

INAUGURAL  
ISSUE

# CWRU Medicine

SUMMER 2023

180

YEARS OF  
MEDICINE

Students  
share their  
experiences  
at CWRU

Innovation  
at the  
Midtown  
Collaboration  
Center

## SHAPING OUR COMMUNITY

Dynamic partnerships help us improve  
health and advance medicine





# Leading for 180 years

Since 1843, Case Western Reserve University School of Medicine has been at the forefront of medical education and discovery.

Ranked as one of the top-25 medical schools in the country and both the #1 medical school and largest biomedical research institution in Ohio, Case Western Reserve is renowned for its innovative curriculum, translational research successes, and commitment to the community.

As we celebrate 180 years of serving Northeast Ohio and the world, philanthropic support of the Catalytic Fund—the School of Medicine Annual Fund—continues to have immediate and lasting impacts on the field of medicine that would be unattainable without the generosity of alumni and friends.

Empower tomorrow's healthcare leaders by supporting the Catalytic Fund.

Give today at [case.edu/medicine/giving](https://case.edu/medicine/giving).

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At the heart of Cleveland's Health-Tech Corridor—stretching from the city's downtown business district to University Circle's academic, cultural and healthcare hub—you'll soon find a hotbed of economic development and medical innovation. The 95,000-square-foot **MidTown Collaboration Center**, located at East 66th Street and Euclid Avenue, will be home to offices of project leaders the Cleveland Foundation and JumpStart Inc., as well as research and programming for partners such as Case Western Reserve University, University Hospitals and Cleveland Institute of Art. The site will illustrate the value of advancing leading-edge research, investing in the historic Hough community, and bridging the city's two centers to create a more connected Cleveland.

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# Checking in

## A Q&A with Dean Stan Gerson

**W**hen Stan Gerson became Case Western Reserve University School of Medicine's interim dean in July 2020, the U.S. was tackling dual crises: the COVID-19 pandemic and a reckoning with systemic racism after the murder of George Floyd.

In the months that followed, Gerson helped the school navigate myriad challenges—from remote learning to local health inequities—that ultimately strengthened the school's educational offerings and commitment to diversity, equity and inclusion.

Gerson, a nationally renowned physician and cancer researcher who led the Case Comprehensive Cancer Center for nearly 20 years, officially became dean of the School of Medicine and the university's senior vice president for medical affairs in October 2021.

For the inaugural issue of *CWRU Medicine*, we sat down with him to learn more about the state of the school and his vision for the future.

**CWRU MEDICINE:** The School of Medicine is celebrating its 180th anniversary this year and, throughout its history, has been a leader in innovative education and groundbreaking discoveries. What priorities have been identified for the school as it moves into its next chapter?

**DEAN GERSON:** Working with our school's leadership team, we created a five-year strategic plan—the school's roadmap—which is rooted in our commitment to diversity, equity and inclusive excellence. We identified three broad interdisciplinary priorities that bring together the depth of expertise of our faculty across our five campuses: artificial intelligence (AI) and machine learning in medicine, therapeutic discovery and development, and population and community health.

**CWRU MEDICINE:** David Margolius recently took the helm as director for the Cleveland's Department of Public Health. During a lecture at

the School of Medicine, "Racism as a Public Health Crisis—Envisioning the Future," he shared a stark picture of the current state of health of the people in the city of Cleveland. What do you see as the medical school's role within the community in changing the trajectory of health disparities?

**DEAN GERSON:** Our clinical faculty members at the School of Medicine provide more than 75% of the healthcare for those living in Northeast Ohio. As Dr. Margolius illustrated in his talk, those living within the same zip code as our university have a life expectancy of 65.4, versus just a few miles away in Shaker Heights, where the life expectancy is 88. This data should give us all pause.

One of the top three priorities at the School of Medicine is a population community health initiative to improve "whole-person health." Partnering with the Cleveland Foundation, we are investing in what will be the Midtown Collaboration Center in the Hough neighborhood, where we will be moving



PHOTO BY NICHOLAS MCLAUGHLIN

our urban and public health education programs, nutrition kitchen, and health screening and community education programs—allowing us to be embedded as part of the community. (Learn more on p. 26.)

With this broad movement on the part of our physicians, educators and researchers, we can link our expertise in medicine to benefit the community. It also provides a unique way to work with faculty across the university who are also working to improve health outcomes through policy and other outreach efforts. And by working in partnership with Dr. Margolius, who has the vision we need right now to address health inequities that can no longer be ignored, there is an opportunity to transform the health of our community.

**CWRU MEDICINE:** You also mentioned therapeutic discovery and development as a key priority—how does the school plan to enhance its work in this area?

**DEAN GERSON:** We now have a Center for Therapeutic Discovery and Development, and I'm very excited about the opportunities there. Current initiatives are taking full advantage of our expertise in small molecules to advance new therapies for cancer and other inflammatory diseases. And we are working toward developing genetic engineering products so a single patient can benefit from customized treatment. Our cell therapy programs are one of the top in the country. Add in nanotherapeutics, imaging therapeutics and early phase clinical trials, and when you put these together, and we have outstanding capabilities.

Our goal is to move our scientific research into early-phase, FDA-reviewed clinical trials here in Cleveland by building a clinical therapy production facility. To take on these exciting initiatives, we will also build biotechnology commercial ventures, partner across our healthcare facilities, join forces in clinical trials with hospitals and community partners and build a local workforce that sustains our efforts.

Recognizing the potential of AI as the next frontier in medicine, we are investing in AI research that would lead to developing imaging diagnostics, speeding drug discovery and creating tools to predict adverse health effects in communities. And, even more importantly, we will leverage the expertise of our bioethicists to reduce bias in healthcare, which has plagued underserved populations right here in Cleveland.

There are so many opportunities ahead for CWRU School of Medicine—and I'm honored to lead the school at this dynamic, promising and exciting time.



# News

Honors, events, updates and accomplishments from across CWRU's medical school



## A SHOW OF SUPPORT

The strings plucked and trumpets blared. Voices broke into chorus. The audience erupted into cheers and applause.

It was yet another successful evening of fun and fundraising in mid-December as more than 200 student and faculty volunteers from Case Western Reserve University School of Medicine and its Cleveland Clinic Lerner College of Medicine took to the John Hay High School stage (and orchestra pit) for the 38th annual Doc Opera.

This year's student-written, -directed, -choreographed and -performed musical parody revue, *Stitch Perfect*, featured songs such as "When I'm an M1" (to the tune of Kelly Clarkson's "Since U Been Gone"), "Residency Baby" (a play on "Industry Baby" by Lil Nas X) and "Hypoxic" (channeling Britney Spears' "Toxic"). Plus, faculty members joined in for tunes such as "EMR Killed the Paper Chart" (The Buggles' "Video Killed the Radio Star").

The end result: impressive performances, countless laughs and approximately \$15,000 raised for the Student-Run Health Clinic, through which medical, nursing, dental and social work students from Case Western Reserve provide free care to the Cleveland community.



PHOTO BY DAN MILNER

## IT'S A MATCH

When Class of 2023 students tore open their envelopes to discover their post-graduation residency placements in March, they learned they matched with top-ranked hospitals throughout the U.S.

Speaking to the crowd gathered at the Health Education Campus of CWRU and Cleveland Clinic, Dean **Stan Gerson, MD**, reminded students that their adaptability, which they've shown while learning during the COVID-19 pandemic, will be their strength as physicians. "As the next generation of healthcare leaders," he said, "you have witnessed a moment in time when science and medicine needed to solve a healthcare need. And it will not be the last."

Out of more than 200 students who matched, 25% will continue serving the Cleveland community through residencies at Cleveland Clinic, MetroHealth Medical Center and University Hospitals, while nearly 30% will remain in Ohio. Top residency choices included anesthesiology, radiology, internal medicine, emergency medicine and general surgery, with 38% of the class entering primary care specialties.

### Among their 84 destinations

- Brigham & Women's Hospital
- Brown University/Rhode Island Hospital
- Cleveland Clinic
- Columbia University
- Duke University Medical Center
- Emory University Medical Center
- Johns Hopkins Hospital
- Massachusetts General Hospital
- Mayo Clinic
- MetroHealth Medical Center
- Stanford Health Care
- UCLA
- University Hospitals
- University of Pennsylvania
- Yale-New Haven Hospital

## CANCER CENTER WELCOMES NEW LEADER

A Columbia University oncologist renowned for his translational research, mentoring and leadership became director of the Case Comprehensive Cancer Center (Case CCC) this spring.

**Gary Schwartz, MD**, chief of the Hematology and Oncology Division at Columbia University Irving Medical Center and deputy director of its Herbert Irving Comprehensive Cancer Center, succeeds Case Western Reserve University School of Medicine Dean **Stan Gerson, MD**, who led the center since 2004.

"I am honored and excited to have this opportunity to lead the Case CCC," Schwartz said. "I am also humbled to follow in the footsteps of Stan Gerson. My vision is to now lead the Case CCC with advances in cancer medicine, with the ultimate goal of curing this disease."

Launched in 1983, the Case Comprehensive Cancer Center is an institutional consortium that

today includes Case Western Reserve University, University Hospitals and Cleveland Clinic. It oversees all cancer research conducted across the institutions, as well as the care of more than 65% of Northeast Ohioans being treated for cancer.

Schwartz has spent more than three decades pursuing novel approaches to treat and cure sarcomas—tumors that begin in bone and tissue—as well as melanoma (more commonly known as skin cancer). He directed Columbia's Minority/Underserved Site NCI Community Oncology Research Program, as well as several other funded grant programs involving clinical trials of treatments for sarcoma. In addition, he led two federally supported training programs for more junior investigators pursuing cancer-related research.

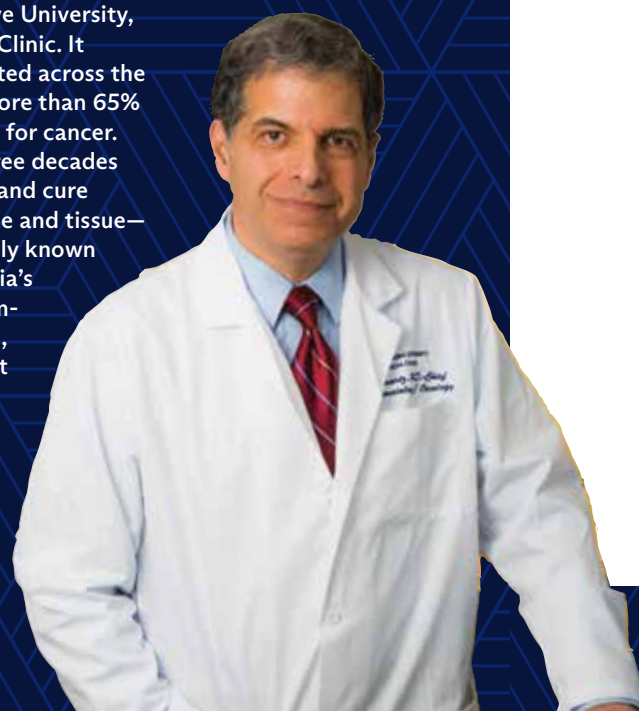






PHOTO BY NICHOLAS MCLAUGHLIN

## LEARNING BEYOND THE CLASSROOM

At medical schools nationwide in 2022–23, applications grew by 14% among Black or African American students and 7.3% among Hispanic, Latino or Spanish students compared to 2020–21. Sustaining this advancement is critical to the Student National Medical Association (SNMA), the oldest and largest student-run organization for underrepresented minority medical students.

Last fall, CWRU hosted SNMA's Regional Medical Education Conference—two days of networking, professional development and educational opportunities for medical, college and high school students. The conference included topics such as Black experiences in specialty areas, preparing for residencies, applying to med school or even, for high schoolers, choosing the right college and finding mentors.

“As a medical school in a predominantly Black city, it was extremely important to us to include younger Black students in this opportunity to learn from and speak with a conference full of Black physicians and medical students,” said **Andrea Arline**, a rising third-year medical student in the University Program who, as political action liaison for CWRU's SNMA chapter and the region, helped organize the event.

This focus on engaging young minority students continued three weeks later, when CWRU School of Medicine and University Hospitals hosted Cleveland's inaugural Black Men in White Coats Youth Summit, a two-day event aimed to inspire pre-teens and teens to consider careers in healthcare. Following a screening of the documentary *Black Men in White Coats*, **Monica Yepes-Rios, MD**, assistant dean for diversity, equity and inclusion for students, moderated a panel discussion with faculty, alumni and local physicians.

### CONNECTING HEALTH AND THE HUMANITIES

In March, CWRU School of Medicine's Department of Bioethics and Cleveland Clinic Lerner College of Medicine's Program in Medical Humanities hosted the Health Humanities Consortium's first in-person conference since 2019.

Presenters (including more than two dozen CWRU medical, graduate and undergraduate students) highlighted how increased calls for collective action to address structural problems can collide with the traditionally individualistic focus of healthcare, and how people and social structures shape each other.

“Gathering a large group of such folks together is inspiring and invigorating, providing both new ideas and models and the reassurance that you are in good company,” said **Erin Lamb, PhD**, the Carl F. Asseff, MD, MBA, JD, Designated Professor in Medical Humanities at CWRU and the consortium's co-president and event co-organizer.



Dustin Tyler

Sandy Markowitz

# CWRU faculty named among top inventors in the country

Two School of Medicine professors, **Sanford “Sandy” Markowitz, MD, PhD**, and **Dustin Tyler, PhD (GRS '99, biomedical engineering)**, were inducted as fellows of the National Academy of Inventors in June to recognize their overall career impact on their fields and society.

Markowitz, a Distinguished University Professor and the Ingalls Professor of Cancer Genetics, was part of the team that sequenced the first complete cancer coding genome. His groundbreaking medical research also has transformed human understanding of the genetics of gastrointestinal cancers. In addition, he helped create the first commercial DNA-based stool test for colon cancer.

Tyler is the Kent H. Smith II Professor of Biomedical Engineering and a global pioneer in neural engineering—improving lives by making prosthetics feel more like a part of the body by restoring the sense of touch to amputees.

Markowitz and Tyler join more than 25 others affiliated with Case Western Reserve who have been elected as fellows or senior members by the NAI in the last decade. Last summer, three members of the Case

Western Reserve University School of Medicine faculty—**Susann Brady-Kalnay, PhD**, the Sally S. Morley Designated Professor in Brain Tumor Research; **Paul Tesar, PhD (CWR '03)**, the Dr. Donald and Ruth Weber Goodman Professor of Innovative Therapeutics; and **Satish Viswanath, PhD**, assistant professor of biomedical engineering—were inducted as senior members.

Six more School of Medicine faculty were elected in February—among eight new senior members from across Case Western Reserve: **Drew Adams, PhD**, the Thomas F. Peterson Jr. Professor of Cancer and Energy Research; **Mark Chance, PhD**, the Charles W. and Iona A. Mathias Professor of Cancer Research; **Margot Damaser, PhD**, professor of biomedical engineering at Cleveland Clinic Lerner College of Medicine; **William Grissom, PhD**, visiting professor of biomedical engineering; **Kevin Kilgore, PhD (GRS '87, '91, biomedical engineering)**, professor of orthopedics and physical medicine and rehabilitation; and **Dan Ma, PhD (GRS '15, biomedical engineering)**, assistant professor of biomedical engineering.





The 2023 entering class of first-year MD students outside Severance Music Center (PHOTO BY DAN MILNER)

# Bright starts

Across multiple programs, hundreds of students earn their white coats

**A**mong the most defining moments in a health science student's career is the white coat ceremony—the day on which they don their new jacket and cross into the world of clinical care or biomedical research.

At Case Western Reserve University School of Medicine, two such milestones have taken place this year, marking the beginning of healthcare careers for hundreds of MD, MD/PhD and Master of Science in Physician Assistant (PA) Studies students.

**“We are grateful to practice the art of healing.”**

—MD class oath of professionalism

(And there are still more to come in the months ahead, as PhD and Master of Science in Anesthesia students take part in their ceremonies.)

In May, 40 PA students earned their jackets, ready to embark on a 27-month educational and clinical journey that centers on experiential learning in the community, pre-clinical clerkships, medical writing across the curriculum, asynchronous learning, clinical simulations, and case-based learning and clinical correlations.



First-year MD students (PHOTO BY DAN MILNER)



2023 first-year physician assistant students in Samson Pavilion (COURTESY)

Less than two months later, 216 new students from the School of Medicine's MD university track, Cleveland Clinic Lerner College of Medicine and the Medical Scientist Training Program attended the annual White Coat Ceremony at Severance Music Center.

Dean **Stan Gerson, MD**, presided over the ceremony with **Lia Logio, MD**, vice dean for education, and **Harry “Bud” Isaacson, MD**, executive dean of Cleveland Clinic Lerner College of Medicine, and reflected on what students can anticipate during their time at Case Western Reserve over the next several years. In addition, **Stephanie Teal, MD**, the Arthur H. Bill Professor of Obstetrics and Gynecology at CWRU School of Medicine and chair of the obstetrics and gynecology department at University Hospitals, reflected on the power and privilege of the white coat as the keynote speaker.

The MD and MD/PhD students crafted, then recited, their own oath of professionalism that focused on confidentiality, respect, empathy, accountability, leadership and innovation—sentiments echoed by Dean Gerson in his remarks.

“Like you, we—and the many pioneers in the field of medicine before you—realize that the status quo is unacceptable,” Gerson said. “We strive for a healthier planet and a healthier population, here in Cleveland and across the globe. And you will help us attain that goal.”





PHOTOS BY ANNIE O'NEILL

# Next steps

Members of the Class of 2023 prepare to put their diplomas to work

As they waited to cross the Severance Music Center stage to receive their diplomas in May, Case Western Reserve University School of Medicine Dean **Stan Gerson, MD**, had simple guiding advice for the 210 Doctor of Medicine students:

**“You are ready.”**



From the curriculum they mastered in classrooms to the discoveries they made in labs and to the conversations, diagnoses and treatment plans they developed at bedsides, these students were more than prepared to tackle the next steps in their careers, Gerson said.

These newest alumni were 168 students from the school’s four-year University Program, 12 from the eight- to nine-year MD/PhD program, 27 through the five-year Cleveland Clinic Lerner College of Medicine and three dentists who earned MDs to become medical surgeons. In addition, the School of Medicine also celebrated 47 students of the Master of Science in Anesthesia program, 28 PhD candidates, and 255 master’s-level students.

Graduates from all programs join an esteemed alumni network of dedicated, remarkable graduates across the school’s 180-year history—and they’re poised for their own success, Gerson noted.

“Your unwavering commitment, passion and hard work have brought you to this momentous milestone,” he said, “and we are proud of what you have achieved.”



# How we rank

# **21**  
**university in the world for number of U.S. utility patents**▲

Case Western Reserve University School of Medicine has seen impressive growth over the past year across myriad areas—from enrollment to hiring to research funding. Here's a quick look at a few key statistics from last year.

# **22**  
**in National Institutes of Health funding among all U.S. medical schools\***

# **16**  
**worldwide for biomedical and health sciences**■

# **14**  
**Department of Biochemistry\***

# **7**  
**Department of Biomedical Engineering\***

# **14**  
**among private medical schools\***

# **13**  
**Department of Pathology\***

# **17**  
**Department of Physiology\***

# **1**  
**Department of Physical Medicine & Rehabilitation at MetroHealth Medical Center and Case Western Reserve University\***

■ Leiden World Ranking  
 ▲ National Academy of Inventors, Intellectual Property Owners Association  
 \* Blue Ridge Institute for Medical Research

# Our school in numbers

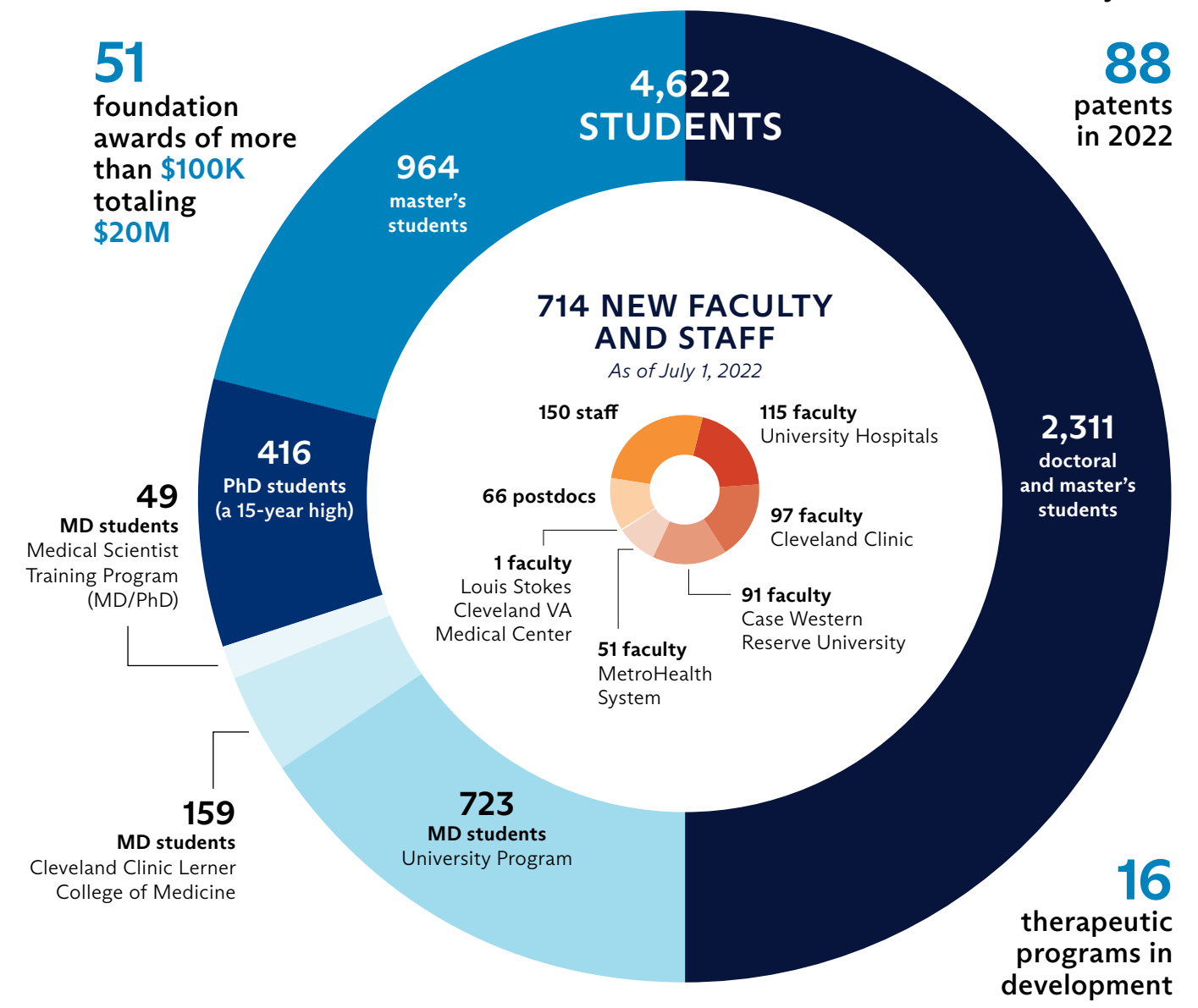
**\$400M+**  
 in active research funding

**RESEARCH AND GRANTS**

**280+**  
 grants in past two fiscal years

**51**  
 foundation awards of more than **\$100K** totaling **\$20M**

**88**  
 patents in 2022



**FACULTY HONORS** | **11** new endowed chairs | **2** new Distinguished University Professors | **11** elected in 2022-23 to the National Academy of Inventors as fellows and senior members



# Outstanding achievements

Students and faculty earn national honors and appointments

School of Medicine students **Lauryn Bailey** and **Benjamin George** each won trainee research prizes from the **Radio-logical Society of North America** for their work in non-small cell lung cancer. They presented their work at the society's annual meeting in November. Bailey's work included the development of a multi-modal deep learning framework for outcome prediction in non-small cell lung cancer undergoing stereotactic body radiotherapy, while George's work focused on studying the role of invasive nodal staging and 18F-FDG-PET avidity in the prognostication of patients undergoing stereotactic body radiotherapy for non-small cell lung cancer.

Professor of Surgery **Edward Barksdale, MD**, was one of 24 individuals inducted last fall as full members of the **American**



**Barksdale**

**College of Surgeons' Academy for Master Educators**. This honor marks the highest level of achievement for surgeon educators within the American College of Surgeons and covers all surgical specialties.

Four medical students—**Monica Chavan (CWR '19; GRS '22, bioethics; MED '23)**, **Amelia Clarke (MED '23)**, **J. Gabriel Lopez Rivera** and **Maria Claudia Moncaliano**—and Associate Dean of Curriculum **Amy Wilson-Delfosse, PhD**, earned first place at the **Student National Medical Association** Region V Medical Education Conference for their poster, "A Pre-Clinical Elective for Student-Faculty Collab-

oration in Curriculum Development in Diversity, Equity, and Inclusion."

Last August, two School of Medicine faculty members were awarded Case Western Reserve's highest faculty honor: the title of Distinguished University Professor. **Pamela B. Davis, MD, PhD**, the Arline H. and Curtis F. Garvin, MD, Research Professor, and **Jonathan Karn, PhD**, the Reinberger Professor in Microbiology, were awarded the honor during fall convocation. Davis, who served as dean of the medical school from 2007 to 2020, is renowned as an extraordinary leader



**Davis**



**Karn**

of the school and also has passionately worked to advance cystic fibrosis research and bring novel therapies to clinical trials. Karn, who is also director of the university's Center for AIDS Research, is an internationally recognized molecular virologist who initially built his career on conducting pioneering basic research on the study of transcriptional control in HIV and has become increasingly involved in translational research.

A group of Case Western Reserve University PhD and medical students advanced to the Augmented Intelligence for Health Bowl finals, which took place in May. This national competition, sponsored by **Northwestern University's Feinberg School of Medicine**, tasks multidisciplinary teams with identifying a problem, pitching a creative solution—specifically addressing health disparities—and presenting their proof of concept. Team members were:

- **Razaq O. Durodoye**, MD/PhD student;
- **Christopher M. Maatouk**, MD student;
- **Jacob James Rich**, PhD student;
- **David M. Selvaraj**, PhD student in the Clinical Translational Science Program;
- **Jacqueline K. Shaia**, PhD student in the Clinical Translational Science Program; and
- **Scott Williams, PhD**, professor in the Department of Population and Quantitative Health Sciences (faculty advisor).

**Mark Griswold, PhD**, the Pavey Family Designated Professor of Innovative Imaging and faculty director of CWRU's Interactive Commons, won the Distinguished Investigator Award from the **Academy for Radiology and Biomedical Imaging Research**. This award

was established in 2012 to acknowledge and celebrate high levels of achievement in the field of academic imaging research.

**Karen Mulloy, DO**, associate professor of family medicine and community health, won the 2023 F. Marian Bishop Educator Award from the **Association for Prevention Teaching and Research** for her contributions within the Master of Public Health program.

**Goutham Rao, MD**, the Jack H. Medalie Professor in Home-Centered Health Care, was appointed to the **U.S. Preventive Services Task Force** for a three-year term that began Jan. 1. The task force is an independent, volunteer panel of national experts in disease prevention and evidence-based medicine who make recommendations about clinical preventive services and health promotion to improve the health of all Americans.

Fourth-year medical student **Jasmine Robinson (MED '23)** served as chair of the Health Policy and Legislative Affairs committee of the **Student National Medical Association (SNMA)**. Robinson was elected to the role during the 2022 SNMA Annual Medical Education



**Robinson**

Conference, the largest gathering of underrepresented minority medical students in the U.S. As an MD student, Robinson was active with admissions, education, diversity initiatives and

volunteering in Cleveland, and she worked on international research projects in Peru and Zimbabwe. She intends to pursue a career in obstetrics and gynecology.

**Adrienne Simmons (CWR'19; GRS '23, bioethics; MED '23)** won third place in **Alpha Omega Alpha Honor Medical Society's** Helen H. Glaser Student Essay Award competition. The contest aims to encourage medical students to write creative narratives or scholarly essays relevant to medicine. Simmons' essay, titled "Sociomedicine: Explanations for Race Disparities in Infant Mortality," was published in the autumn issue of *The Pharos*, the society's quarterly journal.

## THE ANATOMY OF A SOFTWARE STARTUP

Since developers, artists and faculty at Case Western Reserve University's Interactive Commons launched HoloAnatomy® in 2019, the software has transformed the way students at the School of Medicine—and nearly 20 other institutions—learn anatomy. By putting on their Microsoft HoloLens mixed-reality headsets, students can explore and understand the human body in 3D, moving organs virtually or zooming in for a closer look.

At Case Western Reserve alone, more than 370 medical students—plus more at the dental school—use

the software, including the newly launched HoloAnatomy Neuro Software Suite. And its reach is expected to grow dramatically with the launch of Illumis Inc., a startup dedicated to rapidly scaling the platform and accelerating product innovation.

"Now universities can reduce the expensive, time-consuming task of obtaining cadavers," said Illumis CEO Mark Day, "and students can enter a world of new possibilities where they learn faster, retain more vital information, and transcend the classroom with unprecedented

collaborative potential."

It's an investment that pays off: More than a dozen pilot studies showed medical students learned anatomical content twice as fast compared to cadaver dissection and retained information 44% better.

"We believe," said **Mark Griswold, PhD**, the Pavey Family Designated Professor of Innovative Imaging and faculty director of Interactive Commons, "the HoloAnatomy suite will forever change the way students learn the fundamentals of human anatomy."





# ROOTED IN COMMUNITY

**Aiming to reduce barriers to equitable care, faculty and students are leading community-based initiatives that blend neighborhood voices, inventive research and a common vision for a more just future**

BY DANIEL ROBISON

It's a Saturday afternoon, so Urban Kutz Barbershop is packed as usual. Across the barbershop on Cleveland's west side, there's a familiar frizzle of trimmers and lively banter on sports and family. There's also another topic at the forefront of conversation among a group gathered at the shop: prostate cancer. "Anytime we talk about health, I want the authentic barbershop feel because people open up," said shop owner Waverly Willis, a cancer survivor and member of the Case Comprehensive Cancer Center's (Case CCC) community advisory board. This group of community members guide researchers on projects at the cancer center, which itself is a collaboration among Case Western Reserve, Cleveland Clinic, University Hospitals and MetroHealth Medical Center. "So even when we talk about tough topics, the place is rocking and rolling."

*Continued on page 21*







The Cleveland African American Prostate Cancer Project educates barbers in the community about prostate cancer. The barbers then take that knowledge and discuss it with patrons in their shops. From left: Sydney Evans, a community navigator for the project; ‘Dre the Barber’ from Major League Barbershop; and Jayte Tolbert, a barber at Major League Barbershop. (Photo by Angelo Merendino)

Continued from page 18

The group is part of a discussion and “listening tour” convened by the cancer center’s Cleveland African American Prostate Cancer Project. Participants share what they know (and don’t) about prostate exams, cancer risk, genetic testing and family history. They don’t hold back—volunteering their concerns about intrusive screenings and anxiety about impact on sexual performance. There is a lack of trust expressed toward the medical community. All the while, a Case Western Reserve University School of Medicine researcher facilitates discussion and jots down notes.

This conversation, and dozens of others in nearby neighborhoods, is part of the first phase of a \$2.75 million project funded by Bristol Myers Squibb Foundation. Over a three-year period, School of Medicine and Case CCC researchers seek to increase the number of Black men screened for prostate cancer and develop a sustainable model similar communities can follow.

The need for a project like this is clear: Black men have an 80% higher risk of dying from prostate cancer than white men in Cuyahoga County (where Cleveland is located), according to Case CCC data.

Willis and the rest of the cancer center’s community advisory board, which includes voices and partners from diverse communities around the region, helped shape the vision for the project.

In recent years, the board members—many of whom are cancer survivors—have helped the center prioritize research and service projects, especially focusing on those that address the striking toll many cancers have disproportionately waged on underrepresented minority and medically underserved populations.

Many of these efforts place a strong focus on battling entrenched race-based biases and structures that manifest as negative determinants of population health, especially in urban settings. Research projects must also contend with longstanding mistrust of the medical community among underserved populations, which can limit the reach and impact of such efforts.

The Cleveland African American Prostate Cancer Project seeks to take a different ap-

proach: directly engaging with the community it seeks to serve. By vouching for researchers’ intent, Willis earned buy-in from his customers. This listening-tour phase of the project specifically seeks to leverage the trusted relationship of barbers in urban settings, where minority men are known to be less likely to seek regular medical check-ups than their suburbanite peers.

“Your barber is your confidant, your counselor, knows your secrets,” said Willis. “They trust me, and I use that relationship to my advantage to encourage healthy habits. Barbers have so much more power than making people look good.”

Patrons of Urban Kutz are no strangers to frank discussions of health. Since Willis opened the first location in 2008, he has been unfailingly forthright with others about his own issues—from overcoming alcohol and drug addiction, to losing nearly 200 pounds through diet and exercise, to lowering his blood pressure enough to forgo medication. He’s also a cancer survivor. In fact, it was an impromptu urine test at a local health fair that led to his kidney cancer diagnosis.

After he recovered from cancer, Willis arranged for nurses to take willing patrons’ blood pressure while waiting for haircuts—a practice still ongoing today. Once the customer is in the chair, Willis may offer counsel on nutrition or how to stop smoking. It’s personal for him, having lost several family members and shop regulars to preventable conditions or late-stage cancer diagnoses.

As a member of the cancer center’s community advisory board, Willis pushes for researchers and public health efforts to meet people where they are—and understand where they’re coming from.

“You have to have boots on the ground in the community—liaisons between the medical world and the neighborhood,” said Willis. “People will talk about prostate cancer at my shop because they trust me, and I trust Case [Western Reserve]—and so they trust Case [Western Reserve].”

In the coming months, researchers will bring a mobile medical van to the barbershop to offer prostate specific antigen (PSA) tests to identify signs of cancer, as well as conduct



**Black men have an 80% higher risk of dying from prostate cancer than white men in Cuyahoga County, according to Case CCC data.**

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screenings to identify genetic variants that make some more susceptible to the condition.

“Our close relationship with trusted community advocates changes the conversations we’re able to have and creates new opportunities,” said **Erika Trapl, PhD (CWR ’00; GRS ’04, ’07, epidemiology and biostatistics)**, principal investigator of the prostate cancer project and an associate professor in the Department of Population and Quantitative Health Sciences. “If we can make it easier to catch cancer earlier, we can make a dent in mortality rates.”

Research projects aiming to address dis-

parities in health and care are now among the university’s and medical school’s most pressing goals. Serving as an anchor for many initiatives to improve community health—often with the support and participation of neighborhood-based advocates and organizations—the medical school has teamed with dozens of partners at the national, regional and hyper-local level in recent years.

“Not only does this type of engagement redefine the way we develop and conduct research with the community,” said Trapl, “it puts people—our neighbors—at the center of the work and makes us think differently about how our systems can better support them.”



*Karlton Cherry visits Major League Barbershop for a beard touchup. (Photos by Angelo Merendino)*



*Milano, owner of Major League Barbershop, cuts a patron's hair.*



*Calvin Tornes, a community navigator with the cancer center's Cleveland African American Prostate Cancer Project, uses a puzzle to teach Major League Barbershop's Bobby Bushay and Milano about prostate cancer.*

## Partnerships where patients are

There's urgency to this work, faculty say—there are lives that can be saved and improved today. But they are also quick to point out the need for patience and sustained dedication to build trust and conduct effective research. Both, if done well, can produce better health outcomes that disrupt stubborn trends stemming from centuries-deep sources of inequality.

“Our work must be driven by listening,” said **Lisa Navracruz, MD**, an assistant professor in the School of Medicine's Center for Community Health Integration. “Instead of telling communities what they need, we need to involve community voices who know their needs best.”

Among the projects at the medical school that blend a short- and long-term approach is Cardi-OH, a CWRU-led collaboration among Ohio's seven medical schools to improve hypertension management and reduce risk of cardiovascular disease—the No. 1 cause of death among the state's residents. Communities of color face the highest risk, with up to four times more complications and deaths from heart attacks, strokes and other conditions resulting from chronic high blood pressure, data shows.

Cardi-OH “collects and disseminates clinical pearls and emerging practices that may not be fully known that can make significant impact if adopted widely in clinical settings,” said **Shari Bolen, MD**, the Alfred F. Connors Sr. Professor in Health Services and Population Health Research at the university and founding director of Metro-Health System's Population Health Research Institute, as well as co-leader of the Ohio Department of Medicaid-funded Cardi-OH. “We are turning research into practice, establishing protocols and consistency around care, so there are fewer missed opportunities.”

The initiative recently expanded by focusing on ways to combat factors driving type 2 diabetes risks, such as lifestyle and diet.

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## Growing nutrition equity

Communities subjected to decades of disinvestment tend to have fewer sources of fresh, nutritious foods. There are also higher rates of hunger.

Recently, the Foundation for Food & Agriculture Research awarded an additional \$1 million toward an ongoing School of Medicine project seeking to study how changes to local food systems—how food is grown, processed, prepared, sold and even disposed of—can support health in areas denied consistent access to sources of nutrition.

“If we can make changes ‘upstream’ in a broken food system, we can change its downstream outcomes, such as improvements in obesity, blood pressure and other aspects of health related to food,” said **Darcy Freedman, PhD**, the Mary Ann Swetland Professor in Environmental Health Sciences and lead investigator of the research study.

Known as the **Nourishing Power Network**, the community-university-partnered project, which has attracted more than \$2.1 million total from nearly 20 funders, will advance community-led initiatives that promote healthy food traditions and access for Black, Latinx, Asian and Indigenous communities in local food systems.

“Food justice and equity means more well-nourished people expressing themselves culturally in food decisions, individually and for the community overall—with more agency over where their meals come from,” said Freedman.

## Following the data

In pursuing new ways to create healthier communities, Freedman and other School of Medicine researchers have drawn on an inventive research technique known as “community-based system dynamics.”

By combining “narrative and numbers,” the method helps researchers better understand the lived experience of individuals and communities, said **Peter S. Hovmand, PhD**, the inaugural Pamela B. Davis Professor of Medicine in the Center for Community Health Integration.

“It’s a participatory method that draws on the wisdom of those living with issues that researchers are trying to solve,” said Hovmand, who is also a professor of biomedical engineering and has a secondary appointment with the Jack, Joseph and Morton Mandel School of Applied Social Sciences.

Through workshops and other direct engagement, researchers try to map the outcomes that systems (e.g., health, education or food systems) create on their own and together. Data collection and analysis methods, paired with computer-based modeling and simulation, identify possible “leverage points”—essentially small changes that can have an outsized impact on systems producing undesirable results.

“We’re looking for the unseen, perhaps simple, answers that can contribute to solving complex problems,” Hovmand said.

In Northeast Ohio, using this approach has yielded a variety of insights—including how community health workers play a vital role in effective chronic disease health management.

A significant focus of a new five-year, \$2 million research project at the School of Medicine will invest in community health workers, known as patient navigators, and study how they can help patients become more punctual in starting and completing cancer treatment.

“Our focus is on helping people who fall through cracks,” said **Jennifer Cullen, PhD**,

the James T. Pardee–Carl A. Gerstacker Professor in Cancer Research, who is co-leading, with Trapl, this Merck Foundation funded-study.

As one of seven sites part of the national project, the Case CCC is directing the coalition of community partners that will each serve a distinct population in Northeast Ohio, including the Care Alliance Health Center, El Centro de Servicios Sociales, Cleveland Clinic, University Hospitals Health System and Seidman Cancer Center, and The Gathering Place.

Nearly 40% of Americans will be diagnosed with some form of cancer in their lifetimes, according to the National Cancer Institute—and while overall survivorship has improved in recent decades, members of minority and medically underserved populations die from the disease at disproportionately high rates. They often lack access to the basics—cancer screenings, treatment and recovery resources—and care also becomes fragmented due to the complexity of modern healthcare systems.

A significant portion of the study will look at how patient navigators can effectively usher patients through each step of their cancer journey—from screenings to diagnosis, to seeing specialists, to surgery, recovery and psychosocial support—and minimize the amount of time between each step.

“Delays create more late-stage diagnoses, which are harder to treat effectively,” said Cullen.

“Early-stage detections increase when barriers, including an all-too-common lack of transportation, are removed.”

As the work unfolds, researchers at the seven sites will continually meet and pool findings, which could eventually inform new ways of delivering cancer care services unique to—and effective for—certain communities and populations.

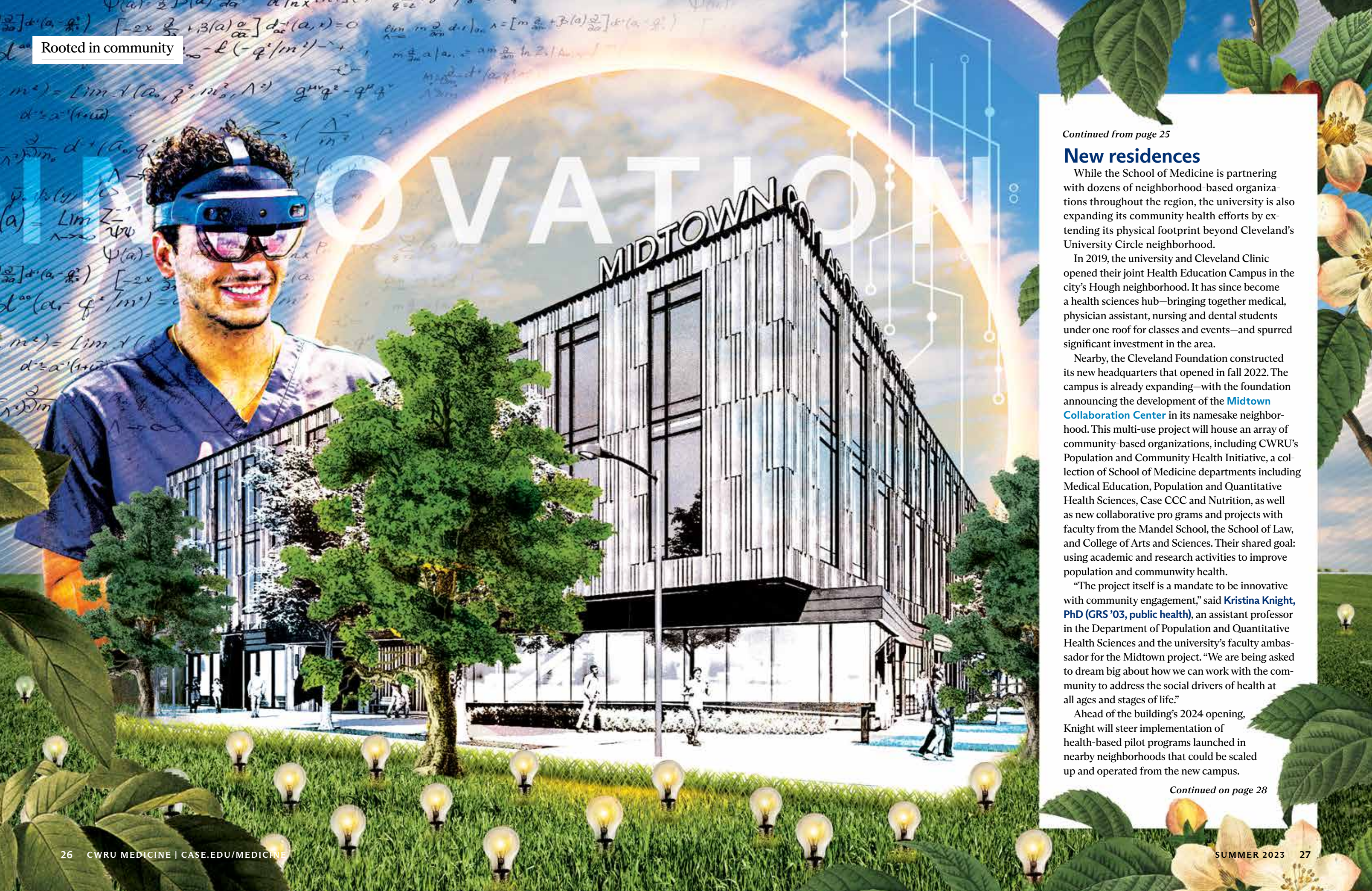
Rooted in community



Through workshops and other direct engagement, researchers try to map the outcomes that systems (e.g., health, education or food systems) create on their own and together. ... “We’re looking for the unseen, perhaps simple, answers that can contribute to solving complex problems,” Peter S. Hovmand said.

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## New residences

While the School of Medicine is partnering with dozens of neighborhood-based organizations throughout the region, the university is also expanding its community health efforts by extending its physical footprint beyond Cleveland's University Circle neighborhood.

In 2019, the university and Cleveland Clinic opened their joint Health Education Campus in the city's Hough neighborhood. It has since become a health sciences hub—bringing together medical, physician assistant, nursing and dental students under one roof for classes and events—and spurred significant investment in the area.

Nearby, the Cleveland Foundation constructed its new headquarters that opened in fall 2022. The campus is already expanding—with the foundation announcing the development of the **Midtown Collaboration Center** in its namesake neighborhood. This multi-use project will house an array of community-based organizations, including CWRU's Population and Community Health Initiative, a collection of School of Medicine departments including Medical Education, Population and Quantitative Health Sciences, Case CCC and Nutrition, as well as new collaborative programs and projects with faculty from the Mandel School, the School of Law, and College of Arts and Sciences. Their shared goal: using academic and research activities to improve population and community health.

"The project itself is a mandate to be innovative with community engagement," said **Kristina Knight, PhD (GRS '03, public health)**, an assistant professor in the Department of Population and Quantitative Health Sciences and the university's faculty ambassador for the Midtown project. "We are being asked to dream big about how we can work with the community to address the social drivers of health at all ages and stages of life."

Ahead of the building's 2024 opening, Knight will steer implementation of health-based pilot programs launched in nearby neighborhoods that could be scaled up and operated from the new campus.

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## A path for improving urban health

In each new MD class at Case Western Reserve University School of Medicine, six students are chosen for a four-year co-curricular program focused on serving medically vulnerable populations.

Known as the Urban Health Pathway (UHP), the track offers students chances to take part in early clinical work, guided by mentors caring for patients from under-resourced communities. In seminars and special learning opportunities, students learn about health policy and advocacy as they complete their MD requirements.

“We provide a path for students that highlights the joy, honor and privilege of working with patients—and how we can meet their needs in respectful, engaging ways that impact and change lives,” said Lisa Navracruz, MD, faculty lead of the UHP, which is among eight pathways first-year students can apply to join.

A family medicine doctor in Cleveland, Navracruz connects community health-focused professionals from around the region with students who have an interest in performing similar work during their careers.

“We have built a community that supports the sparks of passion and purpose in students who are drawn to this work,” she said, “and there’s plenty of work we can do together.”



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## Responding in real time

Meanwhile, on the west side of Cleveland, Case Western Reserve health sciences students operate the Student-Run Health Clinic in partnership with Neighborhood Family Practice. With faculty oversight, student-volunteers gain clinical training while responding to the community’s health needs.

“We can apply what we learn in the classroom to help people immediately,” said Rose Hart, a second-year physician assistant student at the School of Medicine. “Experiences at the clinic are shaping how we will approach our professions with a broader perspective for serving patients and the communities they call home.”

Their work at Neighborhood Family Practice expanded in 2021 to include COVID-19 vaccinations—one of many ways in which members of the medical school community worked to fight the pandemic’s effects. Through city- and county-wide efforts with contact tracing, testing, vaccination and patient education, the data medical faculty and students collected made clear that COVID-19 infection rates, severity and death rates differed widely among populations.

“This was an acute instance of how health outcomes were driven by existing and ongoing inequalities, and many faculty and students involved in pandemic response worked to try to understand and offset these disparities in real time,” said Heidi Gullett, MD, the Charles Kent Smith, MD and the Patricia Hughes Moore, MD Professor in Medical Student Education, who helped lead Cuyahoga County’s COVID-19 response as Board of Health director and a physician at Neighborhood Family Practice.

Efforts to battle COVID-19 were nimbler and more effective because they leveraged existing relationships and trust that had been built in neighborhoods around the region, said Gullett, who is co-chair of Health Improvement Partnership-Cuyahoga, a coalition of more than 300 organizations focused on facets of community health.

As a founding anchor institution of the coalition, the School of Medicine joined its members in 2015 to establish a shared priority: eliminating health inequities stemming from structural racism. This declaration has served to rally new collaborations to improve community health—especially among the region’s large hospital systems, said Gullett.

“Whether it’s COVID-19 or cancer or hunger, as a healthcare community, we share the same goal of targeting what systematically prevents people from reaching their fullest health potential,” Gullett added. “Moving these needles will take time—but the good news is we are rowing together, in the same direction, and committed for the long term.”



Students and community partners attend the Interprofessional Education Collaborative Practice I Showcase in April. Through the IPE program, students learn about team-based care and challenges outside the classroom, and they present solutions-oriented projects for community partners. (Photo by Matt Shiffler)

## Building on trust

Gregory Archer is a prostate cancer survivor and has taught science in Cleveland public schools for more than 20 years. His uneven experiences with healthcare—and the pronounced disparities in health outcomes for racial minorities compared to whites—contributed to Archer’s decision to join the Case CCC Community Advisory Board, where he serves with Waverly Willis and more than 30 others from around the region.

“We live among some of the best healthcare systems on the planet, and one of best medical schools in the country,” said Archer. “All communities should benefit from that—and I think they’re starting to.”

Knowing that the appropriate setting is crucial for the discussion of sensitive health matters, Archer hosted a listening session for the Cleveland African American Prostate Cancer Project at his church—traditionally a place where, like barbershops, Black Americans go for trustworthy information and genuine conversations about vulnerable topics, he said.

“When patients feel like we are seen as valuable, heard and acknowledged, it builds trust,” said Archer. “Trust opens the door for authentic communication, which allows us to become better decision makers for our own health.

“That’s all a good start,” he added. “It’s follow-up that will really make a difference.”

**“We live among some of the best healthcare systems on the planet, and one of best medical schools in the country. All communities should benefit from that—and I think they’re starting to.”**

— Gregory Archer, member of Case CCC Community Advisory Board



# Expanding perspectives

From analyzing petri dishes to providing patient care, students and recent alumni share their CWRU School of Medicine experiences | BY MARK OPREA

In just over a decade, the United States could face a shortage of 37,800 to 124,000 physicians, according to a 2021 report by the Association of American Medical Colleges (AAMC). The physician-scientist field is suffering a sharp decline as well, with National Institutes of Health data showing physician-scientists' percentage in the workforce falling from 4.75% to 1.5% since the 1980s.

Fortunately, medical school applications are on the rise, with a record-setting 18% increase to schools across the country in the early months of the COVID-19 pandemic and, when compared with pre-pandemic data, 4% growth in 2022-23, according to AAMC data. And while applications alone can't address the complications surrounding the shortage—more residency programs and congressional support to financially enable this expansion, for example, are required—the increased demand is drawing more, and stronger, students into the field of medicine.

At Case Western Reserve University School of Medicine, enrollment in all programs has increased by 11% during the past five years and 35% in the past decade, while MD applications have grown by 14% and master's and PhD program applicants are up 52% in the past five years.

With 25 degree options, including master's, PhD and certificate programs, plus three tracks to an MD, more than 2,300 students are realizing their educational goals at Case Western Reserve University School of Medicine.

Here are six of their stories.

PHOTOS BY MATT SHIFFLER

## Tamia Potter

2023 graduate, MD University Program

Tamia Potter was in high school when she realized healthcare was her calling. She earned her certified nursing assistant license by the time she graduated, and started working nights while completing her undergraduate studies at Florida A&M University.

Four years later, she was in Cleveland, starting Case Western Reserve's traditional University Program, when she encountered a tough paradigm shift.

Her previous education, she said, had not fully prepared her for the academic rigor of graduate school.

"I was studying like six, seven hours a day," Potter continued. "Most people I knew were not doing that their first week."

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But the CWRU community, she said, got her through those early days. “I don’t think I would be as successful as I am if it wasn’t for how supportive the faculty and staff are,” she said.

Potter conducted her research—centering on neurosurgical trauma and recovery and quality of life outcomes for patients who have had neurosurgical treatments—at three hospitals: Cleveland Clinic (where she leads a lab), MetroHealth Systems and University Hospitals. Her long-term goal is to be a neurosurgeon specializing in cranial and spinal tumors.

While at CWRU, Potter appreciated that, even as a busy student, she was encouraged to devote time to interests outside her studies. “Case [Western Reserve] respects your time and allows you to explore all of the resources they have to offer,” Potter said.

Potter has served as a mentor for younger students. But for inspiration of her own, Potter looks to one of her role models: **Tiffany Hodges, MD**—an assistant professor of neurological surgery at the School of Medicine and one of University Hospitals’ first Black women neurosurgeons.

**Krystal Tomei, MD**, one of Potter’s mentors and an associate professor of neurological surgery at the School of Medicine, introduced Potter to Hodges. “Just seeing her in person made me realize that the dream I am chasing after is possible,” said Potter.

She’s well on her way: Potter matched at Vanderbilt University—making her the neurosurgery program’s first Black woman resident.

“There are 5,000 neurosurgeons in the United States,” she continued, citing a recent report published by the Association of American Medical Colleges. “And, as of 2020, only 33 of them are Black females. It’s crazy to know I’m going to be one of them.”



## Emily Novak (GRS '22, biochemistry)

Rising second-year student, PhD  
Biomedical Sciences Training Program

Last spring, Emily Novak was in the final stretch of her master’s program in biochemistry at Case Western Reserve University when her appendix nearly burst.

“I had an appendectomy and missed the last two weeks of school before finals, without warning,” she remembered. After she recovered, she was grateful that her professors at the School of Medicine were ready to support her as she caught up and completed her academic work.

“I had a professor sit with me one on one and teach me everything I missed in lecture,” Novak said, “so I was not only prepared for the exam, but also truly learned the content.”

This experience coincided with Novak’s deliberation about where to earn her PhD—and the compassion and attention she received from faculty at CWRU played a large part in her decision to accept the offer from Case Western Reserve’s Biomedical Sciences Training Program, in which students explore various biomedical science areas before homing in on one for their PhD.

In her first year, Novak spent her mornings in classes and rotating across labs to determine her focus.

For instance, even though her main interest is pharmacology, she also joined a lab in the genetics department because they’re working on a potential cancer drug. “I bring a fresh perspective to this lab with my experience,” Novak said. “Biomedical research is very interdisciplinary, and I love that CWRU recognizes this and allows us to explore various disciplines.”

One day, Novak hopes to lead a team of researchers—perhaps at a pharmaceutical company pursuing drug discovery and development.

For now, she’s soaking up everything she can from the genetics lab and her pharmacology classwork. “People here genuinely care about what they’re researching—they’re not doing it to be well-known,” she said. “It’s cool to be a part of that.”



## Matthew Nagy

2023 graduate MD,  
Cleveland Clinic Lerner College of Medicine Program

The headaches started for Matthew Nagy halfway through his senior year of high school. Then, the stiff neck. Then the extreme sensitivity to light.

Nagy would eventually learn these were early symptoms of meningitis. He spent two weeks in the hospital recovering in the care of pediatricians—an experience that would help determine his career trajectory.

After earning his bachelor's degree and Master of Public Health from University of Michigan, he came to Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, a physician-investigator track at the School of Medicine. There, he found a connected community that helped him get through the especially challenging first two years as a med student.

The faculty, too, have been instrumental in his success, which includes extensive research studies and a year in the National Institutes of Health's Cancer Data Science Laboratory. "I have found many great clinical and research mentors through CWRU and have been so thankful and impressed with their commitment and investment in me as a

student," the fifth-year student said.

Among them is **Seth Rotz, MD**, assistant professor of pediatrics and a member of Case Comprehensive Cancer Center, who helped Nagy connect his interests in cancer prevention and pediatrics while teaching him about the late effects of childhood cancer. And, after taking a course called "Artificial Intelligence in Healthcare," Nagy finally found his niche: the intersection of pediatric oncology and data science.

Recently, Nagy has been investigating machine learning biases in pediatrics—such as how certain oncological devices, like those that detect tumors, are often partial to adult patients. He intends to learn how to produce more accurate data to improve precision in pediatric tumor detection, which will be beneficial in both prevention and treatment.

"That's really important [to consider], as doctors," Nagy said. "Not only are we going to be treating illness, but also how can we keep our patients healthy—even after we've cured their cancer?"

Nagy's next step brought him back to the field where his passion for medicine first started: He earned a pediatrics residency at Boston Children's Hospital.





## Bryan Webb, PhD

Sixth-year student, MD/PhD Medical Scientist Training Program

By 2020, Bryan Webb, PhD, had been studying cancer biology in a lab for five years. By 2021, he was delivering babies in the maternity ward.

It's all part of the Medical Scientist Training Program (MSTP) at Case Western Reserve University School of Medicine. The first of its kind in the country, the MSTP is a combined degree program in which a student earns an MD and PhD in eight to 10 years—starting with two years of medical school before shifting to PhD studies and, finally, their last two years of med school.

During his lab work with **Ruth Keri, PhD**, professor of molecular medicine, Webb examined the function of a protein important for the growth of breast cancer cells. He observed that, when the protein's function was inhibited, the DNA was damaged, which led to difficulty going through mitosis and cell death. He also investigated the pathways used by breast cancer cells that allow them to become resistant to that same inhibition.

"But even if we inhibit a protein, chances are, unfortunately, that

cancer finds a way," said Webb, who came to Case Western Reserve after completing his undergraduate degree at Washington University in St. Louis. "And because cancer can find a way, it's good for us to understand what ways cancer finds."

After earning his PhD in 2021, Webb returned to his medical training, which he will complete in May. He has been thrilled by the diversity of patients he sees in his clinical rotations.

"I've been able to deliver babies at University Hospitals, manage the care of septic patients at MetroHealth [Medical Center], determine neurological deficits at the [Louis Stokes] Veterans Affairs [Medical Center] and plan treatment of cancer patients at Cleveland Clinic," said Webb, who is interviewing for radiation oncology positions so he can focus on providing optimal patient care.

"It's not simply cells in a dish; it's not statistics," he said. "It's a scared patient, wondering with their doctor 'Is this the correct treatment for me?'"

"As a physician," he said, "that's what I want to help people with."







## Nuanqiu Hou

2023 graduate, Master of Science in Applied Anatomy

**N**uanqiu Hou was 8 years old when she decided she was going to medical school.

This was the early 2000s, and Hou was being raised by her grandmother in Shenzhen, China.

Years later, after working in a biomedicine lab at Brown University and earning her undergraduate degree from Rhodes College in Memphis, Tennessee, Hou applied to Case Western Reserve University School of Medicine's applied anatomy program.

She enrolled in the summer of 2021 and was quickly taken by the program's tight-knit cohort approach. "Everyone knows each other, shares resources with each other and studies together," she said. Her professors, she noted, are accessible, supportive and kind, especially her mentor and anatomy professor **Scott Simpson, PhD**.

Hou has been impressed by the practical experience and access to resources at the School of Medicine—especially the cadaver lab overseen by **Andrew Crofton, PhD**, professor of anatomy, as well as the classes.

Last fall, Hou took a musculoskeletal surgical anatomy course, where she and her classmates, including first-year orthopedic residents from University Hospitals, practiced placing implants in cadavers for a total ankle replacement, and pedicle screws for a spinal fusion. They observed total hip and knee replacements, and different approaches to repairing elbow and wrist injuries.

"The hands-on aspect was really fun," said Hou, "and it's a great motivation to observe how the little details we learned can have clinical importance and potentially impact patients' quality of life."

After graduation, Hou will gain even greater understanding as a clinical research coordinator in Memphis. It's a role that allows her to gain even more insight into medicine—the field she's longed to join since childhood and, even more so, since her grandmother's passing from lung cancer.

"She was my person," Hou said. "It's why I want to understand diseases—so that I can help other families through the pain we went through."



## Alec Dodson

Rising second-year student, Master of Science in Nutrition

**B**orn and raised in Los Angeles, Alec Dodson was passionate about cooking and entertained becoming a chef, but ended up studying nutrition at California State Polytechnic University, Pomona.

But it wasn't until he worked as a dietary specialist for 2,000 kids with chronic illnesses at a summer camp that Dodson saw his future.

"That was my inspiration to get into medicine," he said. "It was my first time using my knowledge of nutrition and applying it to actual people."

After graduation, Dodson came across the research of **Stephanie Harris, PhD (GRS '07, '11, nutrition)**, associate professor of nutrition at Case Western Reserve University, on culinary lifestyle medicine.

It prompted an epiphany for Dodson. "Oh my gosh," he recalled thinking, "there's a way to incorporate two of my passions into the same thing."

Dodson applied to CWRU's Master of Science in Nutrition program last spring and, since then, has delved into the nature of how healthy eating can help prevent cancer and prolong survivorship. For example, survivors of colorectal

cancer may be more prone to developing gut dysbiosis and may need specific interventions to promote healthy bacteria. Dodson is also investigating the chemical properties of certain plants, such as tomatoes or leafy greens, to see how these kinds of foods can reduce inflammation and oxidative stress—and then how to best communicate recommendations for a revised diet to patients.

"Essentially we're taking different aspects of what it means to be a cancer survivor," he said, "and addressing them through dietary interventions."

What Dodson finds special about the School of Medicine, however, is the cooperative nature of the academic work he's doing—a quality he intends to look for as he applies to MD programs.

Before he graduates this spring, Dodson said he might return to that California summer camp—bringing with him a refined outlook on food education and nutrition.

"That's why I'm in this program right now," Dodson said. "There's chronic illness, and we do need medicine, but at the same time, there are additional ways to make people's lives better [through nutrition]."





# Research Updates

Breakthroughs from the labs of  
Case Western Reserve University School of Medicine

## CONTINUING RESEARCH INTO PRION DISEASES WITH \$20M IN FUNDING

As the only research center of its kind in the U.S., the National Prion Disease Pathology Surveillance Center at Case Western Reserve University plays a critical role in understanding how and why prion diseases—degenerative brain conditions found in humans and animals for which there is no known cure—develop and spread. Last fall, the center earned a five-year Centers for Disease Control and Prevention grant renewal of up to \$20 million to allow researchers to continue their work.

Prion diseases, such as the human-based Creutzfeldt-Jakob disease and fatal familial insomnia, and the animal-based “mad cow disease” and chronic wasting disease, develop when normal prion proteins in the brain change shape and clump together. This causes damage to the nerve cells and results in small, spongelike holes in brain tissue, which leads to memory loss, difficulty speaking and walking, and behavior changes—as well as accelerated death.

In CWRU School of Medicine’s prion center, which was established in 1997, researchers coordinate autopsies and neuropathologic examinations of suspected prion disease cases from across the country. They collect tissue samples and clinical information to monitor and investigate cases—especially those in which the disease may have been acquired from other humans or animals. They perform cerebrospinal fluid testing. And they operate a clinical reference lab for prion disease.

With the grant renewal, researchers will continue surveillance of existing and emerging prion diseases and will set up brain-tissue testing and use a new diagnostic test called real-time quaking induced conversion.

This testing method has “revolutionized the way the disease is diagnosed clinically,” said **Brian Appleby, MD**, professor of neurology and director/principal investigator of the center. “We are pleased to receive this grant renewal to continue this important research.”

Among their latest work: In a National Institutes of Health-funded study released last fall in the journal *Nature Structural & Molecular Biology*, researchers identified the structure of protein fibrils linked to a hereditary form of human prion disease. This insight, they said, reveals the mechanism through which prions can jump between some animal species while retaining a barrier between others.

The answer: Cross-seeding across species is restricted due to differences in the sequence of amino acids among species, according to lead author and postdoctoral scholar **Qiuye Li, PhD**.

“One of the major remaining questions in the field of prion diseases has been why these diseases are transmissible between some animal species but not others,” said senior author **Witold Surewicz, PhD**, the Robert F. Bennett, MD, Professor of Neurological Research in the Department of Physiology and Biophysics. “Our findings explain how this works.”



## MAPPING THE BODY'S SUPERHIGHWAY

Electrical stimulation of the vagus nerve—which connects the brainstem to most organs in the torso—is a critical treatment for chronic health conditions such as epilepsy, rheumatoid arthritis and heart failure. But there isn't enough data to map the vagus nerve's roughly 100,000 fibers to provide more effective, targeted therapies.

Until now.

Through a three-year, \$15.75 million National Institutes of Health contract, researchers at Case Western Reserve and Duke universities are conducting multimodal, multi-scale imaging of 100 human vagus nerves from cadavers donated to CWRU's Anatomical Gift Program.

They're using multiple imaging technologies—including 3D-MUSE, a novel imaging tool developed at CWRU and University of California, Davis, that uses ultraviolet surface excitation to rapidly collect microscopic images of the nerve while slicing through it at about one-thirtieth the width of a hair.

"If we can better understand how the vagus nerve is organized," explained CWRU Assistant Professor of Biomedical Engineering **Andrew Shoffstall, PhD (GRS '13, biomedical engineering)**, who co-leads the project with Duke University's Nikki Pelot, "we can more rationally design devices and procedures to isolate and regulate its many pathways."

The ultimate goal of the "outstanding, cross-cutting and experienced team," Shoffstall said, is to speed development of safer, more effective neuromodulation therapies—bringing targeted care to patients who need it most.



**Shoffstall**

## UNCOVERING WHY WOMEN ARE MORE LIKELY TO DEVELOP ALZHEIMER'S

Alzheimer's disease afflicts females at roughly double the rate of males, and researchers from Case Western Reserve University School of Medicine may have the answer why—as well as a potential path to new medicines to treat the disease.

The female brain shows higher expression of the X-chromosome-linked enzyme ubiquitin-specific peptidase 11 (USP11) when compared to the male brain, according to the findings published in the journal *Cell*. This increase results in greater accumulation of a protein called tau, which is responsible for the formation of toxic

protein clumps inside brain nerve cells of Alzheimer's disease patients.



**Kang**

"When a particular tau protein is no longer needed for its nerve cell's function, it is normally designated for destruction and clearance," said co-senior author **David Kang, PhD**, the Howard T. Karsner Professor in Pathology. "Sometimes this clearance process is disrupted, which causes tau

to pathologically aggregate inside nerve cells. This leads to nerve cell destruction in conditions called tauopathies, the most well-known of which is Alzheimer's disease."

So Kang and co-senior author **JungA Woo, PhD**, assistant professor of pathology, searched for why dysfunction in this typically balanced process might occur.

Their findings—that the female brain naturally expresses higher levels of USP11 than the male, and that USP11 levels correlate strongly with brain tau pathology in females but not in males—suggest that excessive activity of the USP11 enzyme in females drives increased susceptibility to tau pathology in Alzheimer's disease. However, the authors caution that animal models may not fully capture the tau pathology seen in humans.

"In terms of implications, the good news is that USP11 is an enzyme, and enzymes can traditionally be inhibited pharmacologically," Kang said. "Our hope is to develop a medicine that works in this way, to protect women from the higher risk of developing Alzheimer's disease."





# Restoring bodily function to patients across the country



**T**he groundbreaking technology Case Western Reserve and MetroHealth System researchers developed to help individuals regain bodily function after devastating injury or disease was an impressive feat. The next step: expanding access to those who need it.

Through a three-year, \$12.5 million grant from the National Institutes of Health, a team is developing the Cleveland Open-Source Modular Implant Innovators Community (COSMIIC). This network will give researchers across the country access to schematics for the implantable technology that can help patients experiencing paralysis from spinal

cord injury, stroke or other ailments regain bodily function. By making the technology more widely available, the researchers hope it could be expanded to a broader range of diseases and disabilities.

The concept is based on a modular implantable system developed by **Kevin Kilgore, PhD (GRS '87, '91, biomedical engineering)**, the P. Hunter Peckham, PhD, and George J. Picha, MD, PhD, Professor in Biomedical Engineering at CWRU School of Medicine; **P. Hunter Peckham, PhD (GRS '68 '72, biomedical engineering)**, a Distinguished University Professor Emeritus at Case Western Reserve and co-director of the MetroHealth Rehabilitation Institute; and

**Brian Smith**, director of active implant systems in the Department of Biomedical Engineering at CWRU. Kilgore, Smith and Cindy Chestek, PhD, associate professor of biomedical engineering at University of Michigan, lead the COSMIIC team.

“If we are successful, more patients around the country will have access to these life-changing innovations developed right here in Cleveland,” said Kilgore, who is also a staff scientist in MetroHealth’s Center for Rehabilitation Research and its orthopedics and physical medicine and rehabilitation departments. “Our goal is to empower researchers to offer hope to those who need it most.”



## AN EYE TOWARD BETTER UNDERSTANDING THE CORNEA

The cornea is the most densely innervated tissue in the body, according to **Michael Jenkins, PhD (CWR '04; GRS '08, biomedical engineering)**, the Dr. Donald and Ruth Weber Goodman Professor of Innovative Cardiovascular Research at Case Western Reserve University School of Medicine. Yet there’s a lack of knowledge surrounding how the eye’s surface maintains structural and functional integrity—which is key to understanding many diseases.

Through a new five-year, \$7.3 million National Institutes of Health grant, Jenkins is leading a multidisciplinary team of researchers from CWRU and Cleveland Clinic aiming to identify new ways to study how the nervous system maintains eye health, as well as the impact of inflammation and pain.

The researchers are mapping elements of corneal nerves and supporting cells; studying the connection between corneal signaling and the brain’s pain centers; and investigating eye surface control under different inflammatory and pain conditions to better understand the impact of treatment options.



Jenkins



## A positive effect of stress

**H**igh blood pressure, insomnia, even heart disease—the negative medical effects of stress on the body are generally well known. But what if some level of stress can actually protect your immune system?

A study by Case Western Reserve University School of Medicine researchers released in *Proceedings of the National Academy of Sciences* suggests this might just be the case.

After 56 days of stress, mouse models with Crohn's disease-like ileitis showed a significant increase in formation of intestinal tertiary lymphoid organs (TLO)—immune cells that develop in response to chronic inflammation or injury—in the colon as an immune response. However, the stress did not significantly increase small or large intestinal inflammation.

And when the mice received a

“second hit” of stress through a fecal microbiome transplantation, TLO formation didn't increase. Instead, these mice had more cytokines IL-23 and IL-22, which are part of the TLO formation pathway. IL-22, in particular, plays a protective role in wound healing and tissue regeneration and can have both anti- and pro-inflammatory responses.

“Our findings demonstrate that psychological stress induces formation of TLOs by increasing the production of IL-23,” said senior author **Fabio Cominelli, PhD, MD**, the Hermann Menges Professor of Internal Medicine. “So do I want to be stressed? It all depends on the definition of stress. ... A little bit of stress is good in your life, but you want to be stressed in the right way.”



## COMBATING AN ‘URGENT THREAT’

In 2022, the U.S. saw nearly 2,000 clinical cases of *Candida auris* (*C. auris*), a multidrug-resistant yeast that causes serious infection and, in 30 to 60% of cases, death. While the number of cases remains small, it is 10 times larger than five years ago, as the fungus spreads in what the Centers for Disease Control and Prevention deemed in 2015 “an urgent threat.”

With a five-year, \$3 million-plus grant from the National Institutes of Health, Case Western Reserve University researchers are working on a drug therapy that not only may treat *C. auris* but also prevent it.

“What is different and particularly scary about *Candida auris* is that it can survive on skin and healthcare surfaces up to two weeks, allowing the spread from person to person in healthcare settings and nursing homes,” said **Mahmoud Ghannoum, PhD (MGT '04)**—professor of dermatology and pathology at the School of Medicine and director of the Center for Medical Mycology at University Hospitals Cleveland Medical Center—who leads the research team with **Thomas McCormick, PhD**, associate professor of dermatology. “We hope to develop new antifungal compounds that will lead to clinical drugs through the research supported by this grant.”

## THE ETHICS OF “NUDGING”

The concept of “nudging”—subliminally and subtly encouraging people in their decision-making—has long been common practice. (Think: salad bars at the start of a buffet line to encourage healthier eating.)

But can that concept ethically be extended to encouraging participation in clinical trials through tactics such as skewing questions or adding checklist items on consent forms? Case Western Reserve University bioethics and law faculty earned a four-year, \$1.6 million grant from the National Center for Advancing Translational Sciences at the National Institutes of Health to determine the answer.

The study is led by **Maxwell Mehlman, JD**, a professor of law and bioethics at CWRU, and Kim Kaphingst, ScD, at the University of Utah, with CWRU School of Medicine Department of Bioethics, School of Law and Cleveland Clinic Lerner College of Medicine collaborators.

“When we think about nudging people to be subjects in medical trials,” Mehlman said, “it certainly raises a lot of questions.”



# Alumni and Friends

Creating connections among—and celebrating the achievements of—our graduates and donors



Alumni, students, faculty, staff and friends mingled and reunited at (above and opposite page, bottom) the Dean's Reunion Soiree and (opposite page, top) MedConnect Mentoring and Networking Brunch. (Photos by Dale McDonald)

## BACK TOGETHER

Reconnecting, exploring campus and earning honors at **Homecoming and Reunion Weekend**

As part of the first full-fledged Homecoming and Reunion Weekend since 2019, Case Western Reserve University welcomed alumni and friends to campus in October for four days of learning, networking and reconnecting.

In between Blue Bash—a new opening night celebration complete with entertainment, food and fireworks—and a Spartan football win versus St. Vincent College, attendees had the chance to take part in more than 100 other events, including ones especially for School of Medicine graduates.

Central to the school's programming were lectures and panel discussions to educate and inspire. The Dean's Distinguished Lecture, for example, featured **Yuling Luo, PhD (GRS '92, biochemistry)**, founder, chairman and CEO of the immunoassay and antibody technology startup **Alamar Biosciences**, and **Jay Short, PhD (GRS '89, biochemistry)**, chairman, CEO and co-founder of the clinical-stage cancer therapeutic company **BioAtla Inc.** and chairman and co-founder of biopharmaceutical company **Himalaya Therapeutics**. The two leaders discussed building and growing their organizations, the ups and downs of commercializing research, and how a Case Western Reserve education helped them along the way.

In addition, the MedConnect Mentoring and Networking Brunch included an interdisciplinary panel of experts who shared insights on the possibilities and challenges related to the evolving context of healthcare. Lawrence Caslino, MD, PhD, the Livingston Farrand Professor of Public Health at Weill Cornell Medical School, teamed up with Evelyn Duffy, DNP, the Florence Cellar Professor of Gerontological Nursing at Case Western Reserve's Frances Payne Bolton School of Nursing, and Scott L. Alperin, DDS (DEN '74), assistant clinical professor and staff surgeon



at CWRU School of Dental Medicine, to discuss how increasing corporatization, private equity investment and pressures on private practice are affecting healthcare organizations and the overall experience.

Plus, there were plenty of opportunities to network, reminisce with former classmates and faculty, and honor alumni and friends of the school. The premier event was the Dean's Reunion Soiree, a cocktail reception to recognize the grand and reunion classes, leadership donors and scholarship supporters.

Also among the honorees: the 2022 Medical Alumni Awards, Lifetime Achievement Award and Case Medal for Excellence in Health Science Innovation winners, acknowledging outstanding commitment to the school, university and society (p. 52).

The award winners and attendees gathered at the Sheila and Eric Samson Pavilion at the Health Education Campus of Case Western Reserve University and Cleveland Clinic—a space that opened in summer 2019 and hosted only one homecoming before the COVID-19 pandemic began.

"We're back together in what is absolutely the best education facility in the country," School of Medicine Dean **Stan Gerson, MD**, said. "And the fact that we can share it with you is phenomenal."

### SAVE THE DATE

Homecoming and Reunion Weekend 2023 is set for **Oct. 12-15**



HOMECOMING AND REUNION WEEKEND

# Honoring medical excellence

## 2022 alumni and achievement awards



**Janet V. Cross, PhD**  
(GRS '00, molecular biology and microbiology)  
The Clifford J. Vogt, MD '34 Service Award



**Nathan A. Berger, MD**  
Lifetime Achievement Award



**George Dubyak, MD**  
Case Medal for Excellence in Health Science Innovation



**David F. Ransohoff, MD**  
(MED '72)  
Distinguished Alumnus Award (MD category)



**Scott T. Weiss, MD**  
(MED '72)  
Distinguished Alumnus Award (MD category)



**Sanford Markowitz, MD, PhD**  
Honorary Alumnus of the Year Award



**Sadja S. Greenwood, MD, MPH**  
(MED '58)—posthumous  
Special Recognition Award



**Absera Melaku, MPH**  
(CWR '09; GRS '13, anthropology, public health)  
Early Career Leadership Award



**Lawrence F. Brass, MD, PhD**  
(GRS '75, biochemistry; MED '77)  
Distinguished Alumnus Award (medicine-related PhD or MD/PhD category)



**Alexander Chung-Yu Tsai, MD, PhD**  
(GRS '04, epidemiology and biostatistics; MED '06)  
Distinguished Alumnus Award (medicine-related PhD or MD/PhD category)

Know someone deserving of these honors?  
Nominate them by emailing [somalumni@case.edu](mailto:somalumni@case.edu).

## AIR FORCE INVESTMENT CONTINUES PAYING DIVIDENDS

Fresh off the commencement stage with degrees in chemistry and economics from Ohio Wesleyan University, **Michael Wise** had his sights set on an MBA from the University of Michigan. Uncle Sam had different plans.

Sharing the experience of many of his 1960s-era peers, Wise found himself denied an extension from his local draft board. Knowing what was likely coming next, Wise enlisted in the United States Air Force, eventually becoming an officer. After six years in the military, including a year in Vietnam, Wise discovered his calling—pivoting from a pursuit of a business degree to a career in medicine.

“I had friends who were in medical school at Case Western Reserve,” Wise recalled. “I was so impressed by the way medicine was taught there. The way the curriculum was set up is the way medicine should be taught.”

Nearly 50 years later, with a successful and fulfilling career behind him, Wise, MD (MED '76), and his wife, Elizabeth, established a scholarship program for medical students at Case Western Reserve. After an initial \$2 million estate commitment in 2015, the couple recently pledged an additional \$1 million, with hopes that their contributions can help students gain an education unencumbered by financial strain.

“I was the first in my family to go to college,” he said. “And I had the good fortune that the Air Force paid my way through, leaving me without the financial burden so many others have.”

Wise, who initially left the service as a senior captain to pursue his medical degree, moved to Cleveland along with his wife, Elizabeth, and their young son. After completing prerequisite courses and being accepted into the CWRU medical program, Wise reen-

tered in the Air Force and attended classes while on active duty—serving summer months at the hospital on Wright-Patterson Air Force Base in Dayton, Ohio, while the Air Force covered his tuition.

Bringing years of military experience and a deeper life perspective to the classroom, Wise was grateful to have been one of many older students accepted to the school by then-assistant dean of students John Caughey, MD—who Wise felt was welcoming to applicants with unusual backgrounds.

Starting out in internal medicine, Wise quickly realized he wanted to spend more time with patients and took a residency in psychiatry. Eventually, he integrated the two—working with medically ill patients with psychiatric issues—en route to becoming a consultation psychiatrist. Wise also wrote and edited the first two textbooks on treating the medically ill with psychiatric issues.



Michael and Elizabeth Wise

Wise continued his Air Force career at Wilford Hall, a hospital located on Lackland Air Force Base outside of San Antonio, Texas, before retiring from the Air Force in 1987. He would later accept a teaching position at the University of Texas at San Antonio and serve as chair of the Department of Psychiatry & Behavioral Health at Ochsner Health in New Orleans before eventually retiring from the University of California, Davis.

When asked about the consideration he and his wife gave to helping aspiring medical students—who stand to benefit the same way he did—his advice to others was simple. “Do it!” he said. “For me, the way CWRU taught medicine made the most sense. I was able to thrive in that environment without the burden of debt.”

**“I had friends who were in medical school at Case Western Reserve. I was so impressed by the way medicine was taught there. The way the curriculum was set up is the way medicine should be taught.”**

—Michael Wise, MD



# A holistic

**Renowned infectious disease expert** gets her “dream job” advancing vital research and is honored by her alma mater

**W**ithin a few days of starting medical school, **Julie Gerberding** met her first patient: a young mother whose health Gerberding monitored from pregnancy through postpartum care, and into the initial years of the baby’s wellness visits.

It was precisely this early clinical experience, plus the school’s pioneering systems-based curriculum for studying disease, that had drawn Gerberding’s interest in Case Western Reserve University School of Medicine as a seventh grader in South Dakota.

“Being involved with patients so early in my training catalyzed my entire professional trajectory,” said Gerberding, MD (WRC ’77, MED ’81). “The experience placed patients at the center of my learning, an approach that remains part of everything I do.”

Also key to her success in medicine, government and industry? Integrat-

ing programs across disciplines.

Her work as an epidemiologist at San Francisco General Hospital and Prevention Center, which she established, drew the attention of the U.S. Centers for Disease Control and Prevention (CDC). Gerberding joined the agency in 1998 and gained national recognition in 2001 as a prominent CDC representative in front of Congress and the media during the anthrax attacks.

In 2002, Gerberding made history as the first woman to direct the CDC, overseeing a \$10 billion budget with a workforce of 15,000 people in more than 45 countries, and leading the agency through a strategic restructuring to expand research as well as preparedness and response to bioterrorism, pandemics, and other global health threats.

“At the time, the CDC worked in a very vertical fashion. In some ways, that’s good because you have deep scientific expertise,” said Gerberding. “But you also need to integrate



“Build bridges to bolder, broader breakthroughs.”

# approach

that expertise across the silos and that helps catalyze more innovative solutions to complex health challenges.”

When she became an executive leading the vaccines division at the multinational pharmaceutical company Merck in 2010, Gerberding increased global vaccine access and continued her career-long focus on implementing horizontal integration—convening groups that might not otherwise collaborate—to ensure the best outcome for patients and the business.

“That’s my comfort zone,” she said, “bringing in diverse points of view, disciplines and interests to create a ‘wise crowd’ that can solve really hard problems.”

## A new frontier

Last May, Gerberding took on a new challenge when she was named chief executive officer of the Foundation for the National Institutes of Health (FNIH)—a nonprofit chartered by Congress in 1990 to support the mission of the National Institutes of Health (NIH) and to, as Gerberding explains it, “build bridges to bolder, broader breakthroughs.”

“That is a slogan, but it’s also a concise description of our purpose,” Gerberding continued. “We build bridges across the biomedical enterprise, raise money, and provide resources that allow biopharmaceutical companies, patient organizations, foundations, and academicians to work in partnership with NIH to take on riskier

research and do it faster.”

Key to that work, Gerberding believes, is taking advantage of “team science” to accelerate the translation of emerging discoveries into solutions to the most vexing health challenges—like Alzheimer’s disease, cancers, and heart failure. The FNIH Bespoke Gene Therapy Consortium also helps bring hope to 25 to 30 million Americans living with rare diseases caused by genetic defects, but funding to study and treat these conditions is relatively scarce compared to more common illnesses.

Gerberding has received more than 50 awards and honors throughout her trailblazing career, including the United States Department of Health and Human Services Distinguished Service Award, placement on *TIME*’s 100 Most Influential People in the World list and repeatedly making *Forbes*’ 100 Most Powerful Women in the World list.

In 2021, Gerberding’s list of accolades grew when Case Western Reserve University School of Medicine named its newest academic society—small cohorts to which matriculating students are randomly assigned—for the university trustee.

“I’m honored to have my name associated with this brilliant framework for supporting students through their medical school journey,” said Gerberding, whose time at CWRU predated the academic society structure. “Practicing medicine is a privilege. It’s a lot of hard work, but in the end, I can’t imagine a more wonderful opportunity to be of service and feel purposeful while also finding great joy and experiencing life in all of its conditions.”

—Carey Skinner Moss



# Class notes

Includes items submitted to Case Western Reserve University School of Medicine in 2022



Have a new job? Earn an award? Recently marry, have a child, retire or travel the world? We'd love to hear from you! Share your updates with us at [case.edu/medicine/alumni](https://case.edu/medicine/alumni).



## Remembering alumnus, Nobel Prize winner Paul Berg

**Paul Berg, PhD (GRS '52, biochemistry)**, who became Case Western Reserve's first Nobel Laureate in chemistry in 1980 for his groundbreaking work in the biochemistry of nucleic acids, died in February. Berg's pioneering research on the insertion of DNA from *E. coli* bacterium into an animal virus, which became the first known instance of recombinant DNA, was a milestone in scientific discovery—one that launched the field of genetic engineering and led to medical advances such as hepatitis vaccines, synthetic insulin and human growth hormone.

Though Berg had never before heard of Western Reserve University, the Pennsylvania State University undergraduate was drawn to the school after reading literature by Biochemistry Chair Harland Wood on radioisotope technology.

"That was a fortunate choice; in fact," he shared in his Nobel Prize biography, "it changed the course of my career."

Berg later served on the faculties of Washington University School of Medicine in St. Louis and Stanford University School of Medicine. In addition to the Nobel Prize, he received the National Medal of Science and the National Library of Medicine Medal, and was inducted into a number of prestigious societies including the National Academy of Sciences and the American Academy of Arts and Sciences.

**Terrence E. "Terry" Steyer (MED '94)** was named dean of the College of Medicine and vice president for medical affairs at **Medical University of South Carolina (MUSC)**. After serving at MUSC early in his career, Steyer returned in 2014 as chair of the Department of Family Medicine and later became chief of the Primary Care Integrated Center for Clinical Excellence and president of **Carolina Family Care**. He became interim dean of the college last spring and, after a national search, earned the role on a full-time basis. Steyer is an active member of the **American Academy of Family Physicians** and the **Society of Teachers of Family Medicine**. He is an active researcher in the area of healthcare policy and leadership development for healthcare professionals.

### 2000s

**Todd Wood (MED '04)** is now executive medical director of the **Heart and Vascular Institute** and president of **The Heart Group of Lancaster General Health** in Lancaster, Pennsylvania, where he oversees the heart and vascular service line of surgical and medical specialists and serves as the managing partner of the cardiology practice of more than 55 physicians and nurse practitioners. He and his wife, Andrea Dooley-Wood, have two sons, Connor and Garrett.

### 2010s

**Raghav Tripathi (CWR '17; GRS '18, public health; MED '21)** is in his dermatology residency at **Johns Hopkins University** in Baltimore, following his preliminary year as a resident physician at **University of Iowa** in Iowa City. Tripathy married his wife, Ananya, a University of Iowa medical student, last summer.

thrive. He has decades of experience as a former pediatrician and leader in federal policy, local government agencies, and nonprofit management spaces, including deputy chief administrative officer for Health, Human Services, and Education for Prince George's County, Maryland; deputy commissioner of the **New York City Department of Health and Mental Hygiene**; and the first chief medical officer of the Administration for Children and Families in the **U.S. Department of Health and Human Services** during the Obama administration.

**Lisa Flowers (MED '92)** and **Jason Liebzeit (MED '02)** received **Emory University** School of Medicine's 2022 Dean's Teaching Award. Flowers, a professor in the Department of Gynecology and Obstetrics, specializes in the treatment of women with abnormal pap tests, HPV-related disease, and pre-cancerous gynecologic conditions. She is active on national and state committees aimed at improving the quality and delivery of care and service to patients with cervical and breast disease, including work with the **American Society for Colposcopy and Cervical Pathology**, the **American Cancer Society**, and the **Susan G. Komen Breast Cancer Foundation's** National Hispanic/Latina Advisory Council. Liebzeit, an associate professor of medicine, also received the Young Educator of the Year Award (given by Clerkship Directors in Emergency Medicine) as well as the Emory Emergency Medicine Resident Advocate Award. His research interests include the creation and evaluation of novel curricula for undergraduate medical education, particularly in the role of the final year of medical school.

nonprofit that fosters global health education at the undergraduate level. Tumaini sponsors speakers at five universities, from which one student from each attends a global health meeting at Yale University. Mote and his colleagues hope to expand Tumaini to additional schools this year.

**Barbara Schach (MED '83)** recently retired from **Pacific Medical Centers** in Kirkland, Washington, after 35 years in internal medicine. She plans to spend her retirement years pursuing her passion for flying small planes, honing her instrument flight skills and exploring opportunities to use flying for public service.

### 1990s

**George Askew (MED '90)** became president and CEO of the **Meyer Foundation**, a Washington, D.C.-based nonprofit focused on investing in solutions to help economically disadvantaged people

legacy in the medical field.

**Eric Kaplan (WRC '73, MED '79)** retired from solo colorectal surgery practice in 2019 after 36 years in the field. He now spends his time with his wife, Bonnie, and their seven grandchildren, as well as playing with his Shih Tzu and tending to his 1-acre property in Dallas, Texas.

**Beth Kauffman (GRS '73, nutrition)** spent the first 17 years of her career working in the Philadelphia area in federal public health nutrition programs before transitioning to teach high school- and college-level child-development courses until retiring in 2017. She enjoys spending time with her grandchild.

### 1980s

**Thomas Mote (GRS '77, biology; MED '81)** is a semi-retired anesthesiologist and cofounder of **Tumaini Global Health**, a

Florence Fonacier (GRS '59, nutrition)

### 1960s

Stephen G. Kent (ADL '56, MED '60)  
Herbert E. Allshouse (MED '61)  
Mary Lois Andersen (GRS '61, nutrition)  
John A. Fricker (MED '61)  
Robert C. Knowles (GRS '61, biochemistry; MED '64)  
David Gill Logan (MED '61)  
Dalton F. McClelland Jr. (MED '61)  
John G. Nemunaitis Jr. (ADL '56, MED '61)  
Donald J. Vinicor (GRS '61, biochemistry)  
Richard D. Jones (GRS '62, physiology)  
Allan Lerner (ADL '58, MED '62)  
Lawrence R. Burwell (MED '63)  
James A. Coil Jr. (MED '63)  
James A. Madura (MED '63)  
James E. Sampliner (MED '63)  
Ronald T. Rolley (MED '63)  
Sam E. Kinney (MED '64)  
Charles Theodore Kaelber (MED '65)  
Terrence J. Fagan (CIT '61, MED '66)  
Catherine Marie Herlihy Beyer (MED '67)

### 1970s

Helmi Asta Mason (GRS '71, nutrition)

Ann Palmer Kelly (FSM '59; GRS '72, molecular biology and microbiology)  
Thomas Jacob Martin (WRC '73, MED '77)  
Dennis Harold Nicholson (MED '76)  
John F. Campbell (MED '78)

### 1980s

Stephen James Ganocy (GRS '80, biometry; GRS '03, statistics)  
Antonino O. Motta (MED '82)  
Terry Lynn Sebben (GRS '85, biometry)  
Ely Samuel Simon (GRS '88, biomedical engineering; MED '89)

### 1990s

Suzette E. Damboise (MED '90)  
Rex A. Birkmire (MED '91)  
Laura M. Whitman (MED '92)  
Scott R. Lee (MED '98)

### 2000s

Anna Alden Lindley (MED '02)  
Timothy Paul T. Ramacciotti (MED '03)

### 2010s

Erin Jane Camp (GRS '10, nutrition)  
Marian Wahba Ghraib (MED '15)

## In memoriam

Information reported to Case Western Reserve University from June 1, 2022, to Jan. 31, 2023.

### 1950s

James P. Andrews (MED '50)  
Henry A. Essex (MED '50)  
Willard Gaylin (MED '51)  
P. Tennyson Williams (ADL '48, MED '51)  
John H. Morledge (MED '52)  
Randall H. Travis (MED '52)  
Reich L. Watterson Jr. (MED '52)  
Ira Burton Price (MED '53)  
John Floyd (MED '56)  
Alan D. Podis (MED '56)  
Theodore A. Russell (MED '56)  
Fred L. Fisher (MED '57)  
David G. Miller (MED '57)  
Robert E. Nenad (MED '57)  
Herman Buschke (MED '58)  
Sadja S. Greenwood (MED '58)  
George William Boll (MED '59)  
Edward F. Doehne (MED '59)



IN OUR COMMUNITY

# Taking a different path

*Editor's note: Shortly before this magazine went to print, David Macinga passed away. We are honored to recognize Macinga's incredible career and remember his impact.*

As confirmed cases of COVID-19 rose in early 2020, so did the number of businesses switching gears in their assembly lines to help combat the pandemic. Breweries and distilleries produced hand sanitizer, luxury fashion brands made medical face masks and automotive companies manufactured ventilators.

But for leaders at GOJO Industries—the makers of Purell—their mission remained the same: “Saving lives and making life better through well-being solutions.”



DAVID MACINGA

17 patents as a co-inventor

35+ co-authored articles for peer-reviewed journals

60+ abstracts for infection control and public health conferences

“Our duty was immediately clear,” David Macinga, PhD (CWR '92; GRS '97, molecular biology and microbiology), the company's vice president of product development and regulatory affairs, said during an interview last fall. “We were able to act quickly by making significant investments to grow our manufacturing capacity and meet the skyrocketing need for our products.”

Being in a position to make an immediate difference is what attracted Macinga to the field 20 years ago.

Throughout his education at Case Western Reserve University—including his doctoral studies in the Biomedical Sciences Training Program—Macinga planned to enter academia. But a series of

opportunities led him to the industrial field, where he found he could make a “faster, bigger impact.”

Macinga joined GOJO in 2003 as a lab scientist developing antimicrobial and antiviral skin hygiene products, including the latest formula for GOJO's flagship product, Purell Advanced Hand Sanitizer. Until his death in June, he led a group of 60 scientists and regulatory specialists responsible for developing and commercializing topical antiseptics, hand hygiene solutions and surface disinfectants.

The latter two items became increasingly in demand during the COVID-19 pandemic. Across the board, supply chain shortages taxed the company, and Macinga's team was tasked with exploring and validating new suppliers for everything from bottle caps to alcohol.

“[The situation] was daunting, but it was also exciting to have that opportunity to step up and help,” he said. “As a PhD student, you have a limited amount of time to solve a problem by becoming the expert on a topic no one else has explored. I've carried that experience with me throughout every stage of my career, and it has helped me navigate the landscape of regulations, the business side of industry, product development and becoming a leader.”

Macinga said he hoped his experiences would inspire others to consider the potential impact they could have as researchers in industry.

“There is more than one path to reach your dreams,” Macinga said during his keynote address at Case Western Reserve University School of Medicine's PhD white coat ceremony last August. “Be open-minded. Look into other disciplines. The more you can see different points of view, different ways of seeing the world and different ways of defining yourself ... no matter where your journey takes you, you will be fully satisfied and you will be successful.”

—Carey Skinner Moss

# WELCOME HOME.

Come back to Case Western Reserve this fall. Whether you join us on campus or online, the School of Medicine will provide multiple opportunities to connect, engage and share our progress.

Celebrate time-honored traditions, explore new facilities and spaces, and learn more about the future of CWRU.

Please plan to join us on campus, or online for select virtual events, **Oct. 12-15.**

Visit [case.edu/homecoming](https://case.edu/homecoming) for more information.

# Wine for Life

Join the Jed Ian Taxel Rare Cancer Research Foundation for an exclusive wine event to support rare cancer research at the National Cancer Institute (NCI) designated Case Comprehensive Cancer Center and its mission to advance research and improve patient outcomes. Guests will taste select wines and meet with winery representatives, all within the beautiful BurkleHagen photography studio in the heart of Cleveland's AsiaTown.

November 10  
BurkleHagen Studio  
1717 E. 36th St.  
Cleveland, OH 44114

For sponsorship opportunities or ticket sales, visit [case.edu/medicine/giving/strategic-events](https://case.edu/medicine/giving/strategic-events) or email [SOMevents@case.edu](mailto:SOMevents@case.edu).

Visit [case.edu/cancer](https://case.edu/cancer) to learn how the Case Comprehensive Cancer Center advances research and care. To learn more about the Jed Ian Taxel Rare Cancer Research Foundation, visit [jedcancerfoundation.org](https://jedcancerfoundation.org).





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is renowned for developing leaders whose work and dedication will impact the field of medicine for generations to come—and your support can continue this tradition.

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