

# MPB GSA NEWSLETTER

Spring 2017

## Molecular Physiology & Biophysics Graduate Student Association

The purpose of this newsletter is to serve as a resource for MPB students to get to know the department better.

### UPCOMING EVENTS

**May 18th: New MPB Student Happy Hour, 4-6pm**

**May 25<sup>th</sup>: Seminar by Dr. Nada Abumrad - this year's Student Invited Speaker!**

Find out more about her research on the [Abumrad lab website](#).

**June 16th: MPB Coffee Hour with Dr. David Jacobson**

### Annual Holiday Party

**By Merla Hubler**

The annual MPB Holiday party was another success. As has become tradition, the evening was hosted in the spacious Rotunda of the Wyatt Center on Peabody campus. The evening began with cocktails and hors d'oeuvres as the department members and friends warmed up from the chill outside and exchanged pleasantries. MPB faculty and students then partook in an ample buffet, and shared stories of the year. A highlight of the evening was the "Long Brass Quintet" that played upbeat holiday music, rivaling the food and vibrant poinsettias in holiday cheer. The evening was concluded with an address by our interim chair, Dr. Roger Colbran, as well as the annual poinsettia raffle. <>>



### Holiday Cookie Decorations

**By Diane Saunders**

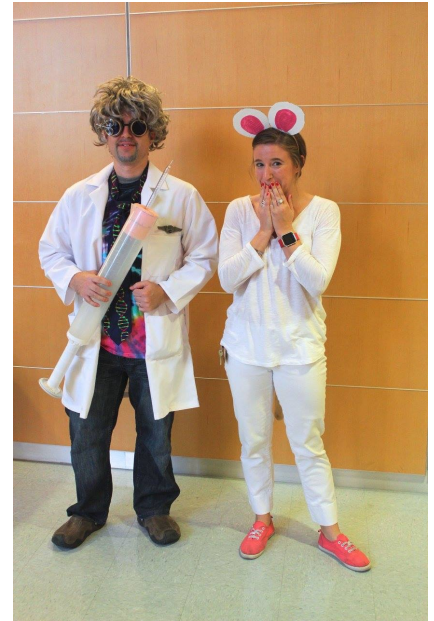
The MPB GSA hosted a holiday cookie decorating extravaganza as part of our coffee hour series this fall. Students gathered to enjoy homemade hot chocolate, and many honed their pipetting skills to pipe icing onto sugar cookies shaped like snowflakes, trees, menorahs, candy canes, and more! We were happy to provide labmates with sweet treats and spread some holiday cheer around the department, as well as uncover hidden sprinkle- and candy-studded accessorizing talent. Stay tuned for more special coffee hour social events this upcoming year! <>>



## MPB Halloween

By Caleigh Azumava

The annual MPB Halloween party was again a hit with creative costumes, drinks, and lots of pizza. With last year's group costume winner out of town, the category was wide open for a new champion. The Madhur lab rose to the occasion and dressed up as the cast of *The Big Bang Theory*. They squeaked out a victory right above the Venters lab who also stuck with the ever present theme of science and came as a crazy scientist and a lab mouse. Ray Pasek and his daughter again stole hearts and the individual costume prize, \$10 to Mellow Mushroom. They came dressed as the most adorable Little Red Ridinghood and the Big Bad Wolf. Anyone looking to win the individual prize might want to look into bringing a baby with them because these two are cleaning up. We had a great afternoon snacking on homemade mini cupcakes from Diane Saunders and catching up with everyone in the department. Hopefully everyone can make it to the next Halloween party dressed up in their best costumes and we'll see who wins in 2017! <>



### NEW MPB GSA Officers

- President:** Karin Bosma
- Vice President:** Diane Saunders
- Secretary:** Joey Elskar
- Treasurer:** Tyler Perfit
- Seminar Chair:** Caleigh Azumaya
- Newsletter Chair:** Sarah Milian
- Social Media Chair:** Merla Hubler

# Faculty Spotlight: Erkan Karakas, Ph.D.

By Merla Hubler

## Erkan Karakas

The Karakas lab studies the structural biology of calcium signaling and transport through biological membranes. Prior to joining MPB faculty in 2017, Dr. Karakas published several high-profile papers on NMDA receptors during his postdoc with Dr. Furukura at Cold Spring Harbor.



### What are the major interests of your lab?

Our lab is interested in understanding the molecular mechanism of calcium signaling at the endoplasmic reticulum (ER)-mitochondria contact sites. The close apposition between ER and mitochondria form a subcellular compartment where many physiological processes take place. In particular, calcium transfer from ER to mitochondria through these contact sites is required for ATP generation, whereas excessive or reduced calcium transfer leads to initiation of apoptotic cell death or autophagy, respectively. Consequently, calcium signaling at ER-mitochondria interface plays an essential role in cell fate decisions and its alteration could be responsible for onset and progression of diseases where the cell fate decision machinery is compromised, as observed in cancer (evasion of apoptosis) and neurodegenerative diseases (excessive apoptosis). Using a combination of structural biology, biochemistry and biophysics, we try to understand how the molecular machinery that mediates calcium signaling is assembled, how it is regulated in the healthy cell and if its activity can be modulated in the diseased state.

### What influenced you to pursue a scientific career and stay within academics?

My entrance to a basic science department for my undergraduate study was a bit fortuitous event, thanks to the university entrance system in Turkey. I was unsure about research at the beginning, but I got interested in structural biology after taking the biochemistry class during my undergraduate education. I was amazed to learn how we could visualize proteins at atomic resolution using structural biology techniques. After my first rotation in a protein crystallography lab, the path to follow was clear for me. I enjoy every moment of solving puzzles and looking for unknown. The main reason for me to stay in academic research is the freedom to perform curiosity driven research.

### What is your most memorable moment in science?

My favorite time is looking at a protein structure I just solved after overcoming many obstacles and trying to understand how it relates to the protein's function. The most memorable of all is when I looked at the structure of NMDA receptor for the first time. For long time, I had thought that would not be possible.

### What might (someone) be surprised to know about you?

I missed the first half of my qualifying exam, because I couldn't wake up on time. Thankfully, I managed to pass the exam on the second half.

### What advice would you give to new graduate students and/or post-docs?

Be positive. Enjoy and celebrate every small milestone in your research and get ready for the next challenge. Persevere.

<>

## Welcome New MPB Students!

By Merla Hubler

Join us for the new student happy hour on May 18th!



**Name:** Matthew Cottam

**Hometown:** Las Vegas, Nevada

**Undergraduate school and degree:** Wake Forest University, B.S. in Biochemistry

**Current lab:** Alyssa Hasty's lab

**Why did you become interested in your field of research?:** I am interested in diseases that affect multiple body systems. I also find adipose fascinating because it is not often considered to be an important tissue, yet it clearly has dramatic effects on daily life.

**Favorite Food:** Korean Fried Chicken

**Favorite animal:** Giant Squid - It is interesting that we know so little about these massive animals.

**Random (unexpected) fact about yourself:** I used to be a competitive breakdancer in high school.



**Name:** Kelli Jordan

**Hometown:** Beaumont, Texas

**Undergraduate school and degree:** University of Texas at Austin, B.S. in Human Biology

**Current lab:** Jacobson lab

**Why did you become interested in your field of research?:** Growing up in a family with a strong history of diabetes and obesity

**Favorite Food:** Tacos and Tex-Mex

**Favorite animal:** Cats

**Random (unexpected) fact about yourself:** I used to wakeboard competitively



**Name:** Slavina Goleva

**Hometown:** Plovdiv, Bulgaria

**Undergraduate school and degree:** University of Kentucky, B.S. in Biology

**Current lab:** Dr. David Sweatt

**Why did you become interested in your field of research?:** I became interested in physiology after conducting research in Dr. Jeffrey Osborn's lab at the University of Kentucky as an undergraduate student. Additionally, my undergraduate coursework in physiology and neurology piqued my interest in the topics.

**Favorite Food:** Stuffed grape leaves made by my grandmother's recipe

**Favorite animal:** Dogs, they are perfect creatures.

**Random (unexpected) fact about yourself:** I moved to America without speaking a word of English.





**Name:** Shannon Townsend

**Hometown:** Elmont, NY

**Undergraduate school and degree:** Amherst College, B.S. in Neuroscience

**Current lab:** Dr. Maureen Gannon

**Why did you become interested in your field of research?:** I've always had an interest in disease physiology and explored diabetes research during my rotation and loved it.

**Favorite Food:** Caribbean food in general

**Favorite animal:** Fennec foxes

**Random (unexpected) fact about yourself:** I have 3 siblings aged 10 and under.

## Congratulations, MPB!

The MPBGSA would like to say congratulations for all of the achievements to our MPB! We have a very talented bunch, so we are taking a moment to highlight some of the accomplishments over the past year. We apologize to any students that we may have missed. «»

- September 2016: Ian Williams received a F31 fellowship
- December 2016: Andrea Perreault published a JOVE paper on the ChIP-exo Method
- January 2017: Roxana Loperena published a review in Medical Clinic of North America on the role of oxidative stress in hypertensive diseases
- January 2017: Bethany Carboneau published a review in the Journal of Cell Communications and Signaling on the role of prostaglandins in the islet.
- February 2017: Amanda Meyer published in Journal of Biological Chemistry on the identification of the Rap1 transcriptional activation domain
- March 2017: Brian Palmisano published a paper in Frontiers in Endocrinology on protection of high-fat feeding on daily rhythms by ovarian hormones
- March 2017: Caleigh Azumaya published a paper in PLoS One on AMPA receptor modulators.
- April 2017: Andrea Perreault published a paper in Experimental Hematology on the role for Epo and the erythroid cell epigenome
- February 2017: Adrian Cadar was accepted into Vanderbilt Medical School with the Vanderbilt full tuition scholarship
- May 2017: Diane Saunders published a review in the Journal of Autoimmunity on Replicative capacity of  $\beta$ -cells and type 1 diabetes

We want to hear from you!

MPB students know how to get things done! Let us know of recent grants, awards and publications so we can feature it in the newsletter. Also, If you would like to contribute to the newsletter just let us know. You can submit articles to [MPBGSA@vanderbilt.edu](mailto:MPBGSA@vanderbilt.edu). It's a great way to improve your writing skills and would look great on your CV. Comments and suggestions are encouraged as well.



[MPBGSA@vanderbilt.edu](mailto:MPBGSA@vanderbilt.edu)



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