*Devoted to noteworthy happenings*

*at the medical school*

PAULA BURCH

Lichtveld

## LICHTVELD IS NEW DEAN OF PUBLIC HEALTH

For 18 years, **Maureen Lichtveld** worked for the Centers for Disease Control and Prevention and the U.S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry. She designed public health research tools and protocols—adopted by each state—to guide national environmental health studies in communities living near hazardous waste sites.

This January, Lichtveld joined the University of Pittsburgh's Graduate School of Public Health as dean. She has nearly 40 years of experience in environmental public health. Before joining Pitt, she served as the director of the Center for Gulf Coast Environmental Health Research, Leadership and Strategic Initiatives within Tulane University's School of Public Health and Tropical Medicine.

Her research focuses on environmentally induced disease, health disparities, environmental health policy, disaster preparedness, public health systems and community resilience.

Lichtveld says she is honored to oversee Pitt Public Health: "Together, we will make science work for our communities—especially those most vulnerable, locally, nationally and globally."

Anantha Shekhar, senior vice chancellor for the health sciences and John and Gertrude Petersen Dean of Pitt's School of Medicine, says that he and the search committee sought a talented scholar and bold collaborator who could elevate the school's record of academic and research excellence.

"We wanted a seasoned leader who could advance our commitment to helping communities—and the people within them—grow stronger and healthier," Shekhar says. "Dr. Lichtveld checked all these boxes and more."

A respected researcher and scholar, Lichtveld holds a Master of Public Health from Johns Hopkins University and a Doctor of Medicine from Anton de Kom University of Suriname and the Leiden University in the Netherlands.

Lichtveld succeeds Interim Dean Everette James, who took the helm of Pitt Public Health following Donald Burke's 13-year tenure in the role.

*—Ellie Graves*

## Shared Vision

**As the world population of older adults continues to grow, the number of people with visual impairment is expected to triple by the year 2050.**

**Pitt is formally collaborating with the U.S. Food and Drug Administration to address the needs of the visually impaired. Under the agreement, Pitt and the FDA will work together for the next five years on scientific, educational and outreach initiatives designed to address the epidemic of vision loss.**

**"It's really exciting. This will put Pitt in a position where we can work with the FDA on the validation of new technological approaches by developing programs and protocols," says José-Alain Sahel, Pitt's Eye and Ear Foundation Professor, chair of ophthalmology and one of the world's top experts in retinal diseases and vision restoration research. "Patients' voices will nurture our projects and define the successes we all want to deliver."**

**"We appreciate this phenomenal opportunity to partner with the University of Pittsburgh. Developing new methods to assess visual impairment and the impact on daily activities is important to helping the FDA better characterize the consequences of vision loss and also helping the FDA to reliably assess the benefit of novel therapies and rehabilitation technologies," says Malvina Eydelman, director of the Office of Ophthalmic, Anesthesia, Respiratory, ENT and Dental Devices in the FDA's Center for Devices and Radiological Health.**

***—Amerigo Allegretto***

LEFT: Bezak
RIGHT: Schenker

TOM ALTANY/UNIVERSITY OF PITTSBURGH

# Overheard

## Palliative Care in the Time of COVID

Working with a patient's care team, palliative care specialists base their treatment on the person, not a prognosis. Their focus is to provide relief from symptoms and the stress of an illness, while also comforting the families. Relatives often play a role in the treatment plan, but COVID-19 safety protocols have prevented many family members from even entering hospitals. This fall, we spoke with Yael Schenker, director of Pitt Med's Palliative Research Center, and Karl Bezak, clinical assistant professor of medicine and medical director for palliative care at UPMC Presbyterian, to learn more about how their teams offered support despite the challenges of the pandemic.

### How did you adjust to the COVID-19 safety measures last spring?

Karl Bezak: Initially, we would try to describe a patient's condition to their family over the phone. It wasn't until we were able to do video conferencing that the family could really see just how sick their relatives were. People who had been saying they wanted everything done [to keep the patient alive] really saw how this was not an acceptable quality of life. It was challenging, but helpful, in terms of painting a picture for those who were making decisions on behalf of the patient.

### Aside from family not being there in person, what was the biggest challenge you have faced because of the pandemic?

Yael Schenker: The degree of uncertainty—that was particularly acute back in the early spring when we really didn't know what we were dealing with. That in itself caused a lot of suffering and fear. What we're trained to do in palliative care is really walk with people who are suffering and sit with that uncertainty. Being sick in the hospital is scary in usual times, but even more so now. I think a really important role for us was being that glue to bring people together who weren't able to be together in the physical space.

### Was there a particular situation that stood out for you?

Karl Bezak: We had a patient who had chosen to stop receiving treatment for pneumonia. Her best friend was able to be at her bedside via iPad as she died. It was really a magical moment. The flexibility and willingness of patients and families to work around the restrictions and policies, to be there as much as possible, especially in a person's last moment, was just absolutely heartening. —*Christina Frank*

# Faculty Snapshots

When someone sustains severe muscle damage—as a result of a combat injury, for example—the tissue often can't regenerate. Instead, the damaged muscle is replaced with scar tissue, which can lead to a significant loss of limb function.

Stephen Badylak, deputy director of Pitt's McGowan Institute for Regenerative Medicine, leads a team of researchers from eight institutions who are developing an implantable device that would regrow functional muscle tissue, even after a drastic loss from something as severe as a motorcycle accident. The team was awarded a $22 million grant from the Defense Advanced Research Projects Agency (DARPA) to pursue the project.

The implantable patch contains microelectrodes, hydrogels (polymer chains that create a moist healing environment) and cell factories. It will monitor key molecular signals at each stage of healing, from shortly after the injury occurs to the days and weeks that follow. An artificial intelligence component will direct the delivery of specific molecules at specific times.

Badylak

"The hydrogels we contribute will serve as the covering for the wounds and the physical support for the electrodes," says Badylak, a professor of surgery at Pitt. "I think of it a little bit like a mini Manhattan Project, and it's fun."

Wagner

Amy Wagner and Toren Finkel joined 29 current and former Pitt Med professors this fall when they were elected to the National Academy of Medicine.

Finkel

A professor of physical medicine and rehabilitation and neuroscience at Pitt, Wagner uses biomarkers and statistical modeling to predict how well patients will recover from brain injury. The data she collects guide clinical decisions along the way—a strategy she calls "personalized rehabilitation medicine." Her clinical work, in turn, informs her research studies of in vivo preclinical models aimed at identifying intervention strategies that promote neurorecovery.

Finkel, a professor of cardiology and director of the Aging Institute, researches how oxidative stress and the function of mitochondria alter the rate of aging. His long-term goal is to uncover the molecular basis of aging and age-related diseases through the study of a variety of different cellular pathways.

Election to the Academy is considered one of the highest honors in the fields of health and medicine. —*CF*

## Get Cooking

GETTY IMAGES

No more instant ramen for first-years! The culinary medicine interest group created Pitt Med cookbooks and gave them to the incoming class in the fall. The group was founded this spring when the Culinary Medicine course—a mini-elective that started in 2019—couldn't meet in person because of the pandemic. The cookbook includes contributions from fellow Pitt Med students, faculty, alumni and staff.

"Cooking can be a wonderful way for students to take a break and get to know other members of the Pitt Med community through recipes, recommendations on cooking and wellness and tips for grocery stores in the area," says Eva Roy, a third-year student and founder of the culinary medicine interest group.

Roy especially recommends associate dean Donald DeFranco's chicken scallopine recipe or the gazpacho recipe from Jack Schumann, recently retired anatomy course director.

*—Gavin Jenkins*

## More Time for Stroke Victims

As a volunteer EMT in high school, Anthony Schulien was fascinated by stroke and brain injury. In the case of ischemic stroke—where blood clots form, leading to cell death—he wondered if the death of cells could be stopped before clots are even removed. This led him to study neuroscience as an undergraduate at Pitt. He's now in his final year of Pitt's Physician Scientist Training Program. With a team led by his mentor, Elias Aizenman, professor of neurobiology, Schulien has helped develop a drug that could protect the brain during and after a stroke.

The drug targets neurons in a brain region (called the ischemic penumbra) that are at risk of dying as a stroke evolves. It aims to halt the progression of cell death pathways in this tissue and slow the progression of the stroke. The authors of the study, which was published in Science Advances with Schulien as lead author, suggest that the drug may reduce brain-tissue loss following stroke and allow patients more time to reach the hospital to have the clot removed. Mice that received the drug in the study showed a smaller region of infarcted brain tissue and better long-term neurological function.

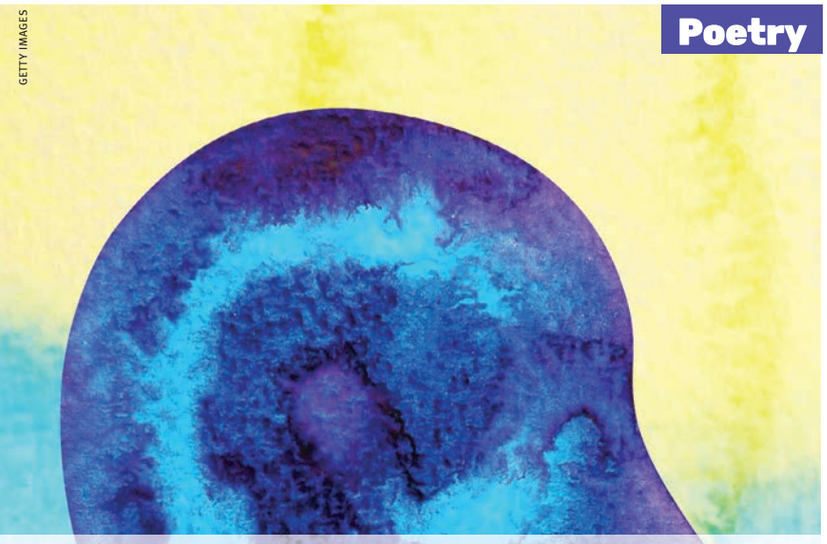
Schulien credits Aizenman, and the more than 20 years of foundational work his mentor has logged researching neuronal cell death, with the breakthrough. Schulien says Aizenman has taught him to stay focused on the big picture as they conduct further studies. "Those are the steps that are needed to take this to real people," he says. *—Samantha Paige Rosen*

DOLLAR BANK

## FLASHBACK

We stand corrected—John Paul Golden (MD 1888) is the first known African American to graduate from the Western Pennsylvania Medical College, which became the University of Pittsburgh School of Medicine. In 2011, we reported it was Allen Gilbert Gantt (MD 1901). After graduating, Golden built a successful practice, with offices located on what is now Pittsburgh's North Side (known then as Allegheny City) and in South Carolina, where he and his wife moved in 1897, returning in 1913. Golden's father, Samuel, was a porter for more than 50 years at the Monongahela House—there, he met Abraham Lincoln, P.T. Barnum and other celebrities. Golden's great grandnephew, Samuel W. Golden IV (MD '80), graduated from Pitt Med and researched and treated AIDS/HIV until his death in 2004.

GETTY IMAGES



Poetry

## Anatomy Practical

I am searching for the phrenic nerve
when I remember the bad feeling I have about you.

Formalin pricking my nose, an attentive hush
  pressing all around me.
This test is timed, but
I look into the body, and I'm lost.

The word itself makes me anxious,
sounds frantic, frenetic.
Lightning strike climbing up beside the heart.

Now my eyes won't focus, and I remember
sleeping, head on your chest on the airport floor,
  how my dreams
were full of rhythms:
  a locked door and someone knocking
with a strange kind of urgency—
steady but ceaseless.

At the same time I notice the fingernails on the
bloodless hands, yet undissected,
are painted pink.

And the timer sounds.

*—Amelie Meltzer (Class of '22)*
*This poem first appeared in the Winter 2019/20 issue of Ploughshares.*

## Innovating in a Pinch

Erick Forno never imagined his asthma research would be used during a pandemic. But, when COVID-19 arrived in the United States, he and his team at Acoustic Waveform Respiratory Evaluation (AWARE) realized they could make a contribution.

AWARE is a smartphone-based app for monitoring at-home lung function; it was developed for people with disorders like asthma, COPD and cystic fibrosis. Forno, an assistant professor of pediatrics at Pitt, and his team recognized it might also be helpful for monitoring the lung health of patients exposed to the novel coronavirus. So they paused their research operation and instituted precautions allowing them to shift their focus.

Their adaptability paid off this fall, when AWARE earned one of three grand prizes of $100,000 at the 2020 Pitt Innovation Challenge (PInCh). AWARE also won a $25,000 bonus for addressing aspects of the pandemic.

With the prize money, the team will gather data from healthy volunteers to advance the app and then examine patients with respiratory illnesses. The AWARE team includes Wei Chen, associate professor of pediatrics and biostatistics, and Wei Gao, associate professor of electrical and computer engineering at the Swanson School of Engineering.

PInCh awarded two other grand prizes for 2020. Liliana Camison, a plastic surgery resident, and Jesse Goldstein, associate professor of plastic surgery, developed a custom-made cartilage ear implant that decreases the complexity and operative time of facial surgeries; to build it, they employed a high-precision cartilage milling process. Their product is called REPLICA. The other grand-prize winner, LungTarget—created by Maliha Zahid, an assistant professor of developmental biology at Pitt— is a novel set of lung-targeting peptides that can deliver molecules able to disrupt protein coding (small interfering RNAs) to treat cystic fibrosis. *—AA*

## Synthetic Biologist Awarded Dickson Prize

Collins

Bioengineer **James J. Collins** has been awarded the 2020 Dickson Prize in Medicine, the School of Medicine's highest honor.

In 2000, Collins described how his team built a stable synthetic gene circuit in E. coli bacteria. That paper has been cited more than 4,000 times and marked the arrival of an important new discipline in biomedicine—synthetic biology.

More recently, Collins created engineered microbes and whole-cell biosensors to serve as diagnostics and therapeutics. One platform that he and colleagues developed embeds freeze-dried, cell-free synthetic gene networks onto paper and other materials; it has a wide range of potential clinical and research applications.

"Dr. Collins is defining what's possible in the disciplines of synthetic and systems biology. His highly creative work applying engineering design principles to molecular biology has generated numerous new diagnostics and therapeutics," says Anantha Shekhar, Pitt's senior vice chancellor for the health sciences and John and Gertrude Petersen Dean of Medicine.

Collins is the Termeer Professor of Medical Engineering and Science at Massachusetts Institute of Technology and is affiliated faculty with the Broad Institute of MIT and Harvard University as well as the Wyss Institute at Harvard. He has received a MacArthur Foundation "Genius" grant, NIH Director's Pioneer Award and Sanofi-Institut Pasteur Award. "I am thrilled and honored to receive the Dickson Prize in Medicine," he says.

Pitt's prize is given annually to an American biomedical researcher who has made significant, progressive contributions to medicine. It includes a $50,000 honorarium and invitation to speak at the University's annual campuswide showcase of research. Both the showcase and Dickson Lecture have been postponed until a date to be determined.

*—Michele Baum*