



## WELCOME FROM THE CHAIR

I have the great pleasure to welcome you to the inaugural Department of Neuroscience, Developmental and Regenerative Biology newsletter — NDRB Signals! This new, monthly newsletter will highlight recent events and achievements of our students, faculty, and staff, as well as communicate important announcements and opportunities. The intention is to celebrate and inform, both inside and outside of our department.

First, I'd like to welcome our two new tenure-track faculty, Drs. Lacey Barton and Alexey Soshnev to our department. Dr. Soshnev is the focus of this issue's Faculty Highlight. Also this month you'll read about our first departmental retreat (along with the names of our three student/postdoc poster winners), two new faculty/student publications, and a highlight of one of our new undergraduate neuroscience students, along with other announcements.

As we approach August and enter into our second year as an independent department it is a time of great excitement and change. The launch of the new BS in Neuroscience degree brings to our department a strong undergraduate presence — initial enrollment is expected to be over 250 students! We are looking forward to the formal name change to one of our PhD programs; a newly "re-branded" Doctoral Degree in Developmental and Regenerative Sciences (with the catchy acronym DRS). In addition to welcoming our two new faculty, we sadly say farewell to Dr. Isabel Muzzio, who will be heading to University of Iowa for her next adventure.

Going forward, I look forward to communicating with you and hearing about our students' and faculty accomplishments, and I hope you enjoy this newsletter.

With warm regards,

Jenny Hsieh, Ph.D.



## NEXT UP...

Commentary from the  
UGAR and GAR

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# FROM THE UNDERGRADUATE ADVISOR OF RECORD (UGAR) - DR. WILLIAM RAMOS

## MEET THE UGAR

My name is Dr. William Ramos and I am excited and honored to serve as the UGAR for the BS Neuroscience program! I earned my BA in Biology from UT Austin, then my MS in Biology from UTSA and my Ph.D. in Biology (with an emphasis in Neurobiology) from UTSA in 2005. Following a postdoctoral fellowship at NIH/NIA, I rejoined UTSA in 2007. One of my duties as UGAR is to serve the students. I will monitor their academic progress and help with overrides, special requests and answer questions about advising. My office is located in SEB 2.142 so come by if you have any questions about the program or if you just want to chat. I look forward to meeting every student this coming year.

Go Runners!

William Ramos, Ph.D.

## THE BACHELOR OF SCIENCE (B.S.) IN NEUROSCIENCE

The BS in Neuroscience is an interdisciplinary degree that will provide students with the opportunity to pursue an integrated course of study in Neuroscience – a unique academic field that requires students to understand and utilize a set of diverse knowledge from multiple disciplines. Neuroscience impacts all areas of science and business and this degree is intended to prepare students for a wide range of careers in this area.

The curriculum is structured around 1) an interdisciplinary foundation in the sciences, psychology, and data analysis; 2) a broad scope of electives for students to individualize their degree or pursue one of three neuroscience concentrations (Behavioral, Molecular, and Pre-medical); and 3) opportunities for research/practical experience.



Bachelor of Science

# Neuroscience

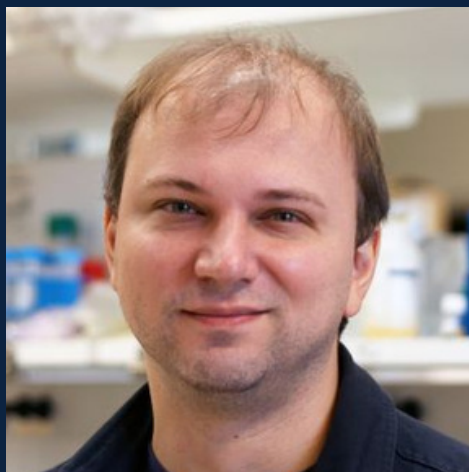
# FROM THE GRADUATE ADVISOR OF RECORD (GAR) - DR. MATT WANAT

The Neuroscience PhD program at UTSA is a diverse, dynamic and growing community of scientists. Our research strengths are broad, ranging from molecular/cellular levels of analysis (neuronal physiology, stem cells, sensory transduction, neurodegeneration) to systems/behavioral levels of analysis (learning and memory, language processing, computational neuroscience, substance use disorders). Our students publish in top tier journals, have received prestigious awards and fellowships, and have continued success in their careers after earning their PhDs at UTSA. Students in the program have excellent opportunities to interact with the larger scientific community through scientific conferences and meeting with the invited seminar speakers in the Neuroscience seminar series. Neuroscience is one the most dynamic and growing research fields and there is no better place to get your training than through the Neuroscience PhD program at UTSA.

Please see the website for more information on the program and details on how to apply: <https://www.utsa.edu/sciences/neuroscience-developmental-regenerative-biology/phd-neuro/>

# FACULTY SPOTLIGHT

## DR. ALEXEY SOSHNEV



### Q: WHAT IS YOUR AREA OF EXPERTISE AND HOW LONG HAVE YOU BEEN WORKING IN YOUR RESEARCH AREA?

I am a chromatin biologist. I study how it all comes together to regulate gene expression in development and disease. My favorite part is that it's a very multidisciplinary part of biology rooted in classical biochemistry and physical chemistry, using developmental biology and genetic engineering for functional studies, and taking full advantage of the most novel tools genome wide analyses of gene activity, chromatin states and 3D maps, proteomics, live imaging, and so on. I started my training some twenty years ago as a clinician, then did graduate school in developmental biology and genetics using *Drosophila* model and followed it up by a postdoc focusing squarely on (mal)function of histones (proteins that package DNA and regulate gene activity) in cancer and development.

### Q: WHERE DID YOU GET YOUR DEGREE AND WHAT ATTRACTED YOU TO BECOMING A PROFESSOR?

I was always drawn to the natural world. When I was in medical school at St. Petersburg State University, I realized that I enjoyed puzzles of pathology a lot more than filling out algorithmic paperwork for the tenth identical patient. As graduation drew closer, I had to get proper training; going to the US was a natural choice, since I already knew English fairly well. After graduating from the University of Iowa, I did a postdoc at Rockefeller University in the heart of New York City. I would say that Waddington's famous "epigenetic landscape" illustration is a good analogy for my career path being a product of many deliberate decisions, but also quite a few chance encounters over time. Being a "professor" was never a goal in itself just a means to doing research on my own terms.

### Q: WHAT DO YOU THINK WILL CHANGE ABOUT YOUR RESEARCH OVER THE NEXT FIVE YEARS?

It's easy to foresee the incremental advances (better microscopes, deeper sequencing, multiplex genetic engineering and such); these things are already happening. More importantly, we will keep getting better at integrating different lines of evidence and experimental approaches, and new fields will arise at the intersections of existing knowledge. For my research program personally, I plan to branch out more into animal models taking advantage of the resources and expertise at UTSA and developing a few new mouse strains that will be instrumental in both developmental and cancer biology.

### Q: WHAT ARE YOU MOST LOOKING FORWARD TO IN YOUR NEW ROLE WITH NDRB?

I really missed the students at Rockefeller (it's a research institution with no undergraduate program and last few years severely limited outreach programs on site). In my admittedly brief visits to UTSA during the interview process, I absolutely loved the energy on campus, and am very much looking forward to the teaching and mentorship part of the job!

### Q: WHAT ARE YOUR FUTURE PLANS?

To keep working on the biggest unanswered questions in chromatin biology to this day which histone modifications (if any) are instructive to transcription, how does chromatin density dictate gene activity, and what are the long term effects of gene expression on chromatin template? One of my postdoctoral projects focused on these, and I plan to pursue it in more details in my own lab. Another exciting area of research we will work on is the role of certain histone types, modifications, and related "writer" enzymes in a class of neurodevelopmental disorders.

### Q: WHAT INSPIRED YOU TO WORK IN YOUR CURRENT FIELD?

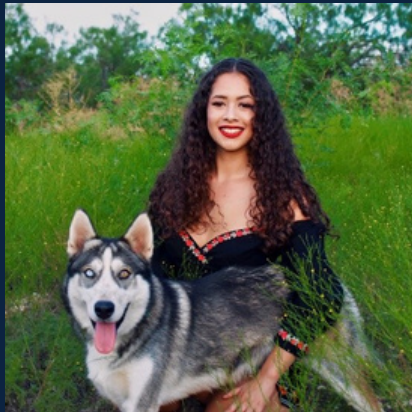
When I was in graduate school, I studied a DNA binding protein found in (almost) every cell type yet loss of this protein resulted in phenotype limited only to female germline. This is an example of a widespread phenomenon how chromatin context, different between cell lineages, regulates the function of individual DNA binding factors. Later during my postdoc at Rockefeller with Dave Allis, and together with some amazing collaborators at Cornell Medicine, Memorial Sloan Kettering, and NYU, we began to work out how changes in chromatin context may drive cancer progression, and more recently, human developmental disorders.

### Q: WHAT ADVICE WOULD YOU GIVE TO OUR FIRST-YEAR NEUROSCIENCE STUDENTS?

Professors enjoy it when you approach them for help, or just to show your interest! Don't be intimidated to come up after class, or email off hours if you have a question or an idea if we are busy, we will just say so! Also read a lot and I don't mean just textbooks.

# STUDENT SPOTLIGHT

## KASSANDRA CASTILLO



Kassandra is an undergraduate junior majoring in neuroscience. Her dream career is to become a neurosurgeon to treat chronic illnesses. She is a poised individual who is eager to learn, determined to accomplish her goals, and strives to help others.

### Q: WHY DID YOU CHOOSE NEUROSCIENCE AS YOUR MAJOR?

I chose neuroscience because I am intrigued with the complexity of the brain. I have a gravitation towards understanding the functions of the brain and the role it plays in the human body.

### Q: WHAT CAMPUS RESOURCES DO YOU FIND HELPFUL?

The best resource on campus is the library. You can utilize the various sources that are provided to be successful in your academics. The library is a great support system, and the staff are always happy to help.

### Q: WHAT ADVICE WOULD YOU GIVE TO THE INCOMING NEW STUDENTS?

Join student organizations! Become an active member of the variety range of organizations on campus. This is a wonderful way to become involved in the community and spark new interests.

# RESEARCH UPDATES

## Publications:

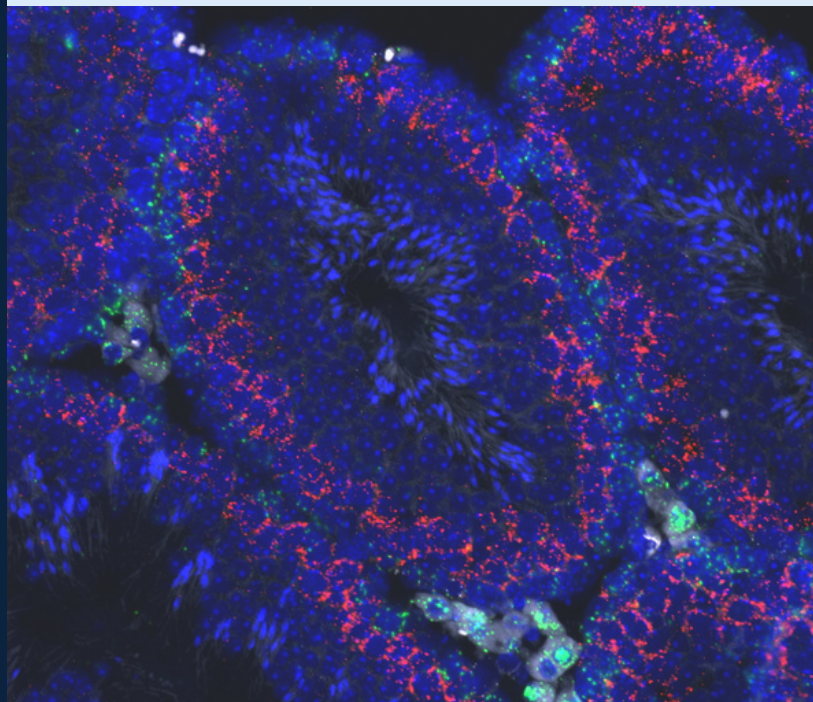
Dr. T. Chris Gamblin: [\*In vitro Tau Aggregation Inducer Molecules Influence the Effects of MAPT Mutations on Aggregation Dynamics\*](#) ([American Chemical Society, June 2022](#)).

Dr. Matt Wanat: [\*Sex Differences in Behavioral Responding and Dopamine Release during Pavlovian Learning\*](#) ([eNeuro Society for Neuroscience, March 2022](#)).

## Grants and fellowships:

Dr. Matt Wanat received a grant R21 through the NIMH: MH127466 'Midbrain astrocytes controlling active avoidance learning' on May 1, 2022

Morgan Johnston (Neuro Ph.D. student) was accepted into the [Neuroscience Scholars Program](#) as an Associate Fellow. This is a program administered by the Society for Neuroscience.



# COS STUDENT SUCCESS CENTER



The College of Sciences Student Success Center (COS SSC) is a comprehensive resource center which supports transfer, first-year, sophomore, junior and senior students. The COS SSC provides mentoring for all COS undergraduate students to help future scientists develop their scientific identity. Student mentors discuss things like academic success, campus connection, and overall well-being with mentees. The center has a variety of study spaces with whiteboards and academic materials for use by students.

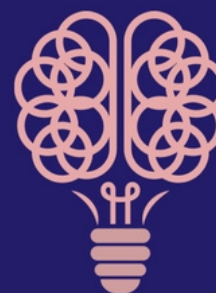
Visit them at **FLN 2.03.02**. They are **open Monday through Friday, 8 am-5 pm**. Email COS SSC at: [cos.success@utsa.edu](mailto:cos.success@utsa.edu) or call **210-458-3702**. Follow them on Instagram [@cos.success](https://www.instagram.com/cos.success) and check out their website at: <https://www.utsa.edu/sciences/student-success/>.

## NEURO-MIND ASSOCIATION (NMA)

The NDRB department is excited to announce its NEW student organization: The Neuro-Mind Association (NMA)!

The organization strives to bring awareness to and educate the community on the field of Neuroscience and includes research and career opportunities.

To get involved for the Fall semester, visit [Rowdy Link](#) or email at [neuromindaUTSA@gmail.com](mailto:neuromindaUTSA@gmail.com)



NEURO-MIND ASSOCIATION

NMA

# DEPARTMENT RETREAT

The NDRB Inaugural Retreat was held at the Dominion Country Club on Friday, May 20, 2022. The department Retreat was an all-day event in which faculty, postdocs, graduate and undergraduate students and staff dedicated time to step back from our day-to-day activities for a period of concentrated discussion, dialogue, and strategic thinking to address our future.

Faculty, Dr. Francesco Savelli and graduate students, Bryan Fowler (Macpherson Lab), James Jones (Wilson Lab), Lorena Roa De La Cruz (Hermann Lab) and Jake Lehle (McCarrey Lab) presented dynamic research talks. Faculty and students were afforded the opportunity to engage and learn more about their research interests.

Postdocs, graduate and undergraduate students were invited to participate in a research poster competition consisting of creating a 5-minute video describing their research. Entries were submitted electronically ahead of the scheduled Retreat and were evaluated by the NDRB community. Congratulations to the winners of the research poster contest! Undergraduate Winner: Hope (Burgos-Robles Lab), Graduate Winner: Erin Hurley (Hsieh Lab) and Post-Doc Winner: Dr. Gopu Changarathil (Hsieh Lab). The three winners were awarded travel funding.

Afternoon sessions featured time set aside to allow groups to segment for group relevant engagement. Faculty participated in a strategic visioning exercise conducted by consultant, Holly Coghill. This exercise provided the department to revise our mission, vision, core values and add metrics to the goals defined in our By-Laws.

The Retreat ended with fun team-building activities. Brush up on your trivia and be prepared for next year. Many thanks to all who attended and participated.



## SUMMER PHD GRADUATES

Congratulations to our Summer 2022 Doctoral Graduates:

### Vanessa Cerda



Ph.D. in Neuroscience  
Major Professor: Nicole Wicha, Ph.D.  
Dissertation Title: "Two Times Four = Dos Por Cuatro: Simple Arithmetic Processing in the Bilingual Brain"

### Ching Hsun Cheng



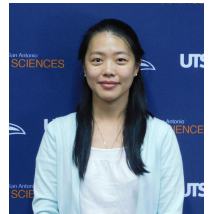
Ph.D. in Cell and Molecular Biology  
Major Professor: Gary Gaufo, Ph.D.  
Dissertation Title: Identifying Reprogramming Barriers to Totipotency

### Bryan Fowler



Ph.D. in Neuroscience  
Major Professor: Lindsey Macpherson, Ph.D.  
Dissertation Title: A Modest Petrosal: Elucidating Function and Molecular Identity in the Understudied Peripheral Taste Ganglion

### Yu-Huey Lin



Ph.D. in Cell and Molecular Biology  
Major Professor: John McCarrey, Ph.D.  
Dissertation Title: Analysis of Differential Epigenetic Reprogramming Potential among Pluripotent, Germ and Somatic Cell Types

### Lorena Roa De La Cruz



Ph.D. in Cell and Molecular Biology  
Major Professor: Brian Hermann, Ph.D.  
Dissertation Title: Mechanisms of Specification and Maintenance of Foundational Spermatogonia Stem Cells in Mice

### Jacqueline Williams



Ph.D. in Cell and Molecular Biology  
Major Professor: Garry Sunter, Ph.D.  
Dissertation Title: Hijacking of the Plant Transcription Factor TCP24 by Geminiviruses for the Regulation of Late Gene Expression

# JOB POSTING

**Now Hiring**

Scan to apply!

**Fall 2022 Work-Study Students!**

All majors welcome  
Work-study eligibility required

Up to 19hrs/week  
Multiple positions available

**UTSA NDRB** Department of Neuroscience, Developmental and Regenerative Biology  
Email: [NDRB@utsa.edu](mailto:NDRB@utsa.edu) Office: BSE 2.304

**We are hiring!**  
Fall 2022 NDRB work-study positions are available.

**Apply here:**

<https://bit.ly/3NzUf8V>

## UPCOMING EVENTS AND DEADLINES

### Fall 2022 NDRB Undergraduate Welcome Day

Tuesday, August 23, 2022, open house 8am-5pm

@ BSE (Biotechnology Sciences & Engineering) 2.304

**All Undergraduate Cell & Molecular Biology and Neuroscience students are welcomed!**

Contact [Xiaoqi.Jiang@utsa.edu](mailto:Xiaoqi.Jiang@utsa.edu) for questions.

### Fall 2022 NDRB PhD Orientation

Monday, August 22, 2022 @ Loeffler

Details to come. Contact [Janice.Marshall@utsa.edu](mailto:Janice.Marshall@utsa.edu) for questions.

**Fall 2022 NDRB Welcome Day**

**Save THE Date**

**Tue Aug 23, 2022  
BSE 2.304**

**UTSA**  
Department of Neuroscience, Developmental and Regenerative Biology