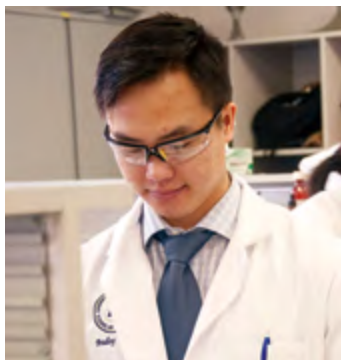
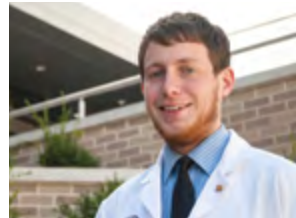


PITTPHARMACY

UNIVERSITY OF PITTSBURGH SCHOOL OF PHARMACY | WINTER 2017



2016—2017:

LOOKING

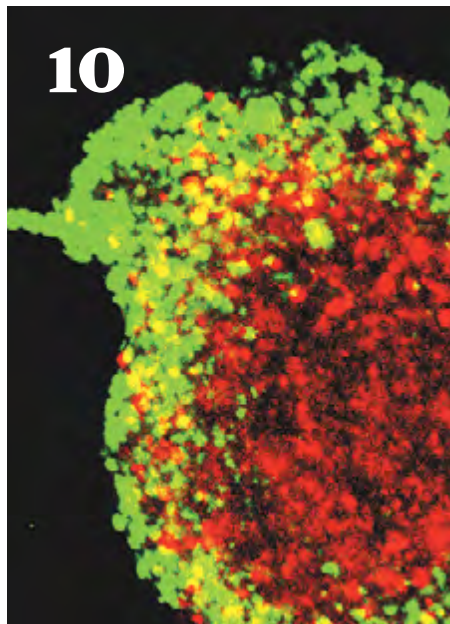
BACK

LOOKING

FORWARD

PITTPHARMACY

UNIVERSITY OF PITTSBURGH SCHOOL OF PHARMACY | WINTER 2017



FEATURES

10. The World is Not Flat
How 3D Modeling Could Change the Way We Target Breast Cancer

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HONOR OUR PAST. SHAPE OUR FUTURE.

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25. Share Your News

27. Check it Out

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32. Alumni Society President's Message

Front Cover:

PittPharmacy celebrates the academic and community contributions of all its members.

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Published in cooperation with the Department of University Marketing Communications.



Dear Friends,

As I look at Thomas Friedman's latest book, "Thank You for Being Late: An Optimist's Guide to Thriving in the Age of Accelerations," I focus on the word, "accelerations." Acceleration (singular) seems a fitting word to describe the world I find myself in daily; in particular, it describes what is happening at our Pitt School of Pharmacy. And I could not be happier about it!

Most of us go about our daily work and only occasionally look back to reflect on the progress we have made. When I did this recently, I was flooded with the sense of pleasure and pride. A combination of vision, hard work and perseverance has put PittPharmacy in a significant and important place in the world of pharmacy, health care, and education.

Take a minute and name the top six areas that are nationally important and relevant to pharmacy.

I am wondering if you identified the same big six that I did: the opiate crisis; "big data"/analytics; pharmacogenetics; pharmacy care for people in communities, particularly those with chronic diseases; innovations in educational approaches; and team-based patient care/interprofessional education. A seventh is the cancer "moon shot."

In past issues, we have described some of the efforts we have made to address the opiate crisis in Pennsylvania. In "big data/analytics" we have described "Target Hunter" and our incredible computational drug discovery program, though we have not shared work on big data for patient outcomes. You have learned a bit about RxPedition, our award-winning and innovative semester-long educational game that immerses students in the process of drug development.

Take the time to read "The World Is Not Flat," which describes the work of one of the cancer-focused laboratories in our School. "Leading the Way: A SNP in Time" briefly showcases one part of our work in pharmacogenetics and an educational innovation for making genetics personal.

Remember as you read these descriptions that our progress has been achieved by a diverse group of people who are inclusive and open to new ideas. You are seeing only a glimpse of the truly outstanding work that our people are doing. We have more stories worthy of being told.

As I look back at Thomas Friedman's book and see the title, I think that if I were writing a book, I might call it, "Thank You: Together We have Accelerated our Innovations for Pharmacy."

Sincerely,

A handwritten signature in black ink that reads "Patricia Kroboth". The signature is written in a cursive, flowing style.

Patricia D. Kroboth, Dean

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Awards & Accolades

FACULTY, STUDENTS, AND ALUMNI



2016 Distinguished Alumni Fellow Larry Merlo '78



Class of 2018 President Julie Mandel accepts Script Your Future Award

Merlo Receives Pitt's Top Alumni Honor

Larry J. Merlo, president and chief executive officer of CVS Health, has been named Pitt's 2016 Distinguished Alumni Fellow. The award recognizes alumni with extraordinary records of professional achievement and community service.

Merlo received the award during an October dinner in Alumni Hall's J.W. Connolly Ballroom.

Merlo has served as president of CVS Health since May 2010 and as CEO since March 2011, playing a key role in developing the company into the largest pharmacy health care provider in the United States. In 2014, he announced that CVS Health would stop selling tobacco in all of its stores, becoming the first major retail pharmacy to do so. Under his leadership, the company has developed apprenticeship programs for pharmacy technicians, and provided scholarships to pharmacy students.

Merlo also received Pitt's 2010 School of Pharmacy Distinguished Alumni Award and was named a Pitt Legacy Laureate in 2008.

He earned a Bachelor of Science degree from Pitt's School of Pharmacy in 1978. He was elected to Pitt's Board of Trustees in 2013. Merlo and his wife, Lee Ann Merlo (A&S '77), endowed the Larry and Lee Ann Merlo Student Leadership Fund Award, providing need-based assistance to students in Pitt's Doctor of Pharmacy Program.

PittPharmacy Wins Script Your Future Again!

PittPharmacy Class of 2018 won the national award in the annual Script Your Future Medication Adherence Competition for the second year in a row. The award was presented at the 2016 Annual American Association of Colleges of Pharmacy Meeting in Anaheim, California, July 2016. The Script Your Future campaign is sponsored by The National Consumers League and is dedicated to public education, research, and inter-professional collaboration to decrease barriers associated with medication adherence.

The PittPharmacy class of 2018 led a community-wide campaign aimed to educate patients in the Greater Pittsburgh Area about the

importance of taking their medications and managing their disease states. Student pharmacists met with individual patients discussing ways to increase medication adherence motivation. Patients completed medication adherence pledge cards; student pharmacists provided them with medication wallet cards, disease management tips, and blood pressure readings. Additionally, students visited multiple hospitals in Pittsburgh to bring awareness to the campaign and provide resources to hospitals.

The campaign reached a total of 1,140 patients at 100 locations, including 79 community pharmacies. A total of 292 inter-professional students and faculty were engaged from Pitt's School of Dental Medicine, Health and Rehabilitation Sciences, Public Health, Medicine and Nursing. PittPharmacy students' social media campaign provided daily adherence tips and showcased a public service announcement, recorded in 10 languages, reaching 74,039 people.



Sandy Kane-Gill



Clockwise: Harry Wilkinson, Heather Johnson, Elyse Tomaszewski, and Addie Brown

Kane-Gill Receives ASHP Excellence Award

Associate Professor Sandra L. Kane-Gill, PharmD, MS, FCCM, FCCP was selected as the recipient of the 2016 American Society of Health-System Pharmacists (ASHP) Preceptor Pharmacy Residency Excellence Award. This award recognizes excellence and leadership in the training and mentoring of pharmacy residents—training that is crucial to the development of future leaders and raising the level of practice. Kane-Gill received the award in December 2016 at the ASHP Midyear Meeting in Las Vegas, Nevada. Kane-Gill provides a webinar presentation, giving expertise to residency programs and preceptors on engaging residents and innovative strategies.

www.ashpfoundation.org/PREAWebinars

PittPharmacy's Achieving Independence Team Wins Again

PittPharmacy won the Pennsylvania Pharmacists Association's 2016 Achieving Independence Competition during PPA's Annual Conference held at the Crowne Plaza Philadelphia-King of Prussia on September 24, 2016. This competition is designed to foster the budding entrepreneurial pharmacy students to one day own their own pharmacy. Students create a business plan based on either starting up a brand new pharmacy in Pennsylvania or purchasing an existing pharmacy and implementing creative changes. Members of the winning team and of PittPharmacy Class of 2018 are Heather Johnson, Harry Wilkinson, Addie Brown, and Elyse Tomaszewski. Their faculty coach was Assistant Professor Bridget Regan, MBA, RPh. Their mentor was Greg Drew RPh, and independent coach was Brandon Antinopoulos, PharmD. Teams from Jefferson College of Pharmacy, LECOM School of Pharmacy, Philadelphia College of Pharmacy and Wilkes University Nesbitt School of Pharmacy also participated in the competition.

This was the fifth consecutive year that a PittPharmacy team has won this competition!



Maryann and Justin Scholl

Spirited Scholls Receive Prestigious Award

Maryann (Heglund) Scholl ('07), and Justin Scholl ('07), received the 'ROC' Spirit Award at the 2016 Pitt Alumni Association Awards luncheon during Homecoming this fall. Named after the University's beloved Panther Mascot, ROC, the Spirit Award recognizes an alumnus for his or her outstanding enthusiasm, loyalty, pride, and spirit in support of the University of Pittsburgh. This year, Maryann and Justin were recognized for their loyalty to the School of Pharmacy and their dedicated and energetic engagement in the Pitt Erie Club.



Brandon
Antinopoulos

Brandon Antinopoulos Receives PPA Preceptor Award

The Pennsylvania Pharmacists Association (PPA) recently presented Brandon Antinopoulos ('10), with the Pharmacists Mutual "Distinguished Young Pharmacist" Award during PPA's 2016 Annual Conference held at the Crowne Plaza Philadelphia-King of Prussia on September 24, 2016, in King of Prussia, Pennsylvania. The Pharmacists Mutual "Distinguished Young Pharmacist" Award recognizes new pharmacists for their dedication to and participation in PPA, commitment to the practice of pharmacy, and involvement in community activities. Antinopoulos graduated from the University of Pittsburgh in 2010 and under his leadership, the Pitt Pharmacy student involvement in PPA grew exponentially. He completed a unique PGY1 Community Pharmacy Practice Residency with the University of Pittsburgh and PPA where he worked to establish key components of the Pennsylvania Pharmacist Care Network (PPCN).

He has been an active member of the Allegheny County Pharmacists Association (ACPA) and was recently installed as president. His community of Brighton has been significantly impacted by the opioid epidemic and he has led the pharmacy's efforts in working with local law enforcement and community groups to ensure that naloxone is available to those who can utilize it in the community.

PPA Recognizes Kelsey Moss with Outstanding Pharmacy Student Award

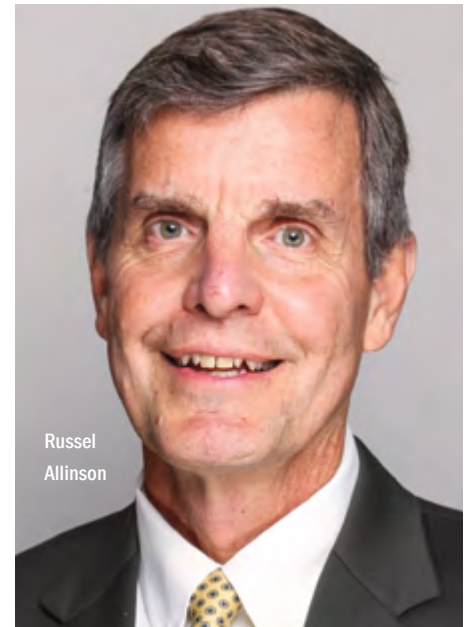
The Pennsylvania Pharmacists Association (PPA) recently presented Kelsey Moss, University of Pittsburgh School of Pharmacy, with the 2016 Outstanding Pharmacy Student Award. Moss was a campus leader for the Pennsylvania Pharmacists Association, and organized 124 students to attend Legislative Day at the Capitol in April of 2015. Moss has also presented two posters at PPA's Mid-Year Conference. Moss was a leader among her peers with her work in a variety of other pharmacy organizations. She was a member of the Community Leadership Innovation and Practice Area of Concentration and presented a poster at the American Pharmacists Association conference in 2015, where she won Best Student Poster nationally. Moss also completed a highly competitive rotation at the NACDS Foundation. Moss is completing a PGY1 Pharmacy Practice residency with Allegheny General Hospital, with a focus in ambulatory care/community practice.

Russel Allinson Named Technology Innovator of the Year

Russel Allinson ('73), CEO and Chief Clinical Officer of Therigy, was named the 2016 Next-Generation Pharmacist Technology Innovator for the development of the company's flagship product, TherigySTM™. Presented by Pharmacy Times and Parata®, the award is given to a pharmacist who successfully leverages pharmacy technology tools



Donna Hazel Past President PPA
and Kelsey Moss



Russel
Allinson

to advance patient care standards, business profitability, and/or employee productivity. The product, TherigySTM, provides pharmacy users with a comprehensive library of clinical content based on best practices and current standards of care so that pharmacies can fully care for their patients. According to PR Newswire, TherigySTM is utilized by over 1,300 pharmacists daily to support over 120,000 patients.



Richelle Hajnosz Lehman

Pharmacy Alumna Serving Third Term as VP of SARPh

Richelle Hajnosz Lehman ('99), was elected to her third consecutive two-year term as Vice President of the Board of Directors for SARPh. SARPh is the Pennsylvania State Board of Pharmacy approved program dedicated to helping pharmacists and pharmacy students help to manage the disease of chemical dependency, alcoholism, and other psychological disorders.

Another Win for Red Light to Cancer Project!

PittPharmacy students Ingrid Pan and Kaley Hayes (Class of 2017) were recognized as one of eight poster award winners in the Population, Reproductive, and Sexual Health Section (PRSH) at the American Public Health Association (APHA) Annual Meeting in Denver, Colorado. The title for their poster was "Evaluation of Targeted HPV Vaccination Education among Undergraduate College Students."

This was the first time student pharmacists participated in poster presentations through APHA. The project is part of The HPV Vaccine: Red Light to Cancer, which aims to create awareness and foster discussion to destigmatize HPV and the vaccine and to educate the catch-up college-aged population through interactive educational campus events. Study coauthors include Alyssa Kunkel ('16), Melissa Somma McGivney, PharmD, FCCP, FAPhA, and Carolyn T. Thorpe, PhD, MPH. Resources for this project were provided by the University of Pittsburgh School of Pharmacy, the Jewish Healthcare Foundation, and the Student National Pharmaceutical Association (SNPhA).



Asha Tata

ACCP Recognizes Tata as Outstanding Mentor

Asha Tata ('05), recently won the Adult Medicine PRN Mentor Award from the American College of Clinical Pharmacy. Tata is the coordinator of the PGY-1 and PGY-2 Pharmacotherapy Residency Program at the University of Maryland. She serves as a clinical pharmacist at the University of Maryland Medical Center and practices in the inpatient internal medicine service and in the outpatient anticoagulation clinic.

Bertz receives Citation of Merit from U of W

Richard J. Bertz ('95), received a Citation of Merit from the University of Wisconsin-Madison School of Pharmacy, where he received his Bachelor of Science degree in 1983. One of just four Citation of Merit Honorees for 2016, Bertz was recognized for his expertise on pharmaceuticals that slow the progression of HIV, his two patents, and his numerous publications in peer-reviewed journals. Bertz, the current vice president and head of clinical pharmacology and pharmacometrics at Bristol-Myers Squibb Company is also a member of the American Society for Clinical Pharmacology and Therapeutics, the American Association of Pharmaceutical Scientists, Rho Chi, and is a member of the Pitt Pharmacy Board of Visitors.



Richard Bertz



PHARMD CLASS OF 2020
31% MEN
69% WOMEN
69% IN-STATE RESIDENTS
31% OUT-OF-STATE RESIDENTS
13% HAVE A BS DEGREE

In the News

FACULTY, STUDENTS, AND ALUMNI



Gordon J. Vanscoy



Class of 2017 members
Maddie Adams and
Daniela Policicchio

Vanscoy Company Awarded Top 50

Gordon J. Vanscoy ('84) was honored as part of the Pittsburgh Business Times 2016 Pittsburgh Smart 50 Awards. The award recognizes the leaders of the smartest companies throughout Pittsburgh.

Vanscoy is the chairman and CEO of PANTHERx® Specialty Pharmacy. Founded in 2011, PANTHERx Specialty Pharmacy sought to reinvent specialty pharmacy, revolutionize pharmacy, and redefine care. Vanscoy positioned PANTHERx in the niche of managing rare and devastating diseases, including those requiring personalized or orphan drugs. PANTHERx landed an exclusive biotech partnership in 2015, managing a new life-saving orphan drug for the entire country. In addition to new agreements with states, health plans and prescriber offices, the biotechnology industry now routinely seeks out PANTHERx as the rare disease partner to help launch new medicines.

Drug Take Back Day Continued Success

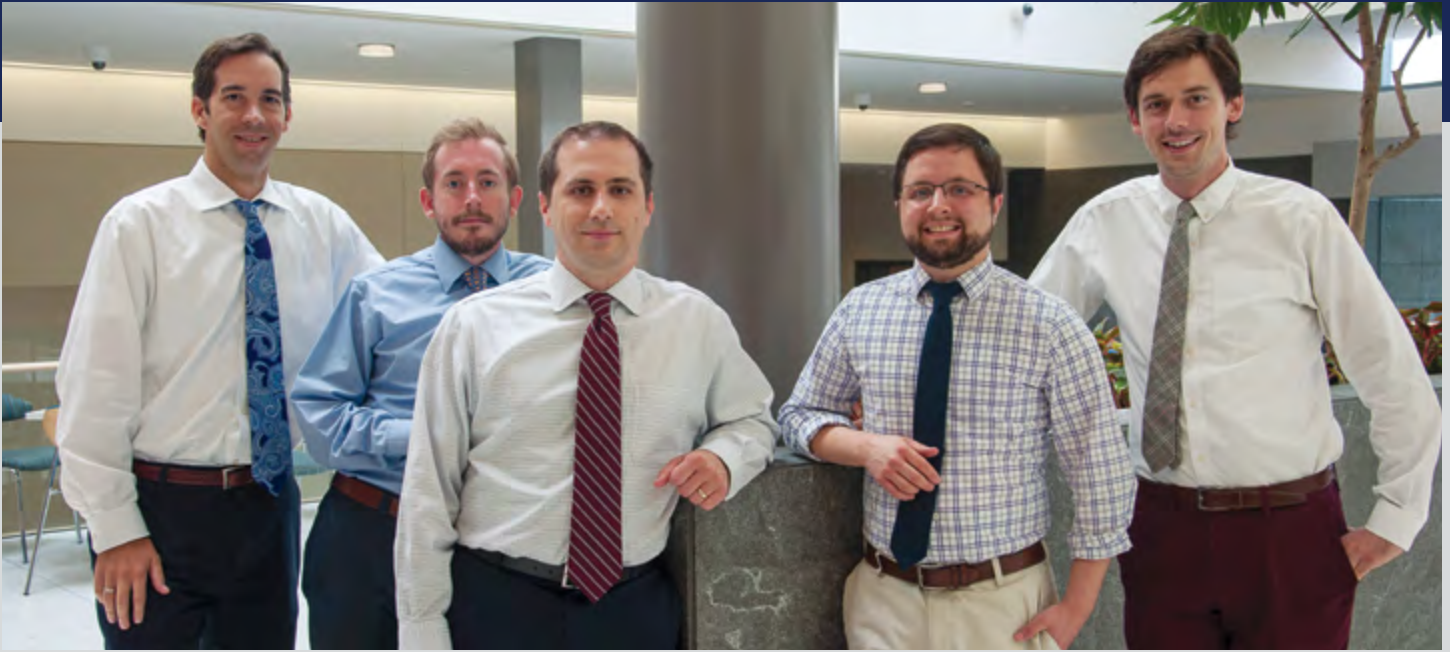
PittPharmacy is very pleased with the success of the Drug Take Back Day on Friday, October 21, 2016. The event collected 245 pounds of medications from 82 patients in the Pittsburgh community with additional medications collected from the Birmingham Clinic and other community sites.

Our thanks to the University of Pittsburgh Division of Student Affairs; PittPharmacy faculty member James Pschirer who helped obtain the proper containers and gloves; thanks to staff member Anna Schmotzer who helped us advertise the event to the community sites; the University Pharmacy in Nordenberg Hall and Patrick Pugliese who hosted the event in their lobby; the DEA for disposing of the drugs properly; and the Pitt Police for their assistance with transportation and safety. Collectively since 2015, the student-sponsored event has collected over 1,115 pounds of drugs.



Jesse Quintiliani
(Class of 2018)

LEADING → THE WAY



Test2Learn™ Team PittPharmacy faculty members James Coons, Lucas Berenbrok, Philip Empey, graduate student Solomon Adams, and faculty member James Stevenson

A SNP in Time

A SNP (single nucleotide polymorphism) here, a SNP there, and, pretty soon, you have the potential for personalizing medication use or “precision medicine.” A growing body of evidence indicates that by knowing an individual’s genetic make-up for certain genes, we can select the most appropriate medication for that individual. Assistant Professor Philip Empey and his colleagues have tackled how to move these discoveries from the research laboratory to clinical practice. They have created a unique training program called Test2Learn™ that allows learners to use their own genetic information to discover how genetics can affect drug efficacy and toxicity. Learners are given the choice of using a generic gene database or signing up for 23andMe™, an analysis of about 500,000 SNPs that can inform them of their genotype. Solomon Adams, a current PittPharmacy graduate student, created a software system to help students focus on the drug metabolism related SNPs. The instruction also includes discussions regarding the ethics of using genetic information for patients and how the students can make an informed decision about obtaining their own genetic results. Test2Learn™ is a dramatic success with PittPharmacy students who are prepared to lead the way in applying pharmacogenetics to patient care.

The success of Test2Learn™ and the unique partnership with 23andMe™ led to a partnership with the National Association of Chain Drug Stores

(NACDS) Foundation to provide Test2Learn™ to pharmacists across the nation. This program will include both online home study and in-person live components, including an optional activity for learners to undergo personal genomic testing. Community pharmacist participants will engage in the in-person aspect of the program, as well as receive the instruction necessary to administer the training to others.

“Pharmacogenomics is considered a new frontier in patient care, with great promise for patient outcomes and public health, and the ‘train-the-trainer’ focus of the fall 2016 national tour will expand the knowledge of it exponentially”, said NACDS President and CEO Steven C. Anderson, IOM, CAE.

Philip Empey, PharmD, PhD, BCPS noted, “Participants who have learned using this model tell us it makes a meaningful impact in their education. Our published outcome data shows students are highly engaged and achieved better learning outcomes. We are excited about offering this innovative certificate.”

Leading the way for PittPharmacy are members of the Test2Learn™ team: Philip E. Empey, James Coons, PharmD, BCPS (AQ CV), Lucas A. Berenbrok, PharmD, James M. Stevenson, PharmD, MS, and PittPharmacy graduate student Solomon M. Adams, PharmD.

Learn more by visiting the Test2Learn™ web site (www.Test2Learn.org).

THE WORLD IS NOT FLAT

**HOW 3D MODELING COULD CHANGE
THE WAY WE TARGET BREAST CANCER**

When Shilpa Sant thinks about the way cells grow in the human body, she draws an analogy to people sitting in a classroom: Craving interaction, the cells—like restless students—start talking to each other, and those conversations shape the actions that follow.

“It’s all about the micro environment,” explains Sant, an assistant professor in the Departments of Pharmaceutical Sciences and Bioengineering.

Like the human beings they constitute, cells need communication—and they interact with, and are shaped by, the environment around them. That environment, a sort of scaffolding, informs the cells about what to do and when to do it. And, as with humans, the cells respond to the cues that come from stressors or changes in that environment.

That premise is the underpinning of a new three-dimensional model for breast cancer that was developed by Sant’s lab and featured in the journal *Cancer Research*. The idea was to more closely mimic the way cancer cells behave in the human body, a process that Sant says is not completely duplicated in standard two-dimensional monolayer cultures.

Ultimately, the hope is that better models will help to refine the development of drugs targeting the disease, Sant says.

Scientists already knew that for some drugs, the effect on actual tumors differed from the observed effect on cells in two-dimensional flat models in which they were tested. Researchers wondered if perhaps only the outer cells of a tumor were affected, and whether the drug needed to get closer to inner tumor cells to work. Using the existing clinical data about how outcomes differed from expectations, Sant designed her model in the lab.

A path to the laboratory

Sant’s methodology is influenced not only by her background in pharmaceutical sciences, but also by the complementary work she has done in bioengineering. After earning her bachelor’s and master’s degrees in her native India, she moved to Canada, where she earned a PhD in pharmaceutical technology from the University of Montreal.

She won a fellowship to train at the Wyss Institute for Biologically Inspired Engineering at Harvard and the Center for Bioengineering

at Brigham and Women’s Hospital in Boston. She worked on tissue engineering and regenerative medicine, fascinated by how well the disciplines meshed together.

Initially, Sant’s passion lay with teaching, and she served as a full-time lecturer in pharmacy while she still lived in India.

“Interactions with the students—that’s what really keeps me going, I think,” she says.

But as satisfying as she found teaching, she longed for something else: an opportunity to pursue new ideas in the field. It was this desire that prompted her to earn her PhD, and before she won her fellowship, she worked in the clinical research department at Labopharm, Inc. in Montreal.

Though she loved the job, she accepted the FQRNT fellowship from Canadian Government because she missed academia, particularly the students.

Personally, it was a challenging decision for Sant, who was married and had a young family. She celebrated her younger son’s first birthday and then immediately moved to Boston. Though her husband and children were extremely supportive, Sant knew that competing for grants and pursuing research had the potential to interfere with family life; so when her fellowship ended, she wanted to choose her next steps carefully.

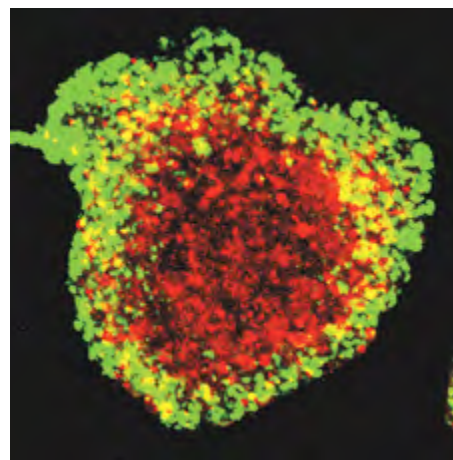
When she interviewed with the Pitt School of Pharmacy, she already had an offer in hand from a Canadian institute. She was impressed, however, by the caliber of Pitt’s pharmacy and engineering schools, as well as the University’s highly interdisciplinary environment.

“It was the kind of research I was envisioning in my lab,” she says. “Pitt is a really collaborative environment.”

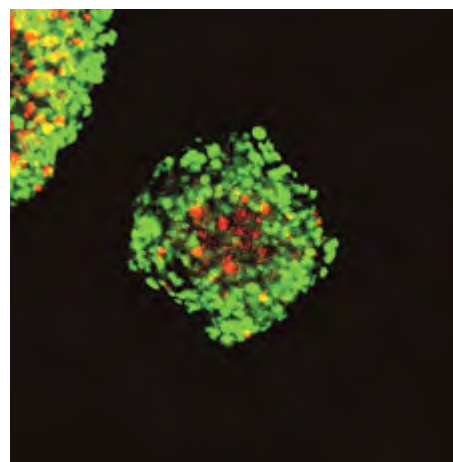
But what really set Pitt apart was the number of people who came to the University decades ago, and never left.

“That gave me a feeling that people really liked to be here,” says Sant. “I can still manage to have family time while having the great, collaborative environment.”

In fact, her family was so pleased with the University that her husband, Vinayak Sant, accepted a position as an assistant professor of pharmaceutical sciences. Today, their children are 8 and 13, and Shilpa Sant is able to pursue the research that is her passion.



On the contrary, large microtumors show a higher proportion of dead cells (red in the center) compared to growing cells at the periphery (green) due to hypoxia and nutrient deprivation because of their large size.



Small microtumors grown in the lab show a lower proportion of dead cells (red in the center) compared to growing cells (green cells on the periphery).

A work in progress

Sant started her lab at Pitt in 2012, focusing on the breast cancer model. Cancer generally turns fatal via metastasis, spreading to other sites through the body. In breast cancer, oncologists considered many factors, one of them being tumor size, which has been shown to influence tumor progression to advanced stage and metastasis. With better modeling, Sant theorizes, the factors that influence tumor movement can be better understood.

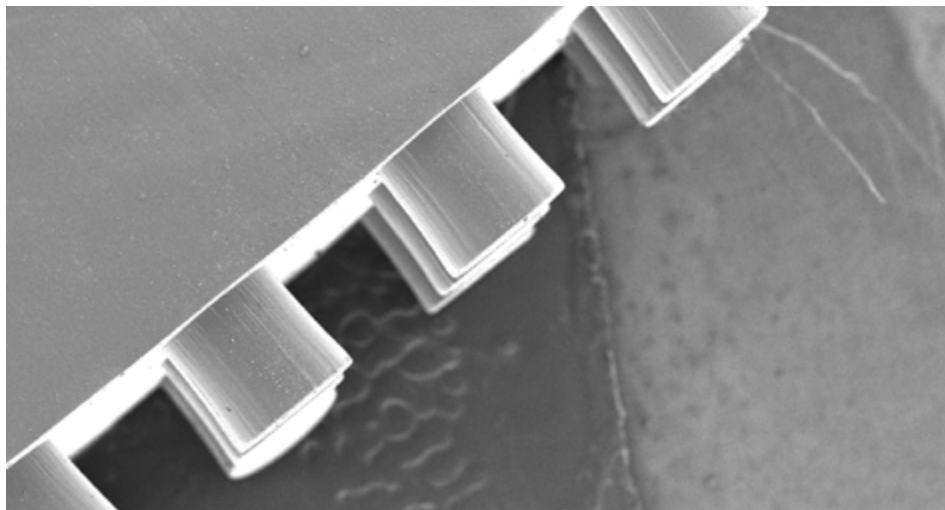
“That was the first question that we started asking,” Sant recalls. “What happens as the tumor grows? How do the cells behave?”

Bigger tumors mean more cells fighting for nutrients, creating a “survival of the fittest” situation, she says. Influenced by these stressors, the cells start looking for ways to survive, which is why they change biologically. The cells emit some signals that direct the blood supply to the tumors, and new blood vessels begin to grow. By figuring out how to survive and then adapting, the tumor becomes harder to kill.

Sant uses tumor cell lines that are derived from primary, non-invasive breast tumors. Every time the lab conducted its experiments, it uses the same cell lines when creating the range of sizes and shapes for her 3D tumor models. Borrowing a concept from the microelectronic industry, she created cylindrical holes of different sizes and surrounded them with a gel that the cells dislike, so they try to avoid sticking to it. Cells in the larger wells began moving together as a whole tumor on top of the gel, crawling away. It reminded Sant of a scene from *Spider-Man 3*—The Black suit when Peter Parker gets his black suit.

“The surprising thing was we never expected them to move,” she said. And yet they did: In fact, the entire tumor moved, and did the next time she ran the experiment, and when a student ran it, too. Small tumors popped completely out of the well after five or six days, when they ran out of space, while larger tumors started crawling out of the well and wound up half inside the well and half outside.

“Cells need communication – and they interact with, and are shaped by, the environment around them.”



Scanning electron microscopy images of the soft elastomer posts of defined sized used to print hydrogel microwells to grow defined size small and large tumors.

That got Sant to thinking: For tumors to spread in metastasis, they need to be able to break away from the matrix around them and find a second home where they can grow. So they began looking at the biological factors as the migrating tumors changed their phenotype.

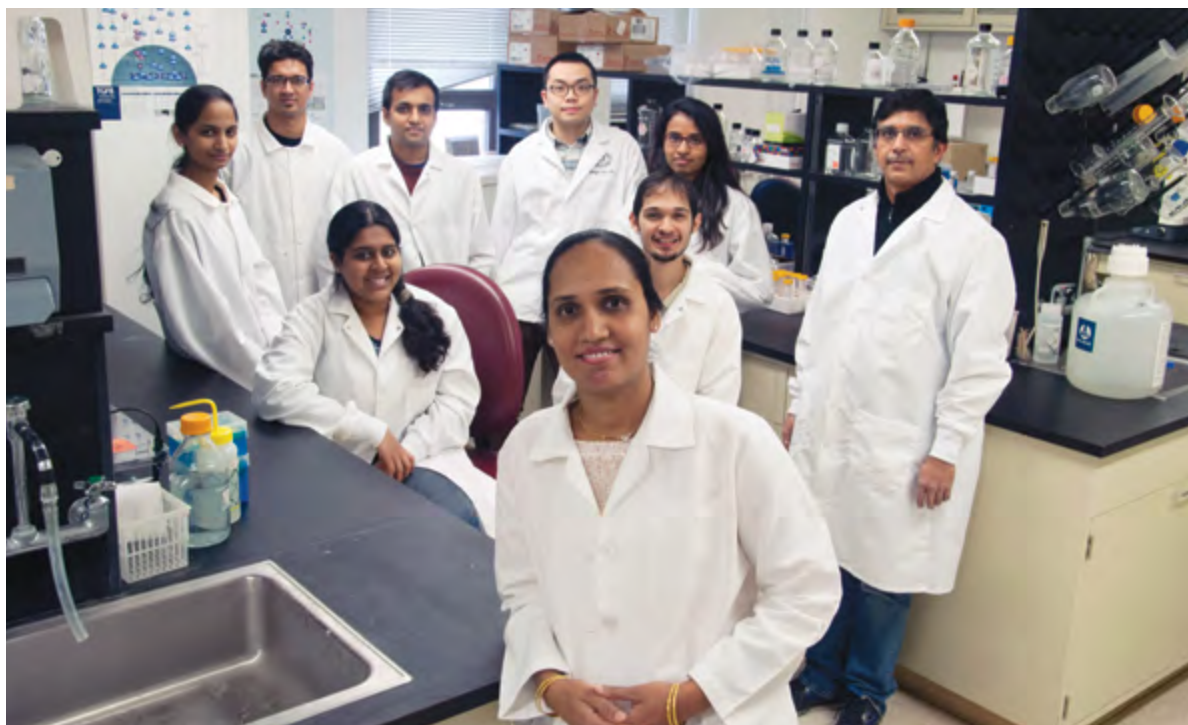
An important factor in Sant’s model is that both early stage and migratory tumors were made from the same non-invasive, non-migratory cell line, allowing them to study the changes in cell phenotype in real time. Many other models in the literature use different non-invasive and invasive cell lines to model different stages of tumor progression such as early stage vs. migratory aggressive stage.

“I think that was the most exciting part of this research,” she says, because it more closely simulates the disease in people.

When they tried the same process in cell lines from the triple negative breast cancer, the larger tumors of these cell lines didn’t move, which validated the clinical observa-

tion of poor correlation between tumor size and aggressive phenotype in patients with hormone receptor negative breast tumors.

Importantly, Sant’s model also revealed time-dependent changes in expression of some receptors due to changes in the surrounding microenvironment in large tumors. For example, only cells grown as large tumors lost expression of estrogen receptors while those grown as small tumors did not. All these cells, when grown as flat monolayers express these receptors. When testing potential drug therapies, these biological changes are significant. When the Sant lab tested a clinically used drug, 4-hydroxytamoxifen, targeting estrogen receptors in small vs. large microtumors grown in the lab, they found that although the drug was effective in inhibiting the growth of small non-migratory tumors, it could not effectively inhibit growth of large microtumors which lost the target expression. Similarly, Sant adds, “A molecule targeting a late-stage tumor won’t work in early-stage pa-



Foreground: Assistant Professor Shilpa Sant
Seated: Supraja Ranganathan and Yohann Pitale
Second row L to R: Lavanya Kondiparthi, Vishal Rakshe, Akhil Patel, Yingfei Xue, Sricharani Rao Balmuri and Vinayak Sant

tients if the target isn't even present in those cells. But researchers wouldn't know that if they tested it in a two-dimensional model that doesn't differentiate the cell behavior that is apparent in the 3D model. And cancer cells in mouse models might behave differently than human cells do.

"So we get physiologically more relevant data, and that's the goal," Sant says.

What lies ahead

Some challenges remain for the model to achieve its full potential. Sant hopes the pharmaceutical industry will adopt the 3D prototype, but her method does not allow for the screening of multiple compounds simultaneously in a high throughput manner, as the industry prefers. So Sant hopes to create that capability.

In addition, because cancer is such a complex disease, many factors influence the patient's outcome—not just the tumor size, which is what Sant's model represents. For example, patients with very dense breast tissue are more prone to cancer, but science still doesn't know why. Sant would like to know what factors exist in the dense microenvironment that make it more hospitable to the disease.

“The surprising thing was we never expected them to move,” she said. And yet they did: In fact, the entire tumor moved.”

Also, many patients carry microcalcifications, prompting them to get second mammograms to look for possible malignancies. Very little is known about where the microcalcifications come from or whether they play a role in advancing cancer.

“We definitely would like to now move forward to look at these other prognostic factors,” she says, using bioengineering tools to build models in vitro. Her lab is building synthetic matrices to reproduce dense tissue and other factors.

“We are trying to build complexity in the microenvironment adding matrices and different cell types that are seen in the patient tumors” she says, adding that she is pursuing additional grant funding.

Sant's hope is that her models will fill the gaps left by 2D and animal models. In addition, she hopes to obtain access to cells derived from specific patients to create a personalized therapy approach, growing a person's cells in real time to see whether they would respond to a particular therapy.

If she is able to do that—the type of personalized medicine that is frequently predicted for the future of health care—Sant envisions a significant potential benefit for the patient.

And that, she says, “would be really cool.”

PHARMACY ALUMS
FIND LASTING LOVE
AMONG THEIR
CLASSMATES

Love Potion

Chris Antypas always knew he wanted to be a pharmacist. He said as much in the third grade, writing in a letter that he would become a pharmacist and live with his brother behind his parents' house in Canonsburg, Pennsylvania.

Outgoing and gregarious, he was a born procrastinator blessed with a photographic memory. The only college to which he applied was the University of Pittsburgh—which, he admits in hindsight, was a risky move. But he got in; things had a way of working out for Chris—except for his plan to ask a classmate, Shannon McLaughlin, to attend their high-school prom. Someone else beat him to it.

“He just has this larger than life personality. He was really active in the school, and I was the opposite—a bookworm,” laughs Shannon, who had thought of majoring in chemistry or chemical engineering in college, but for reasons she still can't explain, decided to put “pharmacy” among her interests in a pre-application to Pitt.

The two reconnected at Pitt, where it was nice to have a familiar face in such a large university. They shared some classes and studied together.

“Before you knew it, we started spending time with each other not studying—going out, dinner and whatnot,” said Chris. About a year into college, the semester before pharmacy school started, they began dating. Right after they graduated in 2009, Chris proposed; they were married a year later, in September 2010.

A professional advantage?

According to the blog Priceonomics, U.S. Census data shows that people who major in pharmacy are more likely than most to marry someone within their own profession. An analysis of 50 majors showed that pharmacy ranks third in the propensity to wed, trailing only theology and general science.

In the case of the University of Pittsburgh's School of Pharmacy, alumni couples credit the small class sizes and supportive atmosphere with fostering their relationships.

“When there are 108 people in class together for eight hours, you know everyone,” says Kyle McGrath, PharmD ('15), a New Jersey native who met his future wife, Reina Fink, at Pitt when the cohort broke into smaller



Chris and Shannon Antypas with daughters Isadora and Ana, and new son, Elias

groups. “Pitt has a great way of connecting us, even in a small environment. Those small groups of six were instrumental in us being able to talk to each other.”

In 2014, their second year of pharmacy school, Reina needed a date for a mutual friend's wedding, so she asked Kyle.

“I wasn't really interested in him as anything more than a friend at the time, but I needed a date. I made it very clear that I wanted to go just as friends. I think I offended him a little bit,” she laughs.

“We had been talking, and I kind of liked her at the time. So when she said it, it was cute and a little bit awkward,” recalls Kyle. “I joke and say I was offended, but I guess it was just nerves.”

But before the wedding ever happened, they began dating, and the relationship grew stronger.

“Reina is a very studious person and pays attention 100 percent in class, whereas maybe I didn't pay attention all the time. So I took advantage of her notes,” Kyle says.

Similarly, Chris Antypas says he was a last-minute crammer, while Shannon was more methodical in her study habits. Still, they managed to motivate each other.

Reina said she and Kyle were somewhat competitive with each other, although Kyle focused on community practice, and Reina was interested in the business administration side of the profession.

In their rotation year, they had to weigh their professional plans against the status of their romance.

“That really helped to develop the relationship, because we had to talk about where things were going over the next year,” Kyle recalls.

They completed one rotation—at a Walgreens in Chapel Hill, North Carolina—together, where they strove to keep their work relationship professional. During his rotations in Pittsburgh, Kyle lived with Reina's family in the suburbs.

“My mom always jokes that I set the standard for my two younger siblings,” Reina says.

After graduation, Reina took a job as a staff pharmacist at a CVS in Raleigh, while Kyle accepted a fellowship at the National Association of Chain Drugstores in northern Virginia. Before he left, he filled Reina's apartment with sunflowers, and when she came home, he proposed through a song that he sang while accompanying himself on the guitar.

The same song was the Reina and Kyle McGrath's first dance when they married in July 2016.

A month later, they relocated to Rhode Island, where Kyle is working at CVS' corporate offices as part of the chain's enterprise product innovation and development team, which creates new services and products to move the retail pharmacy forward. Reina works as a staff pharmacist in the community.

Family business

Early in his college career, Chris Antypas knew that he wanted to one day own an independent pharmacy. He credits Dean Patricia Kroboth and Senior Associate Dean Randy Smith with supporting his vision. Shortly after graduating in 2009, he proposed to Shannon, then moved to Florida to work for a small regional pharmacy there; they married in 2010, and Shannon joined him, working for the same employer.

But he had never quite given up on that dream of living near his family, and the time he spent in Florida was enough to convince him that it wasn't what he wanted. They relocated back to Pittsburgh in January 2011, each taking jobs while he searched for the right independent pharmacy to buy.

The answer came through a woman who attended their church. She was a customer at Asti's South Hills Pharmacy, and she heard that its owner was looking to sell. By leveraging the network he had built, Antypas and his father, Gabe, purchased a half-interest in Asti's in January 2014.

Today, Asti's is a true family enterprise, with Shannon working there part-time and Gabe taking a hands-on role as well. Shannon loves the flexibility of being able to also care for the couple's three children.

"I love it. It's like the best of both worlds. I get to be home with my kiddos and I still get to do what I love at work, which is work in this great environment with great people," says Shannon.

Friends used to think they were crazy for working together, but by now, they're used to it.

"Our experiences going through school together, and spending nearly the entire day with her prepared me for working next to her in the pharmacy," says Chris. "We complement each other well. She's a great pharmacist."

"It is definitely a big part of our lives," adds Shannon.

Mutual support

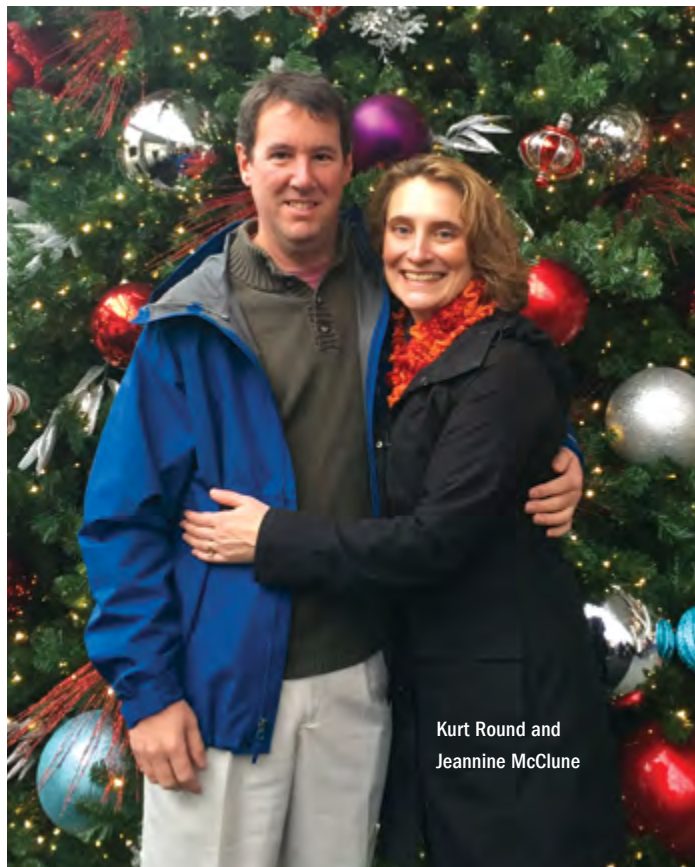
Jeannine McCune and Kurt Round have a relationship that has withstood the test of three decades, not to mention the challenges posed by their two very different careers in pharmacy. They were high school sweethearts in Plum Borough, a suburb of Pittsburgh, and stayed together while at Pitt, from which both graduated with pharmacy bachelor's degrees in 1993.

"He is incredibly bright, where I am incredibly organized. We complemented each other in terms of our skill sets, so we helped each other out with studying," says McCune.

"Dating Jeannine in school was a definite positive for me, because she's a very intelligent person," says Round. "She was there to help guide me and assist me if I ever had questions."



Reina and Kyle McGrath



Kurt Round and Jeannine McClune

As an undergraduate, McCune played a small role in a pharmacokinetic trial led by Kroboth. Inspired by that experience as well as Joe Knapp's immunology class, McCune decided she wanted to build a career in clinical research.

Two weeks after graduation, they got married and moved to North Carolina, where McCune enrolled in a PharmD program.

"It's fortunately becoming more usual now, but at the time, it was atypical to have the female's career driving your geographical location," said McCune. "Kurt has always been phenomenally supportive."

While she was at school and completing her residency and a research fellowship, Round worked as a hospital pharmacist with the Veterans Administration system. He had started working for the VA in Pittsburgh while he was an undergraduate, because the hospital needed technicians due to the Gulf War. Those connections came in handy when he moved to North Carolina, degree in hand.

In 1998, the couple relocated to Seattle, where McCune was hired as a faculty member at the University of Washington School of Pharmacy. Round joined the staff of the Harborview Medical Center, a level one trauma center. Although Harborview typically looked for people with PharmDs or residency training, Round's career has flourished—a testament, he says, to the quality of his education at Pitt.

Today, Round is a clinical pharmacist in the burn and pediatric intensive care units, and McCune is a professor in the Department of Pharmaceutics and the Department of Pharmacy. She is also director of the UW/Fred Hutchinson Cancer Research Center's Pharmacokinetics Lab and a Full Member at the Fred Hutch.

Both have jobs related to the care of critically ill patients, and the fact that they are in the same profession—albeit on different career paths—helps when they have had particularly stressful days at work.

"He doesn't have to explain to me the severity of it," when a difficult case creeps into his personal life, says McCune, whose NIH-funded research focuses on making cancer drugs work better by identifying biomarkers associated with improved survival in cancer patients.

The couple have two children, the older of whom is 17 and starting to look at colleges. She is considering Pitt, though not pharmacy—"too much shop talk," Jeannine says wryly.

Time managers

In hindsight, Round believes the challenging Pitt curriculum not only prepared them professionally, but also helped them juggle their busy lives.

"It was a bit overwhelming, but at the same time, very rewarding," he says. Out of necessity, they learned time management skills that served them well as they balanced two challenging careers with parenthood.

The same holds true for the Antypas family, whose youngest child was born in November. Chris works at the pharmacy seven days a week, and the days are long, with him typically being the last person out the door.

"We live together, we work together, but we don't see each other," he says. But Shannon's earlier experience as a pharmacy manager helps her understand his situation at the pharmacy.



Christian Andreaggi
and Amy Weaver
Andreaggi (Class of 2020)

The couple above are current members of the Class of 2020 and were already married before they entered PittPharmacy. Their hands are feature on the first page of this article.

Did you meet your spouse at PittPharmacy? Do you have a story to share?

Send your experiences to Meg Osborne, omeghan@pitt.edu, for a future follow up story.

"On any given day, it could be a great day or a bad day, and it could be little, simple things that made it happen," says Chris. "We share a mutual respect and that's valuable."

And sometimes, the old competition from their pharmacy school days will surface.

"You can't help it," he laughs, adding that the conversation could go this way: "You think your day was bad? I could solve those problems in the blink of an eye."

"I wouldn't have it any other way," Shannon says.

And her husband agrees: "That's what we signed up for."

ROCK THE BLOCK

The students of American Pharmacists Association Academy of Student Pharmacists (APhA-ASP), in conjunction with Uncover Squirrel Hill, organized a health and wellness fair and block party on Murray Avenue in the heart of Squirrel Hill in October 2016. Hosting seven tents, PittPharmacy students educated over 2,500 members of the community about all aspects of diabetes. They also partnered with Giant Eagle to provide approximately 50 on-site immunizations. The School of Nursing, School of Dental Medicine, Graduate School of Public Health, and School of Health and Rehabilitation Sciences all participated, lending their specific expertise to the event. A special thanks goes to PittPharmacy faculty member Dennis Swanson and alumni coordinator Meg Osborne, advisors on this successful student project.





Where We Are Going

INSIDE SALK HALL & RESEARCH PAVILION



Matthew Gray

Above left: PittPharmacy's Hannah Renner, Philip Empey, Kim Coley, Luke Berenbrok, Melissa McGivney. Above middle: Giant Eagle members sitting left to right: Chiara Gessler, Renee Richardson, Chrissy Jordan; standing: John DeJames

NACDS and CDC Award PittPharmacy and Giant Eagle Vaccination Improvement Grant

A team of PittPharmacy faculty in partnership with Giant Eagle Pharmacy has received an award by the National Association of Chain Drug Stores (NACDS) in conjunction with the Centers for Disease Control and Prevention (CDC) to develop and implement a comprehensive approach to improve vaccination rates in adults in Western Pennsylvania. Kim Coley, PharmD, FCCP is the lead investigator of the PittPharmacy team that also includes Lucas Berenbrok, Philip Empey, Deanne Hall and Melissa McGivney. Coinvestigators from Giant Eagle are Chiara Gessler, Chrissy Jordan, Renee Richardson, and John DeJames. The main aim of this work is to develop and evaluate a value-based model that incentivizes community pharmacies to increase vaccination rates for influenza, herpes zoster, pertussis, and pneumococcal vaccines. The team is working closely with the Pennsyl-

vania Department of Health to increase the frequency with which adult vaccination data is shared between community pharmacies and Pennsylvania's Statewide Immunization Information System. PittPharmacy will be testing a smartphone app to empower patients to manage their vaccination history and promote accurate vaccine data sharing with other health care providers. The final component of this project will be to help prepare community pharmacies to provide vaccines during pandemics. The team will work with local and state health agencies to develop a strategic plan that provides community pharmacies with guidance and tools for pandemic preparedness. The learning from this project will assist patients to have better access to immunizations in their communities through their local pharmacist.

2016 JHF Jonas Salk Fellowship Granted to Gray

Matthew Gray (Class of 2018) was recently selected as a Fellow to participate in the 2016 JHF Jonas Salk Fellowship program. The JHF Jonas Salk Fellowship, led by the Jewish Healthcare Foundation and Health Careers Futures, provides a forum for graduate students across the health sciences to explore innovative ideas and methods for improving health care delivery, engage in interprofessional collaboration to tackle healthcare delivery challenges, and connect with experts and thought leaders in the field. In the 2016 Fellowship Program, entitled, "Master-Designing the Future of Healthcare, Starting Over", students will meet weekly over a two-month period to draw on population health concepts, new technologies, and rapidly growing data resources to imagine and create a master design for a new health care system, from scratch. The fellowship experience will complement Gray's past coursework in pharmacy, participation in the Research ARCO, and engagement in mentored research projects with PittPharmacy faculty, as he pursues a career in pharmaceutical outcomes and economics.



Cody Moore, Christopher Ensor, Raman Venkataramanan, Rujuta Joshi.



Justin Saver and Michael Pinto

PittPharmacy Awarded Cancer Institute Grant

Professor Raman Venkataramanan, PhD, Assistant Professor Christopher Ensor, PharmD, BCPS, Transplant Pharmacy Fellow Cody Moore, PharmD, BCPS, and PhD Candidate Rujuta Joshi, BS, are the recipients of a 2-year research grant awarded by the University of Pittsburgh Cancer Institute–Institute for Precision Medicine.

Their research will focus on precision guided dosing of mycophenolate mofetil in lung transplantation. Mycophenolate mofetil is not routinely monitored among lung transplant recipients due to the duration of blood sampling and cost. The molecular target of mycophenolate mofetil is inosine 5'-monophosphate dehydrogenase (IMPDH). The objective of the study is to improve clinical outcomes in lung transplant recipients by using an IMPDH-guided approach to mycophenolate mofetil dosing in lung transplant recipients.

Pringle and PERU Receive Educational Grants

Associate Professor Janice L. Pringle, PhD received a contract with the U.S. Department of Veterans Affairs titled Pharmacy Readmissions Project Task Order: Application to Reduce Outpatient Return Visits and Improve Access. The Program Evaluation Research Unit (PERU) will work in collaboration with

the Pittsburgh Veteran's Engineering Resource Center (VERC) to develop and evaluate a "Health Pal" application that will employ both smartphone and telephonic components.

Pringle has also received a grant from Blair County Drug and Alcohol Program in which the PERU program will conduct one Screening, Brief Intervention, and Referral to Treatment (SBIRT) training in Altoona, Pennsylvania for the Altoona Family Physician Medicine residency and new providers using PERU's online curriculum.

Two PittPharmacy Students Selected for Inaugural Class of PQA-CVS Health Foundation Scholars

Michael Pinto (Class of 2019) and Justin Saver (Class of 2018) are members of the inaugural class of Pharmacy Quality Alliance (PQA)-CVS Health Foundation Scholars. The PQA-CVS Health Foundation Scholars program is a new initiative designed to foster student interest in performance measurement and quality improvement. As part of their applications, student pharmacists were required to submit a concept for a unique project they will develop throughout the academic year with the assistance of a mentor, and then present during the PQA Annual Meeting in May 2017.

"We received a number of strong applications and are excited to see how our scholars learn, grow, and develop as quality-minded professionals over the next year," said Hannah Fish, Associate Director for Education and Communications at the Pharmacy Quality Alliance.

The goal of this scholarship program is to support and recognize student excellence in projects centered on quality-related initiatives; encourage, promote, and improve education surrounding quality measures and value-based models of care; and foster student interest and engagement in the development of quality-related initiatives. PQA is a non-profit alliance with over 200 organizations. Its mission is to improve the quality of medication management, implement performance measures, and recognize examples of exceptional pharmacy quality.



Da Yang

Yang Awarded NIH Career Development Grant for Ovarian Cancer Personalized Therapy

PittPharmacy faculty member Da Yang, MD, PhD was awarded a grant funded by NIH under the RPCI-UPCI's SPORE in Ovarian Cancer to research ovarian cancer personalized therapy. As the most lethal gynecological malignancy in the United States, ovarian cancer is notorious for its drug resistance. In Dec 2014, the U.S. FDA approved olaparib (a PARP inhibitor) for the treatment of ovarian cancer. However, the olaparib is specifically approved for treatment of BRCA1/2 mutated patients, which account for only 15% of OvCa patients. The question remains: can PARP show a therapeutic effect for the 85% of BRCA wild-type (BRCAwt) ovarian cancer patients?

In the funded project, Yang and his colleague Robert Edwards, MD, Director, Gynecologic Oncology Research, Magee-Womens Hospital of UPMC will investigate the synergistic effect between recently FDA-approved olaparib and a newly discovered miRNA gene (miR-506) in the vast majority of BRCAwt ovarian cancer patients. Successful completion of the study will expand the proportion of the patients who can benefit from the olaparib, and help to better stratify the population of patients eligible for clinical trials for other PARPis in the near future.

Q&A

MIKE UMBLEBY ('96)



Give us a little bit of background and history about yourself:

So, to start, I am from Hollidaysburg, Pennsylvania. In other words, I grew up in Penn State country, but I am proud to say I am a Pitt fan through and through! After high school, I ran track and cross country on a scholarship at Pitt and attended pharmacy school at the same

time. My Pitt Pharmacy degree was the coolest thing I got out of my athletic career, for sure. After Pitt Pharmacy, I had a choice between a job in my hometown at a small independent pharmacy, or I could go and work for Walgreens. I spoke with a gentleman who worked in the Arizona market and the company was growing fast, so I made the decision to go out there and work for them. I worked for Walgreens in the Phoenix market and moved through the ranks, before I had the opportunity to become a District Pharmacy Supervisor, in charge of roughly 35 stores in that market. After a few years, we started opening Walgreens in Pittsburgh, which was exciting for me, so I asked to go back, and thankfully got to reestablish my relationship with Pitt and did a lot of recruiting and events. Then in 2008, I took an opportunity to work in our corporate headquarters, here in Deerfield, Illinois. They had a role that was responsible for pharmacy training across the chain. Most recently, I've been involved in leading change for the company. My official title is senior director of pharmacy renewal, and in this role I am responsible for leading a multiyear initiative to replace their pharmacy and inventory management systems.

You said earlier that you only had one interview to work for Walgreens, so it sounds like maybe your role was predestined, but was there something that inspired you to go into this particular area of pharmacy?

I knew I liked retail pharmacy because as an intern through school, I worked primarily in retail, but I think the inspiration kind of came from my dad's best friend when I was growing up. He went to Pitt Pharmacy and worked for the local independent down the street. I just remember him being this dedicated pharmacist and knowing that's where I wanted to be. In my mind it's the front line of health care; you're so accessible to the patient, and that to me is very powerful. To do that for a company that I didn't know a lot about, but knew that they were growing, and in a different part of the country...it all just kind of clicked.

What are some of your day-to-day obstacles and how do you overcome them?

I am a pharmacist by education and by practice, but my role today wears more of a business cap. I've had enough experience with the company that I'm very comfortable with the business aspect, but now I have to translate that business hat and the health care hat to colleagues who are involved with the technology side. We speak two different languages, so the goal becomes, "how do we communicate together to speak one language."

How do you feel you are changing the environment at Walgreens? Has your role with Walgreens changed your approach to pharmacy?

Walgreens is becoming more agile in its approach to technology, very much like many of the digital companies that exist today. ... While this isn't necessarily tied to health care or pharmacy, per se, it enables us to react to the changing health care environment much more rapidly. The needs and wants of the patient are constantly changing, so I think utilizing partnerships and technology to predict those changes helps us to react at a similar clip.

Did you have a specific class or experience that prepared you for your career?

You're asking me to go way, way back! Honestly, biochem. I did really well in that class and I had peers who didn't, and what that did was give me a lot of confidence and reinforce that I could do this. What's amazing, too, is when you are taking exams and really in the thick of it all, you don't realize the power of what you know. Being able to apply that in real time—that's when you go, "oh wow, I actually know what I'm talking about" which is really cool.

How has your view of pharmacy evolved?

I think the biggest thing is how we need to transform the retail pharmacy industry. What I mean by that, and this may be a bit sacrilegious, but we shouldn't be asking a pharmacist to make sure that the red pill coming from the stock bottle is the red pill that ends up in the patient's bottle. It's not that that's not important, because it's probably THE most important thing that needs to happen, but we need the pharmacist to be establishing relationships with patients. They need to be using the information they were trained to share and be knowledgeable about. Let's make the pharmacist the centerpiece of the patient's experience and let the pharmacist spend their time sharing their knowledge, helping the patient, and just improving patient care. I think it's also essential to make the pharmacist an integral member of the health care team. I know Walgreens is advocating for provider status and I know pharmacy schools, medical schools, nursing schools ... they're beginning to partner so they become comfortable working together right out of the gate. I think getting the transactional work out of their hands and getting them to be seen as a key component of the health care team are the the biggest transformations I've seen.

Moving forward, what changes do you envision for the future of pharmacy?

I see pharmacists becoming providers and introducing technology to address real-time problems and solutions. Also, moving more and more into personalized medicine for diagnoses and outcomes will be huge.

And finally, what advice do you have for our future pharmacists?

Be passionate. And be patient. Good things happen when you work hard.

NEW FACES: FACULTY & STAFF

**Inmaculada (Inma) Hernandez**

Assistant Professor, Pharmacy and Therapeutics

Inmaculada Hernandez earned her PharmD from the University of Navarra, Spain, and she completed her clinical training in the North Middlesex University Hospital and Green Light Pharmacy, both in London, UK. Hernandez was awarded her PhD in Health Services Research and Policy from the University of Pittsburgh Graduate School of Public Health, with a concentration in Quantitative Methods. Her doctoral dissertation focused on the real-world safety, effectiveness and cost-effectiveness of non-vitamin K antagonist oral anticoagulants.

Hernandez joined the School of Pharmacy in August 2016 as Assistant Professor of Pharmacy and Therapeutics with a focus on outcomes research. At Pitt Pharmacy, she will expand her pharmacoepidemiology and pharmacoconomics research. Specifically, Hernandez is interested in the use of large data sets and advanced data mining techniques to study pharmaceutical outcomes. With regard to policy, Hernandez is interested in value-based health insurance design and the study of patterns of use of treatments with high evidence versus low evidence.

**Bryanna Snyder**

Administrative Assistant for the Center for Clinical Pharmaceutical Sciences

Bryanna Snyder began her career at PITT as the undergraduate secretary for the Civil and Environmental Engineering Department and was later promoted to the Academic Administrator. Her responsibilities for both undergraduate and graduate students included class registration, exam scheduling, and organizing dates for student events. During her five years of service at the Swanson School of Engineering, Snyder received the Swanson School of Engineering Staff Recognition Award in 2015, recognizing her outstanding job performance and service.

Snyder has lived in Pittsburgh for eight years, and was born and raised in California. She is currently continuing her education focusing on digital media and is excited to be part of the PittPharmacy staff. Snyder provides the center faculty members with administrative course support of team-taught courses and support for research-related activities in addition to support for the Associate Dean of Graduate and Postdoctoral Programs and the Associate Director of the Institute for Personalized Medicine.

**Brian Zalar**

Director of Finance

Brian Zalar joined the School of Pharmacy in August 2016 as the director of finance. Prior to joining the School of Pharmacy, Brian worked for over eight years within the University's Internal Audit Department where he advanced from a student intern to a senior auditor. As a senior auditor, Brian was responsible for planning, coordinating, and executing audits of various University departments and functions in order to evaluate the effectiveness of internal controls, the reliability of financial data, and the degree of compliance with management policies and external regulations. Brian holds a BSBA with a major in accounting from the University of Pittsburgh College of Business Administration and an MBA with a concentration in finance from the Joseph M. Katz Graduate School of Business. Zalar provides financial administration within the School of Pharmacy. His responsibilities include financial reconciliations and oversight as well as financial analysis that contributes to the long range planning for the school. Zalar provides financial administration within the School of Pharmacy.

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NEWS FLASH!

Don't wait to update your email information!

Get the next electronic issue.

Contact Meg Osborne at omeghan@pitt.edu



IN MEMORY FUND

To establish an award in memory of an alumnus, family or friend that will provide a deserving pharmacy student needed funds please contact Meg Osborne at omeghan@pitt.edu.

IN MEMORIUM

RECENTLY DECEASED SCHOOL OF PHARMACY ALUMNI

(AS OF DECEMBER 21, 2016)

John Arbuckle Jr. - BS '51

William R. Armor - BS '56

James D. Cooper - BS '52

Sidney E. Corbin - BS '55

Vera K. Corey - BS '38

Max J. Critchfield - BS '53

Weyandt H. Dettis - BS '51

Ronald B. Friedken - BS '60

Brian A. Hurley - BS '74

Laura A. Lorek - PharmD '03

John J. Mennow - BS '58

Maurice Mervis - BS '40

James A. Moss - BS '56

Ernest R. Paholsky - BS '57

Dominick D. Sallèse - BS '52

Richard L. Snively Sr. - BS '59

Howard E. Sulzer - BS '57

Robert J. Testa - BS '48

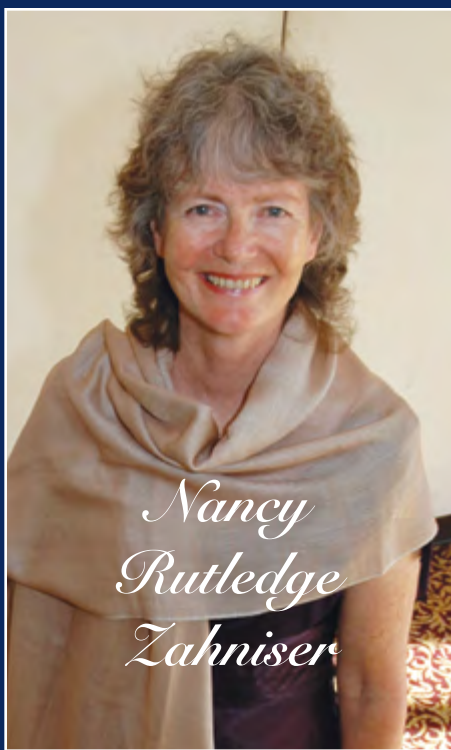
Richard F. Urbani - BS '58

Susan R. Van Buren - BS '75

Samuel Wallwork Sr. - BS '50

Nancy Rutledge Zahniser - PhD '77

In Memorium



Nancy Rutledge Zahniser, PhD, passed away peacefully at her home in Denver, Colorado on May 6, 2016 after being diagnosed with neuroglioblastoma in December 2014. Zahniser received her BA in chemistry from the College of Wooster in Ohio in 1970, and spent one year teaching high school at the Woodstock School in Mussoorie, India. She returned to the U.S. for her graduate studies under Dr. Israel Hanin in the Department of Pharmacology at the University of Pittsburgh, School of Pharmacy where she received a PhD in pharmacology in 1977. Zahniser studied brain acetylcholine synthesis and completed postdoctoral training in the lab of Dr. Perry Molinoff at the Department of Pharmacology, School of Medicine at the University of Colorado Health Sciences Center in Denver, Colorado. She was quickly hired by the UCHSC Department of Pharmacology as an instructor, and then as a tenure-track assistant professor in 1981. She received tenure just ten years later in 1991.

Zahniser was an accomplished scientist, focusing most of her research on better understanding the brain neurotransmitter dopamine (DA) and the addictive drugs that alter its function. Her research has been continuously funded by the National Institutes of Health (NIH) since 1981. Zahniser was committed to her graduate students and postdoctoral trainees, mentoring the research projects of nine thesis students and 22 postdoctoral fellows in her lab. Together with her students, Zahniser has published over 150 papers, reviews, and book chapters.

Nancy Rutledge Zahniser received numerous awards over the span of her career, and received the title of Distinguished Alumna from the University of Pittsburgh School of Pharmacy in 2009. In 2013, the "Zahniser Addiction Symposium" was held in her honor at the University of Florida Center for Addiction Research and Education.



Maurice Mervis, passed away on Monday, August 15, 2016 at 97 years of age. Born in New Castle, Pennsylvania to eastern European immigrant parents, Maurice spent his life in Western Pennsylvania, first graduating from the School of Pharmacy in 1940, and then establishing a respected and revered career as a hard-working pharmacist at Hoffman's Professional Pharmacy in Beaver Falls. Later, the store became known as Mervis Professional Pharmacy. Maurice loved his work as a pharmacist and was recognized for his accomplishments in 1982, when Governor Richard L. Thornburgh appointed him to chair the State of Pennsylvania Pharmacy Board. The School of Pharmacy honored his career and passion to his practice in 2007, when he was recognized as a Distinguished Alumnus.

Maurice is survived by his wife of 68 years, Claire, his four children, five great-grandchildren, and one great-great grandson. We at the School of Pharmacy are thankful for Maurice's friendship.

John Joseph Mennow, age 80, passed away Monday, November 28, 2016. A 1958 graduate of the School of Pharmacy, John spent most of his life living in the greater New Kensington area. During his career, he first worked as a pharmacist for Palmer's Drug, before owning and operating New Ken pharmacy. Most recently, Mennow was a pharmacist for Thrift Drug. Mennow was a phenomenal mentor, and inspired many, including his nephew, Jim Augustine (PHARM '93), to enter the field of pharmacy. John is survived by his wife, Barbara, of 58 years, a daughter, three sisters, and three brothers.

Check It Out

Bress Appointed Diversity Committee Member

Kathryn Bress (Class of 2018) was appointed as the graduate and professional student representative for the University of Pittsburgh's Year of Diversity Steering Committee. The committee involves university administration, one undergraduate representative, one CGS representative, and one graduate/professional representative.

The Office of Diversity and Inclusion (ODI) provides leadership, partnership, support and resources for many diversity initiatives at Pitt. Many key partners throughout the University are dedicated to fostering diversity and inclusion. ODI also works to ensure equal opportunity and compliance with related governmental requirements and anti-discrimination laws, and it investigates discrimination, harassment, and accommodation complaints and grievances.



Kathryn Bress



Julie Mandel

3

Of the 37 pharmacists honored with the title "Fellow", during the ASHP Summer Meetings and Exhibition in Baltimore, three are alumni of the University of Pittsburgh pharmacy residency program: Jeffrey M. Brewer, PharmD, BCACP ('00); Christina E. DeRemer, PharmD, BCPS ('03, '04); Paul H. Juang, PharmD, BCPS, BCCCP ('04).

Mandel Receives Education and Training Award

PittPharmacy's Julie Mandel (Class of 2018) has received a travel award from the Education & Training Practice & Research Network (EDTR PRN) of American College of Clinical Pharmacy (ACCP) to attend the annual meeting in Hollywood Beach, Florida, October 21-25, 2016. Mandel was selected as one of only two students and one resident in the PRN nationwide receiving the travel scholarships.

The mission of the EDTR PRN is to promote dialogue and interaction among members and to develop programs that enhance the knowledge and skills of members involved in education and training within didactic and clinical pharmacy.

Mandel's interest is in pharmacy academia. Her PittPharmacy experiences include the development and implementation of a SimMan presentation at multiple high schools. The team has created a role-play script to show students how to treat patients in the emergency department.



2016 Preceptor of the Year

Susan J. Skledar,
RPh, MPH, FASHP



2016 Preceptor of the Year

Gerard P. Mascara,
PharmD



Stanford I. Cohen Teacher of the Year

Scott R. Drab, PharmD,
CDE, BC-ADM



Graduate Program Faculty of the Year

Robert B. Gibbs,
PhD

Li Wins Top Overall Safar Symposium Poster Award

PittPharmacy graduate student Lingjue Li was awarded the Top Overall Poster at the 14th Annual Safar Symposium, held at the University Club on May 16-17, 2016. The Safar Symposium is a two-day multi-departmental research conference held jointly by the Safar Center for Resuscitation Research and the Peter M. Winter Institute for Simulation Education and Research (WISER) in the University of Pittsburgh School of Medicine.

Li's poster was titled No-reflow Phenomenon: Alteration of Cerebral Microcirculation After Cardiac Arrest in Developing Rats. Li presented her poster with novel findings in cerebral microcirculation after pediatric cardiac arrest as a part of her ongoing project. She observed and characterized the no-reflow phenomenon first time in vivo after global ischemia. Utilizing the two-photon microscopy, the effect of the no-reflow phenomenon was evaluated on red blood cell velocity, plasma transit time, and microvessel diameter change. This work is significant since it demonstrated the alterations in the cerebral microcirculation after pediatric cardiac arrest and therefore revealed potential therapeutic targets to improve the neurological outcome for these patients.



Lingjue Li



Rebecca Wytiaz, Olivia Marchionda, Nicolette Diehl, Marissa Badzik, and Jennifer Fever

PittPharmacy Students Well Represented on PPA Board

Five PittPharmacy students have recently been elected to the 2016-2017 Pennsylvania Pharmacists Association Student Advisory Board. Marissa Badzik (Class of 2018) will serve as the West Director and Jennifer Fever (Class of 2017) as the Vice Chair. Class of 2018 members Rebecca Wytiaz will serve as the Foundation Director, Olivia Marchionda as the Corresponding Secretary, and Nicolette Diehl as Recording Secretary.

Officers are selected based on their abilities and interest in leading the academy, advancing student interests, and building student involvement in PPA. The members of the Student Advisory Board regularly hold brief business meetings at the PPA conferences, allowing the students to have a voice in PPA policy and activities.

Wolfe, a Top Leader for Biologics

Greg Wolfe ('09) was recently promoted as the Director of Biologics' Specialty Pharmacy Services. In addition to providing oversight and leadership to all aspects of the company's Specialty Pharmacy Services, Wolfe is tasked with executing strategic initiatives within the company, and ensuring compliance with all federal, state, and other regulatory accrediting agencies. Wolfe serves as a cochair for the company's Clinical Oversight Committee and is integral in cultivating and executing Biologics' clinical initiatives and patient care programs.

Pitt Rx Alum on a Mission

Adam Martin ('12) traveled to Honduras as a part of an interdisciplinary team on a medical mission trip, serving as a pharmacist to dispense medicine and counsel patients. Martin and his fiancée Christina Tarantola served as pharmacists alongside a physician, nurses, a physician assistant, counselors, and missionaries. Martin and team traveled to two villages: Montevenido, which was on the outskirts of a 15,000 pineapple plantation, and La Linea, deep in the Honduran jungle. "It was so rewarding to be able to use the skills I have learned at Pitt Pharmacy and in my practice to serve these patients—and to do it alongside other health care professions, as well."



Adam Martin and Christina Tarantola

Recent Graduate Published in The Lancet Oncology

Joe Fiore ('14), was recently published in *The Lancet Oncology* for his work in lung cancer. Fiore and his team yielded positive results in the first randomized controlled trial that combined a PD-1 inhibitor with chemotherapy for the first time in NSCLC patients. The report can be found here: www.thelancet.com/pb/assets/raw/Lancet/pdfs/S1470204516304983.pdf

Manios Celebrates 50 Years of Pharmacy

Pitt Pharmacy alumnus, Frank Manios ('57), celebrated 50 years at his independent pharmacy, Franklin Pharmacy & Health Care. Manios, 83, spent several years working for former Pittsburgh-based chain, Thrift Drug, before opening his first pharmacy 50 years ago. He then built the existing Franklin Pharmacy building in Warren, Ohio, in 1970. In the late 1970s, Manios expanded his drugstore to include medical supplies. In addition to his career and livelihood as a pharmacist, Manios is active in several local organizations, including the Salvation Army, Trumbull 100, and American Hellenic Educational Progressive Association. Throughout his lifetime, Manios has also served on the boards of numerous charities and local community organizations, and has been honored for his work at his local church.



Joe Fiore

Investing in the Future

Shoenthal Received and Now Gives



Don and Agnes Shoenthal

Donald R. Shoenthal ('52) will tell anyone that he owes Pitt a debt of gratitude for the education he and other Pitt alumni in his family received. His PittPharmacy education has afforded him many opportunities to give back and help future generations of pharmacists.

Shoenthal was born in New Paris, Pa. and has lived in western Pennsylvania all of his life. As a young high school student, he went to work in Ickes Drug Store in Bedford, Pennsylvania. It was there he met Sheldon Ickes, a Pitt Pharmacy School alumni (Class of '43), who became Shoenthal's mentor, encouraged him to attend the University of Pittsburgh, and, more importantly, encouraged him to go on to the School of Pharmacy. Shoenthal took Ickes' suggestions and has never looked back. During his time at PittPharmacy, Shoenthal was and still is a proud member of pharmacy's academic honor society Rho Chi, and the oldest and largest national pharmacy fraternity, Kappa Psi.

Shoenthal began his pharmacy career working for Peoples Drug in Altoona as a practicing pharmacist for five years. His career path led him to Merck, Sharp and Dohme (later known as Merck & Co.) as a pharmaceutical representative in charge of a five-county territory in Western Pennsylvania and parts of West Virginia and New York. Shoenthal stayed with Merck for the rest of his career. After being a pharmaceutical rep, he was promoted to being a hospital representative in the Pittsburgh area for all of the major teaching hospitals. Later, Shoenthal was promoted to District Manager for Merck Human Health Division responsible for a dozen other representatives covering Western Pennsylvania, parts of Ohio, West Virginia, and New York. For three years Shoenthal was the top district manager in the United States for sales.

Don Shoenthal married Phyllis Funk and they had two children, a daughter Dana who is a PittPharmacy alumnae, (Class of '86), and a son Donald Jr. who graduated from the University of Pittsburgh with an honors degree in

Chemistry in 1982. After 50 years of marriage to Phyllis, Don lost his wife in 2003.

While attending a high school reunion in 2005, Shoenthal became reacquainted with Agnes Imgrund, who after 50 years of marriage and raising three children, had lost her husband, Donald Bracco in 2002. Agnes remembers meeting Don in high school when she was 13 years old and a year behind Don in school. For over 50 years, both had gone their separate ways, married, and had families. After dating for two years, Don and Agnes married in 2007.

Don and Agnes Shoenthal love traveling. They have gone on three 120-day world cruises, and have taken many river cruises through China, Russia, and Europe. They have sailed to Nova Scotia, the Scandinavian countries, Alaska, Antarctica, and visited Petra and Dubai. Ten years ago they honeymooned in Italy and next spring they will be celebrating their tenth anniversary back in Italy.

Don Shoenthal has been a continuous donor to PittPharmacy. He is a proud member of the Chancellor's Circle and the 1787 Society. He has also established a Charitable Gift Annuity that pays him a lifetime income from his gift and in the future, the remainder will become a gift to the School of Pharmacy.

A Charitable Gift Annuity is an easy way to provide an immediate income tax deduction for the donor's portion of the gift. It pays income every year to the donor, and in the end, benefits the School of Pharmacy.

For more information on Charitable Gift Annuities, please contact June Stine at jus73@pitt.edu or 412-648-0185.

CONFERENCE ROOMS NAMED



Renée and Randy Juhl stand before the slide screen showing the title of the conference room recently named in recognition of their philanthropic generosity and their service to the School of Pharmacy. Randy Juhl was the dean of the School of Pharmacy from 1986 to 2002. Renée Juhl ('78) served as the President of the School's Alumni Society Board and gave new energy to the organization during the mid-1980s. The Randy and Renée Juhl Conference Room is primarily used by faculty and students associated with the Clinical Pharmaceutical Sciences Center. It is located on the second floor of Salk Pavilion, the new research facility.



Some alumni will remember Reuben Helfant ('23), cofounder and president of Thrift Drug, as a man who understood the importance of preparing the next generation of pharmacists. Many other alums will remember benefiting from the Thrift Drug scholarship-loan-training program for student pharmacists. Throughout their marriage, the Helfants made it a priority to give back to the community and the University that had played such instrumental roles in their successes. Shortly after Reuben Helfant's death in 1968, Ethel Feldman established the Reuben Helfant Scholarship at the School of Pharmacy. Prior to her own death, she made an additional gift.

In honor of their legacy of giving, the School of Pharmacy has named the Reuben and Ethel Helfant Leadership Conference Room located on the eleventh floor of Salk Hall. Their daughter, Sherry Helfant Malone donated the portrait of her father, his diploma, and his pharmacy license which is proudly displayed in the conference room. Sherry Helfant Malone has continued her parents' tradition of philanthropy by being an annual donor to the school and including the School of Pharmacy in her will.

Alumni Society President's Message

What does "Hail to Pitt!" mean to you?

Personally, the avenues in which Pitt has influenced my own life are abundant and obvious. My journey began by stepping foot on campus in the fall of '97 after my father convinced me to visit Pitt since it was pivotal to other pharmacists in our family, Gary Garofoli ('84) and Jane Garofoli ('85). A few years after my own graduation in 2004, I was blessed to meet my amazing wife, Gretchen Kreckel Garofoli ('09). I married into a family of Pitt pharmacists, my in-laws, Peter Kreckel ('81) and Denise Kreckel ('81). Peter Kreckel received Pitt Pharmacy's 2015 distinguished alumni award. We are now enjoying what the future may bring for our son, Pitt panther Luke Garofoli (Class of '??). In other words, my answer is "Everything."

I am honored to serve as president of the Alumni Society for the 2016-2017 academic year, bringing to you my enthusiasm for our trusted profession and our hailed university. On behalf of the Alumni Society Board, I would like to thank each of you for your continued support, involvement with, and commitment to our current student pharmacists and also each other as alumni. In this rapidly changing and competitive health care landscape, our alumni have a proud history of involvement, whether be through donations, teaching, mentoring, serving as a preceptor, or attending alumni events.

Each year, the Alumni Society hosts several events that promote interaction between student pharmacists and alumni. I encourage you to consider joining us for the annual career roundtable, the Joseph Gatto Scholarship Golf Outing, and planned continuing education opportunities throughout the year. Stay connected to the Pitt School of Pharmacy through the school's Web site, Facebook, Twitter, and LinkedIn (In fact, link with me on LinkedIn as well).

Lastly, I impart you with the reminder that YOU are PITT, every day and every breath, changing practice day in and day out, whether saving uncountable lives through the development of the next Polio vaccine equivalent, or discussing the use of a statin with one single patient, YOU make a difference.

Hail to Pitt!

Mark Garofoli, PharmD, MBA, CGP



Mark Garofoli ('04) and wife, Gretchen Kreckel Garofoli ('08), strike a pose at RxTravaganza 2015.

PHARMACY ALUMNI SOCIETY BOARD 2015-2016

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Rish Arora (Class of 2020)

Sophia Cothrel (Class of 2019)

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Alumni Coordinator
Meg Osborne

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**AT GRADUATION,
98.2% HAD SUCCESSFULLY
LAUNCHED THEIR CAREERS:**

50%

accepted positions in community or specialty practice

36.1%

secured residencies—a 97.5% match rate

1.9%

placed in residencies in the Public Health Service

4.6%

were selected for fellowships

2.8%

accepted positions in hospital practice

1.0%

began careers in the military

0.9%

accepted a position in the industry

0.9%

continued to graduate school

PITTPHARMACY



University of Pittsburgh

School of Pharmacy

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3501 Terrace Street

Pittsburgh, PA 15261

2017

*is a great year
to be part of Pitt Pharmacy!*

GOLF OUTING - MONDAY, MAY 15, 2017

HOMECOMING - FRIDAY, OCTOBER 13, 2017

RXTRAVAGANZA GALA 2017 - FALL 2017

Look for more information soon!
