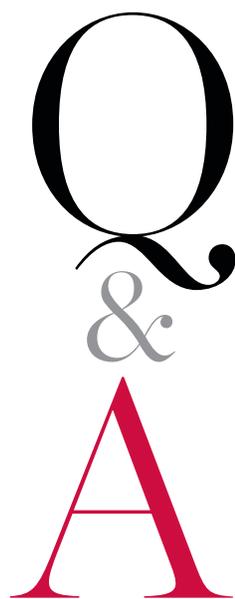
“Heart failure is the leading cause of death in developed countries — affecting more than 26 million people around the world. It is a very complex disorder. Better treatment options are desperately needed — and the faster they are developed, the better. But I grew up with four siblings in a tiny house with one bathroom. It teaches you patience. I really think GRK2 is the ticket. And we’re almost there.”



Walter J. Koch, PhD, FAHA

Grace X. Ma, PhD, CHES

DIRECTOR, CENTER FOR ASIAN HEALTH, AND ASSOCIATE DEAN, HEALTH DISPARITIES



You are a health disparities researcher. Do genetics account for the variations in disease rates among different ethnic populations?

Genetics play a relatively minor part. The factors with greater influence on health are the social determinants of health — which vary from population to population and community to community. Things like access barriers to health care and the quality of that care; cultural beliefs and health behaviors; language and literacy; socioeconomic status; education; employment and income; housing and neighborhood.

Q: *You have directed more than 90 studies focusing on prevention and early detection for cancer and other diseases that affect ethnic groups disproportionately. Can you tell us about some?*

A: Researchers in my field look at the entire continuum of care — to improve prevention, screening, vaccination, disease management, medication adherence — ultimately to improve health status at population and community levels. Therefore, some of my team's studies are broad-based, like Racial and Ethnic Approaches to Community Health (REACH). Others are more specific — such as our program looking at hepatitis B virus screening for Asian Americans, who, because of the virus, have the highest rates of liver cancer of all ethnic groups. Early detection, viral monitoring, and timely treatment can help prevent liver damage and reduce cancer risk.

Q: *You're founder of Temple's Center for Asian Health. Much of your work focuses on this population, but it also extends to others. For example, your \$13.5 million NIH grant with Hunter College in New York aims to reduce cancer disparities among Asian-, African-, and Hispanic Americans. Is it helpful to focus on multiple ethnicities?*

A: I am a first-generation Asian American, so that's where my concern began, but all disparities concern me. And as a health disparity researcher, it is necessary to conduct comparative studies in various ethnic populations to identify similarities and differences in disparities and approaches to improving health outcomes for multiple communities.

Q: *You are known for creating innovative ways to reduce health disparities. Where do you get your ideas?*

A: A participatory approach is the key to research innovation. My teams and I work closely with our intended beneficiaries plus community leaders and health providers to identify ways to address problems. Interventions must earn the trust and involvement of the community. In health care, we must do things *with* people, not *to* them.

Q: *Over the past 23 years, your research has been funded by more than \$70 million in grants from the NIH and other agencies. What is the secret to success when the competition is so keen?*

A: Chase solutions, not dollars. Before applying for funding, conduct a pilot program to test the hypothesis or intervention. Never apply for a grant without supplying feasibility data to show that the approach can work. Do the legwork. Ensure the program addresses significant problems and fills in gaps in scientific knowledge.

Q: *You've trained more than 200 scientists. Wouldn't you accomplish more if you spent less time teaching?*

A: In many respects, teaching and mentoring are my top priority. With so much unmet need in our communities, it is imperative that we groom the next generation of researchers, preparing them to conduct the health disparity research of tomorrow.

Q: *You have received many distinguished awards, including the NIH's Martin Luther King Award for Reducing Health Disparities. Do honors inspire you?*

A: Yes. But the greatest inspiration, the greatest honor, is to see positive change flow out of team science, to see gaps of disparity narrow — to see health status improve.



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Grace X. Ma, PhD, CHES

The CT Scanner

It's a Revolution

“It’s faster, quieter, and produces images of unsurpassed quality,” says Gary S. Cohen, MD, FSIR, Temple Health’s Radiologist-in-Chief and Chair of Radiology at the Lewis Katz School of Medicine.

Cohen is talking about Temple’s newest computed tomography (CT) scanner, the Revolution CT, made by GE Healthcare. The 256-slice scanner takes CT science to its highest level yet, combining advances in technology with improvements in patient comfort and operator ease-of-use.

The Revolution CT’s gantry, the O-shaped opening for patients, permits patients up to 675 pounds to be imaged comfortably. Its coverage is superior too. Like a wide-angle camera lens, its detectors get more in the shot. And it’s fast. “It can scan the heart in a single heartbeat. No more long scans that require breath-holding,” Cohen says.

Plus, the images it produces are amazing.

Older CT scanners use one consistent level of X-ray energy. The Revolution CT works differently. It’s a multispectral energy scanner. It exposes the body to X-ray energy of alternating frequencies to produce different types of data — which are then blended together. These reconstructed images outshine the quality of single-energy scans by about 60 percent — making it easier for physicians to detect small lesions, characterize tissues, identify blood clots, etc. The system’s software can present views of the anatomy in two dimensions — and in far more lifelike three dimensions. Images can be rotated from any angle.

“Technology that promotes rapid, definitive diagnosis can help us get patients on the treatment path more quickly,” Cohen says.

Here’s another plus: With older machines, the slightest movement of the patient — a beating heart, a breathing lung — could cause images to blur. But the Revolution’s motion-correcting system and high-resolution detectors capture clear images of moving anatomy fast. In addition, the Revolution CT overcomes the “artifact” problem. Artifacts are spots that appear in images that do not represent anything actually present in the body. Metal implants in the body can cause them. But the Revolution CT is making artifacts a thing of the past.

“Perhaps most important, the Revolution CT exposes patients to less radiation than older-generation

scanners — which is especially important for pregnant patients, pediatric patients, and patients with electronic medical devices. When we do studies requiring contrast agents, we can reduce the radiation dose as much as 82 percent,” Cohen says.

In addition to doing cardiac examinations or whole-brain imaging in less than a second, the Revolution CT is ideal for perfusion and angiography studies, bone imaging (even for patients with metal implants), pulmonary embolism studies, and interventional procedures that rely on CT navigational guidance.

“It’s the first CT scanner truly helpful in every clinical specialty,” says Cohen.



SCANNER IMAGE COURTESY OF GE HEALTHCARE. SCAN IMAGES COURTESY OF GE AND TEMPLE'S DEPARTMENT OF RADIOLOGY

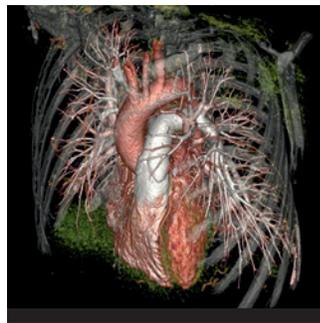
HOW IT WORKS

The control panel streamlines the setup process for technicians.



Made of aerospace-grade aluminum, the gantry houses a shock-absorbing system that reduces the movement induced by acceleration, ensuring smooth, quiet operation — and clear images.

With an 80-cm opening, the scanner can comfortably accommodate patients up to 675 pounds. The machine's X-ray tube can circle around the patient up to five times per second, reaching 75 Gs.



CT images like these — of routinely stunning quality — support diagnosis and treatment planning at Temple.

Temple Obstetrics & Gynecology

A Short History

Temple University Hospital's first medical director was an obstetrician (W. Frank Haehrlen, MD). Its first specialty hospital was a maternity hospital (Greatheart). The third dean of its medical school was a gynecologist (Frank C. Hammond, MD). Dean number four, who led both the medical school and Temple University Hospital, was an obstetrician (William Parkinson, MD '11). Even the first medical student society to honor a Temple professor honored the field: The John Chew Applegate Obstetrical Society.

"Women and infant health have been priorities since Temple's founding in 1892," says Enrique Hernandez, MD, FACOG, FACS, FCPP, the Abraham Roth Professor and Chair of the Department of Obstetrics, Gynecology and Reproductive Sciences at Temple.

Philadelphia has been an important center for the advancement of reproductive medicine. In the 1760s, William Shippen, Jr., MD (1736-1808), created the country's first course of obstetrics instruction in Philadelphia.

At the turn of the 20th century, when childbirth mortality rates approached 20 percent, a Philadelphia physician named Joseph Price, MD (1853-1911), promoted aseptic techniques — reducing them to two percent. Price is known as the father of modern gynecologic surgery in North America. His maternity hospital became part of Temple.

In 1947, a luminary named J. Robert Willson, MD, loomed large in the field from his Temple post. Willson was visionary in foreseeing the field's role in primary care. Willson's textbook *Obstetrics and Gynecology* (Mosby, 1958) was the definitive text in the field with

nine editions over 35 years.

Other Temple faculty of note include Jesse Arnold, MD (eclampsia); Clayton Beecham, MD (gynecologic oncology); Albrecht Schmitt, MD (colposcopy); and Elsie Carrington, MD (gestational diabetes).

Alumni of Temple have also made their mark in the field — notably, the internationally known reproductive endocrinologist and obstetrician-gynecologist Alan DeCherney, MD '67, now at the National Institutes of Health. Numerous alumni and faculty have held leading roles in national societies — and at least a dozen have been President of the Obstetrical Society of Philadelphia, including Hernandez.

Over the years, millions in NIH and industry funding have advanced ob/gyn research and clinical care at Temple. And philanthropy has been no less important. In 1959, the family of a 1926 Temple medical graduate and one of Philadelphia's top fertility specialists endowed the annual Isador Forman Postgraduate Course — an integral part of Temple obstetrics/gynecology education for 60 years. And in 1988, a Temple alumnus named Roland P. Roth, PhD '71, endowed the Abraham Roth Professorship at Temple, now held by Hernandez.

Today, with 22 full- and part-time faculty, dozens of adjuncts, 24 residents and fellows, and in- and outpatient facilities throughout the Philadelphia region, the Department provides care to women of all ages in virtually all aspects of reproductive medicine — delivering 2,500 babies a year — "with special aptitude to meet the needs of high-risk patients," Hernandez says.

FIVE OF FAME



One of the 20th century's most influential obstetrician/gynecologists, **J. Robert Willson, MD, MS, FACS, FACOG** (1912-1993), chaired Obstetrics and Gynecology

at Temple from 1946 to 1963. Foreseeing the essential role of primary care in obstetrics/gynecology, Willson revamped medical and resident education at Temple — and promoted the philosophy as President of all the major societies over the years (the American College of Obstetricians and Gynecologists; the Association of Professors of Gynecology and Obstetrics; and the American Gynecological Society). Willson was a founding member of the Society for Gynecological Investigation. He also chaired the Council on Resident Education in Obstetrics and Gynecology — and directed the American Board of Obstetrics and Gynecology. First published in 1958, Willson's textbook *Obstetrics and Gynecology* (C.V. Mosby), became the definitive text in the field. Its ninth edition was published in 1991. Willson left Temple in 1964 to chair Obstetrics/Gynecology at the University of Michigan, retiring in 1983. Among many other honors, he received the Distinguished Service Awards of both the American College of Obstetricians and Gynecologists and the Obstetrical Society of Philadelphia.



Jesse O. Arnold, MD (1868-1957), joined the Temple faculty in 1904 and served for 39 years — chairing Obstetrics for 16. Well-known for his clinical investigations

and for inventing useful instruments and procedures, Arnold collaborated with Temple Fay, MD, a faculty colleague in neurosurgery, to devise a therapy for eclampsia. He also invented a method to control postpartum hemorrhage and invented the Arnold forceps.



Clayton T. Beecham, MD, FACOG (1907-1990), founded Temple's Division of Gynecologic Oncology. In fact, Beecham's 1955 report on the use of methotrexate to treat

patients with gestational choriocarcinoma (*Am. J. Obstetrics & Gynecology*, Vol. 69:3, 510-524) preceded the publication of Hertz and Li, who are credited with the innovation. Beecham served as President of both the American Association of Obstetricians and Gynecologists and the Obstetrical Society of Philadelphia. He was a founding fellow of the American College of Obstetricians and Gynecologists — and recipient of its 1988 Distinguished Service Award. A Temple faculty member for 25 years, Beecham later chaired obstetrics/gynecology at Geisinger Medical Center (Danville, PA).



An expert in gestational diabetes, **Elsie Reid Carrington, MD '41** (1912-2002), a Temple faculty member from 1949 to 1960, published widely on the topic and consulted

for committees of the National Commission on Diabetes; the Food and Drug Administration; the Department of Health, Education and Welfare; the March of Dimes; and the National Board of Medical Examiners. She also served as an Examiner for the American Board of Obstetrics and Gynecology. In 1961, Carrington joined the faculty of the Medical College of Pennsylvania (formerly known as the Woman's Medical College), chairing Obstetrics and

Gynecology there from 1967 to 1977. She then directed the Maternal and Infant Care Program of the University of New Mexico School of Medicine. Carrington served as Vice President of the American College of Obstetricians and Gynecologists — and was President of the Obstetrical Society of Philadelphia. She was honored with many awards for teaching.



Having published one of the first papers on "Pap smears" (Papanicolaou's method) in Europe, **Albrecht W. Schmitt, MD, FACOG**, a native of Germany, was instrumental in bringing colposcopy, a method for early

cervical cancer diagnosis, to the U.S. Schmitt served his American residency in 1956 at Temple's Episcopal Hospital, forming close ties with Drs. J. Robert Willson and Clayton Beecham — and later served on the faculty of the Medical College of Pennsylvania under the chairship of Elsie Carrington, MD. The prolific Schmitt co-authored textbooks on vaginal cytology, colposcopy, and colpophotography. In 1964, his scientific exhibit on cytology, colposcopy, and histology won a prize from the American Medical Association. Schmitt is a Diplomat of the American Board of Obstetrics and Gynecology and was a founding member and past President of the American Society for Colposcopy and Colpomicroscopy.

TIMESTAMPS: TEMPLE OB/GYN



1892 ▲

Russell Conwell founds Samaritan Hospital (Temple University Hospital's original name). Its first medical director and vice president is an obstetrician, W. Frank Haehnlen, MD (1857-1910). In 1898, Conwell builds a maternity hospital called Greatheart next door.

1901 ▶

Temple's medical school opens. John C. Applegate, MD (1861-1926), heads **Obstetrics**. Wilmer Krusen, MD (1869-1943), heads **Gynecology**. In 1906, Krusen is named President of the Obstetrical Society of Philadelphia.



1917 ▲

Frank C. Hammond, MD, ScD, FACS (1910-1941), Dean of the medical school, is named President of the Obstetrical Society of Philadelphia.

TIMELINE



1923

Greatheart is razed to make room for a larger Samaritan Hospital. Temple's maternity service relocates to the Joseph Price Maternity Hospital (18th and Spring Garden Streets).

1925 ▲

W. Wayne Babcock, MD (1872-1963), one of the first to use spinal anesthesia for gynecologic procedures, is named Chair of Gynecology, concurrent with his role as Chair of Surgery (since 1903).

1927 ▶

Jesse O. Arnold, MD, is named chair of Obstetrics. Frank C. Hammond, MD, ScD, FACS, former Dean, is named Chair of Gynecology. Both serve for 16 years.



1932

Maternity is re-established at Temple's main hospital.

1941 ▼

The Departments of Obstetrics and Gynecology are merged under the leadership of new chair Thaddeus Montgomery, MD, President of the Obstetrical Society of Philadelphia.



1947 ▼

J. Robert Willson, MD (1912-1993), one of the century's most influential leaders in the field, is named Chair. Her serves until 1963.





1955 ▲

Clayton T. Beecham, MD, becomes the first to use chemotherapy to treat gestational choriocarcinoma.

1961

Albrecht Schmitt, MD, becomes one of the first in the U.S. to use colposcopy to diagnose cervical carcinoma.

1966 ▼

James A. Batts, Jr., MD (1913-1992), known for his commitment to minorities in medicine, is named Chief of Community Obstetrics/Gynecology. Batts later directs ob/gyn at the Harlem Hospital Center and teaches at Columbia University's College of Physicians and Surgeons.



1990 ▼

E. Albert Reece, MD, PhD, MBA, is named Temple's inaugural **Abraham P. Roth Professor and Chair of Obstetrics, Gynecology & Reproductive Sciences**. (Today Reece is Dean of the University of Maryland School of Medicine.)



2010

Robotic-assisted gynecologic surgery is launched at Temple.

2014

Temple co-creates Philadelphia's first public cord blood donation program.

2015

Temple's gynecologic oncology fellowship program is established.



2016 ▲

Megan Heere, MD '08, spearheads Sleep Awareness Family Education at Temple (SAFE-T) to reduce parent and infant bed-sharing (a risk factor for infant death). Results were presented at the 2019 Pediatric Academic Societies meeting.

2017

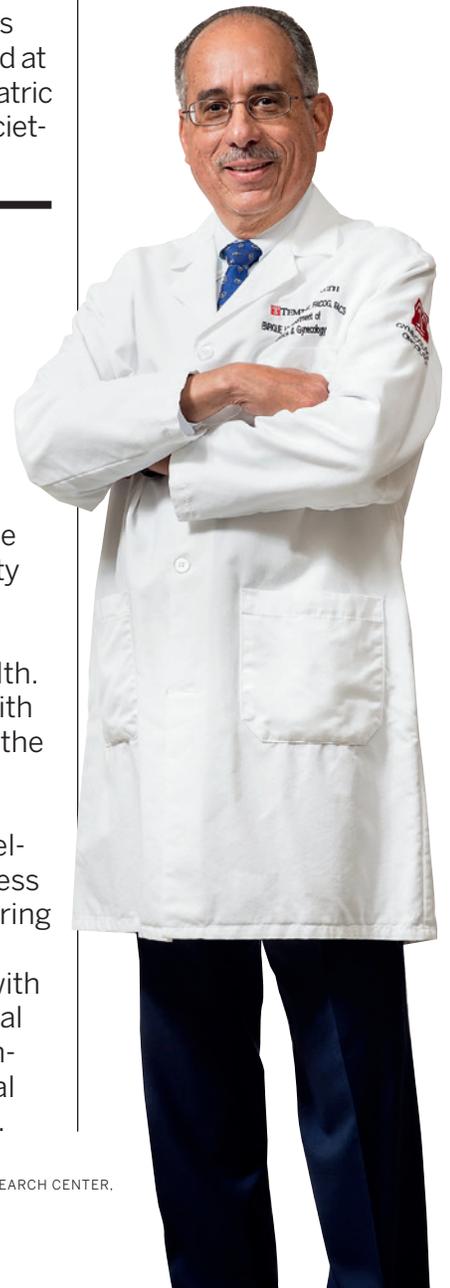
Temple joins the Perinatal Research Consortium, a network of health care institutions engaged in the highest-quality research in perinatal and women's health. In addition, with funding from the state, Temple launches a center of excellence to address opioid use during pregnancy in partnership with Wedge Medical Center, a community mental health facility.

2018

Temple University Hospital is awarded Baby-Friendly designation by the World Health Organization and UNICEF.

2019 ▼

Temple becomes one of only two hospitals in Philadelphia to install facilities for nursing mothers. And Enrique Hernandez, MD, FACOG, FACS, FCPP, **Roth Professor and Chair**, is inducted into the American College of Surgeons Academy of Master Surgeon Educators™.



IMPACT

Grace Notes

Music, Medicine, and John Moran, MD '68

In the early 1960s, before Taj Mahal became famous in the music business, he performed with a popular rhythm and blues band called the Electras. Its members were University of Massachusetts undergraduates. Mahal (whose real name was Henry Saint Clair Fredericks) was an agriculture and animal husbandry major.

“And I was pre-med,” says Mahal’s former bandmate, John Moran, MD '68, a musician and pediatrician based in Providence, Rhode Island. “We played colleges all over the Northeast.”

After graduating in 1964, Moran and Mahal parted ways. Mahal moved to Los Angeles to pursue music, and Moran went to medical school. Not the medical school he originally thought he would attend, but a school whose catalog caught his eye in the UMass library one day: Temple. “I was heading south to visit another medical school anyway, so why not visit Temple, too. And as soon as I got there, I was sold,” he says.

COLORING OUTSIDE THE LINES

Moran’s interview at Temple was conducted by Prince Brigham, MD, a 1950 Temple medical school alumnus who had joined the faculty, and eventually went on to become Dean.

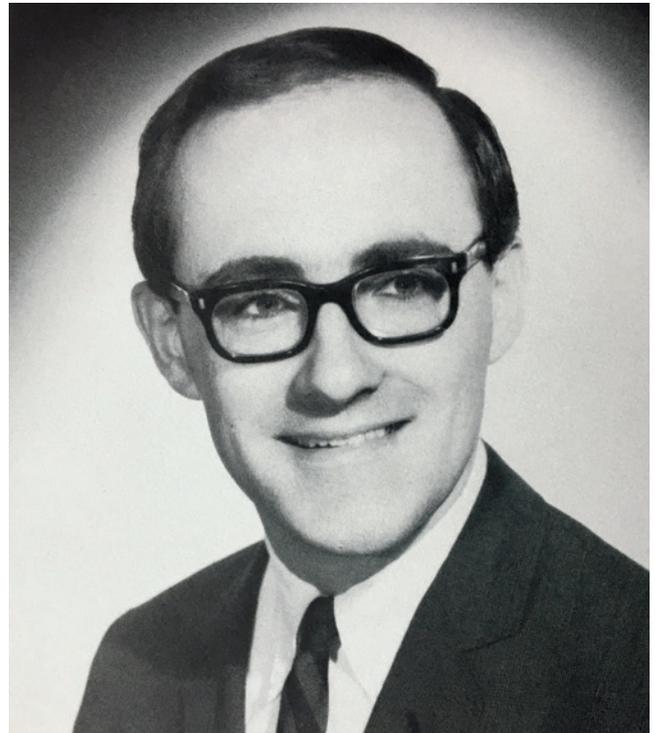
“What an elegant, interesting man. And he went completely off-script for a medical school interview,” Moran recalls. “He said he wanted to assemble a class of *interesting* medical students. So his eyes lit up when I told him about the Electras. Now here was a medical school coloring outside the lines!”

Soon after the interview, Moran was offered a seat in the Class of 1968. “The feet follow the heart. To Temple I went,” he says.

Brigham’s promise — interesting classmates — came true. Moran thought the faculty were fantastic, too. “Imagine a lecture ending with a standing ovation. It was that good,” he says.

“Temple was not a ‘look to your right, look to your left, because one of your classmates is going to fail out’ kind of school,” Moran says. “To the contrary, Temple had life-support systems built in. The faculty were there to help you, not flunk you. And the fraternity houses offered room, board, and a person who cooked and cleaned for \$30 a month.”

Home-cooked meals were welcome comfort during the



upheaval and unrest of the 1960s. Young men burning their draft cards to protest the Vietnam War. The Beatles refusing to play to a segregated audience in Jacksonville, Florida. Nelson Mandela sentenced to life imprisonment in South Africa.

Temple’s dean at that time, Robert Bucher, MD '44, called the era “a social revolution . . . occupying the classrooms, laboratories, clinics, and hospital wards.” To ensure that Temple medical students were prepared, Bucher fine-tuned the curriculum to emphasize socio-economic influences on the patient, ensuring Temple students learned, as Bucher put it, “the cool reasoning of science together with compassion and equanimity.”

GLOWING IN THE DARK

In addition to social change, the 1960s were electric with medical advances. Intensive care units, ventilators, dialysis machines. New surgeries, like the coronary bypass, cryosurgery, and organ transplantation. Contact lenses. The birth control pill, the IUD, and a host of new drugs and vaccines. But the Medicare and Medicaid programs, unveiled in 1965, packed the biggest punch, with millions of newly insured Americans suddenly flooding hospital wards. A lot of hospitals weren’t ready.



Left and top right: Moran with Taj Mahal and the Electras, circa 1962. Far left and above: Moran in medical school.

“But at Temple, patient volume wasn’t much changed,” Moran recalls, “because Temple had always welcomed patients regardless of ability to pay.”

Moran can’t help but wonder: Had he gone to the medical school he originally hoped to attend, would he have become the kind of physician he is today? Did that school teach students about medicine as an agent for social change? Did that school have an Institute for Comprehensive Medicine, integrating disciplines to care for the whole patient? Thanks to professors John Kolmer, MD, and Richard Kern, MD, Temple had one. And it drew the attention of medical educators the world over.

As a Temple-educated physician and faculty member at the Warren Alpert Medical School at Brown University, Moran lives and breathes social conscience in health care. This philosophy animates Moran’s place of work, too: Providence Community Health Centers, the only federally qualified health provider in Providence, with more than 50,000 patients.

“We’re a patient-centered medical home for people with financial, social, cultural, and language barriers,” says Moran, who, although officially retired after chairing pediatrics there for years, still fills in for physicians on vacation. He’s busier than ever, and loving it. He loves Temple, too, attending reunions and receptions every chance he gets. “Of all my alma maters, Temple is the one that glows in the dark,” he says.

After chatting with Temple’s Dean, John Daly, MD ’73, at a Boston reception in 2008, Moran decided it was “time to step up and show my appreciation to the school that has given me so

much.” So he underwrote two spaces in the Medical Education and Research Building — and made provisions for the school to receive a gift from his estate. “John Daly called me personally to thank me,” Moran recalls.

PAYING IT FORWARD

After 40 years of touring, 38 albums, and two Grammy awards, Moran’s old friend Taj Mahal is grateful. He credits everyone who helped him — including elders in the music business who paved his way. “You can’t make it unless the people before you did what they did to get you where you are,” said Mahal in his recent autobiography. “Now you have to give something up to the universe.”

Moran agrees. Karmic debt is meant to be repaid. And Moran had done it at Temple. But then he spotted an article in the *Huffington Post* that inspired him to dig deeper: An article listing Temple among medical schools with high student-loan debt.

In 2018, Moran established the John H. Moran, MD ’68 Endowed Scholarship.

“It riled me to think that a talented, interesting young person might miss out on the chance to go to Temple because scholarship dollars were offered elsewhere,” he recalls.

As Moran knows, Temple was not created with a big endowment. Any endowment, for that matter. Which means that, at Temple, every dollar counts.

“I want to help someone like me, a first-generation physician from a middle-class family, go to Temple. Because there is no finer medical school,” he says.

2019 ALUMNI AWARD RECIPIENTS

A champion in the fight against preventable blindness and a pediatric infectious disease specialist are two of the alumni honored in 2019 by Temple's Lewis Katz School of Medicine for their achievements and service.



The Henry P. and M. Page Laughlin Alumnus of the Year

The highest honor the School of Medicine confers on its graduates, recognizing outstanding contributions to medicine.

Since 1990, **Albert A. Alley, MD '64**, and the volunteers of his nonprofit organization, World Blindness Outreach, Inc., have conducted 100+ sight-restoring missions in more than 25 countries. Alley is devoted to eradicating preventable blindness around the world – and to improving life at home in central Pennsylvania, where he practiced ophthalmology for 45 years and taught clinical ophthalmology at Penn State. He established the Alley Center for the Blind, the Alley Family Center (of Lebanon Valley Developmental and Disability Services), and helped create Mission Cataract Lebanon Valley. Alley's benevolence is no less vibrant at Temple. Among many other gifts to the Lewis Katz School of Medicine, he and his daughter (Cynthia Alley, MD '00, also an ophthalmologist) established the Cynthia Alley, MD '00, and Albert Alley, MD '64, Scholarship Fund. "Give, and you'll be amazed at the benefits you receive," he says.



Alumni Service Award

Given in recognition of exemplary generosity to the School of Medicine.

To **Suzanne Palmer, MD '89**, Professor of Clinical Medicine and Clinical Radiology at the Keck School of Medicine at the University of Southern California (and Director of the Advanced Body Imaging Fellowship program), image is essential. But it's not everything, she says. Medicine is about mentoring. And expanding opportunities for women and minorities – not just at Keck, but everywhere – especially at Temple, where Palmer has championed alumni engagement and student scholarship support for years. “It is important to help support the success of the next generation,” says Palmer, who's active in the National Initiative on Gender, Culture and Leadership in Medicine – among other roles that bespeak her commitment to a more diverse and open tomorrow.



Early in her career, **Donna Skerrett, MD '84**, practiced transfusion medicine and cellular therapy at Weill Cornell, Mt. Sinai, and other New York institutions, chairing the New York State Blood and Transfusion Services Council as well. Today she is Chief Medical Officer of Paradigm Biopharmaceuticals Ltd, a public company developing pharmaceuticals for inflammatory and degenerative diseases. Committed equally to service and science, Skerrett co-founded a nonprofit mentoring organization (Mount Vernon Star Scholars) and serves on the Executive Board of the Alliance of Regenerative Medicine. She is especially generous when it comes to Temple, where she serves on two Boards. “Temple is a model institution that gives back to the community – and taught me how to apply science to improve the lives of people in need,” she says.



Alumni Achievement Award

Recognizing alumni whose contributions to medicine have had a lasting impact.

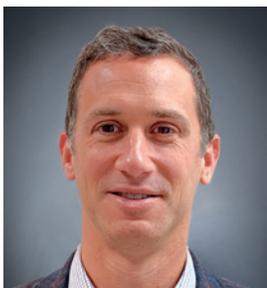
Professor of Pediatrics and Medicine and head of Infectious Disease and Tropical Pediatrics at the University of Maryland School of Medicine, **Karen Kotloff, MD '79**, has made major contributions to vaccine development across the world. As Associate Director of the university's Center for Vaccine Development and Global Health, she's led numerous large-scale trials to evaluate vaccines against a wide range of infections in the U.S. and abroad. Kotloff is a member of FDA advisory committees, consults for the World Health Organization and the Bill & Melinda Gates Foundation, and holds diplomat and fellow status in several prestigious societies.



Honored Professor Award

Honoring faculty who exemplify the knowledge and values that Temple strives to instill.

David J. Karras, MD, Associate Dean for Pre-Clerkship Education and Professor of Emergency Medicine, is absolutely devoted to mentoring Temple medical students and emergency medicine residents. A former Temple resident himself, Karras joined the Temple faculty in 1990 – and has demonstrated teaching excellence and leadership in medical education ever since. Multiple honors have come his way, including six “Outstanding Educator in Emergency Medicine” awards. Karras is a fellow of both the American College of Emergency Physicians and the American Academy of Emergency Medicine. His research has been published in the *New England Journal of Medicine*.



Emerging Leader Award

Honoring exemplary leadership and promise in medicine.

When **Benjamin Scoll, MD '04**, graduated from medical school at Temple and won the A. Richard Kendall Award for Excellence in Urology, his leadership in the field was foretold. Scoll is a founding partner of Fore River Urology, LLC (South Portland, Maine), has published papers in leading journals, and has presented talks at national and international urology meetings. His research won a Philadelphia Urological Society prize. And with science comes service. Steeped in the Temple tradition, Scoll volunteers for numerous community agencies and is active with the regional chapter of “100 Men Who Care.”

SO NOTED

“Never be afraid to reach out when you have reached the end of your knowledge, technical proficiency, or rope. Stating that you need help signals that you are a responsible person, with ethics and integrity.”

— SUSAN E. WIEGERS, MD, FACC, FASE, TEMPLE FACULTY PRACTICE PLAN CEO AND SENIOR ASSOCIATE DEAN

“For more than 125 years, Temple University Hospital has helped lead real change in Philadelphia, and our city is better for it.”

— JIM KENNEY, MAYOR OF PHILADELPHIA

TEMPLE UNIVERSITY HOSPITAL
OB/GYN STATS, FISCAL YEAR 2019

54,386
CLINIC VISITS

1,554
GYNECOLOGIC SURGERIES

6,480
OBSTETRICAL TRIAGE UNIT VISITS

1,300
HIGH-RISK OBSTETRICAL
SERVICE VISITS

2.86
AVG INPATIENT STAY (DAYS)

9,701
FAMILY PLANNING CLINIC VISITS

4,067
GENETIC COUNSELING SESSIONS

16,041
FETAL CENTER PROCEDURES

3,576
ANTENATAL TESTS

2,335
DELIVERIES

“You must give patients more time when you are pushed to give them less; you must give them assurance while you explain the impossibility of absolute certainty; and you must give them a sense of wholeness at a time when the practice of medicine has become so fragmented.”

— AMY GOLDBERG, MD, CHAIR,
SURGERY

**In 1961,
Temple
University
Hospital
charged
\$338 for a
hysterectomy,
which entailed
an 11-day
hospital stay.**

“It’s very easy to have an idea about what someone’s care should look like, but it’s the patients and their families who must deal with the struggles and successes that come with medical care.”

— KEAIRA STILL, BSN, RN, CCRN, NURSING EDUCATION

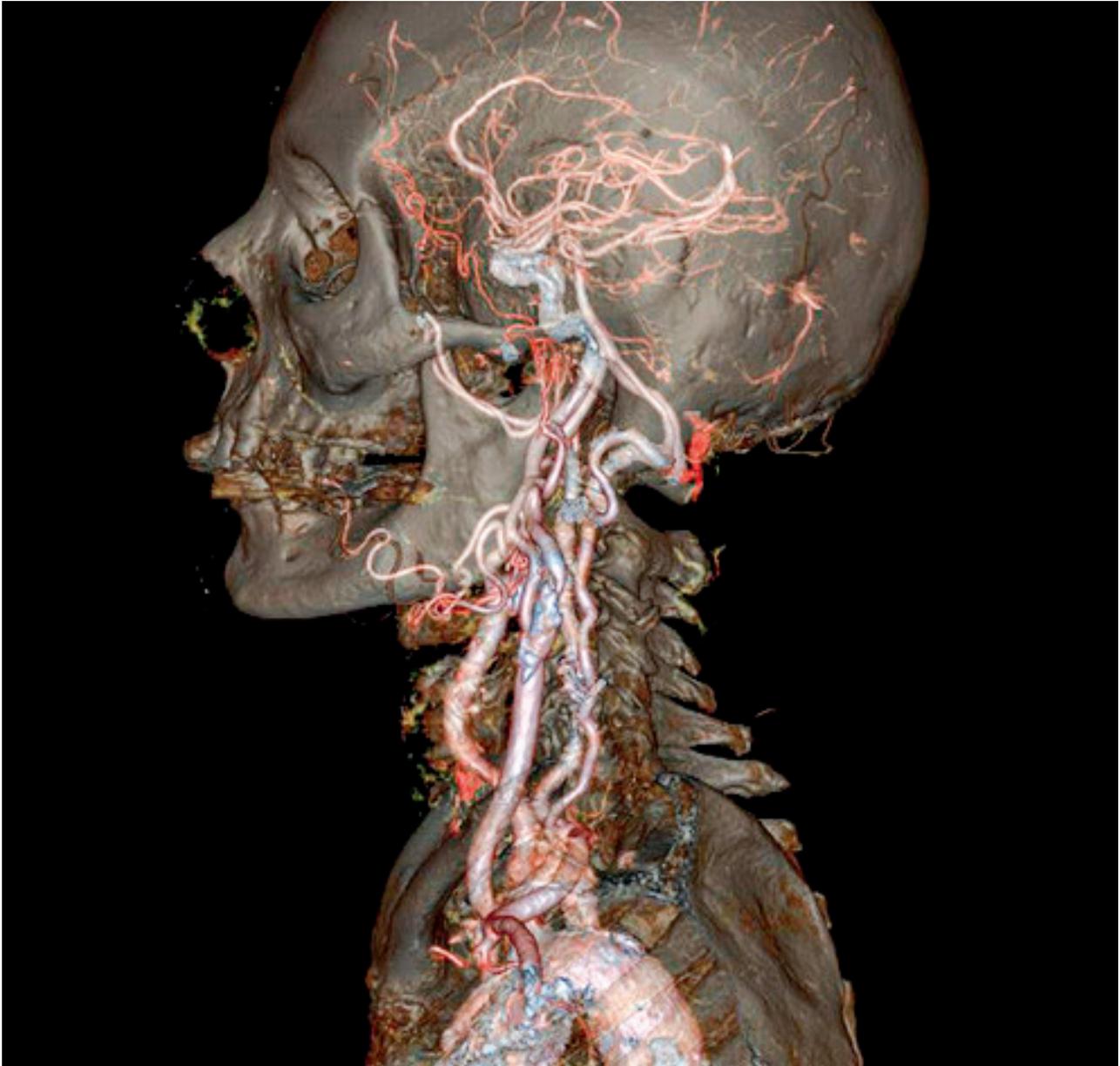
“It’s what you learn *after* you think you know it all that really counts.”

— J. ROBERT WILLSON, MD, FACOG (1912-1993), PAST CHAIR, OBSTETRICS/GYNECOLOGY

Temple University Hospital is a Magnet hospital for nursing — a designation achieved by just 8 % of the nation’s hospitals.

146
Temple
physicians in
38
different
specialties
were named
Philadelphia
magazine
“Top Doctors”
in 2019.

Of the 21
full-time faculty
in Temple’s
Department of
Ob/Gyn and
Reproductive
Sciences,
76% are **women**,
24% are **Latinx**,
and **14%** are
African American.



Go with the Flow

This evocative image — a scan of the circulatory system of the head and neck — was produced by computed tomography angiography (CTA).

“It’s a great tool for diagnosing problems like aneurysms, dissections, steno-occlusive diseases, vascular malformations, thrombosis, and hemorrhage,” says Varun Sethi, MD, Assistant Professor of Clinical Radiology, a fellowship-trained neuroradiologist.

CTA, which combines CT and angiography, takes the diagnosis of vascular pathology to a whole new level.

Angiography is invasive because it is catheter-based. CTA is not. Angiography produces a two-dimensional image. CTA produces a three-dimensional image that can be rotated, so you can view anatomy from any angle you want. Angiography can’t provide volumetric information. But CTA can. “We use it to determine the size of vascular stenoses and occlusions — very helpful for treatment planning, for selecting appropriately sized balloons, stents, and endografts. Similarly, we also use CTA for treatment planning for cerebral aneurysms,” Sethi says.

“At Temple, we learn to treat patients’ medical conditions within the context of their circumstances. Some patients have family support, for example, while others don’t. Better care — better doctors — come out of Temple’s dedicated whole-person approach.”

CARLOS M. ROMERO, CLASS OF 2020

- President, Class of 2020, 2016-20
 - President, Student Government Association, 2019-20
 - Treasurer, Student Government Association, 2018-19
 - President, Students Engaged in Healthcare Policy, 2016-17
 - Treasurer, Babcock Surgical Society, 2016-17
 - Facilitator, Puentes de Salud Latinx Immigrant Health Clinic, 2017-20
-

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with your gift today.

giving.temple.edu/givetomed



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