

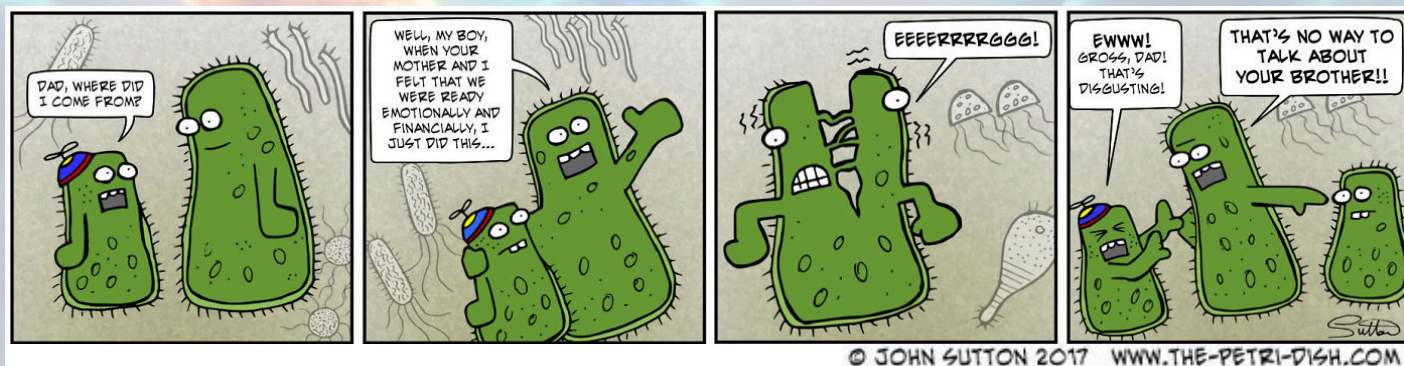
# GCC AMR Newsletter

HOUSTON, TEXAS, USA

14TH MARCH

# HOUSTON, WE HAVE A MICROBE!

## CELEBRATING TRAINEE ACCOMPLISHMENTS



**Gulf Coast Consortia**  
QUANTITATIVE BIOMEDICAL SCIENCES

Check us out at:  
<https://www.gulfcoastconsortia.org/home/research/antimicrobial-resistance/amr-scholars-program/>

BY: ANN M. MCKELVEY, MSC

Fresh from walking the stage in her cap and gown, Dr. Gomez is joyous when she sits down with us to discuss her journey. “I always knew that I wanted to do something in the healthcare industry, and I went straight to community college because I wanted to get experience.” Working as an emergency medical technician while attending community college, she witnessed the collaborative nature of patient care, and gradually she narrowed her options to two: physician or researcher.

Dr. Gomez found herself at a crossroads. On one hand, she admired the clinical team comprised of physicians, nurses, nursing technicians who provided direct care. On the other hand, she recognized that researchers played just as important a role creating better outcomes for patients. Both roles aligned with her passion: improving patient outcomes.

In this time, Dr. Gomez was diagnosed with Type 1 Diabetes. “I found out that my treatment options and how to take care of myself with this new chronic illness were very limited. And that shifted my gears to thinking what profession I can do to help patients like me who have very limited treatment options and how can I make their lives better?” Her life circumstances propelled Dr. Gomez to choose research. She pursued an undergraduate degree in Microbiology from Texas Tech University and in her first semester worked on a project where she studied the viruses carried by mosquitoes. Upon graduating, Gomez was admitted to the lab of Dr. Magnus Höök at Texas A&M University School of Medicine, to study *Staphylococcus epidermidis*.

## The Work

*S. epidermidis* is typically underrated as an opportunistic pathogen, as it is typically found on the skin and considered to be a beneficial microorganism. Her work uncovered the role of *S. epidermidis* in bloodstream infections.

# BEGINNING WITH THE END IN MIND

AMY GOMEZ, PHD

POST-DOCTORAL RESEARCH FELLOW  
TEXAS A&M UNIVERSITY



“What my project found was not only a novel virulence factor, but a potential pathway of how this organism can manipulate the host system to potentially establish a bloodstream infection.” Part of the novelty of Dr. Gomez’s work built on what she observed at the beginning of her journey—collaboration. Dr. Ian Monk created a new genetic tool to study *S. epidermidis*, and that tool allowed Dr. Gomez to use flow cytometry and imaging to demonstrate localization of *S. epidermidis* proteins on the cell surface.

Where is Dr. Gomez headed now? The field is wide open. Her original motivations are still the same—she still believes wholeheartedly in being at the forefront of caring for people.

However, having graduated, she recognizes even more that providing good care to patients has many more facets than it would appear from the outside. Her current long term career goal is to transition into the the field of medical writing where she will be able to repackage the complex scientific findings that emerge at the bench and share them with the public, thus bridging the gap.

For now, she is completing the story that she began during her dissertation work. She has published her first paper, *Staphylococcus epidermidis* ST2 strains associated with bloodstream infections contain a unique mobile genetic element encoding a plasmin inhibitor, and the next is in preparation.

## Staying Motivated

Asked about motivation, Dr. Gomez had one word: *grit*. Some days, pushing through was a decision. “When I was met with an obstacle, when I was met with my own imposter syndrome, I redirected myself so that whether I was walking through a rainy day or a partly sunny day, I was going get through that day and then the next.”

Dr. Gomez offers several pieces of advice for first year students. “Surround yourself with individuals inside and outside your program who can be there to help you troubleshoot your research but also can be there for you in your personal life.” The same applies to choosing a lab. “Communicate early with your PI your lifestyle balance, how you communicate, how you resolve conflict, too.” She recognizes that as a first year it is difficult to realize that the years will pass quickly, and she recommends students network and attend conferences. “It is never bad to start putting yourself out there, and I would have loved to have known that.”

Starting this new chapter, Dr. Gomez has a fresh mindset. For this, she credits a game-changing piece of advice from her mother. “When you allow someone to harm your self-confidence, that’s when they’ve won.” Sometimes, she recognizes, it is all too easy to allow negative opinions to inform self-worth. To combat that, Dr. Gomez keeps in mind that she has a goal, and nothing has the authority to stop her from reaching it. “Reframe! Reframe those negatives into something you can work on.”



BY: HOSSAENA AYELE, MSC

As the first in her family to attend graduate school, alongside her sister, Larissa Tavizón sits down with us, emphasizing how mentorship has been pivotal in preparing her for graduate school and throughout her PhD at the University of Texas (UT) Graduate School of Biomedical Sciences (GSBS). Tavizón shares with us her journey to discovering her desire to be a scientist in the midst of the COVID-19 pandemic and her advice for emerging young scientists.

Tavizón credits her research immersion course as a freshman at UT-El Paso for igniting her passion for research, "I remember walking into the lab, learning what a pipette was and thinking that was the coolest thing ever. I quickly discovered I loved being in the lab. All the tools and techniques we were learning were exciting to me." Later, Larissa joined the lab of Dr. Manuel Llano at UTEP, studying antiviral proteins and mentioned assisting on other projects but wanting her own "big picture" to see to fruition. These experiences sparked a desire to go further with the "I'm not done here" mantra following her to graduate school.

### The Big Picture

Tavizón credits her support system of peers at GSBS for her harmonious transition from undergrad to PhD student during the COVID-19 pandemic. "Going from studying during my undergrad to worrying about creating a research project taught me to heavily lean into a community of support amongst my peers." Her involvement with the student-led organization AMBR, the Association of Minority Biomedical Researchers, is an avenue Tavizón expresses has grounded her throughout graduate school. "I've been able to work closely with students, faculty, and the administration at GSBS, who themselves are not only great resources, but have provided great support." AMBR values student feedback, catering to the needs of their community by holding workshops like Funding 101 and Candid About Candidacy.

## ROOTED IN GROWTH, RISING WITHOUT END, WHILE LIFTING OTHERS TO ASCEND

LARISSA TAVIZÓN

PHD CANDIDATE  
UTHEALTH GSBS



Not only does AMBR provide practical resources to students, but it also creates a safe space for students from underrepresented backgrounds.

### Mentorship

Tavizón also strongly advocates for mentorship, being herself a mentor with Científico Latino. As the only one in her friend group to pursue biomedical sciences further, Tavizón tells us how her mentor from Científico Latino, Jessica Trinh, was vital to her preparation of a successful graduate school application that ultimately led to her acceptance to UTHealth GSBS. She hopes to be that same source of support for other emerging scientists. She is currently a part of a program mentoring several graduate students through their first year of graduate school. "It is a full circle moment for me to serve as a mentor for the same program that helped me."

If Tavizón could offer one piece of advice to a future or current graduate student, it would be to pursue mentors outside of your lab. "I've learned that it's important to have mentors outside your lab, because these people have the experience and guidance that can give different perspectives. These people can also help you with career exploration and navigating the personal, and mental aspects of being a graduate student." One avenue Tavizón mentions is great for meeting potential mentors includes attending departmental seminars "simply getting your face out there will help build that relationship, these are also opportunities where

you can connect with people." Tavizón stresses that contrary to what you may think, PIs want to talk to students. "When I was a first-year, I used to be very intimidated to speak with faculty, but the quicker you gain that confidence, the better."

On top of Ms. Tavizón's community-building efforts, she is a stellar PhD candidate. Currently, Tavizón represents GSBS as a UTHealthLEADS Fellow and recently won first place for her poster presentation at the Keck Annual Research Conference. As part of the Garsin lab, she uses the nematode model to study the host response to infections, specifically from the bacterial pathogens *E. faecalis* and *P. aeruginosa*. Tavizón studies the regulation of a transcription factor that is a functional ortholog for Nrf/CNC proteins in mammals. One of her favorite parts of using the nematode (*C. elegans*) model is the community of *C. elegans* researchers she has met and learned from. Tavizón participates in the Houston Area Worm Group, also known as HAWG, encompassing *C. elegans* labs from different institutions that gather a couple times a month. "Being a part of HAWG, it's really amazing to see what can be done with the model outside of my work. There are so many people doing exciting research with *C. elegans*."

Tavizón is a great example of how you can help others while still helping yourself. There is room for everyone to succeed, and you are not taking away from what you can accomplish by giving back. We wish Larissa Tavizón the best while she is in the final stretch of her PhD, and we can't wait to see what the future holds for her.

---

# ABOUT THE AUTHORS



ANN MCKELVEY, MSC  
TEXAS A&M HEALTH  
AMCKELVEY@TAMU.EDU

Ann is a trained scientist (MSc in Physiology from Case Western Reserve University) and PhD candidate with more than 10 years of basic and translational research experience. Her subject matter expertise includes molecular biology, physiology, and antimicrobial resistance mechanisms in human pathogens.

Along with wearing her scientist hat, Ann has volunteered as a STEM outreach guide for the Girl Scouts of America, assisted in establishing a 501(c)3 scholarship foundation, taught Biology and Anatomy/Physiology courses to undergraduates, and written articles for the Texas A&M Health publication *Vital Record*.

She is passionate about education in all its forms and believes that communicating knowledge, both to scientists and to the public (in clear language) is key to pushing our collective understanding forward. With Hossaena and the entire GCC AMR scholars steering committee, Ann is very excited about the forthcoming newsletter and hopes that with every new issue our scientific community will grow closer knit.



HOSSAENA AYELE, MSC  
UTHEALTH SPH  
HOSSAENA.AYELE@UTH.TMC.EDU

Hossaena is a computational microbiologist in training with an MSc in Medical Microbiology and Infectious Diseases, currently completing her PhD in Epidemiology. Her research interests involve the human microbiome and its changes associated with infection risk. Outside of her education and research pursuits, Hossaena has taken many opportunities to mentor. Organizing a STEM mentorship conference for youth at the YMCA, mentoring at an after-school program to uplift through art, and serving as a teaching assistant for undergraduate and graduate studies courses.

This is Hossaena's first introduction to Science Communication, but she is passionate about this endeavor. She believes that celebrating our peers and their accomplishments allows the public to understand what research is conducted in the community and how it can impact public health while supporting networking within the Texas Medical Center.

Hossaena is excited to introduce "Houston, we have a microbe!" with co-author Ann as part of the GCC AMR scholars steering committee. We hope that with every interview, you gain knowledge on a new subject matter and a new outlook on life and its challenges from fellow trainees.

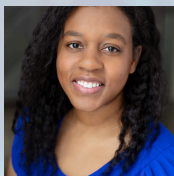


---

## *AMR Scholars Committee*



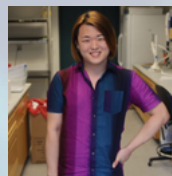
HOSSAENA AYELE  
UTHEALTH  
[HOSSAENA.AYELE@UTH.TMC.EDU](mailto:HOSSAENA.AYELE@UTH.TMC.EDU)



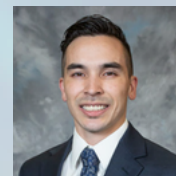
ANN M. MCKEIVAY  
TEXAS A&M HEALTH  
[AMCKEIVAY@TAMU.EDU](mailto:AMCKEIVAY@TAMU.EDU)



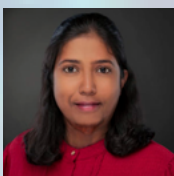
DIGNITE FABRICE NGANGO  
BCM  
[DIGNITEFABRICE.NGANGO@BCM.EDU](mailto:DIGNITEFABRICE.NGANGO@BCM.EDU)



ALEX KANG  
HMRI  
[DKANG@HOUSTONMETHODIST.ORG](mailto:DKANG@HOUSTONMETHODIST.ORG)



JACOB MCPHERSON  
UH  
[JBMCPHER@CENTRAL.UH.EDU](mailto:JBMCPHER@CENTRAL.UH.EDU)



CHETNA DUREJA  
TEXAS A&M HEALTH  
[CHETNADUREJA@EXCHANGE.TAMU.EDU](mailto:CHETNADUREJA@EXCHANGE.TAMU.EDU)



BISHNU JOSHI  
BCM  
[BISHNU.JOSHI@BCM.EDU](mailto:BISHNU.JOSHI@BCM.EDU)



MICHAEL LONGMIRE  
MDACC  
[MKLONGMIRE@MDANDERSON.ORG](mailto:MKLONGMIRE@MDANDERSON.ORG)

### Newsletter Goals

- Support the career progression of trainees in the Texas Medical Center (TMC) who participate in Microbiology-related research by highlighting their accomplishments and contributions to their respective fields.
- Support community building by providing the opportunity to discover trainees within the TMC conducting research on similar topics, supporting collaboration efforts and career advancement.

### Newsletter Scope:

- This newsletter is specifically tailored for PhD students and early-career postdoctoral researchers in the field of Microbiology. It is exclusively intended for trainees affiliated with member institutions of the Texas Medical Center (TMC) in Houston.

If you wish to nominate (or self-nominate) a trainee in the TMC that is doing stellar research, was awarded a competitive fellowship, and/or is just simply awesome, scan the below QR code.

*Thank you for reading!*

