

# MPB GSA NEWSLETTER

Fall 2016

## 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

October 7th: Coffee hour with Dr. Richard Simerly

**October 14th: MPB Relay Race - 5pm at the Rec Center Field House!**

October 28th: Halloween Party & Costume Contest

November 4th: Coffee hour with Dr. Ray Blind

November 10th: Internal Student Invited Speaker

December 9th: Holiday Cocoa, Coffee, and Cookie Decor!

## Coffee Hours

By Merla Hubler

The MPB GSA is excited to host another semester of coffee hours. Over the last years, students have enjoyed this opportunity to meet with faculty and staff and share life stories and pastries. Join us this semester! It's a great way to meet the department and start your Friday with stories, coffee, and a smile.



Please note the special coffee hour in December that will involve cocoa, coffee, and cookie decoration!

**Friday, October 7 – Dr. Richard Simerly**  
**Friday, November 4 – Dr. Ray Blind**  
**Friday, December 9 – Holiday Cocoa, Coffee, & Cookie Décor!**

## New MPB GSA Officers

The GSA would like to thank the prior officers for their contributions. We are looking forward to a great year of organizing events and outreach opportunities for the MPB department faculty, post docs, and students. One of our goals is to continue to increase student involvement and camaraderie this year. Please contact any of the officers with recommendations, critiques or ideas. «»

**President:** Caleigh Azumaya  
**Vice-President:** Diane Saunders  
**Treasurer:** Karin Bosma  
**Secretary:** Roxana Loperana  
**Social Media Chair:** Joey Elsagr  
**Seminar Chair:** Bethany Dale  
**Newsletter Chair:** Merla Hubler

# Faculty Spotlight: Richard Simerly, Ph.D.

## Richard Simerly

The Simerly lab studies axon targeting in limbic and hypothalamic neural pathways, leptin receptor signaling in developing hypothalamic circuitry, and the development of sexually dimorphic forebrain regions.



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

We are a developmental neurobiology lab and study the organization and development of neural circuits that control essential physiological responses such as feeding and autonomic function. Hormones represent natural signals that respond to environmental constraints by sculpting brain architecture to promote an individual's health, and ensure propagation of the species. Basic neurobiological research methods are employed to understand how hormones specify numbers of brain cells and the pattern of neural connections that form between them. A better mechanistic understanding of this process will provide clues about how our own biological response to the environment impacts the way we function throughout the lifespan. For a brief propaganda video produced by Childrens Hospital Los Angeles see: <https://www.youtube.com/watch?v=T-ShSzfDF8>

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

As an undergraduate at the University of California in Berkeley I was exposed to a wide variety of superb scientists who all seemed quite happy pursuing interesting questions. Like most students interested in anatomy and physiology, I considered medicine, but after working in a hospital and seeing that career up close, I decided to pursue laboratory research. At UCLA and at The Salk Institute I received wonderful mentoring that fueled my own curiosity and provided me with the tools to succeed. I was so happy working in

the laboratory, communicating my findings and learning about the discoveries of others that I could not imagine a better life than that of a research scientist. I still feel that way.

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

The first time I used a confocal microscope, because this instrument transformed our ability to visualize components of neural circuits. I had used fluorescence labeling for years, but had always struggled with capturing clear images due to out-of-focus light. Confocal microscopy allowed us to clearly resolve neural inputs to cells and reconstruct tissue volumes in 3 dimensions, as well as collect quantitative data from intact circuits.

### What was one of your favorite moments from your time at Vanderbilt?

One of my favorite times here was when I was starting up the lab, and put in my first order for some large pieces of equipment I needed. Everything finally became very "real"; all the hard work leading up to this point finally paying off, and the realization that I was now responsible for my own success or failure as a scientist.

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

Although my relatives have been in California for 4 generations, California Simerlys are from Tennessee. My great grandfather Simerly started a ranch in the San Joaquin Valley in California, but he was born in Elizabethton in Eastern Tennessee.

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

Being a basic scientist is a great gig! If you told an artist that he could pursue his ideas in a supportive environment, make a 6-figure salary and that the government would pay for his staff and supplies, he would tell you that you were delusional, yet that is what awaits the successful NIH researcher. If you can find something to do that is more fun than working in a lab and discovering new things, then by all means you should do that. But if the fit is right and you are willing to commit, academic science is a great life. <>

# Getting to know our new biomedical illustrator: Rachel Chandler

By Caleigh Azumaya

Rachel Chandler

Rachel is the new biomedical illustrator.

An exhibit of Rachel's artwork can be found on page 6.



## What did you want to be when you grew up?

Funnily enough, I wanted to be a biomedical illustrator. My dad is a neurosurgeon so I grew up around his work and he really encouraged me to pursue that path. I also thought about being a marine biologist.

## What was your academic journey to this job?

I went to college at Belmont University here in Nashville and majored in biology and then took a year off to prepare my portfolio to apply to grad school. I then got my Master's in biomedical visualization at the University of Chicago. Sometimes illustrators double major in biology and art in undergrad but I really wanted to focus on the science at that point.

## Who's your favorite artist?

Right now I really like work from Mœbius. He's a French cartoonist who sometimes illustrates awesome fantasy marine creatures, which I love.

More info: Jean Giraud (who worked under the pseudonym Mœbius and sometimes Gir) is considered one of the most influential artists in the genre of *bands dessinées*. He worked on both sci-fi/fantasy comic books and storyboards for sci-fi movies.

## What's your favorite subject to illustrate?

While I liked that most of my training during my Master's was more focused on gross anatomy, I really enjoy animating molecular biology. Molecular biology is becoming a more popular facet of biomedical illustration and I'm excited to work on it.

## Have you ever done more traditional art?

So, my portfolio to apply to my graduate school program actually had to be 100% non-medical based art and I was an art major for a year in college before I decided to major in biology. I've also sketched on the side since I was little.

## Do you like to work in any other art mediums?

Since most of my job is done computationally, I like to work in watercolors when I get a chance.

## What's your favorite non-science subject to illustrate?

I like to draw and paint marine animals, but portraiture is my favorite.

## What kind of design programs do you think are the best to use in scientific illustration?

I use the whole Adobe suite and I also really like to use 3ds Max. 3ds Max is a 3D modeling software mostly used by architects and game designers that the medical illustration field is slowly adopting because of how good it is at 3D animation and rendering. Surgery departments use it to model incisions sites, etc.

## What drives you crazy about scientific illustration?

I always really stress accuracy in illustration so when other people don't pay attention to big things like DNA twisting in the wrong direction or the heart being on the wrong side of the body it bugs me. Also, sometimes people completely disregard proportions.

## Do you play any sports or have any hobbies?

I don't play any sports but my main activity outside of work is rock climbing. I climb at Climb Nashville West, which is a great gym but I also climb outdoors, sometimes. Tennessee is nice because there are a few really great places to go bouldering about an hour outside of the city. I think bouldering (lower climbing with no ropes) is really exhilarating because I'm a little bit afraid of heights so it's a great way to face my fears.

## What's one thing on your bucket list?

I really want to get certified to scuba dive and then swim in an underground cave, maybe in Mexico.

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## Recent MPB Graduates ▶

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### Nora Kayton Bryant

Previous lab at Vanderbilt: Al Powers

Current Position: Research Fellow, Joslin Diabetes Center

**What advice would you give younger graduate students?**

Keep going! Enjoy all of the resources and special attributes of graduate school, as these are (likely) your last years as a student. Give thought, early and often, to how you want to use your PhD, as there are many options.

**What was the best piece of advice that you received while you pursued your PhD?**

The perfect is the enemy of the good.

**How did your mentor most influence you?**

The list is long, and I am thankful. Perhaps most meaningfully, Al showed me, by example, how a mentor can bring out the best in his/her trainees.

**Favorite place or thing you will miss most about Vanderbilt/Nashville?**

I miss being just across the lab or down the hall from many of the friends that I made during graduate school.



### Kayla (Boortz) Young

Previous lab at Vanderbilt: Richard O'Brien

Current Position: Commercialization Program Associate at Life Science Washington

**What advice would you give younger graduate students?**

My advice would be to figure out how to communicate with your PI early and to do it often. Having open lines of communication and feeling comfortable talking to your boss about everything from experiments, to time off, to papers to frustrations and successes etc is vital, to your success and also a good skill to have once you leave Vanderbilt.

**What was the best piece of advice that you received while you pursued your PhD?**

Maintain a balance; Lab can be consuming but it is important to have hobbies, a social life and to leave work at work occasionally. The happier you are the more successful you (most likely) will be in lab.

**How did your mentor most influence you?**

Richard was/is incessantly positive. After every failed experiment or negative result, he instantly had a next "brilliant" idea and was very much a champion of my work. It is very easy to get frustrated when things aren't going your way (for months/years) and having a boss who always provided positive reinforcement and a silver lining helped me to maintain a positive attitude and to keep pushing ahead. Without his positive influence, I most likely would not have survived my PhD.

**Favorite place or thing you will miss most about Vanderbilt/Nashville?**

I will miss the people and friends I left behind at Vanderbilt. It is such an amazing community and one that I am very proud to be a part of. Regarding Nashville, I will miss 5th and Taylor, Live on the Green and cheap local music. However, I will not miss mouse work or southern summers :)





## Andrea Hill-McAlester

Previous lab at Vanderbilt: Alyssa Hasty

Current Position: Postdoctoral Associate- Molecular Virology and Microbiology- Baylor College of Medicine, Houston TX

### What advice would you give younger graduate students?

My advice to younger graduate students would be to find a good way to manage their stress levels. Although research requires a lot of time, self preservation is necessary to obtain your PhD without completely burning yourself out.

### What was the best piece of advice that you received while you pursued your PhD?

You wouldn't be here if they (the graduate program) didn't think you were capable. Know that you are capable and you can make it through.

### How did your mentor most influence you?

I was most influenced by Dr. Hasty's achievements as a woman in science. She is a great example of how women can have successful careers and family life.

### Favorite place or thing you will miss most about Vanderbilt/Nashville?

The thing I will miss the most about Vanderbilt/Nashville are my

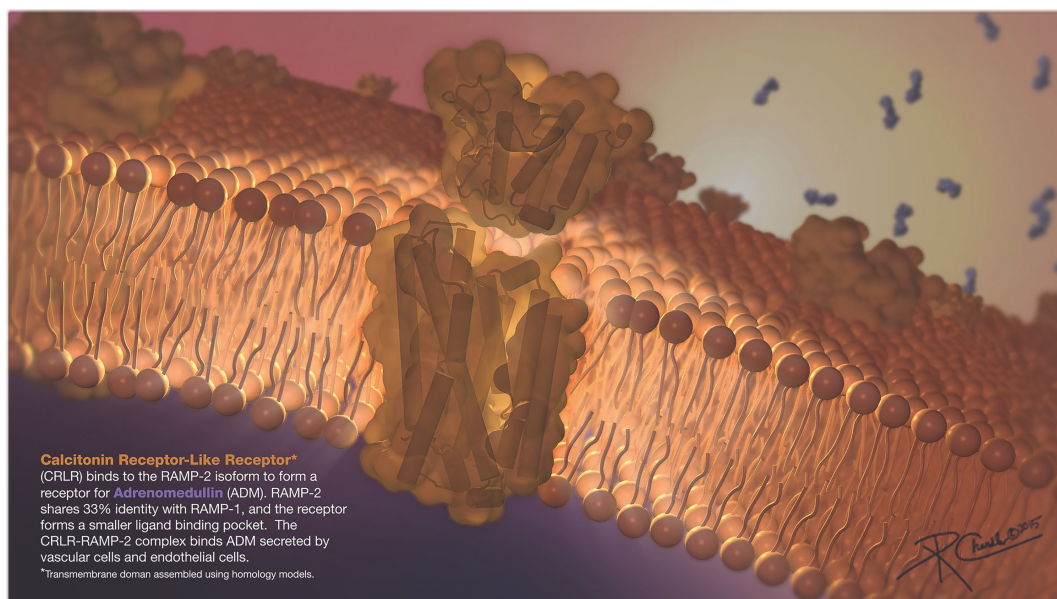
## Congratulations, MPB!

The MPBGSA would like to say congratulations to our MPB students for all of their achievements! 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.

- Ian Williams published in both Hypertension and Cell Metabolism
- Allison Norlander published in Hypertension
- Roxana Loperena received a F31 National Research Service Award a NRSA-F31 predoctoral fellowship, and won 1st place at Vanderbilt's Cardiovascular Symposium
- Adrian Cadar received a VICTR NCATS award, a Carl Storm Fellowship, and authored papers in Bioorganic & Medicinal Chemistry and Translational Psychiatry
- Michael Litt received a Kirschstein NRSA predoctoral award
- Bethany Dale completed a mini-sabbatical in John Irish's lab
- Christian Marks received an AHA predoctoral fellowship
- Reid Bolus published in the Journal of Leukocyte Biology, was featured on the cover and given an editorial highlight



## Special Exhibit: Artwork by Rachel Chandler



### 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.



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