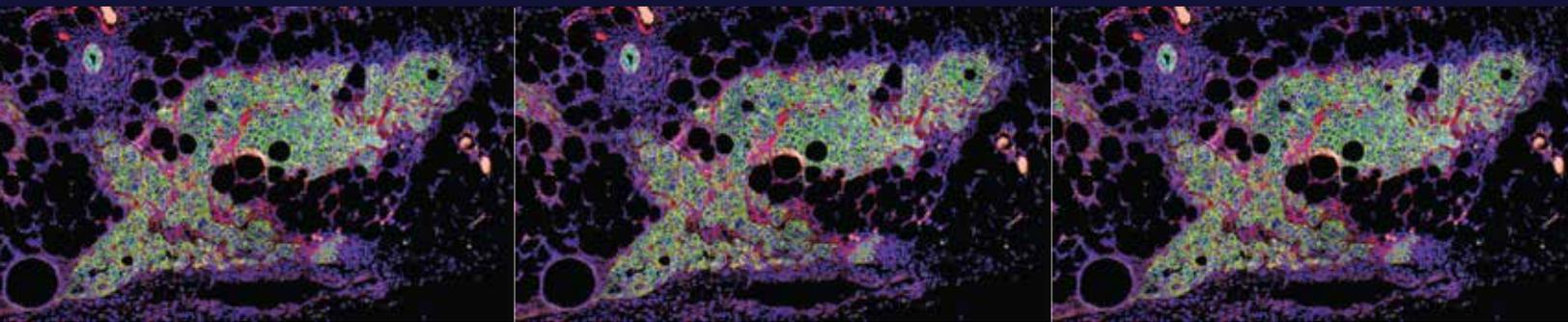


# Therapeutics & Pharmacology Program Newsletter

Vol 9, November 2019



## Inside

Student Voices	2
Current Students	3
Life Outside the Lab	4
Faculty Spotlight	5
Alumni View	5
Student Activities	6
Research Retreat	7
Awards and Achievements	back cover

## Journal Club

Wednesdays --> 11:30-12:30PM  
Alternates between BSRB + SCRB4

Free lunch!

Nov (11/13): Barbara/Maryam

Jan (01/08): Lon/Rajan

Feb (02/12): Victoria

Mar (03/11): Teresa/Rolando

Contact

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to get on the mailing list!

Visit our website:  
[gsbs.uth.edu/therapeutics-and-pharmacology/](http://gsbs.uth.edu/therapeutics-and-pharmacology/)



Find us on Facebook:  
[www.facebook.com/GSBSTAP](https://www.facebook.com/GSBSTAP)

## Director's Desk

The formal organization of the TAP program was further developed this year with the approval of the format of the PhD candidacy examination to be the choice of the student with regard to on-topic or off-topic. The program bylaws were reformatted by the Steering Committee and approved by the GSBS. The Steering Committee for the TAP program gained a new member after Dr. George Calin was voted by the TAP faculty to this position. He joins Drs. Zhiqiang An, Joya Chandra, Xiaodong Cheng, Varsha Gandhi, Marina Konopleva, Shiao-Yih (Phoebus) Lin, Dr. Zhang and myself in this responsibility. Cavan Bailey will serve as the TAP student representative for the coming year. Our program coordinator Ms. Teasha Barker, MHA, has provided extraordinary leadership with her interactions with the students, and also with her assistance with course organization, planning for faculty meetings and overall guidance for the TAP program operations.

The TAP program students continue to be successful in completing their graduate training. This May, four students, Nashwa Kabil, Zhi Tan, Servando Hernandez Vargas, and Swaminathan Kumar confidently received their diplomas in the presence of proud family and friends. Nashwa has relocated to the Washington D.C. area where she is employed as a director in AstraZeneca, focusing on the use of the PARP1 inhibitor, olaparib, in the medical and research communities. Zhi's dissertation studies identified the action of poziotinib in mutant EGFR that has been put to clinical advantage. He is continuing his studies here as a postdoctoral fellow. Both Servando and Swami were accepted into the GSBS PhD program and are pursuing their studies and research.

We're delighted to welcome four new TAP students, Angel Garces, Barbara Nassif Rausseo, Victoria Yan, and secondary ARC student, Sharvari Dharmiah. We are expecting more new students as a result of the successful recruitment event held during GSBS Orientation Week in August. We hosted 30 incoming GSBS students in the South Campus Research Building 4 to panel discussions with TAP students, to roundtable discussions with faculty and to a tour of a laboratory in the Department of Diagnostic and Biomedical Sciences.

Finally, we're all looking forward to the annual TAP program retreat, which this year will be held locally at the Denton A. Cooley and Ralph C. Cooley University Life Center on the South Campus on November 1st. This venue provides close proximity for TAP students, for 1st year students and for faculty to participate in the academic activities as well as spending some leisure time together. The program Committee, headed by Luisa Orlando, Teresa Nguyen and Mary Figueroa, have been planning this year's events, so come prepared for a great time.

- Bill Plunkett, Ph.D., Director - TAP



**Hello**, I am Mary and I am a PhD student in Dr. Joya Chandra's Lab in the Department of Pediatrics - Research. My lab works on understanding and incorporating lifestyle changes to improve treatment of pediatric patients. We are also have an interest in using epigenetics to improve treatment efficacy.

My project incorporates both of the lab interests, I work on determining the impact of cigarette smoke exposure on acute leukemia progression and treatment efficacy. Smokers with acute leukemia have worse survival, but it's unknown why. We believe that cigarette smoke exposure is causing changes in DNA methylation that is decreasing treatment efficacy without causing new mutations. We hope to use this study to improve the treatment of acute leukemia patients.

When I started at GSBS, I had an interest in translational research and treatment resistance and unintentionally did all three of my rotations in labs affiliated with the TAP program. I wanted to work on translational research and decided that TAP would be the best program for me. TAP provides its students with an encouraging environment for students to learn and has many wonderful faculty that are willing to help students become successful. TAP encourages students to tailor their experiences to what they need, and has been the perfect fit for me.





**Jeffrey Ackroyd**  
Müller Lab



**Cavan Bailey**  
Chandra Lab



**Mary Figueroa**  
Chandra Lab



**Lon Wolf Fong**  
Zhang Lab



**Angel Garces**  
Grosshans Lab



**Servando Hernandez Vargas**  
Azhdarinia Lab



**Byung Kyu (BK) Kim**  
Krishnan Lab



**Chenchu Lin**  
Frigo Lab



**Barbara Nassif Rausseo**  
Hwu Lab



**Teresa Nguyen**  
Fueyo Lab



**Luisa Orlando**  
van Hoof Lab



**Aparna Padhye**  
Gibbons Lab



**Priyank Raj**  
Ying Lab



**Maryam Shariati**  
Meric-Bernstam Lab



**Rolando Vedia**  
Moldrem Lab



**Bryan Wehrenberg**  
McConkey Lab



**Victoria C. Yan**  
Müller Lab

**Congratulations!**  
TAP Graduate  
Zhi Tan, Ph.D., 2019

Chandra Bartholomeusz, M.D., Ph.D.  
Assistant Professor  
MD Anderson Cancer Center  
Department of Breast Medical Oncology

## Faculty Spotlight

What makes the TAP program stand out?

The Therapeutics and Pharmacology (TAP) program at the Graduate School of Biomedical Sciences is unique as it takes hypothesis-driven research to preclinical studies in animal models, with a successful record of translation to clinical trials. The faculty of the program have diverse backgrounds in cancer biology, medicinal chemistry, cardiology, structural bioinformatics, drug development, novel imaging approaches and cancer therapeutics that utilize various animal models. The TAP faculty are supportive of students' pursuing internships in industry during their training at GSBS. Graduates from this program have been successful in academia, industry, regulatory affairs and working with the FDA.

What is your research focus?

My primary research interests lie in improving therapeutic options by providing target-driven therapy that is less toxic than conventional therapies and that helps reduce mortality for patients with very aggressive forms of breast cancer. The research in my lab is focused on defining the biological and molecular effects of signaling pathways in breast cancer, with emphasis on metastasis of triple-negative breast cancer (both non-inflammatory and inflammatory breast cancer). I have led many projects focused on understanding the mechanistic role of the MAPK pathway in TNBC metastasis and therapeutic targeting of this pathway (ERK, PEA-15, JNK, MEK). In particular, a strong interest of my lab is to study the role of the MAPK pathway and the inhibitors of this pathway, with emphasis on the role of ERK isoforms, PEA-15, and mechanisms of resistance to MAPK-directed therapy. We are using a combination of genomic, proteomic and siRNA approaches to define the role of these kinases in tumor progression in TNBC. These projects represent translational cancer research that could reduce mortality in patients with metastatic breast cancer. As a translational investigator with clinical and research experience, I am in a position to translate preclinical findings from the lab into the clinic in collaboration with the clinical investigators in the department.

What advice would you give to new graduate students?

Graduate school is an exciting part of your life. Not only do you learn hypothesis-driven science, in addition you will learn to be critical, analyze data, give presentations and write grants and manuscripts, which is so different from regular writing. Further, you make life-long friends who may become your future collaborators and colleagues. It involves a lot of hard work, determination and some frustration. Have fun, and enjoy your time making new discoveries. When your hypothesis works, it is a eureka moment—enjoy it. Pursue your hobbies (exercise, cooking, gardening, writing for a newsletter) and spend time with your family and friends while at graduate school. They actually make you more productive and relieve stress, which is a very important life strategy.



Thuy Vu, Ph.D.

Research Scientist, Institute for Personalized Cancer Therapy, MD Anderson Cancer Center  
TAP Graduate 2014

## Alumni View

What does your current position entail?

I am currently a Research Scientist (non-laboratory) on the Precision Oncology Decision Support team, under the Institute for Personalized Cancer Therapy. Precision oncology generally refers to using data from next-generation sequencing to guide therapy. Together, our team delivers genomic annotations for patients at MDA and at collaborating sites based on physicians' requests. Our goal is to provide an understanding of patients' molecular profiles to physicians, in order to help with treatment/decision processes.

How did TAP prepare you for your current role?

In TAP (or ETAP when I was there), I found lots of opportunities to improve my organization and leadership skills. By participating in and then leading the TAP program retreat, I learned to be proactive and to not hesitate to reach out and to ask questions. This greatly helped me to land a prior job at Roche and then at my currently amazing team at MDA. Also, the program committee, the program director (Dr. Gandhi), and the students at TAP have made the program very open and supportive of student ideas. We have had speakers from both industry and academia share their experiences and network with students to give them broader career perspectives. This has fueled my confidence to challenge myself in different roles to gain experience and find the jobs that suit me the most at different times.

What advice would you give students interested in pursuing a similar career?

If you're trained as a PhD, you're inherently well prepared for this job. To really enjoy and go further in this particular career path, you may want to ask yourself three questions:

1. During your PhD, do you feel comfortable sitting at your desk for hours and digging through published literature to find answers?
2. Do you enjoy writing review or research papers while having some flexibility in your work?
3. Do you want your work to directly impact patient treatment but are not sure if you can commit to lab work or patient interaction?

If you answer yes to all of the above questions, I believe that you would love this career path.



## Lon Wolf Fong

Hey there! I'm Lon, a student in Dr. Shuxing Zhang's lab in the Experimental Therapeutics department at MD Anderson. My work focuses on building computational models that combine chemical and transcriptomic data to identify drugs that will be effective in treating solid tumors.



When I'm not in the lab, I like to unwind by exercising—my favorite activities are swimming, running,

and yoga. The last one is a great energy booster when you're a little under the weather or sore from sitting in front of a computer writing code all day! Besides this, I keep busy by volunteering at my church or for the American Cancer Society, or trying out new activities with a group of friends—this year, we went to a shooting range, went to the Houston Rodeo, and had a six-hour board-game marathon—my first time doing any of those!

## Priyank Raj

Hi! My name is Priyank Raj, I'm a 4th-year PhD student in Dr. Haoqiang Ying's lab at MD Anderson. My fitness is my priority, and takes precedence over academics and social life. I have found an excellent health formula in meditation, breathing exercises and stretching. Also, I love to talk and write (expression is the most instant source of self-awareness). I found an amazing friend circle during my undergraduate years in BITS Pilani (one of the top colleges in India), and I love chatting with them online. I have pretty full life!!!



## Chenchu Lin

Hi, my name is Chenchu Lin. I am a graduate student in the laboratory of Dr. Daniel Frigo at Cancer Systems Imaging, MD Anderson. Although I spend the most of my days in lab and really enjoy it, I do need some outdoor activities to step away from science and keep work-life balance. I like gardening and traveling, both of which help me relax and wind down. Gardening is a great way to unwind my stressful brain. Most time my body feels sour after gardening but it really reboots my brain. I enjoy planting flowers and I feel peaceful when I watch them growing from nothing to something. The beautiful flowers cheer me up when I am frustrated with my negative data. Traveling is another way I "escape" from the lab. Over the past years, I spent my most vacation time visiting Nation Parks. Hiking, fishing or just relaxing in the warmth of the sun make me feel the beauty of the nature. Traveling also strengths my bound with my family. I just brought my parents and 80-year-old grandmother to visit the East Coast. I felt it was a very precious time to share the journey with them after I grew up.



Each year, TAP students organize a program research retreat that features guest speakers, oral and poster presentations, games, an award ceremony, and plenty of delicious food!

This year's retreat was held at McGovern Centennial Gardens, a beautiful nature sanctuary just a short drive from the medical center, adjacent Hermann Park. Our keynote speaker, Keri Schadler, Ph.D. of MD Anderson's Pediatrics Department, provided an outstanding presentation on how to transition into a principal investigator position at a large research university. Her "Do's and Don'ts" section particularly engaged the audience with its candid and humorous points about being a quality research mentor.

The research retreat also showcased the wonderful work of our students through both oral and poster presentations. Each student had the opportunity to be evaluated by a panel of faculty judges and respond to questions about their research.

Each year, the TAP retreat brings in an alumni speaker

to talk about their life after graduation. This year, Bharat Chaganty, Ph.D., presented an exceptional talk about his current position as an industry scientist at Visterra, a biotech company located in Waltham, MA. Students were able to learn the steps and skills necessary for this career path and how doing research in industry differs from academia.

The retreat off-campus at this wonderful location allowed time for fun and games, which included a "science scavenger hunt" based around the presented posters. Students also enjoyed exploring the grounds of the park, including walking to the top of the famous ziggurat waterfall.

The retreat concluded with the award ceremony, where students received trophies and monetary bonuses. A special recognition award was presented to Varsha Gandhi, Ph.D., honoring Dr. John S. McMurray, a TAP faculty member that passed away in March 2017. Dr. Shuxing Zhang was awarded the Student's Choice Faculty award, voted on by TAP students for recognition of outstanding mentorship and service.

#### Research Award Winners - Oral

Teresa Nguyen (1st place), Jeffrey Ackroyd (2nd place & People's Choice)

#### Research Award Winners - Poster

Chenchu Lin (1st place), Cavan Bailey (2nd place), BK Kim (3rd place), Mary Figueroa (People's Choice)

Apple Award Winner - Luisa Orlando

## Research Retreat - Fall 2018



# Student Activities

## Focus on Internship: Cavan Bailey



This past June, I was selected to participate in a week-long course jointly organized by the American Society of Cell Biology, the Keck Graduate Institute, and the University of Massachusetts - Lowell Manning School of Business. Dubbed "Biotech East", this was the first time this course has been held on the East Coast after only occurring at the Claremont Colleges in Southern California for several years prior. As I am originally from Philadelphia and would prefer to move back east after graduation, I applied for this new version of the course, which required a personal statement, updated CV, and a letter of recommendation.

After I was accepted, I was also offered a scholarship of \$300 from Biogen to offset costs of attendance. For a flat fee of \$575, I was provided single room accommodations in the apartments at UMass Lowell along with several meals and the extensive course materials. I flew into Boston Logan airport on a Sunday and took the MBTA train to the picturesque town of Lowell, about a 40-minute train ride north of Boston. Weather was in the low 70s with a gorgeous breeze off the Merrimack River, a real escape from the sultering summers of Houston. I met the other attendees at an informal gala on Sunday night where I learned they were attending from around the country, representing fantastic schools such as MIT, Harvard, Georgia Tech, Yale, Weill Cornell, UPenn, and many others. One participant even flew in all the way from Austria!



During the week, our time was split between classroom-based case studies, lectures from prominent local entrepreneurs and biotech scientists, and a group project where we evaluated the market potential for a renal cancer diagnostic product, with a focus on insurance costs. We still made time for fun, including a brewery tour and kayaking on the Merrimack! At the conclusion of the week, we presented our research to a panel of professors, from both scientific and business disciplines. The course was informative, challenging, but always a great opportunity for networking. I highly recommend GSBS students apply for the ASCB Biotech course, either in California or Boston, you won't regret it!



### Student Social: TAP Cookie Exchange

Every year TAP hosts a series of events to promote interaction between new and current students. In November 2018, TAP hosted its first social event of the year where TAP students brought desserts to exchange with other GSBS students.

The TAP program generously provided a Thanksgiving-style feast of turkey, cornbread, green bean casserole, and more. Students brought desserts including almond cookies, peanut butter cookies, sugar cookies, and many more. The event was a great success with lots of leftovers to make every grad student happy!

## Student Committees 2018-2019

Research Retreat:

Luisa Orlando (chair)

Teresa Nguyen (vice chair)

Mary Figueroa

Student Activities:

Teresa Nguyen (chair)

Chenchu Lin (vice chair)

Journal Club:

Priyank Raj (chair)

TAP Steering committee

student rep:

Cavan Bailey

Website/Facebook:

Cavan Bailey (chair)

# Awards & Achievements

TAP students were very prolific in their publications, and had the opportunity to apply for various external and internal awards. Read on to learn of their exceptional scientific merit...

## Recent Publications: 2019

Servando Hernandez Vargas: First-author of a research article published in Clinical Cancer Research entitled 'Specific Targeting of Somatostatin Receptor Subtype-2 for Fluorescence-Guided Surgery'

First-author of a review article published in The Journal of Nuclear Medicine entitled 'New Developments in Dual-Labeled Molecular Imaging Agents'

Teresa Nguyen: Co-author of a research article published in Neuro-Oncology Advances entitled 'GITRL-armed Delta-24-RGD oncolytic adenovirus prolongs survival and induces anti-glioma immune memory'

Co-author of a research article published in Clinical Cancer Research entitled 'Localized Treatment with Oncolytic Adenovirus Delta-24-RGDOX Induces Systemic Immunity against Disseminated Subcutaneous and Intracranial Melanomas'

Aparna Padhye: First-author of a research article published in Scientific Reports entitled 'A novel ex vivo tumor system identifies Src-mediated invasion and metastasis in mesenchymal tumor cells in non-small cell lung cancer'

Maryam Shariati: First-author of a review article published in Expert Opinion on Investigational Drugs entitled 'Targeting AKT for cancer therapy'

Co-author of a research article published in Breast Cancer Research entitled 'GSK3 $\beta$  regulates epithelial-mesenchymal transition and cancer stem cell properties in triple-negative breast cancer'

Victoria Yan: Co-author of a research article published in Molecules entitled 'The 3S Enantiomer Drives Enolase Inhibitory Activity in SF2312 and Its Analogues'

## Fellowships, Awards, and Honors: 2019

Cavan Bailey: Received Schissler Foundation Fellowship

Mary Figueroa: Received AACR Minority Scholar in Cancer Research Award and Center for Cancer Epigenetics (CCE) Graduate Scholar Award

Chenchu Lin: Received Gee Family Legacy Award

Teresa Nguyen: Received 3rd annual renewal of American Legion Auxiliary Fellowship in Cancer Research



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### THE NEWSLETTER COMMITTEE

The TAP Newsletter is a publication of the Therapeutics & Pharmacology Program at the MD Anderson Cancer Center UTHHealth Graduate School of Biomedical Sciences. Published annually, we welcome suggestions and submissions from program students and faculty.

**Chair: Cavan Bailey**  
(CPBailey@mdanderson.org)  
**Vice-chair: Mary Figueroa**  
(M Figueroa1@mdanderson.org)

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