

Maryland Mentor

A Newsletter for the University of Maryland School of Pharmacy's Academy of Preceptors

Summer 2025

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From the Assistant Dean for Experiential Learning

Dear Preceptors,

As we embrace the warmth and energy of summer, it's a perfect time to reflect on the past academic year—to celebrate our collective achievements, consider areas for growth, and set meaningful goals for the year ahead. This season offers us a moment to pause, appreciate the progress we've made, and look forward to the Fall semester with optimism and purpose.



I am currently working in collaboration with the Office of Faculty and Academic Affairs and the Dean's Office to establish our Experiential Learning Program (ELP) goals for the upcoming year. We are also eagerly anticipating the announcement of the new Experiential Learning Committee (ELC) membership later this summer, including the appointment of a faculty chair and the committee's charges. I look forward to sharing more about these developments, as well as updates on the preceptor promotion process, in our Fall 2025 newsletter.

In July, Dr. Tuan Huynh, assistant director of ELP, and I, along with other School of Pharmacy leaders, staff, and faculty, attended the American Association of Colleges of Pharmacy Annual Meeting in Chicago. Dr. Huynh and I attended sessions on experiential education and NAPLEX preparation and connected with peers across the country. The meeting was both affirming and inspiring, confirmed that the University of Maryland School of Pharmacy (UMSOP) remains at the forefront of pharmacy education, and opened the door to several exciting collaborations with peer institutions. We were also proud to participate in the formal transition of leadership for the Big 10 Academic Alliance Experiential Education Collaborative. UMSOP will serve as the Alliance's host school this academic year, offering us a unique opportunity to lead and contribute to national conversations on experiential education. This collaborative meets monthly and includes working groups focused on assessment, skills-based education, diversity, equity, and inclusion, finance, student affairs, and admissions.

Finally, I'm pleased to share that we recently offered a preceptor development opportunity at UMSOP's annual Precepting Excellence Day. Drs. Precious Dadzie and Seferina Kim led a session titled, **"Facilitating a Welcoming Learning Experience: Supporting Preceptors and Students."** If you missed it, this session is available online, and preceptors can receive continuing education credit for participating.

Produced by:



In this issue, you'll find important reminders for preceptors, updates on NAPLEX preparation strategies, and highlights from our recent student experiences both locally and abroad. We also spotlight professional development opportunities and upcoming events designed to support your continued growth as educators and mentors. I hope this newsletter provides valuable insights and inspiration. Thank you for your continued dedication to our students and to the future of pharmacy education.

A handwritten signature in black ink on a light gray rectangular background. The signature reads "Mojdeh Heavner" in a cursive script.

Mojdeh Heavner, PharmD, BCCCP, FCCM, FCCP
Assistant Dean, Experiential Learning
Professor, Department of Practice, Sciences, and Health Outcomes Research
mheavner@rx.umaryland.edu

What the ELP Office Needs from Preceptors

Please help us be 100 percent compliant with preceptor requirements by doing the following:

- Submitting all required midterm and final evaluations by their due dates
- Entering your site requirements in CORE ELMS by clicking "My Requirements"
- Reading all emails that come from the School via CORE ELMS
- Completing two hours of preceptor development each year
- Providing a brief description in your preceptor profile in CORE ELMS by clicking "Profile Information," then "Description"

Library Access

One of the many benefits of being a School of Pharmacy preceptor is having offsite access to eFacts and Comparisons Online and Micromedex only through the University's Health Sciences and Human Services Library (HS/HSL). Access is limited to School of Pharmacy preceptors who are scheduled to take a student for at least one block in the current academic year. Please note you will only get access during the blocks/rotations that you have students scheduled. If you would like to take advantage of this benefit, please contact LaTia Few at Lfew@rx.umaryland.edu for more details.

We welcome the following newly appointed preceptors:

- | | | |
|----------------------|-------------------|---------------------|
| • Amanda Brahim | • Erika Arato | • Lindsey Glotfelty |
| • Astrid Cooper | • Esther Esadah | • Madison McKnight |
| • Binu John Poulouse | • Hanna Desai | • Sania Ali |
| • Chinedum Dike | • Heather Larch | • Sweta Patel |
| • Christina Hearty | • Katie Heavner | • Taylor Southers |
| • Christopher Diehl | • Katriina Tuazon | • Tiffany Huynh |
| • Derek Edwards | • Keith Pfaff | • Zeleke Goshu |
| • Ebenezer Oyeboode | • Lauren Paul | |

Career, Leadership, and Professional Corner

Save the Date: Interprofessional Care Billing Workshop

This billing workshop is designed to describe and discuss various interprofessional billing models in the complex health care system to maximize the role and impact of interprofessional teams.

When: Tuesday, Sept. 16, 2025

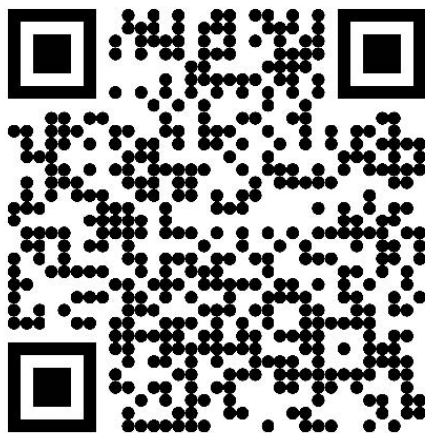
Time: 11 a.m. – 3 p.m.

Where: The Universities at Shady Grove, Rockville, Md.



Agenda

- Introduction into Interprofessional Education and Practice
- Discipline-Specific Billing
 - » Nursing
 - » Pharmacy
 - » Dental
 - » Social Work
- Value-based/bundled/interprofessional payment models
- Panel Discussion and Q&A



For more information, please contact Heather B. Congdon, PharmD, CDCES, FNAP, at hc Congdon@rx.umaryland.edu.

Register here or scan the QR code below to secure your spot!

We look forward to seeing you there!

Preceptor News

Synthesizing NAPLEX Review with Rotation Experiences: Lessons Learned

By:

- **Jacob Amato, PharmD, BCACP**, Clinical Pharmacist II, Internal Medicine MedStar Good Samaritan Hospital
- **Michael Hong, PharmD, BCCP**, Clinical Pharmacy Specialist I, Cardiology MedStar Union Memorial Hospital
- **Samantha Mahar, PharmD, BCCCP**, Clinical Pharmacy Specialist I, Critical Care, MedStar Union Memorial Hospital
- **Allison Chilipko, PharmD, BCPS, BCGP**, Director of Clinical Pharmacy Services, MedStar Union Memorial Hospital and MedStar Good Samaritan Hospital

As a preceptor, maybe a recent graduate or a long-standing pharmacist, pause for a moment and reflect on your time as an APPE learner on rotation. The acronym that elicits nervous energy, fear, and anticipation in every learner in their final year of pharmacy school? NAPLEX. You are beginning to prepare for your final exam and are ready to graduate and move forward with your career. As you plan your study schedule, you seek guidance from your school mentors, peers, colleagues, and preceptors to help you reach your goals and move forward with licensure.

While the fourth year of pharmacy school may be heavily weighted towards rotational activities, learners who demonstrate the greatest chance of successfully passing the NAPLEX start studying early in their fourth year and take the exam as soon as possible after graduation. Please see below for more information to help guide learners through this process, including an overview of some of the best practices MedStar Health has adopted at MedStar Union Memorial Hospital (MUMH) and MedStar Good Samaritan Hospital (MGSH) to facilitate NAPLEX preparation through integration into rotational activities.

NAPLEX Overview: Nuts and Bolts of Examination

The North American Pharmacist Licensure Examination (NAPLEX) is sponsored by the National Association of Boards of Pharmacy (NABP) with ongoing review and validation through psychometric testing.¹ The current NAPLEX blueprint has been in effect since May 1, 2025, with content developed by a panel of practicing pharmacists to establish knowledge, skills, and abilities (KSAs) essential to the foundational practice of pharmacy.^{2,3} Following this practice analysis, content domains were established with secondary validation of the proposed content outline through surveyed feedback from an additional 1,999 practicing pharmacists.^{2,3} This process led to development of the final content outline with scaled weighting for the different content domains.^{2,3}

From there, questions were developed from specialty practicing pharmacists selected from diverse practice areas with advanced training provided for question writing.² Each question must be reviewed by the NAPLEX Review Committee to ensure consistency with NABP question style with supported references for the correct response supplied by the content developer.² Following this review process, the question enters into pilot testing with review of psychometric parameters to eventually move the question into the bank of NABP-approved questions with ongoing review for accuracy.² The NAPLEX Content Outline replaced the prior format from 2021, the Competency Statements, with the addition of five new subdomains.³

Eligibility for Examination and Timeline⁴	<ul style="list-style-type: none">• Create your NABP e-Profile.• Apply for exam services and pay a \$100 application fee.• Coordinate with your pharmacy school following graduation to submit your transcript (with conferral dates) directly to NABP.• Purchase your exam for \$520 following your eligibility check.• Receive your Authorization to Test (ATT) from NABP via email.• Schedule your exam appointment with Pearson VUE based on available testing dates.																		
Length/Duration⁴	<p>6 hours and 45 minutes, with 6 hours of actual exam time. 225 questions - only 200 questions count towards scoring. The other 25 are for pilot testing for incorporation into future exams.</p> <p>Two, pre-determined 10-min breaks - additional unscheduled breaks subtract from exam time.</p> <ul style="list-style-type: none">• Break 1 - Computer trigger at 120 minutes.• Break 2 - Computer trigger at 240 minutes.																		
Content Domains^{2,3}	<p>Five practice areas with different weights given to each domain.</p> <table><tr><th>Domain</th><th>Content</th><th>Weight</th></tr><tr><td>Foundational Knowledge for Pharmacy Practice</td><td>Pharmaceutical science assessment: calculations, compounding, and drug development</td><td>25% (50 questions)</td></tr><tr><td>Medication Use Process (Prescribing, Transcribing and Documenting, Dispensing, Administering, and Monitoring)</td><td>Pharmacology knowledge with drug names and classes, therapeutic substitutions, storage and handling, and vaccinations</td><td>25% (50 questions)</td></tr><tr><td>Person-Centered Assessment and Treatment Planning</td><td>Patient care focus through disease state assessment, monitoring, and patient education</td><td>40% (80 questions)</td></tr><tr><td>Professional Practice</td><td>Public health guidance and ethical considerations</td><td>5% (10 questions)</td></tr><tr><td>Pharmacy Management and Leadership</td><td>Pharmacy operations, inventory management, and quality improvement</td><td>5% (10 questions)</td></tr></table>	Domain	Content	Weight	Foundational Knowledge for Pharmacy Practice	Pharmaceutical science assessment: calculations, compounding, and drug development	25% (50 questions)	Medication Use Process (Prescribing, Transcribing and Documenting, Dispensing, Administering, and Monitoring)	Pharmacology knowledge with drug names and classes, therapeutic substitutions, storage and handling, and vaccinations	25% (50 questions)	Person-Centered Assessment and Treatment Planning	Patient care focus through disease state assessment, monitoring, and patient education	40% (80 questions)	Professional Practice	Public health guidance and ethical considerations	5% (10 questions)	Pharmacy Management and Leadership	Pharmacy operations, inventory management, and quality improvement	5% (10 questions)
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Question Format¹	<p>Most questions are case-based or scenario-based with information or a medical profile to evaluate prior to responding.</p> <p>Different question types, including multiple-choice, multiple-response (select ALL that apply), and/or constructed-response formats with a written response required (usually for pharmaceutical calculation-based questions). You must progress through questions in the order received; you cannot skip questions, return to a question later, or change your answer once completed.</p>																		

Scoring¹	Results received within 14 business days of exam date. Pass/Fail Candidate Performance Report including: <ul style="list-style-type: none"> • Candidate information • Exam result • Exam information • Blueprint content domains • Achievement levels: performance by domain • Percentages: percentage of total exam questions by domain
Re-Examination⁴	<ul style="list-style-type: none"> • Failed Exam: 45-day waiting period from date of exam before eligible to schedule a re-take. • Three attempts in a 12-month period; if not successful, you must wait 12 months before restarting your application process. • Five-attempt max limit.
NABP Resource⁴	<ul style="list-style-type: none"> • NAPLEX 2025 Candidate Application Bulletin

Current NAPLEX Passage Trends

While previously high pass rates of the NAPLEX once served as a testament to the strength and success of pharmacy education, first-time pass rates have shifted and declined in recent years, signaling a growing concern with exam preparation. This shift, along with ongoing exam content changes and revisions, has prompted the need for additional focused review during pharmacy school didactic curriculum, and especially during rotational experiences, to help reinforce strategic knowledge, skills, and abilities for general pharmacy practice.

From 2005 to 2015, the national first-time pass rate stood firmly above 90 percent.⁵ After this period, the NAPLEX underwent two noteworthy changes: a modification of the NAPLEX blueprint to focus more on clinical assessment and therapeutics in 2015, and a change in testing conditions and passing standards in 2016. Following these changes, the national pass rate fell to 85.9 percent the next year. Ried and colleagues conducted a retrospective observational cohort study to evaluate whether the 2015 and 2016 changes to the NAPLEX affected pass rates. The study showed a statistically significant difference in pass rates from before and after, suggesting that the changes were important predictors of the decline in pass rates.⁶ NAPLEX scores in the following years remained between 88 and 89 percent. Pass rates then fell sharply again to 81.3 percent in 2021, corresponding to another NAPLEX blueprint change that year. In contrast to the previous change, however, pass rates continued to decline thereafter. From 2022 to 2024, national first-time pass rates were 76.8 percent, 75.7 percent, and 75.7 percent, respectively.⁷ For the University of Maryland School of Pharmacy (UMSOP), the first-time pass rates were 86.1 percent, 80.2 percent, and 71.4 percent for the same three-year period.

While the remarkable drop in pass rates in 2021 seemed to be associated with the NAPLEX blueprint change, the continuing decline afterwards signals that external factors may be contributing to this ongoing trend. The COVID-19 pandemic significantly impacted the way learners receive education.⁸ This affected not only pharmacist candidates but also students of other health care disciplines. Students taking the Step 1 of the United States Medical Licensing Examination (USMLE) had a first-time pass rate of 96 percent in 2019, which has since steadily declined to 88 percent in 2024.⁹ Passing rates for the National Council Licensure Examination (NCLEX) for registered nurses declined from 88.2 percent in 2019 to 79.9 percent in 2022.¹⁰ While the pandemic has spurred tumultuous changes in the last few years, the root cause of the decline in pass rates seems to be multifactorial, including, but not limited to, exam changes, curricular revisions according to the Accreditation Council for Pharmacy Education (ACPE) Standards in 2016 and changes in enrollment requirements due to declining enrollment rates.^{8,11}

Available Resources for NAPLEX Preparation

To help remediate reduced first-time pass rates, many resources are available to facilitate learner preparation before and during the final year of pharmacy school. The *RxPrep UWorld* book is the most widely used, comprehensive review to assist with preparing for the NAPLEX. The current edition contains 80 chapters, including study tips, clinical topics and case scenarios, calculations, must-know formulas, compounding, biostatistics, and two exam-style practice chapters. This review book may be paired with an optional online course with video lectures for each chapter and a question bank with more than 3,400 NAPLEX practice questions that link to video content for additional review based on performance. The question bank may also be purchased separately for review.¹² Another resource for preparing for the NAPLEX is APhA's *Complete Review for Pharmacy*. This guide is a more concise review with 43 chapters with corresponding review questions, best suited for reinforcement or quick review of select topics. This book is not updated yearly; the most recent edition was published in January 2022.¹³ In addition to these question banks, NABP offers pre-NAPLEX practice exams, available to complete twice per year. These exams may be accessed by logging into your NABP e-Profile account and include up to 100 questions from past NAPLEX exams to simulate the real testing experience and acclimate to the exam format.¹⁴

Before studying, it is recommended to create a study schedule. Sample study planners for three to 12-month study plans can be found [online](#).¹⁵ Best practice focuses on including pharmaceutical calculations early in the study schedule and throughout to allow time for repetition and frequent practice to attain mastery.¹⁶ Learners should plan to complete their study schedule two weeks before their test date. Remaining time may be used to take practice exams and remediate any weak areas.¹⁶ Weak areas, top-selling medications, and “must-know” formulas, such as the Cockcroft-Gault equation, should be further reinforced by creating flashcards or using flashcard apps such as Quizlet. Learners may also use Quizlet to search for [flashcards](#) created by other learners. As this material is user-generated without external validation, caution is advised when using this feature of Quizlet with independent review and investigation by the learner to ensure provided content is accurate.

School Experiential Learning Guidance for NAPLEX Integration

To help maximize use of these available resources, starting with the 2025-2026 APPE rotation year, UMSOP has instituted changes to help further encourage NAPLEX preparation while on rotation through greater overlap with shared experiences. Rotation cases and examples, through detailed review, may be used to further align with core NAPLEX preparation topics in accordance with the blueprint mapping and content domains established as of May 2025. Through this collaborative, reframed model, the learner completes NAPLEX-focused preparation quizzes prior to each rotation with results shared with preceptors to encourage study outline planning and for reinforcement of key concepts during rotation. Following completion of the rotation, the learner will again complete an examination focused on the rotation exit to highlight key knowledge, skills, and abilities developed or refined during the rotation experience.

To help complement this framework with pre- and post-analysis highlighting ongoing strengths and areas for improvement, UMSOP has also partnered with practicing pharmacists and preceptors to develop the NAPLEX Review Support on APPE Rotations Guide to assist preceptors in cross-walking the content domains of the NAPLEX with key themes and foundational concepts from the *RxPrep-UWorld* NAPLEX Review Book and associated chapters. This guide has mapped specific NAPLEX review chapters to the four ACPE-required APPE rotations with additional, optional integration of four disease state review areas to align with other APPE (patient care) and APEX (non-patient care) rotations



The goal of this fostered relationship is to help enhance learner studying and retention of key concepts through harmonized learning experiences with clinical content review as driven by the preparation book. Prior to rotation and during learner onboarding and orientation, the preceptor should review the learner's study timeline and key areas for focus during the rotation. As the learning environment develops in helping to care for advanced patient cases, the preceptor may provide prompting and feedback to help emphasize strategic components aligned with NAPLEX preparation topics and develop a framework for topic review and discussion during the rotation. The learner should share the review book with the preceptor for maximal synchrony of shared experiences. Finally, through feedback and performance review, additional points for focus may be identified to continue to use more concrete, real-world examples to help solidify foundational concepts. Please refer to the detailed guide from UMSOP (available in CORE Elms) for a more detailed breakdown of *UWorld* content and reference chapter numbers correlating to the ACPE-required APPE rotations in addition to four additional clinical themes for cardiology, pulmonary/critical care, infectious diseases, and psychiatry.

APPE Rotation Category	Key Foundational Themes for Review*
Health-System Pharmacy Practice	Drug Interactions Drug References IV Medication Principles Sterile Compounding Medication Safety and Quality Improvement
Ambulatory Care	Basic Science Concepts Answering Case-Based Exam Questions Math Basics Drug Allergies and ADRs Pharmacogenomics
Acute Care General Medicine	Lab Values and Drug Monitoring Parenteral and Enteral Nutrition Clinical Calculations Pharmacokinetics Toxicology
Community Pharmacy Practice	Drug Formulations and Patient Counseling Compounding Calculations Math Practice Nonsterile Compounding Supplements

*Adapted from the University of Maryland School of Pharmacy NAPLEX Review Support on APPE Rotations Guide.

School Experiential Learning Guidance for NAPLEX Integration

In advance of UMSOP's curricular changes and to help develop a site-based learning community, MedStar Union Memorial Hospital (MUMH) started a weekly topic discussion conference for APPE learners with emphasis on NAPLEX-focused topics. This framework was started in 2023 by two of the clinical pharmacy specialists: Samantha Mahar, PharmD, BCCCP (Clinical Pharmacy Specialist I, Critical Care; MUMH), and Michael Hong, PharmD, BCCP (Clinical Pharmacy Specialist I, Cardiology; MUMH). Additionally, these pharmacists, as some of the first, self-led student rotation coordinators, helped to streamline a unified topic discussion platform for all learners on rotation at the same time vs. multiple, different individual preceptor reviews.

The first conference of each five-week APPE block begins with a model presentation led by a preceptor or MUMH PGY1 pharmacy resident. Each learner is responsible for presenting one assigned topic to the group and actively participating in the remaining sessions hosted by their colleagues. Topics are selected by the student rotation coordinator(s) to cover fundamental NAPLEX concepts and are assigned based on alignment with the learner's current clinical rotation. Historically, topic discussions consisted of 30–45-minute Microsoft Powerpoint presentations. However, based on prior learner feedback and with the goal for continual optimization of workflow and processes, for the 2025–2026 academic year, we are encouraging the presenting learner to create a disease state-specific handout to share with their colleagues for use with future rotations or for their own independent study. This transition will help the learner create an optimized, quick-reference study guide for ongoing longitudinal review during the APPE year. Each topic discussion is reviewed by the learner's preceptor before presentation and is moderated by a preceptor to ensure accuracy, stimulate engagement with question/answer sessions, and facilitate learning. Our current student rotation coordinators include Victoria Iervasi, PharmD, BCPS (Clinical Pharmacist I; MUMH), and Seo Lin (Lina) Park, PharmD, BCPS (Clinical Informatics Pharmacist; MUMH), both former MUMH PGY1 pharmacy residents in 2022–2023. In the second half of the year, the MUMH PGY1 pharmacy residents (total of three residents) will participate (new for 2026) as moderators as part of their Teaching and Education Longitudinal Rotation. Additionally, we are working to integrate this structure and platform into longitudinal rotation activities at MedStar Good Samaritan Hospital for the 2025–2026 academic year.

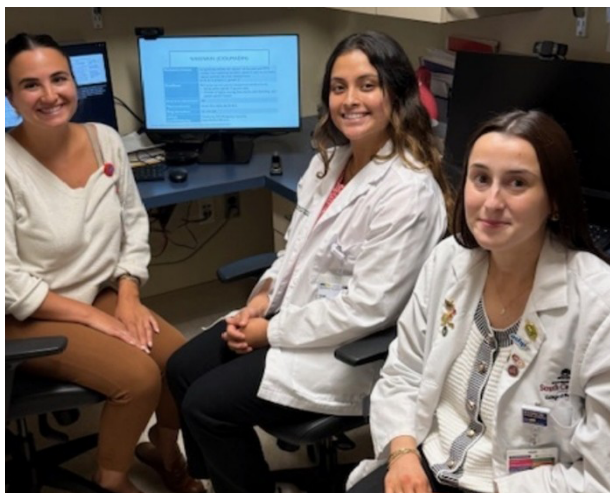


Photo left: Student coordinator with APPE learners. Left to right: Victoria Iervasi, PharmD, BCPS, Heidi Gonzalez-Ramirez (UMSOP); MUMH Longitudinal Track 2025-2026, and Abbey Otto (USC).

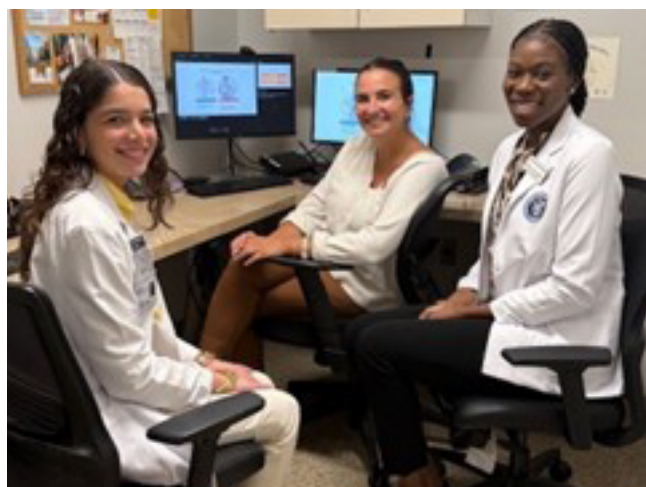


Photo right: Student coordinator with APPE learners. Left to Right: Eidaliz Velazquez Pagan (Notre Dame), Victoria Iervasi, and Funmilola Olatere-Olagbegi (UMSOP).

During patient care rotations, preceptors prepare their learners for the NAPLEX by providing various learning opportunities and evaluating performance for key skills and abilities. These include patient case presentations using real clinical examples, journal clubs that connect research to clinical practice, drug information assignments to strengthen resource utilization and critical thinking, and patient counseling sessions that focus on conveying essential medication information and guiding the interview and education process. These multifaceted approaches ensure learners are not only prepared for the NAPLEX but also develop essential clinical and communication skills. To encourage more opportunities for learners to ask questions and receive feedback, learners will be assigned a MUMH PGY1 resident mentor while on rotation at MUMH. The purpose of the resident mentor is to provide a key resource to support social-emotional learning and development and to receive feedback on their topic discussions, case presentations, or journal club presentations. In addition, the resident may help guide the learner with fourth-year progression and career development through additionally reviewing CVs, preparing for the ASHP Midyear Clinical Meeting, navigating residency and/or fellowship applications, mock interviewing, and/or creating study plans for all licensing exams.

We hope this review serves to outline some of the more recent changes with blueprint mapping for the NAPLEX in helping to better prepare learners for the challenging needs of an evolving pharmacy practice. This discussion also serves as a reminder of days past in walking a similar path towards licensure and the assistance and resources that preceptors may help provide to developing learners.



MUMH pharmacy receptors with APPE pharmacy learners. Left to right: Funmilola Olateru-Olagbegi, Eidaliz Velazquez Pagan, Heta Sheth, PharmD (Clinical Pharmacist I; MUMH), Victoria Iervasi, Abbey Otto, and Heidi Gonzalez-Ramirez.

References:

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Student Perspective

Exploring the AHEC Scholars Program: A Student Perspective on Interprofessional Learning and Serving Underserved Communities

By Allison J.M. Robinson, MPH

The Area Health Education Centers (AHEC) Scholars Program is an impactful initiative designed to prepare health professional students for careers that serve underserved areas through interprofessional education and experiential training. This two-year longitudinal program, followed by a required one-year check-in, offers students from diverse disciplines—including pharmacy, medicine, dentistry, nursing, social work, psychology, and physician assistant studies—with hands-on experience addressing health challenges in underserved rural and urban communities.

To offer insight into what the AHEC Scholars Program looks like in practice, we spoke with Holly Verbrugge, a University of Maryland School of Pharmacy student and current member of Cohort 6, who shared her motivations, experiences, and takeaways from the program.

Interview with Holly Verbrugge, AHEC Scholars' Cohort 6 and Student Pharmacist, University of Maryland School of Pharmacy.

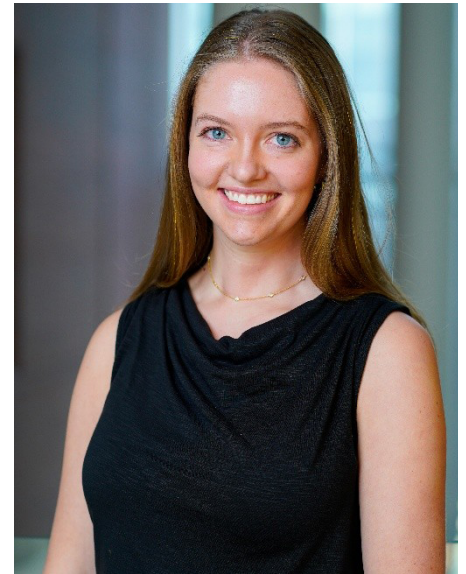
What led you to join the AHEC Scholars Program?

I first became aware of the AHEC Scholars Program through the University of Maryland School of Pharmacy. I decided to join the program because I care deeply about improving access to health care, especially in underserved communities. I also desired to gain a deeper understanding of the challenges

and barriers to health care that underserved communities face, both rural and urban. The AHEC Scholars Program offers valuable training and opportunities to learn about social determinants of health and how they impact communities through interdisciplinary collaboration.

How has the AHEC Scholars Program been beneficial to your educational journey?

The AHEC Scholars Program has provided me with several invaluable experiences that have deepened my understanding and awareness of barriers to health that underserved communities face, as well as strengthened my appreciation of interprofessional collaboration. During my first year in AHEC, I listened to a plethora of educational podcasts, seminars, and books that enhanced my knowledge and awareness of various topics, including patient-centered care, interprofessional care, social determinants of health, and current public health events. I was also fortunate to have the opportunity to participate in an interprofessional course at school, in which I applied knowledge gained through didactic learning. I appreciate the value of working alongside colleagues from other health professions to provide quality patient-centered care.

**What is one thing you would tell someone about why they should join the AHEC Scholars Program?**

The AHEC Scholars Program offers wonderful opportunities to learn about improving access to health care, and additionally, it provides opportunities to get involved and actively participate in various interprofessional experiences. Not only will students learn didactically through this program, but they will apply that knowledge and awareness through experiential learning opportunities that foster professional development and interprofessional collaboration.

Share one experience that has been meaningful to you.

This past semester, I enrolled in IPE Care in Geriatrics, an interprofessional course at the University of Maryland School of Pharmacy in which students from various schools (nursing, social work, and pharmacy) collaborated to provide health education and health services to older adults in the Baltimore community. We visited several senior housing apartment complexes, where we engaged as a class in interprofessional case discussions, presented health information through interactive discussions with older neighbors, and performed blood pressure checks and medication therapy management services. Throughout my time in the course, I gained a deep appreciation for the role of an interprofessional team in the care of a patient and how collaboration with colleagues from other professions leads to improved patient outcomes.

Holly Verbrugge's journey reflects the mission, vision, and impact of the AHEC Scholars Program. By bridging didactic learning with experiential learning experiences, this program equips future health care professionals with the skills, tools, and perspectives needed to make meaningful contributions in underserved communities. For students passionate about improving health access, interprofessional teamwork, and real-world learning, AHEC Scholars offers an invaluable opportunity to grow as both clinicians and community advocates.

Exploring Pharmacy Practice Across Borders: Reflections on Global Rotation Experiences

Beyond the Classroom: Pharmacy Students in Zambia

By Nathaniel Thomas, MBA, and Emily Heil, PharmD, MS, FIDP, BCIDP, AAHIVP



Left to right: Holly Verbrugge, Audrey Hamachila, MS, Sody Munsaka, PhD, Vraj Patel, and Christine Rojas.

As part of the University of Maryland School of Pharmacy's (UMSOP) commitment to developing globally minded health professionals, students can participate in international rotations that broaden their clinical knowledge, enhance cultural competency, and deepen their understanding of diverse health care systems and practices. Three of our P4 students recently completed a rotation at the University Teaching Hospital (UTH) in Lusaka, Zambia, under the guidance of UMSOP faculty member Dr. Emily Heil. This exchange program began in 2017 as an extension of the University of Maryland School of Medicine's existing collaboration with the hospital. Dr. Heil has aimed to expand the role of pharmacists within Zambia's health care system, with student rotations serving as an integral component of that mission.

Below, students reflect on their transformative experiences:

Holly Verbrugge

"I am very grateful to have been able to participate in this rotation. My experience in Zambia was incredible! I learned so much, including how pharmacy and health care practices differ in the United States and Zambia, how to manage diseases in resource-limited environments, and how insurance factors into health care in Zambia. I also increased my understanding and awareness of diseases that are more common in Zambia.

Despite the challenging environment at UTH, I learned an incredible amount about disease management, pharmacology, and the realities of having limited access to

medications. The pharmacists we rounded with during our week in internal medicine were incredibly knowledgeable, constantly pushing us to deepen our understanding of disease pathophysiology and pharmacology. There are several diseases prevalent in Zambia that we don't encounter as frequently in the United States, such as malaria, tuberculosis, and certain opportunistic infections like cryptococcal meningitis and Kaposi's sarcoma. It was fascinating to learn how these conditions are managed from a pharmacist's perspective. What stood out the most was the dedication of the clinical pharmacists we worked with. They truly cared for their patients and were deeply committed to providing the best possible care. It was encouraging to see how integrated pharmacists were in patient care and how they were valued as key members of the interdisciplinary team. Their involvement was a testament to the essential role pharmacists play, even in resource-limited settings.

Overall, my time in Zambia and at UTH was an invaluable experience. I learned to appreciate keeping an open mind and respecting medical care that is provided to the Zambian people. Even though my contributions were limited, the amount of appreciation from the UTH team and gratitude from the patients were encouraging and made me realize the impact that we can have halfway across the world."

Vraj Patel

"My four weeks in Lusaka were filled with invaluable learning experiences that I will carry with me for the rest of my career. This opportunity allowed me to not only expand my clinical knowledge but also see the broader scope of global pharmacy practice. I knew I would encounter differences in available drugs, disease patterns, and treatment protocols. But what truly surprised me was how cultural factors deeply influenced patient care.

For example, I never anticipated that drawing blood for lab tests could be complicated by a patient's fear of witchcraft, making them hesitant to provide samples. Similarly, I observed cases where patients refused blood transfusions due to religious beliefs, despite being critically anemic.

During our first week in Internal Medicine, we encountered many patients with acute kidney injuries (AKIs) related to common conditions like hypertension and Type 2 Diabetes. However, I was particularly struck by how severe malaria infections could also lead to AKIs, which was a unique learning moment for me.

This rotation allowed me to experience pharmacy practice in a setting marked by scarcity, cultural sensitivity, and stigma. I now have a deep appreciation for the resource constraints that many health care professionals face and how cultural differences shape both treatment and patient engagement. This experience has made me a more well-rounded practitioner and has reinforced the importance of global health ties in the institutions I hope to work with in the future."

Christine Rojas

"This rotation has been an incredibly unique experience that I will carry with me throughout my career. Going into it, I wasn't entirely sure what to expect, but I was truly shocked by the conditions under which the health care team is operating. I have deep respect for each of the

providers who are working with limited resources and overcoming challenges that we, in more developed health care systems, can hardly imagine.

It was also eye-opening to see the role the U.S. has played in supporting UTH through USAID. Visiting during a time of uncertainty regarding medication accessibility and funding for the coming year only amplified the gravity of the situation.

Beyond clinical experiences, this rotation has significantly broadened my understanding of global health, equity, and the social determinants that shape patient care. It underscored the importance of adaptability, cultural sensitivity, and ensuring access to essential medications.

There is so much to learn from our colleagues in Zambia and other parts of the world, as well as much we can share from our own experiences. Ultimately, this rotation has inspired me to pursue a career in global health and to advocate for improved access to care worldwide.”

These reflections from Holly, Vraj, and Christine highlight the impact of international experiential learning. Through their time in Zambia, they expanded their clinical skills and deepened their appreciation for cultural humility, access to health care, and the pharmacist’s role in diverse settings. As the University of Maryland School of Pharmacy continues to foster global engagement, these experiences serve as a reminder of the value of cross-cultural collaboration in shaping compassionate, resilient, and globally minded health care professionals.