

# THE TRIANGLE TRANSMITTER

## Register for the First Annual Triangle SfN Spring Neuroscience Meeting!

Triangle SfN is excited to host its First Annual Spring Neuroscience Meeting on Friday, April 10<sup>th</sup>, 2015 at the Research Triangle Park Headquarters!

This exciting event will showcase talks by several leading Triangle researchers:

- Dr. Regina Carelli (UNC Chapel Hill)
- Dr. Stephen Lisberger (Duke University)
- Dr. Emilio Salinas (Wake Forest University)

Additionally, Dr. Adron Harris of the University of Texas Waggoner Center for Alcohol and Addiction Research will be delivering a keynote address.

The Spring Meeting will conclude with a poster session reception. Abstract submissions are welcome from all universities, pharmaceutical companies, and governmental institutions throughout the greater Triangle Region. Encore presentations of posters presented at SfN 2014 in Washington, DC are also encouraged.

Travel awards for SfN 2015 will be presented for several exceptional poster presentations as determined by a panel of local judges. Space is limited – see below for information on how to register! Registration will close on February 28<sup>th</sup> and presenters will be notified by March 15, 2015.

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### Spring Meeting Registration Information

#### Registration:

**Attendee:** FREE

**Triangle SfN member presenter:** FREE

**Triangle SFN non-member presenter:**

- \$5 student
- \$20 non-student

To view a complete schedule and to  
register: <http://tinyurl.com/pmohbu5>

**Registration opens:** February 1, 2015

**Registration closes:** February 28, 2015

## Triangle Researchers Represent at SfN 2014

The annual Society for Neuroscience (SfN) meeting is the premiere event to attend as a neuroscientist. The sheer number of people who attend can make it hard to find any one voice in the crowd; as usual, however, Triangle area neuroscientists made themselves heard amidst the scientific commotion. In case you missed it, here's a glimpse of some exciting research presented by local neuroscientists at SfN 2014:

### Duke University: The Devil is in the Details

It is well established that first- and second-hand smoke can lead to a series of adverse health effects. Second-hand smoke exposure during pregnancy has also been linked to subsequent hyperactivity in children. Nicotine is an obvious contender for mediating these effects, but it is just one of over 100 components of tobacco smoke which could be at fault.

Dr. Ed Levin's lab at the Duke University Medical Center is presently determining how these other components are involved in the emergence of developmental problems. In recent studies his laboratory exposed pregnant mother rats to either nicotine alone or to a cocktail of total tobacco smoke extract in order to simulate the levels of toxins found in second-hand smoke. Dr. Levin's lab found that the developmental problems caused by nicotine were even more severe when mixed with the other components of tobacco smoke. Males were overweight and their offspring were hyperactive and distractible. With the rise of ADHD in children, these studies point to second-hand smoke exposure during pregnancy as a potential causative factor.

### NCSU: Descending Like a Pack of Wolves

One of the largest fields of neuroscience surrounds the enjoyable, motivating, and mood-altering neuromodulator dopamine. At SfN this

year, NC State scientists showed how use of a



*Over 30,000 neuroscientists gathered in Washington, DC this past November for the 44<sup>th</sup> Annual Society for Neuroscience Meeting. (Photo courtesy of Ted Stanek)*

technique called fast scan cyclic voltammetry (FSCV) can provide a clearer understanding of how dopamine levels change on a sub-second timescale while animals engage in rewarding activities.

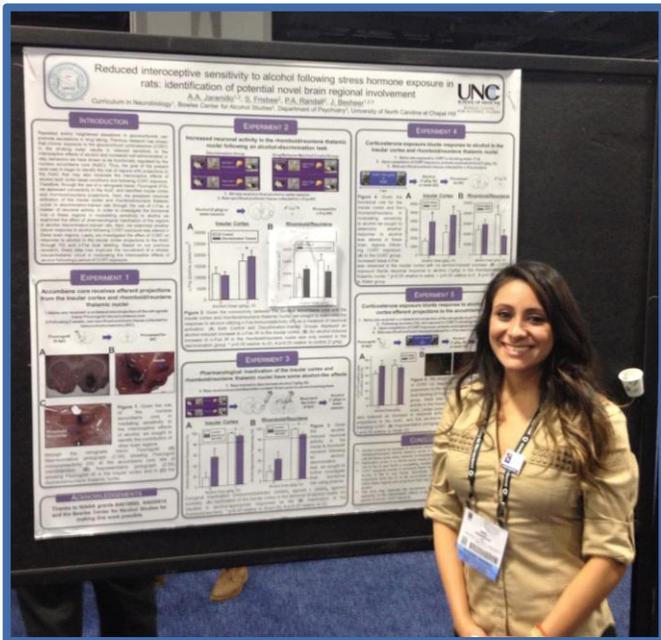
Using FSCV, the neuroscientists of Dr. Leslie Sombers' lab discovered that both acetylcholine and endorphins can amplify dopamine release from the main source of dopamine in the brain – the ventral tegmental area (VTA). Counterintuitively, blocking the endorphin receptor MOR also amplifies dopamine release, and does so to a greater extent than activation. Thus, endorphin levels in the VTA are at a critical point where a fluctuation in either direction can result in significant changes in dopamine output. These studies are revealing insights into the fine line between motivation and addiction and may lead to a better understanding of how patients become addicted to morphine (a MOR activator) through altered dopamine function.

**Continued...**

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## UNC-Chapel Hill: Head over Tar-heels for the Brain

Deep brain calcium imaging, proteomic analyses, and circuit tracing are just a few of the variety of techniques that UNC-Chapel Hill neuroscientists are using to investigate brain function. Anel Jaramillo, from Dr. Joyce Besheer's lab in the Bowles Center for Alcohol Studies, is investigating which brain circuits mediate the sensation of intoxication and how stress can diminish this sensation.



*Graduate student Anel Jaramillio presents her work on the effect of stress on the sensation of alcohol intoxication at SfN 2014. (Photo courtesy of Ted Stanek)*

In Anel's studies, rats were trained to report whether they were intoxicated or not by pressing one lever for a reward if they were intoxicated or another lever if they were sober. Anel focused on assessing and modulating activity in the rhomboid nucleus of the thalamus

and the insula – both of which are regions involved in interoception, or the sensing of bodily states. She found that it is the inactivation of these regions which results in the feeling of intoxication. Stress, which is associated with a general increase in the basal activity of neurons, counteracts this inactivation in the rhomboid thalamus and blunts the intoxicating feeling of alcohol.

## NIEHS: A Healthy Dose of Neuroscience

The development of neural circuits underlying attention and impulsivity are guided in part by norepinephrine signaling from the locus coeruleus (LC) of the brainstem. Yet researchers still don't know how these processes interact, as knocking out norepinephrine signaling is lethal to the developing fetus.

Dr. Patricia Jensen at NIEHS is working to answer this question with a new set of genetic mouse lines that manipulate subpopulations of norepinephrine-releasing neurons in the brainstem. By capitalizing on the rhombomere organization system of the brainstem during development, in combination with multiple types of genetic recombinase proteins, Dr. Jensen can restrict expression of proteins specifically in LC neurons. In order to verify successful genetic manipulation, Dr. Jensen expressed proteins in LC neurons that enabled her to temporarily activate these neurons. These mice showed an anxious phenotype in three different tests of anxiety – a known response to LC stimulation. Future studies entailing the silencing of these neurons will explain how norepinephrine signaling contributes to the proper (and improper) development of attention and impulsivity circuits.

*Story by Ted Stanek, Duke University*

## First Annual North Carolina SfN Social: A Smashing Success!

At Neuroscience 2014 in Washington DC, the Triangle Chapter held its first annual SfN social at the Renaissance Hotel. This event, co-hosted with the Western Chapter, allowed members to take a break from the conference and mingle with other scientists from across North Carolina while enjoying drinks and catered snacks. The room was packed with enthusiastic researchers, ranging from student members to senior faculty, as the event drew more than 75 attendees over the course of the evening. The informal atmosphere allowed conference goers to catch up with friends as well as meet other members, including faculty new to our chapter. Everyone was eager to discuss their favorite parts of the conference and new research that had caught their interest or simply chat with colleagues. Attendance by the Western Chapter also allowed Triangle SfN members to network with our counterparts based in Wake Forest. Stay tuned for news regarding upcoming events jointly planned by these chapters – including the Speaker Exchange Program (see page 5)!

Thanks to your support, we met and exceeded our expectations for the first North Carolina SfN social. Given your enthusiasm, we are planning for an even larger event this year and through the generosity of our sponsors hope to again provide food and drinks! Please join us in making our second annual SfN social just as successful. We hope to see you at Neuroscience 2015 in Chicago!

*Story by Leah Townsend, UNC Chapel Hill*



*Pictured above: Jerry Yakel, Kelly Carstens, Patricia Jensen and Natale Sciolino (top); Logan Brown and Esteban Oyarzabal (middle); Western SfN Chapter President Christos Constantinidis. (Photos courtesy of Shannon Farris and Maile Henson)*

**Interested in writing for the Triangle Transmitter or helping develop content for our new website?**

The Communications Committee would love to hear from you! Email [trianglesfnnews@gmail.com](mailto:trianglesfnnews@gmail.com) for more information!

## Neuroscientist Spotlight: Dr. Amir Rezvani

Triangle SfN President Dr. Amir Rezvani spends much of his time working to uncover the neural mechanisms underlying alcoholism, nicotine addiction, and sustained attention. In addition to his lab work, however, Dr. Rezvani enjoys not only teaching and interacting with students but also sharing science with residents of Durham and the greater Triangle community. He also serves on the board of directors of the Triangle Residential Options for Substance Abuse (TROSA), a long-term residential substance abuse recovery program located in Durham. This month, Dr. Rezvani will have the opportunity to combine his many passions as he presents a seminar to residents of TROSA titled "Addiction as a Treatable Brain Disease."

*Have you or a colleague accomplished something exceptional and wish share this achievement? If so, Triangle SfN would love to feature you in our next newsletter and on our website! Please share your story with us at [TriangleSfNNews@gmail.com](mailto:TriangleSfNNews@gmail.com)!*



The UC Irvine SfN Chapter has initiated a grassroots effort calling for Google to create a brain doodle to celebrate the 20<sup>th</sup> anniversary of Brain Awareness Week (held March 16-25, 2015). In an effort to help our colleagues at UC Irvine, we're asking our Triangle members to send an email request for a brain doodle to Google at [proposals@google.com](mailto:proposals@google.com)




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## Triangle and Western SfN Chapters Join Forces: Speaker Exchange Program

Although the recently reactivated Triangle SfN chapter has only been together for a few short months, it has been bustling with activity!

On the heels of the highly successful Town Hall meeting with Congressman David Price and the North Carolina SfN Social in Washington DC, Triangle SfN is excited to announce the establishment of the Speaker Exchange Program (SEP), a joint venture with the Western SfN Chapter.

Based on the campus of Wake Forest University, the Western Chapter is affiliated with members from a number of

other schools on the western side of the state. The goal of the SEP is to foster collaboration between these sister chapters. As part of the SEP, Triangle SfN will be hosting Dr. Emilio Salinas from Wake Forest during the first annual Spring Meeting in April. In addition, the Western Chapter plans to invite neuroscientists from Triangle SfN to speak at their seminars and events!

If you are interested in hosting a speaker from the Western Chapter, wish to speak at one of their events, or would like some more information about this program, please email [trianglesfnchapter@gmail.com](mailto:trianglesfnchapter@gmail.com).

**NORTH CAROLINA TRIANGLE CHAPTER SOCIETY FOR NEUROSCIENCE  
MEMBERSHIP AND DUES FOR 2015**

**Annual Dues:**

Regular Membership: \$20.00/year or \$50.00/3 years

Student Membership: \$5.00/year or \$12.00/3 years

Partner Membership: \$25.00/year or \$60.00/3 years

**Membership in Triangle SfN  
does not require membership in  
National SFN**

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Dept. & Institution: \_\_\_\_\_

Office Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

CHECK ONE

Regular:	1 year	\$20.00	( )	Student:	1 year	\$5.00	( )
	3 years	\$50.00	( )		3 years	\$12.00	( )
Partner:	1 year	\$25.00	( )				
	3 years	\$60.00	( )				

Date: \_\_\_\_\_

**Dues payable by cash, check or paypal ([TriangleSfNChapter@gmail.com](mailto:TriangleSfNChapter@gmail.com))**

**Return your payment and this form to:**

Dr. Shannon Farris  
Chapter Representative  
111 T.W. Alexander Dr.  
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Research Triangle Park, NC 27709

**Please make checks payable to:**

SfN NC Triangle Chapter

**KEEP IN TOUCH!**

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