

CWRU Medicine

WINTER 2024

180
YEARS OF
MEDICINE

Research for the greater good

CWRU's translational efforts seek to close the gap
between lab discoveries and human health

Case Comprehensive
Cancer Center's
new leader

Students share
their experiences
at CWRU

State-of-the-art
teaching kitchen
advances nutrition

Nominate outstanding alumni and friends

Do you know a Case Western Reserve University School of Medicine graduate, colleague or supporter who deserves recognition for the outstanding work they are doing?

If so, it's time to nominate them for an Alumni Award or to become a future esteemed speaker! (Self-nominations are also accepted.)

Nominate them online at case.edu/medicine/alumni/recognition-awards or email us at somalumni@case.edu with more information.



 **CASE WESTERN RESERVE UNIVERSITY**
School of Medicine

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Armed with the university's largest grant in history, the Clinical and Translational Science Collaborative seeks to close the gap between lab discovery and patient care. Their latest grant focuses on serving underrepresented populations, including individuals who are Black, Latine, LGBTQ+ or living in rural areas. It's one of the many ways that Case Western Reserve University School of Medicine aims to bring research to the real world; you can read about this work in our cover story (p. 14)—and also about a few of the many success stories in "Closer to Life," p. 38.

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School of Medicine

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Checking in

A Q&A with Dean Stan Gerson

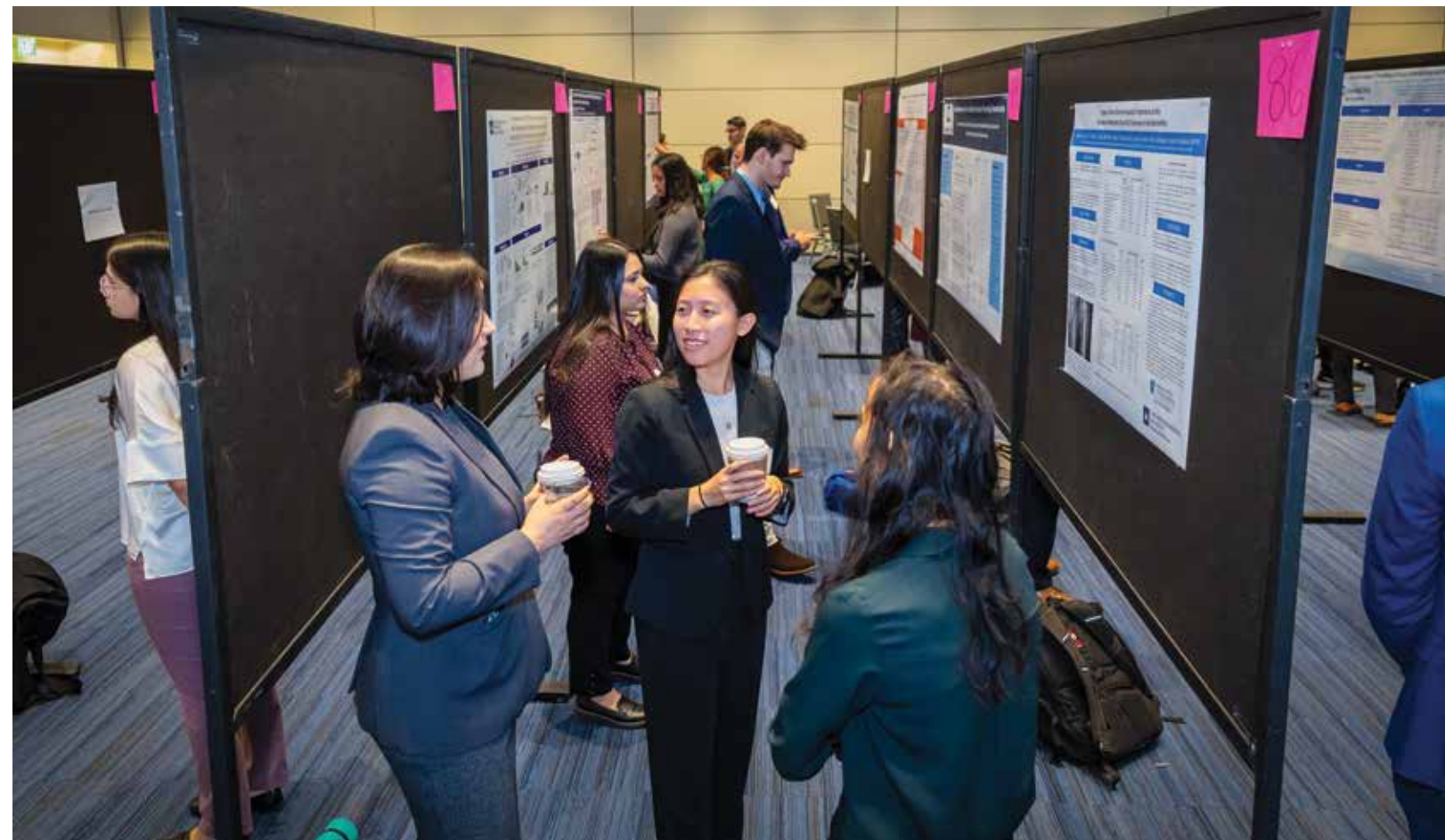
When the 2023–24 academic year kicked off, Case Western Reserve University School of Medicine Dean **Stan Gerson, MD**, announced a theme to define the year ahead: “Discovery with an attitude.” This approach, he said, is how people across the school—faculty, staff, postdocs, students and partners—tackle innovation, whether in the classroom, laboratory or clinical settings. Read on to hear more from Dean Gerson about the school’s latest achievements and goals for the future.

CWRU MEDICINE: What are some examples of how you’re seeing “discovery with an attitude” in action?

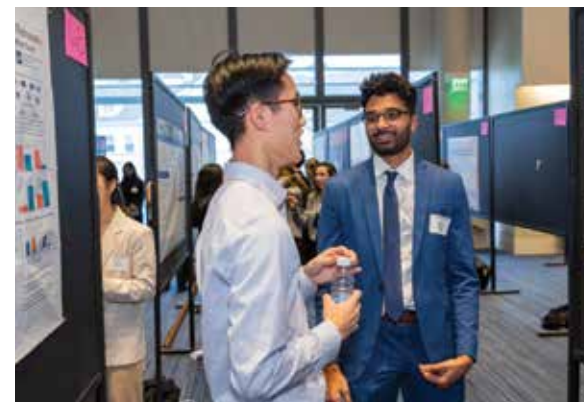
DEAN GERSON: So many people bring innovative, exciting and out-of-the-box approaches to their work—different attitudes that are driving discoveries for patients. In this issue, for example, you’ll read about how we bring our research to the real world (p. 14). Plus, we’re launching the **Institute for Glial Sciences**, where researchers focus on unraveling the mysteries of neurological disease (p. 8), and **Gary Schwartz, MD**, the new director of **Case Comprehensive Cancer Center**, is taking a visionary approach to treating rare cancers (p. 40).

CWRU MEDICINE: Speaking of making real-world differences: Case Western Reserve recently received the university’s largest grant in history—\$56.3 million for the School of Medicine’s **Clinical and Translational Science Collaborative (CTSC)**. What is the impact of this grant?

DEAN GERSON: With this funding, the CTSC enters a new chapter with health equity at its core. While strides have been made, there is much to be done to change the trajectory of health outcomes for underrepresented populations, including those who are Black, Latine, LGBTQ+ or living in rural areas. This funding will allow us to tackle this problem in a way that will



The Graduate and Medical Student Research Day brought students across programs together to celebrate their work and spur collaboration. (Photos by Matt Shiffler)



create a generational shift in the health of those who have for too long been disenfranchised. (Read more on p. 14.)

CWRU MEDICINE: How are students contributing to the school’s mission to advance scientific discovery?

DEAN GERSON: Students are, of course, at the core of all we do. And this year, I’ve been exceptionally impressed by their efforts. For example: In December, more than 250 medical and graduate students participated in our first combined Student Research Day, which illustrated the broad spectrum of translational, clinical and basic science research being conducted on our campus. As I visited with students during the poster session and oral presentations, I reflected on the importance of their research in our efforts to fulfill our mission: To improve global health by linking research to populations in a superb educational environment.

The daylong event was a testament to the school’s history and culture of innovation and discovery—and it showcased how we add to that history every day, each time we enter a lab, sketch out a new idea, publish our findings or launch a clinical trial. Their work is a testament to the collaborative spirit that thrives within our School of Medicine community.

News

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

AN EPIC OPPORTUNITY

Electronic health records (EHRs) are nearly ubiquitous in healthcare today, in use at 90% of hospitals and ambulatory clinics across the U.S. But the opportunity for early medical students to actually learn how to use EHR systems is rare. Until now.

In July, Case Western Reserve University School of Medicine became the first in the country to train first-year medical students on Lyceum, a new platform hosted by Epic, an EHR system for hospitals.

Through Lyceum, students and faculty have access to an Epic training environment, including dozens of test patients with diverse background and clinical case histories, as well as online learning modules and training materials.

"This training will help our students learn how to move the needle on health equity," said **Anastasia Rowland-Seymour, MD**, associate professor of medicine and assistant dean for longitudinal clinical education, "even in the early stages of their learning."



A PATHWAY TO HELP COMBAT ADDICTION

In the U.S. alone, 46.3 million people over the age of 11 are classified as having a substance use disorder, including more than half with a drug use disorder, according to the 2021 National Survey on Drug Use and Health.

It's a stark—and sometimes deadly—reality that **Howard Hoffman, MD (ADL '58, MED '62)**, has seen repeatedly throughout his career, in both private practice and at the psychiatric hospital he helped open in Washington, D.C. In 1971, he developed one of the country's first methadone clinics, where patients with addictions can use this synthetic narcotic to wean off opioids.

"All physicians, regardless of specialty, are going to come into contact with an addicted patient," Hoffman said. "They need to understand addiction and understand what kinds of treatments there are and help the patient get to the right place."

That's why Hoffman helped support—

both financially and in developing the curriculum—Case Western Reserve University School of Medicine's newest Pathway Program on addiction.

Through the school's nine Pathways Programs, medical students take part in individualized enrichment experiences to give them in-depth knowledge of specific areas. In the Addiction Pathway, for example, students can gain expertise on managing patients with substance use disorders through seminar series, a preclinical elective on the opioid crisis, and research, mentoring and clinical opportunities.

The Addiction Pathway is spearheaded by **Theodore Parran Jr., MD (MED '82)**, the Isabel and Carter Wang Professor in Medical Education; Assistant Professor **Neera Gupta, MD**; and **Bob DuPont, MD**—the former White House Drug Czar who inspired Hoffman to start his methadone clinic nearly 50 years ago.

The Addiction Pathway joins eight others already embedded in the school's curriculum:

- Advocacy and Public Health Pathway
- Andrew B. Kaufman World Medicine Pathway
- Climate and Health Pathway
- Humanities Pathway
- Jack, Joseph, and Morton Mandel Wellness and Preventive Care Pathway
- Medical Education Scholars Pathway
- Dr. Edward J. and Nancy M. Mueller Health Innovation and Entrepreneurship Pathway
- Urban Health Pathway

PLANTING 'SEEDS OF DISCOVERY'

More than 110 students from across the U.S. and around the world started their biomedical research training as PhD students at Case Western Reserve University School of Medicine in August—and they were formally welcomed during the annual "Seeds of Discovery" white coat ceremony.

"When you hear comments like 'Why don't they figure out how this disease works?' or 'Why don't they develop something to cure this?'" said Vice Dean for Graduate Education **Marvin Nieman, PhD**, "you are now part of the 'they.'"

113

new PhD students

5-7

years to complete

17

PhD programs

11th

annual PhD ceremony

Outstanding achievements

Students, faculty and staff earn top honors and appointments

Paul Bristol joined the School of Medicine this fall as vice dean of finance



Bristol

and administration, a position in which he is responsible for the overall stewardship of the school's fiscal management and its operational functions. Most recently, Bristol was chief administrator for the Michael E. DeBakey Department of Surgery at **Baylor College of Medicine**, and also has held leadership roles at **University of Texas Medical Branch** and **University of Michigan**.

After serving as interim chair of the Department of Pharmacology since November 2022, **Sudha Chakrapani, PhD**, was named chair in July. Chakrapani, director of the **Cryo-Electron**

Microscopy Core and the **Cleveland Center for Membrane and Structural Biology**, joined the School of Medicine faculty in 2010. Her research focuses on understanding the molecular mechanism of synaptic transmission and neuronal excitability.



Chakrapani

In September, Case Western Reserve named **Fabio Cominelli, MD**, a Distinguished University Professor—the highest faculty honor. Cominelli, a professor of medicine and pathology and director of the Digestive Health Research Institute at the



Cominelli

medical school and chief of the Division of Gastroenterology and Liver Disease at the **University Hospitals Cleveland Medical Center**, was recognized for his groundbreaking research on gastrointestinal conditions, including Crohn's disease and ulcerative colitis.

Jon Donze (CWR '01, MGT '10), director of the Office of Grants and Contracts,



Donze

and **Joyce Helton**, department assistant in the Office of Faculty Affairs, received the Case Western Reserve President's Award for Distinguished Service—one of the most notable honors bestowed upon university staff members. Recommended by the Staff Advisory Council and approved by President **Eric W. Kaler**, the winners of these awards are selected for the transformational impact their work has on the CWRU community.



Helton

Adrienne Fletcher, PhD (SAS '05), recently was named the school's vice dean for diversity, equity and inclusive excellence. Fletcher, who is an assistant professor and associate dean for diversity, equity and belonging at CWRU's Jack, Joseph and Morton Mandel



Fletcher

School of Applied Social Sciences, is a practicing social work professional whose research focuses on the influence of implicit attitude on decision-making within the child welfare system. She recently completed a one-year appointment as the **Ohio Supreme Court's** inaugural director of diversity, equity and inclusion.

Third-year medical student **Penelope Halkiadakis** was selected to take part



Halkiadakis

in the **National Football League's** Diversity in Sports Medicine Pipeline Initiative, completing a one-month clinical rotation with the **Cleveland Browns** medical staff. The program aims to expand and diversify the pipeline of students interested in pursuing careers in sports medicine—and benefit the medical community by contributing to a more diverse medical staff at NFL clubs.

Susan Hatters-Friedman (CWR '96, MED '99), MD, the Phillip Resnick Professor of Forensic Psychiatry, won the Seymour J. Pollack Distinguished

Achievement Award at the **American Academy of Psychiatry and the Law's** annual meeting in Chicago. The award is given to forensic psychiatrists who have made distinguished contributions to the teaching and educational functions of forensic psychiatry.

Postdoctoral scholar **Elina Misicka, PhD (GRS '22, epidemiology and**



Misicka

biostatistics), earned a fellowship grant from the **National Multiple Sclerosis Society** to recognize young investigators whose research is relevant to the society's three goals: stopping MS progression, restoring lost function and ending the disease. Misicka is researching serum metabolite concentrations in the blood and identifying metabolites indicative of MS-related phenotypes.

Associate Professor **Karen B. Mulloy, DO**, received the Alice Hamilton Award



Mulloy

from the Occupational Health and Safety Section of the **American Public Health Association** during its annual conference in November. The award recognizes Mulloy's career spent advocating for the health and safety of

workers in the U.S. and internationally through teaching and research.

Third-year medical student **Archana Murali** earned **Alpha Omega Alpha's**



Murali

2023 Carolyn L. Kuckein Student Research Fellowship for her work studying intraocular pressure reduction pathways and the potential treatment for glaucoma using a specific prostaglandin analog. The national medical honor society awards the \$5,000 prize to help foster the next generation of medical researchers.

Pharmacology student **Jacqueline Plau** earned **PhRMA Foundation's**



Plau

Predoctoral Fellowship in Drug Discovery—a \$25,000 annual stipend awarded to promising students in the advanced stages of training and thesis research in drug discovery. Plau, who is in the Molecular Therapeutics Training Program, is focused on treating the toxic vitamin A side effects in common eye diseases that often lead to vision loss.

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A NEW INSTITUTE FOR RESEARCH EXCELLENCE

Glial cells comprise more than half of the cells in human nervous systems and help ensure proper neurological function. Yet despite their importance to human health, there are few specialized research centers to study them.

But with a renowned glial sciences researcher on the faculty, Case Western Reserve University School of Medicine has launched its own dedicated institute: the Institute for Glial Sciences, led by **Paul Tesar (CWR '03), PhD**, the Dr. Donald and Ruth Weber Goodman Professor of

Innovative Therapeutics.

"We're not just launching a research institute, we're championing a vision," said **Stan Gerson, MD**, dean and senior vice president for medical affairs at the School of Medicine. "Guided by Professor Paul Tesar's exceptional leadership, we're uniting innovation with impact. From our laboratories into clinical application, this institute embodies our steadfast dedication to exploring new frontiers in glial sciences and affecting real-world change."



Tesar and his team in Case Western Reserve University's Department of Genetics and Genome Sciences have been at the forefront of unraveling the complexities of glial cell dysfunction and its crucial role in human neurological diseases. Their pioneering work has not only deepened an understanding of these cells, but also led to groundbreaking advancements in treatments.

Among their notable achievements are the discovery

of two novel classes of medicines: a remyelination therapy for multiple sclerosis, which the university licensed to Convelo Therapeutics, and an antisense oligonucleotide therapy for Pelizaeus Merzbacher disease, licensed to Ionis Pharmaceuticals and slated for clinical trials early this year.

"The Institute for Glial Sciences aims to build from these accomplishments," Tesar said, "propelling new breakthroughs in glial science and offering new hope for treatment of neurological diseases."



Continued from page 9

Postdoctoral fellow **Marissa Scavuzzo, PhD**, won the 2023 **Eppendorf & Science Prize for Neuro-**



Scavuzzo

biology for research into how glial cells—support cells in the brain that help control and safeguard neurons—operate in the intestine’s nervous system. Scavuzzo’s research aims to understand the role of enteric glia in a healthy gut and how it responds to dietary, environmental or genetic changes.

John Wang, PhD, the Dale H. Cowan–Ruth Goodman Blum Professor of Cancer Research, became chair of the Department of Genetics and Genome Sciences in August. Wang, who joined CWRU School of Medicine in 2005, is an internationally recognized, highly funded colorectal cancer researcher: His co-discovery of PIK3CA oncogenic mutations in human cancer, for example, successfully translated into active phase I/II clinical trials.



Wang

Third-year medical student **Victoria Wu** presented her research—on financial toxicity and how it affects cancer patients—at the **American Society of Clinical Oncology** Quality Care Symposium and the **American Society for Radiation Oncology** annual meeting, both held in October.



Wu

AWARDING EDUCATION INNOVATION

In April 2015, Professor **Mark Griswold, PhD**, took the stage at a Microsoft conference, where the global tech company announced Case Western Reserve as the first educational partner for HoloLens, its new mixed-reality headset.

Eight years later—after Griswold and his team at the university’s **Interactive Commons** developed a full-scale anatomy curriculum and software, among other products, for the platform—Microsoft announced Case Western Reserve and its licensing partner, **Illumis**, won its Mixed Reality Partner of the Year Award.

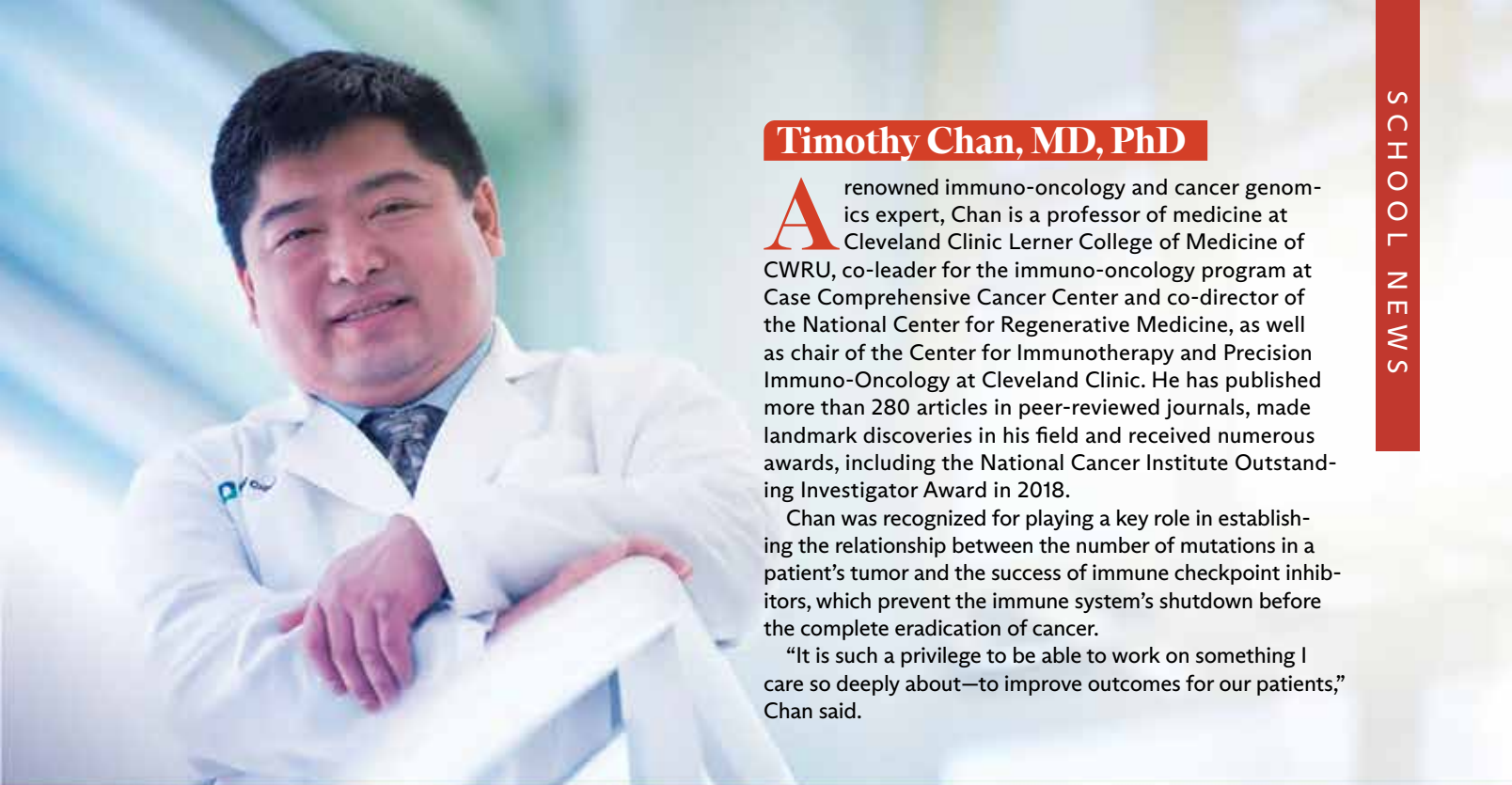


Griswold

“From the first moment we saw HoloLens, we knew mixed reality would be a transformational education tool,”

Griswold said, “and we welcome this acknowledgement of the hard work our team put into envisioning, developing and deploying the HoloAnatomy® Software Suite.”

In addition to its adoption in Case Western Reserve’s medical and dental schools, HoloAnatomy software is used by more than 20 institutions—including Northwestern and Texas Christian University—as a cost-effective and results-driven way to enhance anatomy education.



Timothy Chan, MD, PhD

A renowned immuno-oncology and cancer genomics expert, Chan is a professor of medicine at Cleveland Clinic Lerner College of Medicine of CWRU, co-leader for the immuno-oncology program at Case Comprehensive Cancer Center and co-director of the National Center for Regenerative Medicine, as well as chair of the Center for Immunotherapy and Precision Immuno-Oncology at Cleveland Clinic. He has published more than 280 articles in peer-reviewed journals, made landmark discoveries in his field and received numerous awards, including the National Cancer Institute Outstanding Investigator Award in 2018.

Chan was recognized for playing a key role in establishing the relationship between the number of mutations in a patient’s tumor and the success of immune checkpoint inhibitors, which prevent the immune system’s shutdown before the complete eradication of cancer.

“It is such a privilege to be able to work on something I care so deeply about—to improve outcomes for our patients,” Chan said.

National honors for two professors

When the National Academy of Medicine—one of the most esteemed societies for health and medicine in the country—announced its 2023 inductees, two Case Western Reserve University School of Medicine faculty members were among its honorees: Timothy Chan, MD, PhD, and Kim Anderson-Erisman, PhD. They join more than 2,400 academy members around the world—including 11 from Case Western Reserve.

Kim Anderson-Erisman, PhD

Anderson-Erisman, professor in the Department of Physical Medicine and Rehabilitation at the Center for Rehabilitation Research at MetroHealth and associate director at the university’s Institute for Functional Restoration, was recognized for her research on translational investigations and bridging the gap between basic science, clinical science and the public community living with spinal-cord injury (SCI).

Her training spans the spectrum of SCI research—from cellular and molecular studies to human clinical research. Several of her studies have focused on obtaining the perspective of people living with SCI on various aspects of research, including functional priorities, acceptable benefits and risks, preferences for neuroprosthetics and exercise participation.

“I am incredibly honored and humbled to be included in the ranks of such highly esteemed individuals,” said Anderson-Erisman, director of the Northeast Ohio Regional SCI Model System based at the MetroHealth Rehabilitation Institute. “Everything that I have done in my career has been guided by a single goal: to help others living with spinal cord injury.”





“We’re not teaching them to be Martha Stewart. They are learning about simple food education to really improve health.”

*—Hope Barkoukis, PhD (GRS '75, '97, nutrition)
chair of the Department of Nutrition*

Teaching healthy habits

In today’s fast-paced world, convenience often takes precedence over nutrition when it comes to whipping up a meal. The new state-of-the-art teaching kitchen at Case Western Reserve University School of Medicine aims to change that. Across the 2,300-square-foot facility—which features 48 workstations, a full walk-in pantry, an on-site laundry room and a dishwashing area—students at all levels can learn to make their own nutritious meals while equipping themselves to guide their patients, and the broader community, in developing healthier eating habits.



Watch a video of the teaching kitchen in action.



The teaching kitchen “gets students in the kitchen doing, so instead of just listening to the concepts, we’re really integrating it into the practice,” explained instructor Lindsay Malone (GRS '10, nutrition), pictured above. (Photos by Matt Shiffler)



Believed to be the largest teaching kitchen of its type in the U.S., CWRU’s new space is a “lively education setting” where they hope to engage the community, said Stephanie Harris, PhD (GRS '07, '11, nutrition), the Helen Moss Foundation-Schoff Family Professor in Integrative Oncology (pictured opposite page, third from left).

FOUND IN translation

With the university's largest-ever grant, researchers seek to close the gap between lab discovery and patient care

BY DANIEL ROBISON

For many people, artificial intelligence is the next big thing. For Brennan Flannery, it's a life-saving thing.

As a PhD candidate in Case Western Reserve University's Department of Biomedical Engineering, Flannery is creating a clinical tool that uses machine-learning models to analyze radiology and pathology images to spot kidney cancer and kidney failure. The approach could be especially beneficial for those affected by diabetes and high blood pressure—conditions more likely to afflict Black

individuals, women and older adults.

"Many people with these conditions often don't get diagnosed until it's too late for impactful treatment," Flannery said. "AI can help us spot kidney issues much earlier, so patients get proper care sooner or on a transplant list with more time."

Soon after developing his idea to create this software for common healthcare settings, Flannery began the process of securing a provisional patent—a first step in translational research, which aims to bring laboratory work to the real world faster.

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His efforts are aided by two federally funded initiatives at Case Western Reserve that facilitate translational research: In the university's Venture Mentoring Program, Flannery receives personalized guidance from industry experts; as a School of Medicine Translational Fellow, he's trained in product development of intellectual property (IP) and evaluating markets, among other topics.



Flannery

Both initiatives are part of the **Clinical and Translational Science Collaborative (CTSC) of Northern Ohio**, a

National Institutes of Health (NIH)-funded partnership between the university and affiliated healthcare institutions to spur translational efforts.

"One of the reasons I came to CWRU was this huge focus on developing new technologies and therapies," said Flannery. "It's important to me that my research directly helps people."

Closer to the patient

In August, the NIH awarded the CTSC a seven-year, \$56.3 million grant—the largest single award in the university's history—that builds on \$175 million in related funding since the collaborative's founding in 2007.

The CTSC of Northern Ohio is one of 60 Clinical and Translational Science Award hubs

around the country. Their efforts are badly needed: According to the NIH, new treatments require an average of 10 to 15 years to develop and fail 95 percent of the time.

"There are thousands of diseases and only hundreds of treatments, so there's need and urgency for research breakthroughs to reach patients and communities," said **Grace McComsey, MD**, vice dean for clinical and translational research at the medical school and principal investigator of the CTSC.



McComsey

Since the mid-2000s, the School of Medicine and CWRU have established an infrastructure and entrepreneurial culture to drive discoveries from "bench to bedside."

Faculty and students have access to a network of resources to navigate the complex processes of protecting IP, licensing technology and creating companies. They also receive guidance to traverse the tightly regulated world of biomedical products, including drugs, diagnostics and medical devices.

By many measures, the effort is yielding results. Led by School of Medicine faculty, Case Western Reserve ranked #24 among universities worldwide for utility patents, according to 2022 data from the U.S. Patent and Trademark Office—a ranking that has steadily improved over the last decade and places the institution ahead of universities such as Yale, Carnegie Mellon and Columbia.

Since the CTSC began in 2007, Case Western Reserve has tripled the number of biomedical companies—many with significant valuations—launched each year from technology and treatments developed in its labs. Meanwhile, dozens of discoveries at the university have been licensed to third-party companies.

"The fastest, most efficient route for reaching the patient through a new invention or discovery is often by selling technology to a company or creating a startup—it creates the incentive to reach the market

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Recent examples of entrepreneurial success



Rodeo Therapeutics, a drug-development startup founded by School of Medicine researchers—**Sanford Markowitz, MD, PhD**, the Markowitz-Ingalls Professor of Cancer Genetics and a Distinguished University Professor, and **Stanton L. Gerson, MD**, dean and senior vice president for medical affairs—was acquired in 2021 by Amgen, a publicly traded international biopharmaceutical company, for \$55 million, with additional milestone payments of \$666 million possible.



Lucid Diagnostics, a company producing esophageal cancer tests—derived from research by **Markowitz, Amitabh Chak, PhD**, a professor of medicine, and **Joseph Willis, PhD**, a professor of pathology, and University Hospitals physicians—concluded a \$70 million initial public offering on the Nasdaq Global Market in 2021.



Neolindicate LLC signed an exclusive agreement with the university in 2022 to commercialize an imaging agent that lights up tumor cells, helping neurosurgeons achieve more precise surgical removal of glioblastoma and other malignant brain tumors. The startup's founder and chief scientific officer, **Susann Brady-Kalnay, PhD**—a professor in the Department of Molecular Biology and Microbiology at the medical school—discovered the biomarker and created the imaging agents that detect it.



Convelo Therapeutics, a biotechnology firm that focuses on creating regenerative medicine for neurological disorders—based on research by **Paul Tesar, PhD**, the Dr. Donald and Ruth Weber Goodman Professor of Innovative Therapeutics, and **Drew Adams, PhD**, an associate professor of genetics and genome sciences—entered into a partnership with Genentech in 2019.

5

The number of startup companies, on average, launched annually by faculty, staff and students based on CWRU technology

#24

CWRU's standing globally for utility patents

2022 U.S. Patent and Trademark Office data

What is translation?

Translational research turns scientific discoveries into real-world health solutions. It bridges the gap between lab research and practical applications—creating tools, treatments and interventions for better healthcare and behavioral improvements.

A critical catalyst

In 2014, **Umut Gurkan, PhD**, received a small CTSC grant to study the viability of a promising blood-testing technology.

“CTSC funding was the critical catalyst,” said Gurkan, the Wilbert J. Austin Professor of Engineering, who also holds appointments in biomedical engineering and orthopaedics at the School of Medicine and is a member of the Case Comprehensive Cancer



Gurkan

Center. “Once I received the CTSC funding, it was a tipping point. The rest was one thing leading to another, like a domino effect.”

With the help of additional funding—including an award from the Case-Coulter Translational Research Program—Gurkan developed HemeChip, a point-of-care diagnostic tool tailored for use in low-income countries that can diagnose sickle cell disease and others. In 2018, Hemex Health Inc. licensed the technology. Now known as Gazelle by HemexHealth, the testing device based on Gurkan’s research is now available in more than 35 countries.

“Through the CTSC,” said Gurkan, “I was able to access the expertise that is needed for regulatory processes, customer discovery, market analysis, manufacturing and support to take a technology from the lab to the outside world.”

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quickly,” said **Michael Oakes, PhD**, the university’s senior vice president for research and technology management.



Oakes

“This is why our entrepreneurial ecosystem is so important: Our collective expertise and relationships find the right home for innovations that help people.”

Targeting disparities through translation

In past grant cycles, the CTSC focused on establishing the infrastructure and workforce to bridge the gap between laboratory research and patient care. However, this grant cycle takes a different approach, evident in its theme: “Catalyzing Linkages to Equity in Health,” or CLE Health.

While the CTSC has long funded clinical research focused on underrepresented minority groups—leading to significant changes in treatment for hypertension and other chronic diseases—the consortium will delve deeper into the factors contributing to widespread health disparities among different communities.

“Tons of money is put into research, but in most cases, it’s not improving health at the community level,” said McComsey. “The missing innovation is translating things that are known to work in humans to broader communities—what we call ‘late translation.’”

Decades of evidence links disparities in life expectancy, infant mortality and chronic diseases to social determinants of health—eco-

nomie and environmental factors that extend beyond medical care, such as housing, access to nutritious food, dependable transportation, education and job opportunities.

New CTSC-funded research projects—ranging from small pilot grants to multi-year awards—will aim to better understand root causes of health disparities while developing effective strategies to counteract them and improve outcomes.

“Often, researchers need a little bit of funding to get up and running so they can gather data, test ideas and move research forward,” said **William Schiemann, PhD**, vice dean for research at the School of Medicine and leader of its Office of



Schiemann

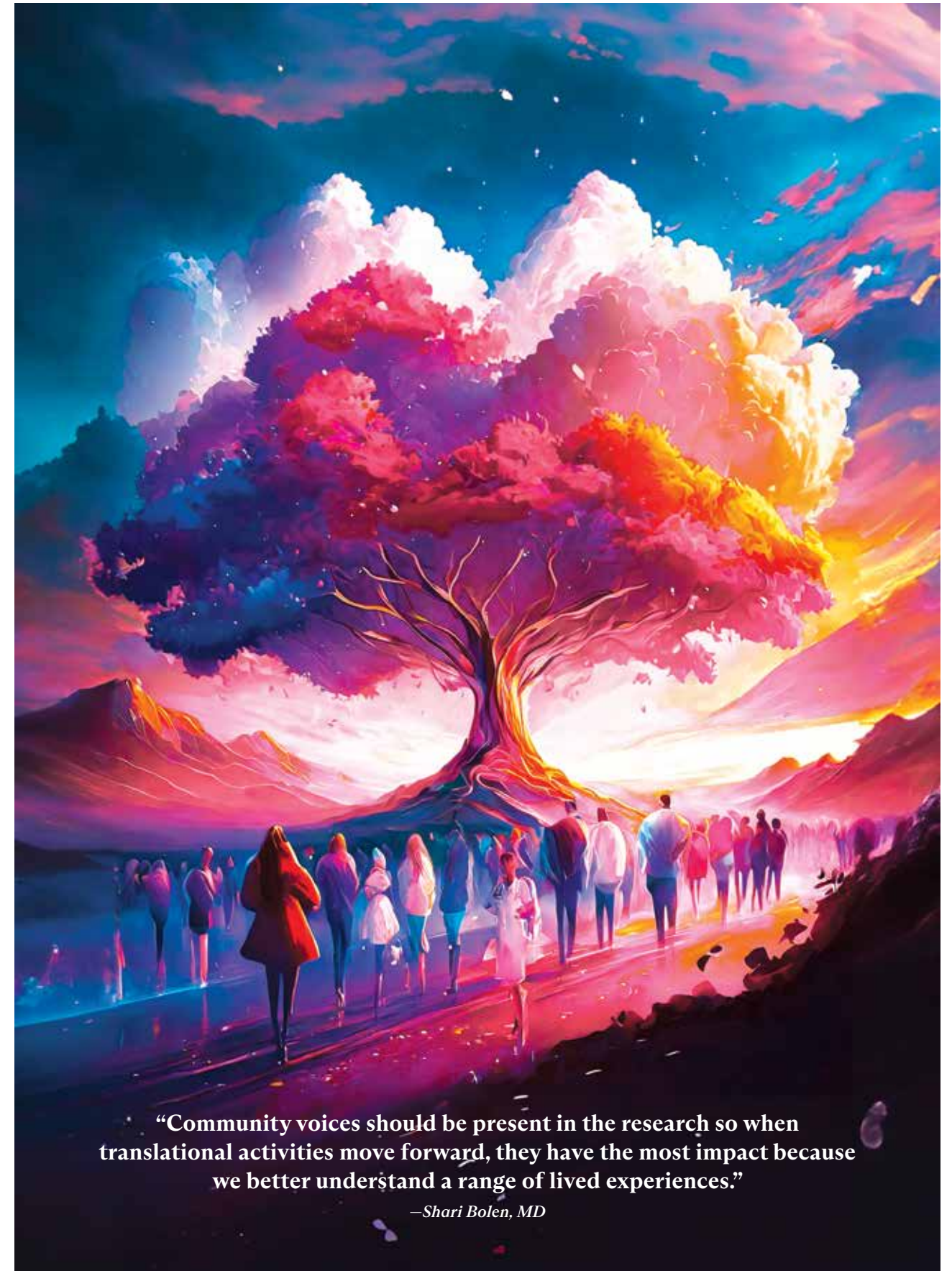
Research Administration. “The CTSC gets many of these projects off the ground.”

The CTSC will prioritize recruiting populations that are typically underrepresented in clinical research—specifically Black Americans, Hispanics, LGBT+ individuals, adults over age 75, people with disabilities and rural residents.

Lack of minority group inclusion in clinical trials has long limited data on the safety and effectiveness of new treatments for diverse populations—and created a shortage of trust in medical practices.

To ensure research reaches these patient populations, particularly in rural areas, the collaborative is adding two new partners, University of Toledo and Northeast Ohio Medical University. They join Cleveland

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“Community voices should be present in the research so when translational activities move forward, they have the most impact because we better understand a range of lived experiences.”

—Shari Bolen, MD



“One of the reasons I came to CWRU was this huge focus on developing new technologies and therapies. It’s important to me that my research directly helps people.”

—Brennan Flannery

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Clinic, the MetroHealth System, University Hospitals and the Louis Stokes VA Medical Center as affiliates.

The CTSC also is expanding workforce development initiatives to train and educate community members to be part of the research teams as study coordinators, regulatory specialists and community health workers.

The approach will help bring in more people from different backgrounds and communities to take part in new research and leadership roles, “which will result in more interventions that promote health to more people more quickly,” said **Michael Konstan, MD (WRC ’78, MED ’82)**, professor of pediatrics at the School of Medicine and the former principal investigator of the CTSC.



Konstan

Another goal: creating opportunities for community organizations and local small businesses to participate—including reviewing and providing feedback on research projects.

“Community voices should be present in the research so when translational activities move forward, they have the most impact because we better understand a range of lived experiences,” said **Shari Bolen, MD**, an associate professor in the Department of Population and Quantitative Health Sciences who is leading community and stakeholder engagement for the CTSC.



Bolen

To prepare researchers for working more closely with community partners, **Gelise Thomas, JD**, is creating a new programmatic foundation for the CTSC—including training that provides regulatory guidance for clinical trials, helps develop studies that foster inclusive partnerships and integrates community health workers.



Thomas

“We are at a point now with this grant cycle where it’s the ultimate level of accountability. If you weren’t thinking about inclusion and diversity and accessibility before, you have no choice but to now,” said Thomas, assistant director of strategic DEI and health disparities with the CTSC.

“That will require a lot of willingness, openness and vulnerability that the scientific community historically has not been called to show,” said Thomas. “It’s an opportunity and an obligation. We’re all at the table—and the tools, resources and people are here, ready to go.”

Translation in motion

Despite an overall decline in cigarette use in recent decades, historically disadvantaged populations haven’t seen the same pace of smoking cessation—a discrepancy that hinders the broader public health benefits of reducing tobacco consumption.

And data shows that groups with the highest rates of smoking are also much more likely to be food insecure.

“Most people who smoke say they do so to relieve stress—and food insecurity is stressful,” said **Jin Kim-Mozeleski, PhD**, an assistant professor in the Department of Population and Quantitative Health Sciences. “They also smoke to reduce their appetite or deal with feelings of hunger.”



Kim-Mozeleski

To test methods for how to reduce tobacco use in these groups, Kim-Mozeleski received a CTSC Pilot Award, which aims to fuel early-stage research projects and prepare investigators to expand their studies.

With the \$50,000 grant, Kim-Mozeleski developed a study examining if reducing food insecurity can help smokers successfully quit.

“It’s novel research,” said Kim-Mozeleski, “because smoking cessation services and treatments have not traditionally incorporated the role of social determinants of health and how those can impact outcomes.”

The study, conducted with the Institute for H.O.P.E. at MetroHealth—a CTSC affiliate—linked participants to community health workers and patient navigators, who provided evidence-based treatments for tobacco cessation.

Half of participants also received an additional financial benefit to help offset the cost of food while they tried to quit smoking. Preliminary results show this group was more likely to make a serious attempt to quit, had longer lengths of abstinence from smoking, and, if the data holds true, was more likely to successfully quit.

With the pilot complete, Kim-Mozeleski is applying for larger grants to do a full-scale study.

“There is such a gap in this area,” she said. “The pilot award enabled us to collect valuable input that’s now guiding our research.”

Building an entrepreneurial ecosystem

Over the past two decades, Case Western Reserve has made significant progress in developing a culture of entrepreneurship and innovation that brings research to the real world. Here's a quick summary of what it takes to bring an idea to life—and the support our researchers have to get there.



1

Get connected

Researchers first need to register with a variety of campus systems to start conducting research. By establishing these accounts at the onset, they'll have a smoother process for funding research, and research administrators can help along the way.



2

Find funding

CWRU's Office of Research and Technology Management and the School of Medicine Office of Research Administration provide a range of resources to help find and secure funding and collaborators. Then, researchers can turn to research administrators for help understanding requests for proposals and sponsor requirements.



3

Develop and submit a proposal

Once a researcher finds a funding opportunity to pursue, it's time to prepare a proposal. They'll determine timelines and proposal responsibilities, from budgets and figures to research narratives and letters of support (and more), before getting to work with their department's research administration team to complete the funding proposal.



4

Set up the project

This is where the project really takes off. Once a researcher receives the official notice of a grant award from the sponsor, they can begin working with their department administration to execute the award—including making sure they've fulfilled all regulatory compliance requirements.



5

Conduct the research and manage the award

Here, researchers get into the crux of their work. And when it comes to keeping on top of the finances for the research award, researchers need to think of their award as a small business—managing financial reports, reviewing expenses, and understanding all reporting obligations.



6

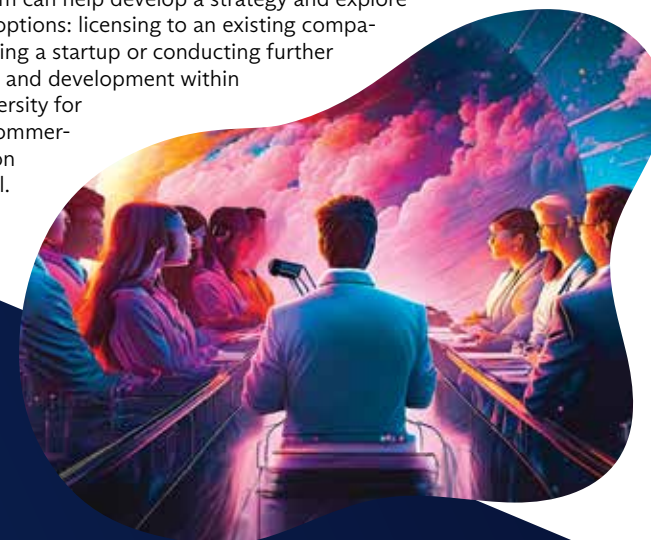
Close out the project

Though each agency has its own guidelines, most sponsors require a final scientific report and a financial report upon completion of an award, which researchers complete with the help of their department and ORTM.

7

Promote and commercialize the work

And if they're interested in commercializing their discoveries and inventions, researchers can turn to the university's Technology Transfer Office (TTO). As the coordinator of intellectual property on campus, TTO can discuss inventions and provide guidance on the disclosure, evaluation and protection processes. The TTO team can help develop a strategy and explore various options: licensing to an existing company, creating a startup or conducting further research and development within the university for future commercialization potential.



Campus resources

A few of the many that help researchers grow their budding ideas into full-fledged businesses

Mentoring and training

Venture Mentoring Program: Connects young faculty, students and staff with local experts to provide confidential business advice

Translational Fellow Program: Provides School of Medicine PhD students and postdocs with guidance and training through workshops and dedicated time for entrepreneurial activities—and with salary support

Licensing and startup support

Veale Institute for Entrepreneurship: Connects students and faculty with resources to accelerate research translation

Office of Research and Technology Management: Once ready for market, the university's research office and technology transfer team work with startups to identify affiliates and find the best path for commercialization

Funding discoveries

Council to Advance Human Health: In its first decade, invested \$1.5 million in 20 projects—leading to eight licensing deals, two clinical trials, and over \$150 million in outside funding

Case-Coulter Translational Research Program: Invests \$1 million each year in promising partnerships between clinicians and biomedical engineering researchers

CWRU Technology Validation & Start-Up Fund: Supported by Ohio Third Frontier, aims to accelerate and fund the translation of promising technologies into the marketplace through Ohio startups

Uriel Kim

Medical Scientist Training Program

In less than a decade, Uriel Kim will have earned four degrees: a bachelor's from University of Southern California in 2015, a PhD from Case Western Reserve in 2020, an MBA from Northwestern University in 2023 and, this spring, an MD from CWRU.

This seemingly insatiable thirst for knowledge is motivated, Kim says, by one goal: "to provide the best care for my future patients."

It's why he sought out the MD/PhD Medical Scientist Training Program at Case Western Reserve and even took a break from his MD studies to pursue his MBA—gaining the business, commercialization and leadership

Continued on page 26



Faces of medicine

Meet six students shaping their fields—
and their futures

Across 25 doctoral, master's and certificate programs, more than 2,800 students are gaining the experience for which Case Western Reserve University School of Medicine is known: rigorous, customizable and contemporary curriculum, state-of-the-art technology, exceptional clinical and laboratory opportunities, and an inclusive, diverse community. But these students know the full Case Western Reserve experience is what you make of it. They're finding breakthroughs in labs, providing exceptional clinical care, supporting their peers and helping the Cleveland community—all while preparing for the realities and demands of the ever-changing healthcare field that awaits them after graduation.

Get to know six of these outstanding scholars.

Continued from page 24

insights that he hopes will enhance his clinical care and research.

Kim's research, which landed him on *Crain's Cleveland Business*' "20 in Their 20s" list, has focused on identifying and understanding health disparities from myriad angles. His dissertation looked at the impact of the Affordable Care Act on cancer outcomes in individuals from low-income communities. He's published on the effects of expanding Medicaid. And he developed a new statistical methodology to accurately estimate the income of patients based on census data—a critical missing piece in understanding the impact of income on health outcomes.

"While delivering excellent clinical care is obviously important, understanding and addressing barriers to receiving care are equally crucial," said Kim, who hopes his next step is a dermatology residency. "The key challenge we face now is making sure our research findings make their way to key decision-makers who can influence policies or systems that will improve health outcomes for patients."

Kimberly Parker

Biomedical Sciences Training Program

Kimberly Parker always imagined she'd be an editor.

That passion for the written word has paid off—literally—even when Parker pursued an entirely different career path. Today, she's less than six months away from completing her PhD in pharmacology, studying the role of long non-coding RNA in breast cancer metastasis.

Through impressive grant-writing skills, honed with the support of her mentor, Vice Dean for Research Bill Schiemann, PhD, Parker secured two highly competitive National Cancer Institute grants that cover both her doctoral and postdoctoral work.

Parker's latest award—the Predoctoral to Postdoctoral Fellow Transition Award (F99/K00)—funds the last two years of her doctoral studies, plus up to four years of postdoctoral work. "Essentially," Parker said, "it gives me the opportunity to find the best postdoc lab for what I want to do."

Writing the grant application helped her better fine tune that goal: running a lab in which members of her team look at RNA processing in the tumor microenvironment to better understand how metastasis occurs.

"I got to think about [my goals] in a big, broad picture," Parker explained. "And then I realized: This is up to me now. I am the scientist in the driver's seat."

As she takes on more advanced positions, it's important to Parker that she continue the culture of support and knowledge sharing that drew her to Case Western Reserve in the first place. She advises other students on successful grant writing, edits their work for Journal Club and guides them in the lab, where they're all aiming to bring breakthroughs to patients.

"Cancer research is extremely complex, but that's part of the reason why I like it," Parker said. "You can embrace the chaos in the research."

Maya Sinjo

Physician Assistant Program

Growing up in an impoverished neighborhood in Lebanon, Maya Sinjo became acutely aware of medical care privileges—and how her community lacked them.

Her family was the only in the area to own a manual blood pressure monitor—a luxury that led to middle-of-the-night visits from ill neighbors. “In most cases, ‘feeling unwell’ actually equated to a heart attack,” Sinjo said. “In which case, my mom’s blood pressure monitor could not help.”

Such disparities—in healthcare as well as in education—led Sinjo’s family to immigrate to Canada when she was 18. (Her parents persisted through multiple immigration processes to ensure their children could have greater educational access.) There, she earned a bachelor’s in kinesiology from York University before learning on social media about the role of a physician assistant (PA) in healthcare.

Sinjo knew immediately that the mix of challenges PAs face daily would align

well with her inquisitive nature, driving her to find diagnoses and treatments for her future patients.

Now a second-year PA student at Case Western Reserve, she focuses especially on underserved communities. She is active in volunteering, whether conducting screenings at farmers markets, educating residents at local shelters, testing students’ vision in inner-city schools, or helping bridge the gap between healthcare providers and their immigrant patients.

She’s seen the need to be that connector firsthand—both in her work as a medical assistant and when attending appointments with her mother, who isn’t fluent in English and is often, Sinjo said, excluded from conversations because of it.

“My career goal is to advocate for patients like my mom who are experiencing health barriers,” Sinjo said, “and to provide a safe place for medically underserved patients to be heard and acknowledged.”



Feyi Rufai

Master of Arts in Bioethics and Medical Humanities
(Integrated Studies)

Most high schoolers enter their college search looking for a home for the next four years—a place at which they’ll earn a degree and gain valuable life experiences before moving on in their journey.

Not Feyi Rufai. As a high school senior, she applied to Case Western Reserve’s Pre-Professional Scholars Program, which offers exceptionally promising students undergraduate admission plus conditional admission to CWRU’s medical or dental schools. Rufai’s goal: eight years, two degrees.

Even before Rufai begins her MD studies in July, she’ll have earned *three* degrees: a bachelor’s in psychology and another in sociology, plus a master’s in bioethics and medical humanities from the School of Medicine.

In this master’s program, which she’s completing as part of an integrated studies option for driven undergraduate students, Rufai has excelled in classroom and clinical experiences. She’s

tackled tough bioethical topics, such as end-of-life care, mental health stigmas, abortion and drug legalization. She’s been active with the Black Student Union, multiple research projects and Cheza Nzuri, an African dance team.

And, most importantly, Rufai has enhanced her bachelor’s degree studies with knowledge and perspectives that will drive her future, including significant interaction with “role models of physicians who work at the intersection of health and social justice work.” It’s a crucial experience for the aspiring OB/GYN who hopes to focus on better understanding and combating health disparities.

“If I want to be a good physician—one who people not only respect but also trust—I need to be able to make decisions for my patients based on their best needs and considering multiple perspectives,” Rufai said. “The bioethics program has really helped me learn how to advocate for someone else and communicate that effectively.”





Emily Manning

MD-University Program

On the way home from taekwondo class, 8-year-old Emily Manning’s world was upended: Her mom suffered a seizure and drove into a ditch, leaving Manning calling for help on the roadside. Shortly after, her mother had a stroke and, later, was diagnosed with HIV. At age 14, Manning became the sole caretaker for her mother, living “on the poverty line.”

“This infiltrated pretty much every aspect of my life,” Manning said, whether it was paying for groceries, juggling school, work and caretaking, or seeing the healthcare disparities her mother faced as a woman with low income.

Still, Manning became the first in her family to graduate high school, before earning a bachelor’s in public policy analysis from University of North Carolina at Chapel Hill and a master’s in physiology from North Carolina State University.

When it came time to apply to medical school, Case Western Reserve was the first to “really embrace me for my personality and my experiences,” Manning said. “I had been told throughout my life that because I was low-income, maybe I shouldn’t apply to college, and maybe

medicine wouldn’t be the best fit for me. But Case [Western Reserve]’s admissions team looked at me for me and said, ‘What do you need to succeed?’”

Now in her fourth year, Manning has not only succeeded in the classroom and in clinicals, but she’s also enhanced the school’s community, developing a mentoring system, serving on a team to improve the curriculum, serving on the alumni diversity committee and leading a first-generation club for students whose families are new to medicine. After graduation, she hopes to study and combat healthcare disparities related to gender and low-socio-economic status, or even work in academic medicine to build pipeline programs for low-income students looking to enter medicine—like she once was.

“I lived on the other side of medicine where I was the caretaker, sleeping in the vinyl chairs. I know what it means to hang on to every word the physician says,” said Manning, who is applying for internal medicine residencies. “That’s something that really informs the way I practice. I can’t fix everything, but I might be able to make one person’s day a little bit better.”

Derek Lake

Master of Science in Translational Pharmaceutical Science

Derek Lake was summiting a mountain in South America when he realized he wanted to pursue a career in medicine.

Well, perhaps it wasn't that *precise* moment. But as Lake was backpacking from Mexico to Patagonia—often volunteering as an emergency medical technician to accompany climbers on their mountaintop quests—he saw the disparities plaguing certain regions, especially related to health-care access.

He knew medicine was how he could make a difference.

Five years later, after earning a bachelor's degree in biomedical sciences and gaining extensive genomics research experience at Northern Arizona University, Lake is pursuing one of CWRU's newest degree offerings, the Master of Science in Translational Pharmaceutical Science.

As Lake expands his pharmaceutical, bioinformatics and entrepreneur-

ial knowledge in the program, he has quickly jumped into the opportunities available: He's a researcher in a pharmacology lab working on protein purification and cryo-electron microscopy, he's part of the National Institutes of Health's I-Corps entrepreneurship training program, and he's a Case Venture Mentorship Program fellow.

Just a few months into the master's program, Lake has gained invaluable experiences—whether networking with pharmaceutical company founders, working in a wet lab or learning how to conduct market research.

"I'm looking to apply my research in the real world," Lake said, "and this program has already given me the practical, applicable skills to do exactly what I want to do."

His goal: returning to Mexico to open a precision medicine clinic—working to improve the healthcare disparities he'd witnessed years ago.



Research updates

Breakthroughs from the labs of CWRU School of Medicine

Understanding—and treating—deadly esophageal cancers

Cancer of the esophagus, especially esophageal adenocarcinoma (EAC), is highly lethal, with 80% of patients dying within five years of diagnosis, according to



Guda

the esophagus, are at high risk of developing EAC.

With a five-year, \$11.2 million grant from the **National Cancer Institute**, Guda and collaborators at CWRU and **University Hospitals** (UH) hope to learn what causes—and how to reduce and treat—such cancers.



Chak

Kishore Guda, DVM, PhD, an associate professor at the School of Medicine. And patients with Barrett's esophagus, a condition marked by a change in normal cells lining

of whom are members of the **Case Comprehensive Cancer Center**—are leading this project, adding to the two decades of work they've put in to this form of cancer.

With this new round of funding, they will focus on how these types of cancers originate—specifically, the molecular and genetic factors that trigger why and how Barrett's esophagus develops and progresses to esophageal cancer.

This latest grant builds upon multiple areas of Guda and Chak's previous research—including their recent identification of an inherited mutation in a gene, Caveolin-3, linked to EAC.

"With this discovery, we will be able to identify early those at a high risk of developing EAC in their lifetime," Guda said of the research, which was published in *Gastroenterology*, "and accordingly tailor screening, lifestyle and treatment strategies to prevent cancer development."

Predicting the power of chemotherapy—in the first round

Nearly 80% of breast cancer patients show partial or no response to conventional chemotherapy, but it

takes four to six months and multiple cycles of treatment to even find out.

With a five-year, \$3.05 million grant from the **National Institutes of Health and National Cancer Institute**, researchers at **Case Comprehensive Cancer Center** and **UH** are studying whether a new magnetic resonance imaging exam can predict chemotherapy's effectiveness for a woman with breast cancer based on a single round of treatment. Their goal: save women from unnecessary treatments while helping physicians seek alternative, more effective options—without wasting precious time.



Chen



Marshall

"This study has great potential to bring real survival and quality-of-life benefits to our breast cancer patients," said **Yong Chen, PhD**, an assistant professor of radiology.

Chen is leading the study with **Holly Marshall, MD**, an associate professor of radiology at the School of Medicine and division chief of breast imaging

at UH, and **Dan Ma, PhD (GRS '15, biomedical engineering)**, an assistant professor of biomedical engineering. They're using magnetic resonance fingerprinting (MRF), which essentially examines multiple tissues in the body with a single, time-efficient image, or "fingerprint."



Ma

Preliminary results of the researchers' work suggest MRF methods can accurately assess therapeutic response seven to 10 days after the initial chemotherapeutic cycle—creating the opportunity for significantly improved patient care and flexibility aimed at a more personalized therapy for many women.

A new approach to stop cancer growth?

Overexpression of the protein LSD1 (lysine-specific histone demethylase 1A) has been identified as a driver of cancer and heart disease, with some researchers looking to slow cancer growth by stopping LSD1's catalytic activity—the chemical reaction that spurs cell growth and appears to lead to its overexpression.

But **Kaixiang Cao, PhD**, an assistant professor of biochemistry at CWRU School of Medicine, is leading a team that challenges that assumption: They believe degrading the entire LSD1 protein—not merely short-circuiting the chemical reaction that leads to its overexpression—can lead to far greater success in slowing or stopping cancer growth in stem cells.

Cao said that stopping catalysis might prohibit overexpression 15% of the time, but his team's approach has a success rate closer to 80%.

"Our findings really challenge the current paradigm," Cao said of their research, which appeared in *Nature Communications* in August. "If we can develop a degrader of LSD1, we

can help the patient go through less therapy—even if we cannot completely cure cancer."

Why people with Alzheimer's disease lose their defense against brain corrosion

Studies have long shown that oxidative stress corrodes the brain, leading to oxidative damage—a main indicator of Alzheimer's disease and other related dementias. But new research, published in *PNAS* and led by **David E. Kang, PhD**, the Howard T.



Kang

Karsner Professor in Pathology at Case Western Reserve University School of Medicine, identified why people with AD lose this so-called "oxidative damage defense."

A protein called Nuclear factor erythroid 2-related factor 2 (Nrf2) is regularly activated in response to oxidative stress to protect the brain from oxidative damage. But in the brain of someone with AD, Nrf2 defense against oxidative stress declines.

Kang's research found a protein called Slingshot Homolog-1, or SSH1, stops Nrf2 from carrying out its protective biological activity. Genetically eliminating SSH1 increases Nrf2 activation and slows the development of oxidative damage and buildup of toxic plaques and tangles in the brain—both risk factors for AD. As a result, the regular connections between brain cells are maintained and degeneration of brain nerve cells is avoided, they found.

Case Western Reserve is among those working on SSH1 inhibitor compounds as potential neuroprotective medicines.

"Many promising drug candidates are certainly in the pipeline," Kang said.

Linking discriminatory housing practices with heart disease

In the 1930s, the United States government-sponsored **Homeowners'**

Loan Corp. (HOLC) established maps of neighborhoods that identified levels of mortgage risk—a practice that led to disinvestments and segregation in "redlined" neighborhoods. Now, nearly a century later, researchers still are uncovering the lasting educational, economic and health effects of these now-illegal practices.

Among the most recent findings: U.S. military veterans who lived in these "redlined" areas had higher risk for heart attacks and other cardiovascular issues, according to a new study by researchers at CWRU School of Medicine, University Hospitals and the Louis Stokes Cleveland VA Medical Center.

The study was published in the July issue of *JAMA Network Open* and conducted primarily by **Sadeer Al-Kindi, MD**, formerly an assistant



Al-Kindi

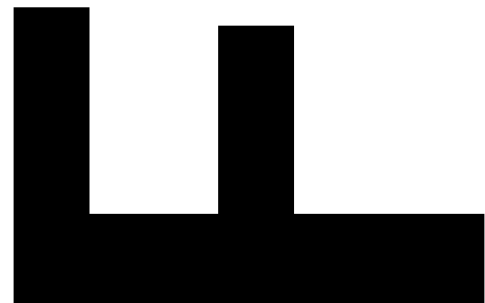
professor at Case Western Reserve School of Medicine; **Salil Deo, MD**, an associate professor of surgery at the School of Medicine and cardiac surgeon at the **VA North-east Ohio Health-care System**; and **Yakov Elgudin, MD, PhD**, director of lung transplantation at **UH Cleveland Medical Center** and an associate professor of surgery at the School of Medicine.

The researchers used information from 80,000 U.S. veterans—some living, others deceased—with pre-existing cardiovascular disease who lived in census tracts color-coded by the HOLC.

They observed that, over a five-year study period, those who lived in redlined neighborhoods were 14% more likely to suffer from an adverse cardiac event like a stroke or heart attack. And this effect remained even after adjusting for known cardiovascular risk factors and other social determinants of health.

According to the researchers, their findings "underline the important fact that, despite improvements in public health, access to care—and citizen health in the United States overall—significant gaps exist between communities, and progress has not been uniform across all neighborhoods."

CLOSER TO



How three researchers' work is moving toward clinical use

BUBBLING UP

In **Agata Exner's** lab, researchers spend a lot of time blowing bubbles.

These, though, are nanobubbles—nanoparticles with gas at their core—each of which is about 2,000 times smaller than a single grain of salt. By stimulating the nanobubbles with sound waves, Exner's team is working toward a specific goal: improving cancer detection and targeted therapy.

Their process: Load nanobubbles with therapeutics and send them toward a tumor or other point of delivery in the body, tracking the movement with ultrasound imaging technology. When the bubbles arrive at their destination, researchers use ultrasound vibration to pop the nanobubbles, which, in turn, "releases the cargo" within the nanobubble directly where it's needed most, rather than all over.

"The precision and control is very helpful," said Exner, PhD, the Henry Wilson Payne Professor, director of Case Center for Imaging Research and vice chair of basic science research in the Department of Radiology.

Exner's team has been funded for nanobubble research in four areas so far: ultrasound imaging of prostate cancer, drug delivery, gene delivery—a recent grant from Moderna aims to see how nanobubbles can transport mRNA—and cancer immunotherapy. With the last approach, there's no delivery required; it's simply popping bubbles in a tumor.

"It seems the popping action actually creates an immune response and recruits immune cells into a tumor," Exner explained. "So we can enhance the effect of existing immunotherapies or we can use the bubbles as an immunotherapy by themselves."

As Exner and her colleagues continue their research—including hopefully soon filing an investigational new drug application with the Federal Drug Administration—Exner is confident in its potential to help fight diseases such as Type 1 diabetes, and ovarian, breast and prostate cancer.

AGATA
EXNER



BRIGHT SOLUTIONS

Already, Exner's team has seen success in its partnership with **Jim Basilion, PhD**, professor of biomedical engineering. For decades, Basilion has worked on image-guided approaches to light up tumors, whether for targeted drug delivery—like with Exner's team—or for more precise, effective surgeries.

"My theory early on was that some tumor cells likely have migrated away from the tumor and might not be accessible to standard imaging probes," leading surgeons to leave cancerous tissue behind, Basilion explained. Further complicating the issue—and causing many cancer surgeries to fail, he said—is that it's often difficult to distinguish between healthy and cancerous tissues during surgery.

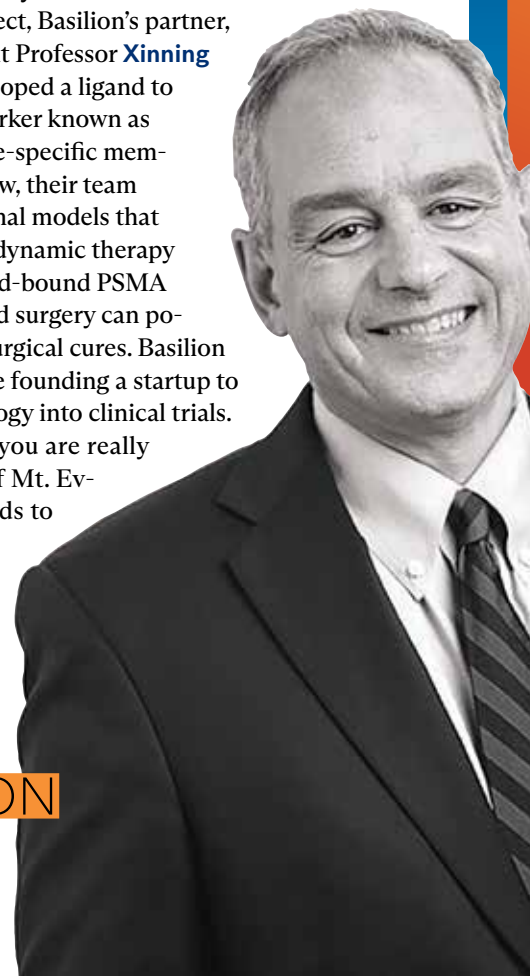
Basilion's solution: develop technology that ensures surgeons only see the image probe's signal when cancer is detected.

Eighteen years since he first started working on the concept, his proprietary technology, Fluorescent Image Resection Enhancement (FIRE)—part of his startup, Akrotome Imaging—is nearing use in human clinical trials. This spring, surgeons at Leiden University Medical Center in the Netherlands are expected to remove cancerous breast tissue during surgery, then use FIRE to identify any remaining tumor tissue so they can extract it.

In another project, Basilion's partner, Research Assistant Professor **Xinning Wang, PhD**, developed a ligand to bind to the biomarker known as PSMA, or prostate-specific membrane antigen. Now, their team has shown in animal models that combining photodynamic therapy through this ligand-bound PSMA with image-guided surgery can potentially lead to surgical cures. Basilion and colleagues are founding a startup to drive this technology into clinical trials.

"At this phase, you are really just at the base of Mt. Everest of what needs to get done," Basilion said. "Still, it's completely invigorating."

JIM
BASILION



RESTORING FUNCTION

Jerry Silver, PhD, knows firsthand the time it takes to bring research to reality—and also the exhilaration that comes with it.

The renowned professor of neurosciences made international headlines in 2015 for his work restoring and repairing rat models' nervous systems following spinal cord injuries. Eight years later, a spinoff company, NervGen Pharma Corp., successfully completed phase 1 clinical trials in humans of Silver's drug, NVG-291.

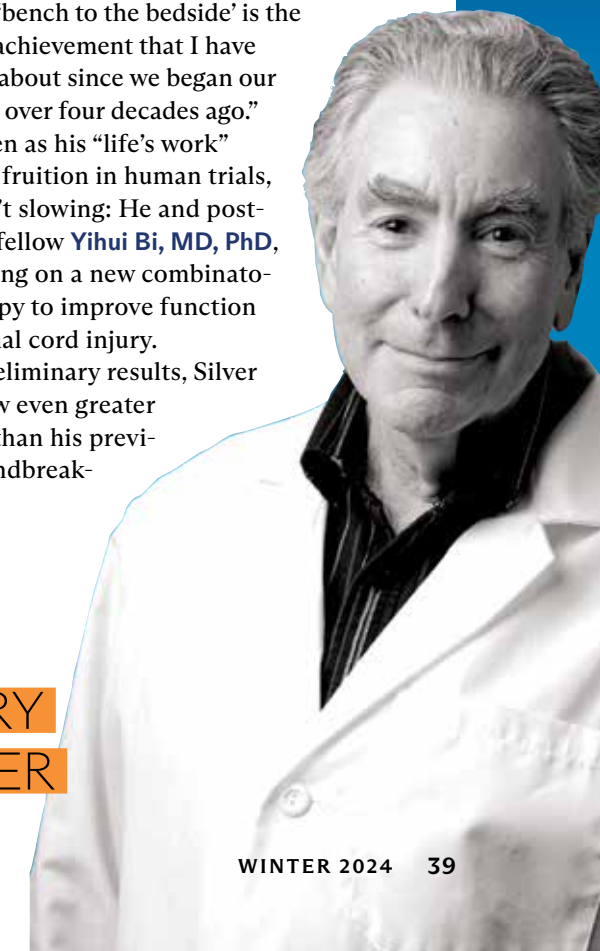
The therapeutic peptide targets mechanisms that interfere with nervous system repair, bringing about functional recovery in preclinical models of spinal cord injury, peripheral nerve injury, multiple sclerosis and stroke. NVG-291 now has moved on to phase 2A trials and was granted "Fast Track" designation by the Food and Drug Administration to accelerate drug development.

"Seeing the full translational potential of my lab's research on restoring function after spinal cord injury is just incredible," said Silver, who now serves as a scientific advisor to NervGen. "Indeed, moving our discoveries all the way from the 'bench to the bedside' is the ultimate achievement that I have dreamed about since we began our studies ... over four decades ago."

But even as his "life's work" comes to fruition in human trials, Silver isn't slowing: He and post-doctoral fellow **Yihui Bi, MD, PhD**, are working on a new combinatorial therapy to improve function after spinal cord injury.

The preliminary results, Silver said, show even greater promise than his previous groundbreaking work.

JERRY
SILVER



6

I want to cure cancer.

It's as simple as that.'



A targeted approach

**New cancer center leader aims to build connections—
in Cleveland and well beyond**

Gary Schwartz, MD, has long believed precision medicine is the future of oncology. But back in the early '90s, very few agreed. Cancer care at the time generally followed a “spray-and-pray” approach: Use as much chemotherapy or radiation as the patient could handle in hopes of overwhelming the cancer into submission. Then a physician-researcher specializing in gastrointestinal cancers at Memorial Sloan Kettering Cancer Center in New York, Schwartz was certain more targeted approaches could succeed. He began sharing his theories and research on the critical importance of prevention and treatment strategies that are tailored to the patient. A dozen years later, he was asked to become the first chief of Sloan Kettering’s new Melanoma and Sarcoma Service.

The core of its focus: precision medicine.

A targeted approach



A history of breaking ground

Throughout his career, Schwartz has established a reputation for providing exceptional care and leading cutting-edge research. After Sloan Kettering, he joined Columbia University's Irving Medical Center, eventually becoming chief of hematology and oncology and deputy director of its cancer center. Last spring, he joined Case Western Reserve University as vice dean of oncology for the School of Medicine and director of **Case Comprehensive Cancer Center** (Case CCC). He was drawn from his lifelong home in New York to Cleveland by the opportunity to lead the renowned Case CCC, a consortium of 400 physician-scientists from Case Western Reserve, Cleveland Clinic and University Hospitals who provide care for approximately 70% of Northeast Ohio's cancer patients. Schwartz is the first director of Case CCC to have admitting privileges at both hospitals—a testament not only to his desire to build connections but also to share his expertise with as many people as possible.

In recent years, Schwartz's work has focused on rare cancers—those that annually affect fewer than 15 of 100,000 people. Such cancers typically don't garner as much attention as more common cancers, but his discoveries have yielded broad benefits.

While on the faculty at Columbia University's Irving Medical Center, for example, Schwartz found success in treating the rare cancer liposarcoma by inhibiting the enzyme CDK4 through a drug known as palbociclib. Later, researchers from a different institution found that the drug—now more commonly known as Pfizer's Ibrance—also prevails against advanced or metastatic breast cancer.

(Such novel thinking may come naturally: His father, Morton Schwartz, was the first to use human tumor tissue to detect a protein specific to prostate cancer; his work was published in *Cancer* in 1953.)

Seeking a CURE

Schwartz's focus on bolstering such "trickle-up effects" has attracted substantial support—most recently, a \$5 million gift from the **Jed Ian Taxel Foundation for Rare Cancer Research** (JEDI) to launch CURE: The Rare Cancer Initiative at Case Comprehensive Cancer Center.

The CURE initiative aims to build on Case CCC's collaborative nature to create a national network of cancer centers and to catalyze innovative approaches to identifying and treating rare cancers. By drawing on these centers' collective reach, Schwartz believes, researchers can profile rare cancers in thousands of patients and generate a comprehensive map of cancer

types. From there, researchers can apply molecular technologies to dissect each component of a tumor at single-cell resolution and, ultimately, develop targeted therapeutic approaches that could defeat rare cancers.

Such a network, JEDI leadership believes, hinges on Schwartz. That's why, when Schwartz moved to Cleveland for his new role at Case CCC, the foundation's funding followed.

"Having the knowledge—from both the scientific and emotional perspective—and the ability to create a vision of where this can all go is really all about Gary," said **Mark Taxel**, chairman and CEO of JEDI, who launched the family foundation after his son, Jed, died of a rare cancer six months after diagnosis. "And with the power of Case Western Reserve's medical school, Case CCC and other institutions involved, the ability for us to make an impact has grown exponentially. It's like one plus one equals five."

This new commitment from JEDI will position Case CCC to "make major inroads in rare cancer—to better recognize the problem, educate the public, help patients navigate their own diseases and, hopefully, understand the biology of these cancers so we can develop innovative therapeutic approaches," Schwartz said.

Vision for the future

Making Case CCC a hub for rare-cancer research is just one of Schwartz's many priorities. Schwartz follows Case Western Reserve University School of Medicine Dean **Stan Gerson, MD**, who led Case CCC for nearly two decades. Under Gerson's leadership, the center earned the National Cancer Institute's "exceptional" rating in 2018, the highest the institute can bestow. Schwartz hopes to achieve the rating again this spring.

"Cancer remains the most complex disease humans experience. Treatments evolve, progress is made, cure is hard and suffering is almost intolerable," Gerson said. "Gary has an incredible passion and urgency to find the cure, one cancer at a time, and to pursue rare cancers with incredible intensity. I am incredibly delighted that he chose to join our center as its leader. Cleveland and the country will benefit for years to come."

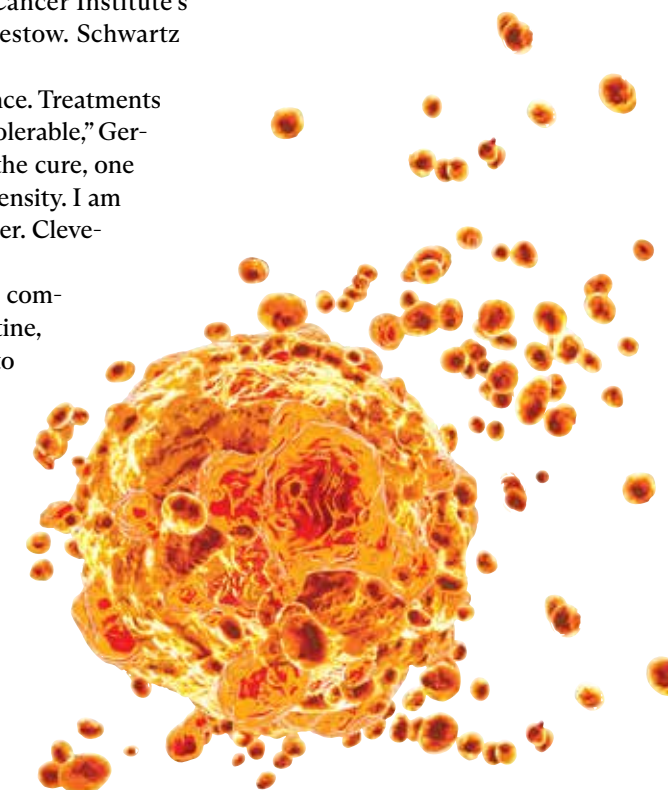
Schwartz wants to ensure that Case CCC serves its entire community—including rural residents such as those in East Palestine, Ohio, where a February train derailment sent toxic fumes into the air. The center also engages urban populations in Cleveland through initiatives to ensure Black men—who are 40% more likely to get prostate cancer than white men—get the preventive care and treatment they need.

Yet as renowned as Schwartz is for targeted interventions, his highest goal is far broader.

"I want to cure cancer," Schwartz said. "It's as simple as that."

"Cancer remains the most complex disease humans experience. Treatments evolve, progress is made, cure is hard and suffering is almost intolerable. Gary has an incredible passion and urgency to find the cure, one cancer at a time, and to pursue rare cancers with incredible intensity."

—Dean Stan Gerson, MD



Alumni and friends

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



Alumni gathered in the Sheila and Eric Samson Pavilion at the Health Education Campus of Case Western Reserve and Cleveland Clinic for the Dean's Reunion Soiree—a welcome-back cocktail reception and dinner to honor Grand Classes, reunion classes, leadership donors, scholarship supporters and alumni award winners. Throughout the weekend, alumni, students, faculty and friends took part in networking and reunion activities. (Photos by Dale McDonald)

HOMECOMING HIGHLIGHTS

Whether they studied on campus five or 50 years ago, Case Western Reserve University School of Medicine alumni who returned for Homecoming and Reunion Weekend in October likely noticed significant changes to the places—and ways—in which they once learned.

But they got an up-close look through events such as “A Day in the Life of a Medical Student,” which featured the school’s Zubizarreta Family Immersive Learning Suite, and “A Look at Our Student-Run Health Clinic,” which showcased the collaborative care provided to Cleveland residents by medical, nursing, dental and social work students. Plus, many events throughout the weekend took place at the Health

SAVE THE DATE

Homecoming and Reunion Weekend 2024 is set for **Nov. 14-17**

Education Campus of Case Western Reserve University and Cleveland Clinic—the 485,000-square-foot building less than a mile from CWRU’s main campus where medical, nursing and dental students have learned and studied alongside each other since 2019.

Among the key events: mentoring and networking sessions for medical and graduate students and alumni; a brunch with students from the Student National Medical Association and Latino Medical Student Association; and the Dean’s Distinguished Lecture, in which **Nina Russell, MD (MED ’93)**, director of tuberculosis and HIV research and development in the Global Health Division of the Bill & Melinda Gates Foundation, shared the importance of taking a “world view” to medical advances.

Additionally, alumni, faculty, students, staff and university leadership connected at the Dean’s Reunion Soiree, which not only featured instrumental and a capella vocal performances by medical students but also the Medical Alumni Awards (see p. 50).

Take a look at a few of the many memorable moments from the weekend.



HOMECOMING AND REUNION WEEKEND

Honoring outstanding alumni

Congratulations to our 2023 Medical Alumni Award winners:



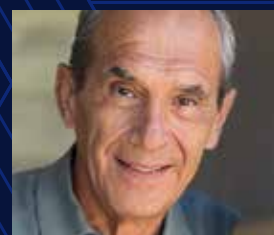
Elizabeth Southworth, MD
(MED '93)

The Clifford J. Vogt, MD '34 Service Award



Kelly Ramsey, MD
(MED '03; GRS '04, bioethics)

Special Medical Alumni Board Award



Vincent Gaudiani, MD
(MED '73)

Lifetime Achievement Award



Annette Sobel, MD
(MED '83)

Visionary Leadership Service Award



Roe Green

Honorary Alumni Award



Emelia Benjamin, MD
(MED '83)

Distinguished Alumni Award (MD category)



Aleksandra V. Rachitskaya, MD
(MED '08)

Early Career Leadership Award



Evelin Molina Dacker, MD
(MED '93)

Robert L. Haynie, MD, PhD '72 '78 Diversity, Equity and Inclusion Award



Angela M. Caliendo, MD, PhD
(GRS '83, biochemistry; MED '87)

Distinguished Alumni Award (medicine-related PhD or MD/PhD category)



Analiz Rodriguez, MD, PhD
(GRS '08, pathology; MED '09)

Distinguished Alumni Award (medicine-related PhD or MD/PhD category)



Do you know someone deserving of these honors? Nominate them today at case.edu/medicine/alumni/recognition-awards.

DEDICATION TO EDUCATION

After a half-century of teaching, a professor and his wife look to the future of the school

Krishan Chandar, MD, arrived in Cleveland in 1974 to complete his neurology residency, eager to bring the education and expertise he was gaining in the United States back to India to advance care in his home country.

He never left.

Now, the 89-year-old associate professor emeritus of neurology and his wife, **Sneh**, have secured a place not only in the school's history, but also in its future. Through an estimated \$1 million estate gift, the Dean's Scholars Program will be re-established as the Dr. Krishan Chandar and Sneh Chandar Dean's Scholars Endowment Fund.

Its goal: to support postdoctoral scholars—especially those from underrepresented backgrounds—as they pursue tenure-track faculty positions in medicine, through stipends, research funding or other professional development initiatives.

"I've always felt that education is a way to advance, but there is still so much inequality that exists," Chandar said. "There are many people in this country who have not been given the opportunity to succeed because of their race. They deserve help to advance, and we need to be able to expand their presence in the educational field."

The fund is an opportunity for Chandar to support the career trajectories of young scholars—just like a Case Western Reserve professor did for him at the start of his career. **Joseph Foley, MD**, who was the head of neurology in the '70s, offered Chandar a post-residency faculty position just weeks into his time in Cleveland.

Chandar was eager to work with the esteemed neurologist, but there was a problem: Chandar had come

to the U.S. on a five-year J1 visa and, after a two-year residency at Baylor College and weeks into his new rotation in Cleveland, his time was running short.

Foley advocated for the university to apply to convert Chandar's J1 visa to immigrant status. After an "extremely difficult, contentious" months-long process, Chandar got clearance—a "joyous" occasion for him, his wife and two young children.

Over his 50 years in Case Western Reserve University School of Medicine's Department of Neurosciences, Chandar introduced "live patient demonstrations," bringing a new patient each week in front of a crowd of 80 students to help understand and diagnose their illnesses.

He initiated teaching activities for all third-year neurology residents. He wrote nine of the school's 10 IQ cases when the school launched its WR2 curriculum in 2007—and then facilitated the small-group learning activities.

Chandar's approaches were so effective that medical students recognized him with multiple awards, including two of the school's highest

teaching honors: the Gender Equity Award and the Kaiser Permanente Award.

He retired from his clinical role in 1999 and since has devoted time to enhancing the neurology program's curriculum. Chandar said he still meets weekly with some neurosciences faculty to discuss advancements and lectures to third-year medical students up to twice a month.

"I have such a gratitude to these students," Chandar said. "Because of them, I can still teach—and they really keep me young."

He's also devoted to lifelong learning, whether that's through the university's Emeriti Academy Book Club or ballroom dancing lessons with Sneh (they've mastered eight different dances).

"We had a wonderful life here," Chandar said. "We made the best decision by choosing Case Western Reserve and Cleveland."



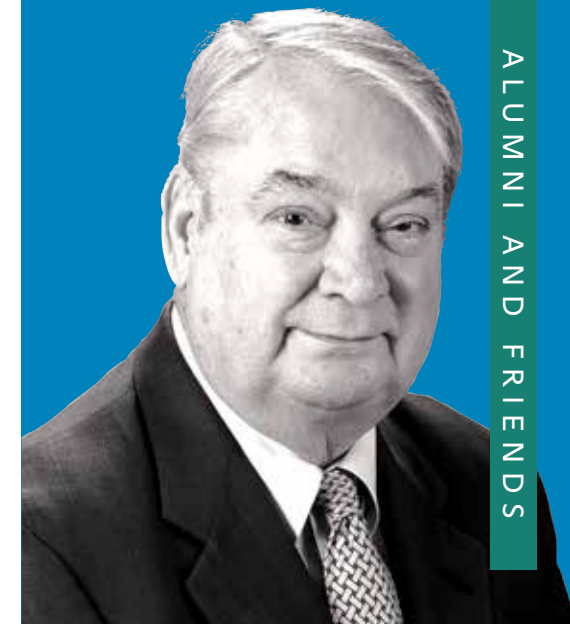
Krishan and Sneh Chandar

Class notes

Includes alumni information reported to Case Western Reserve from Jan. 1 to Oct. 20.



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.



ALUMNI AND FRIENDS

1960s

Robert J. Baumann (MED '65) received a Lifetime Achievement Award from Kentucky Gov. **Andy Beshear** for his five decades of work in child neurology in the state. He was recognized for establishing the **Office for Children with Special Health Care Needs** network of regional clinics in Eastern Kentucky, and his work as a professor and section chief of child neurology at **University of Kentucky**.

1970s

Jeffrey Ponsky (MED '71, MGT '90), professor emeritus of surgery at CWRU School of Medicine, received the **American Surgical Association's** Medallion for Advancement of Surgical Care, which recognizes individuals who have made innovative and lasting contributions to the advancement of surgical patient care. He also was named an Icon in Surgery by the **American College of Surgeons**.

Jane P. Pringle (MED '71) was re-elected to the **Maine State Legislature** as

a representative. She serves on the Health Coverage, Insurance and Financial Services Committee, where she and colleagues are working toward universal, single-payer healthcare.

Robert Spector (MED '75) joined **SightMD New York** as an ophthalmologist, specializing in pediatric and neuro ophthalmology.

1980s

Jay Johannigman (MED '83) is leading efforts to integrate whole blood into trauma care through his role as trauma medical director at **St. Anthony Hospital** in Lakewood, Colorado.

Jay M. Short (GRS '87, biochemistry), CEO of the San Diego-based biotechnology company **BioAtla**, received the Lowell Thomas Award by **The Explorers Club** for his contributions to science innovation in the field of antibody therapeutics. Short is the lead inventor of BioAtla's Conditionally Active Biologic antibody therapeutics for the treatment

of solid tumors as well as Protein-activated Chemical Switches.

Alison K. Hall (GRS '88, anatomy) is interim senior associate dean for research at the **George Washington University School of Medicine and Health Sciences** in Washington, D.C., where she oversees research missions and strategic advancement of programs across basic sciences, translational, clinical, health services and educational research.

1990s

Said Ibrahim (MED '93) became the first Black dean at **Thomas Jefferson University's** Sidney Kimmel Medical College in Philadelphia, following roles as senior vice president of **Northwell Health's** Medical Service Line and chair of the Department of Medicine at **Long Island Jewish Medical Center**, among others. He also was elected to the **National Academy of Medicine** for his research on racial disparities in elective joint replacement and his work that has been leveraged to engage diverse, innovative emerging scholars.

David A. DeWitt (GRS '96, neurosciences) was appointed dean of the College of Arts and Sciences at **Columbia International University** in South Carolina. He is a biomedical scientist with more than 25 years of higher education experience, including nine years chairing the Department of Biology and Chemistry at **Liberty University**.

Charles A. Morris (MED '99) was named chief medical officer for the Brigham family of hospitals in Massachusetts, including **Brigham and Women's Hospital, Brigham and Women's Faulkner Hospital**, and the **Brigham and Women's Physicians Organization**. Morris has held several administrative, educational and clinical leadership roles at Brigham, including program director for the Division of General Medicine Primary Care Residency.

Jesse Torbert (CWR '99; GRS '04, anatomy) joined **UPMC Williamsport** (Pennsylvania), a Level II Trauma Center, as an orthopedic surgeon. Torbert came to UPMC with over 12 years of experience in trauma care. He previously served as the director of orthopaedic trauma at Level I and Level II trauma centers and most recently held a leadership position in an orthopaedic trauma program in Connecticut.

2000s

Margaret "Daniele" Fallin (GRS '01, epidemiology and biostatistics), the James W. Curran Dean of Public Health at **Emory University's** Rollins School of Public Health, was elected to the **National Academy of Medicine**. She is recognized for her work explaining genetic, epigenetic and environmental mechanisms for

neuropsychiatric and developmental disorders.

Christopher Peters (MED '03), an associate professor of medicine at **Geisinger Commonwealth School of Medicine**, a partner in **Radiation Medicine Associates** of Scranton, and medical director and director of clinical research of **Northeast Radiation Oncology Centers**, was the 2023 Tribute to Courage Honoree by the Board of Ambassadors in northeast Pennsylvania. In 2022, he completed a decade of service as the physician co-chair, Health Care Division, for the **United Way** Lackawanna and Wayne County Annual Campaign.

2010s

Sara McCoy (MED '10), an assistant professor of rheumatology at **University of Wisconsin School of Medicine and Public Health**, is among six physician-scientists in the U.S. selected for a new **National Institutes of Health**-sponsored program to support women scholars studying autoimmune and immune-mediated diseases in women. Through the Team Science Leadership Scholars Program, McCoy will receive structured leadership training and up to \$500,000 in funding over two years for her work on Sjögren's disease.

Sanjur Brooks (GRS '13, bioethics) is director of the Human Research Protection Program at **Virginia Commonwealth University**, overseeing approximately 1,500 studies and helping provide over two institutional review boards. Brooks, who previously was chief of ethics policy within the **U.S. Department of Veteran Affairs**, was featured in the Richmond, Virginia, *Style Weekly* publication's "Top 40 Under 40" list.

Remembering alumnus, Nobel Prize winner Ferid Murad

A trailblazing physician-scientist who won a Nobel Prize for his discoveries on myriad uses of nitroglycerin, **Ferid Murad, MD, PhD (MED '64, '65; GRS '65, pharmacology; HON '00)**, died Sept. 4 at the age of 86.

Murad was awarded the Nobel Prize in Physiology or Medicine in 1998 after he and his collaborators discovered that nitric oxide, which is released by nitroglycerin, relaxes or widens smooth muscle cells for better blood flow. Their findings led to new therapies, including better breathing treatments for premature infants and the creation of Viagra for erectile dysfunction.

Born in Whiting, Indiana, in 1936, Murad grew up with dreams of becoming a doctor. He attended DePauw University before pursuing his MD/PhD degrees at Case Western Reserve. He graduated at the top of his class in 1965 before completing his residency at Massachusetts General Hospital in 1967. He went on to work for the National Institutes of Health, at University of Virginia, in a variety of academia and private-sector positions, and as department chair of University of Texas – Houston.

In addition to the Nobel, Murad also earned a variety of awards throughout his career, including the Albert Lasker Award for Basic Medical Research, Golden Plate Award of the American Academy of Achievement, and American Heart Association's Ciba Award.

In memoriam

Information reported to Case Western Reserve from Jan. 1 to Oct. 20, 2023.

1950s

Malcolm A. Brahms (MED '50)
Richard A. Mahrer (CIT '44, ADL '46, MED '50)
Bertram Stephen Koel (MED '51)
Allan Brown Kortz (ADL '48, MED '52)
Lee I. Rubinstein (MED '53)
William R. Pudvan (MED '54)
Robert W. Kellermeyer (MED '55)
Charles N. Conant (MED '55)
H. Myron Halley Jr. (CIT '50, MED '57)
Edward L. Mitchell (MED '58)
Arthur L. Rosenbaum (MED '58)
Richard Palmer Dickey (MED '58, MGT '94)
Andrew W. Botschner (ADL '51, MED '59)

1960s

T. Rodman Wood (MED '60)
Donald P. Becker (MED '60)
Dale C. Havre (MED '61)
Sheldon A. Polster (ADL '58, MED '62)
James J. Strain (MED '62)
Elinor Eastman Weeks (MED '63)
Robert J. Ailes (MED '64)
Galen R. Weaver (MED '64)
Ferid Murad (MED '64, '65; GRS '65, HON '00)
Charles A. Bush (MED '65)
Jacob Kolff (MED '65)
Diane H. Schetky (MED '66)
A. James Beyer Jr. (MED '67)
Howard E. Schwat (MED '68)
W. Gordon Van Nes (MED '68)
Carol A. Krush (MED '68, '69)
William K. Bishop (ADL '65, MED '69)
Robert J. Esterhay Jr. (MED '69)
Dexter B. Northrop (GRS '69)
Robert M. Strimer Jr. (MED '69)

1970s

Wilbert C. Jordan (MED '71)
Don A. Holshuh (MED '74)
Larry D. Sander (MED '74)
Glenn L. Bugay (MED '76)
Mary Schultz Bose (GRS '79)
Patrick J. Tchou (MED '79)

1980s
Wendy L. Wilson (MED '85)
Janis Jean Galm (MED '88)
Stanley Paul Hmiel (CIT '80, GRS '87, MED '89)

1990s

Christine M. Thorne (MED '93)
Janet Francine Piskurich (GRS '94)
Marla Ann Lipman (GRS '96)
Carol Cram Donley (GRS '98)

2000s

Melinda M. Wilding (GRS '01)
Anna Alden Lindley (MED '02)

IN OUR COMMUNITY

Expanding minds

This 78-year-old librarian is helping others learn—while earning his third master’s

If there’s one thing you can’t miss at Cleveland Public Library, it’s a tour by William Spencer. At least, that’s according to several Tripadvisor reviews that mention Spencer by name, strongly urging others to seek out his wealth of knowledge and passion for the library where he’s worked for nearly two decades.



After two stints in the Marine Corps totaling almost 20 years, including a deployment during the Vietnam War, Spencer began volunteering at the library while working full time in human resources and recruiting.

Within seven months, he was offered a permanent job—and has since worked at all 27 branches of the library system and become a fixture at the main downtown location.

There, Spencer has made it his mission to expand his own knowledge—a pursuit backed by

the discipline the military instilled in him. For two years, he woke up before sunrise every morning to drive to University of Pittsburgh, where he earned a master’s degree in library information science. He then went on to complete a master’s degree in humanities from John Carroll University in four years.

Now 78 years old, Spencer has no plans of slowing down. As a medical librarian by training, Case Western Reserve’s Master of Arts in Bioethics and Medical Humanities program appealed to him. Plus, he had connections both personal and professional: His grandmother graduated from the university, and he admired the work of alumnus and bioethics pioneer **Willard Gaylin (MED ’51), MD**.

Though he is much older than his classmates, Spencer is not shy in raising his hand to contribute to class discussions. He admits, however, that his inquisitive nature often holds up class dismissal as he seeks more insights from faculty.

“I benefit from the younger students in the class,” Spencer said, “and hopefully, I bring something to the table with my experience.”

Spencer expects to complete his program in 2025. And then? He is eyeing a PhD with hopes of developing future policies—all in the name of service.

“I’ve had the titles. Titles come and go. Credentials stick with you,” he said. “[And they’re] not to keep to myself, but to utilize for the benefit of others. That is my whole objective in living: that I will leave a legacy—not necessarily with my name on it—but that what I’ve tried to do sticks with someone.”

—Katie Laux

“I’ve had the titles. Titles come and go. Credentials stick with you. [And they’re] not to keep to myself, but to utilize for the benefit of others.”

—William Spencer

Save the date to give back April 10

Make a difference for the School of Medicine programs you care about most during Case Western Reserve University’s annual Day of Giving April 10.

There will be a variety of funds and initiatives you can support on this day, including the **Jason Madachy Foundation and CWRU School of Medicine Alumni and Friends Stethoscope Award**. A gift toward this fund will provide stethoscopes to first-year medical students.

Watch your email for more information!

**Questions? Or want to make sure we have your address on file?
Contact us at somalumni@case.edu or 216.368.6165.**



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UMC-5196-01_2024

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visit plannedgiving.case.edu
or call 216.368.4460.



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