

INSIDE OUTCOMES

News from the Department of Pharmaceutical Health Outcomes and Policy

THORNTON, NEW CENTER RECEIVE \$3.34M STATE GRANT FOR INITIATIVE TO PREVENT PRESCRIPTION DRUG MISUSE

A new \$3.34 million grant awarded by the state's health commission to UH College of Pharmacy researchers aims to reduce the potential for future prescription drug misuse and accidental poisonings, especially controlled prescription substances such as opioids.

Based at The Prescription Drug Misuse Education and Research (PREMIER) Center, the project is being led by center Co-Director Douglas Thornton, Ph.D., Pharm.D., BCPS, assistant professor.

Called the Texas Improved Dissemination and Evaluation of Single-Use Disposal Pouches (TIDES), the project was awarded by the Texas Health and Human Services Commission and funded by the U.S. Substance Abuse and Mental Health Services Administration.

The TIDES project will focus on improving the distribution and evaluation of Single-use Disposal Pouches (SUDPs) in Texas using a network of state-affiliated substance abuse prevention programs; assessing current prescription drug misuse prevention practices of prescribers in the Houston area; and identifying prevention opportunities for high-risk inpatients receiving opioid therapy in the Houston area.

In addition to leading research on controlled substance pre-



PREMIER Center Co-Director Douglas Thornton is leading the state-funded Texas Improved Dissemination and Evaluation of Single-Use Disposal Pouches (TIDES) project.

scription medications, the center's mission includes educating key stakeholders involved in prescribing and dispensing and developing patient-level educational opportunities delivered by prescribers and pharmacists.

FULBRIGHT SPECIALIST PROGRAM SENDING APARASU TO INDONESIA TO SHARE BEST PRACTICES

Rajender R. Aparasu, Ph.D., FAPHA, professor and chair of the college's Department of Pharmaceutical Health Outcomes and Policy, has been selected by the Fulbright Specialist Program to assist a Jakarta, Indonesia-based university in enhancing its pharmacy curriculum and academic research programs.

The college's first Fulbright Specialist, Aparasu will travel to the Southeast Asian nation for a six-week assignment beginning in August 2019 to advise Atma Jaya Catholic University's administrators and faculty members on issues related to scholarship and research development. His planned activities include participating in workshops and group discussions on writing scientific/academic research papers, mentorship and professional development of faculty researchers, and curricular enhancement.



"I am excited to visit Indonesia and assist Atma Jaya's leadership and faculty in developing state-of-art pharmacy curricula and improving their health research capabilities to reach the university's programmatic goals," Aparasu said. "I am glad that the Fulbright Specialist Program is providing this amazing opportunity to share my academic and research expertise while learning about pharmacy training, academia, and culture in Indonesia."

Author of more than 100 journal articles and editor of two books on research methods, research design and pharmaceutical literature

evaluation, Aparasu has more than 20 years' experience in research and developing pharmacy curricula, courses and assessment programs consistent with contemporary and evolving pharmacy practice and accreditation standards.

RESEARCH NEWS

NIH BACKS PROJECT TO BOOST ADHERENCE AMONG MEDICARE MANAGED CARE BENEFICIARIES

Susan Abughosh, Ph.D., associate professor, is leading a project focused on improving medication adherence for hypertensive and diabetic patients through motivational interviewing (MI) techniques.

Supported by a \$459,000 National Heart, Lung and Blood Institute grant, Abughosh's project will utilize MI-trained Pharm.D. students to encourage patients to take their meds on time. The MI technique has shown promising results in promoting behavioral change, she said.

Poor adherence remains a significant barrier to achieving full effectiveness and optimal long-term outcomes in the use of medication and is a significant problem among elderly patients with multiple chronic conditions, Abughosh said.

"In pilot work, our team has demonstrated improvements in adherence



through a pharmacy student telephone MI intervention," Abughosh said. "Pharmacy students have the knowledge base and training to provide comparable services to pharmacists at a lower cost and can be a valuable resource to implement such interventions."

Abughosh's team will use group-based trajectory models to identify medication refill patterns of the group of approximately 15,000 Medicare managed care beneficiaries, all of whom are prescribed either an angiotensin converting enzyme (ACE) inhibitor or an angiotensin receptor blocker (ARB).

Non-adherent patients will be excluded from the interventional second year of the study. The telephone-based intervention will be customized by the past adherence patterns. Monthly follow-up calls will be carried out for six months. Post-intervention refill data will be evaluated to assess the intervention effectiveness in improving adherence.

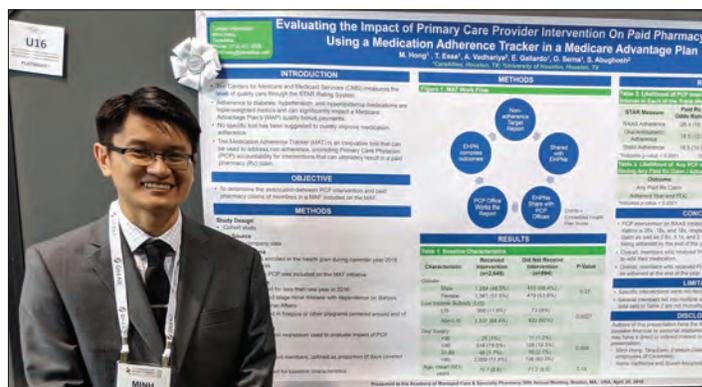
COLLABORATIONS WITH MANAGED CARE COLLEAGUES YIELD AMCP HONORS

After a few projects with UHCOP alumni at CareAllies (formerly Cigna HealthSpring) gained the attention of not only leadership of both organizations, but also peers within the managed care industry. With success in evidence, UHCOP PHOP faculty members and Ph.D. students have expanded collaborations with CareAllies consultant pharmacists, other staff members and residents to similar positive results.

For example, a UHCOP-CareAllies collaboration led by UHCOP alumnus Minh Hong, Pharm.D., clinical pharmacy resident at CareAllies, was recognized with one of only three Platinum Medals awarded at the 2018 AMCP Managed Care & Specialty Pharmacy Annual Meeting.

The project, "Evaluating the Impact of Primary Care Provider Intervention on Paid Pharmacy Claims Using a Medication Adherence Tracker in a Medicare Advantage Plan," was coauthored by fellow UHCOP alumni Tara Esse, Pharm.D., Esteban Gallardo, Pharm.D., and Omar Serna, Pharm.D., all of CareAllies; PHOP Ph.D. student Aisha Vadhariya and PHOP faculty member Susan Abughosh, Ph.D.

"Examining Pneumonia Risk Following New Use of Inhaled



UH Pharm.D. alumnus Minh Hong was a Platinum Medal recipient for his residency project in collaboration with PHOP faculty and students and fellow CareAllies team members.

Corticosteroids (ICS) after a Chronic Obstructive Pulmonary Disease (COPD) Exacerbation Event within a Medicare Advantage (MA) Population," a project of CareAllies resident Man-Khoi Nguyen, Pharm.D., was recognized as a Gold Ribbon abstract at the Academy of Managed Care Pharmacy 2018 Nexus Meeting.

Nguyen's collaborators included CareAllies' Esse, Gallardo, Serna and Amber Franklin; Vadhariya and fellow PHOP Ph.D. student Rutugandha Paranjpe; and Abughosh.

Department of Pharmaceutical Health Outcomes & Policy

Rajender R. Aparasu, Ph.D., FAPhA
Professor & Department Chair

Michael L. Johnson, Ph.D.
Associate Professor & Department Vice Chair

Email: phop@uh.edu
www.uh.edu/pharmacy/about-us/academic-depts/phop/
www.facebook.com/phop.uh

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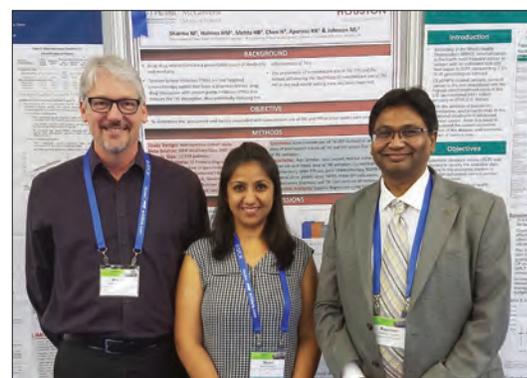
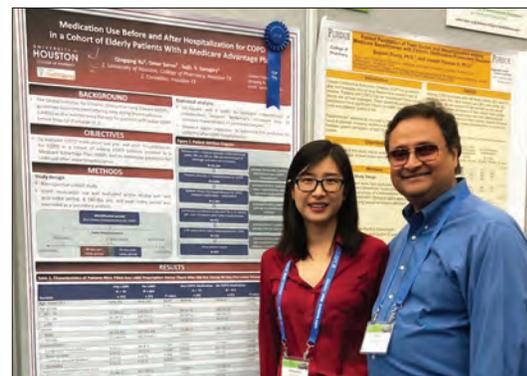
RESEARCH NEWS

CURRENT, FORMER STUDENT AMONG ISPOR POSTER FINALISTS

A current student and a recent graduate of the Pharmaceutical Health Outcomes and Policy (PHOP) Ph.D. program were among the “Best Poster Presentation” finalists at the ISPOR 2018 International Meeting.

Ph.D. candidate Qingqing Xu, M.S., was recognized for her project, “Medication use before and after hospitalization for COPD in a cohort of elderly patients with Medicare Advantage Plan.” Coauthors on the project were UHCOP alumnus and CareAllies Clinical Operations Manager Omar Serna, Pharm.D., BCACP, and UHCOP faculty member Sujit Sansgiry, Ph.D.

Recent PHOP graduate Manvi Sharma, Ph.D. ('17), who now works as an assistant professor at the University of Mississippi School of Pharmacy, was recognized for her project, “The prevalence and predictors of concomitant use of tyrosine kinase inhibitors and proton pump inhibitors in older adults with cancer: An observational study using SEER-Medicare Data.” Coauthors of the project were McGovern Medical School at UTHealth faculty member Holly M. Holmes, M.D., M.S., AGSF; fellow PHOP alumnus and The University of Texas Medical Branch at Galveston faculty member Hemalkumar B. Mehta, Ph.D.; and UHCOP faculty members Hua Chen, M.D., Ph.D., Rajender R. Aparasu, Ph.D., FAPhA, and Michael L. Johnson, Ph.D.



Pictured with their finalist posters are, top right, Xu and Sansgiry; and, bottom right, Johnson, Sharma and Aparasu.

LATEST PROJECTS AND INDUSTRY TRENDS INFUSE PRESENTATIONS, TALKS AT AUBURN'S SPAC 2018



PHOP Ph.D. students and faculty members enjoyed an outstanding 2018 Southern Pharmacy Administration Conference (SPAC) in June 2018 at Auburn University's Harrison School of Pharmacy in Auburn, Ala. Five students and three faculty members from UHCOP participated in three days of networking, poster and podium research presentations, and discussions of current trends and issues in pharmacy administration/health outcomes, as well as a fun “murder mystery” game and reception. First held in 1985, the biennial event draws nearly 100 students and faculty researchers from institutions across seven states. UHCOP's Department of Pharmaceutical Health Outcomes and Policy is looking forward to hosting the 2020 SPAC event on the UH campus June 11-13.

2ND HOUSTON MEDICATION SAFETY SYMPOSIUM FOCUSES ON PRESCRIPTION BURDEN AND MISUSE

Drawing an audience of nearly 200 researchers, students and practitioners across multiple disciplines, the one-day 2018 Houston Medication Safety Symposium in April explored the roots and current status of prescription burden in older adults and the U.S. opioid crisis as well as changes in practices needed to reverse the dangerous trends.

The symposium was co-hosted by UH College of Pharmacy's Department of Pharmaceutical Health Outcomes and Policy and McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth), and sponsored by the UTHealth Consortium on Aging and the Phyllis Gough Huffington Endowed Lectureship.

The featured speakers were Mellar Davis, MD, FCCP, FAAHPM, Palliative Care Department and section head, Geisinger Medical Center System; Mary Lynn McPherson, PharmD, MA, MDE, BCPS, CPE, professor & executive director, Advanced Post-Graduate Education in Palliative Care, University of Maryland, School of Pharmacy; Jerry Gurwitz, MD, chief of Geriatric Medicine, Department of Medicine, University of Massachusetts Medical School; and Paula Rochon, MD, MPH, FRCPC, vice president, research, Women's College Hospital, professor & RTO/ERO chair in Geriatric Medicine, University of Toronto.

The symposium also showcased nearly 30 research poster and podium



presentations by medical, dental, pharmacy and nursing practitioners, academicians, students, postdoctoral fellows and residents. All of the accepted abstracts were published in the peer-reviewed journal *Research in Social and Administrative Pharmacy* (Elsevier).

The award recipients and projects were:

1st Place Podium – Victor Liaw of The University of Texas at Austin College of Natural Sciences, “Change In Opioid Prescribing Patterns Among Disabled Adults Following Hydrocodone Rescheduling”;

2nd Place Podium – Manvi Sharma of UHCOP-PHOP, “Concomitant Use of Tyrosine Kinase Inhibitors & Proton Pump Inhibitors in Older Adults with Cancer”;

1st Place Poster – Chandni Patel of McGovern Medical School at UTHealth, “The Effects of Missed Doses of Antibiotics on Hospitalized Patient Outcomes”; And

2nd Place Poster – Monica Cheng of McGovern Medical School at UTHealth, “Medication Adherence And Personal Determinants Of Health Among Self-Neglecting Older Adults.”

In addition to engaging presentations and discussions, attendees were eligible for free medicine, nursing, pharmacy, dentistry and risk management continuing education credits.



Faculty Highlights

Professor and Department Chair **Rajender Aparasu**, Ph.D., FAPhA, was appointed to a four-year term through June 2022 on the Nursing and Related Clinical Sciences Study Section of the National Institutes of Health's Center for Scientific Review. Aparasu also was awarded a \$557,500 grant from Incyte Corp. for the project, “Oncological Treatment Patterns and Clinical Outcomes in Real-World Settings.” Aparasu was named to the Scientific Advisory Board of the American Society of Pharmacovigilance, a recently established nonprofit organization whose mission is “to rapidly and dramatically reduce the high rate of suffering and mortality due to adverse drug events in the U.S.”

Professor **Sujit Sansgiry**, Ph.D., was awarded a 2017-18 Teaching Excellence Award by the Rho Chi Society, UH Beta Omicron Chapter.

Assistant Professor **Douglas Thornton**, Ph.D., Pharm.D., BCPS, was appointed as a reviewer for a Patient-Centered Outcomes Research Institute Study Section.

Associate Professor **Susan Abughosh**, Ph.D., received a \$174,000 grant from Valeant Pharmaceuticals International for the project, “Drug Utilization and Medication Adherence Among Medicare Patients with Hepatic Encephalopathy and Predictors of Hospital Readmission.”

STUDENT NEWS

FULBRIGHT SCHOLAR LOOKS TO PHOP EDUCATION TO REDUCE DRUG COSTS FOR NATIVE MALAYSIA

Although she started a career in hospital pharmacy and is the daughter of a now-retired community pharmacist, UH Pharmaceutical Health Outcomes and Policy Ph.D. student EeVien Low realized that her passion lies in public health where she can make a broader impact on patient care in her native Malaysia through cost-effective medication policymaking.

Currently on sabbatical from Malaysia's Ministry of Health, Low is focusing using her background in pharmacy, master's degree in Health Economics and PHOP education to help manage the formulary of her country's national health system in which medications are provided at no cost to patients.

"Outcomes research in my country is still lacking, which is what made me want to continue my studies," Low said. "We know in this era that the drugs are getting very expensive, especially oncology drugs and rare disease drugs. At the same time, you don't really know whether these drugs work, that is why we need to do outcomes research: To see whether there is return on investment, in terms in the value of health."

While medications in the national formulary are free, other barriers to adherence and utilization are present, especially within the more rural, poorer communities farther from the capital of Kuala Lumpur.

"Patients may be getting free drugs, but what is the benefit if they can't afford the syringes or if they don't have a fridge at home?" Low said.

After earning her pharmacy degree, Low worked in the outpatient hospital pharmacy setting for five years where she focused on medication therapy management. She then earned a master's degree in Health Economics from the University of Queensland in Australia before joining the Malaysia Ministry of Health. She is currently on sabbatical from the ministry while completing her doctoral program studies.



As UH College of Pharmacy's first Fulbright Scholar student, Low selected the university for the reputation of the PHOP program, the diversity of its namesake city, and its membership and proximity to the world-renowned Texas Medical Center. Since starting her studies at UH, Low has received consecutive highly competitive P.E.O. International Peace Scholarships and was selected to attend a sponsored Utrecht-World Health Organization summer course at the Universiteit Utrecht, a WHO Collaborating Centre for Pharmaceutical Policy and Regulation in The Netherlands.

Low said the opportunity to gain the knowledge of policies and practices of several health systems around the world has been enlightening.

"I hope to learn about the advantages and limitations from different perspectives and systems, so when I go home I can help make sure we don't repeat the mistakes that others have made," she said.

Student Accolades



PHOP Ph.D. student **Tyler Varisco**, Pharm.D., was selected for the American Association of Colleges of Pharmacy/Walmart Scholars Program, which provided support to attend the 2018 AACP Pharmacy Education Annual Meeting.

PHOP Ph.D. alumni **Nandita Kachru**, Ph.D. ('17), and **Navneet Upadhyay**, Ph.D. ('18), received the UHCOP Graduate Student Excellence Award at the May 2018 Graduation Reception & Awards event.

PHOP Ph.D. candidate **Qingqing Xu** was inducted into the Phi Kappa Phi Honor Society.

Seven PHOP Ph.D. program students were admitted into the program in Fall 2018. The new students are, front row from left, **Baneen Sheriff**, **Shrey Gohil**, and **Yinan Huang**, and, back row, **Ning Lyu**, **Ashna Talwar**, **Vaishnavi Tata** and **Zahra Majid**.



STUDENT NEWS

INTERNSHIPS OFFER REAL-WORLD REFINEMENT OF ANALYTICAL, PROJECT MANAGEMENT SKILLS SETS

Over the summer of 2018, five PHOP Ph.D. students and candidates successfully completed internship programs in the pharmaceutical and consulting industries from California to Houston. One of the largest PHOP internship cohorts to date, the students were asked to provide reflections on their experiences.

Benjamin Lewing, Shell Health

"My time as an intern at Shell was one of the greatest learning experiences of my time as a student. I had the opportunity to work on a variety of projects, including randomized control trial analysis, an industrial hygiene project comparing health and safety outcomes for multiple sites, and a project utilizing survey data. I was able to present each of these research projects to stakeholders based in the U.S., Netherlands, and Qatar. I was able to gain experience with project proposal, epidemiological literature review, data selection, importation, and cleaning using internal databases. A great deal of time was spent on SAS analysis including database manipulations, creating unique graphs using macros, and a wide variety of statistical techniques including chi-square analysis, t-tests, paired t-tests, ANOVAs, and multiple types of regressions."



Sanika Rege, AbbVie

"My primary project was focused on the HCV care cascade trends in the U.S. I was involved in conducting literature review, developing the protocol, carrying out data analysis, and presenting the findings. Working in the HCV area was a totally new experience and helped me gain knowledge about the disease state, enhance my technical skills while working on the national laboratory datasets, and use a unique data visualization tool to present my findings top management (which) helped me come out of my comfort zone and grow as a young professional."



Swarnawa Sanyal, Ultragenyx Pharmaceuticals

"My main project was to evaluate the economic burden of a rare disorder – X-linked Hypophosphatemia (XLH) – and estimate the adult prevalence of the disease. During the project, I was entrusted with conducting

a targeted literature review for predictors of pricing and reimbursement for drugs approved in rare disorders and built a repository of pricing research for Crysvida in XLH. The diagnosis code used by physicians for identification of XLH is not consistent throughout. After primary research with key stakeholders and KOLs, I identified the true XLH cohort by applying a mix of ICD 9 and 10 diagnosis code, CPT diagnosis codes, and direct and derived laboratory diagnostic values using Humana claims database, which had 22 million patients. I evaluated the demographic characteristics, all-cause healthcare resource utilization and associated pharmacy, medical and hospital costs among adult patients with XLH and compared it with healthy cohort. I also collaborated with IQVIA and Analysis Group for model conceptualization and design of a cost-effectiveness analysis model for Crysvida in XLH. Additionally, I assisted the team on a research proposal draft titled 'The Epidemiology of Renal Phosphate Wasting Syndromes within an integrated Northern California healthcare delivery system.'"



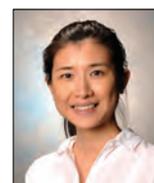
Aisha Vadhariya, Regeneron Pharmaceuticals

"I was a part of a product team in phase 3 clinical trials. Therefore, there was continuous communication with the clinical team. I participated in meetings specific to HEOR and Medical Affairs but also larger groups to understand both clinical and commercial aspects of a pharmaceutical product. My mentor assigned me to a literature review and critical evaluation of the clinical trials of all products in the drug class. I also had the opportunity to get some hands-on experience on an analytics platform for secondary database analysis."



Qingqing Xu, AbbVie

"I worked supporting the oncology/endocrinology and virology team. I mainly led and supported the following projects/tasks: developed of real-world evidence (RWE) toolkit to help affiliates understand the process RWE generation from planning phase to final pull-through and communication; and conducted analyses regarding several research questions using national claims databases."



ALZHEIMER'S, MS AWARENESS AND SUPPORT PROJECTS

Although their work as health outcomes researchers typically involves large patient data sets, PHOP Ph.D. students never lose sight of the fact that there are "real people" – perhaps even friends, loved ones and neighbors – behind those numbers. In many cases, finding "big picture" solutions is what led them to the field.

In a demonstration of solidarity and support of two prevalent and prominent medical mysteries, PHOP students participated in the 2018 Walk to End Alzheimer's (at right) and raised awareness and \$1,100 in donations and bake sales for multiple sclerosis research through their team "Help Heal MS" team during the MS Walk Houston events (at far right).



ALUMNI NEWS

ALUMNI SPOTLIGHT: CARMINE COLAVECCHIA

Before joining the PHOP Ph.D. program, Carmine Colavecchia earned his Pharm.D. degree from Purdue University and completed The Houston Program in Health-System Pharmacy Administration (a two-year concurrent M.S. in Pharmacy Administration from UHCOP and PGY1 pharmacy practice residency/PGY2 health-system pharmacy administration residency at Houston Methodist Hospital).

For the completion of his Ph.D. degree in August 2018, Colavecchia successfully defended his dissertation titled "Effectiveness and Safety of Four-Factor Prothrombin Complex and Fresh Frozen Plasma in Cardiac Surgery." A Board Certified Pharmacotherapy Specialist (BCPS), Colavecchia continued working as a Pharmacy Administrative Specialist at Methodist until 2018 when he joined Pfizer as Executive Medical Lead - US Enterprise.



Q: What interested you in the health outcomes field?

A: Initially, I thought I was going to go into academia. As I was going through (The Houston Program), I realized that I really enjoyed the research aspect of the M.S. I guess what really sparked it was I enjoyed making that larger impact. Maybe it's the little bit of the nerd in me, but I like seeing all the data that was being generated from the electronic health care system or large secondary database, being able to crunch those numbers, figure out what they actually mean, and then help make decisions and interventions that actually improve patient care or population health based on the information and analysis.

Q: Describe your current position?

A: It's like a hybrid between a health economics/outcomes research position and a medical liaison. I don't actually work on a branded product; it's above brand. I help health systems and payers with population health management. I come in and see what their strategic priorities are and see if they align with Pfizer, then see how we can make some interventions or take some steps to help them improve their population health. We have tools that we can provide or just through my experience and knowledge, I can knock up ideas of some different ways they might be able to improve their patient outcomes.

Q: How did the UH PHOP program prepare you for your current position?

One of the huge benefits of the UH PHOP program is the collaboration with the different institutions (in the Texas Medical Center). I was fortunate enough that I was working full time (at Methodist) while I was doing the Ph.D. degree, so what I found maybe the most beneficial to me was that I would learn something in the classroom and say, "This is how I can apply this to the real world from what I'm seeing day to day." I was in a unique position to where I wasn't in the work force in the hospital, but I was kind of managing projects and different teams. I was able to apply research methods and statistical techniques in real time.

The research with the advanced statistical courses helps our students set themselves apart from others. Immediately in my world, I have more knowledge than a lot of my colleagues, just from the didactic curriculum because it was innovative

and on the forefront on different stem design methodology.

Q: How might pharmacists as other disciplines, such as business, economics or statistics, benefit from pursuing a PHOP Ph.D. as a pathway to a career in pharmaceutical health outcomes?

A: The C suite running the leadership has to be able to analyze data and apply it to improve their institution, their business, and their patient outcomes. If you don't learn how to do that, then you're going to be behind in some the skills that you have compared to the other people who are getting that training. One of the things that you see in the pharmacy department now is more automation technology and with that comes a lot of data. Who knows how to use and leverage that data? It's the people who have the analytical skills. I think that it is going to be really important for more Pharm.D.'s to have that type of training.

Even for the business students, I think it's rewarding to see how business skills tied in with the analytical skills can have a large impact on a big population. It's like saying, "Hey, if we analyzed it this way we found 'XYZ' outcome, and now we can make this big change for our organization and improve hundreds, thousands, or millions of lives."

Class of 2018



Ruta Sawant

Dissertation Title: *Preventive Behaviors for Cognitive Health Maintenance: Understanding the Role of Message Framing and Involvement*

Advisor: Sujit Sansgiry, Ph.D.

Current Position: Manager, Global Immunology, AbbVie

Navneet Upadhyay

Dissertation Title: *Geographic Access to Providers and Pediatric Mental Health Care*

Advisor: Hua Chen, Ph.D., M.D.

Current Position: Associate Principal Scientist, Merck & Co. Inc.

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