

The PharmaBurgh

The Pitt-Pharmacy AAPS Student Chapter's Newspaper

NICE TO SEE YOU HERE

From Dr. Poloyac:

Welcome all graduate students and post-doctoral associates to the 2019-2020 academic school year!! With the incoming class we will have a total of 15 postdoctoral associates, 45 PhD graduate students, and 34 masters of science graduate students in the school of pharmacy. We have students who have come to Pitt from all parts of the world, which creates a culture of diversity and inclusivity, which we embrace within our school. It is our motto that "*diversity drives discovery*" and through the wealth of experiences each of you bring to your training, we collectively grow as researchers, collaborators, and colleagues. For some of you this will be the year that you complete your graduate or post-doctoral training and embark on your professional career. For others, this will be the year you reach a major milestone such as the completion of your comprehensive exam or the publication of your first paper. And for others, this is the year that you entered our program. No matter what stage of training you are entering it is our goal to:

·Intellectually challenge you to reach your full potential

·Support you during times of difficulty

·Serve as lifelong mentors throughout your training

·Celebrate with you during times of success

It is our programmatic goal for every student to reach their full potential in preparation for an exciting and productive career. I also hope that you form relationships with friends and mentors that last a lifetime. As the fall approaches, I want to welcome each of you to what promises to be an exciting year in your personal and professional development. Hail 2 PittPharmacy!!!!

Samuel M. Poloyac, PharmD, PhD, FCCM. Professor of Pharmaceutical Sciences and the Associate Dean for Graduate and Postdoctoral Programs



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If you would like to write an article for the PharmaBurgh, please contact Yang Xie (yax15@pitt.edu). Suggestions, concerns and complaints are all welcome!

From Dr. Venkat:

Congratulations to all the graduates. We wish you all the very best as you pursue a new path in your career. Pitt has prepared you well to be successful wherever your career takes you, be it academia, industry or regulatory agency. As you transition from being a student to a responsible citizen of the world, keep in mind that we have been fortunate and blessed to be here and to pursue our passion. Not everyone in this world is as fortunate as we are. So recognize this and make every attempt to help others and make a difference in the lives of others. Also be thankful to everyone who has helped you along the way.

A warm welcome to the new graduate students to our program. We look forward to work with you during the next few years. Opportunities are open to you when you attend the university of Pittsburgh. Knock on the doors and get some exposure and experience. Take advantage of the various opportunities that you come across and find your passion and pursue it. Opportunities to achieve greatness is within you.

Being part of a graduate program in a major university comes with some challenges as well. Seek the help of other graduate students in the program, faculty and staff. We are here to help you. In the beginning focus on the course work and then ease in to your research work. At the same time do not forget to take care of yourself. Keeping good health is fundamental to a joyous academic life. Wish you all the very best!

Raman Venkataramanan, Ph.D; FAAPS; FACC. Professor of Pharmaceutical Sciences and Pathology; Director of TDM and Toxicology, UPMC; Director of Clinical Pharmacokinetics Laboratory

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From Dr. Folan:

Congratulations on your acceptance to the School of Pharmacy and welcome to the Graduate Program in Pharmaceutical Sciences. I'm certainly looking forward to meeting you and I hope you are looking forward to this new stage in your life.

Graduate school will be a new experience for most of you and you will learn very quickly that it is unlike undergraduate or professional degree programs. For some, it may be your first time away from home in a new country or city, a new climate, a new language. At times it will be challenging, at times it will be difficult, at times it will be fun! But it will always be worthwhile. You will make friends and connections that will stay with you for the rest of your career.

Rest assured that we are here to help you settle in and, most importantly, to succeed. You will meet many of our faculty, staff, and students at orientation in August. In the meantime feel free to contact us with any questions or concerns you may have before that time.

Welcome and Hail to Pitt!

M. Maggie Folan, PhD

Director, Graduate Program in Pharmaceutical Sciences



PittPharmacy

AAPS NEWS

Voices from the trenches



Targeting lipid metabolism and signaling in Alzheimer's disease.

On March 22nd, 2019, Dr. Jie Gao, Assistant Professor from the Department of Neuroscience, Ohio State University, did a home-coming presentation with the title "Targeting lipid metabolism and signaling in Alzheimer's disease." Dr. Jie Gao received his PhD degree in pharmaceutical sciences from the University of Pittsburgh School of Pharmacy under the guidance of Dr. Wen Xie. After graduation, he joined the lab lead by Dr. Peter Tontonoz, Howard Hughes Medical Institute, University of California, Los Angeles. As an alumnus of Pitt Pharmacy as well as a young scientist who just started his career as a primary investigator (PI) in a state university, besides his current academic work, Jie also shared with us his experience in self-improvement, grant application, and job hunting. Being open minded and always curious about new breakthrough in sciences went through up and downs in his life and research. Courage to take challenges in the field he is not familiar with drove him to seek a new area in neuroscience rather than stay in drug metabolism.

Role of Quantitative Pharmacology in End-to-End Development of Therapeutic Proteins at Janssen.

On April 10th, Dr. Honghui Zhou, US Pharmacometrics Head at Janssen R&D, Johnson & Johnson, visited our school and made a talk on "Role of Quantitative Pharmacology in End-to-End Development of Therapeutic Proteins at Janssen." During his talk, Dr. Zhou introduced pharmacometric studies on biotherapeutics in Janssen as well as the successful journey of Stelara and Tremfya by using modeling and simulation to improve the understating of efficiency and safety, and help with the optimization of dosing, administration route, even the expansion of indication. At last, Dr. Zhou pointed out that the key expertise as a pharmacometrician should be 1) Expertise in exposure-response (longitudinal, landmark) modeling, 2) Knowledge of mechanistic and physiological PK/PD modeling, computational skills, and advanced modeling software. During lunch meeting, Dr. Zhou also shared with us his personal opinions on self and career promotion in industry, as well as his wisdom in balancing all parts of his life by setting different priorities- faith, family, work and learning.



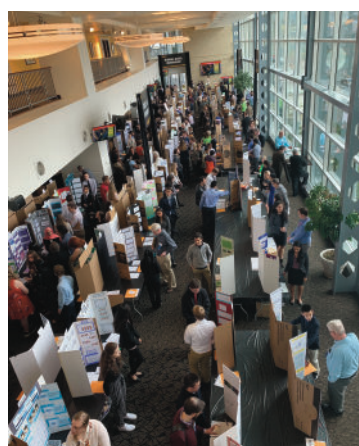
Featured Alumni

Dr. Jie Gao



Dr. Jie Gao, Assistant Professor at Ohio State University

Volunteer Opportunities



Category Award Judge at the 80th Covestro Pittsburgh Regional Science & Engineering Fair

The Covestro Pittsburgh Regional Science & Engineering Fair celebrated its 80th year of open competition of research projects in the fields of science, mathematics, and engineering on March 29-30, 2019 at Heinz Field. This competition is open to all students in grades 6-12 from the 21 counties within Western Pennsylvania and Garrett County, Maryland. The Science Fair has been a Pittsburgh tradition since 1940. It is also the third oldest science fair in the United States under the affiliation of Society for Science and the Public, which runs the Intel International Science and Engineering Fair (ISEF) and the Broadcom MASTERS middle school competition. Graduate students at Pitt Pharmacy volunteered to be Category Award Judges at the science fair and had a wonderful experience in meeting with amazing young scientists who are the future of our world.

AAPS News By Yang Xie, MS

Featured Alumni By Zhuoya Wan, MS

1. You've won K99 training grant which is a great accomplishment. Tell us about your experience in grant application. Why did you decide to apply this grant?

A: As my career goal is to be an independent researcher, I planned on applying for K99/R00 award at the beginning of the fourth year of my postdoc training. At that time, I had one first-author article published, and NIH just announced the big boost in funding dedicated to Alzheimer's research. My postdoc advisor Dr. Peter Tontonoz at UCLA is very supportive when I told him my plan. All these factors worked in my favor, and I felt that this would be a good opportunity for me to apply for K99/R00 award.

2. The competition among peers is fierce, then how do you know you're competitive to win the grant?

A: I think very few people would feel confident when applying such a highly competitive grant, and one's self-confidence can easily swing up and down. In the process of preparing my grant application, I kept telling myself that there's no harm in trying, and focus on the process instead of the outcome.

3. What do you think is key to win a grant?

A: Based on my communication with other K99 awardees and my personal experience. I think the following tips may increase your chance of getting a good score. First, budget your time carefully. Applying K99/R00 is a long process. Total time spent on application, including initial submission and one round of revision/resubmission, is at least one year. Now NIH reduced the application window from 5 to 4 years of postdoctoral research training experience. If you decided to apply K99/R00 grant, you need to start to work on the application in the 3rd year after receiving your PhD or even earlier. Second, research proposal is an important component of your application package, but not the

only one. K99/R00 is a career transition award, and K99 portion is a mentored phase. It is important to justify the need for mentoring (e.g. learning new skills for proposed research), outline a detailed mentoring plan, such as who to seek advice from, what are they going to help with, the schedule to meet your mentors, and design a detailed career development plan to prepare yourself becoming an independent investigator. Lastly, try to contact program officers in the NIH institutes you will be submitting your application, and ask if him/her is willing to read your research proposal and give feedbacks. Most program officers are very experienced in reviewing applications, and their advice will be of great help.

4. How do you think students could prepare themselves to be successful in their future career?

A: I would encourage all the students to have their career plan as early as possible. Try to identify a career path that match your interests and personality, set achievable goals for each year/period, work hard to achieve these goals and make necessary adjustments along the way. I wish all the graduate students and postdocs at Pitt a great success in their future endeavors.

K99: Pathway to Independence Award

The purpose of this program is to increase and maintain a strong cohort of new and talented, NIH-supported, independent investigators. This program is designed to facilitate a timely transition of outstanding postdoctoral researchers or clinician-scientists from mentored research positions to independent, tenure-track or equivalent faculty positions, and to provide independent NIH research support during the transition that will help these individuals launch competitive, independent research careers.



Generating a Career in Regeneration



Akhil Patel, MS, PhD Candidate

Program: PhD; Track: Pharmaceutics

Akhil received his Bachelor of Pharmacy from Gujarat Technological University in India in 2012. He received his Master of Science in Pharmaceutical Sciences at Pitt in 2015 and is currently pursuing a PhD in the Pharmaceutics track under the mentorship of Dr. Shilpa Sant. His work focuses on the development of biomaterials for bone regeneration through an interdisciplinary approach.

Akhil has authored eight publications and has received funding as a student co-investigator through the Center for Medical Innovation. In addition to these accomplishments, he is the founding president of the Society for Biomaterials Pitt Student Chapter and the recipient of the Graduate Student Excellence Award in 2017. The following is an excerpt of an interview we did with him. He has valuable insight and advice to share from his experiences in graduate training.

Karryn: What was your motivation to pursue graduate school?

Akhil: My main motivation to pursue grad school was to understand my capabilities and weaknesses better. Specifically, I wanted to learn analytical thinking and breaking down a problem as well as developing a systematic plan to solve it. I was also motivated to master advanced skills, be it broad transferrable ones or specialized scientific skills. The best option available to me was to pursue grad school in the states and our school offered steaming hot platter with all these components.

Karryn: How did you become interested in biomaterials?

Akhil: I had passion for technologies since my high school. I still remember forming a group with fellow students at our school's science club to make a DIY seismograph for a budget of \$5, around the time when my state was hit with a deadly earth-

quake. When I joined grad school at Pitt, I knew that I wanted to stay in touch with latest technologies such as nanofabrication and 3D printing. On top of that, I was inspired by the tissue regeneration approaches. Biomaterials field is a perfect interface that offers both biomedical technologies and pharmaceutical sciences. Dr. Shilpa Sant's lab allowed me to integrate these elements in multiple biomaterial and pharmaceuticals projects.

Karryn: What other activities are you involved in and how have these enhanced your time at Pitt?

Akhil: Oh, this is my favorite part. I had several opportunities to get engaged in extracurricular activities. In my initial years at Pitt, I loved working with Carnegie Mellon University's IGSA drama club. CMU has a great drama school and its quality transcends to small drama clubs at CMU. During the last two years, I enjoyed working with two new club foundation teams at Pitt, one for Biomaterials student chapter for an international society focused on biomaterials research and another for a meditation and yoga club. Both the teams were highly driven with a purpose to make an impact with the new clubs. Overall, getting engaged in a variety of activities not only enhanced my experience at Pitt but also helped me develop leadership skills. The best part is when your work starts leaving an impact on the student community.

Karryn: How do you overcome challenges faced in graduate school?

Akhil: Just like most grad students, I committed to multiple projects and it can become overwhelming at times. However, with the help of my mentors and advisors, I constantly looked at them as opportunities rather than a burdensome list. I realized when I felt stressed that the cause was not huge amount of work, but it was procrastination. Whenever I completed a lot of things in the day, I never got tired, I only became satisfied. Many of my illusionary challenges disappeared with mental clarity. Staying constantly reminded about my ultimate goals and staying in touch with meditation, yoga, and sports helped me maintain the positive energy around me. I am so glad that our school and the University is promoting such resources across the campus.

Karryn: What has been one of the most gratifying or memorable experiences in your training?

Akhil: Moments of success, be it a paper getting accepted or receiving an award, always become gratifying and enjoyable. It is another level of

satisfaction when you see some of your projects getting funded or you see your mentees getting what they wanted from the research experience. It was extremely satisfying to find out that our proposal could get funding for mice and rabbit preclinical studies for my dissertation. It was equally gratifying to see my high school and undergraduate mentees getting excited to perform complex experiments or get the results.

Karryn: How do you think students can prepare to be successful in their graduate training and future career?

Akhil: It will sail your boat with ease if you develop flexible attitude to learn anything on your way to reach your career goals. If you make this your priority, you will automatically work towards it with 'whatever-it-takes' attitude. When it comes to future careers, networking is extremely important. Network with people in various fields including the field which you label as your dream one. Do your homework about their lab or company. Ask yourself a question that if you had an option to join an organization of your dream, which one would you choose. Dig deeper and ask why you would choose that and what values are attracting you there. Now turn these into questions for networking. Don't be afraid to ask tricky questions when gathering information.

By Karryn Crisamore, PharmD

Resource Around Campus

Biomedical Research Imaging Resources

Cancer institute (UPCI) provides *in vivo* imaging facilities (e.g. PET, PET-CT, Optical Imaging and Ultrasound Imaging) for preclinical studies to the entire University of Pittsburgh research community as well as researches at neighboring institutions. Personnel provide hands-on training and technical support for users of the imaging platforms and the associated anesthesia equipment.

The Core is staffed Monday through Friday 9am-4pm. To learn more about the service they offer, how to access them, and how much they cost: check out their website (<http://researchimaging.pitt.edu/>).



Wen Xie (MD, Ph.D.) is Chairman of the Department of Pharmaceutical Sciences, and Joseph Koslow Endowed Professor in Pharmaceutical Sciences at the School of Pharmacy, and Professor of Pharmacology & Chemical Biology at the School of Medicine. And right now, he has another important title which was given by his students - the Graduate Faculty of the Year.

According to the students, he is one of the perfect teachers we want. "As a senior student in Dr. Xie's Lab, I have first-hand experience of his approachability, his encouragement, and his kindness," Yang Xie stated before she presented her mentor the award, "He challenges us all to shine, not only in course work, but in the lab, and goes above. He is truly a role model for us all."

Besides being an excellent researcher with nearly 190 authored or co-authored journal articles and book chapters, Dr. Xie enjoys teaching. He mentioned on several occasions that he learns more from the students than they from him. Whether or not it is true that "Working with students keeps me young", the engagements with students are genuine. And because of these full-hearted efforts he made, Dr. Xie becomes one of the most beloved faculty in our school. Here are some thoughts he shared with us after receiving the reward.

Oliver: Could you give us a brief introduction to which course you teach?

Dr. Xie: My primary teachings in the graduate program are Pharm 3009 Advances in Pharmaceutical Sciences and Pharm 3071 Foundations in Pharmaceutical Sciences. I have co-ordinated the Pharm 3009 Journal Club since 2002.

Oliver: Have you faced any difficulties while teaching? How did you overcome them?

Dr. Xie: The art of teaching or scientific presentation, in general, is to use simple language to deliver a strong message.

Featured Faculty

The Secret of staying young

Oliver: Did you always want to become an educator? Who inspired you?

Dr. Xie: I was lucky having excellent graduate and postdoctoral mentors. They are my role models in teaching and mentoring my students.

Oliver: Living in an era with innovations happening every day, what is your attitude on textbook/basic knowledge?

Dr. Xie: Innovation is always built on solid foundations. You have to be knowledgeable before being innovative.

Oliver: As a well-established professor, how did you engage edge-cutting studies in your courses?

Dr. Xie: I want to be challenged by my students.

Oliver: Last but not least, what things do you hope your students can master? Even outside the classroom.

Dr. Xie: Confidence, open-mind, hard-working, and being generous are the key qualities for a successful graduate student.

By Xin (Oliver) Tong, MS

Biography

Dr. Wen Xie obtained his MD degree from Peking University Health Science Center and Ph.D. in Cell Biology from the University of Alabama at Birmingham. He completed a postdoctoral fellowship with Dr. Ronald M. Evans at the Salk Institute in La Jolla, California before joining the University of Pittsburgh.

Among his achievements, Dr. Xie is the recipient of the University of Pittsburgh Chancellor's Distinguished Research Award, the James R. Gillette International Society for the Study of Xenobiotics (ISSX) North American New Investigator Award, the American Society for Pharmacology and Experimental Therapeutics (ASPET) Division for Drug Metabolism Early Career Achievement Award, and the Joseph Koslow Endowed Chair in Pharmaceutical Sciences.

Meet Our Grads....

Salwa Albusaysi, PhD

The title of dissertation: Major Depressive Disorder (MDD): Potential Predictors of Vulnerability and Treatment Response.

Reflection:

I had a wonderful journey at the University of Pittsburgh where I had the privilege to collaborate with clinicians at the Western Psychiatric Institute and Clinic. I am grateful for the guidance and friendship of my advisor. I made many lifelong friends at Pitt. A highlight was attending the world's largest gathering of twins in Twinsburg, Ohio with my twin sister.

Future: Dr. Albusaysi has accepted a position as Assistant Professor at King Abdul Aziz University in Jeddah, Saudi Arabia

Katherine Eichinger, PhD

The title of dissertation: Characterization And Immunomodulation Of The Infant Immune Response To Respiratory Syncytial Virus.

Reflection:

I am proudest and most excited about earning a Loan Repayment Award from National Institute of Allergy and Infectious Diseases. This award will make a significant dent in my student loan debt. And by alleviating some of that burden I feel free to pursue my professional interests.

Future: Dr. Eichinger has accepted a Post-Doctoral Fellowship here at the University of Pittsburgh.

Jing Li, PhD

The title of dissertation: Leveraging Mucoadhesive Thiomers And PLA-Based Polymers To Design Biodegradable Extended Release Vaginal Films For HIV Prevention.

Reflection: I feel so proud to have received my PhD from Pitt's School of Pharmacy. Through the graduate program I've developed excellent research skills while also being exposed many academic, professional, and social networking opportunities. I am grateful to have made friends with so many faculty and graduate students in the program.

Future: Dr. Li has accepted a position as a Developmental Scientist at Glaxo Smith Kline in Warren, NJ

Junyi Li, PhD

The title of dissertation: Local Estrogen Production In The Brain And Its Regulation Under Pathological Conditions.

Reflection: During my study in Pitt,

I developed two analytical methods to detect low amount of both estradiol and its productive enzyme: aromatase in the rat brain tissue. This experience taught me how to be an independent researcher and also how to communicate and collaborate with others. I will always treasure this experience and move forward with the skills I gained.

Lingjue Li

Reflection: One of the most exciting achievements is my first-authored publication was selected as the cover of the issue of Journal of Cerebral Blood Flow and Metabolism. I am so honored to be able to work with so many prestigious faculty and collaborators on such a fascinating project. Thanks to my advisors who made my every achievement possible. I dedicate all my achievements to my parents and my husband for their love and devotion. H2P!

Future: Dr. Li has accepted a position as a Developmental Scientist at Janssen of Johnson & Johnson in Philadelphia, PA

Tao Long, PhD

The title of dissertation: Metabolomics Analysis of Brain Monoamines, Metabolites and Amino Acids in Two Models of Menopause with/without Estrogen Receptor Agonist Treatments.

Reflection: I'm most proud of being selected as one of the only four graduate students in University of Pittsburgh to receive GPSG Leadership and Service Award in 2016. This award acknowledges the leadership and service that graduate and professional students provide to Pitt, the surrounding community, and to the world at large. As quoted from Tao's acceptance letter: This year's selection was very competitive. Your

application stood out to our committee because you have demonstrated innovation, boundary breaking outreach, and dedication to the continuation of service!

Future: Dr. Long has accepted a position as an ORISE Fellow at the FDA in Silver Springs MD

Yingfei Xue, PhD

The title of dissertation: Micro-/Nanotechnologies To Engineer Microenvironmental Cues For Regenerative Heart Valve Therapies.

Reflection: I was fortunate to serve as a mentor for six high school and undergraduate students conducting scientific research in the our lab. I am very proud of them, especially when their research were accepted for publication and led to scholarships.

Future: Dr. Xue has accepted a position as a Post-Doctoral Research Scientist at Columbia University in NYC, NY

Xiang Zhou, PhD

The title of dissertation: Clinical Significance of Adenosine Signaling Deficits in Schizophrenia Pathology: From Theoretical Foundations to Symptomatology.

Reflection:

On 2017, I submitted an abstract to the International Congress on Schizophrenia Research, planning on a poster presentation. However, my abstract was the only student research selected for an oral podium presentation. It was my first time giving such an oral presentation. Thanks to my advisor's help it went quite well; it was an unforgettable experience.

Future: Dr. Zhou has accepted a position as a Characterization Scientist

at Eurofins in Philadelphia PA

Nupur Chaphekar, MS

The title of dissertation: Preliminary Safety Evaluation Of 17-Hydroxyprogesterone Caproate (17-Ohpc) Intravaginal Gel In Pregnant Rats.

Jing Chen, MS

The title of dissertation: Role of Cytochrome P450s in Isoniazid bioactivation.

Urmil Chedda, MS

The title of dissertation: Analysis Of Gene Signatures Of Migratory Phenotypes Using Three-Dimensional Breast Microtumor Models.

Stuti Desai, MS

The title of dissertation: Development of Biorelevant In Vitro Release Testing Methods for Periodontal Microparticles.

Peihao Fan, MS

The title of dissertation: Identification Of Novel Targets For Psychosis In Ad With Real World Evidence And Network Analysis Approaches.

Beihong Ji, MS

The title of dissertation: Pharmacokinetics Modeling and Molecular Modeling of Drug-Drug Interactions Between Opioids and Benzodiazepines.

Rachana Kelkar, MS

The title of dissertation: Effect Of Temperature, Age And Lifespan Extending Interventions On Caenorhabditis Elegans Models Of Amyloid Beta Pathology

Sihan Li, MS

The title of dissertation: Regulation of DNA Damage Response via Gene Copy Number Variations.

Pearl Moharil, MS

The title of dissertation: Folic Acid Conjugated Polymer As A Nano-Carrier: Dual Targeting Of Tumor Cells And Tumor Microenvironment.

Shweta Naik, MS

The title of dissertation: Delivery of Biologics In Alzheimer's Disease

Di Rao, MS

The title of dissertation: Effects of Chronic Restraint Stress on Aromatase, Estrogen Receptors, Inflammatory Markers and Local Estrogen Production in Brain.

Mrunal Sakharkar, MS

The title of dissertation: Development Of Micro-Patterned Films For Ophthalmic Drug Delivery.

Tanvi Shah, MS

The title of dissertation: Stabilization of a Tenofovir Alafenamide Fumarate Formulation for Use in a Subcutaneous Implant.

Sydney Springer, PharmD, MS

The title of dissertation: Prevalence of Aspirin Receipt and Discontinuation Amongst Veterans Health Administration Community Living Center Residents with Indications for Secondary Prevention of Cardiovascular Events.

Edited by Yang Xie, MS

Graduate bios is supported by Maggie Folan, PhD

