Directors’ Note

We congratulate the students that defended their theses and graduated during 2014! As we look forward to the 2014-2015 academic year, we are eager to welcome new graduate students to the GSBS and our Program! We are excited about the impending start of the orientation/boot camp on August 18 and want to invite all current faculty and students to the program dinner with the newly matriculated students at Jack Waymire’s house on August 22 (the final night of boot camp).

Both the GSBS and the Neuroscience Program regularly review their curriculum and as a result of these reviews the faculty of the GSBS has organized a GSBS-wide core course for new students that will begin in the fall semester. This GSBS course will cover a wide variety of topics and provide a high level overview that is intended to enable all new students to make the transition into graduate school by leveling their knowledge base and training them to think critically about science and the scientific literature. The required GSBS scientific writing course will be offered in the Spring semester of the first year and provides an opportunity for students to practice critical thinking, presentation skills, persuasive writing, and constructing and writing a logical NIH-style grant proposal.

In our effort to continually review and improve the educational opportunities for students in the Neuroscience Program, new advanced courses will be implemented—look for them in the Spring and Summer of 2015! Additionally, we have a new series of Program Lab Update dinners in which one lab per month will present the “latest and greatest” going on in their laboratories. After an overview by the PI, students and postdocs will present their data—this will be an great way to learn what exciting science your colleagues are doing! Last, but not least, our student-run retreat will occur September 26-27th.

We are really excited about what is going on in the Neuroscience Program. The research is top-notch and the students are doing very well both during and after graduating. We keep working to make what is working well go even better, and evaluating and altering those Program items that need updating. The upcoming 2014-2015 will be great!

Anyone who would like to share information about how the GSBS and the Neuroscience Program prepared you for your current position, current research, awards, and achievements is welcome to send the information to us (Amanda.J.Concha@uth.tmc.edu) and that information will be presented in a subsequent issue. As usual, you are welcome to visit us at our website: www.neurograd.org , and Facebook page: Neuroscience Prgm.

Thanks,
Andy and Jack

(Left) Andrew Bean and Jack Waymire. (Below) Students and Faculty at 2013 retreat.
What I learned in Graduate School

By Brittany C. Parker Kerrigan

As I finish my Ph.D. program at The GSBS it is difficult for me to fathom where the last five years have gone. It feels like it was just yesterday that I was sitting in Onstead Auditorium on Orientation Day, where I introduced myself to my fellow peers… “My name is Brittany Parker, and I’m really excited to be here.”

I truly believe that I have grown more during these past five years than I did in high school and undergrad combined. I have undoubtedly learned an entirely new language consisting of both neuroscience and cancer biology jargon, how to master the perfect western blot, and how to present a scientific talk without passing out from fear. However, the most useful lessons I have learned have nothing to do with what I read in a book, heard in a seminar, or read in a manual. The lessons I learned came with the experience of going through the years of success and failures, and learning the power of taking risks and putting yourself out there with the goal of succeeding. So, to you students starting out your graduate school career, for whatever it’s worth, here are my two cents:

Number one: It is okay to fail – because eventually it’s inevitable, and if you learn to accept failures as a necessary step in achieving success, you will be better prepared to put your ego aside and try again. I learned this lesson the hard way. I joined my lab at a very exciting time. We had just discovered a recurrent fusion gene in high-grade brain tumor. We submitted our findings to the journal Nature. We heard back within two days that they were sending it out to reviewers. You can only imagine my excitement. My first first author publication in Nature. Is this real?

Upon finishing up the recommended corrections, my P.I. came to a shocking discovery: We had been scooped. Another group published their findings on this fusion gene in the coveted journal Science. Of course, with the novelty gone, Nature no longer wanted our manuscript. You can only imagine the frustration, sadness, and confusion that ensued. Luckily, I realized that I was young, that this was the beginning of my career, and that I could either give up and never get the chance to find something deserving of that recognition, or I could dust myself off and try again. We repackaged the manuscript and it eventually was published in the highly respected journal, The Journal of Clinical Investigation. Sitting around feeling sorry for yourself will not get you success. It won’t write a paper for you. Realizing that you WILL eventually fail, and being prepared for that, is what will help you get through the tough times.

Lesson number two: Don’t be intimidated by difficult subject matter. Math and science never came easy to me. I wasn’t the student who would sit through one algebra class and immediately understand. I was the student who would furiously take notes in class, color code them, draw diagrams, and re-read the chapter several times. I realized early on that you can learn anything as long as you put in enough effort.

This lesson hit home when I was preparing for my first exam in Systems Neuroscience. There I was, with absolutely no background in the topic, trying to understand lectures that could just as well have been in a foreign language that I didn’t speak. I realized on the first day of the class that I couldn’t skip by barely listening - it would take a lot of effort. So, there I sat at each lecture with a laptop in front of me on which I literally typed every single word the professor said. This helped in two ways: 1) I knew word for word what each slide was really teaching us, and 2) job security if I ever wanted to become a stenographer. Therefore, do not be intimidated by difficult subject matter. Eventually, even if you were always the smartest in your class, your studies will become more difficult. However, please take my word for it: all you need is a little energy, effort, and some elbow grease.

I don’t believe I will ever fully master these lessons, but I constantly remind myself: nothing worth having comes easy, and in the end, the effort you put in to it truly is worth it.

Alumni News

Caitlin Ellmore Limonciello (Wright Lab, 2011)

After completing my Ph.D. in December 2011 in the laboratory of Tony Wright, I began a postdoc with Dora Angelaki. My postdoc got off to an unusual start as her lab was located at Washington University in St. Louis, but in the process of moving to Baylor College of Medicine in Houston. So I headed up to St. Louis for 5 months, learned to embrace the snow, and spent my free time enjoying Forest Park. In the lab, I began training animals and learning electrophysiology so that I could start my planned research projects once the lab was up and running in Houston.

Dr. Angelaki’s research focuses on multisensory integration, namely seeking to understand how visual and vestibular information are combined for accurate perception of motion and object orientation. My research focuses on the perception of object orientation. I am using electrophysiology, reversible inactivation, and selective vestibular damage to determine how the brain provides an accurate percept of object orientation in the 3D environment. Specifically, I have focused on slant perception (orientation in depth) – how do we determine whether an object is leaning away from or towards us? Thus far I have considered the role of two visual areas, the caudal intraparietal sulcus (CIP), and visual area V3A. Previous research in Dr. Angelaki’s lab has shown that both CIP
and V3A neurons are tuned for slant and tilt, but little is known about their role in perception. So I have recorded CIP and V3A neurons while a rhesus monkey performs a slant discrimination task and correlated neuronal activity with behavioral choices using choice probability analysis. Intriguingly, V3A neurons while tuned for slant, show no correlation with behavior, whereas CIP neurons are strongly correlated with the monkey’s choice. I presented this work at Society for Neuroscience in 2013 and am collecting data in a second monkey so that I can write this study for publication.

I am also beginning to use reversible inactivation to determine whether either of these areas has a causal role in object orientation perception. I am curious if silencing neurons in V3A or CIP will impair the animal’s ability to perceive object orientation. It has been a great challenge to build an injection system that allows good quality neural recordings and accurate administration of drug, but after combining the best attributes of a few existing designs, I am pleased with my system, and was able to complete the first in a long series of injections last month.

Finally the third line of my research directly addresses the role of vestibular sensation in object orientation perception. I have trained monkeys to judge the slant of a plane in a gravity-centered reference frame, requiring them to integrate visual and self-orientation information. With these monkeys, I am investigating how CIP neurons combine visual and vestibular information and also testing the effects of selective vestibular damage on accurate slant perception.

My postdoctoral research has been very enjoyable and fruitful thus far, and I am pleased to announce that I was recently awarded a NIH NRSA Postdoctoral fellowship for my work. I am grateful for this funding which will allow me to finish the aforementioned projects, such that I can further contribute to the understanding of object orientation perception. In other news, I got married to Mario Limonciello in February. We are currently dividing our time between Houston and Austin to accommodate each other’s careers, but hope to find a more stable living arrangement soon!

Sarah Baum
(Beauchamp Lab, 2014)

In January 2014 I joined the lab of Dr. Mark Wallace in the Vanderbilt Brain Institute at Vanderbilt University Medical Center after completing my doctoral work with Dr. Michael Beauchamp. The Wallace lab, like the Beauchamp lab, is primarily interested in the behavioral and neural correlates of multisensory integration, from in vivo electrophysiology in monkeys and cats through to human behavior. My primary project involves a systematic characterization of temporal processing deficits in children with ASD and using these findings to shape treatment strategies that might help increase sensory acuity.

Although I am only half a year into my postdoc, there are a few things I’ve observed. The first is a déjà vu like feeling of being a first year rotation student again. While the entirety of graduate school involves a perpetual feeling of, “I have no idea what I’m doing”, the last time I felt this out of the loop was during my first year tutorials. My first step was to find Vanderbilt’s equivalent of Amanda (a.k.a. solver of all problems and answerer of all questions), and to spend a lot of time on department websites trying to memorize faces of the names I frequently heard. Several months later there’s still a lot to learn, but finally knowing a few faces in the hallways (and them knowing mine) is definitely a great feeling.

Secondly, I’ve found that I’m probably not done with committee meetings. While putting together my F32 application, my advisor mentioned we should put together a committee of mentors for me to meet with every 6 months and go over progress and logistics of my project as it unfolds. My first thought was, you have got to be kidding, I just celebrated the last committee meeting I will ever have. Later I was speaking to a junior faculty member who mentioned that she still has committee meetings and that it has been a really good way to get the feedback you need as you progress in your career. Lesson learned: you’re never done needing mentors. Having people you respect and trust who are willing to take the time to give you feedback and advice is an incredibly valuable asset.

Finally, my most earnest recommendation when transitioning into your postdoctoral training is to find advocates. Because I want to stay in academia (may the odds be ever in your favor), there’s a lot of training that needs to happen during my postdoc years to make me a competitive candidate and prepare me for a successful faculty position. It’s important to have people further along in their career than you that both know your goals and believe in your potential to succeed. Being a great scientist is only half the game, the other half is getting the right opportunities at the right time to get you where you need to be.

Being a postdoc is a strange mix between a greatly increased workload and an almost equally large increase in intellectual freedom to explore and develop an independent line of work. All around it is truly an enjoyable and transformative time in your career. In those precious hours outside of lab I am taking full advantage of Nashville’s historic music scene and trying not to laugh when native Tennesseans ask me if I’ve ever lived somewhere so humid.
Neuroscience Program Students

Joe Alcorn
Lane Lab

Ariana Andrei
Dragoi Lab

Ryan Baumert
McCrea Lab

Charles Beaman
Dragoi Lab

Keri Callegari
Soto Lab

Brittany Coughlin
Byrne Lab

Rajan Dasgupta
Beierlein Lab

Deepna Devkar
Wright Lab

George Edwards
Soto Lab

Madeline Farley
Waxham Lab

Tara Fischer
Dash Lab

Jonathan Flynn
Shouval Lab

Monica Gireud
Bean Lab

Gigi Hergenroeder
Dash Lab

Albert Hunt
Justice Lab

Cihan Kadipasaoglu
Tandon Lab

Leandra Mangieri
Tong Lab

Curtis Neveu
Byrne Lab

Max Odem
Walters Lab

Brittany Parker
Wei Zhang Lab

Stuart Red
Sereno Lab

Sahily Reyes-Esteves
Bean Lab

Caleb Robinson
Dougherty Lab

David Savage
Bean Lab

Muge Sertel
Beauchamp Lab

Neda Shahidi
Dragoi Lab

Natalie Sirisaengtaksin
Bean Lab

Heather Turner
Galko Lab

Alejandro Vila
O’Brien Lab

Yanran (Helen) Wang
O’Brien Lab

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Recent Neuroscience Program Events

2014 Neuroscience Modules: Boot Camp

Last year in place of the traditional Orientation week, the GSBS hosted a two-week long Boot Camp. During this time, program faculty and students gave mini talks, scientific modules, Q&A sessions and attended a program fair during FAC where we distributed material and goodies to incoming students.

September 13, 2013 we hosted a social at Buffalo Wind Wings to welcome the incoming students to the program.

The Neuroscience Student Retreat was held at the San Luis Conference Center in Galveston, TX, October 17-18, 2013. Students participated in a poster session, oral presentations, and junior faculty were invited to give mini talks on their research.

The Neuroscience Program manned a booth for the second annual Graduate Fair at the 2013 Society for Neuroscience Meeting in San Diego, CA. During this two-day event, our program representatives distributed information and fielded questions about our program and the graduate school.

December 12, 2013 the student council arranged a white elephant gift exchange. Students and faculty enjoyed swapping gifts and snacks.

Program faculty and students congregated at Jack Waymire’s newly renovated house for dinner Friday, April 12, 2014.

Look for us at the 2014 Society for Neurosciences Meeting! The Graduate Fair is set for November 15-18, 2014 1:00 – 3:00 pm (11/15), 12:00-2:00 pm (11/16-18) at the Walter E. Washington DC Convention Center, Washington, DC. See you there!

(Above) Students at the San Luis Conference Center Neuroscience Program Retreat in October 2013.

(Below) Commencement 2014
Brittany Parker and Sarah Eagleman were the recipients of the 2014 Presidents’ Research Scholarship (pictured right).

The Neuroscience Program placed second in the Deans Cup competition, a yearlong, program-based volunteer competition.

Monica Gireud was selected to attend the SPINES program at Woods Hole, MA for the Summer of 2014.

Cihan Kadipasaoglu was awarded the 2013-2014 CCTS TL1 Pre-Doctoral Training Fellowship, Organization for Human Brain Mapping Trainee Abstract Travel Award and the 2013 AAAS/Science Program for Excellence in Science.

Jonathan Flynn was awarded the NRC Brain Awareness Outreach Award at the Public Forum moderated by Clay Walker (pictured left with Jack Byrne and Clay Walker).

Stuart Red and Tara Fischer won the Mission Connect Annual Scientific Symposium best TBI poster presentation.

Brittany Coughlin was awarded the 2013-2014 Roberta M. and Jean M. Worsham Endowed Scholarship.

Cihan Kadipasaoglu received the 2013-2014 Sam Taub and Beatrice Burton Endowed Fellowship in Vision Disease.

Nadeeka Dias was the recipient of the 2013-2014 Robert W. and P. Wallis Knox Charitable Foundation Scholarship.

Deepna Devkar was awarded the Dee S. and Patricia Osborne Endowed Scholarship in the Neurosciences.

Curtis Neveu and Stuart Red placed third at the NRC Poster Session.

Sarah Baum was the winner of the 2013-2014 R.W. Butcher Student Achievement Award.

Student Retreat Poster winners:
1st place: Natalie Sirisaengtaksin
2nd place: Heather Turner
3rd place: Jon Flynn

Student Retreat Speaker winners:
1st place: Brittany Parker
2nd place: Sarah Baum
3rd place: Madeline Farley

Natalie Sirisaengtaksin and Stuart Red were the recipients of the 2014 Dean’s Research Scholarship Awards.

Monica Gireud was the recipient of the Federation of American Societies for Experimental Biology (FASEB) MARC travel award.

GSEC Poster Session Winners:
2nd Place: Cihan Kadipasaoglu
3rd Place: Nadeeka Dias and Natalie Sirisaengtaksin

Curtis Neveu and Natalie Sirisaengtaksin are the recipients of the 2013-2014 Russell and Diana Hawkins Family Foundation Discovery Fellowships.

New Neuroscience Program Faculty!
We would like to welcome new faculty members to our program: Shin Nagayama, Ph.D. and Andrey Tsvetkov, Ph.D. from the Department of Neurobiology and Anatomy; Raymond Cho, M.D. from the Department of Psychiatry and Behavioral Sciences; Ines Moreno-Gonzalez from the Department of Neurology; Nicholas Justice, Ph.D. and Laura Smith-Callahan, Ph.D. from the Institute of Molecular Medicine.
Recent Student Publications


GSBS Deans Cup Fall Event: Sarah Baum, Nadeeka Dias, Jon Flynn and Joe Alcorn.

GSBS Deans Cup Spring Event: Program members Heather Turner, Natalie Sirisaengtaksin, Nadeeka Dias and George Edwards III.

Heather Turner showing the different parts of the brain at Brain Night in March 2014.
Congratulations, Neuroscience Program Graduates!

Ph.D. Graduates
Sarah Baum
Brandon Brown
Nadeeka Dias

Sarah Eagleman
Chris Conner
Natalia Rozas O’Laughlin

M.S. Graduates
George Edwards III
Alyssa Kosturakis
Zach Jones

Nadeeka Dias, Ph.D. and Scoot Lane, Ph.D.

George Edwards III, M.S. and Ines Moreno-Gonzalez, Ph.D.

Neuroscience Graduate Program

Co-Directors
Andrew Bean and Jack Waymire

Program Coordinator
Amanda Concha

Neuroscience Student Council Members
Ryan Baumert, Tara Fischer, Albert Hunt, Monica Gireud,
Leandra Mangieri, Sahily Reyes Esteves

UPCOMING EVENTS

NGP Welcome Dinner
Friday, August 22, 2014 at 7:00 PM
Dr. Jack Waymire’s home

Neuroscience Program Retreat
September 26-27, 2014
San Luis Conference Center
Galveston, TX