

# Neuroscience Program

The Interdisciplinary Program in Neuroscience for Undergraduates at Vanderbilt  
*presents*

## August 2017 Newsletter

Welcome back! As a way to keep students and faculty informed of significant events and happenings, we will provide a newsletter at the start of each semester. Enjoy!



### TA Opportunities for Undergraduates AVAILABLE

***Fall 2017 positions are full, but please inquire about Spring 2018, if interested.***

For more information, please reach out to our Program Director, [Dr. David Zald](#).

### DID YOU KNOW?

- *Neuroscience was Vanderbilt's most popular major among students applying to medical school in 2016*
- *Out of those who applied, 72% of neuroscience majors were accepted*
- *Some of the locations where applicants matriculated include Duke University School of Medicine, Vanderbilt University School of Medicine, Northwestern University Feinberg School of Medicine,*

### New & Upcoming Courses

***How to build bigger bodies & brains – and what does it matter***

**Course title:** BSCI 3890 Issues in Biological Scaling  
**Instructor:** Suzana Herculano-Houzel  
**Tue/Thu 8:10-9:25**

Why are all multicellular creatures eukaryotic? Why are invertebrates only so big? Why are all marine mammals large, if not gigantic? Why do larger animals tend to live longer? How does nature build brains of different sizes? Do larger animals actually need bigger brains? What is the use of having a bigger brain, after all? This is a mezzanine course (for undergraduate and graduate students) that covers the intersection across evolution, physiology, energetics, biochemistry, development, behavior and neuroscience pertaining to scaling in biology. This course addresses the evolution of multicellularity and body size; the relationships between brain and body size, and between brain size, number of neurons, and cognition; and the consequences and costs of scaling brain and body, with emphasis on behavior, metabolism, temperature, longevity and how they relate to brain and body size.



Dr. Suzana Herculano

### Upcoming Research Opportunities

Although there are many research opportunities available, below are labs that are actively searching for students for the fall semester:

The [Wallace Lab](#) is looking for Neuroscience undergrads interested in working on psychophysics experiments for research course credit.

Must provide CV/Resume. Two semester commitment preferable. Must not be

*University of California  
San Diego, Baylor  
College of Medicine,  
Emory University School  
of Medicine, Case  
Western Reserve  
University School of  
Medicine.*

- *However, Vanderbilt University School of Medicine accepted 5 Neuroscience majors in 2016, out of the 44 that were accepted.*



## Faculty Spotlight

### Dr. Jon Kaas

**Distinguished Centennial  
Professor of Psychology  
Associate Professor of Cell and  
Developmental Biology  
Professor of Radiology and  
Radiological Sciences**

#### **Q: How did you get into Neuroscience?**

A: I went to a small college, and the best professor taught social psychology, so I applied to graduate school in social psychology. I received a good number of offers from good places, but one, from Duke, didn't offer me a slot in social psychology, but in a new neuroscience program. I decided to try something new to me, and of course I was poorly prepared. But I got to work with a wonderful Psychology professor who was soon elected to the National Academy of Sciences, and it all worked out.

#### **Q: What do you like most about teaching at Vanderbilt?**

A: Small classes, as you get to know and interact with the students. As I now get to teach an Honors Seminar, the students provide much of the input, and I'm really impressed at how good they are.

#### **Q: Do you have any advice for students wanting to continue in this field?**

A: You need to love what you do, because the hours can be long, and the best positions are few. Yet the success rate can be much higher than in the music field, for example. Of the last 20 or so graduate students and postdocs that have worked with me, almost all have academic positions and have had great success. But it is getting harder. So it helps a lot to get into a good program, and pick a great lab to work in.

overextended with other activities.

Only Freshman, Sophomore, and Juniors should apply.

If you are interested, email Walter Lee,  
Wallace Lab Manager,  
([walter.h.lee.1@vanderbilt.edu](mailto:walter.h.lee.1@vanderbilt.edu))

The Woynaroski Lab is currently in search of a few additional undergraduate research assistants. The fun and fast-paced lab uses a broad range of biobehavioral research methods, including eye tracking and EEG, to identify brain and behavioral factors that predict growth and outcomes in children who are diagnosed with, or at-risk for, autism and other neurodevelopment disorders.

We are looking for a minimum commitment of 8-10 hours per week, and offer course credit for the research. Preference will be given to students who are willing to make a long-term commitment (2+ years) to the lab. Those interested should send an e-mail with their resume/CV to [woynaroskilab@gmail.com](mailto:woynaroskilab@gmail.com)

The Music and Social Engagement Group may have opportunities for undergrads interested in working on projects involving psychacoustics, visual attention, and social engagement for research course credit. A minimum two semester commitment is required. Only freshman, sophomores, or juniors should apply. Interested students should send a CV/Resume and statement of interest to Christina Liu ([christina.liu@vanderbilt.edu](mailto:christina.liu@vanderbilt.edu)).

## Search Research Opportunities

## Neuroscience Extravaganza! *presented by The Middle TN Chapter for the Society for Neuroscience and the Vanderbilt Brain Institute*

### **SAVE THE DATE**

Friday, October 20, 2017  
2:00-7:00pm

The Middle Tennessee Chapter of the Society for Neuroscience and the Vanderbilt Brain Institute announce their first neuroscience meeting entirely organized for undergraduate students, graduate students and postdocs. Join us on October 20th for a series of short talks (the best 3 minute talk wins a prize), panels of faculty discussing what it's like to work as a scientist and what is NOT known in neuroscience, as well as a Sing Your Science music session to wrap up the day where you can come rock the audience to the tune of your favorite song plus your own lyrics on your research or favorite scientific topic. Official meeting announcement and call for presentations (and songs!) coming soon. Mark your calendar!



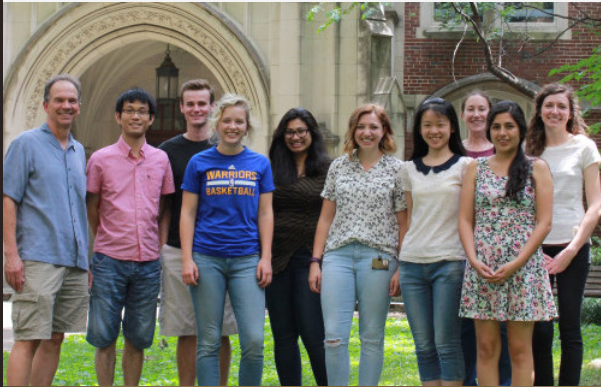
# Student Spotlight

## Ms. Allison Beers

**Year:** Recent Summa Cum Laude Graduate  
**Major:** Neuroscience  
**Minor:** English

As a recent recipient of the program's "Best Honors Thesis" award, Allison has earned this issue's Student Spotlight.

Allison is a former lab member of the David Miller Lab, which uses the nematode, *C. elegans*, for studies of neural development and cell-specific gene expression. For more information on the David Miller Lab, [click here](#).



### Introduction to Neuroscience Research Requirements Seminar

**SAVE THE DATE**  
Wednesday, September 26, 2017  
6:00-7:00pm

Join us to discuss ways in which to make your search for a research lab easier! Open to all majors, but will be mandatory to those registering for NSC 3861. More details coming soon.

### Nu Rho Psi Honor Society COMING SOON

Vanderbilt University will soon be establishing and sheltering a new chapter of the Neuroscience Honor Society, Nu Rho Psi.

Founded in 2006 by the Faculty for Undergraduate Neuroscience, Nu Rho Psi is now an independent non-profit, grass-roots organization comprised of neuroscientists, like you.

More information regarding Vanderbilt's

FIRST ANNUAL  
**Vanderbilt Center  
for Addiction  
Research**  
SCIENCE DAY

**Save The Date**  
10. 17. 2017  
Belcourt Theater

**Dr. Stephen Loyd**  
Medical Director for the  
Division of Substance Abuse  
Services  
TN Department of Mental  
Health & Substance Abuse  
Services

**Dr. Brigitte Kieffer**  
Scientific director, Douglas  
Institute  
Professor, Department of  
Psychiatry, McGill University  
Chair, Monique H. Bourgeois in  
Pervasive Developmental  
Disorders

**Dr. Erin Calipari**  
Assistant Professor,  
Department of Pharmacology  
Vanderbilt Center for  
Addiction Research  
Vanderbilt University School  
of Medicine

**Dr. Carrie Jones**  
Assistant Professor,  
Department of Pharmacology  
Vanderbilt Center for  
Addiction Research  
Vanderbilt University School  
of Medicine

Vanderbilt Center for  
Addiction Research

## 1st Annual VCAR Science Day

**SAVE THE DATE**  
Tuesday, October 17, 2017

Please plan to join us Oct. 17th for the first annual Vanderbilt Center for Addiction Research Science Day. The theme for the day will be on opiates: their impact on our state and the neurobiology of their actions. We'll begin the day with a symposium at the Belcourt Theater. Dr. Stephen Loyd, Medical Director of the TN Department of Mental Health & Substance Abuse Services will describe the current challenges in meeting the opioid epidemic. Dr. Erin Calipari, our newest recruit to the Center, will describe new work using animal models to understand basic mechanisms underlying reward sensation. Dr. Carrie Jones, a member of the Center, will describe a novel strategy her lab is exploring for targeting opiate abuse. Our keynote speaker will be Dr. Brigitte Kieffer. Dr. Kieffer is Scientific Director of the Douglas Institute at McGill University, and an internationally recognized expert in the neurobiology of the opiate system, and has made many of the key foundational contributions to our understanding of opiate actions.

Following our symposium, we will move to a trainee poster session and reception in Langford Lobby, where travel awards will be given to a top student and postdoc poster. An agenda and a registration link will follow.

### Noteworthy Events

#### Friday, August 25, 2017

"Drugs and bugs: The role of Toll-like receptor 4 in nucleus accumbens synaptic physiology and reward behavior"

Daniel T. Kashima, Ph.D. Candidate  
Brad A. Grueter, Ph.D., Advisor  
1:00 p.m.  
1220 Medical Research Building III  
Neuroscience Graduate Program  
Dissertation Defense

#### Thursday, August 31, 2017

"Ascorbate deficiency accelerates neuropathology in Alzheimer's disease"  
Shilpy Dixit, Ph.D. Candidate  
Fiona Harrison, Ph.D., Advisor  
9:00 a.m.

chapter is coming soon, but feel free to visit the Nu Rho Psi [website](#) to learn more.

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Neuroscience Graduate Program  
Dissertation Defense

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