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THE ANNUAL MAGAZINE FOR ALUMNI & FRIENDS · 2024

Ensemble Health Care

Interprofessional education as the ticket to better outcomes







A unique course at Mason Gross School of the Arts that trains actors to play the part of patients is helping students at EMSOP and other Rutgers health institutions hone their assessment skills



EMISUP



MSOP



He's Been There for Students

During his more than 20 years as a preceptor, Stuart Vigdor, Director of Pharmacy Services at Robert Wood Johnson University Hospital Somerset/ RWJBarnabas Health, has provided pharmacy rotations for over 600 EMSOP students.





Pharmacy

CREATIVE TEAM

Joe Levine, Editor

Nina Ovryn, Art Director

Ali Silva, Copy Editor

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Rehearsing the Dialogue

Thanks to a unique class offered by EMSOP and the Mason Gross School of the Arts, student actors are teaching EMSOP's future pharmacists to listen as well as treat

EMSOP's groundbreaking PharmD/MD program is celebrating a decade of success

Combined Therapy

Together EMSOP and the Rutgers Cancer Institute are bringing more research to the bedside

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THE SCRIP

It's All About the Connections

YOU MAY WONDER WHY I AM SITTING IN A MOVIE DIRECTOR'S CHAIR.

- Well a story goes with it. Recently, I learned about a patient with colon cancer who was searching for the right doctor. Time was of the essence. Fortunately, I chair the internal advisory board for the Rutgers Cancer Institute and was able to connect the man with a specialist there. Today, he's cured.
- There's no rocket science here. If you work at Rutgers for 42 years, as I have, you make a few contacts. But the story illustrates a simple idea that can be

difficult to put in practice: The show goes better when the cast has good chemistry. ■ In health care, that ensemble approach entails uniting researchers, physicians, pharmacists and other providers to best serve patients.

EMSOP is a leader in fostering this interprofessional approach to care and research. In the following pages, you'll read about: a unique course we have developed with Rutgers Mason Gross School of the Arts that trains students to act as simulated patients; our PharmD/ MD program, now celebrating its 10th anniversary, which is seeding a pharmacy perspective in the medical profession; and our relationship with Rutgers Cancer Institute, which provides the Institute with key findings from basic research and enables our faculty members to test new compounds in human clinical trials. ■ Again, there's no mystery here. EMSOP has been around more than a century, and it, too, has made some contacts. More broadly, the field of pharmacy is a natural convener be-

cause pharmacists are all about connections.



The show goes better when the cast has good chemistry. In health care, that entails uniting researchers, physicians, pharmacists and others to best serve patients.

They know how medications work and — as the pandemic has illustrated increasingly serve as the first line of defense and triage in patient care. ■ The moral of the story: All of us in health care understand the importance of talking to patients. As we go about our work, let's remember to talk to one another as well.

From left: Rawda Elsayed '25; Nana Yaa Antwi; David Dannenfelser, theater faculty, Mason Gross School of the Arts: Liza Barbarello Andrews '98, Clinical Professor, Pharmacy Practice & Administration. Photograph by Deborah Feingold

Awards & Distinctions

Recognition for faculty and staff from EMSOP, Rutgers and beyond



Field Honors

EMSOP DEAN JOSEPH BARONE received the 2023 New Jersey Pharmacists Association (NJPhA) Lifetime Achievement Award.

BOZENA MICHNIAK-KOHN Professor of Pharmaceutics, has received the Honoris Causa Doctorate from Poland's Poznan University of Medical Sciences.

PATRICK SINKO '82 Distinguished Professor and Parke-Davis Endowed Chair in Pharmaceutics, has been elected to the rank of National Academy of Inventors (NAI) Fellow.

LUCIO VOLINO Clinical Professor, was selected as an APhA fellow by the American Pharmacists Association Academy of Pharmacy Practice and Management.



Faculty Promotions

CAITLYN MCCARTHY '13 Promotion to Clinical Associate Professor, Pharmacy Practice & Administration

MARIA CARDINALE-KING '13 Promotion to Clinical Associate Professor, Pharmacy Practice & Administration

RUPAL MANSUKHANI Promotion to Clinical Professor, Pharmacy Practice & Administration

LUCIO VOLINO Promotion to Clinical Professor, Pharmacy Practice & Administration



Cenure

HOEBE STAPLETON Associate Professor, Pharmacology & Toxicology

LUIGI BRUNETTI Associate Professor, Pharmacy Practice & Administration

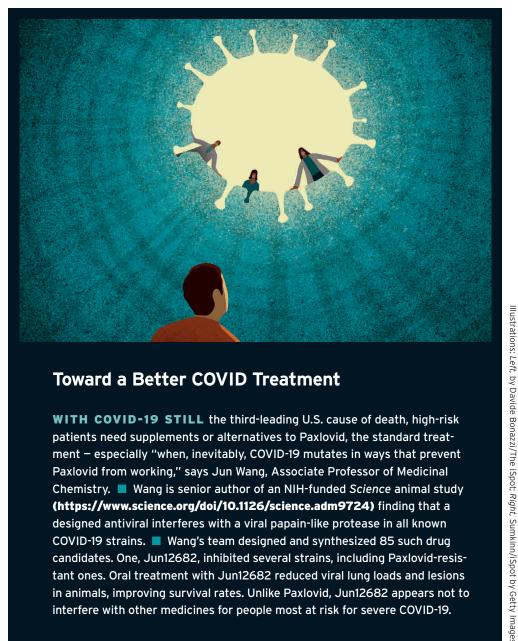


Tried and True

AS NEW SCHOLARSHIPS COME ONLINE, previously established ones continue to play key roles. One of those is the Dr. and Mrs. Arnold W. Karig Endowed Scholarship, which provides financial assistance to select full-time undergraduate or graduate EMSOP students based on academic merit and financial need. Eligibility is restricted to P1-P4 students. ■ Dr. Karig '65 holds advanced degrees from the University of Iowa and Purdue University. He is Dean & Professor Emeritus at the Medical University of South Carolina. ■ This year's scholarship recipient is P2 student Alexandra Bell '26.

SAYING IT STRAIGHT

"As a student paying for college myself, and following a significant family emergency, I am incredibly thankful to Dr. Karig for his generous scholarship. It has reduced the financial stress on me and enabled me to excel in school."



Toward a Better COVID Treatment

WITH COVID-19 STILL the third-leading U.S. cause of death, high-risk patients need supplements or alternatives to Paxlovid, the standard treatment – especially "when, inevitably, COVID-19 mutates in ways that prevent Paxlovid from working," says Jun Wang, Associate Professor of Medicinal Chemistry. Wang is senior author of an NIH-funded Science animal study (https://www.science.org/doi/10.1126/science.adm9724) finding that a designed antiviral interferes with a viral papain-like protease in all known COVID-19 strains. Wang's team designed and synthesized 85 such drug candidates. One, Jun12682, inhibited several strains, including Paxlovid-resistant ones. Oral treatment with Jun12682 reduced viral lung loads and lesions in animals, improving survival rates. Unlike Paxlovid, Jun12682 appears not to interfere with other medicines for people most at risk for severe COVID-19.

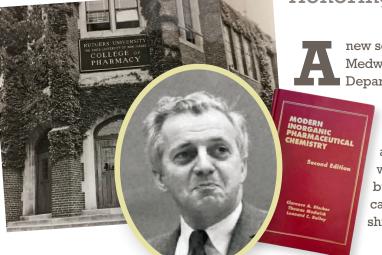
SCIENCE & CARE



Medwick taught basic science, but "he was about more than the drug chemistry. He started me thinking about caring for patients."

- Geralynn Basile Smith '65

Honoring Thomas Medwick



new scholarship honors the late EMSOP faculty member Thomas Medwick '52. Medwick began teaching at EMSOP in 1960 and chaired the Department of Pharmaceutical Chemistry from 1979-1994. He retired in

1998 as Professor Emeritus and was named Alumnus of the Year. Medwick co-authored the textbook *Modern Inorganic Pharmaceu*tical Chemistry and served as standards advisor to the U.S. Food and Drug Administration.

Medwick taught basic science, but "he was about more than the drug chemistry," says scholarship contributor Geralynn Basile Smith '65. "He started me thinking about caring for patients." ■ The Dr. Thomas Medwick Memorial Scholarship will be awarded based on academic merit and financial need.

CAREER PATHING

From Bedside to Industry

SEVEN RUTGERS PHARMACEUTICAL Industry Physician Fellows have completed their year-long training in the practice of pharmaceutical medicine and drug development.

The Rutgers Institute for Pharmaceutical Industry Fellowships currently has 350 PharmD Fellowships, with 27 firms. In 2018, the Institute initiated its Industry Physician Fellowship training program. "We coach Fellows on running meetings, emotional intelligence, functional area skills within the industry and more — a foundation as future pharmaceutical industry leaders," says Fellowship Program Director Carolyn Seyss '92, '94, and "an exceptional introduction to the emerging U.S. field of pharmaceutical medicine," adds 2023 Fellow Michael Plewinski '18, Clinical Trial Physician at Bristol-Myers Squibb. Completing Fellowships are: Archana Jeyakumar; Jordy Mehawej; Matthew Novin; Kenny Onate; Atif Asad Siddiqui; Maha Syed; and Aurea Andrea De Leon. Sona Ghorashi completed year one of her two-year Fellowship.



SAYING IT STRAIGHT

"Stuart advocates for the profession, faculty and students. In difficult situations, I still ask his advice."

– Luigi Brunetti, Associate Professor, Pharmacy Practice & Administration



INDUSTRY SUPPORT

Funding from Sanofi Creates Invaluable Opportunities

The healthcare giant has given EMSOP \$450,000 for scholarships

THE GLOBAL HEALTHCARE COMPANY SANOFI

has made a \$450,000 gift to EMSOP. The funds will provide \$15,000 scholarships to 10 fifth-or sixth-year Rutgers pharmacy doctoral students each year for the next three. The students will receive curated training, mentorship from Sanofi leaders, internship placements and employment opportunities

"I am thrilled by this partnership with Sanofi and what it means for our pharmacy students," says EMSOP Dean Joseph Barone.

"The opportunities available to them are invaluable both to their profes-

sional development and to the future of health care at large. I applaud Sanofi for creating a space to build relationships between the growing healthcare industry and the people it serves."



within Sanofi, and event

and conference invitations.

"The opportunities available [to EMSOP students through corportions like Sanofi] are invaluable, both to their professional development and to the future of health care."

- EMSOP Dean Joseph Barone

The First 10

Recipients of the Sanofi-funded scholarships

Anabell Castillo '25

Nadia Dob'24

Charbel Eid '25

Ifeoma Enekebe '25

Brian Gyamfi-Mensah '24

Ashley Kang '25

Nicole Lombardo '24

Olivia Saez '25

Alexis Shaw '25

Emmanuel Wheagar II '25

RBHS Chancellor Awards

Three members of the EMSOP community received 2023 Rutgers Biomedical and Health Sciences Chancellor Awards:



Ah-Ng Tony Kong
Distinguished Professor,
Glaxo Endowed Chair
in Pharmaceutics; Graduate
Director, Pharmaceutics:
Excellence in Research Award
for established investigators



Assistant Professor, Pharmacy Practice & Administration: Excellence in Clinical or Health Sciences Research Award



Marianne ShenBusiness Manager,
Office of the Dean: Sustained
Service Award

ACTIVE INGREDIENT

Calm and Competent

Aj Rose brings the right mix of skills to EMSOP's simulation lab



s an emergency medical technician, Aj Rose is a quick thinker — and with an undergraduate degree in computer science and now pursuing a master's in business and science, adept with technology, too.

Rose (they/them/theirs) draws on both attributes as a simulation operations specialist in EMSOP's Simulation Lab. Pharmacy students hone their skills in the lab by working with high-fidelity manikins and actors in real-life scenarios that range from medication counseling for diabetes management

to initiating resuscitation efforts for a patient in cardiac arrest.

From a control room with a two-way mirror, Rose collaborates with faculty members to bring manikins to life through voiceovers and vital signs. They also don scrubs to make ad hoc appearances as an embedded participant when additional guidance is needed. For example, when students are preparing a patient for rapid-sequence intubation and forget to position a team member at the airway to breathe for the patient, they step in as a physician. "Ensuring patient safety is crucial, so I had to intervene quickly," Rose recalls.

Rose's product development skills and cool-under-pressure attitude also helped in leading the winning team in the inaugural Rutgers Health Hackathon this past November. The team's entry, developed in just 48 hours, was voice analysis software that discerns a patient's emotional state by measuring coherence and pace of speech. During the threeminute pitch to judges, Rose's own voice was analyzed.

The software's verdict: calm, cool and collected. — Rick Hampson THE BIG NUMBER

#7

In FY 2023. **EMSOP** ranked seventh in the U.S. in funding from the National Institutes of Health to schools of pharmacy and second in the Big Ten Academic Alliance, up from ninth and third, respectively, in FY 2022.





"Get your act together."

It's a theater expression that also describes a major healthcare challenge: the lack of crosstalk among researchers, doctors, pharmacists and other providers. At EMSOP, the solution extends from the preparation of our students to collaborations with other Rutgers schools and laboratories. Read here about: student actors helping our pharmacists-intraining hone their assessment skills; our ground-breaking PharmD/MD program's decade of success; and the symbiotic relationship between EMSOP and the Rutgers Cancer Institute of New Jersey.

It's all part of

Ensemble Health Care

Interprofessional care as the ticket to better outcomes





Rehearsing the Dialogue

Student medical actors are teaching EMSOP's future pharmacists and other apprentice caregivers to listen as well as treat **BY STEVE GIEGERICH**

SCENE: A community pharmacy.

ACTION: A pharmacist listens carefully to a woman describing her recent bouts of wheezing and shortness of breath. Suspecting allergy-induced asthma, he takes a quick family history and asks about her exposure to possible irritants, but nothing seems to be out of the ordinary.

She follows a healthy diet, doesn't smoke and isn't exposed to excessive mold or dust.

She does, however, have a cat.

THE PHARMACIST'S RECOMMENDATION:

Hand-washing after petting the animal and a visit to a doctor who can confirm that cat dander is the source of the problem and prescribe an effective treatment.

CUT.



THAT EXCHANGE, THIS PAST NOVEMBER IN ROOM 135 IN

EMSOP's Mannino Community Pharmacy and Ambulatory Care Clinic, was part of the final exam for "Introduction to Medical Acting," a first-of-its-kind interprofessional course created by EMSOP and Rutgers Mason Gross School of the Arts. The three-credit course is open not just to acting students at Mason Gross but also to those from other Rutgers schools. It equips participants like Nana Yaa Antwi, the sophomore pre-med biology major who played the patient in the above scene, to work as "patient simulators," or Standardized Patients (SPs). They'll help aspiring care providers like P3 EMSOP student John Cho, who played the pharmacist, hone their assessment and patient skills.

"Some of what a pharmacist does must be interaction with a real person because that is the nature of the profession," says EMSOP's Liza Barbarello Andrews '98, Clinical Professor, Pharmacy Practice & Administration, Clinical Director of the Simulation Program and a Critical Care Pharmacy Specialist with the Robert Wood Johnson Barnabas Health System. "That's where embedded participation comes in, whether with a patient or a family member. A lot of it centers on the development of emotional intelligence skills, communication skills. It's harder to achieve that fidel-



RX RUN-THROUGHS In an

"Introduction to Medical Acting" class session last fall, from left:
Nana Yaa Antwi and instructor
David Dannenfelser; Antwi
says "aaah" for Naia Edmonds;
Dannenfelser elaborates on
the finer points of technique as
Aj Rose, Simulation Operations
Specialist, looks on; Noah Carrero
listens as Rose offers some acting tips. [Students without
years listed are non-EMSOP.]







ity with a manikin or classmates reading scripted answers to questions. Interaction with a real person adds a lot."

Also, the medical acting course fulfills a top priority at EMSOP and across Rutgers Health: bridging the proverbial silos that separate the university's different schools and the disciplines they represent to create a learning environment.

"One thing we've wanted to do at Rutgers is to connect all the resources, to bring together each program's strengths to benefit the students," says Barbarello Andrews. "It elevates the game for everyone and ultimately best serves our most important clients — patients."

Curtain Up

ntroduction to Medical Acting" doesn't rewrite the book on medical acting because, for all intents and purposes, there hasn't been one. Instead, Mason Gross adjunct professor David Dannenfelser, a veteran actor, director, producer and author, uses techniques drawn from sources ranging from sixth-century Greek theater to interrogation methods taught in current-day criminal justice programs.

"It's taking what I know about theater and applying it to communicating with students in health care," says Dannenfelser. "That's what an actor does — communicates."

At an "Introduction to Medical Acting" class last November, Dannenfelser and his 18 students rearranged the tables and chairs in Room 135 as a "diagnostic space." Then a "physician" listened to a "patient" with a history of eating disorders describe the persistent fatigue that was interfering with her strenuous exercise routine.

"I feel yucky," the patient complained. "I work out two hours every day, and I don't want to fall behind."

After asking additional questions, the doctor said the symptoms were consistent with a diagnosis of mononucleosis. If a blood test confirmed his suspicions, he said gently, the patient would need to reduce her exercise load.

Other actor patients presented symptoms ranging from diabetes to attention-deficit/hyperactivity disorder. In the class discussion afterward, Dannenfelser emphasized the importance of pushing caregivers-in-training to engage in a genuine back-and-forth dialogue.

"You're acting, but you're also teaching," he said. "A conversational reality is the objective."

That lesson particularly resonated for those in the acting class who plan to work in healthcare professions. "It taught me the importance of compassion, empathy

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"It taught me the importance of compassion, empathy and patient-centered medicine," says pre-med student Annabel Guo. "Being a simulated patient is giving me a sense of how I'll get patients to open up in the future."

and patient-centered medicine," said Annabel Guo, a premed student double-majoring in Biological Sciences and Nutritional Sciences who will attend New Jersey Medical School beginning in August. "Being a simulated patient is giving me a sense of how I'll get patients to open up in the future."

The Back Story

imulation of the human form has been around for as long as the study of medicine. Eurasian stone carvings of the human body date back to 24,000 B.C., and archeologists have discovered clay livers from ancient Babylonia.

In the first half of the 20th century, healthcare professionals trained with life-sized manikins and facsimiled body parts. But today, pharmacy, medical, dental and nursing schools "look to actors to play the role of patients," Dannenfelser says, and even more so following the pandemic, which sharply curtailed live training. "But only a limited number of people meet the standard for training."

Effective simulators don't need to be budding Oliviers or Streeps, but they do need to get caregivers-in-training to suspend their disbelief and engage emotionally in order to truly hear what the "patient" is telling them. And that, says Les Barta, EMSOP's Director of Simulation Technology, is a practice that healthcare professionals can't learn too soon.

"We can't expect a healthcare professional to suddenly develop listening skills 20 years down the line," says Barta, who co-designed the course with Dannenfelser and shepherded it through a two-year development process. "We have to engage them at the beginning of their careers."

To that end, the students who took the inaugural course can gain work as SPs at Rutgers and elsewhere — work that will allow the acting students in the class to make some money while keeping their schedules flexible enough to answer calls for auditions, and everyone in the course to tap their creativity and have some fun.

"I took this course because I needed an elective," says first-year nursing student Laura Norero. "But now I think of it as my personal 'Grey's Anatomy."









OPENING NIGHT At the

class's final exam, upper and lower left: actor Pranvera Kelmendi (on bed), Katelyn Gillies '26 (center) and Mason McClutchy '25 work under field conditions; top: acting class and pharmacy students watch the exam via livestream; center: acting student David Lee gets a high-level consult; right, above: Dannenfelser and Lee; right, below: pharmacy students (from left) Carsyn Norway '25, Riley Christian '25 and Alexandra Bell '26.

Bravo, Encore

s described above, on December 6th, Antwi, Guo, Norero and their classmates gathered in the Ambulatory Care Clinic for their final exam. For the first time, instead of alternating in the roles of the diagnosticians asking questions, they were paired with real healthcare providers-in-training: John Cho and another P3 EMSOP student, Rawda Elsayed. For this occasion, the setting was clinical simulation rooms, outfitted with the kind of medical exam table found at pharmacies that offer extended healthcare services in collaborative practice with physicians.

While the actors presented their health issues to the white-coated future pharmacists, a livestream beamed the proceedings to students, faculty and guests in the classroom.

Antwi, who was first up, flashed a livestreamed peace sign and a smile to her classmates. Once the professional students entered the room, over the next several minutes, she hit all her cues, delivering the verbal, physical and behavioral prompts Dannenfelser had hammered home as essential to guiding clinicians in treating patients.

"It was tough keeping track of all the points I needed to express," she admitted afterward, crediting Cho for "keeping the conversation flowing."

Cho admitted to some jitters but said he forgot the audience once he and Antwi entered that zone of "conversational reality." The experience reaffirmed for him the growing counseling role of pharmacists since the pandemic hindered access to overwhelmed hospitals, clinics and doctors' offices.

"While we don't prescribe," he said, "we can play a key role in determining what's wrong with the patient."

Elsayed said the brief exercise underscored "the importance of empathy, communication and knowing patients and customers." The conversation was so convincing, she added, that at moments she forgot she was speaking to an actor. "I found myself worrying it would be irresponsible to pass along the wrong information."

This fall, following some retooling by Barta and Dannenfelser based on course evaluations and their own analysis of what worked and what didn't, "Introduction to Medical Acting" will be offered again. But the key takeaway will remain the same: that interactions between medical professionals and patients cannot be one-way conversations.

"A patient has a lot of power in the way they relate to a doctor," Antwi says. "You don't have to sit there and let things happen. You need to advocate for yourself and teach a doctor how to take care of you."





It's a Match

EMSOP's unique PharmD/MD program celebrates a decade of success

■ BY STEVE GIEGERICH

Milestone anniversaries in any marriage affirm a coming together that has produced something greater than the sum of its parts. ■ That's been the story of EMSOP's

PharmD/MD program, a dual degree program with Robert Wood Johnson Medical School, which this spring celebrates its first decade. Ten years in, the unique program — the nation's first — is considered a model for preparing expert leaders in healthcare policy, research and clinical care.

ASPIRING LEADER Gaurav Pathak '22 is in his second year at RWJMS.

"OUR MISSION IS TO PRODUCE HEALTHCARE LEADERS

committed to interprofessional care," says Grace Guo, Professor, Pharmacology & Toxicology, chair of the PharmD/MD committee of experienced EMSOP clinical pharmacologists and research scientists. "The healthcare teams of the future will work together rather than ask patients to make appointments at different medical offices or clinics."

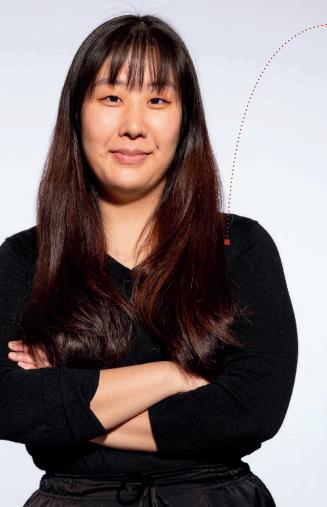
"Our vision is to help build a healthcare system in which people from different professions contribute their expertise to solving health problems," says Carol Goldin, Senior Associate Dean for Planning and Assessment, committee co-chair with Guo. "A key piece is instilling future physicians with an appreciation of the benefits of collaborative patient care and with a pharmacy perspective, because pharmacists have a commitment to understanding the development of new treatments."

Nearly 50 students have participated in the program; graduates have moved on to residencies at nationally recognized medical institutions such as UCLA Medical Center, University of Massachusetts Medical School, Yale New Haven Hospital and Robert Wood Johnson Medical School. Their ranks include stars such as Shirin Poustchi PharmD '15, a UCLA-affiliated internal medicine specialist, and Daniel Haddad PharmD '16, an orthopedic surgery resident at Rutgers Robert Wood Johnson Medical School.

"Students in the PharmD/MD program aspire to be medical department chairs or hospital leaders, and those who have completed it are on trajectories to do that," says Carol A. Terregino, Professor of Medicine, Senior Associate Dean for Education, and Associate Dean for Admissions at RWJMS.

EMSOP graduates bring an invaluable perspective to RWJMS because "they've had clinical experience prior to medical school and understand interprofessional care," Terregino says. "And that enables





them to serve as a resource to other medical students."

Completing the PharmD/MD program takes years and entails the financial burden of pursuing two advanced professional degrees, so by definition, "we're getting students who have made a personal and professional commitment to the program," Terregino adds.

EMSOP is committed to easing that financial strain. Generous support has come from the Mario Family Foundation, which gave a \$2 million grant to EMSOP in 2021 to establish a scholarship fund for newly accepted students; and from the Joseph A. Barone Endowed PharmD/MD Scholarship, created by two anonymous donors.

"But we are always looking for more supporters who can help these dedicated students navigate this critically important career path," says Goldin. Adds Barone, EMSOP's Dean: "Our program has far exceeded our expectation. Each graduate, primed to integrate extensive knowledge and experience in pharmacy and medicine, is transforming our understanding and our practice of health care. We already see the results of their collaborative work."

Three recent EMSOP graduates — Gaurav Pathak '22, Drym Oh '20, and John Park '20, currently completing their

"My EMSOP

experience has

insight ... It's

grate into the

rotation for

and support

helped me inte-

team on clinical

medical school

patients in ways

that other med-

perhaps cannot."

- DRYM OH '20

ical students

given me so much

medical degrees at RWJMS are conducting a research project on the impact of the program.

"Pharmacy is so much more than filling out scripts and checking medication dosages," says Oh, who plans to become a family physician. "My EMSOP experience has given me so much insight into the healthcare system. It's helped me easily integrate into the team on clinical rotation for medical school and support patients in ways that other medical students perhaps cannot."

Meanwhile, Goldin says, the program's goals are to enhance relationships between leaders and faculty at EMSOP and RW-JMS, further integrate curricular

and extracurricular collaboration, and create more interprofessional education opportunities. "Our hope is that the program will produce well-trained, forward-thinking healthcare professionals who truly advocate for integrated health care and policy change. And hopefully practice in New Jersey."



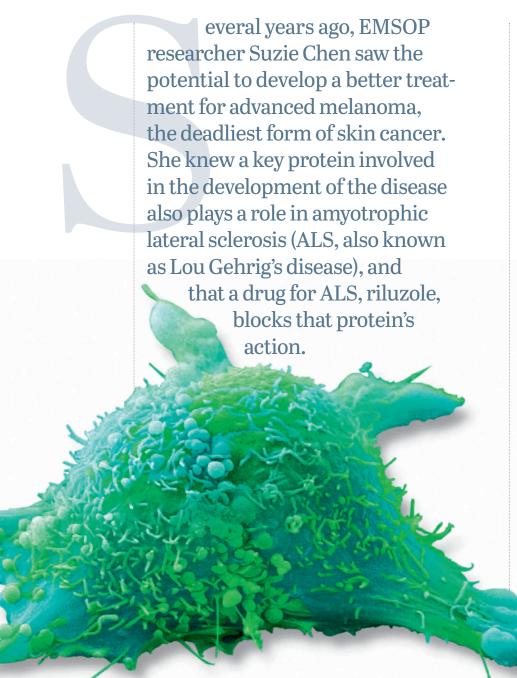
BEST IN CLASS Above: Shirin Poustchi '15; Below: John Park '20; At left: Above, Daniel Haddad '16; Below, Drym Oh '20, RWJMS '24





Combined Therapy

EMSOP's partnership with the Rutgers Cancer Institute of New Jersey brings more research to the bedside **BY STEVE HOLT**



CHEN ALSO KNEW ANOTHER DRUG - SORAFENIB, FOR

liver cancer — slows the spread of tumor cells throughout the body.

Could advanced melanoma be treated with both riluzole and sorafenib? Chen's work with cell cultures looked promising, but validation required testing in human beings.

"I do basic research in a lab, where we try to learn how and why drugs work," says Chen, Distinguished Professor and Chair of EMSOP's Department of Chemical Biology. "To apply that knowledge at the bedside, we need to work with physicians who can lead clinical trials."

Meeting that need is a major reason why EMSOP partners with the Rutgers Cancer Institute of New Jersey, located just across the Raritan River in New Brunswick. As one of 56 U.S. Comprehensive Cancer Centers designated by the National Cancer Institute (and the only one in New Jersey), Rutgers Cancer Institute, by definition, takes a transdisciplinary approach to patient care, research and education. Some 250 affiliated researchers conduct clinical trials of treatments for different cancers. Since 2008, Chen and investigators at Rutgers Cancer Institute have completed four clinical trials including riluzole and sorafenib.

"Our relationship with the Institute is long-standing and enormously productive," says EMSOP Dean and Distinguished Professor Joseph Barone, who chairs the Institute's internal advisory board. "It demonstrates the possibilities of interprofessional collaboration and care."

"The partnership is a major asset to both institutions," says Renping Zhou, Associate Dean for Research and Professor of Chemical Biology, who oversees EM-SOP's relationship with the Institute. "We get access

DEADLY BUT VULNERABLE A combination of two existing drugs offers hope against advanced melanoma.

to patient samples and clinical trials, and we strengthen the Institute's work through our basic research on cancer mechanisms and cancer prevention."

"Together, we can do things that neither would have dreamed of doing on our own," says Steven Libutti, the Institute's director, Senior Vice President of Oncology Services at RWJBarnabas Health and Vice Chancellor for Cancer Programs, Rutgers Biomedical and Health Sciences. "It's a great example of how two plus two can be more than four."

Libutti cites the contributions of EMSOP's Wei-Xing Zong, Professor and Co-Leader, John L. Colaizzi Chair in Pharmacy, who co-leads the Institute's Cancer Metabolics and Immunology Program. "Professor Zong has worked first with Eileen White and now with Christian Hinrichs, co-directors of the Duncan and Nancy MacMillan Cancer Immunology and Metabolism Cen-

ter of Excellence at Rutgers Cancer Institute, to build a world-class program."

Collaborating with pharmacological researchers is especially valuable, he adds, because "it's the cancer pharmacologists and chemists who are going to develop the novel compounds that we'll bring into clinical trials for the targets that researchers from all our partner schools identify."



"Together we can do things that neither would have dreamed of doing on our own."

The EMSOP-Rutgers Cancer Institute partnership

also focuses on earlier-stage discovery work than Chen's. For example, EMSOP's Longqin Hu, Professor and Chair of the Department of Medicinal Chemistry, studies the cancer-preventing and therapeutic properties of new inhibitors of key protein-protein interactions. He seeks to harness — without using antibody-based therapies — the body's immune system and the ability of cells to balance the production of oxidants and antioxidants.

"If we find something really promising, a drug company might be interested in licensing and further developing it, but right now, we're doing the chemistry, making the compounds and evaluating how they work in the discovery phase," Hu says. "Collaboration with the Institute has been critical in advancing our research. Through meeting presentations, we can find collaborators to work with us or provide clinical tissue samples to test our ideas. For example, they might determine that some agents could help identify cancer patients who can benefit from current immunotherapies."

The partnership between the two institutions is also a powerful draw in recruiting new faculty, leading to a number of joint appointments. The most recent are Christina Glytsou and Matthew McBride, both assistant professors in EMSOP's Department of Chemical Biology. (Read more about Glytsou and McBride beginning on page 20.) Both are exploring, among other things, possible environmental triggers in cancers. That's an important focus because New Jersey, which as the nation's most densely populated state and one of the most ethnically diverse, is grappling both with high incidences of certain cancers and barriers to accessing care experienced by under-represented groups. "Both EM-SOP and Rutgers Cancer Institute see protecting the health of New Jersey residents as central to their missions, and those missions are embedded in various levels of health care in the state," says EMSOP's Barone.

The ultimate measure of the partnership's success is the development of new treatments. That process can be long and slow, but recently Suzie Chen and her co-researchers completed the first step. Their Phase I trial demonstrated that patients can safely tolerate riluzole and sorafenib together. While not the goal of that trial, there was also evidence that the combination does, in fact, work against advanced melanoma. Next up: A Phase II clinical trial in a much larger pool of patients.

"There are no guarantees," says Chen. "But these results give us good reason to hope."



"We get access to patient samples and clinical trials . . . and strengthen the Institute through our basic research."



"To apply [our] knowledge at the bedside, we need to work with physicians who can lead clinical trials."

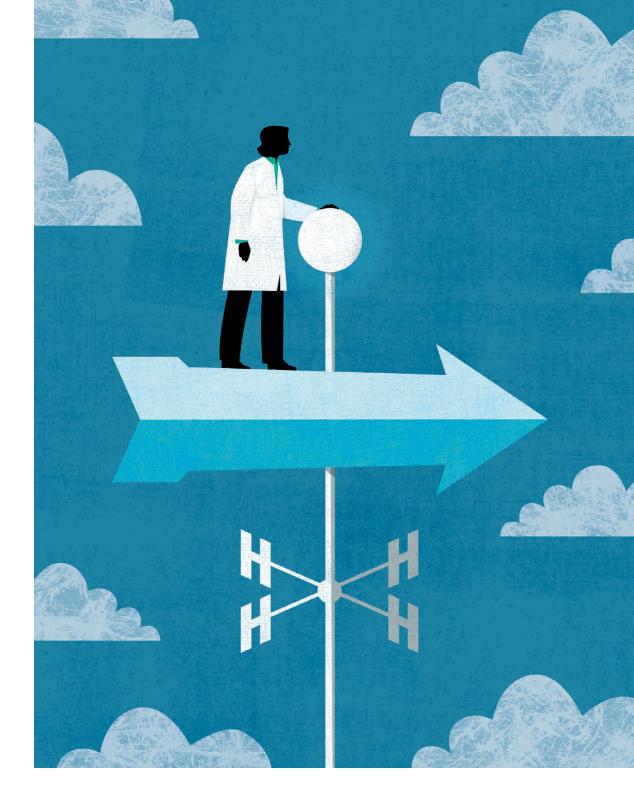


Professor Zong has worked [with] the Rutgers Cancer Institute "to build a world-class program."



The Institute can flag drugs in discovery that might "help identify patients who can benefit from current immunotherapies."

Courses of Treatment



OR STUDENTS AT EMSOP AND OTHER pharmacy schools, the white coat is the classic symbol of professional attainment. But a new sequence of EMSOP courses holds that what's underneath counts most.

"The practice of pharmacy is changing how pain is managed, how medical records and information are stored and shared — but the fundamentals of being a pharmacist remain the same," says Mary Bridgeman '06, Clinical Professor, Pharmacy Practice & Administration. "So

now, more than ever, pharmacy students need to learn how to think like a pharmacist, how to act like a pharmacist, how to actually be a pharmacist."

The new offerings — iPASS (Integrated Pharmacotherapy Assessment Skills Series) and LEAP-AHEAD (Leadership, Entrepreneurship, Awareness of Self and Professionalism: Assessment of Health Education Awareness Development) — are all about authenticity, says Bridgeman, who coordinates the LEAP-AHEAD curriculum

cultural humility

Students learn "what doesn't fit into other didactic components of the curriculum" — in particular "cultural humility," or an openness to patients' attitudes, values and beliefs, and to seeing the world through the lens of their experiences.

with clinical assistant professors Kristin Reinaker and Christine Parikh. Over eight semesters, students learn "what doesn't fit into other didactic components of the curriculum" — in particular "cultural humility," or an openness to patients' attitudes, values and beliefs, and to seeing the world through the lens of their experiences. In serving a patient with diabetes, for example, cultural humility could entail recognizing and respecting how diet might reflect religion or ethnic preferences that could ultimately impact medication management and patient care decisions.

The new curriculum is part of a national trend in pharmacy education, with professional school accreditors now looking for evidence that pharmacy schools are instilling this approach. Students, too, are eager to learn these broader skills.

"Professional identity formation

really matters," says P3 EMSOP student Veronica Elias. "It's not just knowing the facts but how to act with patients and the people you work with." The low-stakes learning environment "eases you into that idea and helps you become comfortable as a pharmacist."

The course's greatest contribution is to remind students of the most basic requirements, she adds, like listening and maintaining eye contact, "even when you're stressed or busy."

For Bridgeman, the LEAP-AHEAD course sequence is a win for students and for pharmacy curriculum development. "Our focus on professional identity formation and the continuous professional development process we're trying to cultivate through the LEAP-AHEAD sequence helps ensure that our students are ready to meet the demands of contemporary pharmacy practice." — **Rick Hampson**

IDENTITY DEVELOPMENT

An EMSOP course is about connecting with one's inner pharmacist



"The practice of pharmacy is changing — how pain is managed, how medical records and information are stored and shared — but the fundamentals of being a pharmacist remain the same."

MARY BRIDGEMAN '06, CLINICAL PROFESSOR, PHARMACY PRACTICE & ADMINISTRATION



"It's not just knowing the facts, but how to act with patients and the people you work with.
[The program] eases you into that idea and helps you become comfortable as a pharmacist."

VERONICA ELIAS FIFTH-YEAR EMSOP STUDENT

SPEAKING UP: Jocelyn Tyson

(continued from back cover)

n 2020, she joined Toastmasters International, a nonprofit that cultivates public speaking, networking, teambuilding and leadership. In 2023, she entered the organization's 30,000-contestant global speaking competition.

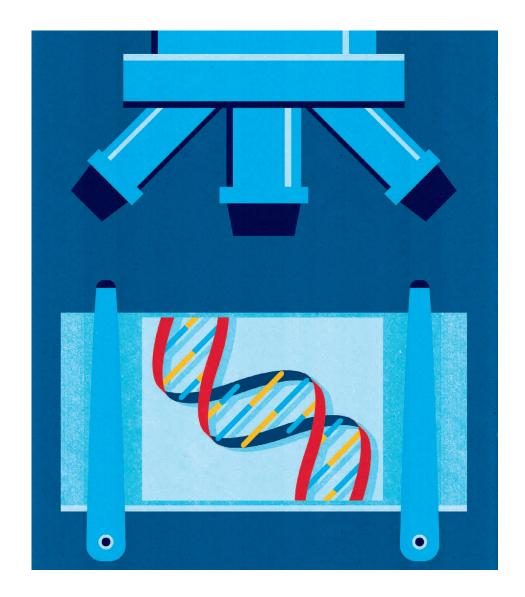
Over the next six months, she won at the club, area, divisional, district and regional levels. Her speech, "Play Again," was about her EMSOP crisis moment and her father's words of encouragement.

In August 2023, Tyson reached the Toastmasters championship round, which required speaking on a new topic. Tyson's was "Have You Been There?" about competing in a triathlon to celebrate a milestone birthday.

"I'd practiced swimming in a pool," she says. "I didn't realize how different a lake was until I was face down in it, unable to see. One voice in my head said 'quit' and the other said 'stick with it." Tyson stuck with it, backstroking to the finish line.

Tyson's speech earned her the Toastmasters World Championship, a new network of contacts and, ultimately, a job at Pfizer as a Vaccine Health and Science Specialist. Her career goal is "to deliver messages about health and wellness to larger and larger audiences."

Meanwhile, she's stayed involved with Toastmasters: "It all starts with finding your voice." — Joe Levine



Taking It to the Genes

Unraveling cancer's secrets **BY STEVE HOLT**

Cancer therapies are often blunt weapons, causing side effects that limit patients' tolerance. But as researchers such as EMSOP's Christina Glytsou and Matthew McBride chart the myriad steps involved in cancer's development, they are designing targeted drugs that minimize collateral damage.

Playing Better Defense

Christina Glytsou has stayed in the game against a cancer that won't quit

ever give up." Legendary college basketball coach and former
Rutgers player Jim Valvano, better known as Jimmy V, delivered that rallying cry to cancer researchers two months before his death from adenocarcinoma in 1993. It has since become the motto of the V Foundation, created by Valvano to support innovative cancer research, and it's been a guiding principle for EMSOP's Christina Glytsou, Assistant Professor of Chemical Biology.

Glytsou — a 2023 recipient of the V Foundation's three-year, \$600,000 Scholar Award — has followed a winding career path from the University of Athens to the University of Padova in Italy, to New York University and now EMSOP. But throughout, she has sought to understand the workings of mitochondria — structures that produce cellular energy, control the cell lifecycle and play a critical role in the development of acute myeloid leukemia (AML).

AML, the most common leukemia in adults, arises in the bone marrow. "Normally, when our cells become damaged, they self-destruct through a process called apoptosis," Glytsou says. "But with AML, leukemia cells can avoid apoptosis and spread to the lymph nodes, liver, spleen, central nervous system and testicles."

Faculty in the Lab



The drug Venetoclax, introduced in 2018, induces apoptosis in cancer cells produced by AML. Sixty to 70 percent of adults with AML now achieve complete remission, and many are cured. However, about three in 10 patients don't respond to the drug, and in others, AML comes back after treatment.

Using a technique called CRISPR to "edit" genes in order to determine their function, Glytsou is pinpointing mitochondria's role in forestalling apoptosis and enabling resistance to Venetoclax. She and her team have found a group of genes involved in mitochondrial functions important in AML, includ-

ing drug-resistant cases. They have identified some novel compounds that target these genes in test tubes and mice.

The next step: human clinical trials.

"We need to understand more about the molecular pathways involved in AML," Glytsou says. "But we're getting closer."

The support from the V Foundation has been critical to her efforts. "The award was a great help last year when I was setting up my lab. But it's equally important because it encourages female researchers like me to persevere in our work." — Steve Holt

"We need to understand more about the molecular pathways involved in AML," says EMSOP's Christina Glytsou, who credits the Jimmy V Foundation for helping her pursue that work. "But we're getting closer."

- CHRISTINA GLYTSOU. ASSISTANT PROFESSOR OF CHEMICAL BIOLOGY

Jimmy V's Legacy

Inspirational basketball coach Jim Valvano — aka Jimmy V led underdog North Carolina State to the 1982-83 NCAA Division I national title. Less well remembered is that, as "Mr. Defense," he cocaptained the 1966-67 **Rutgers Scarlet** Knights. Valvano's ultimate legacy is the Jimmy V Foundation, which he created to defeat cancer just months before his own death from adenocarcinoma. With the Foundation's support of EMSOP researcher Christina Glytsou, that legacy has come full circle.



Bringing New Strategies to the Table

Matthew McBride is exploring amino acids ingested in food and their role in cancer

ATTHEW MCBRIDE IS EXCITED ABOUT THE connections between nutrition and cancer — but he's cautious about describing his work. ■ "There's a lot of emotion around diet," says McBride, Assistant Professor of Chemical Biology. "Some people leap to 'You're gonna use diet to cure cancers,' and for others, there's this connotation of your crazy uncle's blog post. So I say we're doing nutritional



manipulation — fundamental experiments to see what is scientifically valid versus rumors and hype without scientific basis."

McBride focuses on nutrition's role in regulating epigenetics, the body's ability to read a DNA sequence, which depends in part on essential amino acids building blocks of protein that must be ingested as food. When that ability goes awry, a tumor can result.

"We're asking, what are the sources of amino acids? How do we control their levels? If we can learn that, we can think about strategies to control their role in tumor development and that really hasn't been done yet."

Ruling out potential areas of inquiry can be as important as identifying them. One recent finding by McBride and his colleagues suggests that therapeutically targeting one promising pathway could, in fact, promote cancer. It

was known that when a particular enzyme goes into overdrive, it produces the amino acid glycine in excess, fueling tumor growth. Blocking that enzyme to deplete a tumor's glycine supply would seem logical — but McBride's team has shown that, in the livers of mammals, this same enzyme also clears glycine from the animals' systems. Targeting the enzyme would elevate glycine levels, then, because therapies typically circulate through the whole body.

"EMSOP is an ideal place to do this kind of work," McBride says."There's a focus here on understanding how to use drugs or nutrition or really any method for therapy development, but also for basic, reliable, reproducible scientific research. Hopefully, 10 years from now, when there could be dramatic therapeutic implications that aren't yet on our radar, others will build on our work." — Steve Holt



"EMSOP is an ideal place to do this kind of

work. There's a focus here on ... basic, reliable, reproducible scientific research. Hopefully, 10 years from now, when there could be dramatic therapeutic implications that aren't yet on our radar, others will build on our work."

— MATTHEW MCBRIDE, ASSISTANT PROFESSOR OF CHEMICAL BIOLOGY



Improving the Odds

In business and as a philanthropist, cancer survivor John Berg has devoted his career to ensuring better outcomes for all patients

OHN BERG'S ADVICE TO THE students and young professionals he is passionate about mentoring is: "Never say no to an opportunity, because you'll learn from them all — and sometimes more from the bad ones."

Berg '92, '00 speaks from experience. In 1991, just before his fifth year at EMSOP, he was diagnosed with Hodgkin's Lymphoma. Given the news, he initially

decided to withdraw from classes, but "the whole school rallied around me.'

Professors moved Berg's exams forward so that he could receive chemotherapy on Thursdays and recuperate over the long weekend. Friends drove him to appointments and

Celgene's company match for Ernest Mario's \$500.000 gift to create John L. Colaizzi Atrium

had class notes photocopied and ready when he returned. An associate dean who also was battling cancer said, "I'm going to try and make it work, so promise me you will, too."

Thanks to a clinical study at Memorial Sloan Kettering Cancer Center, Berg graduated on schedule (returning to complete a PharmD in 2000) with a clean bill of health and a mission to change the odds for all cancer patients. He went on to work for several biopharmaceutical companies, initially focusing on oncology home infusion products. As Corporate Vice President for Global Medical Communications at Celgene, he oversaw several teams, including those responsible for publications, medical information, learning and development, and CME, serving consumers, practitioners and researchers. In those roles and through a consultancy he subsequently founded and still runs, APEX Medical Affairs Solutions, his mantra remains: "Better, faster, stronger — patients are waiting."

Berg still applies that philosophy by volunteering his time and industry expertise to "pay forward" his good for-

Improving the Odds ALUMNI IN THE FIELD: JOHN BERG

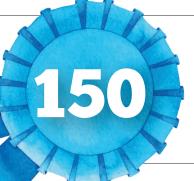
tune. Together with his older son, Ryan, Berg joined other cancer survivors in climbing Mt. Kilimanjaro at the height of the pandemic to raise money for cancer research. With Celgene CEO Mark Alles, Berg arranged a 1:1 company match for the \$500,000 gift from EMSOP name\$50,000

Berg has endowed a \$50,000 student scholarship at EMSOP. "When I needed help, people embraced me in my situation," he says of his time at the school.

sake (and Celgene board member) Ernest Mario '61 that created the new John L. Colaizzi Atrium. He has also endowed a \$50,000 student scholarship, served as

the Celgene-Rutgers Pharmaceutical Industry Fellowship Program lead, served as Committee Member on the Rutgers Alumni Association Board and currently sits on the EMSOP Alumni Association Board. He and his younger son, Tyler. SEBS '24, are avid Rutgers sports fans.

"When I needed help, people embraced me in my situation," he says. "I feel fortunate that now I can help others." — Rick Hampson



ALUMNI COUNCIL IMPACT

Since 2018, the EMSOP Alumni Council has selected more than 150 students to receive over \$20,000 in merit-based awards, which enable students to attend conferences.



ALUMNI OF DISTINCTION

She's a Rutgers Hero

The university honors EMSOP's Pat Risse

ioneering entrepreneur Patricia Devitt Risse '85, '93 has been named to the Rutgers University Hall of Distinguished Alumni. ■ In 2000, as targeted cancer therapies emerged, Risse founded ACT Oncology (now part of Precision for Medicine), a contract research organization focused on early-stage drug development for targeted therapies in the treatment of cancer. "I was amazed by the power of precision medicine - of drugs that could

Tangible Impact

"I was amazed by the power of precision medicine - of drugs that could specifically target unique aspects of an individual patient's tumor and make a tangible impact on life." specifically target unique aspects of an individual patient's tumor and make a tangible impact on life."

Risse has established the Patricia **Devitt Risse Endowed Fellowship and** the Patricia Devitt Risse Endowed **EOF Scholarship and serves on the Rutgers University Foundation Board**

of Directors. At EMSOP's 2019 convocation, she told graduates: "The breadth of your education at Rutgers provides a healthy pathway for many different options for meaningful fulfillment, so try your best to follow your passion and love what you do!"













Act II is Even Better

A recharged Alumni Council is bringing graduates back for more

URING HER LAST YEAR AT EMSOP, SHIVANI GUPTA '20 DEVELOPED A FIRST-Year Interest Group Seminar, "Exploring Pharmacy," and evaluated her teaching methods. Funded by EMSOP's Alumni Council, she presented at the American Society of Health-System Pharmacists (ASHP) midyear conference, landing her first job. Today she's a senior clinical scientist at Pfizer.

Gupta's experience reflects the Alumni Council's recent growing impact. It has brought back alumni reunions, opened its annual meetings to online attendees, spotlighted notable alumni, increased its student support and grown their social media presence.

"Covid catalyzed us to think long-distance and change our external face," says Council President Tyler Redelico '15. ■ Another catalyst is Redelico, an associate medical director at AstraZeneca who has prioritized the Council's student advocacy, community-building and general support for EMSOP while formalizing its organizational structure.

"Under Tyler, every officer heads an initiative," says Gupta, now the Council's Second Vice President. "We're accomplishing much more."

▲ EMSOP RECONNECTING

Clockwise from upper left: John Bellitti '86 and JoAnne Szubiak McGinnis '88 at September's Delta Sigma Theta reunion; raffle winner Mary Cantaluppi and John Cantaluppi '70 at last year's Alumni Reunion at Neilson Dining Hall: alumni nosh in Neilson; Joyce Kong '24, who has expanded the Alumni Council's social media presence, and student liaison Ann Kim '27; Alumni Association President Tyler Redelico '15, speaks at the Neilson event; the 2023 Annual Meeting

Act II is Even Better

CONTINUED FROM PAGE 25

Redelico also credits longtime members such as Steven '75 and Linda Gooen '74, '02; Virginia Plaza '80; Richard Meadows '70; Scott Van Orden '79; Claire Caruana '80 and Daniel Buchner '71. "The blend of old and new has been really fruitful."

Witness the 2023 reunion, the Association's first in 11 years, spearheaded by Meadows and Monica Werkheiser '08 — products of different periods who share an understanding of what reconnects graduates.

"Everyone wants to see old friends," Werkheiser says — and also changes such as the Colaizzi Atrium, simulation labs and hightech training manikins.

The next reunion (September 13th in the Atrium) will honor alumni from many class years, including those with 10th-and 25th-year anniversaries during the past decade.

Since 2018, through crowdfunding and its own treasury, the Council has chosen over 150 students to receive over \$20,000. The merit-based awards help students attend conferences — for example, P1 student Ann Seoyun Kim, an Alumni Association awardee for her poster at the Academy of Managed Care Pharmacy competition comparing psychedelics and SSRIs in treating depression.

Kim also received an AMCP Best Poster Award for comparing different NSAIDs' effects on the body's healing pathways following athletic injuries.

The Council is also reinstituting the Alumnus/a of the Year award, with other annual awards planned. The Alumni Spotlights series was launched on social media by First Vice President Lisa Pilla '85 and Joyce Kong '24.

Now led by Plaza, the series features peer-nominated professionals such as Athena Patrikios '07, Director of Pharmacy-Medicare at Horizon Blue Cross Blue Shield of New Jersey; and Anjali Belani '09, Senior Director, Oncology Medical Affairs, at Pfizer.

Above all, the Council unites alumni and students. "Meeting alumni has opened my eyes to different careerfields," says Kim, the Council's student liaison. "When I graduate, I'll know the different ways I can use my degree." —Joe Levine



STAYING TUNED IN

The Alumni Association has stepped up its social media presence. Follow us:

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Honorary Members

Linda Gooen '74, '02 Scott Van Orden '79 Susan Wei '93

Student Representatives

Ann Seoyun Kim '27 Joyce Kong '24



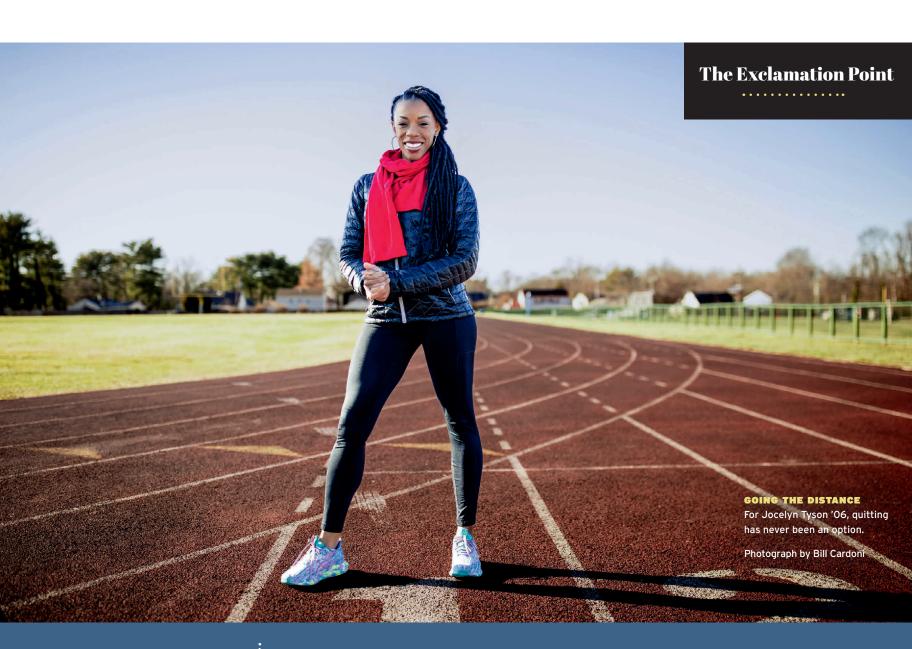
Critical Carer: Andrea Mosquera

KNIGHT SCHOLAR ANDREA MOSQUERA '24 has completed a clinical rotation at New Mexico's Navajo Nation Reservation and presented research to the American Society of Health-System Pharmacists. ■ What's not on her CV: During her critical care rotation, she met a young Dominican man with Type I diabetes. Mosquera, who is bilingual, learned he was out of insulin and hadn't seen a doctor. ■ "He'd have been back in 10 days," recalls Mosquera, who drove him to appointments at Trenton's nonprofit Henry J. Austin Health Center and with an endocrinologist. ■ "This kid fell through the cracks, but Andrea said, 'Nope, not letting that happen,'" says Mosquera's advisor, Liza Barbarello Andrews '98. "That's exactly what we hope a pharmacist would do." — Steve Giegerich



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Speaking Up

DURING HER FOURTH YEAR AT EMSOP, Jocelyn Tyson fell behind in her courses and was told she wouldn't graduate on schedule. ■ "I felt shame," recalls Tyson '06. "As the first-born in my family, I was supposed to be making strides." ■ Then her father gave her The Talk. ■ "My dad is what I call a sore winner," Tyson says, laughing. "Even when we were little, he'd beat us at games. Quitting wasn't an option. You got up, dusted yourself off and played again." ■ Tyson completed her PharmD and became a compounding pharmacist. (continued on page 19)