DEVELOPING NEW TOOLS TO FIGHT CANCER

Alumni making a difference • Physician scientist pipeline • Dean's priorities
Physician Assistant Program Graduation

After two years of navigating classes and clinical rotations during a pandemic, the Duke Physician Assistant Program class of 2022 culminated their experience with a joyful graduation celebration at Duke Chapel in August. Above, graduate Maryanne Thelusma lines up to receive her degree.

SCHOOL WELCOMES NEW DST SCHOLARS

This year’s cohort is made up of scholars who are exploring innovations in lung cancer treatment, fat storage and metabolism, aging, and biochemistry.

ALUMNI MAKING A DIFFERENCE IN CANCER RESEARCH AND CARE

Researchers at Duke are creating more precise approaches to stopping tumors.

FEATURE

‘Laser Focused’

Dean Klotman reflects on the school’s challenges and priorities.

FEATURE

One Foot in the Clinic, the Other in the Lab

Duke is working to bolster the ranks of physician-scientists, who bridge the gap between research and patient care.
Dear Friends,

I hope this message finds you and your family in good health and good spirits. Every academic year brings a surge of energy, fresh faces, and new ideas as nearly 600 incoming medical and health professions, masters, and graduate students from across the nation and beyond join their counterparts at the School of Medicine. Now, several months in, they are already fully engaged in the next phase of their education. It’s an exciting time for them, and for us.

I began my tenure as dean and vice chancellor for health affairs five years ago with the firm belief that the School of Medicine can most meaningfully fulfill its missions of research, education, patient care, and community engagement by committing to two broad, interrelated principles.

The first is that everyone within the School of Medicine community, and indeed across Duke Health and Duke University—regardless of department or unit, title, rank, or role—is a valued member of our community and has important contributions to make for the greater good of our institution and society.

The second is that the most important priority for any leader at Duke—and you will find leaders at Duke at every level, among staff, students, and faculty—is to serve its most important asset: our people. It is our responsibility to create an environment and provide resources that enable our School of Medicine community to flourish so we can positively impact others.

The last several years have brought challenges for all of us, both personally and professionally. There have been long days and hard decisions. And yet at every turn, our faculty, staff, and students have joined together, turning challenges into opportunities and making a difference in the lives of others. The School of Medicine met the pandemic by accelerating collaborative research advances across a vast range of biomedical disciplines, departments, and units, including pioneering work toward a pan-coronavirus vaccine at the Duke Human Vaccine Institute and development and testing of innovative new therapeutic approaches. Our work on COVID-19 continues. Most recently, the Duke Clinical Research Institute was designated as a Donor-Granting center for studies aimed at understanding and treating long COVID.

Our medical educators have innovated new ways to teach and learn, our clinical faculty and staff have created new techniques to test and care for patients, and our students have become leaders themselves, crafting solutions and volunteering to provide care. The School of Medicine community is responding to the challenge of improving equity, diversity, and inclusion by instituting changes that will have a lasting impact. Under the leadership of Kevin Thomas, our first vice dean for equity, diversity, and inclusion, the school is embarking on its second year of implementing the roadmap for change detailed in a comprehensive strategic plan launched last year. The driving force in all we do is an unyielding commitment to fulfill our missions: to educate the next generation of health care leaders, blaze new trails in research, provide world-class care, and care for the communities in which we live and serve.

You, our alumni and friends, are essential partners in helping us succeed at meeting these goals. Thank you for everything you do for the School of Medicine.

With warm wishes,

Mary E. Klotman

In DukeMed Alumni News, the names of alumni of Duke University and its constituent schools and degree programs are printed in bold along with their degrees and class years. HS House Staff (residents, fellows, or interns) are named in italics. Names of current students are printed in bold.

Linda Austin, BA’73, MD’77, and John (Jeb) Hallett, MD’73

Linda Austin, BA’73, MD’77, and John (Jeb) Hallett, MD’73, followed different paths to Duke. Linda transferred from Stanford as a rising sophomore. Jeb nearly didn’t make it. After his application to the School of Medicine was turned down, he drove across the country to convince the dean of admissions that he deserved a spot. It worked.

Linda and Jeb are focused on the future, on the discoveries yet to be made and the standards of care in vascular surgery and treating long COVID. Linda’s Duke education led her to a distinguished career in psychiatry, including educating the general public about mental health issues via her weekly radio show. Jeb went into vascular medicine, where over the course of a storied career he developed new standards of care in vascular surgery and built top-notch training programs.

We are both interested in the next generation: being certain they have the encouragement and the resources to do what we had the opportunity to do.” says Jeb.

Life and Letters

Mary E. Klotman, MD
Dean, Duke University School of Medicine, Duke University Director of Health Affairs, Duke University
E. Bryn Mawr Professor of Medicine
Professor of Pathology
Professor of Molecular Genetics and Microbiology
Member, Duke Human Vaccine Institute
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Dean, Duke University School of Medicine, Vice Chancellor for Health Affairs, Duke University

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Developing New Tools to Fight Cancer

RESEARCHERS AT DUKE ARE CREATING MORE PRECISE APPROACHES TO STOPPING TUMORS

By Mary-Russell Roberson
Photographs By Alex Boerner

For decades, medical cancer treatment has generally meant chemotherapy, radiation, or surgery, alone or in combination. But things are changing rapidly. Today, new approaches such as immunotherapies and targeted therapies are becoming available, with many more in research and development. In many cases, the new treatments are more effective, with fewer side effects.

“It’s an exciting time to be in cancer research and cancer discovery,” said Colin Duckett, PhD, professor of pathology, interim chair of the Department of Pharmacology and Cancer Biology, and vice dean for basic science. “We’re moving into this era where we have a new set of tools we can use to treat cancer.”

COLIN DUCKETT

When you tailor therapy to those subsets, you can make a difference in outcome.

TRUDY OLIVER

“DCI was specifically created a decade ago to break down barriers between disciplines to stimulate collaborative research and multidisciplinary interactions,” said DCI Executive Director Michael Kastan, MD, PhD, the William and Jane Shingleton Distinguished Professor of Pharmacology and Cancer Biology.

Asking fuel to the fire is the Duke Science and Technology (DST) initiative, which aims to catalyze and support collaborative research in service of solving some of the world’s most pressing problems, including cancer.

The new tools, though varied, all represent advances in personalized cancer medicine. Targeted treatments are chosen based on the genetic signature of a patient’s tumor. Some immunotherapies take personalization even further, by manipulating a patient’s own immune cells to create a treatment for that individual alone.

To match treatments to patients, the multidisciplinary Duke Molecular Tumor Board, led by John Strickler, MD, HS’11, and Matthew McKinney, MD’06, HS’06-09, HS’10-13, helps providers identify best practices, newly approved treatments, or clinical trials for advanced cancer patients based on genetic sequencing of their tumors.

“In precision cancer medicine — the right therapy for the right patient at the right time — all these things come together,” Kastan said. “The targeted therapies, the immunotherapy, even standard chemotherapy, all of that is part of precision cancer medicine.”

IMMUNOTHERAPY

Immunotherapy aims to harness the power of the immune system to fight cancer. That can mean activating the immune system, energizing exhausted immune cells, or helping immune cells find cancer cells by guiding them there or by removing cancer’s “good guy” disguises.

Duke’s Center for Cancer Immunotherapy supports these efforts by identifying promising basic science discoveries and building teams to translate those ideas into treatments.

“There are so many world-class basic research scientists here making discoveries...
that are potentially translatable as immunotherapeutic strategies,” said Scott Antonia, MD, PhD, professor of medicine and the center’s founding director. “That’s what motivated me to come to Duke, because of the great opportunity to interact with basic scientists to develop new immunotherapeutic strategies and get them into the clinic.”

Antonia believes immunotherapy has the potential to revolutionize cancer treatment, but more work remains to be done to realize its promise. “The proof of principle is there,” he said. “But still only a relatively small fraction of people enjoy long-term survival. If we can hone immunotherapeutic approaches, we can hone immunotherapeutic approaches, that’s our best opportunity.”

Among the most exciting immunotherapy work being facilitated by the center involves removing a patient’s own T cells (a type of lymphocyte), manipulating them in the lab to make them more effective against tumors, then injecting them back into the patient.

T cells can be manipulated in the lab in a number of different ways. In one approach, called CAR T-cell therapy, the T cells are engineered with an addition of synthetic antibody fragments that bind to the patient’s tumor, effectively directing the T cells directly to the tumor cells.

In another approach, called tumor-infiltrating lymphocyte (TIL) adoptive cell therapy, the subset of a patient’s T cells that have already managed to find their way into the tumor are extracted and then grown to large numbers before being returned to the patient. Antonia and his colleagues recently published a paper demonstrating the effectiveness of TIL expansion in lung cancer. “We’re now doing the preparative work to develop clinical trials using this approach on brain tumors, and our intention is to expand into many other cancers as well,” he said.

Antonia points out that innovations in CAR T-cell therapy and TIL therapy happening at Duke are possible because of collaborations with scientists in an array of disciplines, including antibody experts like Barton Haynes, MD, HS ’73–’75, the Frederic M. Hanes Professor of Medicine, and Wilson Williams, PhD, associate professor of medicine and surgery, at the Duke Human Vaccine Institute, and biomedical engineers like Charles Gernbach, PhD, the John W. Sudduth Distinguished Professor of Biomedical Engineering at the Pratt School of Engineering.

Furthermore, clinical trials for these kinds of cellular therapies require special facilities to engineer or expand the cells, which are provided by Duke’s Mauck Center for Cellular Cures, led by Joanne Kurtzberg, MD, the Jerome S. Harris Distinguished Professor of Pediatrics, and Beth Sizik, MD, MBA, professor of pathology.

“It’s been a very productive collaboration highlighting how Duke is uniquely positioned to develop immunotherapeutic strategies,” Antonia said.

“TARGETED THERAPY

Targeted therapies exploit a tumor’s weak spot—a genetic mutation, for example. The benefit is that the treatment kills only cancer cells and not healthy cells. The prerequisite is knowing the genetics and biology of the specific tumor, no simple task.

Trudy Oliver, PhD ’05, who joined the Department of Pharmacology and Cancer Biology faculty at a Duke Science and Technology Scholars, studies cancer development and the biology of tumor subtypes, particularly squamous cell lung cancer and small cell lung cancer.

“Even within small cell lung cancer, there are subsets that behave differently from each other,” she said. “Our work suggests that when you tailor therapy to these subsets, you can make a difference in outcome.” Some of the treatments she’s identified are in clinical trials.

Sanjay Dave, MD, Wellcome Distinguished Professor of Medicine, is leading an ambitious project to analyze the genomics of the more than 100 different types of blood cancer. His project will streamline the diagnosis of blood cancer and uncover potential therapy targets.

“All cancers arise from genetic alterations that allow cancer to survive and thrive at the expense of the host,” he said. “These genetic alterations are a double-edged sword—they allow these cancer cells to grow, but on the other hand they do confer specific vulnerabilities that we can potentially exploit.”

Dave said his background in computer science, genetics, and oncology helped him as he designed the project, which uses huge datasets. “We’ve done the heavy lifting in terms of tool development and methodology,” he said, “which is ripe to be applied to every other type of cancer.”

CANCER DISPARITIES

Cancer disparities are caused by a complex interplay of elements, including access to health care and other resources, institutional barriers, structural racism, and biology, such as ancestry-related genetics. For example, some genetic biological factors and social elements contribute to disparities in many
“As cancer treatment is approaching this personalized space where patients are no longer treated with a one-size-fits-all paradigm, it’s becoming increasingly apparent that there are differences in outcome with respect to race and ethnicity,” said Tammyta Watts, MD, PhD, associate professor of head and neck surgery & communication sciences, and associate director of equity, diversity, and inclusion at DCI. “The very broad population health sciences, uses epidemiology to study both biological factors and social determinants. That’s because a targeted treatment for a particular genetic expression that might occur more commonly in Black people would help all patients with that expression, even just before, it begins. That’s the goal.”

Watts is collaborating with bioinformatics experts at DCI to try to identify significant differences in gene expression among the two groups.

“I’m trying to tease out differences that may be impactful for disadvantaged patients based on race and ethnicity,” she said. “But there could be differences that emerge that could be useful for designing targeted treatments for a broad group of patients.”

That’s because a targeted treatment for a particular genetic expression that might occur more commonly in Black people would help all patients with that expression, regardless of race or ethnicity.

Watts is far from alone in using cancer disparity research at DCI. Tomi Akinmeyinju, PhD, associate professor in population health sciences, uses epidemiology to study both biological factors and social elements that contribute to disparities in many types of cancer.

Jennifer Freedman, PhD, associate professor of medicine, Daniel George, MD’92, professor of medicine, and Steven Patierno, PhD, professor of medicine and deputy director of DCI, are studying the molecular basis for why prostate, breast, and lung cancer tend to be more aggressive and lethal in patients who self-identify as Black. Patierno, who has been a national leader in cancer disparities research for more than 20 years, leads the Duke Cancer Disparities SPORE (Specialized Program of Research Excellence), funded by the National Cancer Institute. The SPORE grant supports these researchers as well as other DCI teams working on cancers of the breast, lung, stomach, and head and neck.

“One of the things that impresses me is that cancer disparities research is a high priority within DCI,” said Watts, who joined the faculty in 2019.

“These groups are actively engaged and collaborating and asking the questions that will drive change for patients who have worse outcomes that are related to ancestry.”

Even better than a cancer cure is avoiding cancer altogether.

At DCI, Meta Epplein, PhD, associate professor in population health sciences, and Katherine Garman, MD’02, MHS’02, HS’02, associate professor of medicine, are looking to decrease the incidence of stomach cancer by improving diagnosis and treatment of the bacteria Helicobacter pylori, which can set off a cascade leading to stomach cancer. Epplein and Garman, also funded by the Duke Cancer Disparities SPORE grant, hope their work will reduce disparities because H. pylori infections and stomach cancer are both more prevalent among African Americans than whites.

When preventing cancer isn’t successful, the next best thing is to detect and treat early. A relatively new concept in cancer care is “interception,” which means catching cancer just as, or even just before, it begins.

“The point is to prevent it from progressing to full blown malignancy,” said Patierno. “In other words, stop the cancer from getting over its own goal line.”

Patierno envisions a future where patients with pre-cancerous conditions or early cancer could take a pill to halt cancer development without killing cells — in other words, a non-cytotoxic treatment, unlike standard chemotherapy.

“We know it’s there, but we’re not going to poison it or burn it or cut it out because all of these have side effects,” he said. “We’re going to find a non-cytotoxic way to prevent it from progressing. That’s the goal.”

The backbone of the program is a network of comprehensive cancer centers that provide patient care and conduct rigorous research to find new and better ways to prevent, diagnose, and treat cancer.

Duke was one of the original eight such centers, designated in 1973. Much of the progress in cancer treatment in recent decades can be traced to research funded by the “War on Cancer,” which launched in 1971 when Congress passed the National Cancer Act. The act gave the National Cancer Institute (NCI) the authority and funds to create a national cancer program.

“War on Cancer” research has changed the outlook for patients with treatable; physicians can detect and stop cancer earlier; and everyone has the same opportunity to survive cancer.
Changing the Status Quo

Lori J. Pierce, MD ’85
Radiation Oncologist
Professor and Vice Provost for Academic and Faculty Affairs, University of Michigan
Past President, American Society of Clinical Oncology; Board Chair, Association of Clinical Oncology

What is your current research focus?
For a number of years, I’ve focused on radiation sensitivity. I treat breast cancer, and certain types of breast cancers are aggressive and don’t respond well to radiation. So my focus has been looking at agents that can be combined with radiation that can increase the sensitivity of the tumor to radiation. We also have focused on developing molecular profiles that can predict sensitivity to radiation. And then the final area is directing a statewide consortium whose purpose is to improve the quality, efficiency, and cost effectiveness of radiation delivery for breast cancer, lung cancer, prostate cancer, and treatment delivery for bone metastasis. It’s a very rewarding portfolio.

Why did you choose Duke for medical school?
I wanted to go to Duke because of its excellence and the fact Duke had that research year. If you survived your first year, you then did your clinical rotations in your second year, and you could spend your entire third year on research. I wanted that, and not many medical schools offered it.

How did Duke influence your career?
Duke changed my life. I had always planned to go into diagnostic radiology. When I got to my third year, Dr. Leonard Lazarus, who was the chair of radiation oncology, said, “Why don’t you come down to the clinic and see what we do?” And that changed my entire career. Radiology is a wonderful profession, but I discovered that I loved interacting with patients. That’s what switched me to radiation oncology, and I never looked back. Duke changed everything.

Where do you see your field in 5-10 years?
Our field is clearly moving toward increasingly individualized care. One size does not fit all. There are so many different phenotypes of breast cancer, so far more aggressive than others, and we are increasingly able to look at the biology and genetic characteristics of each tumor and individualize how we treat each patient based upon that. We’re getting better at knowing when more aggressive treatment is needed and when you can give less and still have good outcomes. I think that’s clearly where we’re headed.

You’ve spoken of the difference between “equality” of care and “equity” of care. What would you mean by that distinction?
It’s a very important distinction. Equality means everyone gets the same care. That sounds great, but it’s only great for everyone if everyone is starting at the same point. And we know that is clearly not the case. There are so many disparities in terms of access, social determinants of health, and other factors. Equity is where you look at where each person is and give them what they need so that everybody has an equal outcome.

There’s an analogy I like that illustrates the difference: two men are trying to look over a fence at a baseball game, but one man is tall and can see over the fence, and the other is short and can’t. If you give them both stools that are the same height, the tall man can still see over the fence and the short man still can’t. That’s equality: you’ve treated them the same, but you haven’t changed the outcome. With equity, the short man gets a taller stool, so they can both see over the fence.

Equity means giving people what they need to have an equal outcome. That’s what we need to work toward in cancer care. To achieve that, we need to listen more, increase communication, look honestly at our own processes, and be willing to change them.

How do you see Duke as a hematology-oncology resident and then a faculty member influence your career?
Duke was a great training ground. As a faculty member I started Duke’s out-patient palliative care clinic for cancer patients. People come to Duke with all kinds of cancers, and the patients are very racially and economically diverse. Duke has a real commitment to assessing their quality-of-life needs and creating a plan for them, so I got to see a lot of great work in action. The ACS was looking for someone who sees the whole person and how to help them in their cancer journey, and that experience helped make me a good fit.

What are the biggest changes you see ahead for cancer care in the next decade?
Cancer centers are increasingly embracing the idea that their job is not only to identify the right treatment and give it to people, but also to provide whole-person care. They will increasingly address social determinants of health and systemic barriers to health care. Lack of access to food is emerging as one of the biggest challenges. About 40 percent of early-stage breast cancer patients don’t take hormonal treatment every day because they can’t afford it. Or they skip it for two weeks because they have to buy groceries. Until we solve this issue about how the patient will afford the treatment and also afford all the other components of their life, it is as much a threat to the patient’s survival and prognosis as choosing the wrong drug.

We are also seeing shifts in decen-tralizing cancer care and clinical trials so that programs can provide services no matter where a person lives.

Your mother’s experience with cancer influenced you to go into palliative care. How has palliative care advanced in your career?
I had an internal medicine residency at Mayo Clinic. I realized the energy of that experience to pursue a hospice and palliative medicine fellowship at the Mayo Clinic. That was a career-defining moment for me. The field of palliative care started in 2008, so when she was treated, palliative care — this concept of a dedicated and trained group of medical professionals whose sole focus is the patient’s quality of life — wasn’t even something you could access. Now, 30% of National Comprehensive Can-cer Network centers have palliative care programs. National Cancer Institute comprehensive cancer centers are required to have palliative care to receive the designation, and the Commission on Cancer requires it for accreditation. So pretty much every cancer patient has access to palliative care. You couldn’t have said that 10 years ago.

Challenges Alumni Face 15
A Targeting the Seeds of Cancer Growth

Eugenie S. Kleinerman, MD’75, HS’75
Pediatric Oncologist, University of Texas MD Anderson Cancer Center

Please describe the current focus of your research.

My major focus has been in developing new therapies, particularly immunotherapies, for children with osteosarcoma lung metastases. One goal is to understand why osteosarcoma almost exclusively spreads to the lungs and how the lung microenvironment contributes to this process and the failure of current immunotherapies. Recently we’ve learned that the tumor microenvironment can limit the killing function of T-cells and their ability to penetrate into the tumor. So, instead of targeting the tumor cells directly, we are working on how to alter the tumor microenvironment.

What led you to choose Duke for medical school?

When I was in eighth grade, we took a trip to Durham because my dad, who was a pathologist, knew the chair of pathology at Duke. I walked onto the Duke campus and said, ‘Oh my gosh, this is so gorgeous. I have to go here.’ I didn’t get into the undergraduate school, so I went to Washington University, which appealed to me partly because it looked like Duke. Then I applied to medical school at Duke and was fortunate enough to get in.

How did your time at Duke influence your career?

Duke was even more than I hoped it would be. I would not have had a successful research career without Duke. I was fortunate enough to work with incredible people like Ralph Snyderman [Chancellor Emeritus and former Dean of the School of Medicine] and Charlie Daniels [former professor of pathology]. They put me on the path. The attitude at Duke was, ‘We don’t make cookies, we make cookie cutters.’ We were encouraged to be leaders, to think outside of the box, to love my career to Duke. This medical school and this university are very dear to my heart.

What do you see as the future of your field?

Immunotherapy is the way of the future. But we are really starting to understand why mutations affecting specific tumor suppressor genes cause particular cancers and to understand, based on the function of those genes, how we might treat cancers bearing such mutations. We also continue to work on oxygen sensing and its role in diseases where there’s an interruption in oxygen delivery, such as heart attack and stroke. I have recently agreed to be the scientific director of a new program at the Dana Farber Cancer Institute called the Lubin Scholar Awards, which will provide support for young physician-scientists who are training to be laboratory-based investigators. That’s a cause very near and dear to my heart.

A Discovery That Comes Out of Nowhere

Bill Kaelin, BS’79, MD’82
Sidney Farber Professor of Medicine, Harvard Medical School
2019 Nobel Prize in Physiology or Medicine

Please describe your responsibilities in your current role.

I run a research lab of about 10 to 15 people, most of whom are postdoc fellows. Our focus remains to understand why mutations affecting specific tumor suppressor genes cause particular cancers and to understand, based on the function of those genes, how we might treat cancers bearing such mutations. We always continue to work on oxygen sensing and its role in diseases where there’s an interruption in oxygen delivery, such as heart attack and stroke. I have recently agreed to be the scientific director of a new program at the Dana Farber Cancer Institute called the Lubin Scholar Awards, which will provide support for young physician-scientists who are training to be laboratory-based investigators. That’s a cause very near and dear to my heart.

What is the major way that winning the Nobel Prize in 2019 has changed things for you?

I’ve tried to ensure that it doesn’t change my professional life to any great degree. The biggest change is that I have to be a little bit more mindful of what I say and how I write because people pay a little bit more attention.

What are the biggest changes you see ahead for cancer basic and translational research in the next decade?

What’s wonderful about science is the occasional discovery that comes out of nowhere and completely changes the way you think. I’ll actually be rather disappointed if I’m correct in predicting the next big thing. So I’ll cheat a little bit — this is a medical student trick — and I’ll answer a related question. We always have a healthy back and forth between what I would call reductionist biologists who want to go deep on a particular question, versus what I call systems biologists, who seek a much broader description of a system, but without the same degree of depth. Both approaches have their strengths and weaknesses. But I’m hoping the pendulum swings back somewhat toward the reductionists, because I think in cancer biology the trend has gone too far in favor of the systems biologists who are using admittedly exciting technologies to describe cancer cells. But on one level we’ve been describing cancer cells for decades. To cure them, we need the reductionists to go in and do the mechanistic work. For example, see that a particular gene is highly expressed in a cancer doesn’t prove that that gene is required by that cancer. We need to do experiments in model systems and silence the gene. If the cancer cells are still completely happy and able to form tumors and kill a mouse, then its expression may have been correlutive but not causative.
‘Laser Focused’

DEAN KLOTMAN REFLECTS ON THE SCHOOL’S CHALLENGES AND PRIORITIES

By Dave Hart

Last summer, Mary E. Klotman, BS’76, MD’80, HT’85–’86, was appointed for a second five-year term as dean of Duke University School of Medicine, vice chancellor for health affairs at Duke University, and chief academic officer for Duke University Health System.

On mornings when she can fit into her schedule, Mary E. Klotman, MD, dean of Duke University School of Medicine, starts her day by swinging by Manuts on Ninth Street and picking up a couple of breakfast burritos. She delivers these to her son Sam and his future wife, Jess, who live in Durham with their newborn, Jacob Patrick, who was born last January — Klotman’s first grandchild.

“I will call and say, ‘Can I get you breakfast?’” said Klotman. “I used to tell myself I was going over to help, but it’s mainly just so I can see JP. It works.” After the few exceptionally eventful years, seeing her grandson is a tonic.

“Especially during the past two years, it’s easy to get so caught up in things that it becomes all-consuming,” Klotman said. “It’s hard to step away and unwind. JP came along at the right time. There’s so much going on in the world, and seeing a new baby is like magic.”

“There were No Playbook”

Klotman was two and a half years into her first five-year term as dean, leading multiple key priorities, when the pandemic hit. Duke suspended normal operations and Klotman organized a crisis team, composed primarily of the school’s vice deans.

They met first thing every morning to assess and strategize.

“There was no playbook,” Klotman said. “But everybody was extraordinary every single day. They came to the table with ideas, with humor, with offers to help, and with incredible camaraderie. Nobody cared about taking credit. And I have to say, we had very few missteps. I was very, very pleased. And lucky.”

The School of Medicine and Duke University Health System, along with the entire university, became nationally known for their effective and efficient pandemic response. “We’re trying to intentionally learn from that experience and change policies and processes for the better,” Klotman said.

TURNING A MOMENT INTO A MOVEMENT

A few months after the pandemic struck came a second epochal event: the murder of George Floyd by police in Minneapolis. Floyd’s killing triggered an international wave of protests and spurred institutions across America to examine their cultures to identify and reform racial and ethnic inequities. Klotman and her team launched a wide-ranging series of conversations, town halls, and meetings that coalesced into what became called Moments to Movement, a comprehensive initiative to improve equity, diversity, and inclusion across the School of Medicine. Black faculty, staff, and students shared powerful stories of their encounters with deeply rooted structural and societal racist attitudes and practices.

“We navigated COVID successfully because everyone worked together for the common purpose of fulfilling our missions while keeping people safe, and because everyone stepped up to serve. I was incredibly proud of our faculty, staff, and students.”

Mary E. Klotman

people experienced Duke so differently than I thought they did was heartbreaking,” Klotman said. “The message was, ‘Our experience is not the same as yours.’ And we knew that what we were hearing was only the tip of the iceberg.”

Klotman launched a strategic plan designed to outline steps to reduce racial inequity at all levels. Under the direction of Kevin Thomas, MD, the school’s first vice dean for equity, diversity, and inclusion, the School of Medicine has begun implementing the plan’s detailed steps.

“The work they did was so incredibly detailed that it provided us with a road map to change,” Klotman said. “You can’t change culture overnight, but you can start to make organizational changes and procedural changes, and all those things layered together start to move the needle. I’m excited about this work. We have to deliver on this.”

FOCUS ON THE PRIORITIES

Klotman is committed to maintaining momentum on the major projects begun on her first watch, including the anti-racism strategic plan, the new Duke Health Integrated Practice, and the “Patient First” medical education curriculum.

“We’re going to be laser focused on constantly looking at what we’ve accomplished and evaluating what we need to do,” she said.

One important area of emphasis will be continuing to support the school’s research community. The School of Medicine is a leader in the Duke Science and Technology (DST) initiative, which aims to attract top scientists to complement current research faculty in areas including cancer, neuroscience, and immunology.

Among Klotman’s other priorities is doing a deep dive into wellness among the School of Medicine’s workforce and student population.

“We navigated COVID successfully because everyone worked together for the common purpose of fulfilling our missions while keeping people safe, and because everyone stepped up to serve. I was incredibly proud of our faculty, staff, and students. And they have continued to show the same spirit over and over since.”

The reality that so many
By Alissa Kocer

Health challenges across the globe — everything from climate change to infectious disease and better treatment options for patients — precipitate the need for skilled physician-scientists. Physicians who see patients in the clinic and who devote time to scientific research. The in-depth knowledge of the cellular and molecular basis of disease that physician-scientists gain in the lab gives them unique insights into complex medical problems in the clinic — and the experience they gain interacting with patients in the clinic in turn informs their research. This dual role gives physician-scientists unique perspectives on health challenges that are critical for advancing biomedical research and care.

HOW YOU CAN HELP
Philanthropic partners are essential to the success of the School of Medicine. To help us build the physician-scientist pipeline and support our students and future leaders in science and medicine, please contact Sarah Nicholson, assistant vice president for development and alumni affairs, at sarah.nicholson@duke.edu

One Foot in the Clinic, the Other in the Lab

THE SCHOOL OF MEDICINE BOLSTERS THE PHYSICIAN-SCIENTIST PIPELINE

By One Foot in the Clinic, THE SCHOOL OF MEDICINE BOLSTERS THE PHYSICIAN-SCIENTIST PIPELINE

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physician-scientists. Gbadegesin and colleagues are also working to increase the diversity of the physician-scientist workforce by providing early exposure through summer and year-long research experiences for non-Duke and post-baccalaureate students. They have provided scholarships to medical students who wish to extend their third year research year into two years at no additional cost.

Through awards and other resources, OPSD provides continuity of research progress during medical students’ return to clinical training. And the office provides mentorship and professional development opportunities to junior faculty to help them succeed in their independent research careers.

The efforts made by the MSTP, OPSD, and others at Duke to prepare the next generation of physician-scientists are opening the doors to exceptional students, increasing retention of junior faculty, and getting more trainees invested in this vital career path.

“We need to continue to treat and invest in human resources for biomedical research in order to sustain the advances we’ve made and to make more.”

RASHEED GBADEGESIN

“One path is designed for students who want to take care of patients and also do cutting-edge research.”

CHRISTOPHER KONTOS

“A NECESSARY WORKFORCE

The School of Medicine’s programs to boost engagement and increase the number of physician-scientists in the workforce are vital. The world needs them to succeed. Consider the COVID-19 pandemic: physician-scientists played a key role in rapidly learning about the disease and developing vaccines and treatment options.

The efforts made by the MSTP, OPSD, and others at Duke to prepare the next generation of physician-scientists are opening the doors to exceptional students, increasing retention of junior faculty, and getting more trainees invested in this vital career path.

“We need to continue to treat and invest in human resources for biomedical research in order to sustain the advances we’ve made,” Gbadegesin said, “and to make more.”
Duke Clinical Research Institute (DCRI) has been named the Clinical Trials Data Coordinating Center for large-scale national research studies aimed at understanding and improving the treatment of long COVID.

As the data coordinating center, DCRI will partner with RTI International, the study’s Administrative Coordinating Center, to accelerate the clinical trial process, oversee the study’s program-wide infrastructure, establish a patient registry, and launch simultaneous prevention and therapeutic multi-intervention studies among adults and children.

The data coordinating center is part of the National Institutes of Health (NIH) Research to Enhance Recovery (RECOVER) initiative. In December 2020, Congress provided $1.15 billion over four years for NIH to support research into the prolonged health consequences of SARS-CoV-2 infection.

RECOVER brings together patients, caregivers, clinicians, community leaders, and scientists from across the nation to understand, prevent, and treat long COVID. The initiative comprises multiple sub-awards to researchers at institutions across the country.

Transplant Center Performs 10,000th Transplant

The Duke Transplant Center recently performed its 10,000th transplant, according to data from the Organ Procurement & Transplantation Network ( OPTN). The Duke center performed its first organ transplant, a kidney, in 1965.

This is a milestone that only 18 other centers in the U.S. have achieved. In North Carolina to meet that mark.

The Duke Transplant Center has reached this lifesaving goal by focusing on research and innovation to expand access to organs for patients on waiting lists. Recent achievements include:

- Duke surgeons were the first in the U.S. to successfully implant a new-generation CAR-MAT artificial heart to bridge the gap until the patient successfully received a human heart transplant.
- Duke surgeons were the first in the U.S. to perform “donation after circulatory death” (DCD) heart transplants in both adult and pediatric patients.
- Duke performed the Southeast’s first living liver transplant between an HIV-positive donor and recipient.
- Duke has reduced its median wait time to heart transplant to 63 days — less than half the U.S. median wait time of 149 days.

Emergency Medicine Elevated to Department Status

The former Division of Emergency Medicine in the Duke University School of Medicine has been elevated to department status on July 1, 2022.

Elevation from division to department signals the growth and independence of the division.

Charles (Chuck) Gerardo, MD, MHS’13, formerly chief of the division, is interim chair of the new department. He joined the then-newly designated academic Division of Emergency Medicine in 2000, and during his 22 years of service, he has served in multiple leadership roles, including director of undergraduate medical education, director of the Emergency Medicine Global Health Program, and vice chief of clinical operations. The Department of Emergency Medicine is involved in patient care, research, education, and community engagement. Duke is designated a Level One trauma center, stroke center, and perinatal coronary intervention center.

The department has a strong focus on research and is highly regarded for its dedication to training and mentoring the next generation of emergency medicine physicians.

DHVI Awarded Grant to Build Structural Models of HIV

Researchers at the Duke Human Vaccine Institute (DHVI) received a federal grant totaling more than $27 million over five years to focus on building structural models of HIV that will help guide the development of therapeutics and vaccines.

The newly formed Duke Center for HIV Structural Biology at DHVI will become one of the few such centers in the U.S. funded by the National Institute of Allergy and Infectious Diseases, which is part of the National Institutes of Health.

With the funding, researchers at DHVI will create detailed, three-dimensional models that will help reveal how HIV enters host cells, engage the host immune system, and delay or stop the virus from reproducing within the host during antiretroviral therapy only to rebound when the therapy is withdrawn. These models will help scientists better understand the virus and develop better ways to prevent and treat HIV infection.

Although Alkari and his family were facing the same challenges as many other young Haitian immigrants, he was already learning the value of hard work.

Growing up in the community of Léogâne, Alkari says he learned to live deliberately.

‘A Leader Already’

Growing up in the child of Haitian immigrants, Antoinette Jasmine Charles learned the importance of community service. Today, as a medical student at Duke, she’s a leader who is contributing to national conversations about health equity.

Findings from a landmark study of the Undiagnosed Diseases Network (UDN) have shed light on mechanisms behind a number of rare diseases.

Millions of Americans experience significant health problems that defy diagnosis. Those are the cases that Vandaisha Shashi, MD, and the Undiagnosed Diseases Network (UDN) site at Duke take on. Shashi and the UDN help patients with rare and mysterious illnesses find answers.

Duke Surgeons Perform World’s First Partial Heart Transplant

At just 17 days old, Owen Monroe became the world’s first partial heart transplant recipient. The revolutionary surgery was performed in April 2022 by Duke pediatric heart surgeons at Duke University Hospital. Today, baby Owen is proof that this new approach can save lives.

“Ath the beginning, it was, ‘How do we save our son?’ Owen’s mom Tayler said. ‘But our hope then turned into, ‘I hope this can help other children.’ It’s amazing what this could potentially do for the world and the medical community.”

While she was still pregnant, Tayler Monroe and her husband Nick learned their son Owen had a rare congenital heart defect called truncus arteriosus. The condition creates one large blood vessel leading out of the heart instead of two smaller ones. Shortly after Owen was born, doctors discovered the valve on the top of his heart was leaking significantly.

“This meant Owen either needed new heart valves or a heart transplant right away.

At just five pounds and less than a month old, Owen underwent open-heart surgery. He recovered well and was able to leave the hospital with his parents about seven weeks later.

A Champion for Affirming Health Care

Understanding intersecting cultural identities — and providing care that respects and affirms those identities — is at the heart of Tyson Pankey, MD, PhD’s work as a clinician, educator, and researcher.

Pankey, an assistant professor in the Department of Psychiatry & Behavioral Sciences, wants to flip the script on how health care providers talk to and care for people in the LGBTQ+ community.
Barbour also holds a faculty appointment in Duke University School of Medicine. Barbour is responsible for ensuring the excellence of Duke’s graduate programs, leading long-term strategic planning for graduate studies, and managing The Graduate School’s work that supports students and faculty throughout the university.

Prior to coming to Duke, Barbour was dean of The Graduate School and professor of biochemistry and biophysics at the University of North Carolina at Chapel Hill. In 2021, she was selected in the first class of fellows of the American Society for Biochemistry and Molecular Biology.

IRSB Names Tata a Rising Star

Purushothama Rao Tata, PhD, assistant professor of cell biology and medicine, received a 2022 Rising Star Award from the International Society for Biochemistry and Molecular Biology (ISMB). Tata’s lab research focuses on understanding the cellular ensembles of organ regeneration at single-cell resolution in the lung and other epithelial tissues.

The other 2022 Rising Star Award winners are Maya Mokalled, PhD, an assistant professor at Washington University in St. Louis. Mokalled trained at Duke University School of Medicine as a postdoctoral researcher in the laboratory of Ken Poss, PhD, James B. Duke Distinguished Professor of Cell Biology.

When Shannon Norris, BS’93, MD’97, was considering her college options, she had her eye on New England. A high school counselor convinced her to attend a Black Student Alliance invitation-only Weekend at Duke, and by the end of that experience, this was where she wanted to be.

After she graduated and was looking for a medical school, once again she looked north—until Duke offered her a full ride Dean’s Tuition Scholarship to the School of Medicine.

“Duke enabled me to graduate debt free,” Norris said. “That was such a leg up. And now when I come back to campus and see all the energy and activity, I’m all in. I wish I could go to Duke all over again. If I can help some other young people experience that, I want to do that.”

Shannon Norris, BS’93, MD’97

Shannon Norris

Purushothama Rao Tata

Suzanne Barbour

Barbour Named Vice Dean for Faculty

Marla L. Becker, MD, MSCE, professor of pediatrics, is the new vice dean for faculty for Duke University School of Medicine. Prior to her appointment, she served as vice chair for faculty and chair of the Appointment, Promotion, and Tenure (APT) Committee in Duke’s Department of Pediatrics.

As vice dean for faculty, Becker oversees the Office for Faculty and provides leadership on all faculty matters, including advancement, development, mentoring, and professionalism.

A physician-scientist, Becker’s translational research interests focus on identifying factors that enhance response and minimize toxicity to drugs used for the treatment of neoplastic diseases in children, focusing on individualized therapeutic strategies. She is a faculty leader in the Duke Clinical Research Institute, where she focuses on developing and supporting novel networks to carry out pediatric research and clinical trials.

Coleman Named Chief of Vascular and Endovascular Surgery

Dawn Marie Coleman, MD, FACS, has been appointed chief of the Division of Vascular and Endovascular Surgery. Coleman, a clinical professor of surgery and pediatrics, joins Duke from the University of Michigan in Ann Arbor, where she

served as co-director of the Pediatric Renovascular Hypertension Center as well as program director for the Integrated Vascular Surgery Residency and Fellowship at Michigan.

Her clinical and translational research interests encompass a unique pediatric vascular surgery practice, and her research leverages a multidisciplinary team to deeply phenotype patients with renovascular hypertension resulting from aorto-renal arterial dysplasia.

Coleman serves as a lieutenant colonel in the U.S. Army Reserve, assigned to a Forward Resuscitative Surgical Team. She has deployed on three occasions to support forward operations in the Middle East.

Michelle Winn Awardees Named

Duke University School of Medicine this summer named the 2022 recipients of the Michelle Winn Inclusive Excellence Award. Each year, the Winn Awards are presented to individuals from across the School of Medicine who have exemplified excellence, innovation, and leadership through helping to create a more diverse and inclusive environment.

The recipients of this year’s Winn Inclusive Excellence Awards are:

• Amanda Clark, MA, Doctor of Physical Therapy student (trainee award)
• Cristie McCray, MEd, Administrative Manager (staff award)
• Sonali Biswas, BS’18, MS’22, medical student (student award)

• Andrew Spector, MD, associate professor of neurology (faculty award)

The Office of Equity, Diversity, and Inclusion established the Michelle Winn Inclusive Excellence Award in 2016 to recognize individuals who have made significant contributions to diversity and inclusion within the Duke University School of Medicine community.

Bass Receives Administrative Leadership Award

Gloria Johnson Bass, MA, was awarded the 2022 Susan B. Clark Administrative Leadership Award.

The annual award recognizes a Duke Health administrative professional who exemplifies the qualities of dedication to the institution, service to others, personal strength of character, and acting as a role model to others.

Bass joined Duke in 1981 as a staff assistant in the Department of Anesthesiology. When she left, in 1996, she was in a managerial role. In 1996, she continued her Duke career at the Duke Comprehensive Cancer Center (now the Duke Cancer Institute) as the office manager. In 2012, she transitioned into DCI’s Research Administration division.

Barbour Named Dean of The Graduate School

Suzanne Barbour, PhD, a biochemist and national leader in graduate education, has been appointed dean of The Graduate School and vice provost for graduate education.
SOM Faculty Win DST Spark Seed Grants

Four School of Medicine faculty were among the nine winners of the inaugural Duke Science and Technology (DST) Spark Seed grants named by the Office for Research & Innovation. The awards recognize best-in-class research projects proposed by early- to mid-career faculty from across campus and the School of Medicine.

2022 DST Spark Grant-winning faculty and projects from the School of Medicine are:

- **Raluca Gordan, MS’08, PhD’09**, Associate Professor of Bioinformatics & Biostatistics, Computer Science, and Molecular Genetics and Microbiology: “Using Deep Learning to Train a Single-molecule DNA Sequencer to Accurately Identify DNA Lesions”
- **Stefano Di Talia, PhD**, Associate Professor of Cell Biology and Orthopedics: “Synchronized Clocks in Wound Healing”
- **Debra Silver, PhD**, Associate Professor of Molecular Genetics and Microbiology, Cell Biology, and Neurobiology: “Interrogating Subcellular Gene Expression in the Developing Brain”
- **Tomokazu Souma, MD, PhD**, Assistant Professor of Medicine: “Harnessing Female Resilience Factors to Promote Renal Repair”

Post-Docs Named MOSAIC Scholars

Two postdoctoral researchers at Duke University School of Medicine have received Postdoctoral Career Transition Awards under the Maximizing Opportunities for Scientific and Academic Independence Career (MOSAIC) program. The MOSAIC program is part of the National Institutes of Health’s efforts to enhance diversity within the academic biomedical research workforce and is designed to facilitate the transition of postdoctoral researchers from diverse backgrounds into independent, tenure-track or equivalent research-intensive faculty positions. Duke’s 2022 MOSAIC Scholars are:

- **Ayana Guca, PhD**, a postdoctoral scholar in the Molecular Genetics and Microbiology program who studies stress adaptation in the human fungal pathogen Cryptococcus.
- **Ian Williamson, PhD**, a postdoctoral researcher in the Molecular Genetic and Microbiology program who is researching enteric involvement in neurodegenerative disease.

Winger Named a Pew Scholar

Laura Winger, PhD, assistant professor of pharmacology and cancer biology, has been named a 2022 Pew Scholar in the Biomedical Sciences. The award provides four years of funding to early-career scientists to explore some of the most pressing questions in health and medicine. Winger was a postdoctoral scholar in the lab of Nobel laureate Robert K. Lefkowitz, MD, James B. Duke Professor of Medicine and professor of biochemistry and chemistry, for several years before becoming an assistant professor in 2020. Her lab studies G protein-coupled receptors, proteins that are the targets of almost one-third of clinically used drugs.

Schweitzer Fellows Named

Two Duke University School of Medicine students are among the 28 graduate students named as 2022-23 Schweitzer Fellows by the North Carolina Albert Schweitzer Fellows’ program. The Schweitzer Fellows will spend the next year learning to effectively address the social factors that impact health and developing leadership skills.

This year’s class of Schweitzer Fellows includes:

- **Kelly Goo**, a fourth-year medical student, and **Dana Rubenstein**, a third-year medical student, who are implementing a medication access program in Durham who have a mobility barrier to accessing primary care.

Barr-Spaich Scholarship Recipients Named

Medical students Christine Park and Miranda Morris are recipients of the Barr-Spaich Scholarship and Engineering scholarship. The scholarship is awarded annually to third-year Duke medical students who have been accepted into the MD-MEng dual degree program. The award, administered through Duke MEXD, supports recipients as they complete master’s degrees from Duke’s Pratt School of Engineering.

Park and Morris are part of the first cohort to pursue Duke’s Artificial intelligence for Product Innovation Master’s of Engineering (API) as medical students.

Three Selected for ELAM and ALH Fellowships

Tomi Akinyemiju, PhD, and Mara Becker, MD, MSCE, were selected as members of the 2022-2023 class of fellows for the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program at Drexel University College of Medicine. Becky Smith, MD, MS11, was selected as one of the inaugural fellows for the parallel Executive Leadership in Health Care Program.

ELAM is aimed at expanding the national pool of outstanding women candidates for leadership in academic medicine, dentistry, public health, and pharmacy. The ELAM program is focused on executive health care leaders.

Interested in Board Service?

FIND YOUR OPPORTUNITY FOR ALUMNI ENGAGEMENT

Are you looking for an opportunity to meet and network with other Duke alumni, deepen your connection with Duke, and support the School of Medicine? Serving on one of Duke Alumni’s 21 regional boards may be the answer! Engaging with Duke alumni across the institution while representing the School of Medicine is a great way to serve Duke in your own community while maintaining campus connections.

“Serving on the Duke Alumni Nashville regional group as the School of Medicine representative allows me to connect with other Duke alumni and any Duke undergraduates who attended medical school at another institution. At our regional board meetings, I suggest and plan meetings and events to keep everyone informed on the exciting work SOM faculty contribute to advancing science and patient care. Maintaining enthusiasm for Duke in Nashville is easy, and I will remain Forever Duke wherever I go.”

Rebecca Salazar Cuffe, AB’87, MD’91, MS’98, HS’91-’95

“My time as SOM representative on the Duke Alumni Philadelphia Regional board has allowed me to be a mobility barrier to connections to Duke and to Philadelphia in so many ways! I’ve met amazing alums from all walks of life in all age groups. And, I’ve learned about Big Duke—what’s happening in the engineering school, law school, and more. And I have been proud to share what DukeMed is doing throughout the region! As always, Duke continues to give me so much, even as an alum. I am eternally grateful!”

Janice Gault, BV’87, MD’90

One of the main reasons I chose Duke was the cohesiveness across the entire campus, and that feeling of cohesion has only grown as I’ve graduated and become an alumna volunteer. Through my role on the Duke Alumni Regional Board, I’ve been able to network, interact, and befriend countless people in my city. Their diverse array of careers and interests have enriched my life, while our shared affin- ity for Duke has brought me a genuine sense of pride and community!”

Oren Mushin, MD’93

SUSTAIN Duke University School of Medicine’s institutional mission through your continued engagement.

CONTACT Brie Russell at brie.russell@duke.edu regarding your interest in serving on a regional board or other Duke University School of Medicine alumni engagement volunteer opportunities.
Old-School Assessment Beats Genetic Testing for Predicting Heart Disease

A genetic risk for heart disease is far less predictive of problems than actual lifestyle risk factors such as high blood pressure, high cholesterol, and diabetes—even among younger adults.

In a finding published in the journal Circulation, researchers led by a team at Duke Al Health found that genetic tests do little to accurately identify cardiovascular risks compared to a simple risk equation that uses basic health measures.

Senior author Michael Pencina, PhD, vice dean for data science at Duke University School of Medicine and director of Duke Al Health, and colleagues analyzed two large databases. They applied two predictive models: a polygenic risk score, which calculates the number of inherited genetic variants likely to put a person at risk of cardiovascular disease; and a scoring model using traditional long-term risk factors that are largely preventable depending on lifestyle choices.

The researchers found that the polygenic risk score provided limited predictive accuracy for cardiovascular disease risk compared to the traditional health assessment.

CRISPR Technology Shows Success at Preventing and Treating COVID

In what is believed to be a first, a research team led by Duke Health has demonstrated a way to use CRISPR technology to successfully prevent and treat COVID-19 infections.

The proof-of-concept experiments, conducted in mice by senior author Qingben Wang, PhD, professor in the Department of Pathology at Duke University School of Medicine, and colleagues, modified a currently available lipid nanoparticle to deliver a specific CRISPR/Cas13 mRNA that generates an inhospitable environment in the lungs for SARS-CoV-2 infection.

If further research in humans validates the approach, it could lead to a prevention strategy that is not dependent on the ability of antibodies to recognize specific viral structures, so it would be effective regardless of how the virus mutates. The approach also has a treatment benefit, lowering the virus burden and forestalling an immune overreaction that can become an overreaction that can become the major cause of COVID-19 deaths.

The research was published in the online journal Nature Chemical Biology.

Pace of Aging May Help Predict Risk of Dementia

Regardless of what the calendar says, individuals age physically at different rates; some experience only a few months’ worth of biological aging in a year, while others age more quickly.

Duke scientists have discovered that the pace of biological aging may serve as a powerful predictor of an individual’s risk of developing Alzheimer’s disease or other cognitive decline.

Terrie Moffitt, PhD, Nannerl O. Keenan Distinguished Professor of Psychology and Neuroscience; Avshalom Caspi, PhD, Edward M. Arnett Distinguished Professor of Psychology and Neuroscience; and colleagues analyzed data from a longitudinal study that had tracked 1,037 people born in Dunedin, New Zealand, for nearly 50 years.

Among that cohort, the researchers found that people showing signs of cognitive decline were aging faster than those who weren’t. The pace of aging predicted Alzheimer’s disease, mild cognitive impairment, and cognitive functional decline.

This new approach to tracking biological age using the pace of aging could become a useful tool to check for factors that accelerate aging and cognitive decline as well as to track interventions that might slow those processes down.

Real-time Imaging System Helps Avoid Repeat Surgery After Lumpectomy

A Duke University School of Medicine study shows the potential of new imaging technology to change the landscape of breast cancer surgery.

Shelley Hwang, MD, MPH, the Mary and Deryl Hart Distinquished Professor of Surgery, led the study of fluorescence-guided lumpectomy that uses an imaging device to scan the area where the tumor was removed to locate any lingering cancer cells.

Fish Oil Appears to Ease Post-Operative Delirium

Fish oil triglycerides appear to be effective at reducing instances of inflammation in the brain and preventing post-surgical delirium in mice and tissue engineered human models, according to Duke Health and Duke Biomedical Engineering researchers.

Published in the British Journal of Anaesthesiology, the findings point to a potential new therapeutic approach for delirium—a common complication of general surgery, particularly in older adults, that causes confusion, disorientation, or a sudden change in mental abilities. There are no approved therapies for post-surgical delirium.

Lead author Nicole Terrando, PhD, associate professor in the Department of Anesthesiology at Duke University School of Medicine, and colleagues administered a fish oil lipid injectable emulsion to mice before surgery and at any signs of cognitive decline. There were no behavioral signs of delirium or associated brain pathology after surgery. The treated animals also exhibited less inflammation in the brain.

Glioma Study Finds Geographic Differences in Hispanic Populations

Although typically classified as a single ethnic group, people of Hispanic heritage have markedly different risks for brain tumors based on their geographic origins, suggesting greater diversity that warrants attention in the health care setting.

The insight — published in the journal Neuro-Oncology by a team of researchers at Duke Health — resulted from an analysis of glioma brain tumors, which are known to be less prevalent among people of Hispanic heritage compared to non-Hispanic white people.

Lead author Kyle Walsh, PhD, associate professor in the Department of Neurosurgery at Duke University School of Medicine, and colleagues including senior author Quinn T. Ostrem, PhD, assistant professor of neurosurgery at Duke, confirmed the ethnic differences in glioma incidence but identified a gap within the Hispanic group that had not previously been exposed.

Notably, populations that trace their heritage to the Caribbean had higher rates of the lethal brain tumors than those from Mexico or Central America.

The researchers found, however, that people of Mexican or Central American origin tended to have worse outcomes from gliomas than those from the Caribbean.

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Challlenge Accepted

SCHOOL WELCOMES NEW COHORT OF DUKE SCIENCE AND TECHNOLOGY SCHOLARS

By Shantell Kirkendoll

Duke University School of Medicine continues its investment in science faculty recruitment and retention with the addition of four additional Duke Science and Technology Scholars.

The new cohort is made up of scholars who are exploring innovations in lung cancer treatment, fat storage and metabolism, aging, and biochemistry.

"The scholars have accepted the challenge to address the most pressing global issues," said Colin Duckett, PhD, vice dean for basic science. "Their deep scientific knowledge, cultivated through connections at Duke, will help move science forward."

Seok-Yong Lee, PhD, has been retained through support from Duke Science and Technology to continue his work in the Department of Biochemistry and as a member of the Duke Cancer Institute. Lee examines the design of membrane transport proteins — how they use their architecture to take advantage of selective transport and how scientists can use this selective transport for therapeutic potential in humans.

Trudy G. Oliver, PhD’05, has joined the Department of Pharmacology and Cancer Biology, after relocating her lab from the Huntsman Cancer Institute at the University of Utah in Salt Lake City. She investigates understudied subtypes of lung cancer, specifically squamous and small cell lung cancer. Her lab will explore tumor development, growth, and drug resistance to uncover vulnerabilities that can be targeted by therapeutics in these aggressive cancers. She hopes to bring new treatment options to patients.

"I completed my PhD in the pharmacology and cancer biology department almost 20 years ago, and I loved my experience and training at Duke," she says. "I was excited to return and join many wonderful friends and colleagues in this area, and to help give back to the program that launched my own career in science."

Rana Gupta, PhD, has joined the School of Medicine’s Division of Endocrinology after relocating from the University of Texas Southwestern Medical Center in Dallas. He is a top investigator of adipose tissue, where the body stores fat, and its link to heart disease, cancer, and type 2 diabetes. Growing rates of obesity have increased the urgency of understanding adipose tissue biology.

Gupta has made significant discoveries about the origins of fat cells and the genetic factors controlling adipose tissue precursor cells. He is also a member of the Duke Molecular Physiology Institute.

Rana Gupta, PhD

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Shuo Han, PhD, relocates from Stanford University School of Medicine to join the Department of Biochemistry and the Duke Microbiome Center. Her recent work identified promising bioactive molecules produced by the human gut microbiota. Her lab will study how gut bacterial metabolism impacts aging and physiology. Her future research seeks to identify molecular targets that can help extend good health, and she sees potential for collaborations with colleagues in Biochemistry, the Duke Microbiome Center, and the Duke Aging Center.

Shuo Han, PhD

Wilton Williams, PhD
Associate Professor in Surgery, Assistant Professor in Immunology
Learn more at dst.duke.edu

Unlocking our own resilience.
Wilton Williams’ discovery of a new class of antibodies at the Duke Human Vaccine Institute moves us that much closer to the HIV vaccine finish line.

WILTON WILLIAMS, PhD
Associate Professor in Surgery, Assistant Professor in Immunology
Learn more at dst.duke.edu
OBITUARIES

Clarence Almon Bailey, Jr, BS'54, H'56-'60, died on January 31, 2022. He was 89. He received a medical degree from the University of North Carolina at Chapel Hill in 1957. He completed an internship at the Medical College of Virginia and served as a pediatric resident at the University of Florida and Duke University School of Medicine. He was board certified in allergy and immunology. He served as a captain in the U.S. Air Force at Elston Air Force Base near Fairbanks, Alaska, for three years. In 1964, he began a private pediatric practice in Durham, North Carolina, which he continued for 40 years until his retirement in 2004. Roberta Kay Beach, BS'57, MD'71, died on May 28, 2022. She was 76. She earned her undergraduate degree at Duke University and received her medical degree from Duke University School of Medicine in 1971. She attended a pediatric internship at the University of Arkansas Medical Center Hospital and served as a third-year resident in internal medicine at the University of Minnesota. She then joined the Peace Corps, serving as a physician in Cameroon and Nigeria before becoming a solo family practitioner in Upper Marlboro, Maryland, for 20 years. She died on February 15, 2022. He was 79. He attended Tufts University on a Navy ROTC scholarship and was commissioned as an ensign in the U.S. Navy, stationed at the Portsmouth Naval Shipyard in New Hampshire. After earning his medical degree from Duke University School of Medicine, he completed an anatomic pathology residency at SUNY Upstate Medical University and became a diplomate in anatomic pathology in 1975. He was a staff pathologist with an emphasis on gynecologic pathology at Massachusett's General Hospital and then at Brigham and Women's Hospital until his retirement in 2021. He also served as a consultant to the National Cancer Institute and the National Heart, Lung, and Blood Institute. He was a diplomate of the National Board of Medicine and Surgery. Donald Tucker, BS'55, MD'58, H'59-'64, died on January 1, 2022. He was 88. He received his medical degree from the University of North Carolina at Chapel Hill in 1958 and attended residency in general surgery at the University of Virginia. He then attended residency in general surgery at the University of California, San Francisco, and completed an internship at the University of North Carolina School of Medicine. He served for six years as a member of Duke University Hospital's advisory board. He was a past president of the Pitt County Medical Society and a trustee for the Southwestern Regional Medical Hospital. He was a charter member of the Davison Club at Duke University. John “Jack” Ashley Goree, MD'55, H'56-'59, died on May 31, 2022. He was 84. He was drafted by the U.S. Navy, and after leaving the military he graduated from Duke University School of Medicine in 1955. He began his medical career at Duke and attended the Karolinska Institute in Sweden to study vascular neurology. He then returned to Durham, he returned to Durham, he returned to Durham, he returned to Durham, he returned to Durham, he returned to Durham, he returned to Durham, he returned to Durham, he returned to Durham, he returned to Durham. He then completed a fellowship in clinical cardiology from 1964 to 1965. He was a captain in the U.S. Air Force at Eielson Air Force Base in Alaska until his retirement. He was then appointed as a second lieutenant in the U.S. Army and served in Seoul, Korea. As a medical student at Duke, he was elected to the honorary medical society Alpha Omega Alpha and was awarded the Mostow award for scholarship. He trained at Duke, serving as chief resident in medicine, and the University of Michigan. He served in the United States Army for 15 years, then returned to the United States, where he practiced for 35 years and served in numerous leadership positions. He was a clinical associate professor of medicine at the University of South Florida, a fellow of the American College of Physicians, and served two terms as a governor of the Board of Internal Medicine. He received a Distinction of Merit and Alumnus Award from the Duke Medical Alumni Association in 1972. Gordon Anderson Trip, MD'81, died on January 25, 2022. He was 86. After completing a year of internship at Cook County Hospital in Chicago, he joined the Peace Corps, serving as a physician in Cameroon and Nigeria from 1968 to 1970. He went into private practice in St. Louis, Missouri, practicing internal medicine in Montgomery County, Maryland, from 1970 to 2004. After closing his practice, he worked as a consultant for the 3rd Infantry Division at Fort Stewart, Georgia, until his retirement in 2007. Henry Griffith Utley, PhD'64, MD'69, died on May 29, 2022. He was 82. He attended a pediatric internship at the University of North Carolina at Chapel Hill in 1969. He completed a fellowship in pediatric cardiology at Duke University School of Medicine and a fellowship in cardiac electrophysiology at the University of Wisconsin-Madison. He then joined the Peace Corps, serving as a physician in Cameroon and Nigeria before becoming a solo family practitioner in Upper Marlboro, Maryland, for 20 years. Thomas H. White, MD'59, HS'59-'64, died on May 27, 2022. He was 94. He attended Tufts University on a Navy ROTC scholarship and was commissioned as an ensign in the U.S. Navy, stationed at the Portsmouth Naval Shipyard in New Hampshire. After earning his medical degree from Duke University School of Medicine, he completed an anatomic pathology residency at SUNY Upstate Medical University and became a diplomate in anatomic pathology in 1975. He was a staff pathologist with an emphasis on gynecologic pathology at Massachusett’s General Hospital and then at Brigham and Women’s Hospital until his retirement in 2021. He also served as a consultant to the National Cancer Institute and the National Heart, Lung, and Blood Institute. He was a diplomate of the National Board of Medicine and Surgery. Michael Francis York, MD'97, died on May 12, 2022. He was 52. He attended the Honors Program at the University of Maryland in three years, where he earned a degree in chemistry from Emory University in 1981 and attended medical school at the University of Alabama at Birmingham. He completed his surgical internship and orthopedic surgery residency at Duke University Hospital. He was a fellow of the Piedmont Orthopedic Society. He then became a member of the South Carolina Orthopedic Association. In 1991 he moved to Atlanta, where he practiced for 25 years as an eye surgeon in Athens, Georgia. John Victor Verner Jr., AB'50, MD'54, HS'54-'59, died on May 29, 2022. He was 84. He attended Emory University School of Medicine, and completed his internship at the University of Alabama. He went into private practice as a pediatrician, where he practiced for 45 years and served in numerous leadership positions. He was a clinical associate professor of medicine at the University of South Florida, a fellow of the American College of Physicians, and served two terms as a governor of the Board of Internal Medicine. He received a Distinction of Merit and Alumnus Award from the Duke Medical Alumni Association in 1972.
WHITE COAT CEREMONY
2022

Marking the start of their medical careers, 120 first-year students in the Doctor of Medicine (MD) program received their white coats during the White Coat Ceremony on August 5. Over 70% of this year’s class are women, and 29% are from underrepresented racial and ethnic groups. bit.ly/DukeWhiteCoat2022