Buffalo Pharmacy MAGAZINE

VOLUME 7 | 2024

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BuffaloPharmacy MAGAZINE

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Buffalo Pharmacy Magazine is an annual publication of the University at Buffalo School of Pharmacy and Pharmaceutical Sciences.

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Message From The Dean

Over the past year, we have launched a number of major strategic initiatives to better position our students, programs and organizational structure for continued success. These initiatives include reimagining how we educate and support our students, enhancing and expanding our research enterprise, revamping our organizational structure, and the launch of a multimillion dollar faculty and staff hiring initiative. All these new endeavors will allow us to continue our upward trajectory as the nation's leader in pharmacy and the pharmaceutical sciences education and research.

As I look forward, my excitement and enthusiasm for our future could not be stronger. We have built a solid foundation to further support our goal of being the best school of pharmacy and pharmaceutical sciences in the country. Being the "best" means our students will be comprehensively supported throughout their academic journey, our research enterprise will have access to strategic resources to ensure success, and we will continue to function as a thoughtful and engaged community partner promoting a culture of respect and acceptance.

I invite you to explore our 2024 magazine and learn more about the many innovative initiatives we are implementing to position the UB School of Pharmacy and Pharmaceutical Sciences for continued leadership throughout the academy and across the globe.

Warm regards,

Gary M. Pollack, PhD
Professor and Dean

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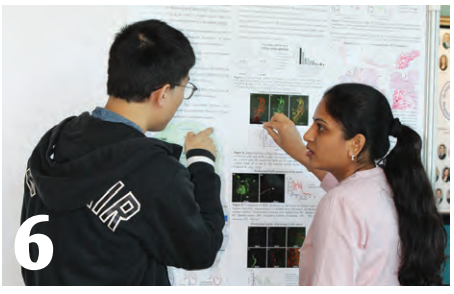
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2023 Commencement

The University at Buffalo School of Pharmacy and Pharmaceutical Sciences held its 2023 Commencement Ceremony on Saturday, May 20. The event took place at the Center for the Arts on the North Campus and recognized 157 PharmD, BS, MS and PhD students.

Kari Mergenhagen, PharmD '07, infectious diseases pharmacy manager, VA Western New York Healthcare System, delivered the commencement address. Mergenhagen also serves as the residency program director for the PGY1 Pharmacy Practice and PGY2 Infectious Diseases Residencies. She was recently presented with the Under Secretary for Health's Excellence in Pharmacy Practice Award by the Department of Veterans Affairs. She has also received a commendation from the Department of Veterans Affairs for her efforts as an educator, mentor and clinician, and for fostering creative thinking, collaboration, transparency and dedication to patient needs.

Commencement platform party

Kari Mergenhagen, PharmD '07, keynote speaker

PharmD graduating students

DEGREES CONFERRED

118 Doctor of Pharmacy degrees conferred

14 Bachelor of Science in Pharmaceutical Sciences degrees conferred

13 Master of Science in Pharmaceutical Sciences degrees conferred

12 Doctor of Philosophy in Pharmaceutical Sciences degrees conferred

"Wherever you go and whatever you do, remember there is a UB family that exists ... although we're graduating, we aren't leaving the friendships we've made. We're continuing our journeys to return to one another to share in our experiences and help build each other up."

– Marisa Masi, president, PharmD Class of 2023

Bachelor of Science graduating students

Spring Celebration: Graduation and Awards Luncheon

Our 2023 Spring Celebration: Graduation and Awards Luncheon program was held on May 19 at the Reikart House in Amherst, New York.

We recognized our 2023 PharmD and Pharmaceutical Sciences graduates and celebrated 48 award winners, including four faculty, one staff, three preceptors and 40 student awardees, all of whom contributed significantly to our school's mission, the profession of pharmacy and the pursuit of academic excellence during the 2022-2023 academic year.

L-R: Robert Bies, PharmD, PhD, Mfonabasi Ette, Yifan Yu

Student graduates and award winners

Student graduates and award winners

L-R: May Thandar, PharmD '23, Nicole Castoro, PharmD '24, Victoria Ferretti-Aceto, commander, United States Public Health Service

Student graduates and award winners

Welcome Week August 23–25, 2023

We welcomed our incoming pharmacy and pharmaceutical sciences students during our 2023 Welcome Week, which included a multiday orientation program, school-wide picnic and White Coat Ceremony for first-year PharmD students.

White Coat Ceremony

Our annual White Coat Ceremony is a rite of passage that signifies entrance into the initial stages of the profession of pharmacy. It represents a contract for excellence in providing compassionate patient care and highlights the importance of scientific scholarship. Our 2023 ceremony welcomed 116 PharmD students to the UB family.

Students from the PharmD Class of 2027 reciting the Oath of a Pharmacist

"This ceremony is the public embrace of our next cohort of student pharmacists and future professionals. It marks your transition from being undergraduate or graduate students to being professional doctoral students and is a really profound transition."

– Gary M. Pollack, PhD '84, Dean

Orientation

PharmD Class of 2027 and pharmaceutical sciences students were welcomed during orientation sessions where they learned about school policies, met with student organization representatives, and connected with faculty and staff who will guide their academic journey.

School Picnic

Welcoming events for our incoming students culminated with our annual school-wide picnic, held at the Pharmacy Building for all faculty, staff and students. Students enjoyed lawn games and participated in a scavenger hunt of the Pharmacy Building with members of their new Learning and Engagement Communities.

Fiebelkorn, leader in pharmacy and student advocacy, retires

BY DEVON DAMS O'CONNOR

After more than 30 years as an educator, mentor and advocate, Karl Fiebelkorn, BS '78, MBA '88, senior associate dean for student affairs, retired in June 2023.

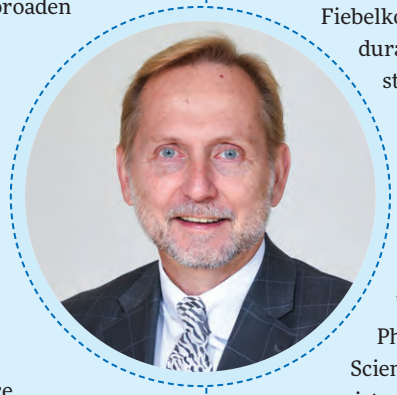
Fiebelkorn earned a BS in Pharmacy in 1978 and an MBA in 1988, both from UB. He began his career as a staff pharmacist at Cleve-Hill Pharmacy in 1978 , before moving to Fay's Drugs in 1980 where he practiced for the next 15 years. He was recruited to UB as a clinical instructor (1991-1995), clinical assistant professor (1995-2008) and clinical associate professor (2008-2023), serving as assistant/associate dean for student affairs and professional relations from 1999-2014 and senior associate dean for student, professional and community affairs from 2014-2023.

He served as our school's authority on pharmacy law for more than 25 years, helping thousands of students pass the Multistate Pharmacy Jurisprudence Examination (MPJE) at a rate that consistently exceeded that of other New York State schools. He also worked to keep practicing pharmacists up to date through his Pharmacy Law Newsletter and the 86 law updates he provided since joining the school.

"Pharmacists have to know the legal issues no matter where they work," explains Fiebelkorn. "There are intricate little bits of law behind the scenes that the public never sees, but the laws are all there to protect patients. As pharmacists, we need to be at the forefront to make proactive changes, because the legislators are mostly not health care professionals."

He also served as our school's business faculty member, teaching pharmacy management and pharmacy administration for more than 30 years, advising 81 PharmD/MBA dual degree students and mentoring student teams competing in the National Community Pharmacists Association (NCPA) Student Business Plan competition, which yielded eight top-10 finishes and one first-place finish. He was the recipient of several teaching and service awards, most notably our school's 2008 Teacher of the Year Award and the 2019 SUNY Chancellor Award for Excellence in Faculty Service . In 2023, he was elected a Fellow of the American Pharmacists Association.

As an educator, Fiebelkorn always encouraged his students to pursue additional degrees and certificates to broaden their skills when it came to finding a fulfilling career in pharmacy. He said that seeing his students succeed was the continual highlight of his career—and he kept visible reminders of the impact he and his colleagues have had on tomorrow's pharmacists.



"Outside of my office there was a bulletin board with hundreds of thank-you cards I've received from students, and I kept some on my desk," he explains. "I looked to them for inspiration often. I strongly believe in the power of a handwritten thank-you note and made it a habit to write several a week to anyone who had taken time for me or for my students."

Off campus, Fiebelkorn tirelessly advocated for the profession and served as a change agent, working to expand the pharmacist's scope of practice in New York State and broadening the ways in which pharmacies can help the community stay healthy. He's a primary driver for some of the most impactful pharmacy programs in New York State , including drug takeback programs, poison prevention initiatives and the ability of pharmacists to administer immunizations.

His professional involvement extended to service with Pharmacists Association of Western New York (PAWNY), Pharmacists Society of the State of New York (PSSNY), Western New York Society of Health-system Pharmacists (WNYSHP), New York State Council of Health-system Pharmacists (NYSCHP), American Society of Health-system Pharmacists (ASHP), American Pharmacists Association (APhA), NCPA and Rho Chi, where he held numerous appointed and elected posts.

Fiebelkorn received numerous awards , most notably the 2002 PAWNY Pharmacist of the Year , the 2009 WNYSHP Robert M. Cooper Professionalism Award and the 2014 PSSNY Bowl of Hygeia . In 2018, he was inducted into the PAWNY Pharmacy Hall of Fame.

"Throughout his career, Professor Fiebelkorn has forged strong and durable relationships with UB student pharmacists and has maintained decades-long relationships with our alumni and those in the local and national pharmacy community," says Gary Pollack, PhD '84, dean of the School of Pharmacy and Pharmaceutical Sciences. "He also has been a consistent and vocal advocate for the pharmacy profession in New York State. While his concern and advocacy for our students will be sorely missed, we all wish him all the best."

"When someone like Karl retires, it is natural to have mixed emotions," says William Prescott, PharmD '02, department chair and clinical professor, Department of Pharmacy Practice. "He has positively impacted the profession, our community, our school, and our faculty and students. Like many of us, I have never known UB without Karl, neither as a student or as a faculty member; he has played a role in the success of so many, including myself. I am so very happy because he now can embark upon a new chapter."

Fiebelkorn is still contemplating what he'll do in retirement, but with good genes that have kept his family members going past age 100, he's got plenty of time to figure it out. His known plans include golf, travel and finishing a book he began writing years ago—not about pharmacy, but instead, a thriller.

Karl thanks his wife, Tina, for all her support in making his career a success.

Pharmaceutical sciences symposia join alumni and world-renowned pharmaceutics researchers

BY SAMANTHA NEBELECKY

The Department of Pharmaceutical Sciences hosted scientists and researchers from around the world for multiple high-impact scientific symposia: the Quantitative Systems Pharmacology Symposium (QSP) and the 15th Buffalo Pharmaceutics Symposium (BPS), held July 26-29, 2023.

Quantitative Systems Pharmacology Symposium

Our sixth annual QSP Symposium assembled world-renowned scientists to discuss contemporary approaches, including the challenges and opportunities for advancing the science and practice of quantitative systems pharmacology. More than 130 participants attended sessions at the Pharmacy Building on July 26. Programming featured presentations and question-and-answer sessions from invited researchers from across the country.

QSP represents an approach to translational medicine that combines computational and experimental methods to elucidate, validate and apply new pharmacological concepts to the development and use of small molecule and biologic drugs.

"Each year, the QSP Symposium has excellent speakers," says James Gallo, PharmD, PhD, professor, Department of Pharmaceutical Sciences, 2023 QSP co-organizer. "Our 2023 meeting had a great mix of young and established scientists who exemplified the growing interest in the field; the talks were stimulating and truly engaged the audience."

15th Buffalo Pharmaceutics Symposium

The 2023 BPS symposium brought together alumni and internationally recognized faculty and invited researchers to exchange valuable scientific knowledge and showcase their research in pharmaceutical sciences. The theme of the 2023 symposium was "Pharmaceutical Sciences: In Pursuit of Excellence," and hosted nearly 230 participants at the Pharmacy Building from July 27-29.

The event kicked off with a welcome reception and dinner held at The Atrium @ Rich's and featured a tribute honoring Ho-Leung Fung, PhD, UB Distinguished Professor Emeritus, Department of Pharmaceutical Sciences. The reception was dedicated to Fung's extraordinary life and contributions to drug discovery and drug development. Fung's family attended the reception where he was recognized for his significant outstanding contributions to the pharmaceutical sciences.

Scientific sessions at the symposium featured student research poster presentations, networking sessions and presentations from Department of Pharmaceutical Sciences alumni and invited internationally renowned pharmaceutics researchers.

The session, titled "Honoring Marilyn Morris: Complexities in Drug Disposition," was dedicated to Marilyn Morris, PhD '84, SUNY Distinguished Professor, Department of Pharmaceutical Sciences. She was honored for her outstanding 37-year career as a UB SPPS scientist, educator, mentor and leader in pharmaceutical sciences.

"The Buffalo Pharmaceutics Symposium has been a long tradition for our department in assembling faculty, students and alumni for scientific lectures and social events around Buffalo," says William J. Jusko, PhD, SUNY Distinguished Professor, Department of Pharmaceutical Sciences, chair of the 2023 BPS.

"Our 2023 BPS was incredible with outstanding presentations by many prominent alumni who lead various pharmaceutical companies, universities and the Food and Drug Administration. Our students and fellows encountered role models who are innovators offering enduring friendships. It was great that we could honor revered and retired faculty, Ho-Leung Fung and Marilyn E. Morris," Jusko adds.

2023 Buffalo Pharmaceutics Symposium attendees at opening reception held at The Atrium @ Rich s

2023 BPS Memories

"What was evident was most of the prominent contributors in the field of pharmaceutical sciences crossed paths in Buffalo during their careers. One of the most rewarding parts was presenting to my colleagues, peers, and mentors, including my mentor and advisor, Dr. Jusko, who taught me PK/PD and profoundly influenced my career trajectory. As one colleague eloquently stated 'You can take me away from Buffalo, but you can never take the Buffalo away from me.'" *Mohamed Kamal, PharmD '01, PhD, senior director of Clinical Pharmacology, Regeneron*

"I'm grateful for the opportunity to present my research on utilizing a multi-omic approach to advance aggressive prostate cancer therapies. The pharmaceutical sciences faculty's unwavering commitment to program excellence has significantly shaped my career. It's a true privilege to be part of this outstanding community, where the culture stands as a cornerstone in establishing their esteemed international reputation." *Robert (Rusty) Arnold, PhD '04, professor and director of Research Development & Support, Drug Discovery & Development, Auburn University*

"Attending the symposium was a deeply nostalgic and heartening experience. Reuniting with former friends, colleagues and mentors made me reflect on my great appreciation for the school. The compelling research presented motivated all of us as proud UB alumni." *Yanguang (Carter) Cao, PhD, associate professor, Division of Pharmacotherapy and Experimental Therapeutics, University of North Carolina*

"Amazing symposium filled with excellent presentations, special tributes and wonderful social events. Many touching moments ... These were the best and unforgettable three days I had in 2023." *Guohua An, MD, PhD '10, associate professor, Pharmaceutical Sciences and Experimental Therapeutics, University of Iowa College of Pharmacy*

"The symposium was a great scientific event that allowed for interactions with speakers and researchers discussing their efforts in cutting edge science and model-informed drug development. It was also a fantastic opportunity to celebrate Drs. Fung, Morris and Jusko, and to catch up with friends and colleagues, past, present and future!" *—Brian Booth, PhD, director, Division of Cancer Pharmacology I, FDA/CDER/OTS/OCP*

Transformational CHANGE

Smart Evolution in Key Areas Paves the Way for Continued Success

BY DEVON DAMS O'CONNOR

The past 12 months have been a time of tremendous and impactful change geared toward improving academic experiences and outcomes at the School of Pharmacy and Pharmaceutical Sciences. In fact, it wouldn't be hyperbolic to call this one of the most revolutionary periods in the school's 138-year history.

From an overhauled PharmD curriculum and grading structure to exciting new faculty hires, these changes are the result of robust discussions, research and program development that core groups of dedicated pharmacy faculty and staff have conducted for more than two years. It's all part of a collective push to continue the school's upward trajectory in rankings, reputation and educational outcomes. Each facet of this ongoing transformation is being carefully considered to preserve what has made the pharmacy program one of the best in the nation, while exploring opportunities for meaningful improvement.

"We're being responsive to trends in higher education in the way we're delivering our degree programs," says Gary Pollack, PhD '84, dean of the School of Pharmacy and Pharmaceutical Sciences. "We're evolving as the environment around us evolves. But we're also trying to be very intentional in terms of making sure that we're maximizing our impact on behalf of our university in the state of New York."

New methodologies overhaul education and evaluation

2024 marks the second year of a three-year rollout for the new PharmD curriculum, which centers around teaching elements of a core concept together, rather than parsing out connected material over several courses and years. By covering all lessons and labs related to a specific body system and its related disease states, for example, students and faculty can focus their time and attention more effectively on the subjects at hand. For more on the curriculum changes, see *Leading the Future of Student Success* on page 15.

The school is also more than a year into its new grading system, which changed how it evaluates student understanding of core concepts. Beginning with the incoming fall 2022 class, faculty shifted away from letter grading and toward a system that intends to prioritize learning over grades. Under the new system, students earn marks of Honors, Satisfactory or Unsatisfactory, similar to a pass/fail approach, with opportunities to achieve at a higher level, too. Data is collected at the end of each semester to gauge efficacy and student response. Anecdotally, however, faculty have reported that students appreciate that the new system provides the academic, emotional and social balance that allows them to be more well-rounded learners.

Structural shifts promote academic focus and professional growth

The Department of Pharmacy Practice instituted a new divisional structure that organizes department faculty and staff into three distinct areas of focus to support pharmacy practice—related research, scholarship and education.

The Division of Clinical Translational Therapeutics is a research-intensive innovation hub that brings in more than half of all grant funding received by the School of Pharmacy and Pharmaceutical Sciences. The Division of Education and Teaching Innovation is leading the PharmD curricular implementation and the launch of additional educational research and scholarship of teaching and learning. And the Division of Outcomes and Practice Advancement leads the convergence of practice and education, inviting practitioners, educators and scholars to work alongside each other to implement and evaluate innovations in health care delivery and education.

"First and foremost, the new divisions help publicly depict our strengths in research, education and practice," explains William Prescott, PharmD '02, department chair and clinical professor, Department of Pharmacy Practice. "They also allow faculty to form smaller groups with like-minded individuals, encourage collaboration, and provide for additional opportunities in higher education leadership where faculty can grow their leadership skills."

Later this year, the Department of Pharmaceutical Sciences will organize into three divisions: Pharmacokinetics-Pharmacodynamics and Systems Pharmacology, Drug and Biotherapeutic Discovery, and Drug Delivery and Pharmaceutical Bioengineering.

"These divisions reflect our longstanding expertise. They allow faculty and students to self-identify with their research interests and will impact on our ability to recruit and retain highly talented students and faculty members."

– Donald Mager, PharmD, PhD

"These divisions reflect our longstanding expertise," explains Donald Mager, PharmD '00, PhD '02, FCP, department chair and professor, Department of Pharmaceutical Sciences. "They allow faculty and students to self-identify with their research interests and will impact on our ability to recruit and retain highly talented students and faculty

Emily Polischuk, PharmD, director of practice labs and clinical assistant professor, Department of Pharmacy Practice

members. Our goal is to leverage the unique opportunity that divisions provide, while maintaining the way we operate and the culture that has worked so well to produce outstanding research and graduate students."

A new administrative structure was also implemented in 2023. It's intended to be a logical realignment of human resources that enables school leadership to more effectively design, execute and assess plans to advance the school's vision and mission.

"The new administrative organization has been quite empowering," says Mager. "The effort to modify our administrative structure was conducted in a very inclusive manner, and aligned with the recommendations and expectations of the university administration as well."

The new structure also established additional director appointments that helped individuals gain leadership experience in their areas of expertise.

"It's providing mid-career faculty with opportunities that are extremely important to help them grow as leaders," explains Mager. "It creates succession planning that ensures the next generation of leadership is ready to step in, and it also helps focus the department by allocating resources to initiatives within our strategic plan so important needs don't fall through the cracks."

New faculty bring sought-after expertise

Last year, the school welcomed four new faculty members, with more hires to be announced in 2024, increasing faculty size by 20% over two years. While it's unusual for a smaller school to welcome so many new people in so little time, the new hires bolster teaching and research capacity, help fill gaps in strategic areas of focus and enhance UB SPPS planning initiatives.

Anthony Pattin, PharmD, joined the school as clinical associate professor, Department of Pharmacy Practice. Pattin teaches pharmacy law and earned recognition at his previous post at the University of Toledo when 100% of their PharmD students passed the Ohio Multistate Pharmacy Jurisprudence Exam. He also maintains an experiential training site and leads a research program in community pharmacy practice studying medication adherence and compliance packaging.

Christ Ange (Angel) Cellino, PharmD '19, MBA '19, assumed the role of clinical assistant

professor, Department of Pharmacy Practice last summer. Cellino coordinates and teaches topics in ambulatory care and business, engages in community health initiatives, and maintains an experiential training site and research program in ambulatory care pharmacy practice centered on the care of underserved patients. Her focus is on mentoring students to become culturally competent practitioners with the skills and compassion needed to work with patients from underserved and international populations.

"UB is a powerhouse in PK-PD. Being able to offer a sought-after UB education online makes our already well-known school available to more students who can't be on campus in Buffalo."

– Carrie Hoefer, PhD, MBA

Emily Polischuk, PharmD, has become director of practice labs and a clinical assistant professor in the Department of Pharmacy Practice. Polischuk is tasked with revamping practice labs in the PharmD program. This new role coordinates all laboratory and skills activities in the school's new integrated curriculum to ensure a more cohesive lab experience for students across courses, provides sequential skill building year after year, and incorporates classroom learning. She will also continue her current role as the pharmacy compounding lab course coordinator and as a preceptor for the introductory pharmacy practice experience and for advanced pharmacy practice experience students.

Carrie Hoefer, BS '10, PhD '15 was recruited to be the new associate dean for undergraduate education and online programs, and clinical assistant professor, Department of Pharmaceutical Sciences. Hoefer is working on implementing an online master of pharmacometrics program available in fall 2024, with a micro-credential course being offered as a preview this spring. Hoefer, who has already successfully launched virtual master's programs at two other universities, says that by optimizing her alma mater's graduate-level programming to meet the unique realities of online learning, the school creates greater opportunity for engagement and impact.

"UB is a powerhouse in PK-PD," explains Hoefer. "Being able to offer a sought-after UB education online makes our already well-known school available to more students who can't be on campus in Buffalo."

That accessibility, says Mager, not only allows UB to offer promising career opportunities to more students, but it also helps organizations find the qualified professionals needed to advance pharmaceutical discovery and development.

"Our grads are in high demand," Mager explains. "They tend to be recruited months before they graduate. And we constantly have leaders from the pharmaceutical industry, the FDA and academia asking when our graduates are becoming available."

Carrie Hoefer, PhD, MBA, associate dean, Undergraduate and Online Pharmacy Programs

Christ Ange Cellino, PharmD, MBA, clinical assistant professor, Department of Pharmacy Practice

Historic funding boosts research recruitment

Unprecedented funding from New York State, including a commitment of $100 million to help the university significantly increase its research activity by 2030, will enable the School of Pharmacy and Pharmaceutical Sciences to attract and hire top research faculty candidates from competitive institutions. New hires this year will help grow the school's research programming and initiatives, a top focus for both the university and the school for 2024.

A portion of the funding will be used to recruit faculty for the school's new Drug Discovery, Development and Evaluation (DDDE) Hub, created to lead and promote high-impact transdisciplinary and interdisciplinary research within the school, across campus and throughout academia.

"This hiring initiative allows us to expand into areas such as small molecule drug discovery that haven't been part of our department in the past," says Mager. "This is a unique opportunity to fill in some of the gaps across the whole paradigm of drug discovery, development and evaluation that will lead to new medications to treat unmet medical needs."

> **"At a time when many pharmacy schools are struggling, we're thriving. The support of the president, provost and SUNY have placed us in a position to grow, permitting us to make truly transformational hires."**
>
> *–William Prescott, PharmD*

The funds not only cover new faculty salaries, but they also help UB present competitive recruitment offers that include funding to establish and staff research labs to support candidates' ongoing work.

"At a time when many pharmacy schools are struggling, we're thriving," says Prescott. "The support of the president, provost and

SUNY have placed us in a position to grow, permitting us to make truly transformational hires."

Moving steadily toward Top 25 ambitions

The school's ongoing transformation is expected to have a tremendous impact on the rest of the university as well. As UB focuses its efforts toward becoming one of the top 25 public research universities in the country, the School of Pharmacy and Pharmaceutical Sciences is stepping into several important roles to help advance those ambitions.

First, by spearheading the DDDE Hub, the school is consolidating all the drug discovery and development activity going on throughout the university into one coordinated effort that has the potential for greater collective impact than each school could achieve by itself. Continued leadership by example within the pharmacy program also generates the kind of research funding, innovation and energy that can help propel UB to the top.

"When you look at how we plan to advance into the top 25, one of the important areas the university has identified is human health," says Mager. "That is where we clearly plug in, and our new hires are going to help us be even more efficient at discovering and developing therapeutics that can have a tremendous impact on human health. The other important area is transformational technology. Artificial intelligence and machine learning are big components of that, and we have faculty here who are already integrating those tools for the development of new medicines and the identification of factors contributing to variability in patient outcomes."

As the school continues to lead in these key areas, the full slate of institutional changes has sparked genuine excitement for a future that builds on the success, reputation and culture that has defined UB's School of Pharmacy and Pharmaceutical Science for decades.

"This is a program of transformation we're going through very intentionally," says Pollack. "On the back end, the school is going to look different than it did when we initiated it, but it's also going to look the same. It's going to have the same values, the same culture. It's just going to be more impactful. And I hope even better at doing what it does."

"This is a program of transformation we're going through very intentionally. On the back end, the school is going to look different than it did when we initiated it, but it's also going to look the same. It's going to have the same values, the same culture. It's just going to be more impactful. And I hope even better at doing what it does."

– Gary Pollack, PhD , dean

Anthony Pattin, PharmD, clinical associate professor, Department of Pharmacy Practice

Leading the Future of Student Success

L R: Nicole Albanese, PharmD, Jennifer Rosenberg, PhD

"We believe these changes will result in students who are better prepared to excel in their academic and professional lives moving forward. Ultimately, that's always our goal."

– Ashley Woodruff, PharmD '09

BY DEVON DAMS-O'CONNOR

It's an age-old question: What does success look like?

The School of Pharmacy and Pharmaceutical Sciences faculty, staff and students have not only answered that question, but they're also implementing systems and resources to support a more holistic vision of student success centered on the academic, social and emotional well-being of students.

In 2023, the school launched two initiatives aimed at creating opportunities for pharmacy students to thrive. The new Office of Student Success and Engagement connects students to clubs, organizations, campus resources and networks based on individual needs and goals. Meanwhile, an overhauled PharmD curriculum streamlines subject matter and engages the evolving learning styles of today's scholars.

Comprehensive centralized support systems: OSSE and LEC

The Office of Student Success and Engagement (OSSE) acts as a clearinghouse for resources to support students during their entire period of engagement with UB. It centralizes services and activities that had previously been offered by a handful of offices within the school, and it helps students find the right help right away. While most pharmacy schools have similar offices to address student needs, few are as comprehensive as UB's.

"The creation of this office is an opportunity for all of us to come together and make seamless transitions for students from the time they're interested in the university and the school, through graduation and beyond," explains Jennifer Rosenberg, PhD, associate dean for student success and engagement and director of admissions. "It's about making connections for students and removing silos that make it confusing to access resources."

The new office now oversees recruitment, admissions and onboarding; academic advisement; registrar and data analytics; career development, wellness, academic and personal support; student conduct; leadership and professional development; and support for 29 student professional organizations, including the structure, advisement and governance of the School of Pharmacy Student Association (SPSA).

The office supports the Department of Pharmacy Practice's interaction and advocacy with local, regional and national professional organizations, prospective employers and government agencies to advocate for positive changes within the profession of pharmacy. It also works with university partners to connect students with additional campus resources and implement university-wide student wellness initiatives.

The office was created in response to observations that students were facing academic challenges that were rooted in a combination of academic, social and emotional factors, some of which are to be expected in a rigorous postgraduate program, and others that have emerged in recent years.

"COVID really impacted and changed students," explains Rosenberg. "Our office is seeing that a lot of needs may not necessarily have been addressed in undergrad, resulting in years of post-COVID educational gaps and life experiences. For instance, students who had science courses virtually may have missed some fundamental content and skills

Learning and Engagement Community leaders

L-R: Niki Pizzutelli, Mary Riedy, PharmD, Ridhi Sharma, PharmD' 25, Dima Abass

taught in labs, so we're aiming to help bridge those gaps right away."

"Curricular struggles bleed into wellness when students don't allow themselves time to recoup," adds Nicole Albanese, PharmD, assistant dean for student success and engagement and clinical associate professor, Department of Pharmacy Practice. "They just

keep studying, don't make friends and burn out. We address all of those needs in concert with one another, because they truly are all connected."

Albanese explains that like most of the school's undertakings, the Office of Student Success and Engagement's work is informed by university priorities and data. Student experience surveys administered each spring for the past two years (with a third planned in 2024) helped uncover areas of need. Students can also share anonymous input from the school's web-based student portal. If the office sees an uptick in a certain issue, they'll address it right away.

Learning and Engagement Communities (LECs) are one new initiative launched last year in response to student and faculty feedback. These small cohorts of faculty and students called "houses" create connections outside the classroom and serve as a home base for resources, advice and social activities.

"We didn't really have anything to support student and faculty interactions outside of class," explains Ridhi Sharma, a third-year student and chief LEC house student leader. "Houses combine all years, so having those relationships and sense of belonging means more mentorship and connections that support first-year students and help others make informed decisions about career goals and paths."

Student concerns about academic pressure and mental health over the years also prompted the school's new grading model and testing methodologies, which will shift pressure away from traditional academic performance and toward a more holistic understanding of the material, with the intent of reducing stress and improving outcomes.

Focused curriculum changes

This student-centric, holistic approach to education was also a driving force behind big changes in how material is taught at the School of Pharmacy and Pharmaceutical Sciences. The new, integrated PharmD curriculum, introduced in the fall of 2023 to the first professional year, teaches elements of a core concept as a unit, rather than parsing out connected material over several courses and years.

For example, instead of covering seven topics related to reproductive health over the course of two years, the integrated curriculum teaches all elements of reproductive health over a two-week block, allowing students to connect the dots more readily. And rather than a few high-stakes exams throughout the semester, more frequent, lower-stress assessments solidify learning and gauge student understanding in a way that allows instructors to identify and address deficiencies before completing an all important assessment.

The biggest reasons for reinventing the curriculum were to eliminate unintentional redundancies and make instruction and learning more efficient, and to incorporate teaching and testing methods that meet the evolving educational needs of current students.

"The higher education climate has changed significantly since small revisions were made to the curriculum more than a decade ago," explains Ashley Woodruff, PharmD '09, outcomes and assessment committee chair and clinical associate professor, Department of Pharmacy Practice. "We're seeing generational learning differences that have led us to be more supportive and thoughtful in our pedagogy and assessment."

The new integrated structure also allows students to better focus and plan their time throughout the semester. Beginning in fall 2024, practice site scheduling for second- and third-year students will be streamlined under the new system. Introductory Pharmacy Practice Experience rotations, which previously brought students off campus to clinical sites one day a week, will now be offered as dedicated multiweek rotations during the semester and summer and winter breaks. This eliminates the need for students to shift back and forth between classes and practice sites while classes are in session, and instead allows for a more immersive clinical experience.

While some faculty are having to teach the new curriculum to first-year students and the old curriculum to legacy students, the new curriculum and scheduling will improve efficiency for instructors in the long run.

"These changes created an opportunity to reduce faculty workload and allow them to block their schedules to focus on fewer things at once," explains Nicole Cieri-Hutcherson, PharmD '10, curriculum committee chair and clinical associate professor, Department of Pharmacy Practice. "Our faculty are incredibly engaged and each person balances so many different things at once. The new approach allows them to wear fewer hats at a time, which creates a healthier professional experience for them, too."

As the new curriculum takes hold, the school will continue to collect data and feedback from students and faculty through surveys, student assessments and focus groups to evaluate efficacy and satisfaction around the changes.

"We believe these changes will result in students who are better prepared to excel in their academic and professional lives moving forward," says Woodruff. "Ultimately, that's always our goal."

Office of Student Success and Engagement Team

Woo selected for NIH Study Section

BY SAMANTHA NEBELECKY

The National Institutes of Health (NIH) Center for Scientific Review has appointed Sukyung Woo, PhD, associate professor, Department of Pharmaceutical Sciences, to serve as a member of its Drug Discovery and Molecular Pharmacology C (DMPC) Study Section.

The DMPC study section reviews cancer-related applications focused on the discovery, design, identification, isolation and development of new molecular agents that are potentially useful in cancer therapy of solid tumors and leukemias. Agents may combat cancer by slowing cancer cell growth, accelerating cancer cell death, sensitizing cancer cells to other therapies, inhibiting metastasis or angiogenesis, or improving side effects.

Panelists are selected based on their achievements in their scientific discipline as determined by the quality of their research accomplishments, publications in scientific journals and other significant scientific activities and honors. Membership on a study section represents a major commitment of professional time and is a unique opportunity to contribute to the national biomedical research effort.

> "Serving on this study section is a privilege, and I am determined to make the most of this opportunity to advance the frontiers of anti-cancer drug development and my personal and professional growth."
>
> *– Sukyung Woo, PhD*

"My appointment to serve on the NIH Drug Discovery and Molecular Pharmacology Study Section is an immense honor and a significant milestone in my career," says Woo. "It signifies recognition of my expertise and dedication to the field, and presents an opportunity to actively shape the future of scientific research in anti-cancer drug development."

Woo's term appointment began on July 1, 2023, and she will serve through June 30, 2027.

"During my term, I aim to promote innovative approaches that have the potential to transform drug discovery and therapeutic development and emphasize the critical importance of translational impact," Woo adds. "I see this appointment as an opportunity for personal growth and I will use this experience to stay updated on the latest advancements in drug discovery and development, enhancing my own knowledge and expertise."

Million-dollar Researchers

SPPS faculty working at the cutting edge of therapeutic discovery and innovation*

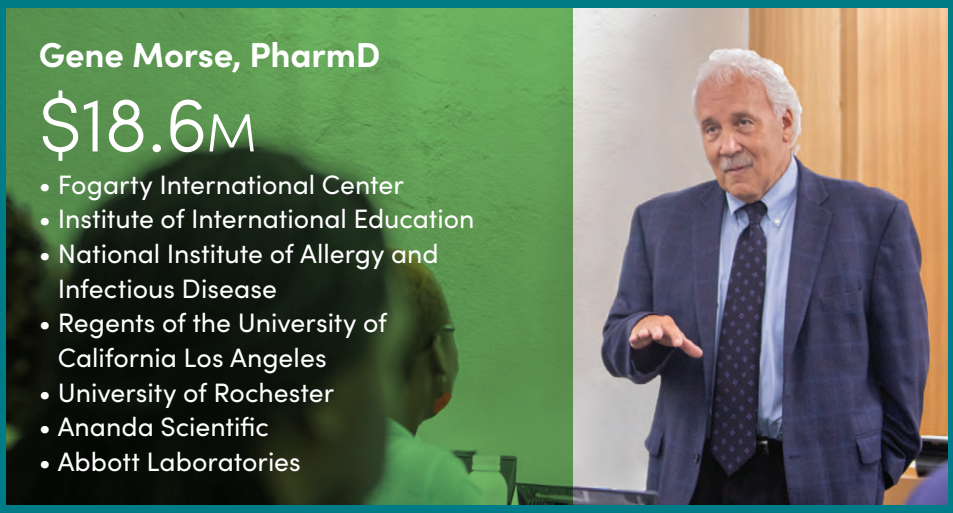
Sathy Balu Iyer, PhD
$3.5M
- National Institute of Allergy and Infectious Diseases
- National Heart, Lung, and Blood Institute
- Empire Discovery Institute

Robert Bies, PharmD, PhD
$4.8M
- U.S. Food and Drug Administration
- Childrens Research Institute
- Magee Womens Research Institute & Foundation
- Medstar Health Research Institute
- Research Foundation for Mental Hygiene, Inc.
- Trustees of Indiana University
- Bill & Melinda Gates Foundation

David Jacobs, PharmD, PhD
$1M
- National Heart, Lung, and Blood Institute
- Community Pharmacy Foundation

Qing Ma, PhD
$4.3M
- Merck Sharp and Dohme
- National Institute on Aging
- Gilead Sciences

Jason Sprowl, PhD
$2.7M
- National Institute of General Medical Sciences
- National Institute on Deafness and Other Communication Disorders



Jun Qu, PhD
$1.6M
- Buffalo Institute for Medical Research
- Pacific Northwest National Laboratory
- Trustees of Boston University
- Health Research Inc.
- Virginia Commonwealth University
- Doheny Eye Institute

Kathleen Tornatore, PharmD
$3.5M
- National Institute on Aging

Brian Tsuji, PharmD
$3.9M
- National Institute of Allergy and Infectious Disease

Sukyung Woo, PhD
$2.4M
- National Cancer Institute
- Board of Regents of the University of Oklahoma
- Washington University

William Jusko, PhD
$3.4M
- National Institute of General Medical Sciences
- GlaxoSmithKline

Young Jae You, PhD
$3.8M
- National Cancer Institute
- National Institute of General Medical Sciences

* Current as of Dec. 1,2023 with data provided by University at Buffalo Sponsored Projects Services

PSI attendees on a scavenger hunt of the Pharmacy Building

Buffalo Pharmacy Summer Institute:

A Pipeline for Future Pharmacy Students and Future Pharmacy Leaders

BY LAURIE KAISER

For Desiree Herman, crushing Smarties with a mortar and pestle and putting the particles in capsules was not only a cool experience as a teenager, but it also helped crystalize her decision to become a pharmacist—and attend the University at Buffalo.

It was July 2019 and Herman, who was entering her senior year of high school in Rochester, N.Y., participated in the three-day Pharmacy Summer Institute (PSI) at the UB School of Pharmacy and Pharmaceutical Sciences.

"I fell in love with UB in general and all the opportunities it offers," says Herman, PharmD '26, who was one of about 50 high school and undergraduate college students who participated in the pharmacy summer institute in 2019. "On the first day, they presented a whole introduction of the pharmaceutical field and explained the difference between pharmacy and pharmaceutical sciences. I learned there are over 200 careers in pharmacy. My family told me after I attended PSI, my whole face lit up."

The enrichment program, which began in 2016 and is sponsored by Independent Health, has enrolled more than 1,000 students since its inception. Most summers, between 40 and 60 students attended in person. During the coronavirus pandemic in 2020 and 2021, the school offered a free, virtual version, which about 800 students attended, explains Jennifer Rosenberg, associate dean for student success and engagement at the pharmacy school.

PSI is Rosenberg's brainchild. When she was hired in 2007, she recommended to pharmacy leadership hosting a summer camp as a recruitment tool.

"It has become the single biggest recruitment pathway to the pharmacy school," Rosenberg says. "We've developed a good rapport with high school and community college counselors. There are a lot of knowns with the program."

The UB PSI Experience

Over just three days, PSI participants visit research labs, meet with faculty members, network with practitioners, researchers and current PharmD students, receive tips on career planning and academic advising, and participate in real-life pharmacy activities, such as patient counseling, vaccine administration and Narcan training.

"The institute really solidified the idea that I was on the right track," says Rachel Romanowski, PharmD/MBA '26, who attended PSI in 2017, between her sophomore and junior years at Williamsville East High School. "UB made more sense to me than any other pharmacy program I considered because of its high ranking and comparatively low tuition. There was literally no reason not to go to UB."

Meeting with pharmacy school staff members, such as Sara Robinson, director of undergraduate advisement and recruitment, provided Romanowski with the road map she needed to select her AP courses and apply for the pharmacy school's early assurance program. She came in with 40 transferable hours, which helped lighten her undergraduate course load.

> "Attending PSI exposed me to the pharmacy school curriculum in an interactive way. It was nice hearing different speakers talk about their careers. It also showed me how diverse pharmacy is."
>
> *Chidima Adams, PharmD '25*

"I wouldn't have had the opportunity to structure my schedule that way if I hadn't met Sara," Romanowski says. "She was so willing to go the extra mile for me."

This type of one-on-one attention has paid off.

About one-third of eligible PSI students have enrolled; another 15% indicated they were planning to enroll. And a whopping 90% of the participants reported that they would recommend the summer institute to other students interested in pharmacy.

Along with opening their eyes to the profession, PSI prepares students for the rigors of pharmacy school and helps facilitate friendships.

"Attending PSI exposed me to the pharmacy school curriculum in an interactive way," says Chidima Adams, PharmD '25, of Baldwin, N.Y., who attended PSI in 2018. "It was nice hearing different speakers talk about their careers. It also showed me how diverse pharmacy is."

Carmela Ruiz, PharmD '24, who attended PSI in 2017 while attending an arts-focused high school in Long Island, N.Y., says she made friends with other students staying in her Buffalo hotel and learned early on about the importance of networking.

Leanna Hodge had a slightly different perspective when she participated in PSI in 2019, as she was an undergraduate in Pennsylvania.

"Attending PSI exposed me to all of the different areas a pharmacist could practice besides in a chain pharmacy or hospital," says Hodge, PharmD/MBA '25, who is currently working in a long-term care pharmacy with a focus on behavioral health and chemical dependency. "Getting to tour the pharmacy school and the area was also a great way for me to see if Buffalo was the right fit for me."

PSI alumni become team leaders

Beginning in 2022, PSI alumni currently enrolled in the pharmacy school have had the opportunity to join the PSI Student Leadership Team, which allows them to gain significant practical leadership experience and also earn micro-credentials in Advanced Leadership Programming and Leadership, Mentoring and Skills Programming.

"They work with me throughout the year to plan for the summer institute and also conduct pre-mentoring with the incoming class through Discord, a social media platform," Rosenberg says. "They also connect with students during the program and continue to stay in touch with them."

Hodge, who served as the PSI co-chair in 2023 and the communications chair in 2022, says she's enjoyed being able to answer students' questions and engage in open conversations with them.

When Rosenberg asked Herman in 2022 if she would like to join the leadership team, she says she jumped at the chance.

"I really loved the idea of helping those in the same position I was in in high school," says Herman, who is now working in an ambulatory clinic that serves patients with diabetes. "I think if I'm able to tell students about what pharmacy is and what an impact pharmacists can have, hopefully, they will find what they want to do."

Ruiz, who serves as the institute's co-chair, says remembering where she was and how she felt not that long ago helped her talk to PSI cohorts.

"It's been rewarding to me to help in this way," she says, "since I got so much out of the program myself."

Pharmacy Summer Institute student leader explaining mock vaccination

Pharmacy Summer Institute student leaders. L-R: Leanna Hodge, PharmD/MBA '25, Carmela Ruiz, PharmD '24, Shiqi Zhang, PharmD '25, Caroline Mak, PharmD '25, Desiree Herman, PharmD '26, Rachel Romanowski, PharmD/MBA '26, Chidima Adams, PharmD '25. (not pictured: Jeffrey Klossner, PharmD '25, Serena Roberts, PharmD '24, Stella Bialaszewski, PharmD '24)

Origins of new autoimmune treatments found in Balthasar lab

BY MARCENE ROBINSON

How could giving patients with autoimmune diseases more antibodies be beneficial? That was a question Joseph Balthasar found himself asking while attending a seminar as a UB doctoral student in 1993.

Perplexed by the lack of information about this phenomenon, Balthasar dedicated the early years of his career to finding an answer. Little did he know, the investigative journey would lead to the establishment of a new field through a groundbreaking discovery: that high doses of immunoglobulin G antibodies increase the elimination of disease-causing antibodies by inhibiting an antibody transporter, the neonatal Fc receptor (FcRn).

Now a UB pharmacy professor, Balthasar and his team were the first researchers to demonstrate that administration of high doses of immunoglobulin G, an antibody, increases the elimination of pathogenic antibodies that cause autoimmune disease by overtaxing FcRn. He also received the first grant from the National Institutes of Health (NIH) to develop FcRn inhibitors, published the first demonstration that specific anti-FcRn inhibitors increase antibody elimination, and received the nation's first patent for specific anti-FcRn drugs to treat autoimmune diseases.

In December 2021—nearly two decades after Balthasar's initial findings—the U.S. Food and Drug Administration approved Vyvgart, marking the first time an FcRn inhibitor was authorized for medical use. The medication, which is prescribed to treat myasthenia gravis, an autoimmune disease that causes muscle weakness, was approved for use in the European Union in August 2022.

And the promising drug at the heart of Johnson & Johnson's $6.5 billion acquisition of Momenta Pharmaceuticals is nipocalimab, an FcRn inhibitor that may be used to treat a range of autoimmune diseases, from rheumatoid arthritis to lupus. Nipocalimab is expected to be approved by the FDA within the next few years, says Balthasar, noting that Momenta Pharmaceuticals licensed his patent from UB to support their work.

"It may be argued that our basic science research, performed here at UB, has led directly to the development of a new class of treatments for autoimmunity," says Balthasar, David and Jane Chu Endowed Chair in Drug Discovery and Development in the School of Pharmacy and Pharmaceutical Sciences. "These advancements are a great example of the downstream benefit of basic science research that is pursued within a university."

From school project to a new class of drugs

More than 70 years ago, scientist F.W. Rogers Brambell made a counterintuitive discovery: The higher the concentration of antibodies in the body, the faster they are eliminated. Although Brambell was unsure of the underlying mechanisms, he hypothesized that the body had a system for protecting antibodies from elimination, Balthasar says.

Brambell's hypothesis was further solidified in the 1980s after a chance finding by clinician Paul Imbach, who noticed that high doses of intravenous immunoglobulin (IVIG) improved the condition of patients

with autoimmune disease. The treatment soon became standard practice despite immunologists having little understanding of how it worked.

The unknown mechanisms behind how IVIG worked is what most intrigued Balthasar when he learned about this therapy at a seminar. A doctoral student in the UB Department of Pharmaceutical Sciences interested in antibody therapies, he made uncovering the mechanisms of IVIG action the subject of an assignment for which he was required to prepare a research proposal in the form of an NIH grant. Although Balthasar never submitted the proposal as a student, he revisited the subject as a UB faculty member.

"Shortly after I started my own lab as an assistant professor, the National Institutes of Health issued a request for proposals (RFP) to investigate mechanisms of IVIG action. The RFP was entirely consistent with the research proposal that I developed as a student at UB," says Balthasar. "I was able to dust off and update my proposal, and with the help of Dr. Victor Yang from the University of Michigan, who agreed to serve as a co-investigator on the project, I was able to receive an NIH grant to test IVIG mechanisms systematically using pharmacokinetic and pharmacodynamic analyses."

His lab was the first to demonstrate in animals that FcRn saturation was the secret to the effects of IVIG in increasing the elimination of pathogenic antibodies. FcRn binds to immunoglobulin G to transport and protect the antibody from elimination. Since there is only a limited amount of FcRn available in the body, the protein can only guard a finite number of antibodies. When the body is flooded with IVIG, FcRn binds to what it can while the rest of the antibodies are eliminated. In patients with autoimmune disease, high doses of IVIG are beneficial because pathogenic antibodies are often eliminated as well. The articles detailing the findings, published in Blood and in Thrombosis and Haemostasis, were among the journals' most highly downloaded and cited papers during the months following their publication, Balthasar notes.

The groundwork laid during his assignment as a student would later help him receive a second NIH grant to investigate development of FcRn inhibitors—the first NIH award issued to develop specific anti-FcRn antibodies to treat autoimmune disease. The inhibitors block FcRn from binding with pathogenic antibodies, achieving the same effect as IVIG therapy in much smaller quantities, Balthasar explains. IVIG is extracted from blood plasma given by donors. Since massive amounts of IVIG are required to treat autoimmune disease, treatments are dependent on both the number and health of donors, he says, making specific FcRn inhibitors a more efficient therapy.

> "It may be argued that our basic science research, performed here at UB, has led directly to the development of a new class of treatments for autoimmunity." — *Joseph Balthasar, PhD*

The inhibitors may be effective at treating any autoimmune disease associated with immunoglobulin G, he says.

Key investigators who collaborated on the development of FcRn inhibitors include UB alumnus Ryan Hansen, associate vice president, discovery PKPD at Eli Lilly and Company; and Feng Jin, founder and chief executive officer of Polaris Consulting. Along with Balthasar, both are co-inventors on the first U.S. patent for the development and use of specific FcRn inhibitors as a treatment for autoimmune disease. Other researchers include UB research technician Maureen Adolf and UB alumni Rong Deng and Tommy Li.

Breaking ground in anti-cancer drug research

Since filing the patent, Balthasar has shifted his focus to investigating novel methods of using antibodies to fight cancer, allowing companies to continue to research and develop FcRn inhibitors for the market.

"For faculty members, when you create a patent, you have two options: start a company or license the patent to others," says Balthasar. "At the time of our FcRn work, I was a young faculty member and I felt that it was important to devote all of my time and efforts to become established as a teacher, mentor and researcher. I did not feel that I was ready to take on the challenges of being an entrepreneur." Now, after 20 years of researching antibody therapies and growth as a scientist and educator, Balthasar believes that, at this point in his career, he has the bandwidth necessary to take a more active role in commercializing technologies developed in his lab.

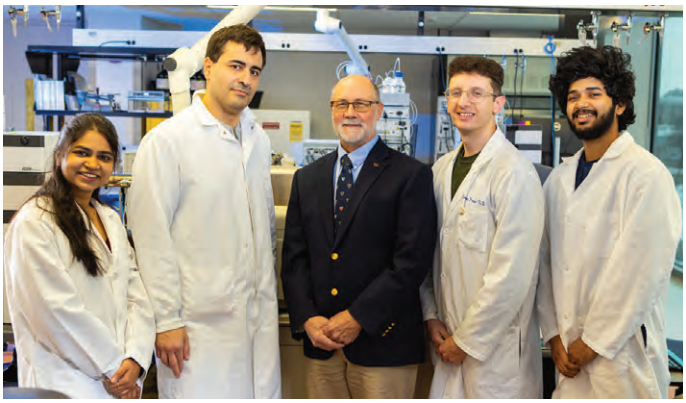
Balthasar and his group are currently developing a new adjuvant technology that enables improved distribution of anti-cancer antibodies within solid tumors, increasing their efficacy. Balthasar is licensing the technology to the Empire Discovery Institute (EDI), a nonprofit drug discovery and development accelerator that is a joint venture between UB, Roswell Park Comprehensive Cancer Center and the University of Rochester. With support from EDI, Balthasar and his group are building this new technology with the goal of bringing their new strategy to cancer patients.

Balthasar has also formed the startup Abceutics Inc. to pursue development of payload-binding selectivity enhancers (PBSEs), a class of drugs created in his lab that may prevent the entry of anti-cancer drug molecules into non-cancer cells. The PBSEs mop up excess anti-cancer molecules, helping to prevent highly toxic cancer treatments from harming healthy cells. By decreasing undesired toxicity, PBSEs allow increased dosing of the anti-cancer therapy and improve anti-cancer efficacy.

Straubinger and Qu labs identify key metabolic regulators of drug resistance in fight against pancreatic cancer

BY REBECCA BRIERLEY

The University at Buffalo research teams of Robert M. Straubinger, PhD, UB Distinguished Professor, and Jun Qu, PhD, professor, both of the Department of Pharmaceutical Sciences, recently published a research article in Molecular & Cellular Proteomics, a top international proteomics journal, describing their work in identifying key metabolic regulators involved in cancer cell resistance to gemcitabine (Gem), a standard-of-care chemotherapy for pancreatic dual adenocarcinoma (PDAC), the most lethal type of pancreatic cancer. The team also includes William J. Jusko, PhD, SUNY Distinguished Professor, and several of his lab members.



Robert Straubinger, PhD (center) with students in lab

Gemcitabine resistance (GemR) can develop clinically during chemotherapy, resulting in poor patient prognosis. Understanding the molecular mechanisms of Gem resistance has been challenging. Straubinger and Qu collaborated on the application of a cutting-edge comprehensive, quantitative proteomic analysis approach to identify key metabolic regulators of Gem resistance in PDAC. Their team systematically examined PDAC cancer cells and identified several therapeutic vulnerabilities of drug resistance that could be targeted to improve therapeutic outcomes for PDAC patients experiencing Gem resistance.

Pancreatic adenocarcinoma does not respond well to current treatments or to newer immunotherapies that have worked well in some cancers. Gem is the mainstay drug for PDAC patients but provides only modest survival benefits. Clinically, development of Gem resistance can be rapid and compromises its efficacy. First author Qingxiang (Nick) Lin, PhD, who performed much of the work as a graduate student of Straubinger in the Roswell Park Comprehensive Cancer Center Cancer Stress Biology Program and is now a postdoctoral scholar at Massachusetts General Hospital/ Harvard Medical School, developed multiple cancer cell lines that acquired a high degree of Gem resistance. The team then employed the detailed proteomic analyses to test their hypothesis that the very large loss in Gem sensitivity in the cell lines developed would identify multiple protein functional networks that cooperate in PDAC cells to create a highly drug-resistant state. Overall, the work has developed a more complete understanding of Gem resistance and established a rational basis for the design of effective therapeutic approaches to overcome Gem resistance in PDAC patients.

Networks of mechanisms working in concert reduce intracellular Gem concentrations and its active metabolites

The key findings indicated that the overall consequence of multiple protein-level changes observed in highly-GemR cells is that alterations in multiple drug response networks work in concert to reduce the intracellular concentrations of Gem and its active metabolites. The team noted significant elevations in protein expression within cellular Gem transport and metabolism pathways that would prevent PDAC cells from experiencing lethal Gem-induced stress and damage. The team concludes that approaches to modulate these drug metabolism pathways could overcome Gem resistance therapeutically in PDAC patients, and has been working toward identifying potential "master regulators" that may coordinate the overall drug-resistance response in PDAC cells.

"This research utilizes the cutting-edge global quantitative proteomic analyses to dissect systematically the molecular mechanisms of both acquired and intrinsic drug resistance in pancreatic cancer, and provides systems-level insights that could translate into therapeutic modulations of drug metabolism to overcome the chemo-resistance that frequently develops clinically, and improve the therapy of pancreatic cancer patients," says Lin.

"Understanding that there are adaptations within multiple pathways of cancer cells enables us to focus on new drugs that can combat drug resistance. One obvious focus would be to identify possible 'master regulators' that drive drug resistance, because the changes we observed in highly drug resistant PDAC cells appear to be coordinated toward an overall purpose.

> **"Understanding that there are adaptations within multiple pathways of cancer cells enables us to focus on new drugs that can combat drug resistance."**
>
> *- Robert M. Straubinger, PhD*

Finding drugs that reprogram drug resistant cells would be the key to exploiting these findings, and reverse clinical drug resistance," says Straubinger.

The team continues its work to develop promising drug combination strategies that can reverse drug resistance in PDAC patient tumors. The ultimate hope is that these approaches could move quickly to clinical investigation, benefiting pancreatic cancer patients fighting this highly aggressive and often lethal cancer.

Qu's research team groundbreaking technique allows first ever simultaneous whole-tissue protein mapping

BY REBECCA BRIERLEY
AND SAMANTHA NEBELECKY

University at Buffalo School of Pharmacy and Pharmaceutical Sciences research teams led by Jun Qu, PhD, professor, Department of Pharmaceutical Sciences, were recently recognized by Nature Communications, an open access journal affiliated with Nature, the premier international science and technology journal, for their groundbreaking techniques for in-depth mapping of protein localizations in whole tissue.

Tissues are where most biological functions, drug effects and diseases occur, and are often considered a homogenous entity where different types of cells are woven in regularly repeated patterns. However, a tissue is more like a city, with highly diversified, dynamic features across different regions. When trying to understand a city, you do not study it as a singularity; instead, you investigate its activities and functions at different locations. Because of the complex interactions within tissues, it is critically important to investigate the location-specific biological activities across all tissue regions. Increasing evidence suggests that the information on spatially resolved biological regulations, which are missed in the majority of current investigations, holds the key to addressing intractable diseases and to discovering and developing novel drugs.

Micro-scaffold Assisted Spatial Proteomic (MASP): Never before achieved simultaneously mapping of numerous proteins across a whole tissue slice in a single experiment

Spatially resolved analysis on a proteome level is highly valuable in pharmaceutical and clinical investigations, but it is challenging. Over the past three years, Qu and co-first authors and research scientists in Qu's lab (Min Ma, doctoral student, Roswell Park Comprehensive Cancer Center; Shihan Huo, postdoctoral associate, Department of Pharmaceutical Sciences; Ming Zhang, research scientist, Department of Pharmaceutical Sciences; Shuo Qian, doctoral student, Roswell Park Comprehensive Cancer Center, and other colleagues) developed a ground-breaking technique, Micro-scaffold Assisted Spatial Proteomic (MASP). For the first time, this technique has enabled the mapping of thousands of proteins on a whole tissue with excellent accuracy and precision. One of the key innovations is a revolutionary micro-scaffold tissue compartmentalization device fabricated using state-of-the-art 3D printing techniques. This method is capable of simultaneously mapping numerous proteins across a whole tissue slice in a single experiment, which has never been achieved before. The team showed an application of the MASP pipeline by mapping over 5,000 proteins with high accuracy in a healthy mouse brain. It included many important brain markers, regulators and transporters, where most of the proteins were for the first time mapped on the whole-tissue level.

Increasing evidence suggests that the information on spatially resolved biological regulations holds the key to addressing intractable diseases and to discovering and developing novel drugs.

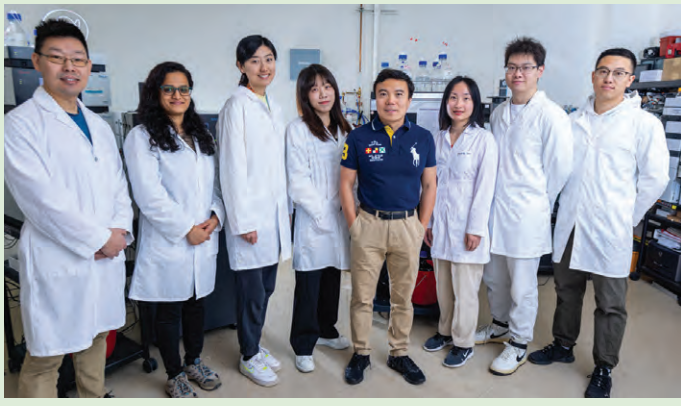
For the first time, this technique has enabled the mapping of thousands of proteins on a whole tissue with excellent accuracy and precision.

"The uneven distribution of biotherapeutics in tissues is frequently responsible for compromised efficacy and undesirable side effects in clinical settings," says Qu. "We believe that understanding the spatial distribution of biotherapeutics on a whole tissue level will afford critical information for directing pharmaceutical efforts in evaluating and designing more effective and safer biotherapeutics. MASP has made this happen by allowing a simultaneous study of the intra-brain distribution of the protein drug, but also the spatially related biomarkers."

Allows for unique protein mapping in various signaling networks and other functional pathways

One unique advantage of MASP is that it allows mapping of many important proteins in various signaling networks. For example, MASP generated whole-tissue distribution maps for proteins involved in the signaling pathway of an intractable neurodegenerative disease, Alzheimer's disease. For most proteins in the pathway, this was the first time their cerebral protein distributions have been observed. The research also showed the first-ever mapping of key players in other disease and function pathways.

"Compared to previous methods for studying protein spatial distribution, such as immunoassays, MASP faithfully preserves the spatial information based on a robust compartmentalization of the tissue, which does not introduce any artifacts related to the labeling process," say Ma and Huo. "More importantly, MASP accurately quantifies each protein at each location on the tissue, which is not affected by the limited dynamic range observed in immunoassays."



Jun Qu, PhD (center) with students in lab

Currently, the second generation of MASP, with higher resolution and higher throughput, is being developed in Qu's lab. The team anticipates a wide range of applications for this novel strategy, such as understanding the efficacy/safety issues of drugs and investigation of the onset and development of diseases.

Healy selected for AACP's inaugural Aspiring Academics Program

BY SAMANTHA NEBELECKY

Kaitlyn Healy, PharmD '25, was selected to participate in the inaugural cohort of the American Association of Colleges of Pharmacy (AACP) Aspiring Academics Program.

From more than 200 program applicants across the country, Healy was selected as one of only 20 student pharmacists to participate in the inaugural cohort.

"I am honored to be a part of the inaugural cohort of the AACP Aspiring Academics Program," says Healy. "Acceptance into this program means a great deal to me as I hope to have a future career in academic pharmacy."

AACP's Aspiring Academics Program is designed to facilitate a deeper understanding of career paths in academic pharmacy. The program engages participants through learning modules, mentorship, networking, a group project, involvement with AACP, and attendance at AACP's Pharmacy Education 2024 and the Teachers' Seminar in Boston, Massachusetts, in July 2024.

At the conclusion of the program, participants will have a greater understanding of the various types of pharmacy faculty positions, the expectations of faculty scholarship, teaching and service, as well as the process and skills needed to advance in a career in pharmacy academia.

"I am excited to gain skills to become a great mentor to future pharmacy students and to learn more about the pathway to becoming faculty," Healy adds.

AACP's Aspiring Academics have the opportunity to learn from two distinct faculty member mentors, one from within their own institution (the home mentor) and one assigned by AACP (the AACP group mentor)—all while building a national network of peers interested in academia.

"The AACP Aspiring Academics Program presents a unique opportunity for Kaitlyn; it will equip her with the tools she needs to embark on her journey to a career as a clinical faculty member," says William Prescott, Jr., PharmD, chair, Department of Pharmacy Practice and Healy's faculty mentor. "Kaitlyn is at the top of her class and has many character traits that will help her throughout her career as an academician and emerging leader. I am excited to serve as her mentor and can't wait to see the impact she makes as a pharmacy faculty member down the road."

SPPS receives AMCP Chapter of the Year Award

BY SAMANTHA NEBELECKY

The SPPS student chapter of the Academy of Managed Care Pharmacy (AMCP) received the AMCP 2023 Chapter of the Year Award. This is the first time the SPPS student chapter has won this award.

The SPPS student chapter of AMCP was established in 2011 and facilitates the education, development and promotion of the principles and practices of managed care pharmacy. This is the practice of developing and applying evidence-based medication use strategies that enhance member and population health outcomes, while optimizing health care resources.

SPPS was awarded the 2023 Chapter of the Year Award for their work during the 2022-2023 academic year. At that time, Macy Meng, PharmD/MBA '25, served as president.

The AMCP Chapter of the Year Award recognizes all that AMCP student chapters accomplish on a year-to-year basis and is awarded to the student chapter that establishes quality, innovative managed care programming for students. The SPPS chapter was recognized for their innovative managed care events, collaborating on a residency and fellowship panel with the University of Maryland and Wilkes University, and for leading a student workshop on prior authorizations.

"It's truly a great honor to receive this award," says Emily Diep, PharmD/MBA '25, president, SPPS AMCP student chapter. "Our former chapter president, Macy Meng, myself, and all our fellow AMCP student leaders have worked diligently to create programming and promote AMCP and managed care pharmacy. We hope to leverage this award to continue pushing out ideas and events that encourage students to learn about managed care and get involved with AMCP."

Along with the award, SPPS received a personalized plaque and a $1,000 chapter grant.

In addition to receiving the Chapter of the Year Award, Diep was one of two students awarded the Northeast AMCP Affiliate Nexus Scholarship and received a $500 award to help fund her attendance at the 2023 AMCP Annual Meeting.

SPPS student chapter of the Academy of Managed Care Pharmacy (AMCP)

Poison Prevention and Awareness

BY SAMANTHA NEBELECKY

During the spring 2023 semester, our first-year PharmD students visited 23 preschool and elementary schools in the Buffalo and Western New York region and hosted more than 100 poison prevention and awareness presentations to approximately 2,500 preschool and early grade school students.

The message our PharmD students shared was, "A poison is anything that can hurt you if you take it the wrong way. Before you touch, play with, eat or drink anything you're not absolutely sure is safe, ask a grown-up." Along with explaining the dangers of accidentally misusing common household items, our PharmD students emphasized the importance of only taking medicine that's prescribed to you.

"I think it's really important to work on poison prevention," says Caden Jones, PharmD '24, SPPS poison prevention student leader. "There are so many potential dangers in our everyday lives, and it's essential to take steps to keep ourselves and those around us safe. I thought this would be an excellent opportunity to work with my local high school and SPPS to design and help distribute a poison prevention presentation for those within our community."

The presentations included videos and interactive games along with student goodie bags containing Poison Information Center magnets, stickers, activity sheets, crayons and letters to parents.

"The UB PharmD students did a fantastic job, were engaging with the elementary students and received positive feedback from the teachers I talked with," says Mary Beth Dreyer, public health educator, Upstate New York Poison Center.

Since the 1980s, our PharmD students and SPPS faculty have partnered with the Poison Control Center to provide educational poison prevention and awareness programs to various groups in the Western New York community.

> "The UB PharmD students did a fantastic job, were engaging with the elementary students and received positive feedback from the teachers I talked with."
>
> *Mary Beth Dreyer, public health educator, Upstate New York Poison Center.*

PharmD students visiting local preschool and elementary schools to teach poison prevention and awareness

Nguyen receives ASCPT Presidential Trainee Award

BY DEVON DAMS-O'CONNOR

Thomas Nguyen, PharmD/MS '23, won a Presidential Trainee Award at the American Society for Clinical Pharmacology & Therapeutics (ASCPT) Annual Conference, held in Atlanta, Georgia, March 22-24, 2023.

Nguyen's top-scoring abstract earned recognition by the ASCPT Scientific Program Committee as "top poster" and was ranked fourth among all the abstracts that were submitted at the conference.

The poster, titled "Prospective Validation of Maximum A Posteriori-Bayesian Estimation of Tacrolimus Exposure in Stable Kidney Transplant Recipients," highlighted the use of precision medicine to help optimize knowledge of an individual patient's unique tacrolimus concentrations, adjust each patient's tacrolimus doses, and, ultimately, increase the likelihood that an individual will have a long-lasting kidney transplant. The poster explained a new approach for monitoring tacrolimus exposure in patients that requires fewer blood samples to measure drug concentrations during the post-transplant period.

"A number of people demonstrated interest in the research during the conference," Nguyen explains. "The idea of using MAP-Bayesian estimation is innovative and it is being incorporated in newer clinical drug monitoring protocols. Our work supports the utility of using this method in a clinical setting."

The work is part of Nguyen's master's project supervised and co-authored by Kathleen Tornatore, PharmD '81, professor, and Nicholas Smith, PharmD '18, PhD '21, assistant professor, both of the Division of Clinical and Translational Therapeutics, Department of Pharmacy Practice. The research is funded by Tornatore's $3.6M National Institutes of Health R01 grant, "Age and Race Influences on Immunosuppression after Renal Transplant," and is part of a larger body of work examining the effects of age, race and sex differences on tacrolimus exposures in stable kidney transplant recipients.

"This has been a rewarding experience," Nguyen says. "This was a great experience at a national conference, and it was a pleasure to represent the UB Transplantation Immunosuppressive Pharmacology Research Program at this meeting."

Roberts Top Three in APhA-ASP National Patient Counseling Competition

BY SAMANTHA NEBELECKY

Serena Roberts, PharmD '24, was awarded second runner-up in the American Pharmacists Association– Academy of Student Pharmacists (APhA-ASP) National Patient Counseling Competition at the 2023 APhA Annual Meeting.

The APhA-ASP National Patient Counseling Competition aims to encourage student pharmacists to become better patient educators, reflects changes that are occurring in practice, and reinforces the role of pharmacists as health care providers and educators.

Roberts initially participated in the local UB School of Pharmacy and Pharmaceutical Sciences competition in fall 2022, where she was selected to advance to the national competition held at the 2023 APhA Annual Meeting, March 23-25, in Phoenix, Arizona.

At the national competition, Roberts participated in two rounds of competition against more than 115 students from pharmacy schools across the country. Both rounds of competition consisted of assessing medications that differed from one another in formulation, drug class and directions of use.

In the first round of competition, competitors randomly chose a medication, then had to look up the prescription alongside a patient's profile using drug reference tools. Competitors then counseled the patient on medication use while addressing their individual profile and personality characteristics. Roberts was selected as one of 10 students who advanced to the final round of competition.

In the final round, competitors again had to review a medication alongside a patient's profile, then counsel the patient on appropriate medication use according to their specific needs. Roberts placed second runner-up in the competition overall.

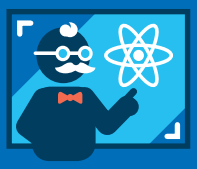
"I am extremely proud and grateful for this opportunity and achievement," says Roberts. "The competition was a challenge, but it was amazing being able to put into practice what I have been learning over the last few years."

Roberts was recognized at the 2023 APhA Annual Meeting awards ceremony with a certificate and cash prize.

"I am happy that I was able to represent the UB School of Pharmacy and Pharmaceutical Sciences on the national level, and I hope that someone from UB will go even further in the competition in the years to come," Roberts adds.

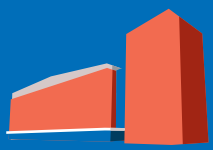
Since the public launch of the *Boldly Buffalo* campaign in April 2018, UB alumni and friends have made an indelible impact on our students and our university. As of June 30, 2023—the close of the fiscal year they have committed over **$1 billion.**

WHAT IS THE IMPACT OF THE CAMPAIGN?



41 New endowed faculty positions

333 New scholarships and fellowships

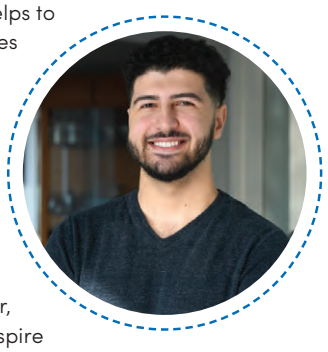


21 New or renovated buildings

Nakhla awarded UB Presidential Fellowship

BY SAMANTHA NEBELECKY

Mina Nakhla, PhD student, was awarded a 2023 UB Presidential Fellowship.



The UB Presidential Fellowship Program helps to fund outstanding graduate students. Nominees must be a new applicant to a PhD program, be appointed as a full teaching, graduate or research assistant, and have a cumulative undergraduate grade point average of 3.40 or higher upon admission.

"I am beyond honored and humbled to receive such a prestigious award," says Nakhla. "This fellowship reflects the hard work I put in during my undergraduate career, and I will use it as a standard for the work I aspire to complete during my doctoral program."

Nakhla is a first-year PhD student in the Department of Pharmaceutical Sciences. Prior to attending UB, he earned his bachelor's degree in cell biology and neuroscience from Rutgers, The State University of New Jersey.

His research interests are in pharmacokinetics and pharmacodynamics modeling, specifically using mathematical modeling to guide clinical research decisions in drug development. He will pursue these interests under the guidance of SPPS faculty. His future career goals are to work in the pharmaceutical industry, academia or federal regulation.

Journal of Pharmaceutical Sciences Special Issue Edition Dedicated to Jusko

BY REBECCA BRIERLEY

A special edition of the Journal of Pharmaceutical Sciences was dedicated to William Jusko, PhD, SUNY Distinguished Professor, pharmaceutical sciences and recognizes his long term contributions to the advancement of the pharmaceutical sciences, including his work in the evolution of PK PD modeling, and 40 year leadership of significant advances in theoretical and applied pharmacometrics. These advances provided a foundational framework for the study and understanding of drug exposure response relationships.

Journal guest editors, David D'Argenio, PhD, professor of engineering, Alfred E. Mann Department of Biomedical Engineering, University of Southern California; and Ioannis Androulakis, PhD, professor, Department of Biomedical Engineering, Rutgers University, had much praise for Jusko's accomplishments. Androulakis stated, "This issue is a tribute , celebrating his groundbreaking contributions and pioneering advancements in the field of mathematical modeling in pharmaceutical sciences. It offers me the extraordinary opportunity to articulate my deep and sincere appreciation for the mentorship, inspiration, and unwavering support I received from Bill throughout my professional journey. His guidance has been a beacon of enlightenment, profoundly influencing my career and personal growth."

D'Argenio continued, "Reading a great literary work changes you. The person you were before reading the novel and after is not the same. So too, each of Bill's seminal works highlighted in this special dedication issue has fundamentally and profoundly changed the way we conceive of and model pharmacokinetic-pharmacodynamic systems. I can think of no greater career accomplishment."

Jusko studies the disposition and pharmacological effects of drugs and the optimization of dosing for immunosuppressive, anti diabetic and cancer treatments which has led to significant advances in mathematical and computer modeling of the time course of responses following drug dosing. His research in pharmacokinetics and pharmacodynamics has received continuous funding from the National Institutes of Health (NIH) National Institute of General Medical Sciences since 1977.

"Dr. Jusko has made extraordinary contributions to advancing the understanding and application of pharmacokinetics and pharmacodynamics," said Gary Pollack, PhD, dean and professor, University at Buffalo School of Pharmacy and Pharmaceutical Sciences. "His work has laid the foundation for the continued advancement of the pharmaceutical sciences and will inform future scientific discoveries for years to come. While the impact of his work has been global, our school, our students and the many alumni he has mentored have been the direct beneficiaries of his career long efforts. He is truly a 'giant' among pharmaceutical scientists, and I am immensely fortunate to have him as a teacher, mentor, colleague and friend."

Jusko's catalogue of awards is unparalleled and includes the Distinguished Pharmaceutical Scientists Award from the American Association of Pharmaceutical Scientists (AAPS); the Volwiler Research Achievement Award from the American Association of Colleges of Pharmacy (AACP); the Oscar B. Hunter Career Award in Therapeutics from the American Society for Clinical Pharmacology & Therapeutics; a coveted NIH MERIT (Method to Extend Research in Time) award ; the Distinguished Service Award from the American College of Clinical Pharmacology; the Lewis B. Sheiner Lecturer Award from the International Society of Pharmacometrics (ISoP); honorary doctorates from the Jagiellonian University in Krakow and the University of Paris Descartes; and a Fulbright Scholarship.

Other colleagues offered congratulatory comments. They included UB SPPS Dean Emeritus Wayne Anderson, PhD; and Ah Ng Tony Kong, PhD, Distinguished Professor and Glaxo Endowed Chair of Pharmaceutics at Rutgers University. "A brilliant pharmaceutical scientist who has made unique and profound contributions to the field of pharmacokinetics pharmacodynamics and PK PD modeling," Kong said .

"The new year marks the recognition of Bill Jusko as one of the giants of pharmaceutical sciences," said Anderson. "The issue is dedicated to his leadership in theoretical and applied pharmacometrics reflecting on his numerous achievements, awards and global impact . During my tenure as dean, Bill had a high impact in many areas: department chair, pre eminent scholarship, student recruitment and mentorship of junior faculty. He was also a friend and a colleague, and I congratulate him on this well deserved recognition."

Jusko has published more than 600 research articles and serves on the editorial boards of numerous academic journals and is former editor in chief of the Journal of Pharmacokinetics and Pharmacodynamics. His top cited articles involve indirect pharmacodynamic models, computational methods for pharmacokinetic analysis, models for target mediated dispositional effects, and effects of protein tissue binding upon pharmacokinetics.

From 2001 to 2016, Jusko was chair of the UB Department of Pharmaceutical Sciences. More than 100 students and fellows have completed training under his supervision. He is a fellow of the ACCP, AAPS, ISoP and the American Association for the Advancement of Science .

Recognizing Greatness

Faculty and Staff Achievements

Collin Clark, PharmD, clinical assistant professor, recipient of New York State Council of Health-system Pharmacists New Practitioner Award.

Karl Fiebelkorn, RPh, MBA, clinical associate professor, named a fellow of the American Pharmacists Association.

Nicholas Fusco, PharmD, clinical professor, named a Distinguished Fellow of the National Academies of Practice.

Kristin Gniazdowski, EdM, senior assistant dean, resource management, selected for National Association of College and University Business Officers 2023–24 Emerging Leaders Program.

David Jacobs, PharmD, PhD, assistant professor, recipient of 2023 University at Buffalo Exceptional Scholar Young Investigator Award.

Jaime Maerten-Rivera, PhD, associate dean, analytics and accreditation compliance, selected for American Association of Colleges of Pharmacy 2023-2024 Academic Leadership Fellows Program.

Calvin Meaney, PharmD, clinical associate professor, named a 2023 Outstanding Reviewer for American College of Clinical Pharmacy Pharmacotherapy Journal. Also named a Fellow of the American College of Clinical Pharmacy.

Christine Stumm, EdM, director, registrar and enrollment services, recipient of 2023 SUNY Chancellor's Award for Excellence in Professional Service.

Sukyung Woo, PhD, associate professor, appointed member of National Institutes of Health Center for Scientific Review Drug Discovery and Molecular Pharmacology C Study Section.

Ashley Woodruff, PharmD, clinical associate professor, elected chair-elect of the American Association of Colleges of Pharmacy Technology in Pharmacy Education and Learning Special Interest Group.

Sprowl receives ASPET Early Career Award

BY SAMANTHA NEBELECKY

Jason Sprowl, PhD, assistant professor of pharmaceutical sciences, received a 2023 Early Career Award from the American Society for Pharmacology and Experimental Therapeutics (ASPET) Division for Translational and Clinical Pharmacology.

Recipients of this award are early career scientists recognized for excellence in translational and clinical pharmacology research. Sprowl received the award in recognition of his pioneering research studying the contribution of solute carriers (SLCs) in drug-induced toxicity and related transformative strategies that target these proteins while maintaining drug efficacy.

Sprowl has been recognized as an emerging leader in studying the role of SLCs as contributors to drug efficacy and toxicity. Expanding knowledge of SLCs and their regulation seeks to aid in predicting nutrient or xenobiotic disposition, as well as explain interpatient variability and response based on their activity.

Sprowl's expertise and contributions to this field are represented by more than 25 peer reviewed manuscripts in high-impact journals associated with SLCs and drug response.

His research group is currently investigating tyrosine kinase regulation of SLCs and how these events contribute to patient variability or life-threatening drug-drug interactions, research that is supported by National Institute of General Medical Sciences R01 funding.

"I am honored to be recognized by the ASPET Division for Translational and Clinical Pharmacology," says Sprowl. "This is an award that has been previously received by many of my colleagues who I hold in high regard and have made many significant contributions to our field."

Clark receives AACP New Investigator Award

BY SAMANTHA NEBELECKY

Collin Clark, PharmD, clinical assistant professor, Department of Pharmacy Practice, received a 2023 New Investigator Award from the American Association of Colleges of Pharmacy (AACP).

The award assists early-career pharmacy faculty in the development of an independent research program and provides a foundation for future extramural research funding success by enabling them to generate preliminary data.

Clark received the award for his project titled, "A Pilot Pharmacist-to-Pharmacist Hand-off Intervention During Transitions of Care." The goal of the project is to test the feasibility of enhancing the communication between clinical pharmacists in the inpatient and outpatient settings to improve patient outcomes, as patients leave the hospital and return home. The project findings will inform the development of future pharmacist-driven clinical services in transitions of care.

"I am honored and humbled to be selected for the award," says Clark. "This is a very exciting opportunity for me, as it will allow me to establish an independent research program studying the impact of clinical pharmacy services during transitions of care."

The award provides Clark with funding to conduct his research project and to attend the 2024 AACP Annual Meeting in July 2024.

Seyse recognized as AACP Distinguished Preceptor

BY SAMANTHA NEBELECKY

Stephanie Seyse, PharmD, internal medicine pharmacist, Buffalo General Medical Center, was recognized as a 2023 Distinguished Preceptor by the American Association of Colleges of Pharmacy (AACP).

The AACP Distinguished Preceptor Recognition Program honors preceptors for their sustained commitment to excellence in experiential education and professional practice. This national acknowledgment is only awarded to five preceptors annually and recognizes preceptors who work at colleges or schools of pharmacy but are not full-time employees.

"I am humbled to receive this prestigious award in recognition of my passion for advancing pharmacy practice through precepting all types of learners," says Seyse. Seyse is passionate about mentoring the next generation of pharmacists and has been precepting Introductory Pharmacy Practice Experience (IPPE) and Advanced Pharmacy Practice Experience (APPE) students, as well as Postgraduate Year 1 (PGY1) and PGY2 pharmacy residents, for nearly 30 years.

"In order to advance our profession, it is vital that we take an active role in teaching and mentoring the students and residents who will become the pharmacists of tomorrow," Seyse says. It is such a joy to see the growth of learners clinically and professionally, and know that I had some part in shaping who they will become."

"Seyse is a dedicated pharmacist who is passionate about providing the best patient care possible," says Richard O'Brocta, director of experiential education. "She shares this incredible passion and energy with our students, instilling in them the same selfless motivation to achieve excellence. She is a true friend of pharmacy education and enthusiastically helps to prepare the next generation of pharmacists."

New Leaders Pave Way for Academic Innovation

Strategic appointments enhance student learning, research productivity and support

BY SUZANNE CREAN

Nicole Albanese, PharmD, clinical associate professor, Division of Outcomes and Practice Advancement, Department of Pharmacy Practice, in August was appointed the first assistant dean for the new Office of Student Success and Engagement. This new student services office was created to provide a supportive environment to enhance their personal growth, foster professional and career preparation, and ensure their academic success.

"I can't wait to start getting to know the entire Student Success and Engagement team in the upcoming weeks and months."

– Nicole Albanese, PharmD

In her role, Albanese will lead initiatives including recruitment and admissions, onboarding and academic advisement, career development, and our new Learning and Engagement Communities.

"I am a hands-on, immersive learner who needs to see and experience things in order to fully understand them in a way that I can then effectively lead," says Albanese. "I can't wait to start getting to know the entire Student Success and Engagement team in the upcoming weeks and months!"

Recently appointed associate dean for graduate education, **Robert Bies,** PharmD, PhD, professor, Department of Pharmaceutical Sciences, will grow our PhD programming and associated areas involving recruitment, budgeting and governance.

Bies will oversee all aspects of our school's on-site graduate programs, advance the impact of our online MS programming and lead the Office for Graduate Education. He will support the division directors of graduate studies in managing our Pharmaceutical Sciences MS and PhD programs, as well as the Pharmacometrics and Personalized Pharmacotherapy, and the Clinical and Translational Therapeutics MS programs.

"I look forward to working with my colleagues and the dean to shepherd the graduate programs through this period of significant change."

– Robert Bies, PharmD, PhD

"This is a very unique time at the School of Pharmacy and Pharmaceutical Sciences with significant growth and evolution of the graduate programs encompassing the PhD in Pharmaceutical Sciences and the MS degrees in Pharmaceutical Sciences, Pharmacometrics and Personalized Pharmacotherapy, and Clinical and Translational Therapeutics," says Bies. "I look forward to working with my colleagues and the dean to shepherd the graduate programs through this period of significant change."

Reunion and Alumni Awards October 12–14, 2023

Alumni Awards

Three outstanding alumni award winners were recognized during our 2023 Pharmacy Reunion Weekend in October. The celebration kicked off Thursday, Oct. 12, with the UB Alumni Achievement Awards Ceremony honoring Mark J. Sinnett, BS '83, PharmD '87, with a UB Distinguished Alumni Award.

Sinnett, director of clinical and educational pharmacy services at Montefiore Medical Center, Bronx, New York, was recognized for his outstanding career and contributions, including his national and statewide professional leadership through the New York State Council of Health-System Pharmacists and the American Society of Health-Systems Pharmacists, support of pharmacy students and postgraduate education, along with his long-term support of the university and the pharmacy school.

Our SPPS Alumni Awards Ceremony, held Friday, Oct. 13, in conjunction with our 2023 reunion program, honored Karen M. (Wilson) Brim, BS '82, Orville C. Baxter Memorial Professional Practice Award recipient, and Kathleen M. Giacomini, PhD '79, Willis G. Gregory Memorial Award recipient.

Brim was selected in recognition of her extraordinary dedication to the practice of pharmacy and the school. She is currently a clinical pharmacist at Independent Health where she plays an integral role in new product evaluation, managed care activities and provider relations. An advocate for better health outcomes and enhanced community engagement in underserved areas, Brim also volunteers as a UB SPPS dean's alumni ambassador, mentoring students and assisting with prospective student interviews and application reviews.

Dean of the University of California San Francisco School of Pharmacy, Giacomini is a world-renowned scientist in the field of membrane transporters and is widely recognized for her work in transporter genomics and pharmacogenomics. She is one of a few pharmacy-trained elected members of the National Academy of Medicine and is also a recipient of the Volwiler Research Achievement Award and the Distinguished Pharmaceutical Scientist Award, both from the American Association of Colleges of Pharmacy. Giacomini was unable to attend the award ceremony.

L-R: Karen M. (Wilson) Brim, BS '82, Gary Pollack, PhD '84, dean SPPS, Mark Sinnett, BS '83, PharmD '87

Reunion Events

The reunion was held on Oct. 13 in the Pharmacy Building and welcomed fifth-year graduates from 1972 to 2007 back to campus. Reunion events included building tours, discussion of our new strategic initiatives with faculty scholars, and poster presentations with our award-winning student researchers.

For graduates from 1988, marking their 35th reunion year was bittersweet. The class honored the memory of recently deceased classmate, Ann Schuler Duquin '88, during the event.

The evening culminated with a cocktail reception where memories were shared and connections renewed.

On Saturday, October 14, reunion classes attended UB Homecoming and Bulls football. The classes of 1988, 1997 and 1998 kept the party going at private class dinners.

The class of 1975 took their reunion celebration to the high seas on a Panama Canal cruise at the end of October.

Top: Alumni reconnecting at reunion.

Bottom: UB Pharmacy Classes of 1980s honoring the memory of Ann Schuler Duquin '88

Top: Reunion attendees celebrate with Brim

Bottom: UB Pharmacy Classes of 1990s

We'll Make it Happen!

BY JUDSON MEAD

Wooin Lee (PhD '01) and Ellen Wang (PhD '01) were fast friends—"lab sisters" – over their years together in Ho-Leung Fung's lab in the Department of Pharmaceutical Sciences.

Fung, UB Distinguished Professor Emeritus in the Department of Pharmaceutical Sciences, is well known to everyone in the field as an internationally celebrated researcher, past president of the American Association of Pharmaceutical Scientists (AAPS) and, from 2005, editor-in-chief of the AAPS Journal.

Lee and Wang had stayed in close touch after leaving UB. Lee held various academic posts in the U.S and since 2014 has been on the faculty of Seoul National University; Wang is a senior researcher with Pfizer.

They planned to meet at the 2022 AAPS annual meeting in Boston, where they also looked forward to meeting their mentor, Fung, whom they hadn't seen in a decade. Lee and Wang had speculated about Fung's age.

"When we saw him we asked him, when are you turning 80," Wang says. It would be the next year.

Celebrating Leung Fung

Lee and Wang thought maybe they could organize a Fung lab reunion to mark the occasion. Then they wondered what they could get Fung and his wife, Sun-Mi, who was also turning 80 and had been very much their "lab mom."

"What can you get someone who is turning 80 and who already has everything," Wang remembers. Maybe a scholarship in his name?

But first, they wanted to make sure this wouldn't make him uncomfortable. "He was always putting other people first, and hesitating to put himself in the spotlight," Lee says. He was enthusiastic and said he'd wanted to do this many years ago but hadn't gotten around to it.

"So we said to each other, if this is something he wished he'd done—we'll make it happen!"

Thus the Fung Laboratory Graduate Fellowship was conceived.

They began by calling Fung lab alumni to announce the reunion to celebrate the Fungs' milestone birthdays and to propose raising funds for a fellowship. For the next several months, Lee and Wang were on the phone, on Zoom calls, writing texts and emails to a widening group of SPPS alumni.

What surprised them was how much wider than the Fung lab the eventual circle of contributors extended. "That really speaks to the impact he's had on those students through conversation and the courses he taught and his influence as the department chair," Wang says.

Donors sent appreciations with their contributions: "Dr. Fung and Sun-Mi were like surrogate parents during our years at UB." "Dr. Fung always did things the way that they should be done, with the perfect mix of rigor and leniency, sternness and empathy, seriousness and humor." "Dr. Fung is instrumental in shaping the scientist I am today." "Though not a member of the Fung lab, Leung always gave me a listening ear and helpful advice."

In the summer of 2023, on the Saturday after the conclusion of the Buffalo Pharmaceutics Symposium, donors to the Fung fellowship gathered with the Fungs at Joe and Sue Balthasar's home. This was the celebration Wooin Lee and Ellen Wang had started to plan in 2022, the seed that grew into a fellowship.

The Fung Fellowship

A few months later, the first Fung Laboratory Graduate Fellowship was awarded to Osama Aqel, a first-year doctoral student who came to UB from a master's program at the University of Arizona.

The Fung fellowship will be used to attract top applicants to the SPPS pharmaceutical sciences graduate programs. But as it happened, when the inaugural award was made, this top applicant had already enrolled.

Any graduate program would have wanted Aqel. He had published more than a dozen papers by the time he finished his master's degree. But UB had been his first choice anyway: "I was looking for the top program and I always heard at conferences that UB is the top."

His long-term goal is to contribute to the advancement of oncology treatments by working in the pharmaceutical industry.

Ho-Leung Fung has this message for Aqel and future fellowship holders:

"This is a wonderfully exciting time to be doing pharmaceutical research, when we are getting the handle on developing new drugs for many seemingly incurable diseases such as dementia, obesity and genetic disorders. The work that you do could potentially alleviate the suffering of millions of people around the world. I wish I were young again like you to engage in this quest. Good luck to all of you."

To join the donors building the Fung Laboratory Graduate Fellowship, please go to crowdfunding.buffalo.edu/project/35129.

Modeling the Ideal

BY JUDSON MEAD

Marilyn Morris, PhD '84, SUNY Distinguished Professor, retired from her faculty position in the UB School of Pharmacy and Pharmaceutical Sciences at the end of the 2023 academic year. In December of that year, PhD student Xinnong Li was named the first recipient of the Marilyn Morris Excellence in Pharmaceutical Sciences Fellowship.

Fittingly, Li and Morris had overlapped two years earlier when Li took Morris' course in drug metabolism and transport at the beginning of her master's degree studies.

"The course was really hard for me," Xinnong remembers. "I wasn't sure I would pass our first exam." But she did. And with what she says was a lot of effort, she eventually earned an A in the course—to go with her record of straight A's through the completion of her master's degree.

She also earned an expression of Morris' confidence in the form of a letter of recommendation to the doctoral program where she is now working on problems in pharmacometrics in the lab of Robert Bies, PhD, professor, pharmaceutical sciences.

The Morris influence

That makes Xinnong one of the very latest in an almost two-generation-long line of pharmaceutical scientists and, more widely, women in academics and, even more widely, her school and university whose lives and ways Marilyn Morris influenced with her standards, her fairness and her leadership.

Morris came to UB to start her doctoral studies in 1978. Five years later, she was finishing her dissertation under world-renowned pharmaceutical scientist, Gerhard Levy while she was pregnant. That made her an inspiring model for Gayle Brazeau, PhD '89, newly arrived at the SPPS to start her doctoral studies.

The two eventually became academic colleagues and close friends, their families traveling the world together. So it was natural that Brazeau, who is former dean and now professor of pharmaceutical sciences at the School of Pharmacy at Marshall University, would take the lead in a campaign that created the graduate fellowship in Morris' name.

"Marilyn has always had a passion for leadership. She instilled a sense of excellence in her students and in the academy," Brazeau says. "She had a rich scientific career and she balanced that with a phenomenal family life."

Morris had a one-year-old daughter when she joined the SPPS faculty and added her second and third daughters in the next three years. She never missed teaching any classes. And she continued to publish and bring in grant support.

She became one of the world's preeminent scholars in membrane transport proteins, their influence on the pharmacokinetics and pharmacodynamics of drugs, and their use as therapeutic targets. She authored some 225 peer-reviewed scientific papers, book chapters and conference proceedings and reports. She served as the co-editor of the textbook on "Drug Transporters: Molecular Characterization and Role in Drug Disposition," now in its third edition.

Not content simply to make her own way, Morris approached then-UB president William Greiner (1934-2009) about academic accommodations for women faculty—for instance, a tenure clock pause for women faculty just starting families. It was the beginning of a policy discussion that eventually changed the face of the university.

Morris was a leader as a mentor, having been the primary research advisor for more than 60 graduate students, and 14 postdoctoral fellows. She was a leader in the university, having been associate dean of UB's Graduate School from 2006-12.

"She was an especially good role model for students going into academics," Gayle Brazeau says. "She taught her students to be good academic citizens and good team members."

Providing for excellence in pharmaceutical sciences

Now they are thanking Morris by supporting the fellowship in her name.

Guohua An, PhD '10, associate professor of pharmaceutical sciences and experimental therapeutics at the University of Iowa, counts herself lucky to have been one of her PhD students. "I consider her as my academic mom," she says, "and I am grateful for this lifelong relationship."

Xinning Yang, PhD '09, now a policy lead at the FDA, says, "I especially value two characteristics of Dr. Morris, persistence in research and dedication in service to the community."

"In addition to science she taught us how to be independent and collaborate with others for our projects," says Urvi Telang Aras, PhD '10, at Bristol-Myers Squibb.

And Youngjin Moon, PhD '07, also at the FDA, says, "I know that I can never repay Dr. Morris for all that she has given me, so I can only hope that supporting the Dr. Marilyn Morris Fellowship can attempt to pay it forward to other students."

To join these and the many other donors building the Marilyn Morris Excellence in Pharmaceutical Sciences Fellowship, please go to crowdfunding.buffalo.edu/project/31896.

L–R: Gayle Brazeau, PhD '89, Robert Bies, PharmD, PhD, Xinnong Li, first Marilyn Morris Excellence in Pharmaceutical Sciences Fellowship recipient, Daniel Brazeau, PhD

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