

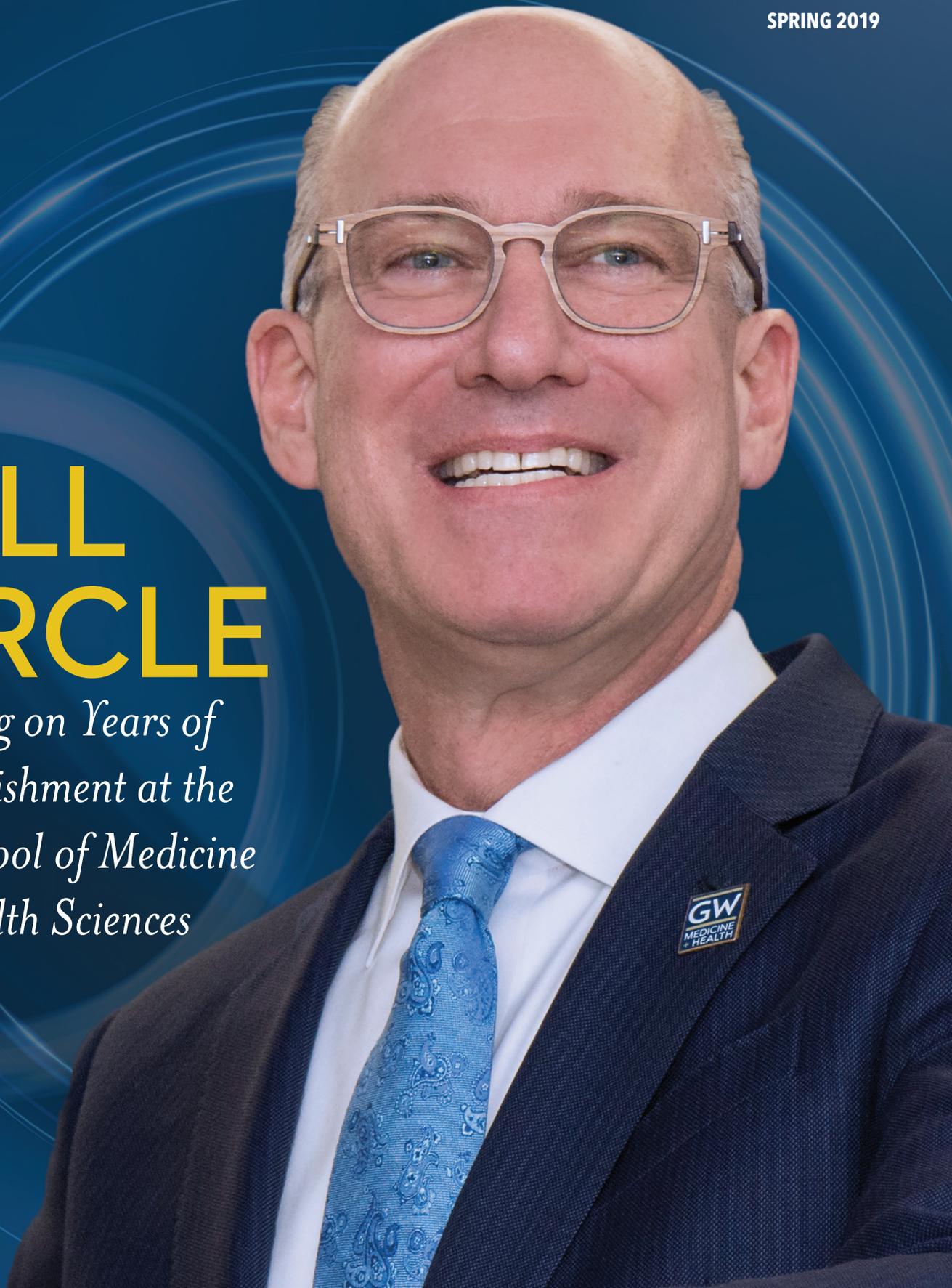
THE GEORGE WASHINGTON UNIVERSITY
SCHOOL OF MEDICINE AND HEALTH SCIENCES

Medicine + Health

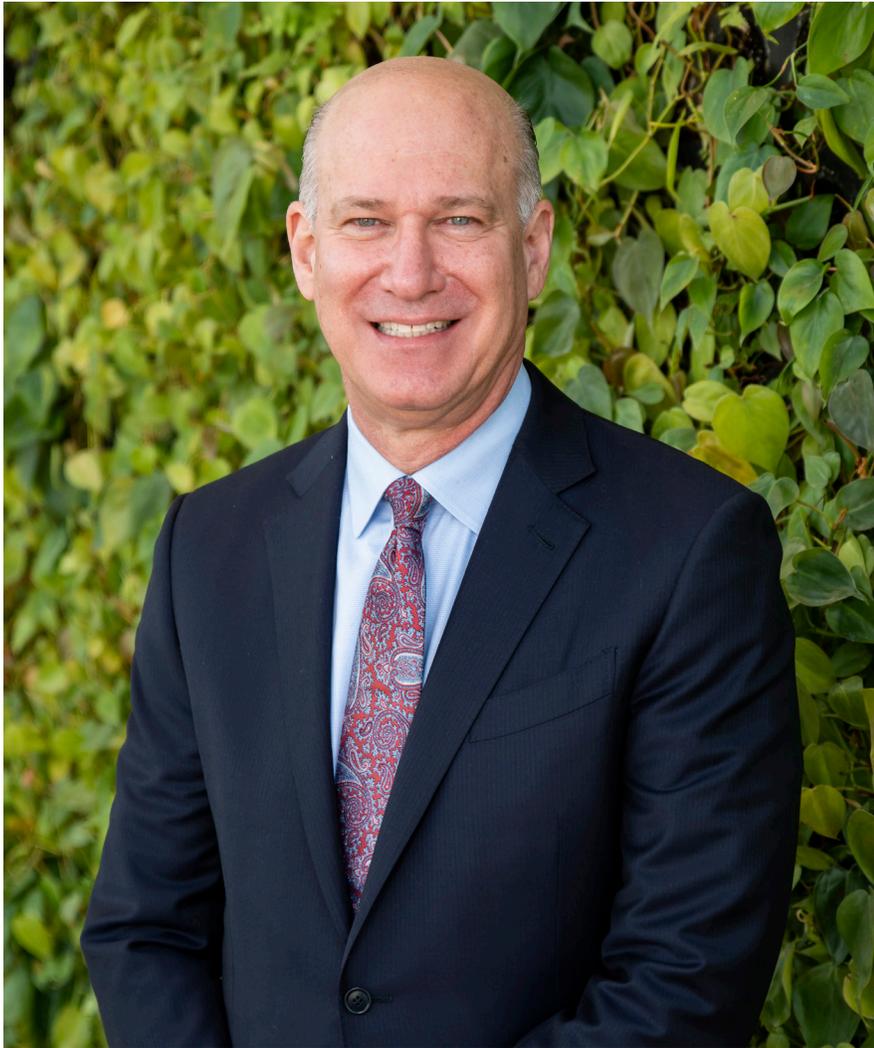
SPRING 2019

FULL CIRCLE

*Reflecting on Years of
Accomplishment at the
GW School of Medicine
and Health Sciences*



A NOTE FROM ROSS HALL



support of the faculty and alumni gave me the insight and confidence to make the changes necessary to lead the school to the next level.

Today, I look back with pride at what we have achieved, including full accreditation of our programs, the revision of the MD curriculum, the hiring of nationally renowned faculty members, the expansion of our health sciences programs, and the establishment of an influential Office of Diversity and Inclusion. We have moved the institution forward in research, education, clinical care, and philanthropy.

Both GW and I have evolved over the past 42 years. I owe my personal and professional growth to the thousands of people whom I have had the privilege of teaching, learning from, working with, and providing medical care for.

To the late Jerry Wiener, who hired me onto the faculty in 1985; to the late Bob Keimowitz, who appointed me assistant dean in 1991; to Skip Williams, who named me chair of the psychiatry department; and to former President Knapp, thank you for your confidence and for the amazing opportunities you provided me. To our SMHS alumni, thank you for your friendship and support. To my partner

Steven Mazzola, my family (including those no longer with us), and the late Steve Dixon, none of this would have been possible without your love and encouragement. It is time for me to pass the baton to the next ambassador of the brand, but please know, as an alumnus and faculty member, I will be present and supporting President Thomas J. LeBlanc's leadership. Also, I'm quite sure that after four decades at GW, I may actually bleed buff and blue.

A handwritten signature in black ink, appearing to read 'Jeffrey S. Akman'. The signature is fluid and cursive, with a long horizontal line extending to the right.

JEFFREY S. AKMAN, MD '81, RESD '85
VICE PRESIDENT FOR HEALTH AFFAIRS
WALTER A. BLOEDORN PROFESSOR OF ADMINISTRATIVE MEDICINE
AND DEAN, SCHOOL OF MEDICINE AND HEALTH SCIENCES

Dear Colleagues,
After nearly nine years serving as the vice president for health affairs and dean of the School of Medicine and Health Sciences (SMHS), I recently decided to transition out of these roles and make way for new leadership at SMHS. It has been an incredible honor to hold these key leadership positions at my alma mater, and I am proud of the accomplishments we've made during my tenure.

I arrived at the George Washington University (GW) for medical school in 1977, and three decades later, in December 2010, GW President Steven Knapp asked me to step into a dual leadership role overseeing the former GW Medical Center and SMHS. Although I was content in my position as psychiatry chair, I also knew that I was the right person at the right moment to lead these important institutions. My deep familiarity with the medical and academic enterprise and the

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Moiré Marketing Partners

Medicine + Health

is published by:
 Office of Communications
 and Marketing
 2600 Virginia Ave., NW
 Suite 329
 Washington, D.C. 20036
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 smhs.gwu.edu

SPRING 2019

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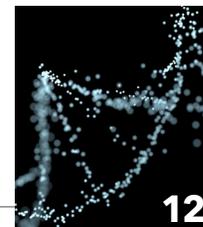
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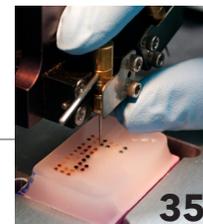
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MAKING THE ROUNDS



CLASS OF 2019 TOP RESIDENCY SPECIALTIES

Internal Medicine	40
Emergency Medicine	17
Pediatrics	15
Anesthesiology	13
Psychiatry	12
Obstetrics-Gynecology	11
Family Medicine	10
General Surgery	10
Radiology	8

Med Students Make a Match

When the clock struck noon on March 15, George Washington University (GW) School of Medicine and Health Sciences fourth-year MD student Jacklyn Omorodion let

out a scream and jumped in the air, becoming engulfed in hugs from her family. She had matched at her No. 1 choice for residency in combined pediatrics and genetics: Boston Children's Hospital.

Every year students gather in Ross Hall to celebrate the milestone. At noon, medical students across the country simultaneously receive and open their envelopes to find out their match.

The Class of 2019 will pursue residencies at institutions including NYU Weill Cornell Medical Center, Albert Einstein College of Medicine/Montefiore Medical Center, Walter Reed National Military Medical Center, Icahn School of Medicine at Mount Sinai, and Yale School of Medicine, among many others. Seven students will continue their training at GW, and one will train at Children's National Health System. ■





GW Health Village

Over the weekend of Jan. 12-13, visitors toured the GW Health Village at the NBC4/Telemundo44 Health and Fitness Expo. Volunteers from the George Washington University (GW) Hospital, the GW Medical Faculty Associates, and the GW School of Medicine and Health Sciences, as well as the GW Ron and Joy Paul Kidney Center and the GW Cancer Center, were on hand. About 1,000 people received blood pressure, BMI, and diabetes screenings, and also took advantage of the opportunity to receive wound care and foot and ankle consultations. ■



Stroke
 • Low blood flow to focal part of brain

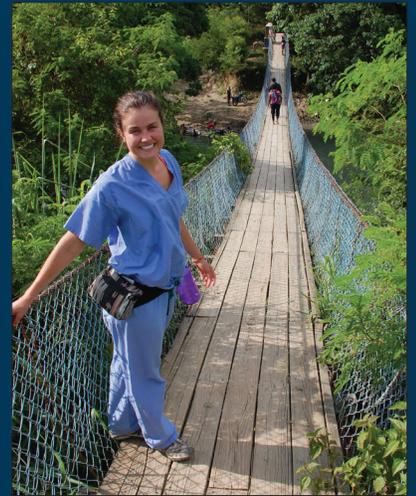
There are two major causes of stroke:

Ischemic
 • Blood clot from another part of the body blocks a blood vessel or artery to the brain

Hemorrhagic
 • An artery bleeds in or around the brain

A Patient Guide to Understanding Stroke

Celebrating 25 Years



Since 1994, the Office of International Medicine Programs has transformed lives and improved health care delivery around the world through medical education, training, research, and service.

School of Medicine
& Health Sciences

THE GEORGE WASHINGTON UNIVERSITY



Perfect Pass Rate

In 2018, for the ninth consecutive year, all graduates of the George Washington University School of Medicine and Health Sciences (SMHS) Doctoral Program in Physical Therapy (PT) passed the National Physical Therapy Examination (NPTE) on their first attempt.

The NPTE is a comprehensive, rigorous exam that all PT graduates must pass in order to be licensed to practice in their respective jurisdictions.

This accomplishment is a “testament to the hard work and dedication of our students and faculty,” said Ellen Costello, PT, PhD, director of the Physical Therapy Program in the Department of Health, Human Function, and Rehabilitation Sciences at SMHS. “Our program faculty are nationally known educators who place high value on the student learning experience. When our bright and energetic students join hands with our incredible faculty, the results are impressive.” ■

Rapid Stroke Care

Timing is everything when it comes to stroke care, and thanks to advanced brain imaging software, the George Washington University (GW) Hospital can now make faster care decisions for patients experiencing a stroke.

The hospital’s new RAPID CT Perfusion software streamlines treatment decisions for doctors when patients present to the hospital with a stroke more than six hours after the event occurred.

In the past, patients who arrived in the later stages of a stroke would not have been candidates for aggressive stroke treatment management because it was difficult for doctors

to determine the amount of brain damage, and whether more damage was imminent, said Kathleen Burger, DO, director of the GW Hospital Comprehensive Stroke Center and associate professor of neurology at the GW School of Medicine and Health Sciences.

Now, in only 90 seconds, the RAPID software can generate information on how much damage has occurred in the brain and what areas have not yet been affected but are still at risk as time goes on. Burger said that data gives doctors information to help them determine the efficacy of certain surgical procedures. ■

Top-Ranked Grad Schools



Topping the Charts

The George Washington University (GW) School of Medicine and Health Sciences (SMHS) has once again made the list of top-ranked schools in the *U.S. News & World Report's* Best Graduate School Rankings for 2020. In addition to GW's continued presence on the overall school list, the SMHS physician assistant (PA) studies and pediatrics programs have been ranked this year.

“These rankings are a positive reflection of the work that we as an institution put into our students, our curriculum, and our research,” said Jeffrey S. Akman, MD '81, RESD '85, vice president for health affairs, Walter A. Bloedorn Professor of Administrative Medicine, and dean of SMHS.

Continuing on its upward trajectory, The SMHS PA studies program ranked high this year among health specialties, maintaining a spot as one of the top five PA programs in the country. SMHS also ranked among the top medical schools across the country in both research and primary care. This year, the school climbed up the list to No. 60 in research and No. 67 in primary care.

The SMHS pediatrics program, located at Children's National Health System, ranked among specialties this year as one of the top 25 pediatrics programs in the United States. ■

GW *Legacy* CHALLENGE 2019

Include GW in your estate plan and the university will match a portion of your future gift today - to the department, program, or area of your choice!

The 2019 GW Legacy Challenge provides an immediate cash match for donors who document new or increased planned gift commitments to the School of Medicine and Health Sciences, such as gifts by will, trust, or IRA beneficiary designation. As a planned giving donor, you can direct matching funds to your area of interest (equal to 10% of the value of your planned gift, up to \$10,000).

Participate in the 2019 GW Legacy Challenge and give 110% to GW!



You document your planned gift using the Legacy Challenge Gift Confirmation Form

+



10% Legacy Challenge Match Funds are directed where you specify

=



Immediate impact to your area of interest at GW

x



Future impact with your planned gift

Visit go.gwu.edu/give110Med to learn more.

We are deeply grateful to the late Joan H. Colbert, CCAS BA '61, and Douglas J. Mitchell, GWSB MA '93, for bequeathing the matching funds being used in this program.

THE GEORGE WASHINGTON UNIVERSITY

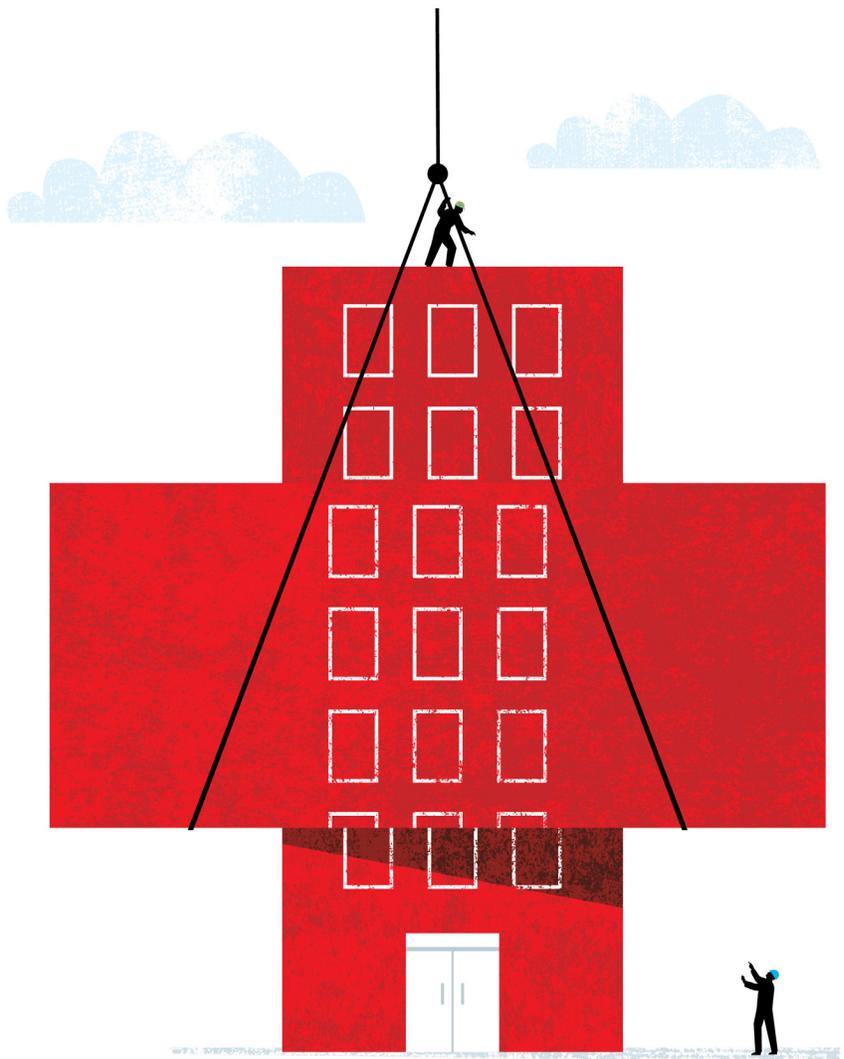
WASHINGTON, DC

CRISPR Limits Impact of Certain Parasitic Diseases

For the first time, researchers at the George Washington University (GW), with colleagues at institutes in Thailand, Australia, the United Kingdom, and the Netherlands, have successfully used the gene-editing tool CRISPR/Cas9 to limit the impact of parasitic worms responsible for schistosomiasis and liver fluke infection.

Their findings were reported in two papers published in the journal *eLife*. CRISPR/Cas9 is a technology that allows researchers to precisely target and deactivate the genetic information needed to produce a particular protein.

“The genes we ‘knocked out’ using CRISPR/Cas9 resulted in markedly diminished symptoms of infection in our animal models,” said Paul Brindley, PhD, professor of microbiology, immunology, and tropical medicine at the GW School of Medicine and Health Sciences and lead author of the paper. “Our research also showed that this revolutionary new biomedical procedure – CRISPR/Cas9 – can be adapted to study helminth parasites, which are a major public health problem in tropical climates.” ■



Restructuring the Relationship

The George Washington University (GW) and the GW Medical Faculty Associates (MFA), the clinical practice of GW physicians, have restructured their relationship as of December 2018.

The GW MFA retains its status as a separate 501(c)(3) nonprofit medical group, and the university exercises new rights of coordination and control. The new structure will bring more stability to the medical enterprise by consolidating the GW MFA with the university's stronger balance sheet. It also creates greater strategic

alignment between the university and the GW MFA.

As faculty members in the GW School of Medicine and Health Sciences, the GW MFA physicians serve as teachers and mentors for medical students, residents, and researchers. The day-to-day clinical operations of the largest independent physician practice in Washington, D.C., as well as the duties and responsibilities of the clinical faculty, will remain the same under the new structure. ■

A
COMMUNITY
FOR

HELP



As a rising senior at Bowie High School in Prince George’s County, Maryland, Malik Williams dreamed of a career in medicine. Growing up in Temple Hills, Maryland, all Nicholas Dingle thought about was becoming a sports announcer. A unique program at the George Washington University (GW) Rodham Institute is helping both of them get a little closer to achieving their goals.

Success stories have become the trademark of the institute’s Health, Education, and Leadership Program (HELP), designed to support the children of GW Hospital and GW Medical Faculty Associates staff. A majority of HELP students come from Title I schools, institutions receiving federal funds to enhance opportunities for students from low-income families, where high school graduation rates hover around 40 percent.

When Williams mentioned his medical aspirations, his mother — a mammography technician at GW Hospital — suggested he talk to Jehan “Gigi” El-Bayoumi, MD, RESD ’88, founding director of the Rodham Institute and professor of medicine at the GW School of Medicine and Health Sciences (SMHS). Williams expected that the busy El-Bayoumi might offer some career advice and possibly allow him to shadow her at work. Instead, after talking to Williams, El-Bayoumi recommended him for a Posse Scholarship, which provides full college tuition and emphasizes leadership.

In spring 2018, Williams graduated from the University of Wisconsin; he plans to pursue a master’s degree in health policy and management. “Wisconsin made me better equipped to handle different environments,” Williams says with a little laugh. He adds that the skills and experiences he gained through HELP put him on a firm footing in college. “It was a sink-or-swim situation, and I learned how to swim.” Ultimately, Williams would like to work for the Centers for Disease Control and Prevention as a public health policy specialist.

HELP, says Tracie Bass, director of workforce pipeline programs at the Rodham Institute and the program’s founder and driving force, is really the centerpiece of the institute’s youth education programming. “It’s the exposure that makes this so important,” she explains. “Many of these kids have never even been on a college campus before. Because of their socioeconomic status, they haven’t considered going to college as a real possibility.”

The yearlong program consists of a back-to-school event, a spring break camp, a two-week summer session, and monthly professional development and service opportunities on Saturdays throughout the academic year. The experience offers invaluable firsthand role modeling from SMHS MD students, residents, and faculty instructors, and program

participants gain direct skills-based instruction focused on health awareness, advocacy, interest, ability, and a postsecondary education. Students participate in community service activities, receive professionalism tips, and develop leadership skills, and not only do they receive CPR training, but they’re also trained by compression-only CPR instructors.

“Our goal is to expose the kids to the variety of health care careers,” Bass explains, adding that the career advising and college preparation offered through HELP is framed in a health care context. “This is meant to be a pipeline program for students to go into health care.” Even if the students don’t choose a health profession in the future, she says, they still learn to be better advocates for, and consumers of, health care for themselves, their families, and their community.

The benefits are mutual, Bass adds, calling the program a bidirectional learning experience. “The MD students and residents are getting exposure to children who, in many cases, don’t have any experience working with [health care] in any setting. They learn a lot about the health disparities these children and their families face in Washington, D.C.”

Rodham Institute staff are quick to point out that HELP introduces participants to the medical professions, but doesn’t exclude other vocations. Dingle, 20, a sophomore at Virginia Union College and the son of Monica Jenkins, an administrative assistant in the Division of Cardiology at SMHS, says he received CPR training and learned about health disparities and “food deserts” — communities underserved by grocery stores. “I did a social impact project on that topic,” he adds. Dingle also learned “how to network and be a professional,” he says proudly.

As he pursues his lifelong ambition of becoming a sports announcer, HELP volunteers connected Dingle with Dave Johnson, sports director for WTOP radio and the play-by-play announcer for the Washington Wizards and DC United, who has become his mentor. In return, Dingle is now mentoring middle school and high school students, focusing “on good work habits and time management.”

Franck Tchoukeu credits HELP with developing his social skills and his confidence, but he had to be persuaded by a high school counselor to join the program. “Once I got there, I got out of my comfort zone,” he says. He went on to the University of the District of Columbia, where he was elected treasurer of the Student Government Association.

So far, according to El-Bayoumi, 100 kids and teens have completed the program, all of whom have graduated from high school and gone on to a four-year college or a community college, or, in one case, enlisted in the military. “All of them are being exposed to a variety of health careers,” says El-Bayoumi. “We would love everyone to go into health care, but even if they don’t choose [the profession], they still become health champions.” ■

ACADEMIC YEAR 2018–19



2,259
School of Medicine and Health Sciences
STUDENTS

701 MD program students
1,451 degree-seeking health sciences (HS) students
107 non-degree or certificate program health sciences students.

MD STATS



180 MD STUDENTS

*chosen from
a completed applicant pool of
more than 11,000*

 **MOST DIVERSE**
ethnic/socioeconomic



37% Male
63% Female

63% is the **highest**
percentage of women
in an incoming MD class
at SMHS

HS STATS

GW Health Sciences
offers nearly

42 ACADEMIC PROGRAMS

across nearly **20**
different health care disciplines



GW Health Sciences

has earned

TOP HONORS

from multiple prestigious organizations



432 RESIDENTS AND FELLOWS

rotating in 38 Accreditation Council for Graduate Medical Education (ACGME)-accredited programs sponsored by SMHS

PARTNERSHIP IN GENOMIC RESEARCH

BY ASHLEY RIZZARDO

In April 2018, aligning with French President Emmanuel Macron's visit to Washington, D.C., a collaboration between the George Washington University (GW) and Centre National de la Recherche Scientifique (CNRS), the main multidisciplinary research organization in France, was signed. The partnership, taking form in the joint laboratory EpiDaPo — Epigenetics, Data, Politics — amplifies research at the intersection of genetics, environment, big data, and society.

Internationally renowned geneticist Eric Vilain, MD, PhD, director of EpiDaPo and chair of the Department of Genomics and Precision Medicine at the GW School of Medicine and Health Sciences (SMHS), has been involved with the lab since it was first established at the University of California, Los Angeles, with support from the CNRS Institute for Humanities and Social Sciences, and continues his involvement in the lab's new location at GW.

Vilain joined the SMHS faculty in 2017, bringing with him 30 years of expertise in genomic research. He is one of the world's foremost experts in the genetic determinants of sex development and sex differences.

"My research on people born with an intersex condition, with all its complex challenges, was the catalyst to broaden my horizons, collaborate with social scientists, and build a community of multidisciplinary scholars," explains Vilain, who also serves as director of the Center for Genetic Medicine Research at Children's National Health System. "In establishing EpiDaPo, we will investigate the social aspects of deciphering the human genome and epigenome."

Through its interdisciplinary approach to the challenges associated with "genomic" and "post-genomic" approaches of life, says Michel Dubois, PhD, deputy director of EpiDaPo and senior research fellow at CNRS, the goal of the lab is to bring together various academic communities, contribute to the public debate, and participate in informed decision making.

Considering the fierce debate around genomics and precision medicine and its recent attention in the news, Vilain says that "it is crucial to have an understanding of the social consequences of a scientific approach."

EpiDaPo's research activities develop at the intersection of cross-cutting themes and questions, such as: How

Eric Vilain, MD, PhD, director of EpiDaPo and chair of the Department of Genomics and Precision Medicine at the George Washington University School of Medicine and Health Sciences.



should society think about the new interdisciplinary and epistemological, but also normative characteristics of research in genetics and epigenetics? And how can establishing a biological understanding of gender and sexual orientation be used to advance social and political goals?

Since establishing the partnership between GW and CNRS, EpiDaPo researchers have continued to engage in studies on the public circulation of epigenetics and empirical investigation of translational research. The lab has also begun developing new projects with international scientific and institutional partners, including projects in Pakistan and the Congo, which both require a multidisciplinary and global perspective.

"The move from Los Angeles to D.C. has been an opportunity to rethink some of our scientific priorities and extend our scientific network," says Dubois. "GW is located in the perfect spot for multidisciplinary research involving sociology, political science, statistics, and life science. Congress is around the corner, and so is the National Institutes of Health and the Food and Drug Administration, making the field of study very fertile and the public policy implications highly topical."

EpiDaPo also hosted its first seminar on genomics and personalized medicine, bringing together a multidisciplinary panel of experts to discuss the state of genomic research in the United States. The symposium, hosted at the Embassy of France, featured brief presentations by experts from the National Human Genome Research Institute, the University of Louisville, Dartmouth College, and GW.

"Our speakers addressed some of the scientific and social challenges related to personalized genomic medicine," Vilain says. "It was a great example of the kind of topics EpiDaPo aims to address in a multidisciplinary way."

To increase further scientific exchanges between France and the U.S., Vilain and Dubois say they have been working on establishing a "mirror" site for EpiDaPo in Paris, allowing researchers to move easily from one site to another. The new site is planned to open this summer. ■

A Discussion on Genomics and Ethics



BY ASHLEY RIZZARDO

During the fall of 2018, a new seminar series was launched to engage the George Washington University (GW) community in a discussion around genomics and genetic testing. The series, co-convened by Shawneequa Callier, JD, associate professor of clinical research and leadership at the GW School of Medicine and Health Sciences, and Sonia Suter, JD, John and Inge Stafford Faculty Research Professor at GW Law, features four sessions in its first iteration, with hope for renewal in the future.

Callier, an expert on bioethics and health care law, is an investigator focusing on the ethical, legal, and social issues raised by genomics and precision medicine research. Suter earned her master's degree in human genetics and worked as a genetic counselor for two years before pursuing a career in law and bioethics. Her research and expertise focus on the legal and bioethical issues in medicine and genetics.

The first session, held in December 2018, discussed genomic literacy, communication, and education. Panelists from GW, the National Human Genome Research Institute, and Thomas Jefferson University addressed the implications of direct-to-consumer tests, such as 23andMe, which allow people to discover fun genetic traits about themselves, such as the gene that makes them a heavy sleeper, as well as more serious health data, such as an increased risk for Alzheimer's disease or breast cancer.

A second session on reproductive medicine and genomics was held in April 2019. Remaining sessions will cover race, genomics, and health disparities and gene therapy, genetic engineering, and precision medicine.

Here Callier and Suter discuss ethical issues and questions around genomic research and sequencing and the impact of the new access consumers have to information that can greatly affect their lives.

What prompted you to develop this series?

Callier: We had talked about what we could do on campus to try to raise awareness about ELSI, or the Ethical, Legal, and Social Implications of Genomics, and the ELSI research program funded by the National Human Genome Institute at the National Institutes of Health. There's a lot of discussion

about DNA; it seems to be talked about everywhere among my colleagues and peers. We wanted to do something here at GW, find other colleagues like ourselves who are interested in the subject, and advance the discussion.

Suter: The average person is thinking about these issues a lot more than they used to. Partly because the news and advertisements feature DNA testing a great deal these days. Also, the genetics field has evolved a lot. What we can offer people in genetic testing today is a lot different from when I was a genetic counselor. At that time, we mostly offered reproductive genetics. There wasn't a lot of testing to identify increased risks for future illnesses. I think genetic testing is more salient to the everyday person today, because there's more available to them.

What do you hope comes from this seminar series?

Suter: Public awareness. The more people are engaged and understand the issues, the more the public has a voice in trying to shape the direction of genomic and genetic testing and how the resulting information is used. We need to be thinking as a society about how we want to manage this.

Callier: GW is one of the few places in the Washington, D.C., area with numerous faculty members interested in ELSI and conducting ELSI research. This should be a place where people can come to discuss and debate ELSI issues. It should be a place where there is scholarly discussion, open to the public, happening to advance dialogue on important ELSI local, national, and international concerns.

What are some of the ethical issues around genomics and genetic testing?

Callier: Our first seminar discussion topic was about the commercial market, direct-to-consumer genetic testing, consumer access to these tests, and the implications for patients. What does it mean for you to be able to go online and simply purchase a test, not talk with your doctor, and have potentially medically relevant results available to you?

Suter: There can be a lot of confusion because consumer tests are not always fully accurate. Also, when patients go to their health care providers, unless the providers are geneticists,

they often don't have a full understanding of the implications of the genetic results. As testing becomes more prevalent and more people get tested, we are finding that we don't have enough health care providers to educate patients about the results of genetic tests and what they mean for patients.

Callier: We also want to address diversity and inclusion in genomic research. A lot of the information we have right now related to genetic testing comes from European populations. Historically, we have excluded all other populations from a really important type of research study, called a genome-wide association study; these studies help to identify the causal variants associated with diseases, including complex diseases. In the clinic, among patients of diverse ancestry, especially those who do not have ancestry from a European country or a continent that has been studied, challenges in interpretation are more likely. In such cases, genetic testing could lead to a misdiagnosis or the discovery of a variant of unknown significance.

Suter: Privacy also is a huge overarching issue in all of this. As people participate in any type of research, or send their samples to 23andMe or any of the direct-to-consumer genetic testing companies, their information is now with the company or researcher. The commercial companies are doing research, and the information is often being shared. Consumers can choose to opt out, but it's not clear people fully understand they have that option or know what is at stake.

Callier: Look at the Golden State Killer case. They used a publicly accessible database that consumers were using just to assess their ancestry to identify the killer. A lot of people may not want their relatives to be identified without their permission due to law enforcement's use of their genetic data.

What about issues involving sequencing, as in the Human Genome Project?

Callier: Informed consent received a lot of attention when scientists began to sequence the human genome. ... I always talk to my students about Henrietta Lacks [the African American woman whose cancer cells were taken without her consent and serve as the source of the "immortal cell line" used in research]. If we were able to get informed consent from Henrietta Lacks, if informed consent was common in the 1950s, what would we tell her about the potential uses of her DNA? Researchers had no idea at the time. We didn't know what the internet was. We could not say that in 30 to 40 years someone would publish her genome on the internet. Her cells were taken long before the start of the human genome project. You can make that analogy today. We don't know what the future's going to look like in terms of how these technologies are used in cooperation with other technologies. Informed consent will always be a difficult topic.

Suter: Some of the issues we talk about now have been concerns from the beginning. Privacy and discrimination were issues from the start, although, in many ways, they were more future, rather than immediate, concerns. Today, however, the worries about privacy and discrimination are becoming more pressing; they are no longer hypothetical. These issues don't go away, they only intensify.

Are there currently guidelines or restrictions on gene editing?

Suter: Researchers are doing clinical trials of gene editing to develop treatments against diseases, and the FDA has approved some gene therapies. But technically, gene editing of embryos is not legal in the United States. I think there is strong agreement within the health care community and the scientific community that gene editing in embryos is absolutely not appropriate to be doing at this point, because the health risks are too great. You also have to ask, "What are we doing such gene editing for?" In the recent case of embryo gene editing in China, the researcher was trying to create an immunization against HIV/AIDS infection. However, the safety of embryo gene editing has not yet been established. Even assuming you could prove that reproductive gene editing was safe, many people think he chose an inappropriate scenario for embryo editing, because he wasn't attempting to treat a serious, inevitable disease.

Callier: There also needs to be clarity regarding the distinctions between gene editing and gene therapy and then also somatic gene editing and germline gene editing. [According to the Center for Genetics and Society, somatic gene editing changes the DNA in cells of an adult or child to treat disease, or even to try to enhance that person in some way, without impacting future generations. Germline gene editing is genetic alteration using technologies such as CRISPR, which results in changes that may be passed down to children. Editing the genome of an embryo would be germline gene editing.] There's absolutely a strong sense that we should not be engaging in germline editing, because that can be inherited by our children.

What should people know before they submit their DNA for a direct-to-consumer genetic test?

Suter: One thing that makes me crazy, as a former genetic counselor, is the cavalier attitude many people have toward obtaining genetic information. I spent so much time talking to people about what genetic information meant to them and the value and risks of obtaining it. I think there's a tendency in American culture to think getting all information is always good. Genetic counselors believe that genetic information can be valuable, but it can also be toxic. It depends on the

From left, Sonia Suter, JD, and Shawneequa Callier, JD, are prompting a dialogue on the ethics behind genomic research and sequencing and the public's access to genetic data.



nature of the information, why you want it, and what your options are. I would like people to think more carefully about the value and risks of obtaining genetic information before getting genetic testing.

Callier: There's some literature on this topic and the idea that people can plan. If they know they're going to have Alzheimer's, they can take steps to plan some aspects of their projected final years. But most people, like Sonia said, don't know what to do with that information or don't want that information. My concern has to do with the accuracy of the tests. There have been a number of articles in the news about how people have received different test results, depending on the company that were proven to be false after visiting with a physician.

What do you think the future of genomics and genetic testing looks like?

Callier: When the human genome was sequenced, physicians and researchers were the gatekeepers to knowledge. Today,

consumers can access information and do what they want with it. ... We're living in a world where privacy is really a foregone concept. We're all tracked and monitored and we voluntarily put our information out there. So, one thing we can imagine is a world where there's no such thing as privacy. Your behavior and genetics are together available.

Suter: And that's not limited to just genetics. Recently, there was an interesting study on tracking people through the apps on their phones, which know where they are and let anyone follow a person's day. By combining that information with genetic information, someone could start to do some really interesting and potentially scary things.

Callier: We hope that by hosting these seminars at GW and encouraging this conversation we can open people's eyes to what the future could look like. Given that awareness, perhaps we as a society can decide what we want from genomic research and better establish our standards for how that information is shared. ■



FULL CIRCLE

Reflecting on Years of Accomplishment at the GW School of Medicine and Health Sciences

BY THOMAS KOHOUT

On Jan. 17, 2019, an email went out to the George Washington University (GW) School of Medicine and Health Sciences (SMHS) community with a major announcement. After more than eight years as Vice President for Health Affairs at GW and Dean of SMHS, Jeffrey S. Akman, MD '81, RESD '85, would step aside following the completion of a national search for his successor.

“I have been tremendously honored for the past eight years to serve as GW Vice President for Health Affairs (VPHA) and Dean of my alma mater,” he wrote in a statement sent to the SMHS community. “SMHS students, faculty, residents, and staff have all been incredible partners on this most rewarding journey and have inspired me as we’ve made significant progress.”



ONE OF OUR OWN

The VPHA/Dean position was never supposed to be the last stop for Akman. The average term of a dean is roughly five years, according to the Chronicle of Higher Education. He was just 54 years old when then-GW President Steven Knapp tapped him in December 2010 to serve in the dual role on an interim basis. Seventeen months into Akman's tenure as interim dean, the GW Board of Trustees gave the go-ahead to begin a nationwide search. By that time, however, faculty members were already at work casting their support for Akman.

Uncertainty about dissolving the Medical Center and moving to a new administrative structure under the leadership of a new dean, one who would be unfamiliar with the unique relationship between the university, SMHS, and its clinical partners, including GW Hospital, the GW Medical Faculty Associates (MFA), and Children's National Health System, left the faculty feeling rattled.

"His biggest contribution has been to keep everybody together with as little rancor as possible," says Alan Wasserman, MD, chair of the Department of Medicine and Eugene Meyer Professor of Medicine at SMHS and former president of the GW MFA, who orchestrated a petition for the chairs and faculty members to make Akman's appointment permanent. It was a turbulent time, he recalls,

and faculty members were nervous about the changes; they wanted someone they could trust. To his credit, says Wasserman, Knapp listened. "He saw the value in promoting a dean with such a groundswell of support from the faculty.

"Things are different now," he adds. "The MFA and the university have a closer relationship. It's a different era. Jeff Akman was that bridge."

It's hard to argue the credentials Akman brought to the table; few people have seen GW from as many angles. A double alumnus, he earned his medical degree from SMHS in 1981 and completed his psychiatry residency in 1985, rising to chief resident before the end of his training. He earned the school's Distinguished Teacher Award in 1998, and in 2005 was selected as one of four recipients of the 46th Annual Alumni Service Awards. He even authored the MD program oath and established the program's White Coat Ceremony.

Before rising to the ranks of VPHA and Dean, Akman served on the leadership team of former SMHS Dean Robert Keimowitz, MD, first as an assistant dean for student educational policies and later as associate dean for student and faculty development and policies. As the Leon M. Yochelson Professor and chair of the Department of Psychiatry and Behavioral Sciences, Akman served in both an academic and a clinical capacity, encompassing all three aspects of the GW clinical partnership.

Those experiences, says Wasserman, made Akman an unbeatable candidate to tackle the administrative challenges of being a dean at GW.

STRATEGIC THINKING

Almost immediately after his interim appointment, Akman led the development of a new strategic plan to guide the school, one that would be more than just a conversation starter. It had to be an active, living, breathing plan.

During a town hall meeting shortly after he took office, Akman laid out an ambitious list of priorities that would go on to define his strategic vision — leadership, education, discovery, community, and clinical excellence — priorities that would become the pillars of a four-year strategic plan.

“When we published the new strategic plan for SMHS, we established the impetus for momentum and growth in key strategic areas,” says Akman. The plan mapped out the route the leadership team would use to allocate resources. Fleshing out those themes was an emphasis on affordability, curriculum enhancement, research, and a commitment to diversity and inclusion.

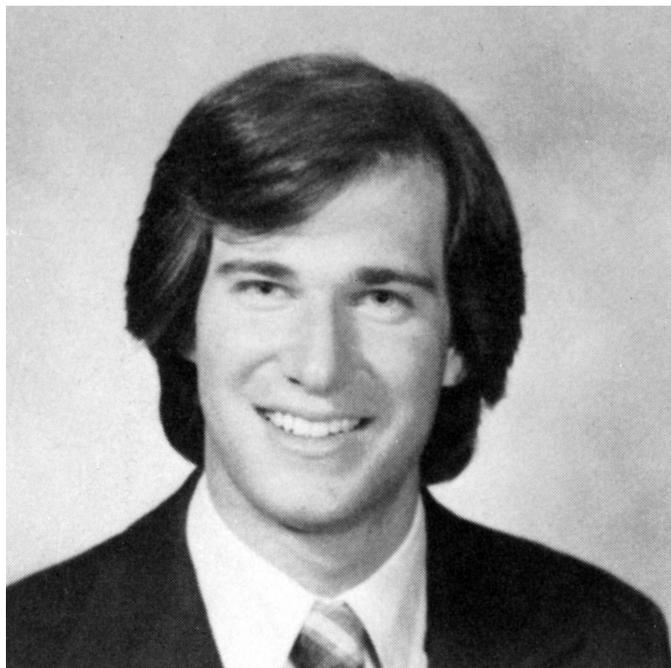
That latter theme was the first among the efforts undertaken. Akman formed a Diversity and Inclusion Task Force to identify action items that would position SMHS as a national leader in promoting diversity. He also directed the group to revise the school’s mission statement and ensured that diversity and inclusion were featured prominently.

“This has been a very important issue for me,” Akman says. “As a gay man, issues around diversity have been paramount in my career as well as in my personal life. So, that was one of the first things I wanted to tackle.”

In addition, Washington, D.C., is a city with significant health disparity problems, and Akman felt a sense of responsibility to the community. “That’s a bold thing to add to any mission statement,” he says. “One that is difficult to measure, but it speaks to how we think about curriculum, how we think about investment in the community, how we think about research that can address these sorts of issues.”

“I think this has been something Dean Akman has been passionate about since the moment he took the lead of SMHS as interim dean. Dean Akman made diversity and inclusion part of what we do every day.”

— Yolanda Haywood, MD,
RESID ’87, BA ’81



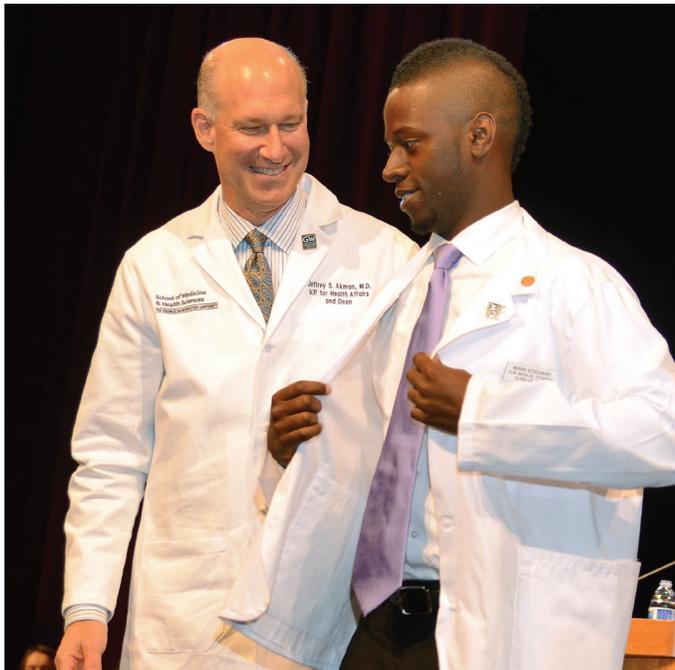
Few people have seen GW from as many angles as Jeffrey S. Akman. Above is Akman from his MD program graduation yearbook in 1981.

Yolanda Haywood, MD, RESD ’87, BA ’81, was tapped to serve as senior associate dean for a new Office of Diversity and Inclusion tasked with developing strategic initiatives and identifying diversity opportunities in faculty development, academics, and research. “I think this has been something Dean Akman has been passionate about since the moment he took the lead of SMHS as interim dean,” says Haywood. “Dean Akman made diversity and inclusion part of what we do every day.”

With Akman at her back, Haywood fortified existing programming, such as the DC Health and Academic Prep Program and Upward Bound, with new offerings including the Pre-Matriculation program, the Mentored Experience to Expand Opportunities in Research program, and a host of seminars and training sessions on topics including unconscious bias and cultural competency.

In the six years since it was established, the office has had a noticeable impact on the representation of African Americans, Hispanics, and people from socioeconomically disadvantaged backgrounds, as well as increasing diversity in gender and sexual orientation. Combined, students who identify with those groups grew from 24 percent of the MD program population in 2016 to nearly 38 percent in 2018. By the start of the 2018-19 academic year, the MD program welcomed its most diverse class in SMHS history. Sixty-three percent of the class of 2022 are women, the largest percentage of an incoming class in SMHS history.

SMHS also established numerous pipeline programs for high school and college students from communities



“Making school more affordable and enhancing value have been priorities for me as dean.”

— Jeffrey S. Akman, MD '81, RESD '85

underrepresented in health care, such as the Health Sciences Program’s Governor’s Health Sciences Academy at T.C. Williams High School, designed to encourage high school students from communities traditionally underrepresented in academic medicine to explore the many career options available in health care; the GW Summer Program Advancing Research on Cancer, to promote diversity among the pool of students pursuing biomedical research PhDs; and the Medical Laboratory Sciences Summer Immersion program, offering prospective students the chance to dip their toes in a field with high employment demand.

“When I think of Jeff Akman’s legacy, what comes to mind is that he is the heart and the brain of the GW School of Medicine and Health Sciences,” says Lawrence “Bopper” Deyton, MD '85, MSPH, senior associate dean for clinical public health and Murdock Head Professor of Medicine and Health Policy at SMHS. “When I look at the things that I am most proud of about this institution where I trained and I now work, I am most proud of the culture of acceptance, humility, and diversity.”

AN EYE ON EDUCATION

As the groundwork was being laid in early 2011 for the MD program’s next accreditation cycle, Akman felt it also was important to address the MD program’s curriculum, incorporating new technologies, interprofessional learning, and novel educational modalities.

The MD curriculum, says Akman, had remained “essentially unchanged since I was a medical student in 1977.” There had been some revisions over the years, he adds, but the basic format was the same — the first two years focused

on basic sciences and the second two on clinical medicine. “It never made sense to me to learn about the anatomy and histology of the heart in one semester, the physiology of the heart in the next semester, and the pathology of the heart the following year. It’s just not how doctors think.”

A Curriculum Oversight Group was established to create an innovative educational infrastructure. Its members came up with a shortened and integrated preclinical curriculum, allowing for more time for independent learning while emphasizing active-learning pedagogies supported by early clinical experiences. The revised curriculum also made use of GW’s unique location in the nation’s capital by incorporating clinical public health into the students’ learning.

By June 2016, the revised curriculum was fully up to speed, and the MD program earned a full eight-year accreditation from the Liaison Committee on Medical Education.

During the same time, the nationally ranked Physician Assistant (PA) Studies Program at GW earned a full seven-year accreditation from the Accreditation Review Commission on Education for the Physician Assistant, followed by a revision of its own curriculum. In 2017, the Health, Human Function, and Rehabilitation Sciences Department’s Physical Therapy program received a full 10-year reaffirmation of accreditation from the Commission on Accreditation in Physical Therapy Education. In addition, distance education programs were expanded and a new PhD program was started in Translational Health Sciences.

IMPROVING THE STUDENT EXPERIENCE

“Making school more affordable and enhancing value have been priorities for me as dean. GW was viewed as one of the most expensive medical schools, and I wanted to change that,” says Akman. The school has invested significant resources in an effort to reduce the student debt load and raise money for scholarships, and also initiated a program to buy student debt. By “bending the tuition curve” and slowing the growth of tuition in relation to other schools, his efforts paid off. Among U.S. medical schools from 2011 to the present, the SMHS

MD program dropped 18 spots on the total cost of attendance ranking (from 15 to 33). The total student scholarships and grants more than doubled in the same period, moving SMHS into the top 20 in terms of financial assistance; and remarkably, SMHS fell nearly 40 spots on the list of average indebtedness among graduating medical students.

In addition to addressing affordability, the school focused on bringing technology into the classroom and increasing student engagement opportunities. Today, incoming MD and PA students use the latest in educational technology, including iPads, and improvements to classrooms and educational, study, and lounge spaces have been a hallmark of Akman's tenure. Examples include the state-of-the-art, 17,000-square-foot Clinical Learning And Simulation Skills Center located on the fourth floor in Ross Hall, as well as new and expanded teaching labs for the doctor of physical therapy program.

RAISING THE PROFILE OF RESEARCH

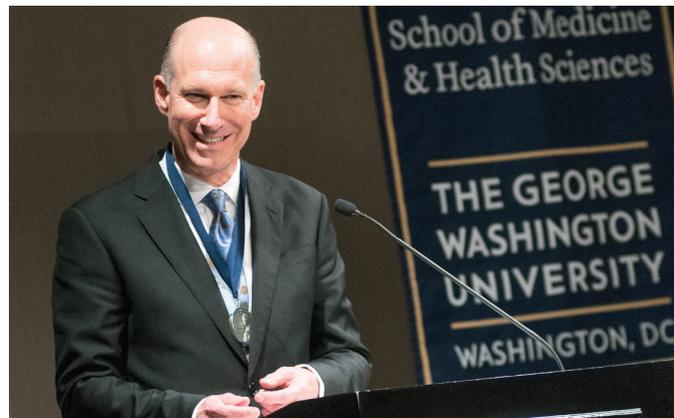
In focusing on research, Akman and his leadership team identified three principal areas of investment — neuroscience; HIV/AIDS and microbiology, infectious disease, and tropical medicine; and cancer.

"We realized we can't do everything," Akman says. "We had to be strategic and focused in the areas in which we chose to invest."

Akman hired Robert Miller, PhD, senior associate dean for research and Vivian Gill Distinguished Research Professor at SMHS, who now also serves as GW's vice president for research, to lead the investment in research. At the time, GW ranked near the bottom on a list of National Institutes of Health sponsored research awards. Using the 2015–18 strategic plan as a model, the school has hired more than 40 new research faculty in areas of strength including cancer, neuroscience, and infectious disease, signaling a profound commitment to growth. An emphasis on investment in supporting research in clinical departments and workforce development rounded out the efforts. Between 2015 and 2018, SMHS saw research space significantly increase including on the eighth floor of the Science and Engineering Hall, annual proposal submissions jump from 210 to 346, and new awards rise from 50 to 86.

OUTSIDE THE BOX

Expanding the school's relationships through community partnerships, pipeline programs, and global partnerships has been a central part of Akman's strategic vision. During his tenure, international affiliations have grown to more than 150 and new programs have expanded to include global research partnerships and a broad range of educational and training opportunities for learners at GW and around the world.



In honor of the decades of service to the George Washington University School of Medicine and Health Sciences (SMHS) by Vice President for Health Affairs and Dean Jeffrey S. Akman, MD '81, RESD '85, the school has initiated the Jeffrey S. Akman, MD '81, RESD '85, Innovation Fund. The endowed fund will provide seed grants and pilot funding to launch student, resident, and faculty projects. The endowed fund will support innovative projects designed to transform ideas into results through intergenerational collaboration. Projects addressing the full range of the academic mission of SMHS will be accepted. Grants will be awarded annually to faculty-student and/or faculty-resident teams through a competitive process. To support the fund, please visit go.gwu.edu/akmanfund.

Through a bequest from his father's cousin, Leonard Akman, MD '43, the dean created the Akman Professorship in Global Psychiatry and the Akman Scholarships to support international travel for GW medical students on the global health track in the MD Program. The dean and his family also established The Charles and Sonia Akman Fellowships in Global Psychiatry.

MOVING FORWARD

Akman has stated he will stay in his position until a new dean is found before starting a sabbatical. The university has secured a firm to conduct a national recruitment search, and the faculty senate has formed a search committee. It's not clear, however, how long it will take to find someone to fill Akman's shoes.

"I've been here 41 years," he says, "so it's hard to imagine not being here. But when you look at what we've accomplished and you look at where the university is in terms of stability, this was the right time. ... It's remarkable how the school has evolved. I think we are primed for another great decade ahead and, as a faculty member and an alum, I look forward to continuing to contribute to my alma mater's progress." ■

AMPLIFYING CAREGIVER VOICES



Researchers at GW Investigate Ways to Improve
Caregiver, Clinician Communication

The voices of people caring for sick loved ones are important in any health care setting, but especially when these caregivers are — day in and day out — helping people in a disordered state of consciousness. They notice the subtle changes, the small shifts that could be vitally important to the patient’s treatment. However, sometimes communication between caregivers and clinicians breaks down, which is why researchers at the George Washington University (GW) are working to ensure everyone’s voice is heard.

“When it comes to working with patients in disordered states of consciousness, we have a lot of ambiguity surrounding diagnosis and prognosis, and that creates challenges for communication between the clinicians and caregivers,” says Jennifer Weaver, PhD candidate in the GW School of Medicine and Health Sciences (SMHS) Translational Health Sciences Program.

Alleviating those challenges is the goal of two ongoing studies at SMHS. One study, funded by the American Institute for Research (AIR) with support from the Robert Wood Johnson Foundation, of which GW is a site, is investigating how to better measure progress for people in disordered states of consciousness through working with caregivers. The other, Weaver’s dissertation project, in a very similar vein, seeks to address the gaps in caregiver-clinician communication.

People suffering from disordered states of consciousness, Weaver notes, have experienced a brain injury that has affected consciousness, which requires both arousal and awareness. Patients may be in a coma, or they may be awake and responding to external stimuli but unable to functionally communicate. “Functionally communicating doesn’t have to be verbal,” she says. “But if there’s some way to communicate that’s consistent, like using one’s hands or eyes when they have that motoric ability, that’s one of the things we look for to say that the patient is emerging into consciousness.”

For the AIR research project, titled “No One Listens to Me,” Weaver meets weekly with two co-investigators who also are caregivers to talk about their experiences. The primary investigators of the site are Trudy Mallinson, PhD, interim associate dean for health sciences research at SMHS, and Christina Papadimitriou, PhD, associate professor of interdisciplinary health sciences at Oakland University in Michigan.

Before coming to GW, Weaver worked as an occupational therapist at inpatient rehab facilities, where she would see many patients suffering from traumatic brain injuries. She realized there existed challenges in measuring progress for

patients whose injuries were considered mild but were still impacting their daily activities, as well as those who were unconscious or unable to communicate.

“I just think there’s such a need for research to facilitate better care for persons with disorders of consciousness. There’s a lot to learn; it’s an important area to explore,” she says. “[Caregivers] often do not feel heard by the medical field. And with disorders of consciousness, someone can remain in that state for more than a decade, so once the patient is discharged from the hospital, if they’re making any type of change, we may not know it right away. We need to listen to the caregiver if a change is occurring.”

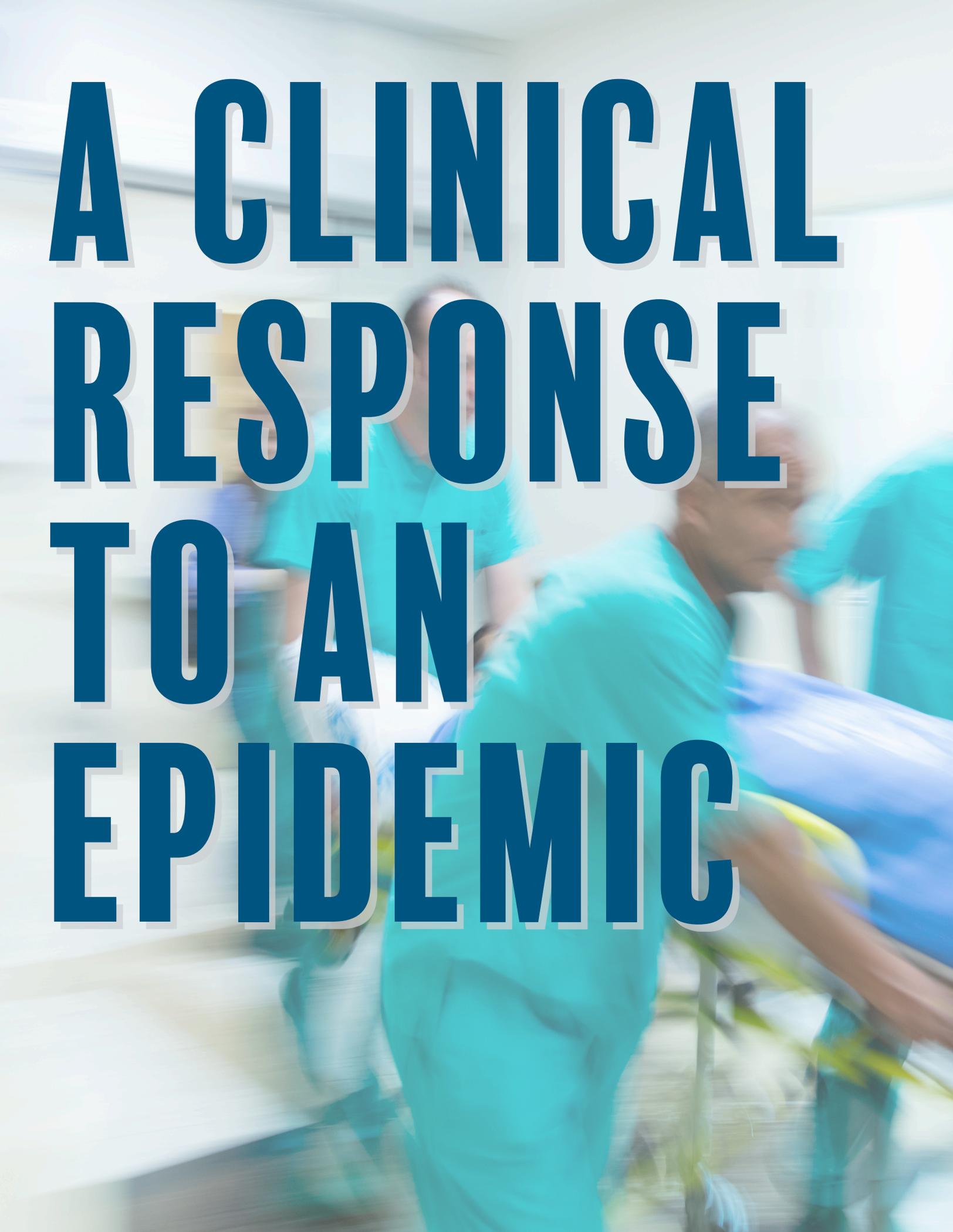
People suffering from disordered states of consciousness, Weaver notes, have experienced a brain injury that has affected consciousness, which requires both arousal and awareness. Patients may be in a coma, or they may be awake and responding to external stimuli but unable to functionally communicate.

The study is allowing the researchers to hear the caregivers’ stories, learn about their experiences, and be informed about changes they’ve observed in their loved ones. “The caregivers ultimately become the experts. They’re living it day to day,” Weaver remarks.

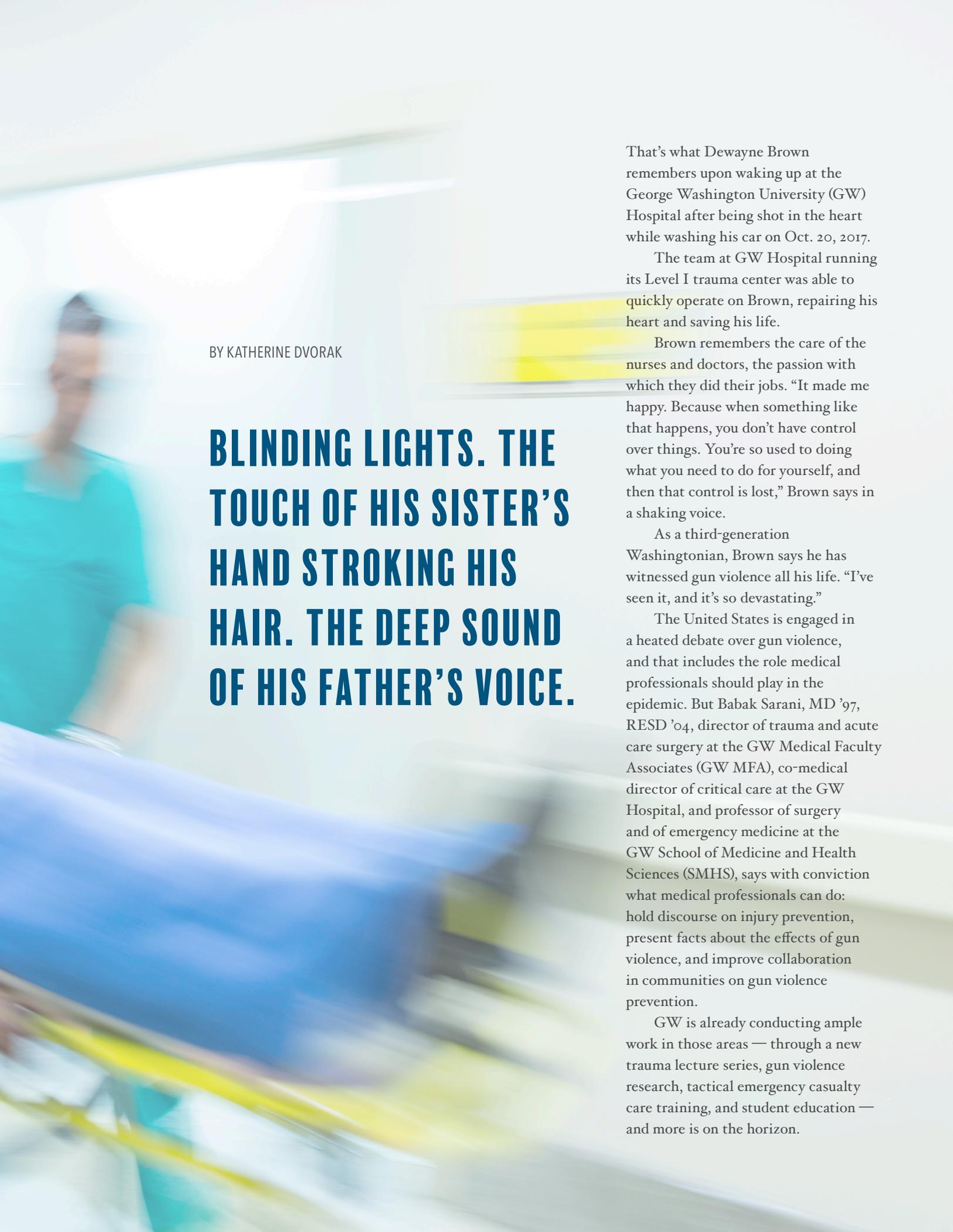
That study also ties in with Weaver’s dissertation on how to help caregivers and clinicians better communicate about the recovery process and how to engage both in the treatment plan.

“I want to see if there are ways to create shared language between the two parties making decisions about the loved one’s condition, and maintain open lines of communication between the two,” she says.

One outcome from the two projects could be a way to better educate clinicians on how to talk with caregivers, Weaver explains. “We have assessment tools, but often I am asking, ‘How do we present that information so it’s not just the clinicians using that information to make a decision, but the caregivers, too?’ So if the patient’s making a positive change and progressing ... how do you facilitate the conversation about the recovery that’s occurred, such as where to go next with the treatment and the options available? That’s the goal right now.” ■

A blurred photograph of medical staff in teal scrubs pushing a gurney with a patient in a hospital hallway. The text is overlaid on the image.

A CLINICAL RESPONSE TO AN EPIDEMIC



BY KATHERINE DVORAK

BLINDING LIGHTS. THE TOUCH OF HIS SISTER'S HAND STROKING HIS HAIR. THE DEEP SOUND OF HIS FATHER'S VOICE.

That's what Dewayne Brown remembers upon waking up at the George Washington University (GW) Hospital after being shot in the heart while washing his car on Oct. 20, 2017.

The team at GW Hospital running its Level I trauma center was able to quickly operate on Brown, repairing his heart and saving his life.

Brown remembers the care of the nurses and doctors, the passion with which they did their jobs. "It made me happy. Because when something like that happens, you don't have control over things. You're so used to doing what you need to do for yourself, and then that control is lost," Brown says in a shaking voice.

As a third-generation Washingtonian, Brown says he has witnessed gun violence all his life. "I've seen it, and it's so devastating."

The United States is engaged in a heated debate over gun violence, and that includes the role medical professionals should play in the epidemic. But Babak Sarani, MD '97, RESD '04, director of trauma and acute care surgery at the GW Medical Faculty Associates (GW MFA), co-medical director of critical care at the GW Hospital, and professor of surgery and of emergency medicine at the GW School of Medicine and Health Sciences (SMHS), says with conviction what medical professionals can do: hold discourse on injury prevention, present facts about the effects of gun violence, and improve collaboration in communities on gun violence prevention.

GW is already conducting ample work in those areas — through a new trauma lecture series, gun violence research, tactical emergency casualty care training, and student education — and more is on the horizon.



David Bigelow Bowes and Rosemary Bowes, PhD

The realities of gun violence came crashing in for Rosemary Bowes, PhD, assistant clinical professor of psychiatry and behavioral sciences at SMHS, when she and her husband, David Bigelow Bowes, a retired journalist, lost their grandnephew, Vaughn Bigelow Jr., at the hands of a gunman.

The 13-year-old was with his mother and two brothers in the parking lot of their dentist's office when the gunman opened fire following a road rage incident. Vaughn Jr. was killed, while his mother and one of his brothers suffered critical injuries.

"What happened with Vaughn Jr., his mother, and his siblings was, you know ...," says Bowes, her voice trailing off. "It's your family. How did that happen? It's heartbreaking, and it makes me so angry. But I said 'We've got to try to do something about this.'"

Bowes had long wanted to give back to GW through a lecture series, she says. The question was, what should the series address? Vaughn Jr.'s death led to the answer: the Rosemary and David Bowes Lecture Series on Trauma and Critical Care.

It was decided the series, endowed in perpetuity by Bowes, would provide support for an annual lecture series on gun-related violence. Sarani says his vision for the series is all-encompassing, covering topics including the history of medicine in gun violence treatment and research and education on gun violence interventions.

Although the series will always be held at GW, Sarani says he wants it to be more than a GW event. "I envision this including everyone. All the D.C. area trauma centers, maybe people from the city government, the police department, fire department."

Bowes adds that she wants the series to be like a creek that leads into a river, action that ripples outward. Her vision includes videos, a website, and other educational materials on gun violence. "We can't prevent all gun violence, but we can have a voice in the care of those impacted by it," she says. "We have to do even more to take care of all affected people. How do we do that?"

She asserts that there needs to be greater education and innovation when it comes to the "chain of custody of a patient" and the patient's journey from where the trauma occurs, to the ER, to the recovery room, to physical therapy, and beyond.

TRAUMA CARE 24/7

Twenty-four hours a day, seven days a week the George Washington University (GW) Hospital's Center for Trauma and Critical Care is poised to meet the needs of any trauma patient who comes through its doors.

Just six blocks from the White House, three from the State Department, and down the street from the World Bank, GW Hospital has to be prepared at all times to treat a diverse group of patients, from area residents to visiting dignitaries and heads of state.

The center is certified as a Level I Trauma Center by the Verification Review Committee of the American College of Surgeons, the highest achievement possible in adult trauma care.

The levels assigned to trauma centers are defined by the type of capabilities facilities must have to care for patients. Level I means a facility has the capacity in terms of both equipment and personnel to treat any injured patient who presents to the hospital regardless of the severity of the patient's injury.

The GW trauma center treats more than 2,000 patients each year and is staffed at all times by a team of trauma surgeons, emergency medicine physicians, trauma-trained nurses, anesthesiologists, intensivists, operating room personnel, therapists, and other medical professionals.

"The trauma center is ready to fire up an operating room with less than 15 minute's notice," says Babak Sarani, MD '97, RESD '04, director of trauma and acute care surgery at the GW Medical Faculty Associates, co-medical director of critical care at the GW Hospital, and professor of surgery and of emergency medicine at the GW School of Medicine and Health Sciences. "That means the team spends the night here. The nurses spend the night here, the technicians spend the night here, the anesthesiologists spend the night here, everyone who needs to be here is here."





Tactical Emergency Casualty Care training brings battlefield emergency care experiences to the civilian setting.

“Vaughn Jr.’s mother and brother would not have survived if the people in the dentist’s office had not come out and started CPR,” she says. “They wouldn’t have survived the wait for the EMTs. And then the EMTs came and did their job and got them to the OR so they could get into surgery and then into recovery. This kind of coordination is so important, and we need to be working to improve it, and to create a new normal from chaos.”

The first lecture in the series, held on May 8, brought many out to hear from C. William Schwab, MD, founding chief of Penn Medicine’s Trauma Center. Schwab spoke about the formation of the trauma center and its growth into a robust enterprise dedicated to caring for the injured as well as to its research into mitigating the risk of injury from all trauma, but particularly gunshot wounds. During the lecture he also told the personal story of his early days as a trauma surgeon and the impact his profession has had on him.

TAKING A TACTICAL APPROACH

The lecture series is the newest way GW is addressing gun violence, but other stakeholders also are working hard in this area, including Geoff Shapiro, director of emergency medical services and tactical/operational medicine at SMHS.

While supporting the military special operations community, Shapiro and colleagues saw the positive impact of Tactical Combat Casualty Care (TCCC), a threat-based medical training program that was created with the help

of Kevin O’Connor, DO, associate professor of medicine at SMHS and director of executive medicine at the GW MFA. TCCC helps train military members to save lives on the battlefield from injuries that previously would have been fatal. “These people survived and had excellent outcomes,” Shapiro says. “We realized we needed to start teaching this to civilians.”

TCCC, which uses military language and is geared toward military populations, needed to be translated for the civilian space. That led Shapiro, E. Reed Smith, MD, associate clinical professor of emergency medicine at SMHS, and others to create a new national program called Tactical Emergency Casualty Care (TECC). The first meeting about the program occurred in 2013, and the effort has ballooned from there, even gaining support from the Federal Emergency Management Agency through a \$1.3 million grant.

TECC, says Shapiro, is now accepted as the standard for high-threat medicine in the civilian world, including for mass shooting events. The program is meant for police officers, firefighters/EMS personnel, and other first responders.

Some of what TECC training provides is a different kind of first aid, Shapiro says. “EMTs learn to control bleeding, but historically we haven’t done as well as we could to teach people to be aggressive. We don’t teach people to move victims out of harm’s way when possible,” he explains.

The program also teaches first responders how to provide psychological support. “We address how they can talk to

their patients, to comfort them. Imagine being injured and thinking you might die and no one's talking to you. So even with EMS providers, we recommend they look the person in the eye and say 'I know you're here, I see you, I'll come back for you,'” Shapiro says.

TECC also includes a program for bystanders called “Be the Help.” It features training as simple as hypothermia prevention, with tips that include moving someone from a tile floor to carpet, which will keep the person warmer.

As public awareness of mass shootings grows, Shapiro says there's an increase in interest in programs like TECC. “What used to be a harder sell, especially because we're asking people in law enforcement and fire/EMS to change behaviors, is now becoming the norm,” he says. “And bystanders, they're more empowered now because of awareness. We need to start moving that ball forward. It's still new, but I think we'll see it continue to grow.”

In addition to training and education, medical professionals play a role in helping patients who may be at risk for violence, says O'Connor.

“When you hear about gun violence, the important thing to remember is that it's two words: ‘gun’ and ‘violence,’” he says. “A small percentage of medical professionals will pursue the important work of balancing Second Amendment freedoms with imperatives for public safety. But every one of us is in a position to address the other word, ‘violence.’ We all can remember that social determinants of health overlap with social determinants of violence. We are in positions to immediately impact these factors; we can identify and address depression, signs of abuse, or domestic stressors. We need to make those critical interventions — and we can make them today.”

He adds that every day clinicians can help people who may be at risk for domestic violence, criminal violence, or self-harm. “It's there; you can see it,” he says. “We need to help our learners develop the skill set and moral courage to address it.”

ADVOCATING FOR A SAFER FUTURE

Future doctors, physician assistants, and physical therapists in training also are realizing the importance of enhanced education when it comes to helping patients affected by gun violence.

SMHS students formed a GW chapter of SAFE, or Scrubs Addressing the Firearm Epidemic, a coalition of doctors, nurses, medical students, and health care providers committed to protecting patients' health.

Kime McClintock and Charles Hartley, Class of 2020 MD students and members of the SMHS Social Justice Interest Group, wanted to focus on timely and important causes. SAFE is addressing gun violence in a nonpartisan way, through research, education, and evidence-based policy, says Hartley.

“We want to take something that can be divisive, but touches all of us, and put aside political disagreements and look at the ways that have been proven for how this issue can be handled,” Hartley says.

The GW SAFE chapter has held informational sessions on gun violence and hosted guest lecturer Kyle Fischer, MD, clinical assistant professor at the University of Maryland School of Medicine, who spoke about what interventions medical professionals can initiate to help victims of gun violence.

Students also can participate in the Disaster Medicine Scholarly Concentration, the only such program in the United States, says James Phillips, MD, who serves as co-director of the concentration with Joelle Simpson, MD, emergency medicine specialist at Children's National Health System. Phillips is the chief of the Disaster and Operational Medicine Section within the Department of Emergency Medicine and is also the director of the disaster medicine fellowship.

Phillips says disaster medicine is a subspecialty of experts trained to care for injuries and illnesses associated with both natural and human disasters, and who provide education, consultation, and leadership at all levels of government and private industry. They are trained to respond to domestic and international mass-casualty incidents, perform research, and help shape policy.

The “disaster cycle,” a model for the disaster medicine and emergency management approach, is a continuum of preparedness, mitigation, incident, response, and recovery, says Phillips. “We prefer to focus the budget and training more ‘left of boom,’ which is preparedness and mitigation, instead of ‘right of boom,’ which is response and recovery. History has repeatedly shown us that preparation and mitigating against the effects of a disaster before it happens is significantly cheaper than responding and recovering from one.”

He adds that there's been a heavier focus on mass shooting incidents in recent years because lethality is high and targets tend to be “soft,” meaning they are low-security places such as night clubs and schools. “It's something we can train people to survive,” adds Phillips, “there's an emphasis on that.”

It has now been more than a year and a half since Dewayne Brown's life was turned upside down by gun violence. The memory and trauma of that October day are still raw; the scar on his chest still gives him pain and his recovery has been challenging, but he is facing and overcoming obstacles each day. He's back to walking in his favorite spot, Haines Point, and has returned to working out at the YMCA whenever he can.

“I'm just trying to live a real good life,” he says, softly, “a real peaceful life.” ■

‘DON’T BE A BYSTANDER’

Conventional wisdom for responding to someone who is hurt has always been “don’t touch them, don’t move them.” But that long-held advice no longer applies when it comes to massive bleeding.

“For major bleeding, the most important thing is to keep the blood inside the body. The leading cause of death on the battlefield is bleeding. So address that immediately,” says Kevin O’Connor, DO, director of executive medicine at the George Washington University (GW) Medical Faculty Associates and associate professor of medicine at the GW School of Medicine and Health Sciences.

O’Connor knows what he’s talking about. He spent 22 years as a physician in the United States Army, many of those years deployed with Special Operations Forces, before serving for more than a decade in the White House. In 2009, he was appointed as physician to the vice president, providing care for then Vice President Joe Biden and his family.

When it comes to managing bleeding, O’Connor says, the four Ds are key: **detecting** the source of the bleeding; **direct pressure** on the source of the bleed; **devices**, such as tourniquets, hemostatic dressings, and pressure bandages, to stem bleeding; and **don’t dilute**, or avoiding use of IV fluids that may raise blood pressure and dilute critical clotting factors, thus interfering with the very things the body is doing to stem the bleeding.

He adds that “the name of the game is to perfuse the squash” – meaning responders should make sure the victim is getting enough oxygen to the brain.

“Pretty much everything from the nose down is ultimately there to deliver oxygen and glucose to the brain. The brain is very demanding and if it doesn’t get oxygen and glucose every several seconds, it will shut down and die,” he says. “Anything you do that takes away from that delivery hurts. So how much is too much pressure? You need enough blood pressure to keep the brain happy – but not so much that it pushes more blood out of those holes until they are definitively plugged. The most fundamental action to diagnose shock, or inadequate perfusion, is ‘I think, therefore I am.’ So if you’re talking to me, you’re good.”

He also says to feel for a peripheral pulse – one felt in the extremities. The presence of a peripheral pulse and mentation are the best field indicators of adequate perfusion.

An easy way to triage in a crowd, as long as the scene is safe, is to shout “anyone who is injured, come to the sound of my voice,” O’Connor adds. Then have anyone



capable of assisting go to check on the people who did not step forward, because the patients on the ground are a lot sicker, and need the most help, he explains.

The reason, he adds, that gunshot wounds cause such destructive injuries is that the energy found in the bullet speed is transferred to the tissue.

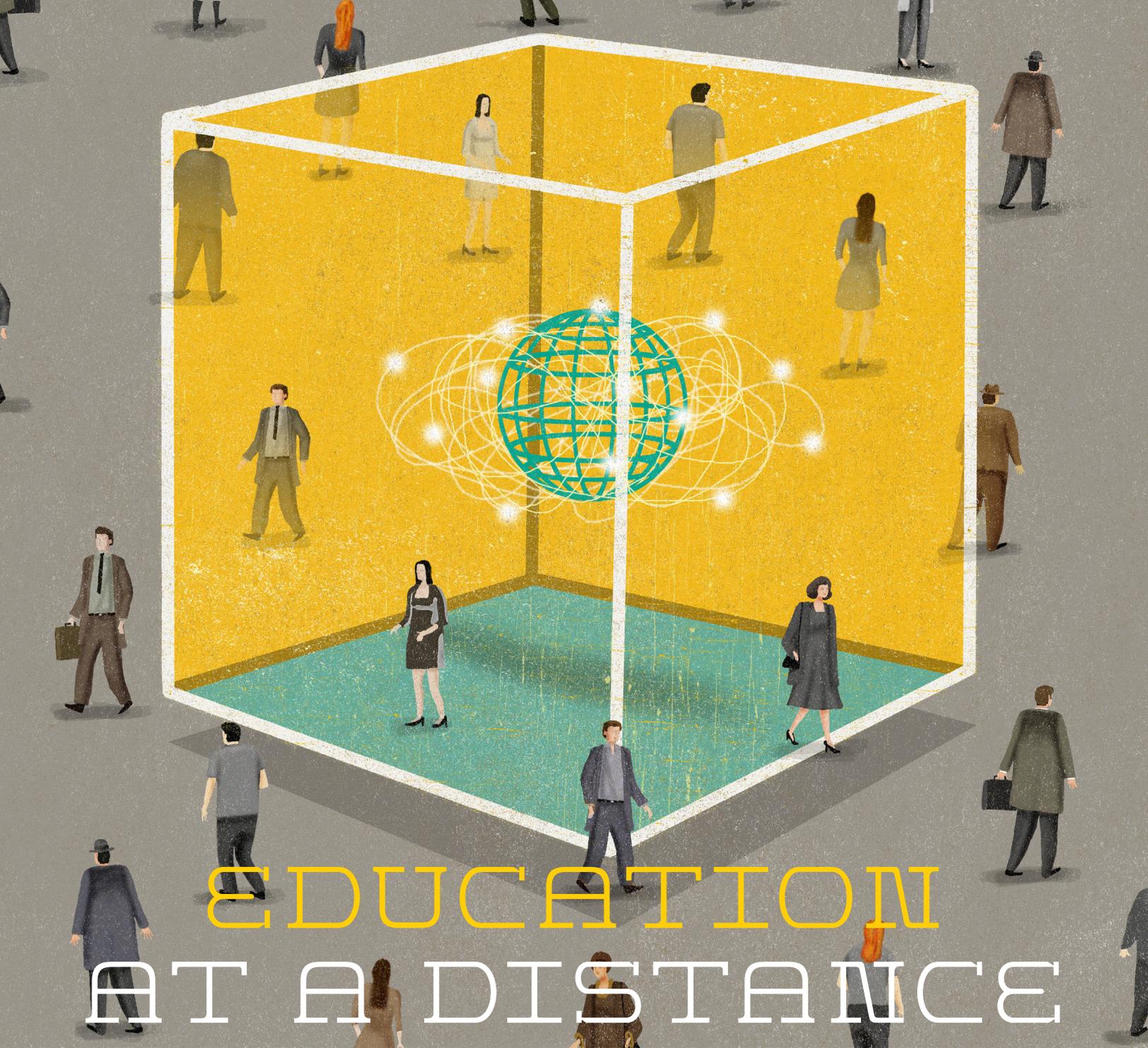
“Kinetic energy is half of the mass multiplied by the velocity squared. If you have a heavier object, you’re going to deliver more kinetic energy. But increasing the velocity of that object is going to increase the kinetic energy exponentially as compared to simply increasing the mass, which is why a bullet does a lot more damage than a knife,” he says.

When a bullet leaves the muzzle of a firearm, he continues, it will lose some of that energy when traveling through the air, but once impact occurs, the bullet will flatten. That causes a cavity that will crush and tear as the bullet moves through. This is known as the permanent cavity.

But more important, he says, is what comes next: the shockwave behind the bullet. That forms a temporary cavity, and that nearly instantaneous violent stretch is where the massive damage happens. “The shockwave can expand up to 30 times bigger than the permanent cavity. So find the entrance wound, try to determine the direction of the tract, imagine that hole 30 times bigger, and anything in that range is damaged until you can prove it isn’t,” he says.

For bystanders, the most important thing to do is stop the bleeding however possible.

“You’re not going to make them worse,” he says. “You can only help keep the blood inside the body. Refuse to be a bystander. Be a by-doer! By-doers are our nation’s ‘immediate responders.’ ” ■



EDUCATION AT A DISTANCE

BY STEVE GOLDSTEIN

U.S. Army Capt. Olga Terekhina, MSHS '16, BSHS '12, is an outstanding alumna of George Washington University (GW). Although you'd think it would be easy, finding students on campus who've taken courses alongside her is a nearly impossible task.

Perhaps that's because despite earning two degrees, and working toward her third, in laboratory technology from GW's School of Medicine and Health Sciences (SMHS), Terekhina has never set foot on campus.

There's an old saying that the military runs on its stomach. Maybe so, but GW's armed service members education, in large part, runs on distance learning. GW is a major player in that space; SMHS is a classroom to the world, thanks to having one of the largest online education programs in the country. Since the mid-1970s, the school has had a relationship with the U.S. Navy, offering degree programs in medical laboratory technician studies and nuclear medicine, among others. The Army joined its ranks in the mid-1990s with a degree program in medical laboratory technology.

Now there are courses in a variety of health sciences fields available to active-duty service members; thousands have taken these programs and have obtained Associate in Science (AS) degrees, Bachelor of Science in Health Science (BSHS) degrees, and Master of Science in Health Science degrees. Thousands of active-duty members of the military have gone through the Medical Laboratory Sciences (MLS) program. They work as lab techs all over the world, providing vital information about the status and function of the body — data that is used in the diagnosis, treatment, and prevention of disease.

Overseeing the program is Marcia Firmani, PhD, MSPH, who serves as the chair of the Department of Biomedical Laboratory Sciences (BLS). Firmani teaches several courses within the MLS program, including clinical microbiology and molecular diagnostics. “I think the reason we’ve been successful, and why students like to come to GW, is that we have fully online courses,” says Firmani. “So whether the student is based in Guam, Japan, or Germany, they can partake in and complete our programs.”

Firmani estimates that at least 60 percent of the students enrolled in the BLS programs are active-duty military or veterans. To encourage them to obtain college degrees and provide accessibility to those studies, SMHS offers tuition assistance to active-duty military students in the online BSHS degree programs. Many of the military graduates from the BSHS programs come back to GW to complete online master’s degrees. “Once they graduate, they are deployed all over the world as medical lab technicians,” says Firmani. Thanks to a shortage of lab techs, “over 90 percent of our students have a job the day they graduate.”

Courses, says Firmani, start each week on Mondays. “The students are working so they have to be able to do their course work in their own time,” she explains. “It’s very similar to being in a classroom; there are lectures, videos, and whiteboards.” There also are live sessions via computer that include a hand icon that students may click to ask a question. For the teacher, there are some disadvantages, she admits. “You don’t see their faces, so you don’t know who’s puzzled or bored — or sleeping.” On the other hand, students pepper their course instructors with emails all the time. “It’s like having office hours 24/7,” she laughs.

The health sciences program is host to one of the largest online distance learning programs at GW; the Milken Institute School of Public Health at GW and the GW School of Nursing are the other significant players. The military relationship has been “very positive” for health sciences, says Firmani, “because [students] are proud to obtain GW degrees — and they go on to take non-contract courses.”

Terekhina, who came to the United States from Ukraine in the late 1990s, says the online program meshed well with

U.S. News & World Report recognized the George Washington University (GW) as having top online bachelor’s programs, ranking in the top 20 in the 2019 Best Online Programs rankings.

The programs were selected based on factors such as graduation rates, indebtedness of new graduates, and academic and career support services offered to students. The online bachelor’s programs housed within the GW School of Medicine and Health Sciences were scored high for having faculty with academic credentials that mirror campus-based programs and having well-trained instructors to teach distance learners. The programs also received high marks for engagement, meaning there is high participation in online courses compared to other online programs.

GW has been offering online bachelor’s degree programs since 1996–97. Many online students at GW are active-duty members of the U.S. military. U.S. News & World Report also ranked GW as having one of the best online bachelor’s programs for veterans.

her career goals. “It was very suitable for a working military professional with a schedule that sometimes could be unpredictable and who may have been located halfway across the world,” she says.

She received her bachelor’s degree in clinical laboratory science in 2012 (summa cum laude) and, four years later, earned her master’s degree in medical laboratory sciences (with honors), and won the prestigious Ozgur Ekmekci Interprofessional Leadership Award. She’s currently assigned as the chief of laboratory services and the quality assurance coordinator for the Medical Department Activity–Bavaria in Vilseck, Germany. Her goal is to complete her doctorate in clinical laboratory science.

Despite her lack of physical presence, Terekhina left an impression at GW — and vice versa. “The program expanded my view of the health problems that plague the world, introduced me to new technologies capable of diagnosing them,” she says. “[It] acquainted me with policies necessary for these technologies to be used ethically and responsibly.” ■

A PATH TO SUCCESS

BY ASHLEY RIZZARDO

You're not truly successful unless you're giving back to your community. That's the tenet Marcee Wilder's mother raised her with and what she reflected on as she considered her career path.

It led Wilder, MD, MPH, to an emergency medicine residency at Icahn School of Medicine at Mt. Sinai in New York City and a research fellowship at the George Washington University (GW) School of Medicine and Health Sciences (SMHS).

Although her role as a physician allowed her to give back to the community, Wilder realized she could be doing more to improve the lives of people living in at-risk communities.

"I wanted to pursue an academic career," she says. "I want my research to be important, I want to change policy, and I want to impact many lives."

Wilder's mentor, research fellowship director Melissa McCarthy, ScD, clinical research director for the Department of Emergency Medicine at SMHS, had a parent grant to explore social determinants of health and how they affect health care costs and utilization. She offered to help Wilder write a diversity supplement, which resulted in a successful two-year award from the National Institutes of Health (NIH).

The NIH's diversity supplements are designed to provide support for research experiences and mentorship for individuals from groups underrepresented in the biomedical, behavioral and clinical, and social sciences through the academic continuum from high school to the faculty level.

"The diversity grant ensures that [Wilder] has the time to do research here. She's doing research 75 percent of the time and working clinically 25 percent," explains McCarthy, who also serves as a professor of health policy at the Milken Institute School of Public Health at GW and of emergency medicine at SMHS. "Normally, it would probably be around 90 to 95 percent clinical, and 5 percent on the side trying to do some research. This really gives her the opportunity to start building her academic career early."

Wilder says that although the supplement covers only two years, it provides enough time to create a body of research capable of propelling an investigator forward to a place where he or she can apply for additional funding or a career development award.

"Coming out of residency, you sign a contract to work clinically," she says. "Normally, you wouldn't have time to amass the kind of numbers and data to successfully compete for a career development award when working 100 percent clinically. You have to focus on a specific research area for a while and develop some expertise in that area before applying for a career development award or other NIH funding. To come out of residency and step into the fellowship and have this supplement as soon as I started working has been very exciting."

Wilder is researching the impact of social determinants of health on medication adherence as part of McCarthy's study, which enrolled 8,700 patients at GW Hospital, the OB-GYN clinic at the GW Medical Faculty Associates, and United Medical Center, where she works in the emergency department.

The study involves merging health care claims data with interview data collected at the time of enrollment, as well as six and 12 months later. All of the participants enrolled in the study are insured by the D.C. Medicaid program. The investigators are using the data to determine how changes in patients' social and living circumstances, such as employment and housing status, affect their health and health care use.

Wilder says the researchers gain a sense of the participants' lives from the interview data. The team builds on that patient information by looking at participants' health care use through claims data: How many times have they been to the emergency department? If they have congestive heart failure, are they filling their prescriptions and routinely taking their medications? If the subjects are not adhering to their medication regimen, explains Wilder, the team looks to glean



From left, Melissa McCarthy, ScD, and Marcee Wilder, MD, MPH, are exploring social determinants of health and how they affect health care costs and utilization.

additional information from the interviews. “Do we notice they’re also reporting housing instability, loss of employment, or trouble paying their bills?”

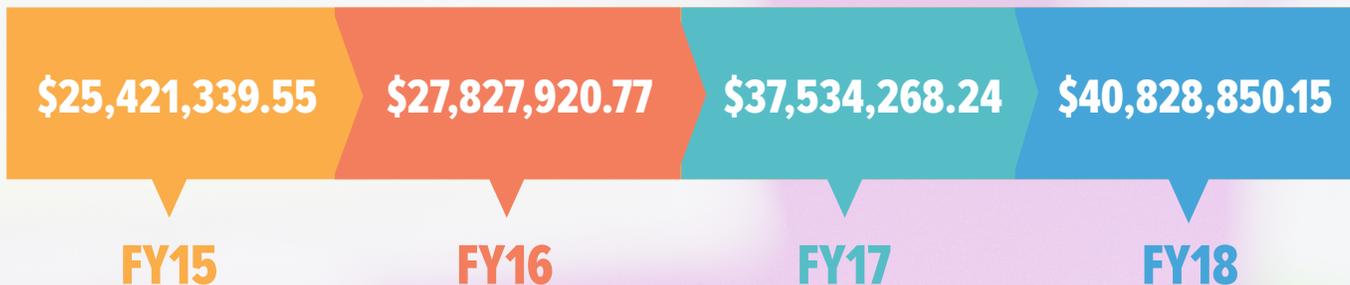
“These factors cause preventable visits to the emergency department,” she adds. “If you don’t take your COPD or heart failure medication, you’re going to have a heart failure exacerbation and have to come to the emergency room.”

There are a number of diversity supplements currently at SMHS, according to Alison Hall, PhD, associate dean for research workforce development at SMHS. Many are for undergraduate and graduate students; this is the first for a faculty member. Supplements, she says, are powerful ways to add researchers to ongoing projects and strengthen the workforce of tomorrow.

“SMHS is working hard to enhance the diversity of its researchers,” Hall says. “A supplement is a rapid and impactful way to bring promising researchers into our training programs and faculty.”

The work that Wilder and McCarthy are doing allows Wilder to explore her own research goals. “My bigger goals are in researching and addressing health care disparities, which are commonly experienced by patients living with adverse social determinants of health,” she says. “The research I am conducting for the diversity supplement fits in nicely with what I envision my research in the future to be.” ■

SMHS research **Total Expenditures**



Funding by Source (millions)



	Federal	Foundation	Other
FY15	\$20.7	\$1.9	\$2.8
FY16	\$22.7	\$1.3	\$3.8
FY17	\$31.3	\$2	\$4.2
FY18	\$35.7	\$2.1	\$3

TOP 5 Expenditures by Research Focus

1. Immunology/Infectious Disease
2. Population Health
3. Cancer
4. Neurology
5. Other Clinical Research



NEW PROPOSALS

FY15	209
FY16	280
FY17	339
FY18	346



PRINCIPAL INVESTIGATORS

FY15	87
FY16	87
FY17	102
FY18	113



BOLSTERING CORE LABS

SMHS Updates, Increases Facilities to Expand Faculty Accessibility

BY KATHERINE DVORAK

The George Washington University (GW) School of Medicine and Health Sciences (SMHS), as it aims for pre-eminence in every facet of the institution, is expanding and growing its core lab facilities to ensure all faculty have access to the necessary tools and technologies to support their research.

“We’re always striving to provide the most efficient way for our faculty to access new tools,” says Robert H. Miller, PhD, vice president for research at GW and senior associate dean for research at SMHS. “Instead of researchers having to buy their own equipment, cores provide common equipment that is several grades up, and we can keep it up-to-date and modern.”

One of the first recent steps in updating the core labs was the addition of a satellite Flow Cytometry Core Facility in Ross Hall. The new site complements the one located in the GW Cancer Center on the eighth floor of the Science and Engineering Hall, which contains equipment for sophisticated cell sorting and cell analysis experiments, as well as services in data analysis, instrument training, and cytometry education.

The satellite site will offer greater access to and availability of those same tools to researchers located in Ross Hall — and save them the trip across the street to use the resources, says Miller.

The school also has formalized its Biorepository, a comprehensive resource of biospecimens and clinical data, based in the Department of Microbiology, Immunology, and Tropical Medicine, and designed to help SMHS investigators facilitate their research on HIV/AIDS, cancer, and other areas. The Biorepository includes specimens from NIH-funded projects. By formalizing this resource, Miller explains, SMHS ensures that the monetary rates for storing specimens in the repository can be charged to the researchers’ grants at the federal government rate.

“Basically, that will make it much easier to collect and store samples, and it will further support translational and clinical research,” Miller notes.

Another new addition under discussion is the creation of a Cellular and Molecular Core Facility. This will expand capabilities for faculty working in the GW Institute for

CURRENT CORE LABS

Research Pathology Core Lab: Provides research services for both human and animal tissues, including tissue processing, embedding, sectioning, routine haematoxylin and eosin stains, more specialized stains, and optimization of immunohistochemistry.

Nanofabrication and Imaging Center: Features microscopy instrumentation and a Class 100 cleanroom. It provides university-wide core infrastructure for research in engineering, chemistry, physics, biology, public health, medicine, and biomedical sciences.

Flow Cytometry Core Facility (See story)

Biorepository (See story)

Biostatistics Center: Serves as the coordinating center for large-scale multi-center clinical trials and epidemiologic studies. The center participates in major medical research programs of national and international scope.

McCormick Genomic and Proteomic Center: A genomic research center at the interface of computational genomics and wet-laboratory science.

GW Biomarker Discovery and Analysis Core Facility: Provides resources for the detailed analysis of gene and protein expression in the nervous system and other services.

Neuroscience and other molecular biologists in SMHS. Miller says the new facility would include equipment allowing for analysis of cellular metabolism, and would enhance immunohistochemistry, which is the process of detecting antigens in cells of a tissue section; RNA scope; and in situ hybridization, a type of hybridization that uses a complementary DNA, RNA, or modified nucleic acids strand to localize a specific DNA or RNA sequence in tissue.

“The changes and additions we’ve made and will continue to make to these vital facilities are all about efficiency and allowing faculty to have access to modern technologies,” he says. ■



SPOTLIGHT ON QUALITY

Lynt B. Johnson, MD, MBA, Brings
Years of Experience to GW Liver and
Pancreas Institute for Quality

BY KATHERINE DVORAK



the real reason for his grandmother's passing: gallbladder cancer. "I'm sure subliminally my career path being in liver and pancreas disease was rooted from that beginning," he says.

As someone who is always up for a challenge, Johnson says he found the unique and complicated nature of the liver and pancreas appealing.

One of the few organs that can regenerate itself, the liver is the metabolic center of the body; it's the factory, Johnson explains. "A lot of your proteins and clotting factors and metabolism of toxins begin in the liver, so it controls a lot of different processes. ... And for years it was one of the more challenging organs to operate on, as well as to do a transplant of," he says.

That also meant the large incisions needed for a liver transplant were the opposite of where the medical field was heading as Johnson was starting his career. Minimally invasive procedures were the innovation of the day, but not for liver transplants.

The field did catch up eventually, in large part, Johnson says, because of "the altruistic nature of women." Live liver donor transplants were increasing, and women were the ones stepping up as donors.

"We started to realize that they're already doing an incredibly lifesaving task; what can we do to improve the process? And the idea was that we could do it through smaller incisions and it would be beneficial to everyone," Johnson explains. "That's how I became interested in minimally invasive surgery, because of the live donors."

The liver is challenging, but the pancreas has complications of its own. Currently, surgery is the only option for addressing pancreatic cancer, which is one of the most deadly forms of the disease. The challenges are twofold. First, chemotherapy is often ineffective, because it cannot penetrate the scar tissue the cancer creates, and, second, there are few early diagnostic markers for the disease.

However, innovation in the last four to five years has led to an increase in the number of patients eligible for surgery, Johnson notes. When the disease spreads, it can invade the blood vessels around the pancreas, but now surgeons are able to go in and not only cut out the cancer, but also cut it out of the blood vessels and put them back together.

And, like so many other areas of surgery, pancreatic disease is getting the minimally invasive treatment, done through laparoscopic-assisted approaches, leading to a much smaller incision, less pain, and a faster recovery.

Challenges aside, when asked what he enjoys most about the path to which he's dedicated his life, Johnson answers instantly: the anniversary cards he receives from patients.

"It's the patients and the ability to have an impact on their lives, on their families," he says. "That is the draw to come in every morning." ■



Quality is key for Lynt B. Johnson, MD, MBA. It's there in his dedicated 25 years as a pancreatic and liver surgeon, in his expectations for the future doctors he teaches, and in the name of the new institute for which he is the executive director: The George Washington University (GW) Liver and Pancreas Institute for Quality (LPIQ).

Johnson arrived at the GW Medical Faculty Associates only a little more than a year ago, but sitting at his desk on a chilly January day, he has a crystal-clear vision for the future of LPIQ.

"What I have been very successful at is building strong programs. Not only do I want to build a great program here, but I also want it to be recognized for the quality of the work we do. It's not just a 'center' — we put 'quality' in the name because that's what we want to represent," he says. "We want to be on the cutting edge for all the innovative treatments and newest therapies that become available, and hopefully we'll originate some of those treatments here on campus."

Johnson, who serves as professor of surgery at the GW School of Medicine and Health Sciences, became interested in the medical field at a very young age, around 9, in fact. He lost his grandmother to what at the time he was told was "yellow jaundice." The loss had a big impact on him. It pushed him to learn more about medicine, about what causes people to get sick.

Years later, when he started his career, Johnson discovered

FACULTY NEWS

PA Proud

Following his retirement from the George Washington University (GW) Physician Assistant (PA) Program, James Cawley, PA-C, MPH, DHL (Hon.), reflecting on his impact on the university and on the profession, said he has “enjoyed every minute of it.”

Cawley, former professor of PA studies at the GW School of Medicine and Health Sciences and professor of population and community health at the Milken Institute School of Public Health at GW, founded and directed the GW PA-MPH program, the first of its kind.

The idea for the joint program came from Cawley’s own experiences. He graduated from PA school in 1974 and went to work at Johns Hopkins Medicine as a primary care clinician. While there, Cawley decided to get his Master of Public Health degree, which he says opened his eyes to the larger world of medicine and public health. “It was so meaningful to me, and I wanted

to make that opportunity available for other PA grads,” he said.

Cawley dedicated more than three decades of his life to the GW PA Program, and in October 2018 the faculty presented him with the Distinguished Public Service Award. “Given his more than 40 years of service as a PA, as an educator, as a scholar, as a leader, I can’t think of anybody more deserving of this recognition,” Maura Polansky, PA-C, MS, MHPE, chair of the Department of Physician Assistant Studies, said at the time.

Now, Cawley is looking forward to semi-retirement. He says he’ll still write and teach when opportunities present themselves, but that he’s also looking forward to hitting the golf course and spending time with his grandchildren. However, he adds that he’ll also always remember his time at GW.

“The GW PA program was one of the first in the country,” he notes. “It was a great program then, and is a great program now. I’m fortunate to have been a part of it.” ■

Rao Installed as John P. Adams Professor in Orthopaedic Surgery

In 1953, John P. Adams, MD, became chair of the George Washington University School of Medicine and Health Sciences (SMHS) Department of Orthopaedic Surgery, and more than 60 years later he watched the installation of Raj Rao, MD, as the inaugural John P. Adams Professor in Orthopaedic Surgery.

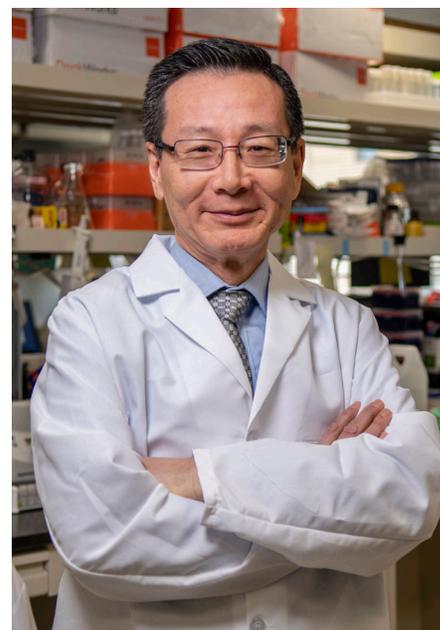
“With the professorship, I know that I’ll still be part of the department for the future, and I thank everyone who made this possible,” said Adams, 97, Professor Emeritus of Orthopaedic Surgery at SMHS.

Since becoming chair of the



department, Rao has “taken the department into the next phase of excellence,” said Jeffrey S. Akman, MD ’81, RESD ’85, vice president for health affairs, Walter A. Bloedorn Professor of Administrative Medicine, and dean of SMHS.

Rao thanked his family, friends, and many mentors for helping to support him in his journey. “Thank you for being here and for the leadership you each provide,” he said. ■



Rong Li Tapped to Lead Biochemistry and Molecular Medicine

Rong Li, PhD, is now serving as chair of the Department of Biochemistry and Molecular Medicine at the George Washington University (GW) School of Medicine and Health Sciences.

Li is a recognized cancer biology researcher. His work has primarily focused on answering important questions concerning breast cancer treatment and prevention, including how BRCA1 suppresses tumors in gender- and tissue-specific manners, how tumor-inhibiting estrogen receptor β can be mobilized, and how adipose stromal cells can promote breast cancer progression.

Li came to GW from the University of Texas Health Science Center at San Antonio, where he was professor in the Department of Molecular Medicine and co-leader for the Cancer Development and Progression Program at the NCI-designated cancer therapy and research center, Mays Cancer Center. ■



Deyton Honored with James D. Bruce Memorial Award

For more than 70 years, the James D. Bruce Memorial Award for Distinguished Contributions in Preventive Medicine has been presented by the American College of Physicians (ACP). In 2019, George Washington University's (GW) Lawrence "Bopper" Deyton, MD '85, MSPH, joined the elite list of award winners.

Deyton, senior associate dean for clinical public health, Murdock Head Professor of Medicine and Health Policy, and professor of medicine at the GW School of Medicine and Health Sciences, has held leadership positions at the National Institute of Allergy and Infectious Diseases at the National Institutes of Health for more than a decade, and served as the chief public health and environmental hazards officer for the U.S. Department of Veterans Affairs' Veterans Health Administration. He also served as the first director of the Center for Tobacco Products at the U.S. Food and Drug Administration.

Deyton received the award at a convocation ceremony in Philadelphia during the college's annual meeting. ■

Marcia Firmani, PhD, MSPH, Chairs Department of BLS

Marcia Firmani, PhD, MSPH, was tapped in February to chair the Department of Biomedical Laboratory Sciences at the George Washington University (GW) School of Medicine and Health Sciences (SMHS).

Firmani, who also serves as an assistant professor of biomedical laboratory sciences and of microbiology, immunology, and tropical medicine at SMHS, has nearly two decades of experience in teaching and research.

In addition to serving as interim chair since 2016, she oversees the Medical Laboratory Sciences Program. She has greatly expanded the program since assuming this role in 2013, and continues to teach classes, advise students, guide curriculum development, and ensure compliance with accreditation standards.

Firmani has been an integral part of the growth of GW's Virginia Science and Technology Campus. She



helped design student classrooms and laboratories in Discovery Hall, and also managed a team of faculty and staff involved in the Post-Baccalaureate Pre-Medicine Program, undergraduate and graduate Medical Laboratory Science Programs, and educational contracts with the U.S. military. ■

The BOS Behind Hearing Loss and Kidney Defects

Researchers at the George Washington University (GW) received a \$1.9 million grant from the National Institutes of Health to study the known and unknown genes associated with branchiootorenal spectrum (BOS) disorders, a class of craniofacial abnormalities that cause hearing loss and kidney defects because of genetic mutations.

GW's principal investigator (PI) on the grant is Sally A. Moody, PhD, chair of the Department of Anatomy and Cell Biology at the GW School of Medicine and Health Sciences (SMHS).

Using data published on the fruit fly *Drosophila*, Moody and her three co-PIs identified 15 vertebrate proteins that potentially bind to the *SIX1* protein, many of them involved in expression in the developing ears and kidney, which could potentially be relevant to BOS. The team will use gain-of-function and loss-of-function approaches to determine whether any of these candidates play a role in inner ear or kidney gene expression and formation. They will also determine the impact, if any, on *SIX1* function. ■

Straker Chosen as President-Elect of PAEA

Howard Straker, MPH, PA-C, assistant professor of physician assistant (PA) studies at the George Washington University School of Medicine and Health Sciences, was elected as president of the Physician Assistant Education Association (PAEA).

Straker started serving as president-elect in January 2019. He will take over as president in 2020. He previously served as secretary of PAEA.

As president, Straker will work to place PA education at the forefront of health care and education. His leadership will focus on increasing clinical training and sites, as well as leveraging technology in education. ■



Howard Straker, MPH, PA-C, assistant professor of physician assistant studies, teaching in the Clinical Learning And Simulation Skills Center.



Ellen Costello, PhD, PT, Earns Educator Award

In 2019, for the first time, the Academy of Acute Care Physical Therapy (AACPT) presented an award to honor

an outstanding physical therapy educator. Ellen Costello, PhD, PT, director of the Physical Therapy Program at the George Washington University (GW) School of Medicine and Health Sciences, received the award.

It honors Costello, who also serves as associate professor of health, human function, and rehabilitation sciences, for her professional involvement and contribution in acute care physical therapy education.

"I am honored to receive the AACPT Educator Award and appreciate the efforts of all acute care physical therapists, who set the stage for optimal patient recovery," Costello said. "My initial area of clinical practice was in the ICU in a NYC burn and trauma center. Those experiences set the stage for my love of acute care practice and the understanding of the critical role physical therapy should and must play in the hospital setting. Teaching this content to GW's bright and energetic DPT students is a joy." ■

Building Research in Breast Cancer Prevention and Treatment

Noted breast cancer prevention and treatment researcher Yanfen Hu, PhD, recently joined the faculty at the George Washington University (GW) School of Medicine and Health Sciences as professor of anatomy and cell biology and a member of the GW Cancer Center's cancer biology program.

Previously an associate professor of molecular medicine at the University of Texas Health Science Center at San Antonio, Hu is the principal investigator on multiple grants studying BRCA1 associated cancers. That includes a National Institutes of Health grant exploring the role of BRCA1 in DNA repair and genome stability maintenance and a U.S. Department of Defense grant investigating drug resistance in BRCA1 associated cancers.

In 2014, Hu received a Minority-Serving Institution Faculty Scholar in Cancer Research Award from the American Association for Cancer Research. ■

Faculty Honored by American College of Physicians

In fall 2018, three distinguished members of the George Washington University School of Medicine and Health Sciences (SMHS) earned awards from the American College of Physicians (ACP).

The organization offers 24 awards and a number of masterships each year.

The ACP award winners from SMHS included Jillian S. Catalanotti, MD, MPH, associate professor of medicine, who earned the Walter J. McDonald Award for Young Physicians; Marie L. Borum, MD, RESD '88, EdD '03, MPH '95, professor of medicine, who received an ACP mastership; and Helen Burstin, MD, MPH, executive vice president and CEO for the Council of Medical Specialty Societies and associate clinical professor of medicine, who received an ACP mastership.

Masters must be highly accomplished professionals demonstrating eminence in practice, leadership, or medical research, and they must be distinguished by the excellence and significance of their contributions to the field of medicine. ■

Shining a Light on Non-Alcoholic Fatty Liver Disease

A study by Colin Young, PhD, assistant professor of pharmacology and physiology at the George Washington University School of Medicine and Health Sciences, seeks to better illuminate the role of endoplasmic reticulum (ER) stress in the development of non-alcoholic fatty liver disease (NAFLD).

NAFLD is the accumulation of fat in the liver of people who drink little or no alcohol, and affects one in three Americans. On the basis of previous studies, researchers believe that ER stress, a protein folding process in the brain, is involved in the generation and maintenance of NAFLD. However, changes in the nervous system are not well understood.

Young and his team's current study, which received more than \$2.4 million from the National Institutes of Health, aims to help researchers better understand the role of forebrain and hypothalamic ER stress in obesity-induced hepatic sympathetic overactivity and NAFLD development.

The grant will fund the project through March 2023. ■

40 Under 40

Several George Washington University School of Medicine and Health Sciences (SMHS) faculty members were honored with 40 Under 40 Awards during the 2018-19 academic year.

SMHS Assistant Professors of Medicine Ashté Collins, MD, FASN, and Chavon Onumah, MD, MPH, each received 40 Under 40 awards from their undergraduate alma mater, Xavier University of Louisiana, for their commitment to creating positive impact on their communities.

SMHS Assistant Professors Kofi Essel, MD '11, MPH '17, the director of the Community/Urban Health Scholarly Concentration and a community pediatrician at Children's National Health System (Children's National); Ankoor Shah, MD, MBA, MPH, medical director for the IMPACT D.C. Asthma Clinic at Children's National; and Maranda Ward, EdD '17, MPH, an expert on health equity in the SMHS Department of Clinical Research and Leadership, were among this year's 40 Under 40 Leaders in Minority Health recognized by the National Minority Quality Forum (NMQF) at the 2019 NMQF Leadership Summit on Health Disparities, in Washington, D.C. ■



New Head of Pulmonary Hypertension Program

Expert pulmonary clinician and researcher Mardi Gomberg-Maitland, MD, has joined the George Washington University (GW) School of Medicine and Health Sciences as the medical director of the GW pulmonary hypertension program and as a professor of medicine.

Gomberg-Maitland is building a comprehensive management program to include outpatient and inpatient diagnosis and treatment, noninvasive and invasive testing, and state-of-the-art pulmonary hypertension medication options.

She earned her degree at the Albert Einstein College of Medicine, Yeshiva University, with a special distinction for research in cardiovascular medicine, in 1996. ■

Drago Named TOPRA Fellow

Daniela Drago, PhD, RAC, associate professor of clinical research and leadership at the George Washington University School of Medicine and Health Sciences, was recently recognized as a fellow of The Organization for Professionals in Regulatory Affairs (TOPRA).

TOPRA is a professional membership organization for individuals in health care regulatory affairs that works internationally to promote excellence across the profession. The TOPRA fellowship program is a component of the organization showcasing individuals who have made outstanding contributions to the field. To be considered for a fellowship, candidates must show a noteworthy impact on the field, and be nominated by at least two colleagues, one of whom must be a TOPRA fellow. ■



Nanotechnology and Immunotherapy Combine in Cancer Care

A team of researchers at the George Washington University (GW) Cancer Center, led by Rohan Fernandes, PhD, assistant professor of medicine at the

GW School of Medicine and Health Sciences, has engineered a nano-immunotherapy that combines the advantages of nanotechnology and

immunotherapy to treat cancer.

The goal: to increase the potency of immune checkpoint inhibitors, a class of immunotherapy that elicits dramatic benefits in only a modest subset of cancer patients, to a significantly larger proportion of patients.

Fernandes received more than \$1.6 million from the National Institutes of Health for the study. His team will work with Prussian blue nanoparticles (PBNPs) coated with immunological signals, used in combination with checkpoint inhibitors. After elucidating the effects of PBNPs used for photothermal therapy on the tumor and adjacent immune cells, Fernandes will test the efficacy of the ensemble nanoimmunotherapy on tumor eradication and relapse prevention, and will evaluate the success of nanoimmunotherapy in treating disseminated cancer. ■

Ward Selected to Serve on D.C. Health Equity Commission

Maranda Ward, EdD, MPH, visiting assistant professor of clinical research and leadership at the George Washington University School of Medicine and Health Sciences, has been selected to serve on D.C. Mayor Muriel Bowser's Commission on Health Equity.

Serving on the commission, representing Ward 8, will allow Ward to marry her education and service efforts to advance health equity, she said, while also giving her the opportunity to make a positive impact in the place she calls home.

As a member of the commission, Ward will make recommendations to the D.C. Department of Health, D.C. City Council, and Mayor Bowser that address health inequities across the District.

The council unanimously voted to move her to the Ward 8 seat in December. ■

Mendelowitz Tapped as Interim Chair

David Mendelowitz, PhD, professor of pharmacology and physiology and of anesthesiology and critical care at the George Washington University School of Medicine and Health Sciences, is now serving as the interim chair of the Department of Pharmacology and Physiology.

Mendelowitz has served as the vice chair of the department since 2003 and has been a member of the department's faculty since 1999.

As interim chair, Mendelowitz is leading the department on a day-to-day basis through promotion of innovative research and ensuring excellence in the department's education programs. He also works to encourage collaboration, mentor professional development of faculty, and spearhead recruitment and retention efforts, as well as encourage ongoing growth to the department's research portfolio. ■

LeLacheur Receives PAEA Master Faculty Award

Susan LeLacheur, DrPH '08, MPH '89, PA-C, BS '82, associate professor of physician assistant studies at the George Washington University (GW) School of Medicine and Health Sciences, received the Master Faculty Award at the Physician Assistant Education Association's Education Forum in October 2018.

The Master Faculty Award recognizes a program faculty member with a minimum of seven years of service who has made noteworthy contributions to physician assistant education.

LeLacheur began her career working in family practice in a largely Latino community. She then began work in HIV clinical research at GW. Today, she lectures widely on infectious disease and HIV infection and volunteers at Whitman-Walker Health in HIV and primary care. At GW, she is the director for the Foundations of Medicine course. ■

Vishal A. Patel, MD, to Lead Multidisciplinary Cutaneous Oncology Program



Vishal A. Patel, MD, FAAD, FACMS, an accomplished Mohs/dermatologic surgeon and cutaneous oncologist, has joined the George Washington University (GW) Cancer Center. He will serve as the director of the recently established cutaneous oncology program at the center.

The program brings together dermatologists; dermatologic surgeons; medical, surgical, and radiation oncologists; and dermato-pathologists to provide comprehensive and personalized skin cancer care to patients.

Patel, who specializes in advanced cutaneous malignancies, specifically cutaneous squamous cell carcinoma, most recently led the Division of Dermatologic Surgery and directed the high-risk skin cancer clinic at Columbia University in New York City. ■

Philippines Recognizes Pedro José

Pedro José, MD, PhD, professor of medicine at the George Washington University School of Medicine and Health Sciences, was honored with a Presidential Award for Filipino Individuals and Organizations Overseas by Philippines President Rodrigo Duterte in December 2018 at Malacañang Palace in Manila.

The Presidential Awards are a biennial search for individuals and organizations based abroad who have dedicated their work in the service of Filipinos. This year's awardees come from 12 countries and territories; they went through a four-stage selection process involving multi-sectoral representation.

José was among 11 awardees who received the Pamana ng Pilipino Award. The award is conferred upon Filipinos living overseas who, in exemplifying the talent and industry of the Filipino, have brought the country honor and recognition through excellence and distinction in the pursuit of their work or profession. ■

Adam Friedman, MD, Tapped as Interim Chair

The George Washington University (GW) School of Medicine and Health Sciences (SMHS) and the GW Medical Faculty Associates (MFA) selected Adam Friedman, MD, FAAD, professor of dermatology, to serve as the interim chair of the GW Department of Dermatology.

Friedman, who joined the clinical staff of the GW MFA and was appointed to the SMHS faculty in 2015, has been a leader and innovator since his arrival. He also serves as the founding director of the Dermatology Residency Program, is the director of translational research in the Department of Dermatology, and is the director of the Supportive Oncodermatology Program at the GW Cancer Center.

Friedman also currently serves as the medical director for the Orlando Dermatology Aesthetic and Clinical Conference, special adviser for the Dermatology Education Foundation, and director of the Oakstone Institute's Dermatology Board Review and Dermatology for Primary Care series. ■

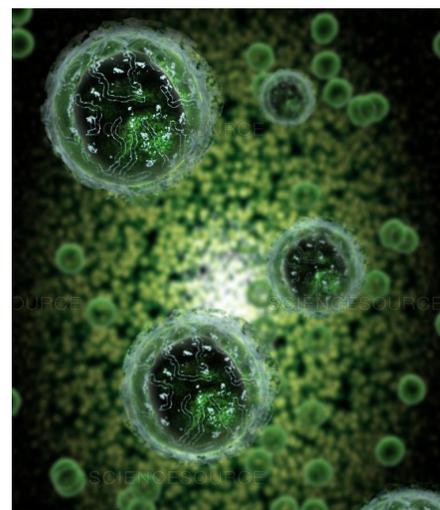
New R21 Awarded to DC CFAR Investigator, Rebecca Lynch, PhD

District of Columbia Center for AIDS Research (DC CFAR) investigator Rebecca Lynch, PhD, assistant professor of microbiology, immunology, and tropical medicine at the George Washington University School of Medicine and Health Sciences, was awarded an R21 grant from the National Institute of Allergy and Infectious Diseases at the NIH.

The grant will support Lynch's research project titled "Effects of Boosting Mucosal Immunity by Microbiota Manipulation on B-Cell Responses to the HIV-1 Vaccine."

The R21 grant encourages exploratory and developmental research by providing support for the early and conceptual stages of project development.

Lynch's project will look at the effects of manipulating the microbiome on the response of antibodies to vaccination. She hopes the data generated from this project will provide critical new information regarding the role of the microbiome in adjuvant design and vaccine response, as well as provide the rationale for ongoing clinical trials involving microbiome alteration. ■



Focusing on the Final Frontier



BY ASHLEY RIZZARDO

There are a few locations along the Potomac River that Abdulla Alhmodi, MD, RESD '18, would recommend if you enjoy rock climbing. But, he cautions, they're all single pitch — a climb lasting one rope length. If you want multi-pitch climbs, the closest spot is in Seneca Rocks in West Virginia. "It's a bit of a drive," he says. "But it's beautiful."

For most people, extreme rock climbing would be hobby enough. Alhmodi, however, has higher ambitions. He enjoys extreme environments as well, ones that test the human body, such as high altitude and outer space.

Alhmodi, a fellow in the Extreme Environmental Medicine Program in the George Washington University (GW) School of Medicine and Health Sciences Department of Emergency Medicine, is originally from the United Arab Emirates (UAE) and currently serves as a member of the UAE Armed Forces. He traveled through England and Scotland before attending medical school at the Royal College of Surgeons in Ireland, located in Dublin. Alhmodi was not sure what he wanted to specialize in as he entered his medical education.

"I was interested in first aid and providing care from the first point where the emergency happens," he recalls. "Emergency medicine offers the opportunity to treat any injury or acute condition, any gender, any age group, and have the confidence to stabilize and treat [patients]."

While Alhmodi completed his emergency medicine residency at GW, the UAE established a program to train and

send Emirati astronauts to the International Space Station to run experiments and conduct research.

Inspired by mentor Kris Lehnhardt, MD, a former emergency medicine physician at GW, who also had an interest in space and its long-term impacts on human health, Alhmodi applied for and went through the UAE Space Agency astronaut selection process.

When astronauts are sent to the International Space Station, their main duties include performing maintenance of the station and conducting research and experiments. The preparation involves two years of basic astronaut training, though depending on the mission and the research they will be involved in, they may have more specialized training.

Possible areas of research on the International Space Station include astronomy and biology. Alhmodi is interested in conducting experiments related to human physiology in space.

"The initial plan was to train four astronauts to go to the International Space Station," he explains. "But then it was decided that two would go. I was ranked third in the process."

But Alhmodi isn't discouraged. In fact, he plans on taking another shot when the next selection process starts. When he finishes his fellowship at GW, Alhmodi will return to the UAE, where he will work with residents in the emergency department of a military hospital.

While Alhmodi's path forward has a clear trajectory on the ground, he hopes the journey that took him from the UAE to England, Scotland, Ireland, and the U.S. also takes him into space. ■

Medicine + Social Justice

BY ASHLEY RIZZARDO

The 45th Session of the Committee on World Food Security, hosted by the United Nations (UN) Food and Agriculture Organization in October 2018, convened global delegates, policy experts, and nutrition scientists to hold discussions on food security and nutrition in the context of the 2030 Agenda for Sustainable Development. Harleen Marwah, a second-year medical student at the George Washington University (GW) School of Medicine and Health Sciences, traveled to Rome for these meetings to advocate for the needs of patients around the world.

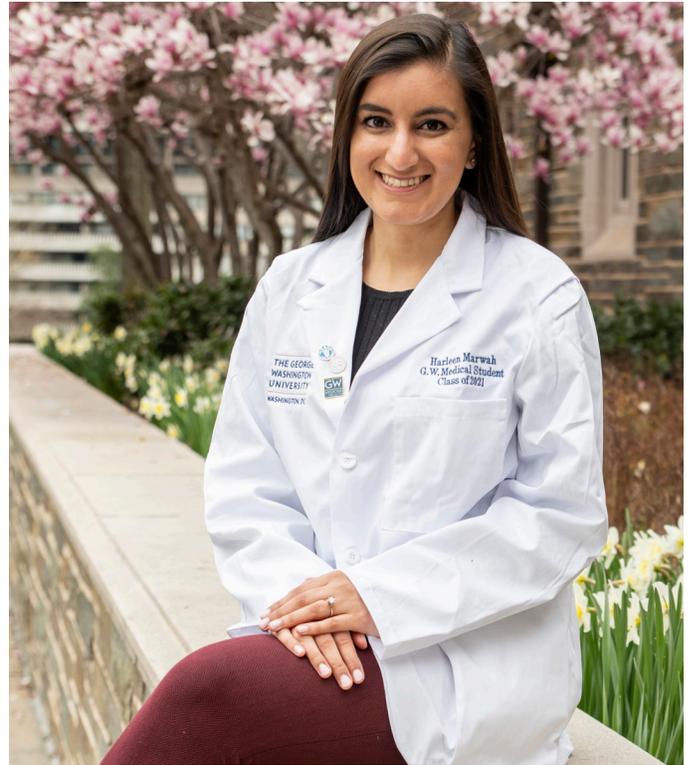
Marwah was selected to attend the conference with a delegation from Planet Forward, a project with the Center for Innovative Media at the GW School of Media and Public Affairs, after participating in a national storytelling competition on innovations to combat global hunger. In Rome, she had the opportunity to meet with policymakers and develop insight on how to be an effective physician-advocate.

Growing up in suburban Los Angeles, in a family of health care professionals, Marwah always had an interest in medicine. During her undergraduate and graduate studies at the University of Southern California, she confirmed that a dedication to social justice could align with a career in medicine.

Whether it was in the classroom or out in the communities she was working with, Marwah recognized the value of tracking patterns and looking upstream in patients' health care journeys to identify early interventions and solutions that could reach patients outside the clinics and help them lead healthier lives.

"While my passions for public health and social justice were developing, I saw the importance of each individual's story," says Marwah. "That is what led me to this career path where I have the privilege to practice clinical medicine and support individuals along their journeys, while also being cognizant of trends and patterns that may someday translate into a useful policy or initiative that can transform many lives."

Marwah has a particular interest in the relationship between health and climate change. She points out that although climate change will certainly impact everyone, it will disproportionately affect some of the world's most vulnerable populations.



In 2014, Marwah was selected to be a United States delegate to the Conference of Party (COP) negotiations run by the UN Framework Convention on Climate Change (UNFCCC) in Lima, Peru. The following year, she was a delegate in Paris for the COP21, where the UNFCCC finalized the Paris Agreement.

"It was inspiring to observe and participate in that process over the course of the year from Peru to Paris," Marwah says. "The conversation went from 'Is there a link between health and climate?' to 'There is undoubtedly a link between health and climate.'"

Prior to medical school at GW, Marwah worked with a health policy consulting firm in Washington, D.C., analyzing federal health care policy and creating business strategies for stakeholders across the full spectrum of health care.

When applying to medical school, Marwah was drawn to GW's commitment to creating 21st-century physicians.

"To me, that is so important. I think our role as physicians and our responsibility to our patients extends beyond the clinical setting," she explains. "We are leaders in the community and it is a privilege to care for our patients. When we are in a position where we can make a difference, it is important that we advocate for our patients and ensure their needs are met with action."

When Marwah thinks about the future, she says she looks at her colleagues and is full of hope. "Being a medical student at GW, I am inspired by my classmates. It's motivating and refreshing to be part of a community dedicated to a greater purpose." ■

A Gift in Loving Memory

BY KATHERINE DVORAK

Brenna Clougherty, MD '08, who served as chief resident of pediatrics at Children's National Health System (Children's National), was a devoted physician who touched dozens of lives. Many of those who knew her best felt compelled to find the perfect way to honor her after she died from cancer in March 2018, just six months before her 10th George Washington University (GW) School of Medicine and Health Sciences (SMHS) reunion.

With the reunion on the horizon, members of the SMHS MD Class of 2008 realized that raising money for an Adopt-a-Doc scholarship would be the perfect way to memorialize Clougherty's giving spirit and passion for education. The class, along with Clougherty's family, friends, and resident cohort, raised more than \$30,000 for a four-year scholarship.

"Brenna was an amazing person. She worked as a nurse before medical school and while her husband was in the military. Becoming a doctor wasn't the obvious path for her, but she did it anyway. She was incredibly devoted to the practice of medicine," says Rachel Shnider, MD '08, a pediatrician at Children's National and friend and colleague of Clougherty, who helped organize the fundraiser.

She adds that the donations connected the many medical circles of Clougherty's life. "She was always the one to bring everyone together. She was such a unifying and inclusive person," Shnider says.

Clougherty did not have a straight path to her medical degree, and neither does the recipient of the scholarship, first-year MD student Elizabeth Ghandakly.

Although Ghandakly always had an interest in medicine when she was younger, she also was drawn to law and policy. She decided after college to follow the latter interest, attending law school and finding a job in the field — but medicine kept calling.

To decide if this career change would be the right one, Ghandakly spent years shadowing doctors and volunteering at Clougherty's professional home, Children's National.

"I did that for four years as I was considering this transition, and it all reinforced that I really did want to go into medicine. I had to go back to school to take the prerequisite courses, so I did an evening program while also still working full time. It was a lot, but for me, because I was really enjoying it even though my day was full, it showed medicine was the right path," says Ghandakly.



Brenna Clougherty, MD '08, at left, and Adopt-a-Doc Scholarship recipient Elizabeth Ghandakly, above.

Now that she is at SMHS, her interest in policy remains. Ghandakly is part of the health policy scholarly concentration, and her enthusiasm for medicine has only grown.

The scholarship, Ghandakly says, is incredibly meaningful to her. "It's in memory of someone who really contributed a lot to the medical community and to the school, and also who is associated with Children's National. It's very helpful for me to have this and be able to focus on studying and being involved in school, because that doesn't allow time for another job," she says.

"I was a little bit worried; if you're switching careers it's a little scary," Ghandakly adds. "But every day [I feel] validated that it was the right choice, and I'm just appreciative for the support this scholarship will give me." ■

CLASS NOTES

1980s

Kenneth Baran, MD '82, an interventional cardiologist, recently joined the Marilyn Covey Heart and Vascular Center at the Essentia Health-St. Josephs Medical Center in Brainerd, Minnesota, as part of a collaboration with the Minneapolis Heart Institute.

Neal Barnard, MD '80, RESD '84, FACC, adjunct associate professor of medicine at the George Washington University School of Medicine and Health Sciences, received the Medical Society of the District of Columbia's Distinguished Service Award during the society's 201st Annual Meeting and Reception.

Thomas Yetman, MD '83, was appointed as chief executive officer for Providence Medical Group Alaska.

1990s

Sunil Budhrani, MD '99, MPH '99, MBA, adjunct associate professor of emergency medicine at the George Washington University School of Medicine and Health Sciences, has been named as the new CEO of Innovation Health, a partnership between Inova Health System and managed health care company Aetna. Budhrani has served as the chief medical officer for innovation health for the past three years and will continue in the role while also serving as CEO.

Virginia Gurley, MD, RESD '91, MPH, was named senior vice president and chief medical officer at AxisPoint Health.

Amy Hise, MD '96, adjunct assistant professor of pathology and international health at Case Western Reserve School of Medicine, was appointed president-elect of the International Endotoxin and Innate Immunity Society.

Thu H. Le, MD '93, BS '89, professor of medicine at the University of Rochester, has been jointly appointed the John J. Kuiper Distinguished Professor and chief of the Division of Nephrology in the Department of Medicine.

Ken Miller, MD '90, PhD, has been appointed by California Gov. Jerry Brown to the Commission on Emergency Medical Services. Miller has served as medical director at the Santa Clara County Emergency Medical Services Agency since 2016.

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WEEKEND

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or call 202-994-7511.

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2000s

Jeffrey Anderson, MS '07, director of pharmacy services at Yavapai Regional Medical Center, was named fellow of the American College of Healthcare Executives.

Shabnam Shahabadi, MD '03, BA '99, was selected as a 2018 "Top Doc" by *Washingtonian* magazine.

Vijay Vanguri, MD '03, was appointed vice chair of pathology and chief of anatomic pathology at University of Massachusetts Memorial Medical Center, where he also serves as director of renal pathology and chief of the Division of Anatomic Pathology.

2010s

Christine Boyer, PA-C '14, CERT '14, with One Medical, received her HIV Specialist certification from the American Academy of HIV Medicine.

Jason Brenner, MD '11, was appointed as a part-time lecturer in ophthalmology at Harvard Medical School.

Dale Butler, MD '12, assistant professor of surgery at the Uniformed Services University of the Health Sciences, Naval Medical Center Camp Lejeune, received the Navy and Marine Corps Commendation Medal with Combat "C" insignia.

Amir Meiri, MD '15, received the Citizenship Award from the Boston University Internal Medicine Residency Program.

Tracy Mitchell, MS '15, system administrative director for population health at CoxHealth, was selected as the 2018 Health Care Champions Administrator by the Springfield Business Journal.

Elana Neshkes, MD '16, pediatrics resident at the University of Pittsburgh Medical Center, Children's Hospital of Pittsburgh, was appointed resident liaison to the American Academy of Pediatrics Board.



Frank Slaby, PhD, professor of anatomy and cell biology at the George Washington University School of Medicine and Health Sciences (SMHS), passed away March 18, 2019. He was an important part of the SMHS family for more than four decades, and

played a significant role in the education of thousands of students.

"[Frank Slaby] was a person of integrity and decency, and a model citizen of the school and the university," said Jeffrey S. Akman, MD '81, RESD '85, vice president for health affairs, Bloedorn Professor of Administrative Medicine, and dean of SMHS. "He was always looking for creative ways to teach his students and his contributions were central to the development of our multiple curricula. He cared deeply about his students and their success and thrived on improving medical education."

Slaby is survived by his wife of 35 years, Susan McCune, MD, their son, Christopher, and Slaby's brother, Robert Slaby. ■

George Washington University (GW) Professor Emeritus **Victor H. Cohn, PhD '61**, passed away March 15 at the age of 88. Cohn served as a professor in the School of Medicine and Health Sciences Department of Pharmacology and Physiology for 33 years before retiring in 1994.

During his tenure, Cohn served as both vice chair and acting chair of the department. He was a biomedical researcher who studied antimalarial drugs, histamine, and drug metabolism. He was co-author of a chapter in the highly rated Goodman & Gilman's *The Pharmacological Basis of Therapeutics* textbook for more than a decade. He also studied contamination of water supplies and even explored the effects of cigarette smoking and the response to drugs.

Cohn earned his doctorate in biochemistry from GW in 1961. He also received a Distinguished Service Award from the GW Faculty Senate citing "recognition of his continuing strong vocal support of faculty rights." ■

IN MEMORIAM

Brian D. Brantner, MD '73
 Ruth E. Burke, MD '45
 John P. Burns, MD, RESD '54
 Robert E. Byler, MD '65
 Chao Hung Chan, MD '65
 Thomas Eskridge Francis, MD '76
 John W. Harris, MD '54, RESD '58
 Jeffrey Milton Haskins, MD '79
 Andrew M. Hruszkewycz, MD, RESD '85
 Charles Norman Kendall, MD, RESD '72
 A. Daniel Laurent, MD, RESD '87
 Everett C. Mosley, MD '57
 Thomas W. Mears, MD '46
 Lee J. Milas, MD 2015
 George Quayle Neslen, MD '74
 Darrell Lawrence Priddy, BS '82
 Harry P. Raymond, MD, RESD '51
 Amira Moftah Safwat, MD '73
 Gerald A. Schneider, MD '60
 Jose L. Silva, MD '47, RESD '48
 James A. Stansfield, MD '53
 Jeffrey Lynn Stevenson, MD '86
 Russel S. Thacker, BS '92
 William Terry Williams, BS '85



Dear Fellow Alumni,

I would like to take a moment of your time to consider the ways in which alumni can play an active role in supporting the George Washington University (GW) School of Medicine and Health Sciences (SMHS) community and give back to the school.

I can attribute much of my career success to my years at SMHS. Like most of my classmates, I came to medical school with an inherent drive to strive, to contribute, and to help people. I knew where my vision and my values

were leading me, but it was my experiences at SMHS and studying in Washington, D.C., with the school's cultural diversity and the city's multinational nature, that got me there. From the moment I arrived on campus, my instructors and professors were phenomenal. Members of the Class of 1993 all felt that way. I recall talking about it often. We were very fortunate and proud to be at GW, receiving such a quality education.

When you are a recent graduate, you're eager to get out into the world, hone your skills, and advance your training. You aren't ready to think about things like legacy. As for me, I was busy starting my family and launching my practice. I wasn't in a position when I was younger to think about giving back financially. To alumni in the early stages of your career, consider offering your time – by mentoring students entering the residency interview process or talking to prospective students about your experiences at GW – as a means of contributing to your alma mater.

As time goes on, however, your thoughts start to look to the bigger picture. You might begin to reflect on those opportunities that you had, and start to think about how you can help. I can look back and say there were a handful of events in my life that changed everything. One of those moments for me was receiving financial assistance through the Legacy Fund. You want to be respectful of those pivotal moments and afford similar opportunities for others. The cost of medical school continues to rise. The mean debt load facing a medical student attending a private institution is more than \$206,000, according to the Association of American Medical Colleges. That's why I'm helping to provide an opportunity for those who have the academic potential, but otherwise couldn't afford tuition and all of the other expenses that go with being a medical student.

I invite you to consider taking a more active role in your SMHS community, in any way you can, by supporting GW students and the future of medicine.

Sincerely,

Brian Acacio, MD '93
Medical Director
Acacio Fertility Center
Laguna Niguel, California

SMHS Council of Advisers

Stuart S. Kassin, MD '72, FACP, MACR, Co-Chair
Distinguished Clinical Professor of Medicine, University of Colorado-Denver School of Medicine; Chief Medical Officer, Multispecialty Physician Partners

Lara S. Oboler, MD '95, Co-Chair
Cardiology; Lenox Hill Heart & Vascular Institute

Christopher L. Barley, MD '93
Clinical Assistant Professor of Medicine, Cornell/Weill School of Medicine

Constance Urciolo Battle, MD '67, FAAP
Pediatrics and Public Health

Elizabeth L. Cobbs, MD '81, RESD '84
Professor of Medicine, George Washington University (GW) School of Medicine and Health Sciences (SMHS); Chief, Department of Geriatrics, Extended Care, and Palliative Care, GW Medical Faculty Associates

Carlos R. Diaz, MD '72, RESD '75
President and Owner, Aeromedical Services

Daniel Ein, MD, FACP, FAAAAI, FAAAAI
Clinical Professor of Medicine, GW SMHS; Director, Allergy & Sinus Center, GW Medical Faculty Associates

Thomas E. Flynn, MD '86
Ellsworth Uveitis & Retina Care

Jeanne G. Holzgrefe, MD '96, PhD, MPH
Assistant Clinical Professor of Psychiatry and Behavioral Sciences, GW SMHS; Chevy Chase Psychiatric Services

Floyd Alexander Katske, MD '76, RESD '77
Clinical Assistant Professor of Urology, David Geffen School of Medicine, UCLA

Jay E. Katzen, MD '72, BA '67
Ophthalmologist, the Eye Center

Kerry L. Kuhn, MD '73, RESD '77, BA '70, FACOG
Private Practice; Senior Vice President of VitalMD

Gerald S. Lazarus, MD '63
Dermatology

John C. Pan, MD '70, RESD '74
Founder, Center for Integrative Medicine, GW SMHS

Smita H. Patel, MD, DFAPA
Assistant Clinical Professor of Psychiatry and Behavioral Sciences, GW SMHS

Rakesh C. Sahni, MD
Maryland Cardiology Associates

Art B. Wong, MD '67
Founder, Emergency Physicians Medical Group, PC

The GW SMHS Council of Advisers offers the dean of the School of Medicine and Health Sciences recommendations on strategic priorities and important issues for the school, and provides generous support and advocacy.

School of Medicine & Health Sciences

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A Path to Success

A two-year award from the National Institutes of Health is enabling Melissa McCarthy, ScD, and Marcee Wilder, MD, MPH, explore social determinants of health and how they affect health care costs and utilization. The grant is also giving Wilder a boost in her efforts to build a research portfolio. Read more on page 32.