

Capsule

Spring 2021

University of Maryland School of Pharmacy
Magazine for Alumni and Friends



Reflecting on the Pandemic

How those at the School of
Pharmacy met the challenge,
learning lessons in the process

DEAN'S MESSAGE



The past year has been one of tremendous stress, anxiety, and worry as the University of Maryland School of Pharmacy navigated its academic, research, practice, and community outreach endeavors in ways we never imagined. Each of our faculty, staff, students, preceptors, and alumni stepped up to demonstrate commitment, flexibility, adaptability, and innovation, striving to do the best they could for our students, their co-workers, families, patients, and neighbors.

The stories I have heard about our people going above and beyond to fulfill the School's mission and their individual roles are awe-inspiring. There are those who quickly pivoted their primary research goals to new ones focused on understanding the coronavirus, and those who were forced to adjust their patient care programs and routines to now be front-line health care workers.

There are those who turned their living spaces into learning spaces to continue their education,

those who had to completely revamp courses and classes for virtual learning, those who made use of technology and teleworking to keep the School of Pharmacy operating, and those who showed up on-site every day to ensure that our facilities were still running smoothly and to get our spaces ready for a moderate return of people and activities.

Each one of them has played a role in helping the School of Pharmacy navigate this pandemic.

This issue of *Capsule* features some of those stories, told from the perspective of our faculty, staff, students, preceptors, and alumni. We solicited their stories and are pleased to feature them here to help us all better understand the pandemic's impact and to serve as a historical marker of this unprecedented time.

I can't say enough how thankful and appreciative I am of our School of Pharmacy community of students, clinicians, researchers, professionals, alumni, and preceptors. Their tireless efforts to surmount the vast challenges poised by the pandemic have been an inspiration to me.

In the spirit of expertise, influence, and impact,

A handwritten signature in black ink that reads "Natalie D. Eddington". The signature is fluid and cursive.

Natalie D. Eddington, PhD '89, FAAPS, FCP
Dean and Professor
Executive Director, University Regional Partnerships

MISSION

The University of Maryland School of Pharmacy leads pharmacy education, scientific discovery, patient care, and community engagement in the state of Maryland and beyond.

VISION

We will achieve our mission by:

- inspiring excellence in our students through a contemporary curriculum, innovative educational experiences, and strategic professional relationships.
- advancing scientific knowledge across the spectrum of drug discovery, health services, and practice-based and translational research with significant focus on collaborative partnerships.
- expanding the impact of the pharmacist's role on direct patient care and health outcomes.
- building and nurturing relationships with all members of our community.
- capitalizing on our entrepreneurial spirit to improve pharmaceutical research, practice, and education in Maryland and throughout the world.

PLEDGE

We are proud to be critical thinkers, lifelong learners, and leaders who are sought for our expertise. We earn our reputation with the highest standards of personal ethics and professional conduct. Students and education are central to everything we do. We engage the community; together, we contribute to the improved health of society. We celebrate the distinctive talents of our faculty, staff, and students. We honor our traditions and advocate for dynamic changes in pharmacy practice, education, and research. We create the future of pharmacy.

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University of Maryland School of Pharmacy Alumni Magazine

Spring 2021

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**Read More, See More,
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Read in-depth biographies of faculty, see additional pictures of School events, and share School news with your friends on social media. More details on the articles covered in this issue of *Capsule* are available in an electronic version — online. You can view *Capsule* from any mobile device. Visit www.pharmacy.umaryland.edu/capsule and start learning more about the University of Maryland School of Pharmacy.

Heil Speaks to Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria



Emily Heil

Emily Heil, PharmD, BCIDP, BCPS-AQ ID, AAHIVP, associate professor in the Department of Pharmacy Practice and Science (PPS), was invited to speak during the 2020 Fall Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB) public meeting in September. The virtual meeting highlighted challenges related to antimicrobial stewardship during the COVID-19 pandemic.

Antimicrobial stewardship is a systematic effort to educate both health care professionals and patients about evidence-based practices for the prescribing and use of antibiotics, with a goal to reduce the overuse of these medications and, as a result, decrease the chance for certain pathogens to develop antimicrobial resistance.

“Antimicrobial stewardship has expanded in recent years,” said Heil. “Thanks to the leadership of infectious diseases pharmacists, it has become an important patient safety program at hospitals across the country. The COVID-19 pandemic has certainly presented challenges for these programs, but enhanced collaboration between stewardship teams and other health care professionals has occurred in many places as a result of the pandemic, which is a real positive.”

Established in 2014, PACCARB provides advice, information, and recommendations to the Secretary of Health and Human Services regarding programs and policies related to combating antibiotic-resistant bacteria. Heil was invited to speak at the 2020 Fall PACCARB public meeting in her role as a board member with the Society of Infectious Diseases Pharmacists. Other presenters represented groups such as the World Health Organization, Centers for Disease Control and Prevention, and Rutgers University.

Heil began her presentation with a discussion about the barriers that can impede successful antimicrobial stewardship during a pandemic, including uncertainty in diagnosing co-infections, the novelty of the coronavirus, and personnel shifts

required to address the pandemic. She noted that even her own practice site at the University of Maryland Medical Center was not immune to these challenges, as the pharmacy staff who typically oversee antimicrobial stewardship there had to pivot their efforts to assist with developing and updating COVID-19 guidelines, enrolling patients in clinical trials, and allocating medications.

Heil outlined how health care systems can leverage the experience of their infectious diseases pharmacists and antimicrobial stewardship program staff during a pandemic. She explained that many of the strengths already present in existing antimicrobial stewardship programs — including drug shortage and supply chain management, adverse event monitoring, clinical trials and allocating emergency use agents, antimicrobial optimization, and education and delegation — are easily translated to managing the new challenges presented by a pandemic.

“Antimicrobial stewardship programs already have expertise in developing treatment guidelines and enhancing guideline compliance through direct intervention and education,” said Heil. “Creating and disseminating COVID-19 treatment guidelines was logistically easy for our team based on the infrastructure that was already in place at our institution.”

She added: “Stewardship programs also have substantial experience with supply chain management, particularly as it relates to drug shortages and management of scarce resources. In fact, managing the emergency use authorization process for remdesivir [an antiviral drug that has shown promise in the treatment of COVID-19] from procurement all the way to administration is likely being led by an antimicrobial stewardship pharmacist at most hospitals across the country.”

Heil concluded her presentation with a call for renewed investment in advanced education and training opportunities for health care professionals specializing in infectious diseases.

“If we are to take away any lessons from this experience, I hope we have learned that antimicrobial stewardship teams and infectious diseases pharmacy leaders already possess the programmatic strengths that allow us to thrive in assisting with pandemic management. A renewed investment in antimicrobial stewardship is needed to ensure that these professionals are available to help address similar challenges moving forward.” 🌟

Grant Increases Access, Safety of Generic Drugs



James Polli



The University of Maryland School of Pharmacy (UMSOP) and the University of Michigan College of Pharmacy (UMCOP) have received a \$5 million grant from the U.S. Food and Drug Administration (FDA) to establish a joint Center for Research

on Complex Generics (CRCG).

The CRCG will increase access to safe and effective generic drugs through collaborative research, training, and exchange. The center will facilitate information sharing among graduate students, postdoctoral fellows, those working in industry, and faculty at both universities.

“Complex generic drugs are, in general, more difficult to develop due to complex formulation or mode of delivery, resulting in fewer complex generics on the market,” said Sally Choe, PhD, director of the Office of Generic Drugs (OGD) in the FDA’s Center for Drug Evaluation and Research. “By awarding this grant, our goal is to support research and development of these products so they can be made available to patients in a more timely way. By supporting increased competition in the generic market, we can help provide more options for Americans and potentially bring down prices on these important therapies.”

A team of 24 investigators from UMSOP and UMCOP will allow the center to offer broad research capabilities from formulation development and analytical characterization to computer (in silico) models and animal testing to clinical trials and post-market assessment of patient data.

UMSOP and UMCOP faculty have a wealth of experience in multiple facets of the complex generics field. That includes the formulation and evaluation of complex drugs, as well as exceptional laboratory and training space to move the development and assessment of complex generics forward. Both universities have a long track record of FDA-sponsored clinical research, with a focus on formulation design and performance.

The center is co-directed by James Polli, PhD, the Ralph F. Shangraw/Noxell Endowed Professor in Industrial Pharmacy and Pharmaceuticals at UMSOP, and Anna Schwendeman, PhD, associate professor of pharmaceutical sciences at UMCOP. A 1993 graduate of UMCOP with a PhD in pharmaceuticals, Polli’s research interests focus on oral drug formulation and pharmacokinetics.

Schwendeman’s research interests focus on nanomedicines for treatment of atherosclerosis. She spent 12 years in the phar-

maceutical industry at Cerenis Therapeutics, Pfizer, and Esperion Therapeutics.

Ultimately, Schwendeman and Polli hope the CRCG will make complex analytical assays and pharmaceutical development expertise accessible to the generic industry and eventually lead to more rapid approval of high-quality and accessible generic products.

Generic drugs account for about 90 percent of prescriptions filled in the United States. However, some drug products are more complicated than others and denoted to be complex products. Examples are products with complex active ingredients, complex formulations, complex routes of delivery, and complex drug-device combination products.

There are barriers to implementing new FDA guidance and achieving first-cycle approvals for complex generics. For example, some newer analytical equipment, cutting-edge methodologies, software, and in silico models are not readily available to the generic industry. The scientific intricacies of complex generics may require additional coordinated efforts between stakeholders to overcome these hurdles through stronger communication, better education, and more thorough research in complex generic product development to increase the rate of first-time product approvals.

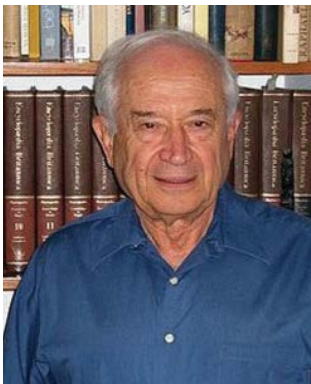
“The ‘pre-competitive space’ for potential complex generic products is often poorly developed, at least in terms of pre-existing knowledge in the public domain,” said Polli. “With at times a dearth of pre-existing knowledge about complex drug formulation and pharmacokinetics, the development and assessment of potential generic drugs is challenging. The CRCG aims to fill this gap by contributing to the ‘pre-competitive space’ for potential complex drugs.”

Funding from the grant will support three main activities:

- Facilitate communication among OGD, the center, and generic industry stakeholders to better understand the needs for training, research and development, and implementation of new regulatory requirements.
- Promote generic industry training through workshops, webinars, and hands-on demonstration, and engage fellows, students, and the public in complex generics research.
- Conduct collaborative research and technique development that facilitate complex generics.

“Our last pillar is our research mission,” added Schwendeman. The center will facilitate collaborative projects by established researchers within the industry and the FDA, and will host the Visiting Scientists Program for OGD and generic industry fellows. ☺

SOP Hosts Inaugural Holaday Memorial Lecture in Medical Cannabis



Raphael Mechoulam

The School of Pharmacy hosted its inaugural John W. Holaday, PhD, Endowed Memorial Lectureship in Medical Cannabis in October. Established with a gift from Curio Wellness — a medical cannabis brand and trusted health care partner based in Maryland — the lectureship was delivered as part of the MS in Medical Cannabis Science and Therapeutics program’s virtual fall symposium. It honors

the memory of Holaday, a highly accomplished pharmaceutical executive, entrepreneur, and medical scholar who also served as chairman emeritus of Curio Wellness’ Scientific Advisory Board.

“Dr. Holaday was not only an accomplished professional and entrepreneur, but also a kind and caring person who served as a mentor to many young professionals,” said Natalie D. Eddington, PhD ’89, FAAPS, FCP, dean and professor of the School of Pharmacy, in her opening remarks. “We are grateful to Curio Wellness for their recognition of Dr. Holaday and his many contributions to the life sciences.”

Serving as the keynote speaker for the lecture was Raphael Mechoulam, PhD, the Lionel Jacobson Professor of Medicinal Chemistry at Hebrew University in Israel and one of the world’s pre-eminent cannabis scientists. Mechoulam and his research team were the first to isolate and identify several major plant cannabinoids, including D9-tetrahydrocannabinol (THC), the major psychoactive compound in the cannabis plant.

“Both new students and those who have been in the medical cannabis field for years have been impacted by Dr. Mechoulam’s research in cannabinoid science,” said Leah Sera, PharmD ’10, MA, BCPS, associate professor in the Department of Pharmacy Practice and Science and director of the MS in Medical Cannabis Science and Therapeutics program at the School of Pharmacy. “It is a gift and honor to have him speak to our students about the history and the future of this exciting field.”

Mechoulam’s lecture, titled “The Cannabinoids: Looking Back and Ahead,” explored the history of cannabis use, the different phases of cannabinoid research, and the numerous

medical conditions that cannabinoid-based medications can treat. According to Mechoulam, most scientists were not interested in pursuing cannabis research when he began his career. Now prestigious scientific journals such as *Nature Reviews* regularly incorporate articles spotlighting cannabis research in their volumes and leading health associations have noticed the positive impact of cannabis on certain medical conditions.

Mechoulam noted that most cannabis research currently focuses on cannabidiol (CBD), a chemical in the cannabis plant, and THC. While CBD and THC are closely related chemically, their biological activity is completely different. THC possesses psychoactive properties not found in CBD, causing a number of adverse events that have led many researchers to discount it as a potential treatment. However, CBD has been extensively studied to help treat a number of conditions, including epilepsy, chronic graft-versus-host disease, schizophrenia, diabetes, and type 1 diabetes.

“We found that we had a new drug that could be used; it was not toxic and there were no side effects,” said Mechoulam. “But nothing happened for 35 years, until parents with children who had been diagnosed with epilepsy started to look for new treatments. It was these parents who found that CBD was quite good at suppressing their child’s epilepsy.”

He added: “As a result, CBD began to be widely used, and was even approved for a major clinical trial. The results mirrored what we saw in our earlier study, and CBD was approved for use in children with epilepsy. My only question is: why did we have to wait so long?”

Mechoulam’s current research focuses on the numerous anandamide-like compounds in the mammalian body, particularly those involved in basic biological reactions such as bone formation, vasodilation, head trauma, and addiction. He and his research team have developed several compounds that are currently being advanced as drugs by pharmaceutical companies.

He commended the University of Maryland School of Pharmacy for establishing its MS in Medical Cannabis Science and Therapeutics program.

“High-quality academic programs such as this are sorely needed to further the field of cannabis research,” said Mechoulam. “I hope my remarks today have inspired your students to continue down the path of education, discovery, and advocacy in this field.” ☀

Eddington, Sera Named Leaders in Health Care by *Baltimore Business Journal*



Natalie D. Eddington



Leah Sera

Natalie D. Eddington, PhD '89, FAAPS, FCP, dean and professor, and Leah Sera, PharmD '10, MA, BCPS, associate professor in the Department of Pharmacy Practice and Science (PPS) and director of the MS in Medical Cannabis Science and Therapeutics program at the School of Pharmacy, have been named as two of the recipients of the *Baltimore Business Journal's* inaugural Leaders in Health Care Awards. Established in late 2019, these awards celebrate doctors, nurses, hospital leaders, and other health care workers for their profound dedication to helping people.

Eddington and Sera were recognized in the medical cannabis category of the Leaders in Health Care Awards, applauding their work in developing and launching the School of Pharmacy's MS in Medical Cannabis Science and Therapeutics program — the first graduate program in the United States dedicated to the study of medical cannabis.

"I was thrilled to learn that the *Baltimore Business Journal*

planned to recognize Dr. Sera and me with its inaugural Leaders in Health Care Awards in the area of medical cannabis," says Eddington. "The demand for an educated workforce in medical cannabis has never been higher. Our program is designed to prepare students to meet this demand and make a positive impact on their communities. I thank the *Baltimore Business Journal* for seeing the value in this critical work, especially during these challenging times."

Adds Sera: "It is an honor to be recognized by the *Baltimore Business Journal* for our work to establish the School's MS in Medical Cannabis Science and Therapeutics program. This program is incredibly unique, because there truly is no other educational program that offers the in-depth instruction on the science, policy, and therapeutics of medical cannabis that the students who are accepted into our program receive. Receiving this award really validates all of the hard work that we poured into creating this first-of-its-kind program."

Launched in 2019, the MS in Medical Cannabis Science and Therapeutics is a two-year program that blends online instruction with face-to-face experiences to prepare graduates to respond to the increasing demand for medical cannabis with an understanding of the basic science and clinical uses of the cannabis plant. Students who complete the program are well-equipped with the knowledge needed to support patients and the medical cannabis industry, add to existing research, and develop well-informed medical cannabis policy.

The *Baltimore Business Journal* received more than 130 nominations for its Leaders in Health Care Awards. Only 15 health care professionals were selected. ☀

SOP Faculty Join State Vaccine Advisory Group



Cherokee Layson-Wolf



Deanna Tran

Cherokee Layson-Wolf, PharmD '00, CGP, BCACP, FAPhA, associate professor in the Department of Pharmacy Practice and Science (PPS) and associate dean for student affairs at the School of Pharmacy, and Deanna Tran, PharmD '11, BCACP, assistant professor in PPS, have been selected to serve on the state of Maryland's SARS-CoV-2 Vaccine Technical Advisory Group. Established by the Maryland Department of Health, the SARS-CoV-2 Vaccine Technical Advisory Group is tasked with reviewing COVID-19 vaccine trial data and offering guidance about how that data can be applied to the state's vaccine distribution plan.

The advisory group includes pharmacists, physicians, nurses, social workers, and other public health professionals.

"As one of the most accessible health care professionals,

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pharmacists regularly demonstrate the critical role our profession plays in ensuring that patients have access to all of the tools they need to stay healthy, including certain vaccinations,” says Jill A. Morgan, PharmD, BCPS, BCPPS, professor and chair of PPS. “We are thrilled to have Drs. Layson-Wolf and Tran representing the School of Pharmacy on the state of Maryland’s SARS-CoV-2 Vaccine Technical Advisory Group. Their participation will allow them to share the pharmacist’s perspective as COVID-19 vaccine providers and help shape the state’s COVID-19 vaccine distribution plan to ensure that it plays to the strengths that each profession brings to the table.”

The SARS-CoV-2 Vaccine Technical Advisory Group meets regularly to review data for the vaccines currently given emergency use authorization by the Food and Drug Administration, as well as discuss best practices for educating and communicating with the public about the vaccines. Members offer insight on which populations should be included in vaccine priority groups, provide guidance to ensure that vaccines are distributed equitably across

the state, and develop messaging to help communicate information about available vaccines to local communities.

“As pharmacists, Dr. Tran and I not only offer guidance to the group on what practices would best assist us in educating our patients and colleagues about the vaccines, but also share information that has been communicated to us by both our patients and colleagues,” says Layson-Wolf. “Because pharmacists are one of the providers of the COVID-19 vaccine, it’s important that we be involved in the conversation to help shed light on any challenges or barriers that might prevent us from being able to fully respond to our patients’ health care needs.”

Tran adds: “As a pharmacist who has practiced in both a community pharmacy and an ambulatory care clinic, I have had the opportunity to interact with some of our most under-represented and vulnerable patient populations. I’m excited to be able to share the lessons that I have learned from working with these populations to help ensure that our vaccine distribution plan is inclusive of these individuals and the unique challenges they face.”

SOP Researchers Advance Antiviral Treatments for COVID-19



Jana Shen



Jack Henderson

COVID-19 is caused by a virus known as SARS-CoV-2, which is similar in structure to two other viruses that have produced previous outbreaks: SARS-CoV, which caused an outbreak of SARS in 2003, and MERS-CoV, the cause of a 2012 outbreak of Middle East Respiratory Syndrome.

In *The Journal of Chemical Physics*, scientists from the School of Pharmacy report molecular-level investigations of these three viruses, providing a possible pathway to new antiviral drugs to fight all three diseases. At the present time, no effective treatment or drugs exist for any of these coronavirus diseases.

The investigators looked at a viral protein that plays a key role

in the ability of the virus to replicate itself once inside the body. This protein also plays a role in defeating the host’s immune system, so it provides a particularly attractive target for potential drug treatments.

The protein, an enzyme known as the papain-like protease, PLPro, is nearly identical in SARS-CoV-2 and SARS-CoV but is slightly different in MERS-CoV. The first structural X-ray of this enzyme revealed a shape in the catalytic domain somewhat like a hand with a “thumb,” “palm,” and “fingers.”

The thumb and palm come together to form a binding site, where a drug molecule could potentially be captured. The fingers fold down over this region and provide structural integrity that is essential for PLPro activity.

The investigators discovered small shifts in pH could change the shape of this enzyme through a process known as protonation, where hydrogen ions bind to certain amino acid units in the protein.

“Protonation state switch is an important energy transduction mechanism,” said author Jana Shen, PhD, professor in the Department of Pharmaceutical Sciences (PSC) and co-director of the Computer-Aided Drug Design Center at the School of Pharmacy.

Co-author Jack Henderson, a PhD student in PSC, said, “The coronavirus spike protein, for example, makes use of protonation state switches to induce large conformational changes required for

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membrane fusion.”

Membrane fusion is the first step in infection. A virus attaches to the outer membrane of a cell, making its way inside where it can begin to form copies of itself that spread throughout the body.

Another key feature of the PLPro binding site is a string of amino acid units called the BL2 loop. The investigators found this loop can open or close in SARS viruses when a particular amino

acid on the loop is either protonated or deprotonated. In the MERS virus, however, the loop is flexible even without such an amino acid.

This feature suggests a potential drug could target the BL2 loop, causing it to close and tightly bind to a viral inhibitor.

“Our work provides a starting point for further mechanistic investigations using higher-level approaches,” said Shen. ☼

Qato Selected for National Leadership Program



Danya Qato

Danya Qato, PhD, PharmD, MPH, assistant professor and graduate program director in the Department of Pharmaceutical Health Services Research (PHSR), has been selected to participate in one of the Robert Wood Johnson Foundation’s leadership programs. These programs connect changemakers from every profession, sector, and field across the United States to learn from and work with one another in creating more just and thriving communities.

Qato was chosen to participate in the organization’s Culture of Health Leaders. Designed for leaders from all fields — from technology and business to architecture and urban planning — Culture of Health Leaders fosters cross-sector collaboration and supports individuals in their continued growth and development as agents of change for equity and health.

“Our department congratulates Dr. Qato on her recent selection to the Robert Wood Johnson Foundation’s Culture of Health Leaders program,” says C. Daniel Mullins, PhD, professor and chair of PHSR. “Dr. Qato has dedicated her career as an educator and researcher to improving health equity for all people, and this new opportunity not only celebrates all that she has achieved to date, but also offers an opportunity for her to continue growing as an individual, a pharmacist, and health services researcher. I am excited to see how she will apply all that she learns in the program in her future professional endeavors.”

Qato received her PhD in health services research from the Brown University School of Public Health, her Doctor of Pharmacy (PharmD) from the University of Illinois, and her Master of Public Health (MPH) with a concentration in international health from Harvard University.

Her current research focuses on improving regulatory and

policy tools to reduce the use of high-risk medications in vulnerable populations, polysubstance use and women’s health, access to essential medicines, and health equity. It is funded by the National Institute on Aging, the U.S. Food and Drug Administration, and the University of Maryland, Baltimore (UMB) Institute for Clinical and Translational Research, where she is a KL2 Scholar.

Qato also teaches courses in epidemiology and health policy at the School of Pharmacy and the University of Maryland School of Medicine, and serves on multiple Universitywide committees, including the Center for Global Engagement Advisory Committee. Before joining the School of Pharmacy in 2016, she was based at the Institute for Community and Public Health at Birzeit University in Palestine, where she was a Fulbright Scholar and served as an expert consultant to the World Health Organization.

She also previously served as a Schweitzer Fellow, a Paul and Daisy Soros Fellow, and a U.S. research fellow of the Palestinian American Research Center and the Arab Council for the Social Sciences.

“I am so grateful for this recognition and hope to bring my unique experience and perspective as a pharmacist, epidemiologist, and health services researcher to the Culture of Health Leaders program,” says Qato. “As a Culture of Health Leader, my goal is to amplify the role that pharmacists can and do play in promoting health equity in the community, especially as it relates to improving access to substance use treatment and reproductive health care.”

She adds: “I also look forward to the opportunity to support efforts across PHSR, the School of Pharmacy, and UMB broadly that advocate for enhanced education and action around health equity with a lens toward justice locally, nationally, and globally.

“The network, collaborative possibilities, and support offered by the Robert Wood Johnson Foundation will be invaluable to this pursuit.” ☼

PATIENTS' Medeiros Is UMB Employee of the Month

BY LOU CORTINA



Michelle Medeiros

The job of principal investigator (PI) on research grants and contracts is generally reserved for faculty members, a fact C. Daniel Mullins, PhD, knows well in his role as professor and chair of the Department of Pharmaceutical Health Services Research at the School of Pharmacy.

But Mullins, a prolific researcher who is the executive director of the School's PATIENTS Program, also knows there can be exceptions to this rule, pointing to

one of his program's leaders, Michelle Medeiros, MS, MA, CCRP, director of research.

"Faculty deserve a high level of respect, but to make sure that we're not too hierarchical, I've worked to get PI privileges for staff members in our department," Mullins says. "One of them is Michelle, who is the PI on a \$250,000 Patient-Centered Outcomes Research Institute [PCORI] award. I really think this shows what our staff members are capable of doing when we don't hold them back and just let them run."

Mullins was speaking Feb. 5 on a Webex video conference that was billed as a PATIENTS Program leadership meeting but really was a celebration of Medeiros being selected as the University of Maryland, Baltimore's (UMB) January Employee of the Month. UMB President Bruce E. Jarrell, MD, FACS, delivered the news to Medeiros, noting they were familiar with each other from when she worked for UMB's Institutional Review Board/Human Research Protections Office.

"We go way back, so I know all about the quality of Michelle's work," Jarrell said of Medeiros, who also has worked for the Marlene and Stewart Greenebaum Comprehensive Cancer Center and the Center for Vaccine Development and Global Health at the School of Medicine (SOM). "Her work with the PATIENTS Program and all of her accomplishments are quite impressive. Dr. Mullins' team is excellent, and Michelle certainly stands out. This is a very well-deserved award."

Jarrell turned the conference over to Mullins, who was joined by 20 colleagues from the PATIENTS Program in singing Medeiros' praises. Mullins echoed what he had written in his Employee of the Month nomination, focusing on Medeiros' PI role with a Capacity Building Award from PCORI.

The new project advances the mission of the PATIENTS Program, collaborating with a local neighborhood-building nonprofit, the Southwest Partnership, to use its resources to broaden the program's footprint in West Baltimore.

The project's mission includes forming a stakeholder advisory board, co-developing materials for patient-centered outcomes research (PCOR) and comparative effectiveness research (CER) training and delivering it to Southwest Partnership members, and documenting and disseminating lessons learned. The project is titled "Community Based Development of Collaborative and Sustainable Partnerships in PCOR/CER (CO-DRIVEN)."

"The Southwest Partnership is an important partner for UMB and our program," Mullins said. "It represents seven neighborhoods and six anchor institutions that work together to build an awesome community. Michelle engaged with their senior leadership, even during a pandemic, and determined that there was potential interest in them having more active participation in community-engaged research."

"Michelle's work to make this happen symbolizes all of UMB's core values of accountability, civility, collaboration, diversity, excellence, knowledge, and leadership. At the same time, her PI role demonstrates that the glass ceiling that often exists for staff members and women on academic campuses does not exist for people at UMB such as Michelle who excel at their job."

After five weeks, Medeiros says the project is "going great."

"The Southwest Partnership is recruiting advisory board members from the community and has received multiple applications, which is great considering it's not the typical in-person engagement, it's virtual engagement," Medeiros said. "Many people from our community have already expressed strong interest in joining this effort."

Medeiros works on several other projects involving PCOR and community engagement, including another PCORI grant with SOM's Department of Orthopaedics titled "Pragmatic Randomized Trial Evaluating Preoperative Antiseptic Skin Solutions in Fractured Extremities."

"Basically, I work to bring the voice of the patient and stakeholders in the community to the research table," she said.

As for what she likes best about her job, Medeiros says it is the 20 colleagues who took time to join the virtual celebration.

"Our team works very, very well together, and we have a team approach to everything," Medeiros says. "The School of Pharmacy also is very supportive of me being a non-faculty PI, and that's great. I also enjoy the rapport we've built with the communities we work with, considering the historical difficulties of research and under-represented populations."

Medeiros will receive a plaque, letter of commendation, and \$250 in her next paycheck as UMB Employee of the Month, rewards that made her feel "pretty awesome." 🌟

SOP, KamTek Collaborate on Therapeutic Development to Treat Deadly Infections



Ryan Pearson



Stephen Hoag

Researchers from the University of Maryland School of Pharmacy (UMSOP) and KamTek, Inc., a biotechnology company based in Frederick, Md., have partnered to address the major public health problem of primary and recurrent *Clostridioides difficile* (CD) infections. A Gram-positive anaerobic bacterium, CD is the leading cause of hospital- and community-acquired deadly diarrhea in the United States, and is an emerging pandemic threat.

“We are excited for the opportunity to collaborate with the experts at KamTek to address the critical public health challenge presented by CD,” says Ryan Pearson, PhD, assistant professor in the Department of Pharmaceutical Sciences (PSC) and member of the UMSOP-KamTek research team. “While the primary infection is often a side effect associated with taking certain antibiotics, the bacterium can easily spread from person to person, making it a grave threat to public health. Our team’s work to reformulate an existing therapeutic to help treat this deadly pathogen could be crucial in allowing us to contain CD infections before they spread.”

With an estimated 485,000 cases diagnosed each year, including 25,000 deaths, and \$5 billion in treatment costs in the U.S. alone, CD infections are designated by the Centers for Disease Control and Prevention as an urgent threat requiring aggressive action. Drug-resistant strains of CD also contribute to the larger problem of antibiotic resistance.

Currently, treatment with any of the three available drugs for CD infections, including metronidazole, vancomycin, and fidaxomicin, follows high rates of relapses. Fecal microbiota transplant — the last therapeutic option for recurrent CD incidents — has been flagged by the U.S. Food and Drug Administration (FDA) for its potential risk of life-threatening infections.

Scientists at KamTek recently discovered that clofazimine (CFZ) — a drug currently used to treat drug-resistant tuberculosis, leprosy, and methicillin-resistant *Staphylococcus aureus* — has high potency against CD. The drug also does not inhibit the growth of most other gut microbes that are known to resist CD colonization, aiding in the prevention of CD relapse. KamTek scientists developed an enteric-coated tablet formulation of CFZ, known as EK101, that offers low systemic absorption, minimal exposure to the small intestine, and quick release of the drug in the colon.

The company holds four patents for its discoveries related to the efficacy of CFZ and its derivative against CD. Its scientists are partnering with researchers at the School of Pharmacy to further develop the EK101 formulation with support from a grant from the Maryland Industrial Partnerships (MIPS) program.

“The grant from MIPS will help researchers involved in the UMB-KamTek partnership evaluate anti-CD potential of EK101 by examining its ability to deliver CFZ to the target organs,” says Stephen Hoag, PhD, professor in PSC and director of the Applied Pharmaceutics Lab at the School of Pharmacy, and member of the UMSOP-KamTek research team. “Our goal is to finalize the formulation of EK101, preparing it for *in vivo* efficacy, dosing, and toxicity studies, which, once successful, will be followed by investigational new drug clearance for human clinical trials.”

Because the FDA has granted a “Qualified Infectious Disease Product” designation for CD, the development of this new therapeutic will benefit from a fast track designation, priority review, and five additional years of market exclusivity.

“EK101 is set to become a commercial success and meet an urgent global health care need, while also addressing the broader issue of antibiotic resistance,” says Sharan VedBrat, PhD, MS, president of KamTek, Inc. ☪

Laurels

FACULTY AND STAFF

Angel Bivens, BSPHarm, MBA, CSPI, has been accepted into the University of Maryland, Baltimore's (UMB) Emerging Leaders Program.

Nicole Brandt, PharmD '97, MBA, BCPP, CGP, FASCP, Catherine Cooke, PharmD, and Barbara Zarowitz, PharmD, received the Gold Award for their research poster presented at the 2020 Pharmacy Quality Alliance annual meeting. Cooke also was invited to serve as a member of the Maryland Department of Health's (MDH) Health Services Cost Review Commission Diabetes Measures Work Group.

Becky Ceraul and Shannon Tucker, MS, CPHIMS, have been appointed to the Program Committee of the American Association of Colleges of Pharmacy's (AACP) Administrative Services Section.

Heather Congdon, PharmD, CACP, CDE, was a member of the interprofessional UMB team that received the 2020 George E. Thibault, MD, Nexus Award from the National Center for Interprofessional Practice and Education.

Sandeep Devabhakthuni, PharmD, BCPS-AQ, was inducted as president of the Maryland Society of Health-System Pharmacy.

Megan Ehret, PharmD, MS, BCPP, has been appointed to the editorial board of the journal *Pharmacy*.

Emily Gorman, MLIS, has been named chair-elect of the AACP's Library and Information Science Section.

Mojdeh Heavner, PharmD '08, BCPS, BCCCP, has been appointed by the Society of Critical Care Medicine to its Center for Disease Control and Prevention Infectious Disease Threats Advisory Panel and was elected secretary/treasurer of the American College of Clinical Pharmacy's (ACCP) Critical Care Practice and Research Network.

Daniel Mansour, PharmD '06, BCGP, FASCP, AGSF, has been named a fellow of the American Geriatrics Society. He also has been accepted into UMB's Fellows Program in Community Engagement.

Ashlee Mattingly, PharmD, BCPS, was elected coordinator of the American Pharmacists Association's Compounding Special Interest Group and was appointed to the American Society of Health-System Pharmacists (ASHP) Compounding Section Advisory Group.

Joey Mattingly, PharmD, MBA, PhD, has been appointed by the Patient-Centered Outcomes Research Institute to its Advisory Panel on Clinical Effectiveness and Decision Science. He, **Julia Slejko, PhD**, and **Eleanor Perfetto, PhD**, received second place in the 2020 PhRMA Foundation Value Assessment Challenge.

Zachary Noel, PharmD, was named a 2020 Outstanding Reviewer by the journal *Pharmacotherapy*.

Brent Reed, PharmD, received the Best Poster Award at the ACCP's virtual annual meeting.

Julia Slejko, PhD, has been appointed to the COPD Foundation's COPD360 Therapeutics and Digital Health Development Network Steering Committee.

Sheryl Thedford, PharmD '11, has been appointed to the Psychiatric Pharmacy Specialty Council by the Board of Pharmacy Specialties.

Chanel Whittaker, PharmD, BCPS, CGP, FASCP, has been named Geriatrics Residency Director of the Year by the American Society of Consultant Pharmacists.

STUDENTS

The School of Pharmacy's student chapter of the **Academy of Managed Care Pharmacy** received second place in the organization's 2020 Chapter of the Year awards.

Alexandria Chan, a graduate student in the Department of Pharmaceutical Sciences (PSC), has received a one-year, \$300,000 grant from the American Chemical Society for "Polypharmacological Rescue of Proteasome Inhibitor Efficacy in Multiple Myeloma: Dual Inhibition of HDAC6."

Julie Jeong, a second-year student pharmacist, has been appointed an American Pharmacists Association-Academy of Student Pharmacists Region 2 member at large.

Dante' Johnson, a graduate student in PSC, has received a two-year, \$69,746 grant from the National Institute of General Medical Sciences for "A New Platform for Studying Protein Folding in Live Cells."

Hanna Lefebo, a third-year student pharmacist, received a College of Psychiatric and Neurologic Pharmacists (CPNP) Foundation grant to attend the CPNP 2021 virtual annual meeting.

Marlene Mahipat, a student in the MS in Medical Cannabis Science and Therapeutics program, received an AARP Maryland Recognition Award.

Fourth-year student pharmacists **Cynthia Mock** and **Jemini Patel** won the 2020 ASHP's Local Clinical Skills Competition.

Dana Rubinova, a student in the MS in Medical Cannabis Science and Therapeutics program, has been named by *LA Wire* as a 40 Under 40.

Chaitali Shah, a student in the MS in PSC program, was named the December Intern of the Month by the Maryland Technology Internship Program.

Farideh Sistani, a fourth-year student pharmacist, has received a one-year, \$5,000 fellowship from the American Foundation for Pharmaceutical Education for "Quantifying Health and Economic Impacts of Medicare/Medicaid Policies to Reduce Co-Payments for Chronic Pulmonary Disease Patients Using Inhalers."



What I Learned From the Pandemic



In March 2020, the School of Pharmacy quickly pivoted to distance learning and teleworking in response to the COVID-19 pandemic. The sudden shift was disorienting, stressful, and difficult for many in the School community of faculty, staff, students, preceptors, and alumni. And no one knew how long the virtual format would last. Now, a year later, members of our community of scholars, students, clinicians, researchers, and professionals share their accounts of the pandemic's impact on their professional and personal lives.



**JILL HAMILTON,
MSW**
*Contracts and Grants
Specialist,
Department of Pharmacy
Practice and Science*

On March 18, 2020, I became a mandatory teleworker. I thought it would be for a few weeks and we all would be back to "normal." That quickly shifted, as teleworking became the new norm. At first it was scary,

not knowing what was going on with the pandemic. Professionally, I quickly learned how much I loved teleworking. It took a while to get into a daily routine, as my colleagues were adapting to this as well. Meetings all went virtual, and I learned how to turn the video and speaker off and on. It seems basic, right?

It was a lot to learn all at once, while the unknown of the pandemic unfolded around us. Work was the one thing I relied on because it felt normal and it had to be done. I marvel at the fact that everything I did in the office, I can indeed do at home.

The one thing that became a new norm was my supervisor (Megan Young), our department chair (Jill Morgan), and our dean (Dr. Eddington) checking in frequently regarding our mental health. There were weekly surveys and emails to see how we were doing and to alert us about campus resources, including the Employee Assistance Program. I found these to be very helpful, if for no other reason than I felt seen and heard. With so much other uncertainty in the world, I found my work/workplace to be the calm in the storm.

As we move forward to life after COVID-19, I know the future is going to be more efficient, teleworking will continue, and the University of Maryland, Baltimore (UMB) will continue to embrace technology. My supervisor already has set up electronic filing for all of the contracts and grants that we manage. This made the transition to teleworking seamless. The campus already had Microsoft Teams and other computer programs in place.

Does every meeting really need to be in person? COVID-19 has taught us that the answer is no! It has been great to attend meetings that are online. I have been able to join or listen in and still be working at my desk. The Virtual Face to Face events with UMB President Jarrell have been an invaluable resource of learning and reassurance during this time. UMB has been my lighthouse throughout this year. While I didn't plan for a pandemic when envisioning 2020, it certainly has been an adventure! 🌟



CHAITALI SHAH
*Student, MS in
Pharmaceutical Sciences**

The pandemic-induced shutdown has brought unexpected and unknown fear to me and my plans to complete my MS in Pharmaceutical Sciences at the School of Pharmacy. I was in the midst of attending several classes, including a laboratory course at the

Institute for Bioscience and Biotechnology Research on the University at Shady Grove (USG) campus. I also was holding the part-time position of library assistant at USG.

It goes without saying that I was very worried about the overall changes that the pandemic would engender and its potential impact on my goals, commitments, and career. Soon, all my regular classes went virtual, but I was very fortunate to be able to continue my lab work and library job virtually. The upside of this virtual life is that I ended up with more free time, which I exploited by enrolling in additional courses offered online.

Furthermore, I participated in the Massachusetts Institute of Technology COVID-19 challenge, a three-day hackathon in which more than 1,500 individuals from across the world proposed the best strategy on how to identify and isolate asymptomatic patients to reduce the COVID-19 risk in a timely manner. My team pitched an idea that involves developing a disruptive strategy to increase the detection rate in asymptomatic people by using synthetic biology for tricking, trapping, and detecting SARS-CoV-2. We ranked in the top 3.

It wasn't until my fall internship at AstraZeneca was rescinded due to COVID-19 that I became anxious. As part of my curriculum, my graduation in December totally depended on this internship. Thanks to great leadership at the School of Pharmacy, my class cohort was given the flexibility to work in academic labs to complete our graduation requirements. However, I still managed to get an internship at a Germantown-based company called 3i Diagnostics, and it ended up being a turning point in my life by not only providing me with experience in a variety of molecular biology and analytical techniques, but also opening up several career options. I was featured as Intern of the Month by the Maryland Technology Internship Program in early January, and I recently accepted the position of associate scientist at PPD Laboratories in Wisconsin.

Although the initial switch to the virtual environment was difficult for me, as time passed it boosted my career in ways I never would have imagined. The journey was tough, but well worth it. 🌟

** Shah graduated in December 2020.*

AMANDA WOLFE

*Digital Media Specialist,
Office of Communications
and Marketing*



At the start of the pandemic, I scurried home in the same surreal awe as my colleagues. My subsequent pivot to teleworking was mostly graceful. As a digital media specialist, I'm all things screen — photographer, videographer, editor. My

obstacle was the sudden lack of human interaction. We couldn't meet to film. There were no events to capture. My agenda capsized, organizational tasks floating to the surface. Fortunately, this wavering uncertainty presented new opportunities. I was granted the time to learn elementary coding skills. I could finally devote myself to behind-the-scenes website work, and I only deleted our entire online News Center once.

With some bumps in the road, our team shifted in-person events like graduation to virtual experiences. Faculty, staff, and students sent me video messages and speeches that they recorded from home. I stitched them together. Having to rely on the unrefined quality of web cameras has wounded my artist's eye, but technology offered us a way to be together. The newest, and perhaps most endearing, aspect of working remotely has been in helping my faculty and staff colleagues do things like move a video from a phone to a computer. A doctorate degree does not guarantee technological prowess. I understand that now. We're all learning new things in this new environment, and without individual contributions, my projects would be much less meaningful.

Eventually, I dusted off my cameras and have periodically returned to campus, where I am able to occasionally film and photograph in accordance with established safety protocols. I am not someone who has suffered much from the pandemic. At most, it has affected my sleep. To be part of a community that is at the forefront of conquering the pandemic is humbling and amazing. We persist, and while it may seem silly, that's what I'll look back on — the resiliency of the human spirit, the vulnerability of our errors, and the gift of connection. ☀

RODNEY ELLIOTT

*Engagement Specialist,
The PATIENTS Program,
Department of
Pharmaceutical Health
Services Research*



When the COVID-19 pandemic hit, most community-engaged research programs in the United States struggled to identify ways to continue their important work. The PATIENTS Program (Patient-Centered

Involvement in Evaluating the Effectiveness of Treatments) retained a commitment to diversity, equity, and inclusiveness as well as continuous patient and community engagement. We quickly pivoted to virtual engagement and launched a series of biweekly Facebook Live events, alternating between "Real Time with Rodney," hosted by me, and "BJ's Corner," hosted by BJ Robinson-Shaneman, senior program specialist for the PATIENTS Program. These Facebook Live sessions serve as a platform to keep us connected with the Baltimore community.

In a typical year, the PATIENTS team participates in numerous health fairs, neighborhood block parties, church wellness festivals, University of Maryland, Baltimore (UMB)-sponsored community events, and summer back-to-school drives. We recognize the importance of being in the community and providing community members with health information, resources, and opportunities to participate in research.

With COVID-19, we listened to the experts, heeded their advice, and followed safety protocols by switching to virtual engagement. Although it is a different way of connecting, it has been effective.

Data shows that about 78 percent of viewers are from the Baltimore area, demonstrating that the sessions are directly engaging our specific community of interest. These sessions have served as an excellent way to engage with the community as well as bring awareness to the work that the PATIENTS Program does. Since the first Facebook Live session in May, there has been a significant increase in followers (42 percent) to our program's webpage.

The sessions also have generally increased the page's reach on Facebook. One session with UMB President Bruce Jarrell, MD, FACS, had a 41 percent increase in the number of people who viewed the page's content. Currently, we have 305 Facebook followers, which is a 55 percent increase compared to the previous year. The sessions continue to grow and expand our reach, an achievement that amazes me since our program is primarily focused on in-person engagement.

In 2021, we will continue to grow our social media efforts. We've found a new and effective way of engaging with our audience. Whether in person or virtually, we will continue to meet our community where they are, as a bridge that connects the community with research. ☀



GLORIMAR RIVERA, PHARM.D, BCPS
Preceptor and Clinical Pharmacy Specialist in Medication Safety, University of Maryland Medical Center

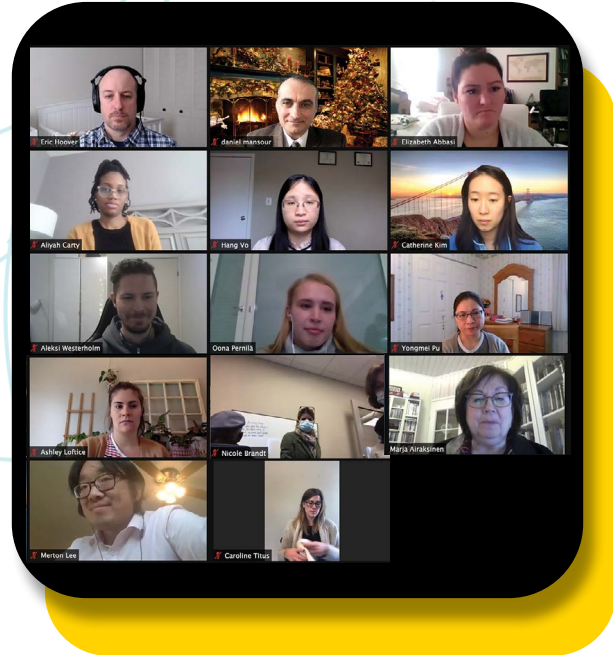
The health care workforce is facing an unprecedented time, and pharmacists are among the professionals serving at the front line, adopting innovative

strategies to continue to provide essential services to patients and promoting safe use of medications during these challenging times. Since the beginning of the COVID-19 pandemic, in addition to serving as the medication safety clinical pharmacy specialist at the University of Maryland Medical Center, I have had the honor to serve as the pharmacist-in-charge of the Baltimore Convention Center Field Hospital (BCCFH).

The setup of BCCFH was different from any health care facility I have previously experienced. It can serve up to 250 COVID-19 patients who require lower levels of care before being discharged home. As the pharmacist-in-charge, I assisted in the design of the inpatient pharmacy and medication distribution models, the development of policies and procedures to ensure the safety of pharmacy front-line workers and patients, and collaborated with the interdisciplinary team in the development of clinical initiatives and guidelines.

As new therapies develop for the management of COVID-19, the roles of pharmacists and pharmacy technicians are vital to ensure safe medication use. I have been able to assist in the development of guidelines for the use of remdesivir as well as in the implementation of an Infusion Center to administer the monoclonal antibodies that were granted an Emergency Use Authorization from the Food and Drug Administration — bamlanivimab, casirivimab, and imdevimab.

The most significant experience has been the interaction with patients. Being able to communicate with Spanish-speaking patients and be a support for them during their hospital stay has been invaluable. I will always remember a conversation with one of our very first patients, where he described being scared when he was diagnosed with COVID-19 but that he was grateful that he was able to recover thanks to the care he received at BCCFH. I am proud to be part of the BCCFH team, certainly one of the most valuable experiences in my career. 🌟



PETER LAMY CENTER ON DRUG THERAPY AND AGING

MERTON LEE, PHARM.D '20
Geriatric Pharmacotherapy Fellow

NICOLE BRANDT, PHARM.D '97, MBA, BCPP, CGP, FASCP
Executive Director and Professor, Department of Pharmacy Practice and Science

DANIEL MANSOUR, PHARM.D '06, BCGP, FASCP, AGSF
Interprofessional Clinical Coordinator

In the fall 2015 semester, we launched an interprofessional education care in geriatrics course for students from disciplines across the University of Maryland, Baltimore (UMB) including nursing, pharmacy, and social work, who gathered to present health education and address the care needs of older adults in West Baltimore. In that first semester, we partnered with Mount Clare Overlook Apartments, a residential community near UMB.

Students went on-site and made an immediate impact in the care of our neighbors, from reviewing medications, assessing blood pressure readings and fall risk, to addressing immediate, patient-specific concerns like setting up and using a CPAP machine, facilitating communication between a neighbor and his caregiver, and coordinating care among another neighbor's many providers. Since that first semester, our students have consistently described improving

their competency in interprofessional dynamics, gained confidence in providing care and in coordinating with others who have different skill sets. Beyond educational achievements, students and course faculty have developed authentic relationships with our neighbors: we celebrated birthdays, mourned passings, hugged, high-fived, and laughed together. But in March 2020, we suddenly had to adapt.

Our initial move to virtual meetings enabled us to continue to care for neighbors we had visited. And while we missed seeing the people with whom we had been learning, we were able to follow through on our care, for instance our neighbor whose CPAP machine we set up found it too difficult to use. Working over Zoom and through phone calls and emails, our students ensured that he received a refund for his returned CPAP machine. We felt grateful to maintain our care relationships through technology.

For fall 2020, we realized that we would have to conduct the entire course virtually instead of through the richness of face-to-face, home visits. This adaptation would be significant. Older adults with whom we had no prior relationship were sometimes justifiably skeptical of joining Zoom meetings to discuss their health with students. At first, we had to leverage the existing care relationships our course faculty maintained with older adults at their practice sites to recruit volunteers for students to practice their patient assessments and teamwork.

Meanwhile, we also worked slowly to build trust with neighbors and community members who reached out by phone, having them first join virtual group meetings. The trust built in our shared classroom, where students and people from the community teach each other, eventually resulted in the kind of rewarding, collaborative care that has been a hallmark of our course.

Adapting so that we could present an enriched, person-focused learning experience in a virtual setting during a global pandemic has required us to double down on the skills that enabled us to launch a new approach to health care training in the first place: a willingness to improvise and troubleshoot on the fly, all the while attending to the personal needs and relationships that enable collaboration. 🌱



**LAUREN WAGNER,
MS '11, PHD '14**
*Deputy Director of Clinical
Quality Management,
Ryan White HIV/AIDS
Program
Baltimore City Health
Department*

In April 2020, I was selected to serve as an outbreak team lead for the emergency COVID-19 response in Baltimore City. In my role, I managed a team of four

outbreak investigators. After being trained by the Centers for Disease Control and Prevention (CDC) on outbreak investigation and response, we were tasked with conducting investigations and providing intensive technical assistance on COVID-19 outbreaks in settings such as child care facilities, private schools, group homes, acute care and outpatient sites, and businesses.

Our work included conducting interviews with facility administrators, determining current infection control practices, reviewing CDC and Maryland Department of Health guidance, determining exposures and making appropriate recommendations, gathering and reporting daily outbreak data, and coordinating testing response. Each day was drastically different, and we learned very quickly to be adaptable to change. At any given time, our team would manage anywhere from 10 to 25 outbreaks simultaneously. As the lead, I often provided guidance on unique and varied situations and developed best practices for implementation when no guidelines were available.

This is a once-in-a-lifetime crisis, and I was helping to mitigate a dangerous virus in my local community. Our team experienced the greatest test — working under the pressure of a worldwide emergency. A coordinated effort resulted. Strong collegial relationships were developed among each other and with facility staff. We supported each other — creating a safe space to discuss our thoughts and feelings while we coped with the devastating effects of the pandemic.

As a dedicated public health professional, this experience was extremely challenging yet very rewarding. Professionally, it reinforced the vital importance of teamwork, having a common vision, and applying collective expertise to create solutions to complex problems. I will use these lessons learned to strengthen my quality improvement work in the HIV/AIDS field. Personally, this experience reinforced my mission to empower communities. The success of the next phase of the pandemic is crucial, I know that by working together for the greater good of humankind, we will be able to prevail against COVID-19. 🌱



NEPHTHALEE EDMOND TEFERA, PHARM.D, BCPS
Preceptor and Pharmacy Supervisor, MedStar Montgomery Medical Center

When the COVID-19 pandemic began, we were faced with many unknowns. As a preceptor and hospital pharmacy leader, I saw firsthand how my team of pharmacists

and technicians were working tirelessly to provide patients the best care despite at times being understaffed with limited medications, supplies, and information.

I also quickly realized students and residents had a front-row seat to what leadership looks like in times of crisis. Our approach to addressing critical medication shortages, procurement strategies, policy development, communication, and employee well-being was paramount. Fortunately, we rose to the occasion and maintained the confidence and trust of our patients and employees.

Professionally, the critical thing that I have kept close to heart as I serve and lead is that crisis doesn't create character; it reveals it. I am proud and honored to be a School of Pharmacy preceptor and health care leader during these unparalleled times. I sincerely hope pharmacy students and residents understand that leadership is not an actual title or position. It is action and the example you set for others. My hope is that our leaders will lead with wisdom, grace, and courage. The tide is rising, but the world WILL eventually recover and beat this "2020 black swan."

I envision pharmacy leadership will take on a new approach to future planning, including crisis recovery task forces, expansion of remote working capabilities, and leadership coaching. ☀



VICKI WILLIAMS, PHARM.D '99, BCACP
Medical Liaison, Amgen

A typical day in the medical science liaison life is driving to appointments, face-to-face visits, and relationship building. We use our pharmacy education and expertise to bring science to our medical colleagues in the hospital and the clinic. I drove to D.C. and saw multiple cardiologists in a day, then

drove home again. I went to large meetings and interacted with nurse

practitioners and clinical pharmacists about their challenging practices and discussed great new science. I got to put on a dress and heels!

When we became "homebound" because of COVID-19, those relationships became much harder to manage. Not to mention how difficult it is to sit in my office chair, ALL DAY, EVERY DAY! I won't complain about the ability to wear yoga pants, though.

My days are now filled with Webex, phone calls, and emails, asking how our customers are coping, how they are using telemedicine to deliver the best care possible ... then talking some new science. It's different, but it is still rewarding. The needs of our customers are clarified, specific, focused, and I can deliver much of that from my desk.

But we all long for the days of a real, in-person visit. The kind that isn't interrupted by the dog barking at the UPS driver. The kind that allows you to see someone's expression. The kind that lets you pull in another colleague or walk around the corner to answer someone's immediate question.

I was taught by the School of Pharmacy to be a "relationship" pharmacist, a communicator, an educator, and I LOVE that part of my job. It's hard to do from afar. But I know this will pass. I know I'll be able to get back in the field soon. I know it will look different, and that's OK. I will truly be grateful to have a vaccine, shake a hand, get lost in the halls of Johns Hopkins, sit in a grand rounds lecture. But I will miss my yoga pants. ☀



Pre-pandemic photo

SEAN KIM
*Student Pharmacist
President, Class of 2023*

Just like everyone else, this pandemic has hit me hard. Suddenly after spring break in March 2020, our classmates were separated by virtual learning with no promise of when we'd see each other again. All of the didactic classes in the PharmD curriculum, which is every class from the first to third year, have been transitioned to the virtual platform. For fourth-year students, rotation blocks are sometimes canceled and changed due to the pandemic.

Being a pharmacy student requires the ability to adapt as we learn new languages and cultures in school. Virtual learning is new to everyone, both faculty and students. Confusion sometimes arises, despite the best efforts by administrators and student leaders.

All Student Government Association (SGA) events are now virtual. Students being unable to meet in person has made engagement difficult for the SGA. However, we overcame and proceeded with what we could. Our online engagement skills have been developed, and we taught ourselves how to utilize virtual platforms such as Zoom and Webex.

Whenever I look at this silly picture of the Class of 2023 in Pharmacy Hall (on previous page), it fills my heart with love and makes me miss them.

What have we learned throughout the pandemic? We learned to become stronger internally and externally in order to adapt and move forward. We couldn't just complain about the situation but had to find ways to overcome it. This pandemic won't be the only challenge we will confront in our lives. But as health care professionals, we won't give up because we have taken an oath to keep serving patients. The delivery system for those services may change, but solving problems is our passion as scientists and health care providers. 🌟



**CYNTHIA BOYLE,
PHARMD '96**
*Professor, Department of
Pharmacy Practice and
Science (PPS)*

When a school commits to a comprehensive simulation program such as Fishbowls and OSCEs (Objective Structured Clinical Examinations), it harnesses resources within health profession schools to plan, deliver,

and evaluate activities for students at various stages of learning and development.

The Fishbowl for first-year pharmacy students — Abilities Lab 1 (PHAR 505) — occurred just seven weeks into the fall 2020 semester, which was conducted virtually. It was stunningly complex at the outset. Standardized participants were trained virtually with virtual fourth-year students to deliver two introductory scenarios based in pharmacy practice.

In small groups of 10 to 12 via Zoom, students practiced what they had learned in three patient education labs and two community pharmacy verification labs. Many PPS faculty volunteered to facilitate the sessions.

After participation in the Fishbowl patient encounter simulation activity, each student completed a self-reflection. Students' observations helped to complete the learning cycle to identify what went well, what could have been better, and how this relates to future education and practice.

The standardized participants serve a vital role in the exercises. Students do not know them, and much like responding to a patient asking a question at a pharmacy counter, students practice evaluating patients' needs to provide appropriate care. At the end of the encounter, the standardized participants give feedback for "what it was like being your patient." Some of their comments were:

- You were professional and non-judgmental.
- When the pace of information was moderate, I was less

anxious and overwhelmed.

- You assuaged my fear with emotional support.
- With good eye contact and appropriate tone in the encounter, I found emotional empowerment.

Appropriate communication is a lifelong pursuit and challenge in health care. Alumni and stakeholders can be confident that the student pharmacists in the Class of 2024 are well on their way to take their place in the profession — despite the virtual format of their first year of pharmacy school. They will need all of us to support and encourage them, as they would any year. 🌟



JACE JONES, PHD
*Assistant Professor,
Department of
Pharmaceutical Sciences*

2020 was an extraordinary year. The challenges have had a direct impact on all of my professional duties (research, teaching, and service). A vast amount of my time has been spent adjusting to the need to transfer a major portion of

my face-to-face interactions to remote/video platforms.

This involves a major shift in how I operate my lab. The two primary interactions I have with my lab were fundamentally changed: weekly group meetings and one-on-one research discussions, both of which were in-person. The shift to remote meetings has been an adjustment. I view research as a tactile endeavor that benefits from in-person interaction. The shift to remote meetings has allowed us to continue our research discussions, exchange information, and provide emotional support for one another.

Another adjustment has been the need to continue our research activities, which require us to be physically present in the lab, and the need to provide a safe working environment. We are accustomed to conducting our research while wearing PPE, but the heightened risk of COVID-19 has made it necessary to enhance laboratory safety practices — at the department, School, and University level. Although it has required a concerted effort to adhere to the new lab protocols, it has allowed us to continuously perform laboratory experiments.

It also should be noted that we are fortunate to be able to carry on with our work. The inconveniences we have encountered fail in comparison to the substantial impact COVID-19 has had on our society. With that in mind, we have initiated several research projects focused on using our analytical chemistry expertise to help fight the COVID-19 pandemic. Via several industry-academic partnerships, we are developing new analytical strategies focused on developing diagnostics for enhanced virus detection.

In the future, I envision day-to-day research activities to return to

relative normalcy once it is safe to do so. Most of our research activities require in-person use of instrumentation and laboratory equipment. In addition, the return of face-to-face interactions where a robust exchange of ideas is possible is highly advantageous for mentoring and learning.

In regards to teaching, I do think that there will be options to engage students remotely, yet I think we have come to more fully appreciate the advantages of in-class instruction. As such, once it is safe to do so, I fully expect in-class instruction to resume. 🌟



PETER SWAAN, PHD
*Professor and Chair,
Department of
Pharmaceutical Sciences
Associate Dean, Research
and Advanced Graduate
Studies*

2020 was not an easy year, with the pandemic forcing the School to suspend research operations for almost three months, and subsequently restart it in a limited capacity and with new guidelines in

place. It has taken a toll on productivity and forced us to rethink and reimagine how we do meaningful research. However, comparing the Department of Pharmaceutical Sciences' (PSC) output to previous years, one would not think that anything has truly slowed us down.

PSC faculty productivity resulted in 176 peer-reviewed original research articles in 2020. The department brought in \$8.4 million in grants, contracts, and fellowships, which is a testament to the continued success of our faculty and students. Since the start of the pandemic, faculty, postdoctoral fellows, and students submitted 78 proposals requesting more than \$18.8 million in research support.

Our Research Phased Reopening Task Force (Maureen Kane, PhD, C.S. Raman, PhD, Stephen Hoag, PhD, Amanda Oglesby, PhD, and Fengtian Xue, PhD) planned and coordinated research suspension in March 2020 and the safe reopening of our laboratories in June 2020. Through their concerted action and recommendations, PSC was well ahead of the University mandates to suspend research, which led to a smooth transition to keep essential instruments and equipment running using a well-planned emergency crew. This team also is deeply indebted to Pam Crowe, MS, the School's director of facilities and laboratory services, for her outstanding assistance and insights during the process.

PSC's Business Office staff, under the leadership of LiYi Wu, MS, department administrator, have been working from home diligently to place orders, track down packages, and coordinate a smooth transition for everyone.

By working together, the PSC leadership team has been able to efficiently navigate the challenges of keeping research going during the pandemic and to ensure a smooth and safe transition from research

suspension to reopening labs. As an active researcher, the collegiality and thoughtfulness of all researchers sharing a floor was invaluable to keep our science moving forward. 🌟

WHY I GOT THE COVID-19 VACCINE

ROSIE LOVE, MPH, a PhD candidate in the Department of Pharmaceutical Health Services Research, received the COVID-19 vaccine and explains she needed this protection because she has kidney disease.

"I am a kidney disease warrior. I wanted to protect myself, my family, and share my experience with the COVID-19 vaccine as a patient with a high-risk medical condition," she says, adding that she did a lot of research before being vaccinated. "I was not scared or anxious at all to get the vaccine! I had an appointment with my physician prior to getting the vaccine. He advised me that I should get it as soon as I had the opportunity."

While there have been patients with kidney disease who have been included in the clinical trials for the vaccines, there is no long-term evidence to show that their outcomes are worse or better with the vaccine than patients without kidney disease, Love explained.

"I do understand why there is some hesitancy from some patients about the vaccine. However, the risk of poor outcomes from COVID are worse for patients with kidney disease than those without. This is known. So my risks of going unvaccinated are greater than any potential side effects I may experience from the vaccine."

Helping her in her decision to get the COVID-19 vaccine, Love researched the American Kidney Fund's resources about kidney disease patients in clinical trials.

"I felt informed, prepared, and empowered when I made the decision to get the vaccine as a high-risk patient. This is the way I believe all patients should feel."

CHEYENNE SIMMONS, a student in the School of Pharmacy's MS in Medical Cannabis Science and Therapeutics program and a laboratory technician in a Frederick facility, accepted the COVID-19 vaccine for many reasons, but most importantly to keep her mother safe.

Her mother suffers from several underlying conditions, including chronic obstructive pulmonary disease, and is at heightened risk.

"I have been actively working in a laboratory since March 2020. There is always the chance I could accidentally expose my mom," Simmons explains. "Aside from my family, I got vaccinated to help flatten the curve. The unknown can be frightening, but please do your research and help keep others safe!"

— Joanne Morrison



Crowe Named Pandemic Champion

BY MARY THERESE PHELAN

Pamela Crowe, MS, doesn't go out of her way seeking recognition but she found it anyway, being named a Champion of Excellence at the University of Maryland, Baltimore (UMB).

Crowe, director of facilities and laboratory services at the School of Pharmacy (SOP), was nominated for the way she stepped up during the COVID-19 pandemic.

"Pam balanced telework with being on campus to ensure the continued operation of buildings such as Pharmacy Hall, Pharmacy Learning Center, and the School's areas in Health Sciences Research Facility II [HSRF II] and the Saratoga Building, home of the Maryland Poison Center," SOP Dean Natalie D. Eddington, PhD '89, FAAPS, FCP, said in her nomination.

Crowe facilitated the continued delivery

of packages and supplies; coordinated the pickup of critical items hastily left in offices and lockers in March by faculty, staff, and students; and ensured the continuity of renovation and maintenance projects. But her work doesn't end there.

She also is a member of SOP's Administrative Board, which meets virtually each week to manage the COVID-19 pandemic's impact on the School. She is a member of the UMB Recovery Task Force's Campus Operations group, which meets virtually every other week, and served on the Incident Management Team that coordinated the University's initial emergency response to the pandemic.

When Phase 1 of UMB's return to research was announced in July, Crowe ensured that scientific laboratories and other spaces in Pharmacy Hall and HSRF II were prepared and safe for faculty, postdoctoral fellows, and graduate students. She also worked with UMB's Office of Communications and Public Affairs to produce signs reminding faculty, staff, and students about guidelines for social

distancing, face coverings, and frequent hand washing, as well as capacity limits for bathrooms, elevators, and common areas.

She personally installed all of the signs on SOP's research floors in HSRF II, as well as in Pharmacy Hall, in advance of the researchers' return.

Crowe said she visits campus weekly so she can check on things firsthand.

"I like to walk around the buildings and labs to see if everything is OK," she said. "I don't think I'd be as comfortable if I was exclusively at home. I love my job — it's fun and interesting."

As for the award, Crowe accepted it humbly. "I'm doing what my counterparts are doing. I just happened to be the one called out for it," she said, citing her facilities colleagues at the other UMB professional schools. "We're all doing the same thing essentially, making sure that things continue to run, that we communicate with facilities management, and that we coordinate the needs of the occupants in the buildings." 🌟



Students Roll Up Sleeves, Administer Vaccines

BY MARY THERESE PHELAN

With a look of intense concentration, Amy Chen, a fourth-year student at the School of Pharmacy (SOP), gently pierced the skin of the upper arm of Jane M. Kirschling, PhD, RN,

FAAN, thus administering to the dean of the School of Nursing (SON) her first dose of the Moderna COVID-19 vaccine.

The scene was a familiar one at the Southern Management Corporation (SMC) Campus Center, where officials from the University of Maryland Medical Center (UMMC), the University of Maryland Medical System, and the University of Maryland, Baltimore (UMB) have established a fully operational

clinic for health care workers and other front-line personnel to receive vaccinations against COVID-19.

Students from SOP and SON at UMB have volunteered to administer vaccines, fulfilling a need to help during the pandemic while gaining valuable hands-on experience.

"I volunteered because I wanted to help fight COVID. I feel like what I am doing matters," said Chen, who at the time was unaware

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of her patient's role at UMB. "Had I known, I would have been a little nervous."

Alexandra Clyde, another SOP student, said she volunteered because doing so means saving lives. Pharmacy students participating in the clinic completed online trainings and received immunization certification as part of their normal studies.

"This has obviously been a life-altering experience," Clyde said. "I definitely know people who have suffered a lot from everything that's going on. So, the fact that we can finally kind of see an end is really enlightening and gratifying. I think most people get into health care with just the idea of helping people. And this, for me, has been the best way to help people."

She has an upcoming appointment to receive the vaccine herself, and when she does, she will be thinking of a beloved family member who passed away in April 2020 of COVID-19. "I'm getting my shot for my uncle," Clyde said.

Volunteering for the vaccination clinic was an easy decision for fellow pharmacy student Ryan Jackson. Both of his grandparents are suffering from COVID-19.

"Whenever they need volunteers to stop a disease, or to stop the spread of a disease that is affecting so many, I think we're definitely helping," Jackson said.

Magaly Rodriguez de Bittner, PharmD '83, BCPS, CDE, FAPhA, professor in the Department of Pharmacy Practice and Science (PPS) and associate dean for clinical services and practice transformation at SOP, received her first dose of the vaccine from one of her students, Jemini Patel.

"I'm delighted. I've been wanting to get it for a long time," Rodriguez de Bittner said. "Secondly, I'm delighted that I've been able to get the vaccine by one of my student pharmacists and really highlight what an important role pharmacists have in public health. For us, it's really very important to see how by having that training, the students

are ready, capable, and able to really provide vaccines and improve public health."

Rodriguez de Bittner also was eager to get vaccinated because she welcomed two new grandchildren in 2020.

Getting vaccinated, she said, "provides me an opportunity to be there for them, to spend time with them."

The instructor beamed with pride after Patel gave her the shot.

"She followed all the steps that we teach them," Rodriguez de Bittner said. "And the other thing is I really, honest to God, did not feel it. So it was very painless. It was very easy, very, very smooth."

Said Patel: "She has taught me the technique, so it's truly a test on how I do. Yes, I was a little nervous, but I have had practice and I am comfortable giving vaccines."

Patel said she participated in the clinic because it was a good opportunity to serve her University community. She received the vaccination earlier in the week. "I was very eager to get the vaccine. My parents are elderly," she said.

Cherokee Layson-Wolf, PharmD '00, CGP, BCACP, FAPhA, associate dean for student affairs and associate professor in PPS, said SOP's leadership collaborated with UMMC to assist in staffing the SMC Campus Center clinic.

"Our students are trained at the end of their second year, so we've been fortunate to be able to place fourth-year pharmacy students here as immunizers within the SMC Campus Center clinic," Layson-Wolf said. "This is a monumental experience for our students to really be involved on this large level to help impact public health. And this is what our students have been trained for."

She added: "We feel so strongly about the role of pharmacists in immunizations that we do provide this training to our students earlier on. So they're able to do this when they're on rotations when they're at work and here on rotation through this clinic,

and they're really able to help increase the throughput of the number of people that are able to be immunized on this campus."

Layson-Wolf said she had been vaccinated earlier in the week.

"I got the shot for many reasons, to help protect myself and my family," she said. "And I think folks in these health care roles need to serve as role models, to be able to say, 'I believe in this vaccine. I believe that this has impact on my community.'"

Kelly Doss, a student in SON's Clinical Nurse Leader program, also welcomed the chance to be part of the clinic.

"I'm excited to be part of this and very, very happy to have this opportunity," she said.

As excited as Doss was to be part of the vaccination process, Kirschling was appreciative for the hands-on learning students are receiving.

"I'm extremely grateful for the partnership between the medical center, the medical system, and UMB in terms of making this a reality. Not only for our employees, but for students, it is extremely important," Kirschling said. "We have 2,000 nursing students at the University of Maryland, Baltimore, and our undergraduate and graduate students and their ability to pull together and to participate in the vaccination process is important, and will help us get it done sooner."

Kirschling said she was eager to get the vaccine and is completing the approval process for becoming a vaccine administrator.

"We all need to do our part in terms of fighting the pandemic, and we have a number of tools that we can use — hand washing, social distancing, masking. Vaccines are another tool to help us get through this pandemic sooner than later," she said. "It's important that we all pull together right now and meet this unbelievable need to have people who can provide vaccinations to those who are willing to take the vaccine." ☀



IT Team Makes Work From Home Work

By Christianna McCausland

Prior to the coronavirus pandemic, a handful of School of Pharmacy employees worked from home perhaps a day or two a week. Early in 2020, the School began to plan for a possible transition to a fully online workforce as news of the pandemic spread. Tim Munn, MS, assistant dean for information technology (IT), explains that in some ways, the School was well-positioned to move its 500 faculty and staff to remote, online work.

“We had a strategic Cisco Webex initiative we’d started in 2019 to enhance conferencing arrangements and to be the key technology for the Master’s in Pharmaceutical Sciences,”

he explains. “That enabled work from home to be a more straightforward transition for us.”

There were, however, unexpected challenges. The School provided laptops to those in need, but once the University moved to limited in-person activities, there was no one on-site to take delivery of the ordered devices. This was alleviated when Pharmacy Hall became a designated delivery site, and the School’s IT staff were designated as essential employees, allowing them to be on campus.

IT staff set up each machine to ensure it had appropriate software and protections. And while many employees had

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devices at home, Microsoft phased out its Windows 7 software in January 2020, which meant many people were using a home computer with obsolete software. At one point, a member of Munn’s team even took a laptop home to be picked up by an employee who lived in the same neighborhood.

“My team often goes the extra mile for people in an effort to help,” says Munn. “Their creativity was extremely helpful in making a difficult, stressful situation a bit more manageable.”

Additionally, there were abundant internet challenges as families suddenly had multiple people working online eight-plus hours a day as well as children in virtual school, stressing bandwidth. A few employees were still on dial-up service.

“As faculty and staff scrambled to set up their work-at-home situations, there were numerous challenges with laptops, network access, Webex and Zoom issues, and more,” says Natalie D. Eddington, PhD ’89, FAAPS, FCP, dean and professor. “Our IT team not only solved each problem, but did so under the enormous stress and strain of the uncertainty that the pandemic brought to us all.”

Working from home, employees could securely access the information on their work computer via “Remote Desktop.”

While this was a boon for faculty and staff, the software needed to be “patched” weekly with important functional and security updates. Munn created a rotation wherein one of his nine-person technical staff would be on-site one day a week to ensure that systems continued to function.

Zoom rapidly emerged as the user-friendly video conferencing platform and Munn says the University moved quickly to get a Zoom license, which they rapidly expanded. The IT department hosted training sessions for using Webex and Zoom and created online tutorials to help employees use the various remote tools.

Still, as the pandemic wore on, Munn says his team was fielding plenty of help calls. To manage the volume, they used a tool called “Bookings” that enabled employees to directly schedule an appointment with a technician online.

“It’s been challenging to keep people focused — the pandemic fatigue is being felt by all,” says Munn. Of course, the pressing question now is: What does the future hold? Munn feels the School is prepared for anything.

“I think the IT experience we’ve had will serve us well in implementing whatever work looks like in 2021 and beyond.”

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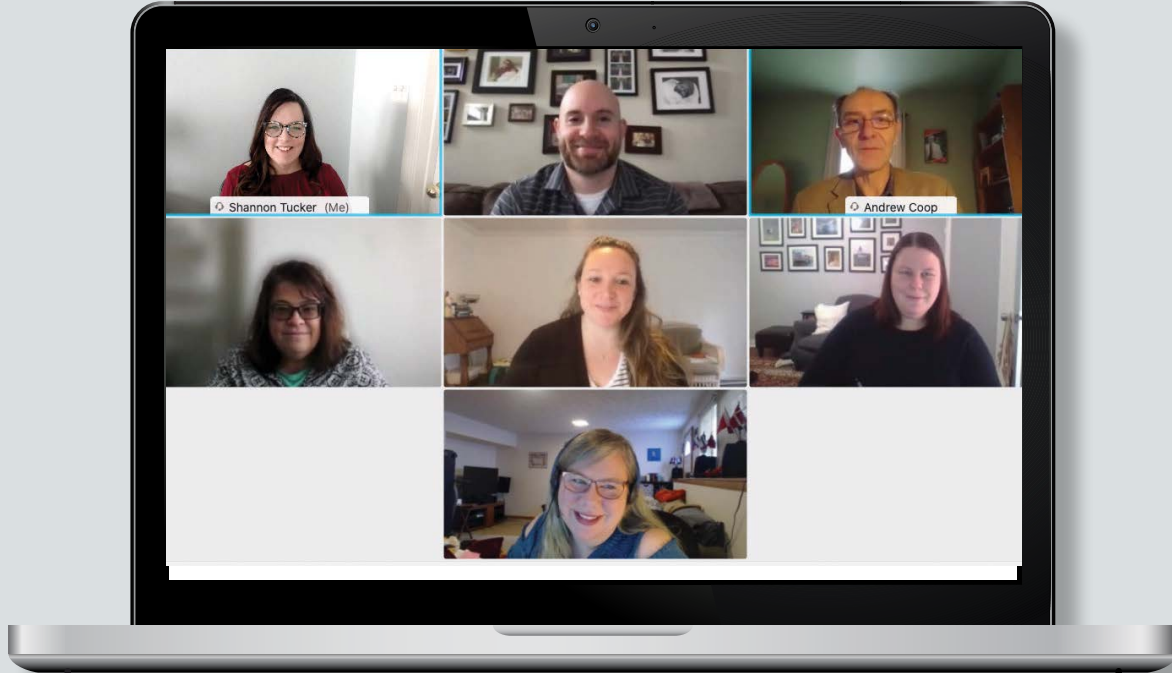
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Philip Johnson

Network Administrator



OAA's Education Evolution

By Christianna McCausland

In March 2020, the School of Pharmacy moved its entire academic enterprise, as well as business, administrative, and research operations, online as the coronavirus pandemic unfolded. Most of the School's master's programs already were largely online, but the two PhD programs and the Doctor of Pharmacy (PharmD) program, while having some virtual elements, were largely in-person experiences. At the time, it was an emergency pivot, but as the year progressed, the School, under the leadership of the Office of Academic Affairs (OAA), evolved its educational approach.

"In the spring emergency pivot, we were forced to quickly move academics online without a lot of planning," explains Andrew Coop, PhD, associate dean for academic affairs and professor in the Department of Pharmaceutical Sciences, whose office oversees the PharmD program, which has 479 students. "While that was effective in that emergency moment, we learned a lot of lessons in the spring that informed what we implemented in the fall. It's been an iterative process."

The School decided in June 2020 to continue a virtual format for the forthcoming fall semester and used the summer

to develop a strategic plan for delivery of the PharmD program. The School's PhD programs in pharmaceutical sciences and pharmaceutical health services research moved online as well in the spring under the leadership of their respective departments. "We took feedback from students and faculty and worked with the vice chairs in all three of our departments to create a student-centered delivery approach," says Coop.

Essential to this new approach was a limited amount of synchronous online learning to reduce "Zoom fatigue," the very real exhaustion that comes from sitting in a video conference for hours on end. For the fall semester, synchronous instruction for PharmD students was limited to two- to three-hour blocks, two to three days a week, scheduled consistently from noon to 2 p.m. Understanding that students and faculty were home, possibly with family and other demands, this specificity enabled everyone to plan their schedules. It also meant students in other time zones could join class at a reasonable hour. Faculty provided all new asynchronous material — mostly pre-recorded videos — that were released consistently at the start of each week.

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“We realized we couldn’t just take the normal schedule and post it online,” says Shannon Tucker, MS, CPHIMS, assistant dean for instructional design and technology. “We had to help everyone balance this environment; it’s not the same as going into Pharmacy Hall and being there and shutting out the rest of your life.”

OAA assigned an instructional designer to each course manager to help faculty create online curriculum reflective of the new normal, courses that didn’t just use technology, but applied it creatively to enhance the online experience. Courses were designed to focus on outcomes to ensure students met the essential requirements for completion.

“We asked, ‘How can we achieve our objectives in this environment in a way that’s engaging?’” says Tucker. “This provided faculty an opportunity to get really creative, and I expect there will be things we’ve helped faculty implement they may want to keep post-pandemic.”

“With the strategy that evolved over the summer, we were able to implement team-based learning, more group discussion, and alternative assignments,” says George Anagnostou, MS, director of instructional technology in OAA. “From the exam perspective, we added an A.I.-based exam proctoring solution with the human review component handled by our office.”

The School now utilizes ExamMonitor to handle assessments. It uses tools such as facial recognition and audiovisual recordings to ensure best practices in un-proctored exam environments. Efficient assessment was critical to maintaining rigorous School standards and student achievement.

“The assessments had to measure that the students were achieving the learning outcomes, but assessment is very different for an online course than for a live course, and we had conversations about more authentic methods to assess students in an un-proctored environment,” explains Lisa Lebovitz, JD, assistant dean for academic affairs and assessment. “The method of delivery had to change and so too did the method of assessment. Overall, we still had to ensure that students were prepared so they could be successful in their next step through the curriculum.”

Maintaining this academic structure has required hundreds of hours of meetings, collaborations among faculty, students, student government leadership, and staff, and monumental efforts by the IT, AV, and instructional design departments.

“Communication has been so important, so everyone was included in the decision-making process and to help us develop solutions quickly,” Tucker says. “Thanks to these efforts, many of the lessons learned from the pandemic will have positive impacts on the School in the future.” 🌟

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Griffin Sauvageau, a fourth-year student pharmacist, and preceptor Patricia Ross

In March 2020, during those tumultuous days of the first surge of the coronavirus pandemic, the University of Maryland School of Pharmacy's (UMSOP) Class of 2020, due to graduate in May, was completing its clinical rotations. For the protection of its students, the School elected to limit in-person rotations until June, opting for virtual experiences for the majority of the 152 students in the graduating class.

"Switching to a new format was a huge, complicated undertaking," says Patricia Ross, PharmD, MEdHP, a preceptor, clinical associate professor, and since 2009, experiential education site coordinator at The Johns Hopkins Hospital (JHH). Her responsibilities include preceptor recruitment, scheduling student rotations, and the logistics involved in setting up successful rotation experiences at JHH for students during their four years in pharmacy school.

"During the pandemic, the challenge has been to care for patients, develop a learning experience for students to acquire skills while upholding high academic standards, and safeguarding everyone's health," says Ross. She has worked closely with the School's Experiential Learning Program and tapped into the expertise of JHH's Department of Pharmacy and its preceptors to create both virtual and hybrid rotations.

Ross, who also precepts the Advanced Pharmacy Practice Experience (APPE) ambulatory care rotation at JHH, directed the six APPE students on assignment at Hopkins in the spring to work from home, making virtual visits to patients using a secure video platform. During the virtual visits, students conducted patient interviews to assess information, evaluated medication

Switching on Short Notice

By Lydia Levis Bloch

therapies, and implemented ongoing treatment plans in collaboration with their preceptors.

"Taking the APPE ambulatory care rotation to a virtual format was definitely doable," says fourth-year UMSOP student Amanda Harrilal Khan. "At the very beginning, I felt I missed some patient interaction, but as the rotation evolved, I know I made strong connections with patients, who would be excited when we called. It was extremely rewarding," she says.

Ross also designed an innovative, hybrid model for third-year students in the Introductory Pharmacy Practice Experience Quality and Safety Health-System Practice course, allowing them to complete their rotation at JHH. Collaborating with Agnes Ann Feemster, PharmD, BCPS, the School of Pharmacy's assistant dean for experiential learning, they added two elements to the rotation: students screening cancer patients arriving for their appointments for COVID-19 symptoms and providing flu vaccines to hospital employees.

Certain aspects of the virtual format and telemedicine may be incorporated into future programming, says Ross, particularly in the ambulatory care rotation, which lends itself to having patients interact with students and preceptors by phone and video.

A preceptor since 2003, Ross estimates she has mentored 175 students, and works with about 100 preceptors at JHH. What is most satisfying, she says, is to observe the students' evolution as they progress through a rotation. "They become more comfortable providing direct patient care and increase their self-confidence and belief in their abilities," Ross says. "Rotation is about applying what they learned in the classroom to real patients. Sometimes that can be overwhelming, so helping students make that connection is very gratifying."

A recipient of the School of Pharmacy's Preceptor of the Year Award in 2016, Ross also is program director of the ambulatory care pharmacy residency at JHH. Her research focuses on chronic disease states, such as diabetes and hypertension.

"Dr. Ross is a role model," says Khan. "She goes above and beyond for her patients and has inspired me to choose ambulatory care as a career specialty."

Ross returns the compliment, saying she admires the flexibility and determination of the pharmacy students as they navigated their rotations during the pandemic. "They fully deserve applause," she says. ☺



Saluting 50 Years

By Gwen Newman

Dorothy Levi

Dorothy Levi, BSP '70, RPh, describes herself as a typical Type A, first-born, Virgo personality. Logical, organized, attentive to detail, and not one to sit idly, she enrolled in the University of Maryland School of Pharmacy (UMSOP) at the age of 16, and graduated with honors in 1970 — a trendsetter who helped open the long male-dominated field to females. "My class of 48 students included 11 women," Levi notes. "We were the first class to have clinical rotations in the School's transition to the all-PharmD program."

Post-graduation, Levi worked for more than two decades in the hospital pharmacy setting at then-Lutheran Hospital, which merged with Provident Hospital to become Liberty Medical Center, a 282-bed acute care community hospital in Baltimore. As director of pharmaceutical services, she was responsible for the department's administrative, clinical, and financial services. She supervised 30 employees, managed a \$1 million budget, and maintained compliance with Joint Commission on Accreditation of Healthcare Organizations standards. And, in the midst of a relocation, she oversaw her department's move from Ashburton Street to Liberty Heights Avenue. She left the hospital in 1992 to retire.

A Baltimore native, Levi also co-owned a community-based pharmacy, Medical Arts, from 1977 to 1999. Its marble soda fountain was donated to the Baltimore Museum of Industry where it now resides in the permanent pharmacy exhibit there. Levi served as a clinical instructor for UMSOP from 1982 to 1992 and sat as a two-term commissioner on the Maryland Board of Pharmacy. She re-entered the pharmacy world in 2002, working part-time in community-based pharmacies.

Levi, who has long been engaged philanthropically, volunteering for and donating to many community and national organizations and causes, has other ties to UMSOP. "My first

donation to the School of Pharmacy was as a charter member of the David Stewart Associates in 1984."

Now, she adds, "I am pleased to be able to convey my appreciation for and enjoyment of pharmacy by funding a seminar room in honor of my 50th year since graduation. I am so proud to be a member of the pharmacy community, knowing that over the years, my profession has been named the most respected many times, and I look forward to seeing new advancements in the field as we are becoming a much more visible health care provider."

Overseeing and orchestrating logistics seems to come naturally to Levi, who with no farming experience in 2010 created with her partner, Phil, a home for their dog, Rocky, plus a menagerie of animals, all pets, that included 25 goats, four alpacas, a dozen chickens, and a pair of Mandarin ducks, then grew to accommodate a sheep, guineas, peacocks, fish, birds, and a pair of Chinese golden pheasants. Today, the couple oversees six acres of land with a barn, poultry area, and two aviaries. And, somehow, she makes it sound easy.

Animal care, Levi says, "was on-the-job training, but with Phil excelling in all aspects of farm life and animal care, we have handled anything that has come our way. He and I share a love of animals and there's nothing cuter than a baby goat."

Levi retired, again, in 2014, and relocated with Phil to Florida, bringing all their pets with them.

Today, the creative force who is the mother of two, Michael and Jennifer, and grandmother of six, enters the Sumter County Fair annually and has received 10 "Best in Show" ribbons for photo entries that reflect her love of nature, travel, her grandchildren and pets, plus assorted baked goods, arts and crafts creations, and curated collections. ☺

A Steady Source of Support

Daniel E. Wagner, JD '62, serves as a powerful advocate for student success through his support of the School of Pharmacy's Pharmapreneurship™ initiative. Wagner established a collection of annual endowed scholarships in honor of his family's legacy at the School, which includes an impressive nine graduates. He has ensured the collection of Wagner Family Scholarships in Pharmapreneurship will be funded and awarded each year during his lifetime and then into perpetuity to nine students enrolled in the School's Pharmapreneurship Pathway. This generous support gives students a platform to support research and business ventures.



Ayotunde Okusolubo
Herbert C. Wagner Scholar

Phyllis (Wagner) Brill, BSP '50 Scholarship
Nehal Ahmed, Class of 2022

Betty (Wagner) Cohen, BSP '49 Scholarship
Meghna Bhatt, Class of 2022

Allen S. Hanenbaum, BSP '59 Scholarship
Jordan Fraker, Class of 2021

Charles H. Wagner, BSP '44 Scholarship
Anyen Fon, Class of 2022

Herbert C. Wagner, BSP '62 Scholarship
Ayotunde Okusolubo, Class of 2022

Howard J. Wagner, BSP '52 Scholarship
Jannel Hall-Prear, Class of 2022

Judith D. Wagner, BSP '77 Scholarship
Maria Palmer, Class of 2022

Manuel B. Wagner, PhG '21 Scholarship
Jeffrey Banaszak, Class of 2022

Raphael H. Wagner, PhG '23 Scholarship
Phuc Tran, Class of 2021

More than half of School of Pharmacy students rely on scholarships, fellowships, and financial aid to make their dream of becoming a pharmacist or researcher a reality. Please contact Ken Boyden, JD, EdD, associate dean for development and alumni affairs, at kboyden@rx.umaryland.edu to create an endowed scholarship to benefit the next generation of pharmacists and researchers.



Mahtab Hariri-Salehi

Mahtab Hariri-Salehi, PharmD '96, considers daily healing from modern-day stresses an integral part of her “vital lifestyle” as a pharmacist and entrepreneur. The concept stems from her childhood.

“I come from the old world,” she says. “I lived in Iran until I was 13. Every time anyone would get sick in my family out of the kitchen would come a special food or herbal remedy,” recalls Hariri-Salehi, who learned early to associate her family’s loving preparation of broths and Borage tea for colds or quince leaf tea for stomachaches with the healing process.

Combining that foundation with a natural affinity for biology and “finding remedies” led Hariri-Salehi to the Doctor of Pharmacy (PharmD) program at the University of Maryland School of Pharmacy. She says the decision prepared her well for subsequent roles as an academic, independent pharmacist, and, most recently, a pharmapreneur.

In May 2019, Hariri-Salehi founded Intrigue Yellow, Inc., a female empowerment platform that starts from self to home health to society and global initiatives. One of its initiatives is The Apothecarista, a project that focuses on lifestyle medicine topics as a resource, particularly for women.

“Intrigue Yellow streamlines my passions in medicine, home, family health, and wellness in women,” says Hariri-Salehi, who recently has added private patient consultations and advocacy. Earnings support her Intrigue Yellow Foundation for female entrepreneurial initiatives in the arts and sciences.

“Everything I’m doing now I owe to the University of Maryland,” Hariri-Salehi says.

She describes the culture at the School of Pharmacy as conducive to facilitating critical and independent thinking.

Finding Remedies

By Elizabeth Heubeck

“Classes were like discussion places. We would explore new ideas and concepts,” observes Hariri-Salehi.

One idea that struck her was the concept of pharmaceutical care practices and direct care to patients, which she applied early in her career at the University of Maryland Medical System’s (UMMS) Ambulatory Outpatient Pharmacy. There, she focused on patient counseling and enhanced medication adherence with easy access to pharmacists. A year later, Hariri-Salehi oversaw associated satellite ambulatory care consulting sites.

Hariri-Salehi also employed this patient-centric model at the University of Illinois at Chicago, where she completed a residency in ambulatory care. There, Hariri-Salehi launched her next generation outpatient pharmacotherapy clinic for neurology patients modeled after the one at UMMS. The “one-stop-shopping” comprehensive model resulted in significantly fewer emergency department visits by epileptic patients.

Then, in mid-life, the obligation of raising three children and caring for her parents gave Hariri-Salehi a new perspective on holistic and preventative care. “I’ve been taking care of my parents for the past 20 years. I kept micromanaging their medications, working with their physicians, and adjusting their lifestyle. I saw how gracefully they’re aging,” says Hariri-Salehi, whose father is 102.

Around the time she launched Intrigue Yellow, the School of Pharmacy started the Center for Women in Pharmapreneurism, which aims to prepare women to pursue innovative solutions to health care challenges. “We look forward to collaborating with Mahtab as a member of the center’s task force. She’s a great asset and example of the type of female entrepreneur we want to be part of our center,” says Magaly Rodriguez de Bittner, PharmD '83, BCPS, CDE, FAPhA, the School’s associate dean for clinical services and practice transformation.

Hariri-Salehi is excited to continue pursuing her professional passions that serve society, women, families, and overall well-being. “Not only am I living out my curious vision of helping to remedy the root cause of chronic diseases through lifestyle medicine practices, but I also hope to use my pharmaceutical and philanthropic experiences to heal societies,” she says. 🌱



Q&A with Alumni Association President Kristine Parbuoni, PharmD '05

Where are you from?

I grew up in Southern California (Rancho Cucamonga), about 50 miles east of Los Angeles.

Why did you choose the University of Maryland School of Pharmacy?

I was intrigued by the location, the idea of living on the East Coast, the School's proximity to Washington, D.C., and potential career opportunities in the area at places such as the FDA and NIH. During my interview, I was impressed by the warm welcome from Bob Beardsley, PhD, who was then the associate dean for student affairs. He already knew me by name.

Where do you work and what do you do there?

I'm an associate professor in the Department of Pharmacy Practice and Science at the University of Maryland School of Pharmacy and director of simulation education programs. My clinical practice site is at the University of Maryland Children's Hospital, where I provide clinical pharmacy services to the Pediatric Intensive Care Unit (PICU) and the general pediatric teams.

What inspired you on this career path?

During my first year of pharmacy school, we completed two one-week rotations — one at a community pharmacy and one at a hospital. I chose the Children's National Medical Center for my hospital site because it sounded different from the other hospital options, and I wanted to explore D.C.

During that one week, I enjoyed interacting with the pediatric pharmacists and technicians, the friendly and welcoming environment of a children's hospital, and drawing up patient specific doses. I spent one day with the clinical pharmacist in the PICU and was amazed by her drug knowledge and relationship with the medical team. I was inspired to be a PICU pharmacist who makes medication recommendations to the team.

Why are you involved with the School's Alumni Association?

I grew as a leader and professional during my time as a student at the School and wanted to give back to the School that helped shape me.

What advice do you have for your fellow alumni regarding staying connected to the School?

Since the School is temporarily in virtual mode for events, it's even easier to tune in for endowed lectures, CE events, and alumni town halls. I would also make sure to follow the School's social media platforms to be aware of upcoming events. Additionally, when we return to in-person meetings, I always enjoyed the opportunity to catch up with faculty and fellow alumni at professional conference receptions, like the ASHP (American Society of Health-System Pharmacists) midyear meeting.

Alumni Class Notes

1984

Matthew Shimoda, PharmD, has been appointed to the Maryland Department of Health SARS-CoV-2 Vaccine Technical Advisory Group.

1995

Michael J. Barton, BSP, retired after 25 years as pharmacist-in-charge at Omnicare.

2005

Hoai-an Truong, PharmD, received the University System of Maryland Board of Regents Faculty Award for Excellence in Public Service. Truong is professor in the Department of Pharmacy Practice and Administration at the University of Maryland, Eastern Shore. He also will represent Maryland in the 2020-2021 American Pharmacists Association's (APhA) House of Delegates.

2008

Chris Cunningham, PhD, was elected to chair the American Association of Colleges of Pharmacy's Chemistry Section for the 2020-2021 term.

2011

W. Chris Charles, PharmD, will represent Maryland in the 2020-2021 APhA's House of Delegates.

2012

Andrew York, PharmD, has been named executive director of the Maryland Prescription Drug Affordability Board.

2015

Kinbo Lee, PharmD, was appointed acting lead delegate and will represent Maryland in the 2020-2021 APhA's House of Delegates.

2019

Diamond Melendez, PharmD, joined High Point University as director of the Standardized Client Experiences program in the Fred Wilson School of Pharmacy.

What's new with you?

Please send us updates on your personal and professional life. Have you changed jobs, had a recent promotion, received an honor or appointment? Did you recently get married or celebrate the birth of a child or a grandchild? Do you have an interesting hobby or participate in community service projects?

Please let us know by completing the School of Pharmacy's online Class Notes form at www.pharmacy.umaryland.edu/alumni/resources/class-notes/.

In Memoriam

The University of Maryland School of Pharmacy honors the lives and memories of the following alumni who passed away between Jan. 1, 2020, and June 30, 2020. We are grateful to each of these alumni for the lasting impact that they made on the School community and the advances they achieved in pharmacy education, research, or practice.

Eugene P. Balcerak, BSP '53
A. Edwin Balcerzak, BSP '57
Bernard Billian, BSP '53
Noel E. Durm, BSP '55
Paul Freiman, BSP '53

Thomas J. Hayman, BSP '57
Nancy C. Kendricks, BSP '60
Joseph Krall, BSP '48
Norman L. Levin, BSP '57
William C. Moore, BSP '66

Sheldon E. Pollekoff, BSP '55
Stanley E. Protokowicz, BSP '58
Rochelle R. Rotenberg, BSP '76
Joseph A. Teramani, BSP '51
James P. Tristani, BSP '73

If you would like to make a memorial gift, please use the enclosed giving envelope or call 410-706-5893.

A Message from Alumni Affairs



Greer Griffith

I hope that this message finds you and your family in good health. The past year has been most challenging for us all, and we continue to be grateful for the support of our alumni and friends of the University of Maryland School of Pharmacy.

Throughout these difficult times, the School of Pharmacy has continued to provide world-class education, clinical care, and research with minimal interruptions because of the support of our community, including you. If you helped one of our students find a job or experiential rotation, thank you. If you provided a fellow alumni or student with sage advice and mentorship, thank you. If you attended one of our events and keep up with our publications, thank you.

And finally, if you made a gift to any one of the various funds at the School of Pharmacy, thank you. Each of these actions plays a huge role in creating a robust community, and you are a vital piece of that community.

In the spirit of building and supporting our community, please be on the lookout for an email survey in May, which will aim to evaluate the services that we might offer to enhance our alumni experience. We know that these are challenging times and we want to support you in your career and professional life the best way we can.

We remain grateful for your proud affiliation as an alumnus of the University of Maryland School of Pharmacy.

Wishing you all the best,

A handwritten signature in black ink that reads "Greer".

Greer Griffith, MS
Director of Alumni Relations and Annual Giving
Office of Development and Alumni Affairs
ggriffith@rx.umaryland.edu

Alumni Association Executive Committee 2020-2021

Kristine Parbuoni, PharmD '05
President

Daniel Mansour, PharmD '06
President-elect

Kelcymarie Bye, PharmD '16
Past president

Geoffrey Heinzl, PhD '16
Secretary

David Ngo, PharmD '13
Treasurer

Capt. James Bresette, PharmD '97

C. Lawrence Hogue, BSP '69

Mitchell Johnston, PharmD '00

Eziaku Ogbonna-Makia, PharmD '12

Magaly Rodriguez de Bittner, PharmD '83

Hoai-an Truong, PharmD '05

Support Your School

Campaign for Pharmacy



Because of donors like you...

The School of Pharmacy is able to:



Deliver our educational programs as well as provide **critical patient care** and **community services** without disruption

Allow our faculty and students to conduct **transformational research** and create new programs without interruption

Support the implementation of new and mission-focused initiatives



Make it possible to **withstand crises**



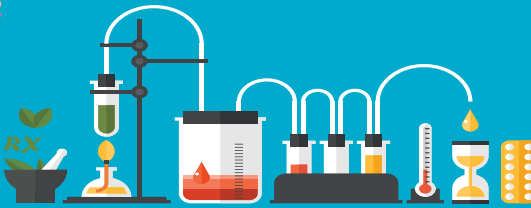
Only
17.69%

of the
School of Pharmacy's
budget comes from
the State of Maryland

The rest of our operating budget is comprised of grants and contracts, endowed scholarships and fellowships, tuition and fees, and unrestricted gifts.

Unrestricted Giving Supports

The more than **90%** of our students who depend on **scholarships** to complete their education



Gaps between our operating budget and important programs and initiatives that **advance education, research, practice, and community engagement**



Critical patient care initiatives



Expansion of **virtual platforms** for our students and faculty for our virtual 2020-2021 academic year





Ken Boyden

Our Hindsight Is Finally 2020

As we near the end of the spring semester, we will have completed a full academic year of virtual learning and telework. Our faculty, students, staff, and administration have been tirelessly committed to the success of our community and the field of pharmacy practice, research, and service during this unprecedented time. It has been incredibly inspiring to observe the commitment, generosity, and dedication to the University of Maryland School of Pharmacy from our entire School family in general, and from so many of our proud, caring alumni in particular.

In my role as associate dean for development and alumni affairs, I am compelled to express with extraordinary gratitude and pride that our School of Pharmacy community leads in so many ways. We all knew that we have remarkable faculty and staff, and that our students have always been among the brightest our nation offers. But what we also have learned is that during the most difficult times, our broader School family steps up like few other communities.

2020 has challenged us all in so many unanticipated ways. Whether resulting from a pandemic or politics, social and racial unrest, remote meetings or restricted travel, this past year has impacted all aspects of life. And yet our alumni and friends have promptly and compassionately responded with support for students in financial distress and for our School's unyielding commitment to provide the finest education.

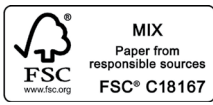
Please know that your support, generosity, and sacrifice to help meet the many needs of the School community during the COVID-19 era has been both remarkable and remarkably important. We all have been touched by your responsiveness. If you made a gift to your School during 2020, please know that it has made an impact likely beyond your expectations. Charitable contributions to the School of Pharmacy are important every year. But this past year, during this time of unprecedented challenges, your gift has taken on additional importance.

If you have yet to make your gift, please consider doing so by visiting www.pharmacy.umaryland.edu/go/give or returning the envelope in this *Capsule*. Your support remains just as essential to our path forward as we continue to navigate the realities brought upon us by the pandemic. We celebrate your generosity and association, as well as the promise and hope expressed through philanthropy. At the heart of all of the School's ambitious efforts is the support of our alumni and friends.

With deep appreciation,

A handwritten signature in black ink that reads "Ken". The signature is stylized and written in a cursive-like font.

Ken Boyden, JD, EdD
Associate Dean
Office of Development and Alumni Affairs
410-706-4415
kboyden@rx.umaryland.edu



The School of Pharmacy's most recent **Annual Reports** are now available on our website. Each report includes the presentation of our Honor Roll of Donors, research grants and contracts, financial information, and more.

Visit www.pharmacy.umaryland.edu/about/offices/marketing/publications/ and scroll to the Annual Report section to read the Fiscal Year (FY) 2019 and FY20 reports.