LEWIS KATZ SCHOOL OF MEDICINE AT TEMPLE UNIVERSITY | TEMPLE UNIVERSITY HEALTH SYSTEM

Temple Health Magazine

FALL 2015

SPECIAL SECTION:
INTRODUCING THE LEWIS KATZ SCHOOL OF MEDICINE AT TEMPLE UNIVERSITY

CHRONIC KIDNEY DISEASE:
IT'S TRULY A MATTER OF HEART

"Be the Breakthrough"

How Patients Advance Medicine

TEMPLE HEALTH

Lewis Katz: Of Love and Legacy

On October 13, 2015, Temple University School of Medicine became the Lewis Katz School of Medicine at Temple University, a significant event in the school's 116-year history. We celebrated the milestone with a series of festivities that no one would have enjoyed more than Lewis himself. Tragically, the longtime trustee and benefactor died in a private-plane accident last spring.

Lewis hated to miss a good party — hated to miss anything. His life was a whirlwind tour, both planned and spontaneous. He loved meeting people: coffee shop cashiers, United States presidents, professional athletes, underprivileged kids. His quest was to live with purpose — and that purpose was to enable others to do the same.

"Lewis never forgot people who started, as he did, with nothing," said his friend, former President Bill Clinton. "It bothered him that anybody with any dream would be left out or left behind."

That's Lewis to a T. And the ethos and mission of Temple University.

Here at the Lewis Katz School of Medicine at Temple University, with every student we train, and with every advance we make in research, we extol Lewis Katz and all great people who invest their love and largesse in opportunity, in education, and in tomorrows they may never see.

Larry R. Kaiser, MD, FACS

Senior Executive Vice President for Health Affairs, Temple University
Dean & Professor of Surgery, Lewis Katz School of Medicine
President & CEO, Temple University Health System

MEDICAL SCHOOL: JOSEPH V. LABOLITO; KAISER: DOMINIC EPISCOPO

Temple Health Magazine

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LEWIS KATZ
1942 – 2014

Introducing The Lewis Katz School of Medicine

On October 13, 2015, Temple University School of Medicine became the Lewis Katz School of Medicine at Temple University — a dedication the University enacted to honor one of its biggest supporters and most enthusiastic advocates.

"Anyone who spent time with Lewis Katz could not help but be swept away by his tremendous curiosity, boundless energy, and his genuine concern for people from all walks of life," said Temple University President Neil Theobald. "It is an honor to commemorate this great philanthropist and Temple trustee at the university he loved."

Patrick O'Connor, Chair of the University Board of Trustees, said, "In countless ways, Lewis touched the lives of thousands in this region, often without them ever being aware that he was behind their good fortune. The Lewis Katz School of Medicine at Temple University will continue that tradition, by improving the health and welfare of men, women, and children for decades to come."

An alumnus and long-time Temple trustee, Katz grew up in a row house in Camden, NJ. His widowed mother worked two jobs. Young Katz worked, too. He had a paper route and sold pots and pans door-to-door. After he graduated from Camden High School, an anonymous donor's scholarship enabled him to attend Temple University — an act that Katz later credited with launching his own philanthropy, a magnificent record that the Partners for Livable Communities called "inspirational work bridging racial and economic divides."

With holdings in banking, professional sports, and media (including *The Philadelphia Inquirer* and *Daily News*), the astute lawyer and businessman made a lot of money and gave a lot away — quietly writing six-figure checks to establish churches, synagogues, and schools. Katz counted the Boys & Girls Clubs of America, the Starlight Children's Foundation, the American Heart Association, and his beloved Temple University among his favorite charities. His $25 million gift to Temple University School of Medicine — the single-largest in its history — turned out to be his last.

In addition to naming its medical school in his honor, Temple University has also established the Lewis Katz Scholarships, full-tuition scholarships for undergraduates who show promise for difference-making through civic and service-leadership.

Two weeks before the tragic accident that took his life, Katz gave an award-winning speech at Temple University's 2014 Commencement. In it, he implored the graduates to make a difference with their lives. "He certainly did that with his own," said Larry Kaiser, MD, FACS, the Katz School Dean and Temple University Health System CEO.

THE LEWIS KATZ SCHOOL OF MEDICINE

MISSION: With faculty, staff, and learners representing the diversity of society, the Lewis Katz School of Medicine, founded 1901, is dedicated to excellence in education, research, and patient care. It provides patient-centered education, conducts research to advance science, and utilizes contemporary knowledge and techniques to provide patient care administered with compassion and understanding.

STUDENTS: 879 MD program students (11,365 applicants, with 483 accepted for the MD Class of 2019); 107 graduate students.

FULL & PART-TIME FACULTY: 926.

DEGREE PROGRAMS: MD; MS and PhD in Biomedical Sciences; MA in Urban Bioethics; MS in Clinical Research & Translational Medicine; MD/PhD Program; MD/MA in Urban Bioethics Program; MD/MPH Program; MD/MBA Program; in development: MS in Medical Sciences - Physician Assistant Program.

OTHER PROGRAMS: Postbaccalaureate Program.

MD CLASS OF 2019: Female: 48% Male: 52%; PA residents 47%; Average GPA 3.66; Average MCAT score 31.77.

***U.S. NEWS & WORLD REPORT* RANKINGS:** 4th-most applied-to in nation; in top third of all 156 U.S. medical schools; 3rd-highest ranked in PA.

RESIDENCY MATCH RATE: 97% for the Class of 2015 (national average 96%).

EDUCATIONAL AFFILIATES: Seven in PA (see p. 10).

RESIDENCY & FELLOWSHIPS: 34 programs enrolling 556 physicians.

NATIONAL RESEARCH RANKINGS: $89.1 million in NIH funding (2014). In addition to its nationally regarded programs in cardiology and pulmonary medicine, the School ranks #19 in cancer biology; #14 in neuroscience; #18 in pharmacology; #24 in physiology; and #14 in emergency medicine clinical research.

ALUMNI PROFILE: More than 13,000 living alumni working in patient care, industry, government, medical education, and public service around the globe.

For more information on the school naming, please visit temple.edu/katz.

Painting by JASON SEILER


ASK ME
ABOUT
CLINICAL
TRIALS
FOX CHASE
CANCER CENTER

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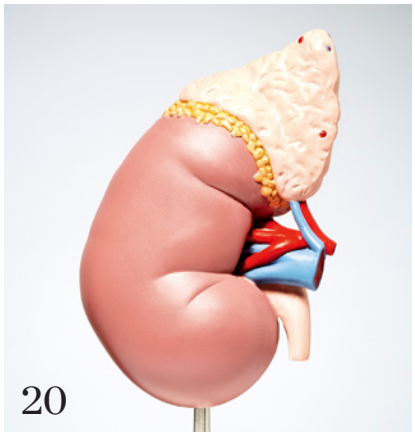
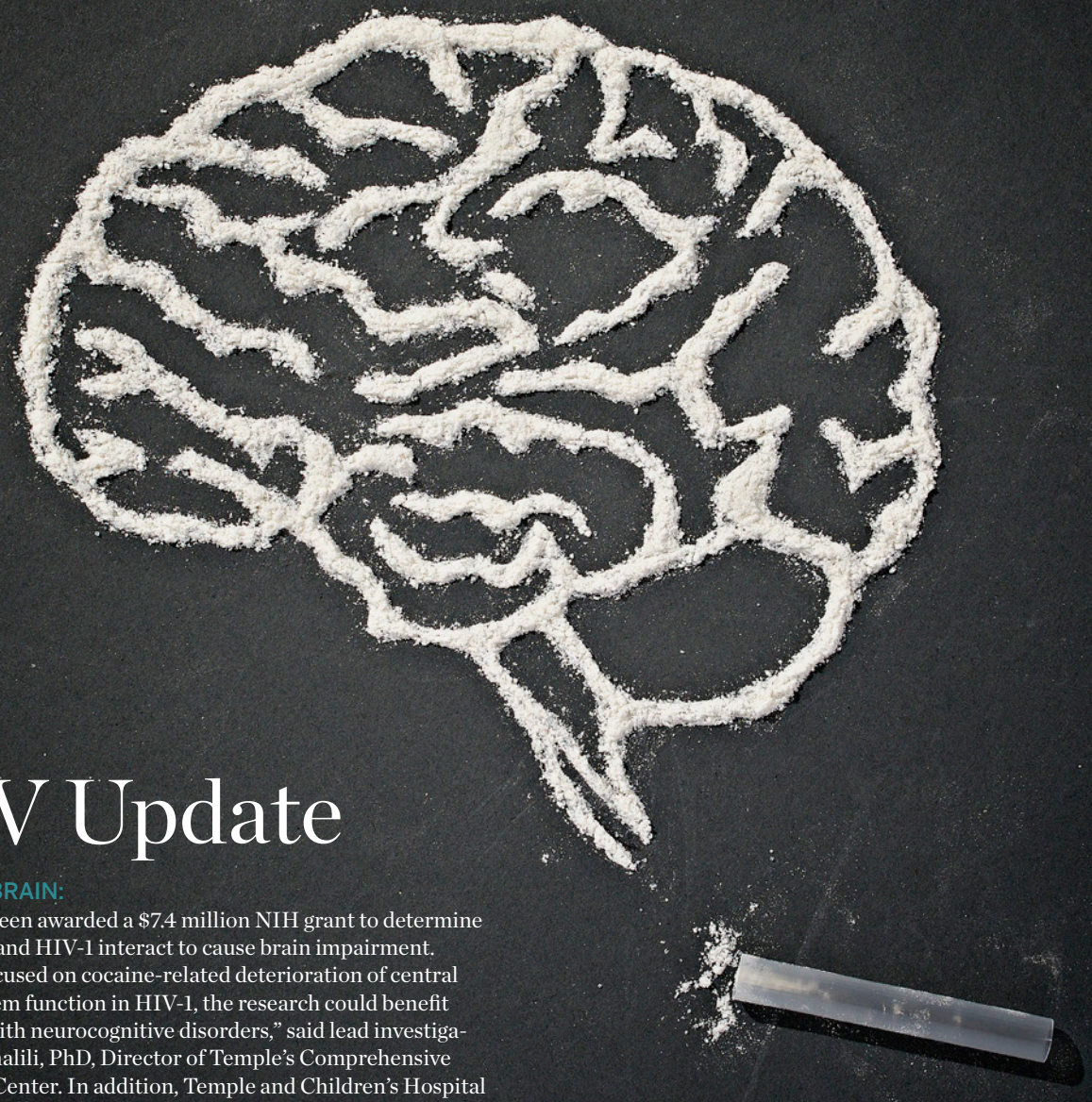


ON THE COVER: The campaign for clinical research is perhaps the ultimate campaign for advancing medicine. Photograph by Clint Blowers.

DR. ESNAOLA: CARDONI; TEMPLE HOSPITAL: NICOLAS RAPP; KIDNEY: CLINT BLOWERS; CAPITOL BUILDING: RICHARD MIA

CURRENTS



HIV Update

HIV & THE BRAIN:

Temple has been awarded a $7.4 million NIH grant to determine how cocaine and HIV-1 interact to cause brain impairment. "Although focused on cocaine-related deterioration of central nervous system function in HIV-1, the research could benefit all patients with neurocognitive disorders," said lead investigator Kamel Khalili, PhD, Director of Temple's Comprehensive NeuroAIDS Center. In addition, Temple and Children's Hospital of Philadelphia received a $4.3 million NIH grant to investigate new methods to eradicate HIV that lurks in brain cells despite antiviral treatment.

HIV SKIN-DISEASE:

Temple has launched a specialty clinic for patients with HIV-related skin diseases, "which can be quite disfiguring," says Misha Mutizwa, MD, Director of HIV Dermatology, noting that Philadelphia has one of the nation's highest rates of HIV infection.

NEW TREATMENT GUIDELINE:

Temple took part in a major international study prompting a major shift in HIV therapeutics. "The study proved that starting therapy early reduced progression of HIV — and reduced the risk of developing serious illness or death by 53 percent," said Ellen Tedaldi, MD, local principal investigator and HIV Director at Temple. Believing that the risks of early therapy outweighed benefits, the former standard protocol was to delay treatment until indicators reached a certain threshold, but now it is clear that sooner is better.

Photograph by CLINT BLOWERS

Autoimmunity Insight

Genetic propensity underlies autoimmune disease. It will lie dormant until something triggers it. What, exactly, remains a mystery. But now researchers at Temple have identified a likely trigger for the autoimmune disease Systemic Lupus Erythematosus (SLE).

In their recent study, published in *Immunity*, Drs. Çagla Tükel and Stefania Gallucci investigated bacterial communities called biofilm, present in the gut, and found that certain biofilm components triggered the immune-system response that leads to SLE in genetically susceptible mice.

While most past research into biofilm looked at its mechanisms of antibiotic resistance, Gallucci and Tükel are studying its role in immune-system response. Their findings point to "leaks" in the digestive tract as the possible source of vulnerability. When the beneficial bacteria in the gut cross the intestinal barrier, problems can result.

While this study pertains to SLE, the scientists speculate that similar processes might underlie autoimmune ailments like multiple sclerosis and type-1 diabetes. "Further research may lead to changes in patient treatment," says Gallucci, noting that the team is now working with clinicians in Temple's Lupus Clinic to study biofilms in SLE patients.

The research was supported by the NIH, the Lupus Research Institute, and the Lupus Foundation.

RICHARD MIA

At the White House & State Capitol

Temple's Dr. Larry Kaiser was part of a select group of health care leaders invited to the White House for the kickoff of President Obama's Health Care Payment Learning and Action Network, which brings together experts to identify best practices for health care delivery and payment models.

"I was honored to be invited to the White House to help advance value-based health care," said Kaiser, noting that the Network's fundamental goal — improving the quality of care and lowering costs — is consistent with Temple's. "It's the way the market is moving," he said.

In addition, Kaiser was among 19 Pennsylvania leaders — and the only hospital or health system CEO — named to Governor Tom Wolf's Transition Committee on Health Care. Temple University Hospital Board member Herbert Long was also invited to serve.

Speedwell for COPD

The Speedwell plant has been used in traditional medicine in Asia for more than 100 years. Now Temple is leading a study to test an investigational drug that contains a speedwell extract, intended to suppress inflammation and ease breathing for patients with Chronic Obstructive Pulmonary Disease (COPD). "The biologic principle behind this drug targets a hole in our therapy for COPD," said Gerard Criner, MD, FACP, FACCP, national principal investigator for the trial. The drug won't cure COPD, but it might ease symptoms and decrease exacerbations. COPD is the third-leading cause of death in the United States. Yungjin Pharm Co., Ltd., is sponsoring the trial.

Medical Education Evolving

Last April, more than 7,500 aspiring physicians worldwide took the new Medical College Admission Test®. "It's a new day for the MCAT exam," said Darrell G. Kirch, MD, President and CEO of the Association of American Medical Colleges. "There has been a paradigm shift in medical education to acknowledge the competencies physicians need beyond medical knowledge — skills that will allow doctors to treat the whole patient — and the new exam reflects these changes," he said.

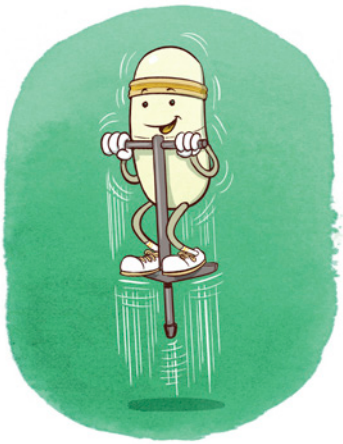
The test has changed, and medical education has, too. "Medical schools must continually refine and improve their curricula in response to new medical knowledge and to marketplace shifts that influence health care delivery," says Arthur Feldman, MD, PhD, Executive Dean at the Lewis Katz School of Medicine at Temple.

Consistent with the way medicine is moving, Temple's medical education strategic plan, "Improving Health Through Innovation in Education," showcases service-learning, quality and safety of patient care, professionalism, and interprofessional collaboration. Lecture courses are de-emphasized. Instead, the focus is on interprofessional collaboration and small-group learning. Students are paired with clinical mentors and are required to perform scholarly research to become acquainted with translational research, population health, and the "big data" movement that's driving health care management, Feldman said.

Moreover, since interdisciplinary education is a core competency of medical education, medical, pharmacy, dental, and nursing students are now brought together. "This forward-thinking approach teaches students important lessons of coordinated, team-focused collegiality across disciplines," said Lawrence Kaplan, MD, Associate Dean for Interprofessional Education. "These are fundamental to value-based care."

Kaplan is a graduate of the Lewis Katz School of Medicine at Temple University and President of its Medical Alumni Association.

Lawrence Kaplan, MD



POEM & Good Vibrations

Three new treatments are available at Temple for patients with treatment-refractive digestive conditions. Patients with achalasia and other swallowing disorders could benefit from Per Oral Endoscopy Myotomy (POEM), a new endoscopic treatment. Patients with severe gastroparesis could benefit from the updated Medtronic Enterra® II, a gastric neurostimulating device that delivers mild electrical pulses to the stomach to aid digestion. Temple is also testing a device for chronic constipation: a capsule that begins vibrating six or eight hours after it is swallowed, producing contractions in the intestines to initiate a bowel movement.

THE KATZ SCHOOL OF MEDICINE AWARDED OVER

$3.6

MILLION IN STUDENT SCHOLARSHIPS LAST YEAR

KAPLAN: JOSEPH V. LABOLITO; PILL: KOREN SHADMI

Newly Appointed

Rebecca Armbruster, DO, MS, FACOI, has been appointed Chief Medical Officer (CMO) of Jeanes Hospital. Prior to this appointment, she served as Associate CMO at Temple University Hospital and was Medical Director of Resource Management.

Ralph Horwitz, MD, MACP, has been appointed Director of the newly founded Temple Transformative Medicine Institute, established to help advance the field of population health, particularly as it relates to underserved populations. Prior to joining Temple, Horwitz was a Visiting Scholar at the Institute of Medicine and a Senior VP at GlaxoSmithKline.

Gordon Morewood, MD, MBA, FASE, has been named Chair of Anesthesiology at Temple University Hospital and Anesthesiologist-in-Chief for Temple University Health System. Morewood succeeds Rodger Barnette, MD, FCCM, who retired from the post after devoting his career to Temple (see page 39).

Kathleen Reeves, MD, has been named Senior Associate Dean of the Lewis Katz School of Medicine's new Office of Health Equity, Diversity and Inclusion. Reeves is also Director of the Center for Bioethics, Urban Health and Policy; and Professor of Clinical Pediatrics. Prior to Reeves' appointment to the Health Equity Office post, she also served as Senior Associate Dean of Student Affairs.

MASTERFILE

Good News for Babies

The Lewis Katz School of Medicine at Temple recently became one of 60 winners of a Grand Challenges Exploration Grant, a Bill & Melinda Gates Foundation initiative aimed at solving persistent global health and development challenges. Focusing on the effects of antidepressants, amphetamines, and alcohol on the brain and neurological development of the unborn fetus, Laura Goetzl, MD, MPH, is using the grant to develop a maternal blood test to help predict abnormal fetal neurodevelopment during the first and second trimesters of pregnancy. "To date, little information has been measurable in the first two trimesters," she said. "The goal is to identify neurological problems early in pregnancy so that intervention is possible."

Goetzl, Professor of Obstetrics, Gynecology and Reproductive Sciences, is working with the Temple-Shriners Hospitals Center for Neural Repair and Rehabilitation on the project.

In addition, Temple University Hospital is one of the first hospitals in the nation selected to join the EMPower Initiative, a federally funded program that puts hospitals on track to achieving the Baby Friendly USA© designation. EMPower supports hospitals in promoting best practices for prenatal and maternity care — including breastfeeding. "We are committed to the long-term well-being of our patients and their babies," says Vice President and Chief Nursing Officer Elizabeth Craig, DNP, CRNP, FACHE. "The ultimate goal is to improve population health."

Endowed Chairs

Four physician leaders have been awarded endowed chairs at the Lewis Katz School of Medicine at Temple University: Dr. Joseph Cheung, Chair of the Katz School Department of Medicine, is now the Richard Laylord and Dorothy L. Evans Chair of Medicine; Fox Chase CEO Richard Fisher, MD, is the Robert C. Young Chair in Cancer Research; Glenn Gerhard, MD, is the Joseph and Rebecca Goodfriend Endowed Chair in Genetics; and Yoshiya Toyoda, MD, PhD, Chief of Cardiovascular Surgery, is now the William Maul Measey Chair in Cardiothoracic Surgery. Endowed chair positions help academic medical centers recruit and retain professionals of unsurpassed talent — thereby helping to move the academic enterprise ahead.

Lancaster General Hospital

New Academic Affiliation

In a new academic affiliation, Lancaster General Hospital (LGH) has become a major clinical teaching site for medical students at the Lewis Katz School of Medicine at Temple University. Up to 64 students will rotate at LGH in internal medicine, ob/gyn, family medicine, and psychiatry each year, with rotations in additional specialties to follow.

Located in south central Pennsylvania, LGH includes Lancaster General Hospital (founded 1893); Women & Babies Hospital; Lancaster Rehabilitation Hospital; a network of outpatient and urgent care centers; the Ann B. Barshinger Cancer Institute; and the Lancaster Heart & Vascular Institute.

Other Lewis Katz School of Medicine academic affiliates include Temple's hospitals; Abington Memorial Hospital; Crozer-Chester Medical Center; Allegheny Health System; and St. Christopher's Hospital for Children. The school also has clinical campuses at Geisinger Health System and St. Luke's Health System.

Nobel Laureate Acknowledged

Media outlets around the nation, including the *New York Times* and the *Washington Post*, acknowledged the scientific contributions of Nobel laureate and long-time Fox Chase Cancer Center scientist Irwin "Ernie" Rose, PhD, who died in June at the age of 88. Rose shared the 2004 Nobel Prize for chemistry with Drs. Aaron Ciechanover and Avram Hershko of the Technion-Israel Institute of Technology for discovering the ubiquitin-conjugating system, work that paved the way for new medical therapies.

Lung Center Expands

Temple has announced a dramatic expansion of the Temple Lung Center that will add 200 additional faculty and staff over the next two years, furthering its leadership in lung care, research, and medical education. Key to the expansion is the establishment of Temple's new Department of Thoracic Medicine and Surgery — "the first in the nation to include thoracic medical and surgical care in a consolidated, multidisciplinary academic department," says Larry Kaiser, MD, FACS, head of Temple's health system. The Department features four integrated sections: Thoracic Surgery; Lung Transplant; Pulmonary, Critical Care and Sleep Medicine; and the Center for Inflammation and Lung Research. Long-time Temple Lung Center Director Gerard Criner, MD, FACP, FACCP, has been named Founding Chair. The Katz School alumnus has an international reputation in pulmonary medicine.

Eczema School

Temple's new tuition-free "eczema school," a first-of-its-kind program in the U.S., offers treatment, education, and counseling to help families and children cope, physically and emotionally, with eczema, a condition that affects approximately 31.6 million Americans. For information about upcoming sessions of the three-part program, contact (267) 838-1094.

HOSPITAL: WOHLSEN CONSTRUCTION COMPANY AND NATHAN COX PHOTOGRAPHY. ROSE: FOX CHASE ARCHIVAL PHOTO

2.8
THOUSAND SURGERIES WERE PERFORMED AT TEMPLE'S HOSPITALS LAST YEAR

Trauma Trial

Temple is leading a first-of-its-kind study that could change how paramedics, nationwide, treat patients with gunshot or stab wounds to the torso. "We are investigating whether these patients have a better chance of survival if they are taken right to the hospital rather than first receiving standard field procedures," says Amy Goldberg, MD, FACS, Chief of Trauma & Surgical Critical Care. Goldberg is leading Temple's participation in the study, which includes the city's other trauma centers and the Philadelphia Fire Department. "Inserting breathing tubes and providing IV fluids may be detrimental in certain cases," Goldberg notes. "For example, if you put an IV line in a patient who is bleeding and pump their pressure up with intravenous fluids, you might dislodge clots and cause more bleeding." Goldberg says the trial results could change standard paramedic practices for these types of trauma patients nationwide. In addition to advancing care for victims of traumatic violence, Temple is committed to violence prevention, education, and outreach. Its Cradle to Grave and Philadelphia Ceasefire programs target at-risk youth and known offenders. "Violence is a public health problem," says Goldberg, Temple's Interim Chair of Surgery.

ED CUNICELLI

Distinctions

Stephen Aronoff, MD, MBA, Chair of Pediatrics at Temple, has been elected to the American Pediatric Society, the oldest academic pediatric society in North America — a distinction reserved for child-health leaders whose contributions have earned national and international recognition.

Mohan Doss, PhD, MCCPM, Associate Professor of Diagnostic Imaging at Fox Chase Cancer Center, received the International Dose-Response Society's Outstanding Leadership Award — recognizing his contributions to a deeper understanding of the science.

Elizabeth Lee, MD

Konstantinos Drossatos, PhD, Assistant Professor in the Center for Translational Medicine at the Lewis Katz School of Medicine, received an American Heart Association Outstanding Early Career Investigator Award. His interests include heart function in patients with sepsis.

Toby Eisenstein, PhD, Co-Director of Temple's Center for Substance Abuse Research, has been honored with the Founder's Award of the Society on Neuroimmune Pharmacology, recognizing her "visionary contributions."

Paul Engstrom, MD, Acting Chair of Medical Oncology and Senior VP at Fox Chase, received the prestigious Rodger Winn Award of the National Comprehensive Cancer Network (NCCN) — recognizing his role as "father" of NCCN 's Clinical Practice Guidelines in Oncology.

Elizabeth Lee, MD, Associate Director of the Internal Medicine Residency Program at Temple, has received a Unified Leadership Training in Diversity Award from the Society of General Internal Medicine.

Michael Levy, MD, PhD, Vice Chair of Medical Oncology and Director of the Pain and Palliative Care Program at Fox Chase Cancer Center, received the Lifetime Achievement Award of the American Academy of Hospice and Palliative Medicine — recognizing his outstanding contributions to shaping the direction of the field.

Robert Lux, CPA, FHFMA, Chief Financial Officer of Temple University Health System, has been named one of this year's top "150 Hospital and Health System CFOs to Know" by *Becker's Hospital Review*. The list features health care finance executives who have helped navigate their organizations through health care reform.

Heart & Cancer Updates

NORTH AMERICAN FIRST

Fox Chase will soon become the first hospital in North America to treat patients with photodynamic radiation therapy, an advanced radiation treatment technology currently available only in China. Eric Horwitz, MD, Chair of Radiation Oncology, says Fox Chase is investing $20 million to bring the therapy to Philadelphia. "This is special. This technology will enable us to do something that's never been done before in North America," he says.

HEART FAILURE

Research led by Walter Koch, PhD, Director of Temple's Center for Translational Medicine, found that the antidepressant paroxetine (Paxil) blocks GRK2, an enzyme related to heart failure, and restored heart function in laboratory tests. The findings, published in *Science Translational Medicine*, "could open the door to a new class of therapies for a disease long considered irreversible," Koch said. In addition, Temple is the only Philadelphia hospital participating in a nationwide phase II clinical trial testing the ability of end-stage heart failure patients' own stem cells to create new heart blood vessels. The cells are harvested from bone marrow, optimized in the lab, then injected into the heart with the aid of NOGA® imaging.

BETTER BIOPSY FOR PROSTATE CANCER

Traditional prostate biopsies involve removing samples from representative regions of the prostate. A new fusion-guided approach, combining MRI and ultrasound, targets areas identified as suspicious — "increasing the likelihood of finding significant cancer," says Fox Chase surgeon David Chen, MD, FACS. The approach is especially helpful for men with histories of elevated PSA yet negative biopsy results.

PANCREATIC CANCER

A recent study published in *Cell Cycle* implicates vitamin D in pancreatic cancer's resistance to chemotherapy. When Fox Chase researcher Timothy Yen, PhD, studied all 24,000 genes involved in pancreatic cancer and knocked out the gene for a protein that binds to vitamin D, he found that gemcitabine, the standard chemotherapy, killed almost all of the cancer cells. Normal cells do not need vitamin D to survive. Apparently, however, pancreatic cancer cells do.

HEART VALVE DISEASE

Artificial heart valves can wear out — but sometimes a second open-heart surgery for valve replacement is too high-risk. Therefore, Temple is offering a new FDA-approved minimally invasive option, the CoreValve® System, a "valve-in-valve" replacement that is delivered via catheter, then anchored to the old valve to restore its function. In addition, Temple University Hospital is the only hospital in the nation studying a new minimally invasive treatment for severe tricuspid valve regurgitation. The Edwards-Sapien XT® Transcatheter Valve is also implanted in a minimally invasive catheter-based procedure.

OVARIAN CANCER

Research led by Fox Chase's Chair of Clinical Genetics Mary Daly, MD, PhD, FACP, suggests that precancerous cells linked to ovarian cancer may arise in the fallopian tubes, not in the ovaries. Thus a risk-reduction approach could entail fallopian tube removal alone, sparing the ovaries and surgically-induced menopause. The findings were published in *Cancer Prevention Research*.

Timothy Yen, PhD

BRYAN LATHROP

THE LEWIS KATZ SCHOOL OF MEDICINE HAS

ONE

OF ONLY NINE COMPREHENSIVE NEURO-AIDS CENTERS IN THE U.S.

Stephen Permut, MD, JD

JOSEPH V. LABOLITO

Premier Posts

Steven Houser, PhD, FAHA, has been named President-Elect of the American Heart Association. Houser is Senior Associate Dean for Research at the Lewis Katz School of Medicine at Temple, where he also serves as the Vera J. Goodfriend Endowed Chair in Cardiovascular Research; Director of the Cardiovascular Research Center; and Chair of Physiology. With 156 local offices, over 3,000 employees, and 22.5 million volunteers and supporters, the American Heart Association funds innovative research and advocates for stronger public health policies. An alumnus of the Lewis Katz School of Medicine at Temple University, Houser is internationally regarded in heart research.

Walter Koch, PhD, has been named Chair-Elect of the Cardiovascular Division of the American Society for Pharmacology and Experimental Therapeutics. Koch is Chair of the Department of Pharmacology, founding Director of the Center for Translational Medicine, and the William Wikoff Smith Endowed Chair in Cardiovascular Medicine at Temple. He is internationally known in heart research.

Eric Kropf, MD, is one of just three surgeons in the U.S. to be elected to the American Orthopedic Society for Sports Medicine's Council of Delegates. Kropf is Director of Sports Medicine at Temple University Hospital and Assistant Professor of Orthopedic Surgery.

Darilyn Moyer, MD, FACP, has been named to the Board of Regents of the American College of Physicians (ACP), the largest medical-specialty organization in the United States. Moyer, who is Professor of Medicine, Internal Medicine Residency Program Director, and Assistant Dean for Graduate Medical Education at Temple, recently served the ACP as Chair of the Board of Governors and as Governor of its Pennsylvania Chapter. Moyer is Immediate Past President of the Katz School's Medical Alumni Association.

Stephen Permut, MD, JD, FACP, Chair of the Department of Family and Community Medicine at Temple, has been named Chair of the American Medical Association (AMA), the largest physician group in the United States. The longtime Lewis Katz School of Medicine faculty member has been a member of the AMA House of Delegates for 16 years, is former President of the Medical Society of Delaware, and has served other professional associations in leadership posts as well. A Fellow of the American College of Physicians, American Academy of Family Physicians, American College of Legal Medicine, and College of Physicians of Philadelphia, Permut has also served Temple as Senior Associate Dean of Academic Affiliations and has practiced medicine in a variety of settings in underserved, inner-city communities. He is a past President of the School's Medical Alumni Association.

Elin Sigurdson, MD, PhD, FACS, Chief of General Surgery at Fox Chase, has been elected to the Executive Council of the Society of Surgical Oncology, the premier organization for surgeons and health care providers dedicated to advancing and promoting the science, education, and practice of cancer surgery worldwide.

Susan E. Wiegers, MD, FACC, FASE, Senior Associate Dean of Faculty Affairs and Professor of Medicine at the Lewis Katz School of Medicine at Temple, has been named President of the American Society of Echocardiography, the largest international organization for cardiac imaging.

Nestor Esnaola, MD, MPH, MBA, FACS

Professor of Surgery

Associate Director, Office of Cancer Health Disparities & Community Engagement

Fox Chase Cancer Center

As a professional health advocate and educator, Evelyn González makes a practice of asking a very telling question when she speaks at community gatherings and support groups.

"Has anyone here benefitted from clinical research?" she asks. Usually, there's no response. "Okay," she continues, "has anyone here ever taken an over-the-counter pain pill or allergy medication?" When every single hand goes up, she's proven the point: All of us have benefitted from clinical research, personally.

"It's peculiar," says González, Senior Director of the Office of Community Outreach at Fox Chase Cancer Center. "We know that clinical research moves medicine forward. Yet it's an abstract kind of knowing. We don't really 'get' that when we take a medication or undergo a screening or treatment, that there were real people just like us behind it, people who participated in research to prove its effectiveness and safety."

Most Americans understand that new medicines and devices require Food and Drug Administration (FDA) approval — but less clear, apparently, is that the FDA relies on clinical data to make its decisions. Clinical data come from patients. Without volunteers for clinical studies, progress can grind to a halt. According to the National Cancer Institute, 40% of 500 recent cancer treatment trials had to be closed prematurely because too few patients enrolled. Moreover, only 3% of adult cancer patients participate in clinical research in the first place. Something's not right.

A recent Research!America survey found that more than 72% of Americans said they would participate in a clinical trial if their physicians recommended it. To capitalize on this willingness, we need to raise awareness that clinical trials exist — and can extend, even save, lives. Studies show that when patients from all walks of life are better informed about clinical trials, they are far more willing to participate.

"Advancing medicine is a partnership between patients and physicians," says Fox Chase surgical oncologist Nestor Esnaola, MD, MPH, MBA, FACS, Associate Director of Cancer Health Disparities and Community Engagement. "As health care professionals, it is our responsibility to communicate this. Then patients will understand and reciprocate."

BY GISELLE ZAYON
Photography by Cardoni

BUTTONS: CLINT BLOWERS

Esnaola came to Temple in September 2012 from the Hollings Cancer Center at the Medical University of South Carolina (MUSC). There, too, he was troubled by the pervasive lack of public understanding about how medicine is advanced. But then MUSC did something that wowed him: an awareness campaign about clinical research, aimed at both patients and staff. "I'd never seen it done before. Yet it struck me as so logical, so necessary — one of those 'why has no one done this before' kind of things," Esnaola says.

Once in Philadelphia, Esnaola began laying the foundation for Temple to launch a research-awareness campaign of its own. He spoke with González, the head of health communications. He spoke with Margaret von Mehren, MD, Associate Director of Clinical Research at Fox Chase. Like a super-strong magnet, "Be the Breakthrough" drew them right in. The idea also received the essential backing of Fox Chase Cancer Center's President and CEO, Richard I. Fisher, MD, a renowned oncologist who treats patients and conducts important research of his own.

"Clinical research is monumentally important," says Fisher. "It's where bold science and breakthrough medicine converge to improve patient outcomes, to improve health — of individuals, of entire nations. Without it, there are no critical discoveries, no breakthroughs."

So, after much careful planning, "Be the Breakthrough" was launched at Fox Chase Cancer Center in July 2014. Its first year has now concluded — producing very exciting results.

"Advancing medicine is a partnership between patients and physicians," Esnaola says.

JUST ONE GOAL

Trials of investigational drugs are the kind most people know about, but there are other kinds of trials, too. There are trials that help answer questions like what causes a disease, trials about ways to prevent disease or diagnose it sooner, and trials aimed at helping chronically ill people live with less pain. Clinical research spans the continuum of health. Research is complex. "Be the Breakthrough," however, is simple. It has one goal: to start a conversation among patients and staff about clinical trials: what they are, why they are important, what enrolling in one entails.

All physicians, scientists, and staff are part of the campaign. "Everyone who meets patients and families is involved," González explains. "Our roles vary with our job responsibilities, but everyone is an ambassador for clinical research."

For most staff members, the role is simply to say to patients, "We would love to tell you about trials here that could extend your options," and then offer to connect that patient with a clinical research professional who will provide all the details. González explains that Fox Chase employs a full-time clinical trials educator who meets with patients and families to explain the clinical research process. Together they review "Be the Breakthrough" pamphlets that outline key facts in language that is clear and easy-to-understand.

Posters, banners, and other "Be the Breakthrough" materials have been placed in every corridor, waiting area, and exam room throughout Fox Chase. Wherever you go, staff wear red-and-white campaign buttons. Walk most anywhere in the hospital, and you'll find another "Be the Breakthrough" banner around the next bend. These items start conversations that could lead to a patient's participation in a clinical study.

"A patient must meet strict eligibility criteria to be invited to enroll in a trial, yet with 200 trials underway at any given time, chances are good that Fox Chase has an appropriate trial to offer most patients — except when the cancer is quite rare," says Margaret von Mehren, MD, Physician Director of the Clinical Trials Office.

Von Mehren explains that when there's a good match between a patient and a trial, all the information about the trial is disclosed and discussed up front. In collaboration with the patient's physician, a clinical research coordinator for the study will sit down with the patient and family to explain what the study is all about: its goals, benefits, and risks.

Patients learn that the plans for all studies have been reviewed and approved by an Institutional Review Board that follows strict scientific and ethical principles to ensure participant safety. Patients learn that all patients get the highest standard of care whether they do or do not enroll in a trial. In a process called Informed Consent, patients learn about the protocol for the trial, how it will be conducted, what will happen, step by step. If English is not the patient's first language, certified medical interpreters are available to help. Financial counselors look at each patient's medical insurance coverage to determine what, if any, extra costs might arise in connection with the trial. Generally, there are none. Patients learn that participating in a trial is voluntary. They can withdraw at any time, though most don't.

All questions are answered, and all details are discussed. "Patients need good information in order to make the decision about whether to participate," von Mehren says.

Whether care is connected with a trial or not, Fox Chase provides navigation assistance to guide patients through the steps that their diagnosis and treatment require. "It is important to be clear and compassionate. Dealing with cancer is stressful enough. We don't let unanswered questions become an additional burden for patients to take on," von Mehren says.

WE, THE BREAKTHROUGH

"Be the Breakthrough" posters depict men and women of different racial and ethnic and backgrounds. "We're showing diversity purposefully," Esnaola explains.

Although the NIH established guidelines for the inclusion of women and minorities in clinical research nearly 20 years ago, participation by minority populations remains low. Hispanics, for example, make up more than 16% of the U.S. population, yet represent only 1% of clinical-trial participants.

People are not all the same. With different genetics, family histories, and lifestyles, certain groups are at higher risk for specific diseases. Gender, race, and ethnicity affect health care access and outcomes. Patients can even respond differently to the same treatment. "That is why getting participation from diverse patients in trials is key. Science requires real-world diversity," Esnaola says.

Grace Ma, PhD
Laura H. Carnell Professor of Public Health
Director, Center for Asian Health
Temple University

Grace Ma, PhD, and Carolyn Fang, PhD, *target* minority participation. Ma is Director of Temple University's Center for Asian Health, and Fang is co-leader of the Cancer Prevention and Control Program at Fox Chase. Their collaborative studies focus on Asian Americans, for whom cancer is the leading cause of death.

"Asian Americans are the fastest-growing racial group in the country — yet the least-studied group when it comes to cancer prevention," says Ma. "We are working to change this, with research targeting the biological, cultural, behavioral, and socioeconomic determinants of Asian American health."

One particularly relevant issue is cervical cancer. Since the Papanicolau (Pap) test for early detection of cervical cancer was introduced 30 years ago, the overall mortality rate for cervical cancer has steadily decreased in the U.S., "but not among Vietnamese, Korean, and Chinese women. Their utilization of the Pap test is the lowest among all the ethnic and racial subgroups," Fang says. "To change this, we need to understand why."

Fang and Ma have learned that most Asian American women in immigrant communities know relatively little about cervical cancer. They are not familiar with its risk factors and screening guidelines. Moreover, their beliefs about cervical cancer are scientifically inaccurate — for example, that cervical cancer is caused by menopause or by multiple childbirths. That the Pap test is only for sexually active women. That health care is only for the sick, not for prevention or early detection. "These deep-rooted beliefs can lead to late-stage detection of a disease that is highly preventable," says Ma.

Beliefs can act as huge barriers to health care. So can logistical barriers, such as unfamiliarity with the American health care system, lack of health insurance, and limited English proficiency.

Ma and Fang crafted a program intended to move women beyond every single barrier identified. The goal was to see what impact the program would have on Pap test rates. The results were exciting. Participants had a 70% increase in screening rates, compared to an 11% increase among women who did not participate. Broad implementation of this type of program could have a huge impact.

Ma and Fang use a special tactic in their research: engaging community members to participate in the research process. They choose women who are trusted, respected, and well-known in the community to serve as community ambassadors in studies. They are trained to help educate other women and dispel myths. Sometimes they serve as navigators, helping to make doctors' appointments for women, accompanying them, arranging transportation — whatever the protocol necessitates. "Community ambassadors are essential liaisons between scientists and research participants. They build the trust that successful research requires," Fang says.

"Research is not something done to people. It is done with people," says Ma.

As Ma says, "Research is not something done *to* people. It is done *with* people — especially those who are medically underserved."

Lynne Alston
Entrepreneur &
Breast Cancer Survivor

The neighborhoods served by Temple University Health System hospitals are nothing if not multicultural. "The diversity of our service area gives us a unique opportunity to become a national model for minority clinical trial accrual," Esnaola says. In fact, with funding from the National Cancer Institute, Fox Chase is training community ambassadors in dozens of neighborhoods to help educate their neighbors about the importance of research. "Without participation by racial and ethnic minorities, science is incomplete," González says.

GETTING ENGAGED

Fears and misperceptions about research are not exclusive to immigrants. Almost everyone has some.

People worry that participating in a trial means "being experimented on" or risking getting a placebo instead of a treatment. Not true. Every study is conducted in the safest possible way, and all patients in all studies receive the highest standard of care. People fear that being told about a trial means you've run

Evelyn González, MA
Senior Director, Office of Community Outreach
Fox Chase Cancer Center

out of options. Not true. People fear that studies supply substandard care. In fact, because patients in studies are followed by research and treatment experts, they receive especially close care.

Lynne Alston learned all of this in a hurry in April 2014, when she was diagnosed with triple-negative, stage III breast cancer. As a "serial entrepreneur," learning new things is her business. "No matter the situation, I always pursue the three E's: engagement, empowerment, and enlightenment," she says. This philosophy has been her ticket to everything from insurance sales to high fashion. Now it's informed her cancer journey as well.

After having a lumpectomy at a community hospital, Alston decided to come to Fox Chase, a nationally certified comprehensive cancer center, to continue her care. Comprehensive cancer centers have more treatment options to offer, including experimental ones. "To my way of thinking, investigational medicines must have good potential," Alston says. "Why would all these smart doctors and scientists study them if they didn't?"

Lori J. Goldstein, MD, Alston's physician, leads Breast Cancer Clinical Research at Fox Chase — and Alston hoped to enroll in one of her treatment trials. "When Ms. Alston learned that we did in fact have an appropriate trial for her, she wanted to get started right away," said Goldstein, who is Director of the Naomi and Phil Lippincott Breast Evaluation Center and Deputy Associate Director of Clinical Research.

The trial involved eight rounds of infusions over three months. In between, Alston made frequent visits for monitoring. She experienced some unpleasant side effects, but Goldstein watched her closely and addressed them, supporting her every step of the way.

Alston is doing well today. She is grateful for Goldstein and "all the amazing, giving people" she has met along the way. She has derived satisfaction from being part of a process that will help expand options for other patients someday.

"Options are so important when you have a serious disease, and that is what clinical research is all about, expanding options," González says.

A number of strategic programs at Fox Chase help expand options for patients like Ms. Alston. Each and every one links to clinical research in some way.

In June 2014, Fox Chase became the only cancer center in Philadelphia and one of just a handful in the nation to offer new patients next-business-day appointments. Since launching the Rapid Access Service, new patient appointments have increased 14% and online registrations increased 41%. This means more patients seeking care at Fox Chase will learn about clinical research. In addition, 29% more research grant applications were submitted by Fox Case investigators last year than the year prior, and last year new grant awards totaled nearly $41 million. This means the clinical research portfolio is growing. And one more essential statistic: Since launching "Be the Breakthrough" in July 2014, patient participation in clinical trials at Fox Chase increased 60%.

"Options are so important — and that is what clinical research is all about, expanding options," González says.

"To build on this momentum, "Be the Breakthrough" will be rolled out at Temple University Health System's other hospitals to benefit patients with dozens of different diseases," says Susan Fisher, PhD, Director of the Temple Clinical Research Institute. "Temple has hundreds of trials underway," Fisher says. "Every trial is important. Likewise, every patient in every trial is in fact making a breakthrough, because with every patient, science advances. More is learned."

Yesterday's research created today's standards of care. Today's research creates the advancements of tomorrow.

Stoking the clinical research engine is the ultimate campaign to move medicine ahead.

For more information about clinical trials at Fox Chase Cancer Center, call 1-888-FOX CHASE (1-888-369-2427). For more information about "Be the Breakthrough," contact Evelyn González at (215) 728-3689.

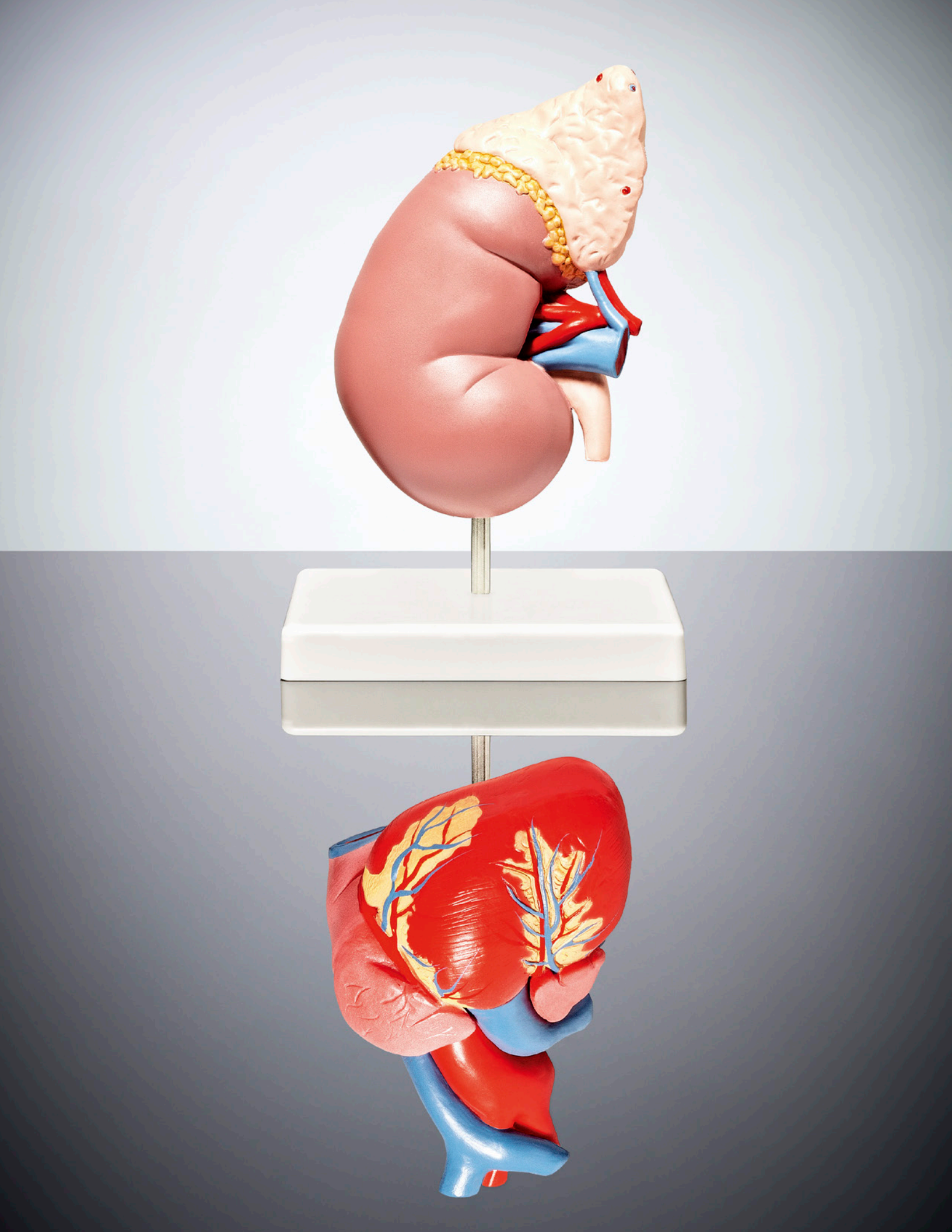
Chronic KIDNEY HEART Disease:

Getting to the HEART of the Matter

Some 31 million people in the United States live with chronic kidney disease. The vast majority don't know it, because the disease is often silent and symptomless. By the first indication that something is wrong, the condition may already be in the late stages. A deeper surprise is that many people with chronic kidney disease die of *heart* disease before their kidney disease is ever detected.

The link between kidney disease and heart disease first came to light in the late 1990s. Much about it still remains unknown. But the

By KARA ROGERS • *Photograph by* CLINT BLOWERS



connection between the diseases makes sense. "The kidney is a vascular organ that is highly linked to the cardiovascular system," says Crystal A. Gadegbeku, MD, FAHA, Chief of Nephrology at Temple University Hospital and Associate Professor of Medicine at Temple's Lewis Katz School of Medicine.

The kidneys have many functions. "Many people think of the kidneys solely as an organ responsible for waste removal. Actually, they are also important in blood-pressure regulation, maintaining acid-base and mineral balance, producing red cells in the bloodstream, and in bone health. Research continues to enlighten us on what the kidneys do," says Gadegbeku.

Given the multitude of kidney functions, chronic kidney disease impacts systems throughout the body. But most significant are its effects on the heart. "Heart disease is an astonishing 20 to 30 times more common in patients with chronic kidney disease than in the general population," Gadegbeku says.

A Fellow of the American Heart Association, Gadegbeku not only treats patients with kidney disease but is also an emerging leader in research illuminating the kidney-heart connection. She has been active in multiple NIH-funded kidney and kidney-heart studies involving thousands of patients nationwide, including the African American Study of Kidney Disease and Hypertension, the Chronic Renal Insufficiency Cohort (CRIC) study, the Nephrotic Syndrome Rare Disease Clinical Research Network (NEPTUNE) study, and the Systolic Blood Pressure Intervention Trial (SPRINT).

Through these studies, Gadegbeku and colleagues investigate unique cardiovascular risk factors related to kidney disease as well as traditional risk factors for both diseases, such as hypertension and diabetes. "There are complex interactions between the kidney and heart. We are bringing together teams of scientists with multidisciplinary expertise to study the problems. These are exciting times for kidney research that will improve patient care in the future," Gadegbeku says.

In 1958, when kidney dialysis was called "vivodialysis" and the science was still emerging, Carmen Bello, MD (at left), and Roger Sevy, MD, PhD (right), fine-tuned an early "artificial kidney" machine at Temple. Bello was Professor of Pharmacology. Sevy, then Chair of Pharmacology, went on to become Dean of the School of Medicine at Temple.

ADVANCED CLINICAL CARE

Temple's long-standing nephrology expertise is well-respected locally and regionally. Part of what makes the medical center a top-choice destination for kidney disease is its participation in innovative clinical research. Clinical trials offer many patients the chance to benefit from emerging treatment options. "With full-service heart and kidney programs — including kidney and heart transplantation — we are uniquely equipped to care for very complex patients," Gadegbeku says, crediting Temple's "unparalleled collaboration across the disciplines of nephrology, cardiology, and transplantation."

"Because most patients with chronic kidney disease aren't diagnosed until their kidneys are failing, it is essential that we learn more about prevention and early detection, effective treatments, and possible cures," Gadegbeku notes. Today, the options for patients whose kidneys fail completely are limited to transplantation and several forms of dialysis. Neither is curative, and both require close monitoring and special care.

In addition to directly managing care for patients at six kidney-dialysis centers in the Philadelphia region, Temple's outreach for kidney and pancreas transplantation extends to the tri-state area.

But while dialysis is lifesaving, kidney transplantation is the treatment of choice when kidneys fail. "The university's organ-transplant program ranks among the best in the country," explains Antonio Di Carlo, MD, CM, FACS, FRCSC, Chief of Abdominal Organ Transplant Surgery at Temple University Hospital. Di Carlo specializes in kidney, combined heart-kidney, pancreas, and liver transplantation.

"At Temple, cardiologists, nephrologists, transplant curators, donor curators, intensive-care specialists — all are on-hand to help coordinate and perform transplants. It is a city of people treating each patient," Di Carlo says.

Di Carlo's team has pushed the boundaries of innovation. Using minimally invasive surgery, a healthy kidney can be removed from a living donor through a small incision in the abdomen. The team has also combined minimally invasive procedures with robotic surgery to remove diseased kidneys, speeding recovery times for patients.

Transplant recipients treated at Temple have made remarkable recoveries. "Many of our kidney-transplant patients are able to do everything that they could do before. We even have heart-transplant recipients who are participating in 5k and 10k runs," Di Carlo says.

Kidney health must be monitored carefully not just for patients who have received a kidney, but for all patients with solid-organ transplants. Therefore, kidney specialists play an important role within the multidisciplinary team of experts who take care of transplant patients. "We have the expertise to address the broad range of kidney-related issues that arise in transplantation," Gadegbeku says.

KATZ SCHOOL OF MEDICINE YEARBOOK COLLECTION

Crystal Gadegbeku, MD

ED CUNICELLI

"What I find special about working at Temple is the close-knit relationships among physicians and staff with far-ranging expertise. We work harmoniously to provide a spectrum of experienced judgment, which translates to outstanding patient care," she notes. "Temple's unique environment is ideal for kidney-disease patients because their cases are often complex, involving multiple medical complications."

RESEARCH INROADS

While on faculty at the University of Michigan, Gadegbeku co-led the development of a new kidney research core at the George M. O'Brien Kidney Center, an interdisciplinary cooperative research center funded by the National Institutes of Health. She continues to hold a leadership role there, and has established Temple as one of the research sites in its consortium, which studies data from more than 1,000 patients with kidney disease. Gadegbeku says the scientific information drawn from Temple's diverse patient population provides an unsurpassed resource for bench-to-bedside research activities.

When Gadegbeku came to Temple in 2011, part of what drew her was the chance to take her career to the next level as a physician-scientist, educator, and public health care advocate. As Assistant Director of the Temple Clinical Research Institute, Gadegbeku is committed to expanding clinical and translational research initiatives with a specific focus on health disparities. It is essential, she says, that people of every ethnic and racial background not only receive the health care they need, but also have the opportunity to participate in research to help identify effective prevention strategies and treatments.

We are not all the same. African Americans are three to four times more likely than Caucasians to suffer from kidney disease. Hispanics, Latinos, and Native Americans are also disproportionately affected. Since Philadelphia is home to a rich mix of populations, kidney disease is reflected in higher proportion here than in many other areas.

"The increased burden of kidney disease among certain groups is probably caused by a combination of genetic susceptibility and environmental exposures," Gadegbeku says. She and her colleagues are actively exploring a recently discovered genetic mutation common in African Americans that is associated with kidney disease. Historically, certain variations in this gene helped protect people from Sleeping Sickness, a disease endemic to certain parts of Africa. Understanding this genetic variation may lead to prevention and treatment strategies.

Exploring the high rates of cardiovascular disease in patients with kidney disease remains an important research focus for Gadegbeku. One of her long-time research partners is cardiologist Martin G. Keane, MD, FACC, FAHA, FASE, Medical Director of Temple's Echocardiography Laboratory. Through their collaboration in the largest epidemiological study of chronic kidney disease in the U.S., Keane and Gadegbeku have confirmed that a protein involved in phosphate metabolism, fibroblast growth factor 23 (FGF23), is an important mediator of heart disease in patients with chronic kidney disease.

> "Heart disease is an astonishing 20 to 30 times more common in patients with chronic kidney disease than in the general population," Gadegbeku says.

"FGF23 is associated with left-ventricular hypertrophy in kidney disease patients," says Keane. Hypertrophy involves a thickening of the heart wall. "Through echocardiography, we can *see* how kidney disease is causing heart problems," he says.

The relationship between kidney disease and heart disease is complex. Inflammation, metabolic abnormalities, and other biological factors are at play. When the kidneys are affected by disease, systems throughout the body begin to go awry. "Kidney disease doesn't get the 'press' that heart disease and cancer do. But it should," Gadegbeku says. "It is a global epidemic. In the United States, it is the ninth-leading cause of death."

Today, with a full roster of patients and nearly $13 million in research funding, Gadegbeku says simply, "We are trying to save lives. And doing so has meant a shift in focus from concentrating solely on kidney function, to now also looking at heart disease."

"By working together, we are able to give many patients a new lease on life," Di Carlo adds.

It's the full package: cutting-edge clinical care, education for new generations of professionals — and research aimed at getting the kidney and heart to give up some of those secrets they keep.

Kara Rogers is a science writer based in Madison, WI. To make an appointment with a Temple specialist, call 1-800-TEMPLEMED.

PREPARED FOR THE WORST

123 YEARS OF TRAUMA CARE

BY GISELLE ZAYON | ILLUSTRATION BY NICOLAS RAPP

The eyes of the world were upon Philadelphia after the May 12 derailment of Amtrak Train #188, a mass-casualty incident that made international news, with more than 200 injured and eight deaths. First-responders rushed crash victims to 11 hospitals that night — and brought the greatest number (64) and most severely injured, to Temple. "We're a very experienced trauma team," says Amy Goldberg, MD, FACS, Trauma Program Director and Chief of Trauma and Surgical Critical Care.

With 170,000 emergency visits and 2,000 trauma cases per year, Temple's emergency departments are busy — and May 12 was no exception. All emergency department beds at its main hospital and Episcopal division were occupied when the mass-casualty alert blared in. "We called in reinforcements and made made disposition plans for the emergency patients already in house. When police cars and ambulances began arriving from the crash site, we were ready," said Michael DeAngelis, MD, FAAEM, Associate Chair of Emergency Medicine.

Emergency-triage specialists assessed each victim's condition upon arrival, assigning care to the appropriate team of emergency and trauma care experts. Twenty-seven patients with life-threatening injuries were categorized as trauma cases. Each received the intense, controlled attention of a trauma team. "This is what we do, what we train for," said Jill Volgraf, BA, RN, CEN, Trauma Program Manager. Philadelphia Police, Homeland Security, and FBI personnel were on hand, as well as news crews eager for details. Hospital operators took phone calls from families frantic to locate loved ones. Most came from distant cities and countries, since Philadelphia-area passengers had de-boarded before the train derailed.

TRAUMA ROOTS

"Level I trauma centers are essential assets for their regions — and as this incident proved, sometimes for the nation and the world," said John Kastanis, FACHE, President and CEO of Temple University Hospital.

Temple has maintained Level I trauma certification, the highest attainable, for nearly 30 years. In addition to a dedicated trauma team that provides 24-hour in-house coverage, Temple employs a full-time emergency preparedness manager, maintains an All-Hazards Preparedness program, and regularly conducts disaster drills with regional first-responders. Temple works in emergency transport as well, with specialty-care ambulances and helicopters that cover 35,000 ground and air miles per year.

"We've been in the urgent care business for 123 years," says Robert McNamara, MD, FAAEM, Chair of Emergency Medicine. "This was one of Temple's founding aims."

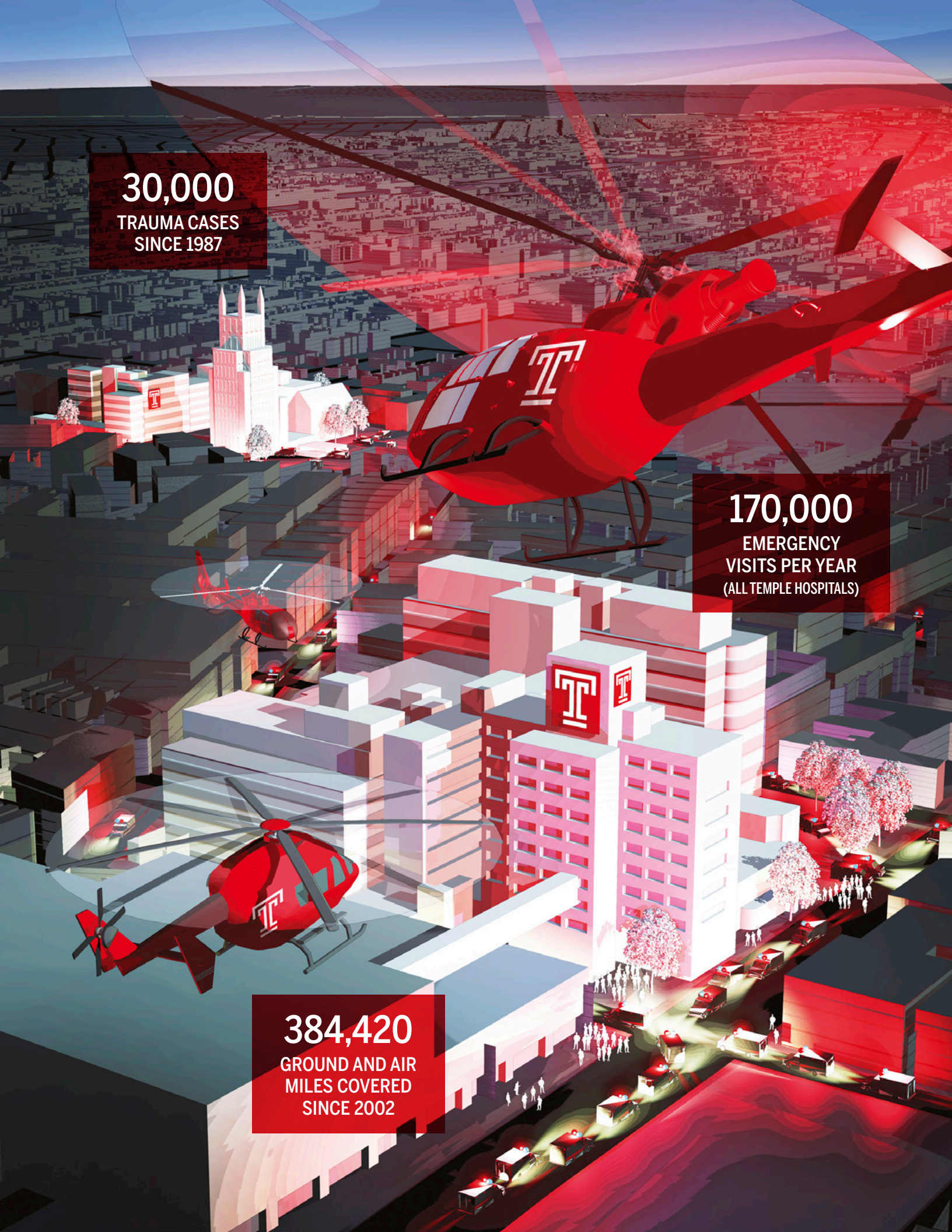
At the turn of the 20th century, Philadelphia employed a quarter-million factory workers. Mills churned out everything from metal castings to lace. North Philadelphia was home to dozens of plants, including Baldwin Locomotive Works, American's largest steam-engine manufacturer. The massive operation employed 8,000 to 10,000 workers.

"Factory accidents were commonplace," says McNamara. "And with horse-drawn ambulances, the nearest hospitals were too far away. North Philadelphia needed a hospital of its own."

On January 18, 1892, at a point central to factories and a network of busy railroads, Russell Conwell, Temple University's founder, opened Samaritan Hospital. Less than two weeks later, a local factory explosion put the new hospital to the test. The Samaritan staff managed to save three of the four most seriously injured workers. "Had there not been a hospital in the vicinity of the accident, these poor, suffering men would have been taken to a distant hospital at a loss of much time," said Dr. W. Frank Haehnlen, Samaritan's medical director.

In the century-plus that has passed since, Temple has responded to almost every kind of emergency imaginable. It has also trained thousands of emergency-response professionals who work all over the world.

"We are extremely proud of our staff and first-responder colleagues, who save lives with their swift and heroic actions, day in and day out," said Herbert Cushing, MD, FACP, Temple University Hospital's Chief Medical Officer. "This is what it's all about. This is why we are here."


30,000
TRAUMA CASES
SINCE 1987
170,000
EMERGENCY
VISITS PER YEAR
(ALL TEMPLE HOSPITALS)
384,420
GROUND AND AIR
MILES COVERED
SINCE 2002

EUGENE J. VAN SCOTT AND RUEY J. YU

NATURALLY

INVENTIVE

BY BRUCE E. BEANS PHOTO ILLUSTRATION BY C.J. BURTON

You might not know their names — Eugene J. Van Scott and Ruey J. Yu — but chances are you've used their formulations, which are key ingredients in hundreds of skin-care products used daily by millions of people in more than 85 countries. Insiders call the duo the Crick and Watson of cosmetic dermatology.

"So imagine my delight when these two legends surprised me with a $1 million gift this summer to establish the Van Scott and Yu Fund for Dermatology at Temple, a new fund for basic, translational, and clinical research," says Gil Yosipovitch, MD, Department Chair. "A million-dollar gift is transformative no matter what its source, but having it come from giants such as Drs. Van Scott and Yu makes it especially important."

SEEDS OF THE STORY

Van Scott and Yu grew up nearly 7,000 miles apart — Yu in pre World War II Taiwan, Van Scott on a farm in upstate New York. But what they both shared from an early age was a fierce curiosity.

Raised in a roofless shack in Japanese-occupied Taiwan, Yu's early years were marked by scrounging for food and by a childhood disease that left his vocal cords permanently weakened. Since he had difficulty communicating, he found solace in books, becoming a preternaturally gifted autodidact who eventually earned a full scholarship to a chemistry PhD program at the University of Ottawa, Canada. From there, he was hired at Temple's medical school, where he quietly went to work on a number of projects relating to biochemistry.

Confident and charismatic, Van Scott had no difficulty communicating, but he too shared a passion for science. He became interested in dermatology from his days on the farm, where he frequently contracted poison ivy. After serving in the U.S. Navy during World War II, Van Scott went on to the University of Chicago, where he earned his bachelor's and medical degrees and eventually completed his residency. It was in those years when Van Scott crossed paths with Stephen Rothman, MD — a pioneer of laboratory-based dermatologic research — who took him into his lab and became his mentor.

Van Scott quickly rose through the ranks. After Chicago he joined the National Institutes of Health (NIH), where he launched and headed the Dermatology Service at the National Cancer Institute (NCI). During the 1950s and 1960s, Van Scott became a national leader and one of the field's most important researchers. Among other things, he studied the effects of cancer chemotherapeutics and radiation on the proliferation of cells in human epidermis and hair follicles. He also launched clinical studies of emerging cancer therapies for benign skin diseases and malignant ones, such as mycosis fungoides — the most common type of cutaneous T-cell lymphoma. The dosing regimens he determined for the compounds he pioneered are still being used today.

Van Scott eventually became Scientific Director of the General Laboratories and Clinics at the NCI. But, in the late 1960s, drawn more to research than to acclaim, Van Scott "retired" from the NIH to join Temple's dermatology faculty, which was one of the nation's best at the time, operating out of its renowned Skin & Cancer Hospital.

It was upon his arrival at Temple in 1968 that Van Scott and Yu first met.

MEETING OF THE MINDS

"It was a big deal when Dr. Van Scott came to Temple," Yu recalls. "He was a big name at the NIH. Everybody knew who he was."

At that time, Yu had only been at Temple a year himself. Although he had no specific dermatological training, he had been working on natural sources of enzymes, from things like mold and fungus, that had specific applications to hair and skin.

"My English was not very good, in addition to my difficulty speaking," Yu recalls. "But Van Scott took interest in my work."

"Dr. Yu was unassumingly working on another professor's research," Van Scott remembers. "And it was leading him to really novel approaches to skin-related biochemistry. I was blown away. He's a bona fide genius — and there aren't many. Part of my secret has been to associate with people smarter than me, so I knew I wanted to work with him."

"Very shortly after our meeting," Yu recalls, "Van Scott called me up and said, 'Drop what you're doing and come work for me. Let's find some diseases to tackle.'"

At that time, ichthyosis — a disfiguring skin disorder that causes gray, scaly skin — was virtually untreatable. For centuries, it had bedeviled both patients and doctors. Independently, both men had already been investigating compounds that might tackle keratinization: the process by which the skin's cells lose their moisture and are replaced by horny tissue. So when they began working together, Van Scott asked Yu to think of a compound that could penetrate the thick scales and epidermis of ichthyosis patients.

"I prepared organic acids from apples, oranges, and other natural sources," Yu recalls. He blended each one into a cream base that included salicylic acid — the sole yet inadequate treatment for the condition at that time.

Patients applied variations of these new compounds to their arms several times a day for just a week. Van Scott and Yu were stunned when

"The discovery of alpha-hydroxyacids really unlocked everything," explains Van Scott. The pair had found a Holy Grail of cosmetic dermatology: a fundamental compound effective for difficult clinical cases as well as for day-to-day cosmetic concerns. Insiders call the duo the Crick and Watson of cosmetic dermatology.

Drs. Eugene J. Van Scott (left) and Ruey J. Yu (right)

many patients came back with normal, smooth skin in the tested areas. In their resulting landmark 1974 *Archives of Dermatology* paper, Van Scott and Yu coined the term "alpha-hydroxyacids" (AHAs), a category of compounds that they later discovered also had significant benefits in treating acne and in rejuvenating sun-damaged and aging skin.

"The discovery of alpha-hydroxyacids really unlocked everything," explains Van Scott.

Later, while exploring what effect AHAs would have on seborrheic keratosis — the non-cancerous spots that older people often develop — Van Scott and Yu serendipitously realized that their patients' wrinkles were disappearing. The pair had found a Holy Grail of cosmetic dermatology: a fundamental compound effective for difficult clinical cases as well as for cosmetic concerns.

Today, with 140 U.S. patents and more than 225 worldwide, their AHA compounds and subsequent formulations are found in hundreds of skin care products used daily by millions around the world. These include products produced both by NeoStrata Company Inc., the Princeton-based firm that they eventually founded, and products produced by their licensees, which have included virtually every major producer of skin-care products in the world: Aventis, Avon, Beiersdorf (NIVEA and Eucerin), Bristol-Myers Squibb, Chesebrough-Pond's, Estée Lauder, Johnson & Johnson, Mary Kay, and Pfizer.

And it didn't end with AHAs. The research Van Scott was doing in the 1960s on psoriasis led to the development of methotrexate, which a half-century later, is still the first-line drug for the condition. Likewise, the nitrogen mustard treatment he developed is still a mainstay treatment for mycosis fungoides, a lymphoma that originates in skin cells. Van Scott received the prestigious Albert Lasker Award in 1972 for this work. Yosipovitch calls "their output and their impact incredible — foundational to the field."

TO GLORY REGAINED

Today, Van Scott is 93 and Yu is 83 — and they're still at work. The duo have published 250 papers. Their many honors include the 2010 Discovery Award from the Dermatology Foundation. As they continue their investigations, they have much to look forward to, and much to reflect on when they think back.

Temple's dermatology department was closed for budgetary reasons in the late 1980s, after which Van Scott and Yu went to work with NeoStrata full time. It was a difficult thing for the duo to see. Then, in 2013, after a long fallow period, Temple's medical school Dean and Health System CEO, Dr. Larry Kaiser, recruited Gil Yosipovitch, MD, a famed dermatologist, to rebuild the department. Van Scott and Yu were heartened as they watched from afar. They knew that Temple dermatology was again headed for brighter days.

"It's a resurgence not just of dermatology but of a whole organization," says Van Scott. "Dr. Yosipovitch is a physician-scientist of the same kind we were. He is committed to research, but also has good ideas about clinical outreach. He's doing it all the right way. It is what a research university is all about — curiosity, discovery, helping people. That's what Ruey and I believe in, and we're proud that Temple does too."

"My hope, and my belief," adds Yu, "is that our gift will return Temple to prominence in dermatology. To innovate, to help people. To assist a medical student who may have come from a difficult background like I did, to make a difference in the world."

"Gene Van Scott and Ruey Yu helped usher in an incredible period of dermatological discovery and patient care at Temple — an explosion of game-changing ideas and products," Kaiser says. "And now, 50 years later, with this gift, they are doing it again."

Bruce E. Beans has written for the *New York Times* and the *Washington Post*.

PHOTOS COURTESY OF NEOSTRATA COMPANY, INC.

Arthur Feldman, MD, PhD

EXECUTIVE DEAN, KATZ SCHOOL OF MEDICINE
CHIEF ACADEMIC OFFICER, TEMPLE UNIVERSITY HEALTH SYSTEM

Q & A

You say a two-tier system of medical education is emerging in the United States that could threaten the future of medical research?

Correct. Only a few of the 17 new medical schools that have opened in the U.S. in recent years have substantive research programs and physician-scientists on faculty. It is a new model of medical education in which research plays a minimal role, if not an altogether absent one. Discoveries made at our nation's medical schools have changed the face of medicine. We must protect the engine that keeps medicine moving ahead.

Q: *What's behind this trend?*
A: Primarily, the physician shortage. The pressure to get more physicians on the front lines has spawned a fast-track model of education with an exclusive emphasis on clinical training. Moreover, some medical schools have shortened their curricula from four years to three — eliminating research. Medical research programs are very costly to maintain, especially in this era of shrinking research dollars. Going forward, more schools may reduce or eliminate their research programs. Such programs are more affordable for students and schools alike, but come at a larger cost to society.

Q: *You are a classically trained MD-PhD, founder of a research journal, and author of texts. You recently won the Lifetime Achievement Award of the Heart Failure Society of America and were elected to the Johns Hopkins University Society of Scholars. But research careers aren't for everyone. Why not leave it to the student what kind of medical school to pick?*
A: That's precisely the crux of the problem. Medicine and research are two sides of the same coin. There's no "choice" to be made. Research informs clinical decision making. And clinical observation drives further advances along the bi-directional science highway. If anything, solid scientific training for physicians is *more* essential today, with the research-driven fields of genomics, proteomics, metabolomics, and decision-analysis changing our understanding of disease, changing how we care for patients. All physicians — not just some — must learn to synthesize, critique, and apply scientific data to the care of individual patients. How we provide medical students with these skills will have a major impact on patient outcomes.

The path I took is not for everyone. But many specialty training programs (like otolaryngology and orthopedic surgery) won't even consider applicants who have not done research. To limit the career options of brand-new MD graduates is a real disservice. At the Katz School of Medicine at Temple University, we require medical students to perform scholarly research.

Q: *In June,* Science Translational Medicine *published "American Medical Education at a Crossroads," a paper you co-authored on this topic with Drs. Arthur Rubenstein (University of Pennsylvania), Marshall Runge (University of North Carolina), and Joe Garcia (Arizona Health Sciences Center). What remedies do you suggest?*
A: First, academic organizations and regulatory bodies must evaluate new models of medical education in a timely manner to determine whether they are in the best interest of students and patients. Secondly, universities must commit to bearing the significant cost of maintaining research programs — which inform the quality not just of medical education but of medicine itself. Third, we must persuade policy makers and the general public that a scientifically based medical education is a necessary investment, not an optional one. Continued cuts in NIH funding will have significant consequences for patient care. We need *enhanced* federal support.

We must assiduously avoid creating a new generation of physicians who will be unable to apply the scientific advances of medicine for the benefit of their patients.

A school of medicine is a public trust. As a nation, we must be held accountable for the quality of the medical education we provide.

Photograph by JARED CASTALDI

Arthur Feldman, MD, PhD

Stem Cells & the Heart

Raj Kishore, PhD, did not intend to become a heart researcher. But now he's among the hottest ones out there in regenerative medicine today. As a young scientist, he planned to go into tumor immunology. But in 1996, just seven days after he moved from India to the United States for a postdoctoral fellowship, he lost his mother, back home, to heart disease.

"Heart disease kills more people than all cancers combined," says Kishore, who directs stem-cell heart research at Temple. "We can prolong life for heart patients and improve their life-quality. But we do not have a cure."

A basic fact explains why heart disease is so tough to cure — and why it has cumulative effects. Unlike most cells in the body, heart muscle cells have a very limited turnover. Kishore calls them "woefully inefficient" in the face of the massive cell loss induced by a heart attack. "Medical and surgical intervention can only do so much for an organ with such limited natural ability to heal. That's why autologous stem cells, our own natural cells with regenerative capacities, hold such promise for the heart," he says. A promise many cardiologists believe has *not* been delivered.

"It is true. Stem cells have only had modest success in the heart," Kishore says. "But if you consider the context of this modest success, you'll get more excited about them."

First, look at where we're putting these cells: into a pumping organ. As the heart contracts and expands, most of the stem cells get flushed out. Moreover, they're going into diseased tissue, with high inflammation, poor blood and oxygen supply, lack of nutrition. Of every 100 stem cells delivered to the heart, perhaps two survive. "If just two cells can produce a benefit, however modest, imagine what 12 or 20 could do," says Kishore, who is pursuing multiple strategies aimed at boosting stem-cell retention, survival, and functionality in the heart.

One strategy entails sending stem cells in with a helpmate, a potent anti-inflammatory cytokine called interleukin 10 that helps mitigate tissue inflammation, so more stem cells can survive. Another tactic is to improve the health of stem cells before they're transplanted. "Remember, stem cells are our own cells; this is what makes them safe, no rejection factor," says Kishore. "But that also means they are tainted with whatever we have — diabetes, high cholesterol, and so on. So the aim is to pretreat them, restore them to a more pristine state before they are deployed."

Another tactic is to improve stem-cell plasticity. Adult stem cells are limited. The ones that become vessel cells, for instance, will not become muscle cells, and vice versa — but Kishore is coaxing them into more flexible roles by targeting a process that governs which genes in a cell are turned on or off. "Since all heart cells develop from a common ancestor stem cell, turning back the epigenetic clock may retool that stem cell's developmental 'fate,' its identity," he notes.

The exosome is another target. Tiny vesicles secreted by stem cells, and just 30 to 100 nanometers in diameter (there are 10 million nanometers per centimeter), exosomes are cargo ships stocked with small ribonucleic acids, proteins, and other "goodies" that stem cells deploy to damaged cells, such as injured heart muscle cells, arming them with protection. Stem cells as a whole are fragile, but exosomes are tough little things. Encased in a protective bilayer membrane, they can travel long distances in tissues without degrading. "Exosomes could be natural nano-devices for the delivery of new therapeutic applications, perhaps standardized into 'off the shelf' products someday," says Kishore.

In August of 2011, Kishore and his collaborators were the first to show that exosomes secreted from human hematopoetic stem cells can heal not just injured cells, but the injured heart as a whole — a phenomenon since confirmed by numerous studies. "Exosome biology, however, is in its infancy. Many unknowns must be investigated before exosomes could become a modality for therapy," says Kishore, a Fellow of the American Heart Association who has chaired several of its national scientific sessions over the years.

Before Kishore was recruited to Temple in 2014, he served on the faculties of Tufts and Northwestern Universities. He has accrued more than 100 publication credits and over $10 million in NIH and American Heart Association research grants to date — and he's only just approaching the full powers of his career.

"Traditional medicine addresses the symptoms of disease, but stem-cell therapies are shifting the paradigm. There's more work to do," he says. "But we're holding keys to a possible cure."

Photograph by JIM GRAHAM

Raj Kishore, PhD

Rhythm Section

Physicians have great new tools to treat Atrial Fibrillation (Afib), the most common type of arrhythmia (irregular heartbeat). Affecting nearly 3 million Americans, Afib is an electrical-impulse abnormality in the atria, the upper chambers of the heart. The condition can be intermittent, persistent, or permanent. "It can feel like a quivering in the heart, sometimes accompanied by lightheadedness and shortness of breath," says Joshua Cooper, MD, FACC, FHRS, Director of Cardiac Electrophysiology at Temple, known nationwide for his expertise in diagnosing and treating complex heart-rhythm problems.

Afib increases one's risk for stroke fivefold. Therefore, many patients take anticoagulant drugs, along with medications to help maintain normal heart rhythm. A procedure that resets the heartbeat with a controlled electrical shock, cardioversion, can temporarily help some patients. Yet Afib can be difficult to control — which is where experts like Cooper come in, using cutting-edge technology to perform a procedure called ablation.

After the patient is sedated, Cooper inserts five super-thin specialized catheters into large blood vessels in the groin — then guides them to the heart, using special imaging technology. Next he uses a technology called Jet Ventilation to increase the patient's rate of breathing tenfold. Quick, shallow breaths minimize the "bobbing" effect that breathing has on the heart. This helps stabilize the internal environment, ensuring precise instrument placement.

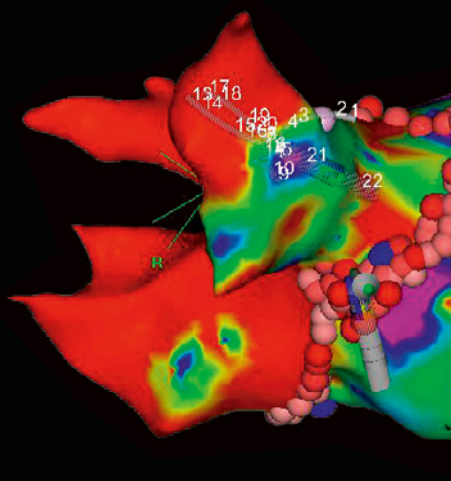
Next Cooper makes a three-dimensional map of the heart's inner-terrain using intracardiac echocardiography and a five-pronged catheter. As the prongs touch the walls of the heart, they transmit information about relative distances and positions, much like GPS technology. They also measure electrical conductivity — creating a map that depicts both the anatomical structure of the heart and the electrical properties of heart tissue (purple areas have normal voltage; abnormal spots show up in red).

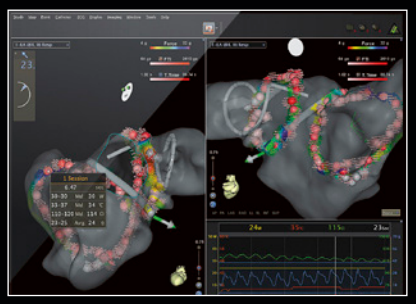
While some heart-rhythm disturbances stem from a single spot of abnormal tissue, Afib is caused by multiple clusters of misfiring cells. Therefore, the goal is to electrically isolate each cluster, and wall them off with a series of ablations, small burns made with radiofrequency energy. The goal is to create scars, because scar tissue cannot conduct electricity. "If we miss one tiny spot, errant electrical signals can escape — and cause recurrence of Afib," Cooper notes. So success depends on creating burns that overlap and which penetrate tissue at full-depth. A special force-sensing catheter provides precise control over the amount, depth, and direction of energy delivered. Too intense a burn could cause tiny bits of tissue to break off, forming a clot that could cause a stroke. To minimize this risk, Cooper uses an irrigated ablation catheter that pumps saline through several holes, cooling and washing the tissue. He also uses scar-mapping technology to track the areas he has ablated and those which still remain.

Some patients require atrioventricular (AV) node ablation. In this procedure, radiofrequency energy is used to scar the AV node, the small pathway connecting the upper chambers (atria) and lower chambers (ventricles) of the heart, to prevent the atria from sending electrical impulses to the ventricles. A pacemaker is then implanted to keep the ventricles beating properly.

"Our success rates are higher than ever," says Cooper, who also performs complex ablations for ventricular tachycardia and other arrhythmias — and uses other advanced technologies for pacemaker and defibrillator implantation. "These are just a few of the cutting-edge tools we use for heart patients at Temple," he says.

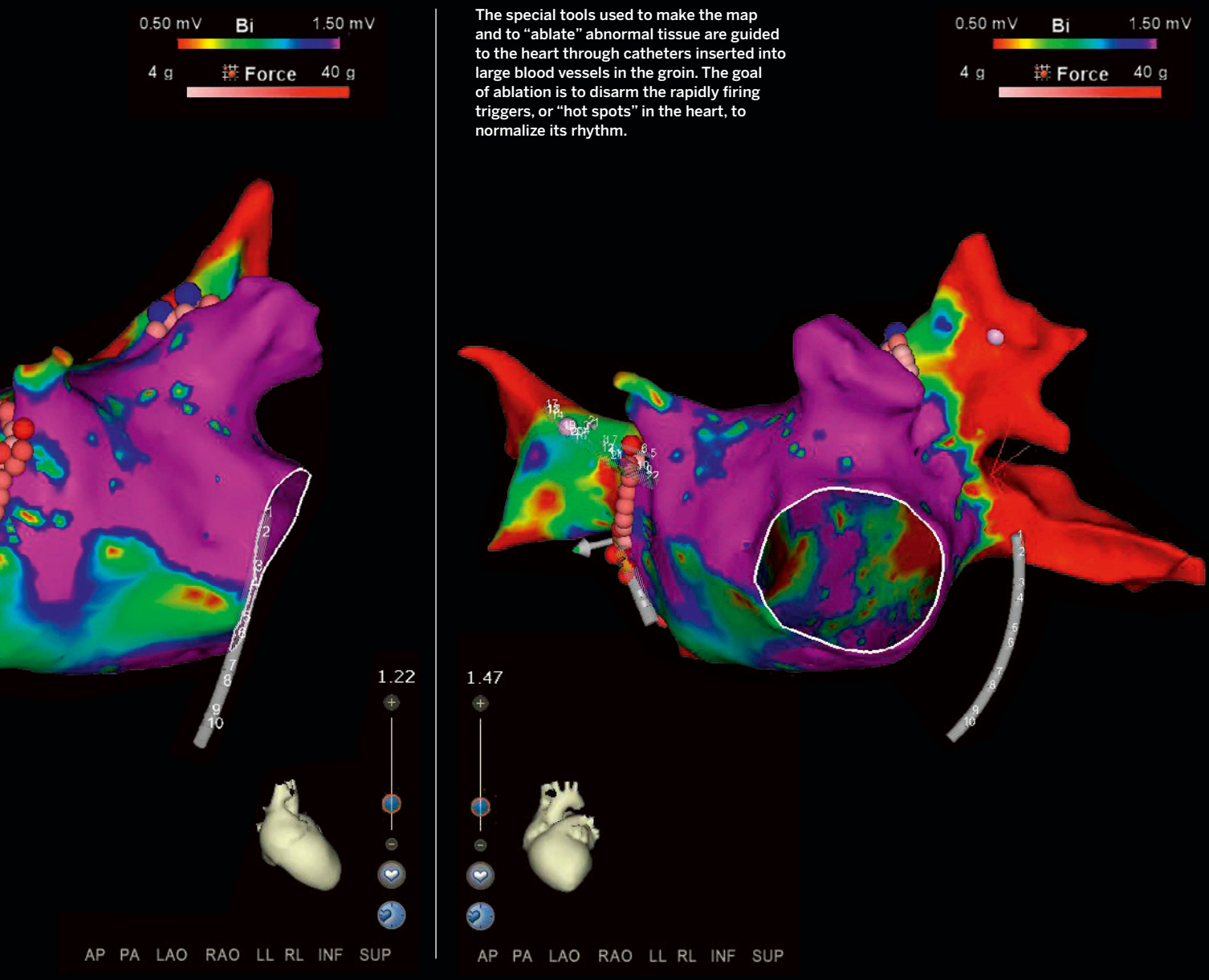
Technologies for Afib treatment enable the physician to create a three-dimensional map of the patient's heart. The map depicts the patient's unique anatomy, uses color to represent the electrical variances, and shows the tools, enabling the physician to manipulate them with precise control.



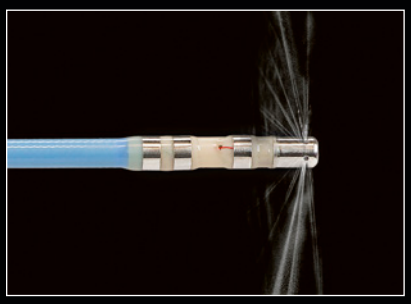


LESION-TRACKING
A sophisticated computer program creates a visual record of every ablation or burn, helping the physician track the progress of the detailed procedure. It won't be successful if one tiny errant area is missed.

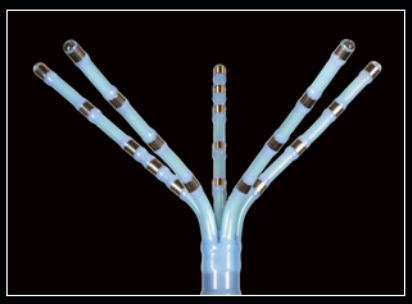
The special tools used to make the map and to "ablate" abnormal tissue are guided to the heart through catheters inserted into large blood vessels in the groin. The goal of ablation is to disarm the rapidly firing triggers, or "hot spots" in the heart, to normalize its rhythm.



PRECISE CONTROL
The flexible Thermocool® SmartTouch® Catheter uses radiofrequency energy to create tiny ablations or burns. Readings supplied by sensors at the tool's tip helps the physician assert precise control over the direction, depth, contact pressure, and amount of energy used with each burn.



COOL STREAM
Tiny jets of saline flow through this irrigated catheter's tip to keep the heart tissue cool and clean after an ablation, preventing any small clots from forming.



MAP-MAKING
As the physician gently moves the PentaRay® Catheter inside the atria, tiny sensors embedded in its "fingers" transmit information to computer software — rapidly building a "map" of the heart, like the ones above.

IMAGES COURTESY BIOSENSE WEBSTER, INC., AND DR. JOSHUA COOPER

TIMELINE

BIG AIR Advancing Lung Care

In 1943, Temple anatomist Dr. John F. Huber, identified, mapped, and named the bronchopulmonary segments. This seminal addition to the anatomical nomenclature paved the way for numerous advancements in lung care.

Pulmonary medicine was not recognized as a specialty until the 1950s, but the lungs have been a Temple focus since its pre-20th century founding, when pneumonia and tuberculosis (TB) were epidemic. Staffed by Temple experts, the Eagleville Sanatorium, one of the country's finest, put the University at the TB epidemic's fore until antibiotics turned the tide in the 1940s. Soon, however, two other diseases started mounting a swift rise: lung cancer and Chronic Obstructive Pulmonary Disease (COPD).

With world-class physicians, technologies, and research programs, Temple has made significant contributions to the understanding, diagnosis, and treatment of lung disease, with notable contributions in COPD, idiopathic lung disease, pulmonary embolism, "liquid breathing," lung cancer, mesothelioma, and the estrogen-lung cancer link. Today, Fox Chase Cancer Center and the Temple Lung Center are nationally renowned hubs for the study and treatment of lung disease. In addition, the patient outcome results of the University's lung transplant program surpass national averages.

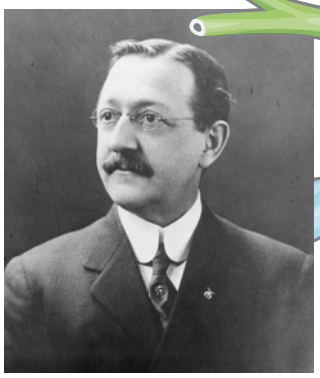
"We are often involved in setting new guidelines for breakthrough medicine and comprehensive care," says Gerard Criner, MD, Chair of Temple's Department of Thoracic Medicine and Surgery — a new department that will enable Temple to get "bigger air" than ever before in teaching, research, and patient care.

1851

Upon its opening, **Episcopal Hospital** includes two TB wards that, according to the superintendent's report, "are occupied almost constantly."

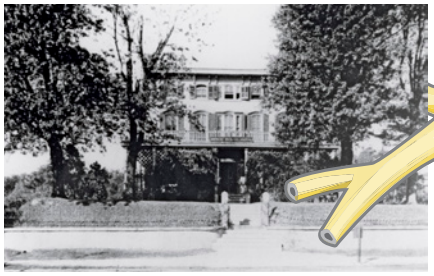
1892

At the new **Samaritan Hospital** (Temple University Hospital), **Dr. I. Newton Snively** is among the first to use antipneumococcic serum to treat croupous pneumonia. In 1903 Snively became Temple medical school's second Dean.



1905

Early faculty of the **American Oncologic Hospital** (Fox Chase Cancer Center) include **Drs. C.B. Longenecker** and **John Swan**, early experts on roentgen analysis of lung disease and the relationship of industry/environment to lung disease, respectively.

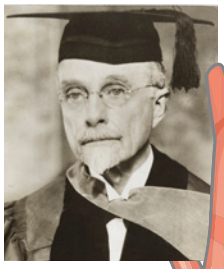


1908

The *Journal of the American Medical Association* features the pneumatic shield, invented by **Dr. W. Wayne Babcock**, Chair of Surgery at Temple. The device induces artificial pneumothorax, the surgical collapse of the lung, the preferred treatment for TB at the time.

1909

Dr. Abraham Cohen becomes founding medical director of the **Eagleville Sanatorium**, a decades-long Temple affiliate and one of America's finest TB hospitals. Cohen heads Temple's Section of Diseases of the Chest. His brother Louis and son Robert were Temple faculty as well.



1930

Dr. Chevalier Jackson comes to Temple. The father of modern **bronchoesophagology**, Jackson invented illuminated bronchoscopes to remove foreign bodies from the airway. In 1938, **Dr. W. Emory Burnett** performs Philadelphia's **first pneumonectomy**. A thoracic surgeon, Burnett later becomes Temple's chief surgeon.

1945

Temple's Chair of Anatomy, **Dr. John Huber**, is honored by the American Medical Association for his delineation of the **bronchopulmonary segments**.

1987

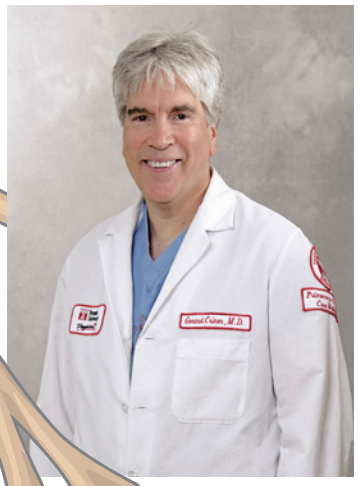
Philadelphia's first **heart-lung transplant** is performed at Temple. In 1989, Temple uses **"liquid air"** to treat fragile preterm babies, a world first. In 1993, the **Temple Lung Center** is established, centralizing services for lung disease patients.

2003

Dr. Walter Scott and Fox Chase colleagues help establish the American College of Chest Physicians Guidelines for treating stage I and II **lung cancer**.

2011

Dr. Larry Kaiser, an internationally renowned thoracic surgeon, becomes CEO of Temple's healthcare enterprise. Kaiser founded the University of Pennsylvania's Lung Transplantation Program and directed its Center for Lung Cancers and Related Disorders. Two years later, **Dr. Yoshiya Toyoda**, pioneer of the minimally invasive antero-axillary approach in lung transplantation, joins the Temple staff.



2015

Temple establishes a new Department of Thoracic Medicine & Surgery, appointing longtime Temple Lung Center Director **Dr. Gerard Criner** Founding Chair.

SNIVELY: TEMPLE UNIVERSITY LIBRARIES SPECIAL COLLECTIONS; REMAINING BLACK & WHITES: KATZ SCHOOL & FOX CHASE ARCHIVAL PHOTOS; TEMPLE LUNG CENTER, DRS. KAISER AND CRINER: TEMPLE HEALTH; SCOTT: JOSEPH HURLEY.

ALUMNI NEWS

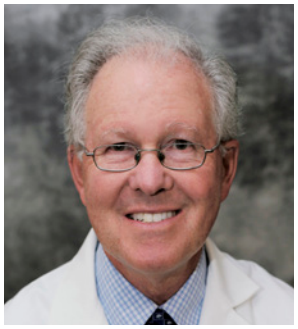
Temple's 13,000+ medical school graduates are advancing health and social welfare across the globe.

1960s

James Taylor, MD '61, North Eastham, MA, is the Massachusetts Medical Society's 2015 Senior Volunteer Physician of the Year. The award recognizes his more than decade-long commitment to the Duffy Health Center in Hyannis, MA, which provides services to homeless and vulnerable populations. "The patients are some of the most appreciative I have treated. This has been one of the most enjoyable and rewarding chapters in my professional life," Taylor said.

Robert B. Taylor, MD '61, Virginia Beach, VA, recently authored his 20th book, *Diagnostic Principles and Applications* (Springer, 2013). Taylor is former Chair of Family Medicine at the Oregon Health and Science University School of Medicine.

Palmer C. Evans, MD '67, Tucson, AZ, serves on the Board of the New York City-based Commonwealth Fund. Evans is the former Senior VP and Chief Medical Officer of the Tucson Medical Center.



Richard D. Scott, MD '68, Dedham, MA, has been honored with the 2015 Lifetime Achievement Award of the Knee Society of the American Academy of Orthopaedic Surgeons. An orthopedic surgeon at New England Baptist Hospital and Professor of Orthopaedic Surgery at Harvard, Scott is internationally recognized for his significant contributions to the field.

William J. (Terry) Kane, MD '69, Chapel Hill, NC, is Chair of the Board of First Flight Venture Center, a technology incubator in the Research Triangle Park region. He is also Consulting Professor in Community and Family Medicine at Duke University, where he formerly chaired the department. Earlier in his career he was Executive VP and Chief Operating Officer at Sharp Healthcare (San Diego, CA), and before that he served as a senior executive with US Healthcare, CIGNA, and Independence Blue Cross of Philadelphia.

1970s

David Galinsky, MD '71, Merion Station, PA, is Chief Medical Officer of the Department of Aging of the Pennsylvania Department of Health. Prior to accepting this post, Galinsky devoted 43 years to private practice in general internal medicine and geriatric medicine.

Stephen Permut, MD '72, Wilmington, DE, has been named Chair of the Board of the American Medical Association (see page 13.)

Laurence Wellikson, MD '73, Philadelphia, PA, is CEO of the Society of Hospital Medicine, the national society that represents the nation's 40,000 hospitalists.

Anthony Comerota, MD '74, FACS, FACC, Perrysburg, OH, is Director of the Jobst Vascular Institute at ProMedica Toledo Hospital and Adjunct Professor of Surgery at the University of Michigan. Comerota is former Chief of Vascular Surgery at Temple, and a past President of the Katz School Medical Alumni Association.

Joel Kremer, MD '74, Albany, NY, is Director of Research at the Center for Rheumatology at Albany Medical College. In addition, he is founding President of the Consortium of Rheumatology Researchers of North America, Inc., an independent registry that collects clinical data from observational registries for research.

Steven J. Davidson, BA' 71, MD '75, Brooklyn, NY, is Senior VP and Chief Medical Informatics Officer at Maimonides Medical Center, where he served as Chair of Emergency Medicine for 15 years.

Robin Richman, MD '76, Boston, MA, is Vice President of Physician Relations for the Massachusetts Hospital Association (MHA). Prior to joining MHA, she served in a series of executive posts with the Reliant Medical Group (formerly Fallon Clinic), Atrius Health, Harvard Vanguard Medical Associates, and Tufts.

Frank Speidel, MD '77, West Chester, PA, is Chief Medical Officer of Healthcare IT Leaders, a Georgia-based consulting firm specializing in health care IT initiatives. Prior to joining this firm, he was CEO of St. Luke's Hospital in Houston, TX.

Bruce Auerbach, BA '71, MD '78, Boston, MA, is VP, Chief Medical Officer, and Medical Director at Sturdy Memorial Hospital in Attleboro, MA. He also serves on the Board of Directors of Boston-based Coverys, Inc., one of the country's largest medical professional liability insurance providers.

Steven R. Houser, PhD '78, FAHA, Ft. Washington, PA, has been named President Elect of the American Heart Association (see page 13).

Rodger Barnette, MD '79, FCCM, has retired from his post as Chair of Anesthesiology at Temple to accept an appointment at Kijabe Hospital in Kenya, where he will practice and teach. During his three decades at Temple, Barnette served in numerous

SCOTT: COURTESY NEW ENGLAND BAPTIST HOSPITAL; HOUSER: ED CUNICELLI; RICHMAN: COURTESY MASSACHUSETTS HOSPITAL ASSOCIATION

leadership roles for the hospital, medical school, and physician practice plan — accruing accolades and honors while regularly traveling abroad to serve populations with great medical need.

Michele Johnson, MD '79, New Haven, CT, is Professor of Diagnostic Radiology; Professor of Neurosurgery; Associate Professor of Surgery (Otolaryngology); and Director of Interventional Neuroradiology at Yale Medical School. Last year, when she became the first African American woman to be named a full professor there, she said, "Teaching students to work together successfully for the patient's benefit is the real legacy I'd aspire to."

1980s

Roberta L. Gartside, MD '81, Reston, VA, has been named to the Board of the Society for Women's Health Research in Washington, DC. Gartside is a past VP of the American Society of Plastic Surgeons.

Ruth Perry, MD '82, Moorestown, NJ, received the Frank J. Osborne Memorial Award of the New Jersey Association of County and City Health Officials for her contributions to public health. Perry is Executive Director of Trenton Health Team, an alliance of providers focused on public health. Perry was an executive with Rohm & Haas for 17 years. She is also a former member of the Katz School Board of Visitors at Temple.

David S. Wilkes, MD '82, Charlotte, VA, has been named Dean of the School of Medicine at the University of Virginia. Prior to accepting this post, he was Executive Associate Dean for Research Affairs at Indiana University School of Medicine, where he also served as the Calvin English Professor of Medicine, Microbiology, and Immunology. Wilkes has also been Principal Investigator for the Robert Wood Johnson Foundation's Harold Amos Medical Faculty Development Program, one of the nation's leading initiatives to increase the number of minorities on medical school faculties.

William E. Narrow, MD '83, MPH, Silver Spring, MD, Associate Director of Research at the American Psychiatric Association, served as Research Director for the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), released in 2013 after 14 years of development. The DSM, published by the American Psychiatric Association, is the authoritative guide to the diagnosis of mental disorders for clinicians and researchers in the U.S. and much of the world.

Steven Lindheim, BA '80, MD '84, Dayton, OH, is Professor of Obstetrics and Gynecology and Director of Reproductive Endocrinology and Infertility at Wright State University's Boonshoft School of Medicine. Prior to joining Wright State, he was Medical and Scientific Director at the Arizona Reproductive Institute, and before that directed the University of the Cincinnati Center for Reproductive Health.

Darilyn Moyer, MD '85, Lafayette Hill, PA, has been elected to the Board of Regents of the American College of Physicians (see page 13).

Karen Rizzo, MD '85, Lancaster, PA, just completed her term as President of the Pennsylvania Medical Society. She is a former Trustee of the Society and a past President of the American Academy of Otolaryngologists/Head & Neck Surgery. Rizzo practices with Lancaster Ear, Nose and Throat. She's served on medical mission trips to Vietnam, South Africa, and Egypt.

Elizabeth Drum, MD '86, Wyncote, PA, was named MedicalMissions.org's 2015 Physician of the Year for international service. A pediatric anesthesiologist and former Temple faculty member, Drum has participated in 23 medical mission trips to Haiti, India, Latin America, and sub-Saharan Africa. She also founded a scholarship program through the American Society of Anesthesiologists to enable U.S. anesthesiology residents to spend a month in Ethiopia. Last year, MedicalMissions.org posted more than 28,000 mission opportunities on its database.

Michael DellaVecchia, MD '88, PhD, FACS, FICS, Berywn, PA, has been named President of the Philadelphia County Medical Society. A former Director of the Emergency Department at Wills Eye Hospital in Philadelphia, DellaVecchia has served as a consultant to NASA and holds several U.S. patents for medical devices, ultrasonics, and photonics.

Mary Davis, MD '89, FACP, Pound, WI, is Chief Medical Officer of Network Health, the Wisconsin-based health insurance company. Before that she worked with Dean Health Plan, in Madison, WI, as Senior VP and Chief Medical Officer, having also managed a private consulting firm specializing in health plans, software firms, and provider systems.

Roger Giordano, MD '89, Henrico, VA, is Medical Director of the Inpatient Rehabilitation Center at HCA Virginia's Parham Doctors' Hospital. He is active in the community as a speaker

JOHNSON: COURTESY YALE UNIVERSITY; PERRY: MATTHEW RAINEY; WILKES: COURTESY UNIVERSITY OF VIRGINIA HEALTH SYSTEM; MOYER: JOSEPH V. LABOLITO; RIZZO: COURTESY PENNSYLVANIA MEDICAL SOCIETY; DAVIS: COURTESY NETWORK HEALTH

for multiple sclerosis and Parkinson's disease patient and physician education.

1990s

Scott Epstein, MD '90, Clarks Summit, PA, is Medical Director of the Physical Medicine and Rehabilitation Department at Wayne Memorial Hospital, where he also serves as medical staff President.

William J. Sonstein, MD '91, FACS, Old Westbury, NY, is Chief of Neurosurgery at North Shore-Long Island Jewish Plainview Hospital. He specializes in surgical options for revision spine surgery including posterior lumbar interbody fusion, kyphoplasty, and X-STOP interspinous spacers.

Jay S. Talsania, MD '91, Allentown, PA, is a hand surgeon with Orthopaedic Associates of Allentown. Talsania recalls deciding to specialize in orthopaedics and hand surgery "when I met the orthopaedic surgery residents at Temple," and when **Joe Thoder, MD '83**, lectured on hand surgery. "Every part of what Dr. Thoder talked about excited me," said Talsania, who has traveled to Guatemala numerous times on medical missions.

Anthony Frempong-Boadu, MD '92, Brooklyn, NY, is Director of the Division of Spinal Surgery at New York University Langone Medical Center, and also serves as Director of the Neurosurgery Spine Fellowship program at NYU School of Medicine.

Nancy C. Fan, MD '93, Wilmington, DE, is serving her second term as President of the Medical Society of Delaware. Fan practices obstetrics/gynecology at St. Francis Healthcare.

Col. Nelson Rosen, MD '94, Green Neck, NY, a pediatric surgeon, is deployed with the U.S. Army, leading the Third Medical Command's Operational Command Post in Kuwait, overseeing all Army medical units operating in the Centcom area of operations, which includes all medical units in Iraq, Kuwait, Afghanistan, and the medical logistics hub in Qatar.

Phil Hess, MD '95, Helena, MT, is Medical Director of the Big Sky Medical Center. Hess has nearly 20 years' experience in rural health, hospital medicine, emergency service, and critical access. Most recently, he practiced in Anchorage, AK, where he served as medical director of two rural health clinics.

Jeffrey P. Keverline, MD '95, Lenoir, NC, an orthopedic surgeon associated with Carolina Orthopedic Specialists, recently received Caldwell Memorial Hospital's George M. Hancock, MD Excellence in Patient Care Award.

David J. Mauro, MD-PhD '96, Washington Crossing, PA, is Chief Medical Officer and Executive VP at Advaxis, Inc., a clinical-stage biotechnology company that develops cancer immunotherapies. Mauro is former Executive Director and head of oncology clinical development at Merck & Co., Inc., having also directed medical strategy for the drug Erbitux at Bristol-Myers Squibb.

Christopher Kowalski, MD '97, Yardley, PA, is a general surgeon and fellowship-trained laparoscopic abdominal surgeon based at St. Mary Medical Center in Langhorne, PA. Prior to this appointment, he was associated with Temple University Hospital and with Susquehanna Valley Medical Specialties in Bloomsburg, PA.

S. Carolyn Acker, MD '99, Atlanta, GA, is Associate Professor of Psychiatry and Behavioral Sciences and Medical Director of the General Psychiatry Practice at the Emory University School of Medicine.

2000s

Joel J. Shu, MD '02, Mellville, NY, is Vice President of Clinical Transformation and Population Health at Catholic Health Services (CHS) in Long Island, NY, a system that includes six acute care hospitals, three nursing homes, a home nursing service, and other components.

Gina Suh, MD '04, Redwood City, CA, is a clinical Assistant Professor of Medicine in the Section of Infectious Diseases at Stanford University. Her clinical and research interests include orthopedic infections.

William Barker, MD '06, Moorestown, NJ, practices family medicine with the Inspira Medical Group in the Woolwich region. Following medical school, Barker served as a brigade surgeon with the U.S. Army and was deployed to Afghanistan — receiving the Global War on Terrorism Medal and a Bronze Star for his service.

John T. Riehl, MD '06, Gulf Breeze, FL, is a fellowship-trained orthopaedic trauma surgeon who is now practicing with the Andrews Institute for Orthopedics & Sports Medicine's Orthopaedic Trauma & Fracture Care team.

Utpal Patel, MD, PhD '08, Palm Harbor, FL, a fellowship-trained Mohs surgeon, recently helped to establish national standards of care and best practices in the field of dermatology as a member of the American Academy of Dermatology's Clinical Guidelines and Research Committee.

SAVE THE DATE
CLASS REUNION
FOR MD ALUMNI IN CLASS YEARS ENDING IN 1 AND 6
MAY 6 & 7, 2016

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ALUMNI AWARDEES

Nine graduates of the Katz School of Medicine at Temple University were honored last spring during the combined reunion celebration for MD alums who graduated in years ending in 0, 4, 5, and 9. One award was presented by the University, the remainder by the Medical School.

COURTESY WASHINGTON & JEFFERSON UNIVERSITY

The Alumni Distinguished Service Award

THE HIGHEST HONOR THAT TEMPLE UNIVERSITY CONFERS ON ITS ALUMNI, RECOGNIZING EXEMPLARY LEADERSHIP, SERVICE, AND PHILANTHROPY

E. Ronald Salvitti, MD '63 "In the beginning, all I wanted was opportunity. Now it is my goal to see that others have that chance," says E. Ronald Salvitti, MD '63, who has spent four decades supporting causes at Temple that range from the strategic to the social. He helped the school build its spectacular medical education and research building. He established professorships, program funds, and scholarships, most notably the Salvitti Family Scholarship, which provides substantial assistance to eight medical students on an ongoing basis, and the John Daly Endowed Merit Scholarship Fund, honoring the school's emeritus dean. As Founder and Medical Director of the Southwestern Pennsylvania Eye Center, Salvitti lives in the Pittsburgh area yet makes Temple, in Philadelphia, his second home. The former Chair of the Lewis Katz School of Medicine's Board of Visitors says he feels privileged to have worn so many hats over the years to help a university he loves. His leadership included service on the University President's Advisory Board.

The Alumni Service Award

HONORING OUTSTANDING ALUMNI WITH EXEMPLARY RECORDS OF SERVICE AND GENEROSITY TO THE SCHOOL

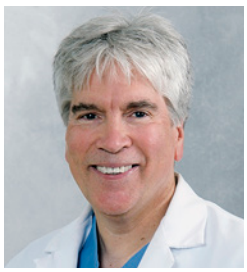
William S. Greenfield, MD '69 "My appreciation for the impact of my medical training at Temple has grown without interruption," says William Greenfield, MD '69, a thought-leader who has made his mark on psychiatry in the region and on Temple's medical school. Founder of Penn Recovery Systems, Inc., once the largest provider of capitated behavioral health care to HMOs in the greater Philadelphia region, Greenfield chairs the Greenfield Foundation, which partners with nonprofit organizations doing important work. He is particularly fulfilled by its underwriting of TEAC, the Temple Emergency Action Corps, founded in the wake of Hurricane Katrina. TEAC's aim is to educate and utilize medical students in sub-acute medical disaster relief. With missions in disaster zones stateside and abroad, TEAC has proven immensely popular, altering students' career plans and lives. Greenfield is an Emeritus Director of the Katz School Alumni Association and currently serves on the School's Board of Visitors.

Leonard S. Jacob, PhD '75, MD, DSC (Hon) "Self-made professionals are not lone wolves. They have mentors who became lifelong colleagues and friends," says Leonard Jacob, PhD '75, MD, DSC (Hon), a successful physician-scientist who credits his teachers at Temple for helping to motivate and support his career. Early on, Jacob rose through the ranks in industry. He was worldwide VP of SmithKline Pharmaceuticals prior to striking out on his own two decades ago. To date, Jacob has overseen the development of seven prescribed drugs. He is Chair of the Board of Antares Pharma, Inc., past chair of Bradley Pharmaceuticals, and co-founder of two other publicly traded pharmaceutical and biotechnology firms: Genaera Corporation and InKine Pharmaceuticals. And Jacob is no less industrious as an alumni leader. He serves on the Katz School's Board of Visitors at Temple University and has established new funds and programs in pharmacological education.

The Honored Professor Award

FOR KATZ SCHOOL FACULTY WHO EXEMPLIFY THE KNOWLEDGE AND VALUES THAT THE SCHOOL STRIVES TO INSTILL

Alan Maurer, MD '75 "The good physician is always teaching. He teaches his students, his patients, his colleagues — he teaches himself," says Alan Maurer, MD '75. A recognized expert in diagnostic imaging, Maurer is Professor of Radiology and Medicine at the Katz School of Medicine, and directs Nuclear Medicine and Molecular Imaging at Temple University Hospital. Highly regarded for his expertise in nuclear cardiology, he is also known for his work in PET/CT molecular imaging and his nuclear medicine-based research in GI motility. To teach is to lead. Maurer is a past president and Executive Board member of the Society of Nuclear Medicine and Molecular Imaging, an international group with 18,000 members. Committed to excellence in patient care and to moving science ahead through innovative research, this professor of long-standing tenure at Temple is credited with numerous contributions that have helped to advance the field — chief among them, teaching.



Gerard J. Criner, MD '79 "Medical education is leadership education. We must teach our trainees to build relationships with colleagues, with NIH and industry, with patients and providers. It's the only way healthcare can advance," says Gerard J. Criner, MD '79, FACP, FACCP, longtime Temple Lung Center Director and Founding Chair of Temple's newly established Department of Thoracic Medicine and Surgery. The internationally recognized alumnus has overseen numerous advances in pulmonary and critical care medicine, having led major clinical studies and served on NIH steering committees, technical panels, and workshops. Associate Editor of the *American Journal of Respiratory and Critical Care Medicine*, Criner is one of just two physicians in the nation appointed to GOLD, the Global initiative for Obstructive Lung Disease. Criner's long-term dedication to his alma mater, and his many contributions to research, teaching, and clinical care, have made Temple a destination for physician education in the field.

GREENFIELD: JOSEPH V. LABOLITO; JACOB: COURTESY OF DR. JACOB; CRINER AND MAURER: ED CUNICELLI

The Paige M. and Henry P. Laughlin Alumnus of the Year Award

THE HIGHEST HONOR THE SCHOOL OF MEDICINE CONFERS ON ITS GRADUATES

Sandra Harmon Weiss, MD '74 "Temple teaches an open-minded, pragmatic approach to problem solving, a tenacity that accepts no partial solutions. This has served me well throughout my career," says Sandra Harmon-Weiss, BA '71, MD '74, FAAP. A nationally known expert in Medicare, Medicaid, and uninsured populations, Harmon-Weiss is widely sought out for her expertise and counsel. She has testified to the Health Subcommittee of the House Ways and Means Committee and has served on NIH steering committees and Institute of Medicine panels. The former Vice President and Director of Government Programs for both U.S. Healthcare and Aetna is a longtime alumni leader and major benefactor who's done much to advance the Katz School of Medicine. She currently chairs the School's Board of Visitors. While she has been honored by the Robert Wood Johnson Foundation and Health Care Financing Administration, she maintains that "the most distinctive honor of all is to have achieved an MD degree from Temple, with the fine edge of clinical excellence it signifies."

Harris Nagler, MD '75 "To help others, one must commit to continuous improvement of one's own knowledge and skills," says Harris M. Nagler, MD '75, FACS, a nationally recognized physician executive, medical education expert, and leader in the field of urology. Nagler is past President of New York's renowned Beth Israel Medical Center, and now its Physician-in-Chief and Chair Emeritus of the Sol and Margaret Berger Department of Urology. He has also been president of several professional societies, including the Society of Reproductive Surgeons. "It is not about the position…it's about the passion," says Nagler. Among the many honors reflecting his contributions to patient care and physician development are the American Urological Association's Distinguished Service Award and Lavengood Award for Distinguished Service. Nagler's publication credits include numerous books on the treatment of male infertility — and he's accrued a long list of regional and national "Best Doctor" citations. He maintains supportive ties with the Katz School, and currently serves on its Board of Visitors.

The Alumni Achievement Award

RECOGNIZING ALUMNI WHOSE CONTRIBUTIONS TO MEDICINE HAVE HAD A LASTING IMPACT

Robert E. Wright, MD '65 "The ethics and standards instilled in me at Temple remained motivating factors throughout my career," says Robert E. Wright, MD '65, honored for his long and distinguished record of advancing medical education. In 1977, Wright founded the Wright Center for Graduate Medical Education (formerly the Scranton-Temple Residency Program), which has educated thousands of internists. As Founding Chair of the Medical Education Development Consortium, he helped establish the Commonwealth Medical College (Scranton, PA), served as its Dean, and is now a Trustee. Wright's long-time leadership in graduate medical education includes posts on the National Council of Program Directors in Internal Medicine and the Accreditation Committee for Graduate Medical Education. He also founded Temple's Primary Care Institute, in 1991. "It's a joy to be honored," he says, "for career accomplishments I have thoroughly enjoyed."

Col. Donald Gajewski, MD '94 "I've had the best job in the military," says Col. Donald Gajewski, MD '94, who has devoted his career to military personnel injured in the line of duty. Early on, he served as Director of Musculoskeletal Oncology and Amputee Surgical Care at Walter Reed Army Medical Center (Bethesda, MD). Later he was Chief of the Department of Orthopaedics and Rehabilitation at Landstuhl Regional Medical Center in Germany, where he also served as Chief of Surgery. Gajewski has been deployed twice; first to Iraq in 2004 with the 31st Combat Support Hospital, then to Afghanistan in 2010-2011 with the 555th Forward Surgical Team. He is also Founding Director of the Center for the Intrepid (Brooke Army Medical Center in San Antonio, TX), a multi-million dollar physical rehabilitation center created by donations from more than 600,000 Americans through the Intrepid Fallen Heroes Fund. Gajewksi has put himself on the front line in many ways, for the greater good of individual patients and country.

HARMON-WEISS: JOSEPH V. LABOLITO; NAGLER: COURTESY DR. NAGLER; GAJEWSKI: COURTESY ASHEVILLE ORTHOPEDICS; WRIGHT: COURTESY OF DR. WRIGHT

SO NOTED

Quotes Selected by Larry R. Kaiser, MD, FACS, Temple University Health System CEO

"If in the last few years you haven't discarded a major opinion or acquired a new one, check your pulse. You may be dead."
– GELETT BURGESS

"The key to being a good leader is keeping people who hate you away from those who are still undecided."
– CASEY STENGEL

"WE'RE NO SMARTER THAN OUR ANCESTORS, NO MORE TALENTED, YET WE BENEFIT FROM ALL THEIR EFFORTS, JUST AS THOSE WHO COME AFTER US WILL BENEFIT FROM OURS."
– SCOTT SANDERS

"The opposite of a profound truth may well be another profound truth."
– NIELS BOHR

"The enemy of knowledge is certainty."
– LAWRENCE WEINSTEIN

"SECURITY IS A FALSE GOD; BEGIN MAKING SACRIFICES TO IT AND YOU ARE LOST."
– PAUL BOWLES

"Problems that remain persistently insolvable should always be suspected as questions asked in the wrong way."
– ALAN WATTS

"The measure of our intellectual independence and maturity is what it occurs to us to question."
– NATHANIEL BRANDEN

"IF YOU DON'T JUDGE WELL HOW IMPORTANT DIFFERENT MATTERS ARE, THOUGH ALWAYS BUSY, YOU WILL INEVITABLY MAKE LITTLE PROGRESS."
– WILLIAM PENN

"If we would have new knowledge, we must get a whole world of new questions."
– SUSANNE LANGER

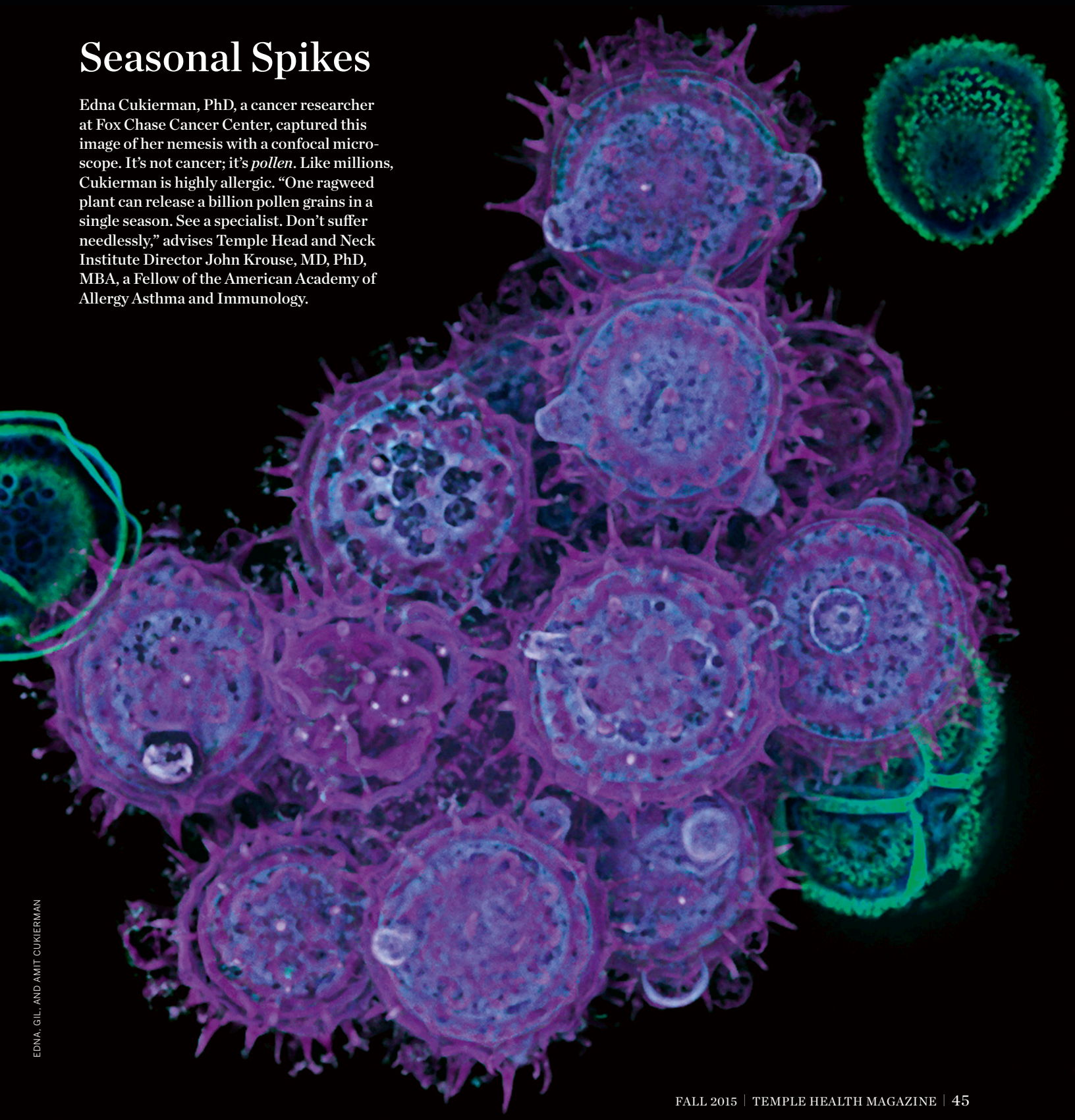
"Words are, of course, the most powerful drug used by mankind."
– RUDYARD KIPLING

"IF NOT ENOUGH PEOPLE DOUBT YOU, YOU'RE NOT MAKING A DIFFERENCE."
– SETH GODIN

"If you don't risk anything, you risk even more."
– ERICA JONG

Seasonal Spikes

Edna Cukierman, PhD, a cancer researcher at Fox Chase Cancer Center, captured this image of her nemesis with a confocal microscope. It's not cancer; it's *pollen*. Like millions, Cukierman is highly allergic. "One ragweed plant can release a billion pollen grains in a single season. See a specialist. Don't suffer needlessly," advises Temple Head and Neck Institute Director John Krouse, MD, PhD, MBA, a Fellow of the American Academy of Allergy Asthma and Immunology.



EDNA, GIL, AND AMIT CUKIERMAN

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