

The Neurotransmitter

Newsletter of the Western North Carolina Chapter
of the Society for Neuroscience



March, 2009 – Issue #1

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Neuroscience

Welcome to *The Neurotransmitter*

by *Dwayne W. Godwin, PhD, WNCSfN President*

Welcome to the first newsletter of the WNCSfN, *The Neurotransmitter*. We hope that it will be a useful way to catch up on activities of the chapter, as well as learn about current events that impact the membership.

The WNCSfN has over 100 members throughout our clinical and basic science departments, spread out over all Wake Forest campuses. Our far flung nature reflects the multidisciplinary potency of neuroscience, but it carries with it a danger of diffusion.

As we move increasingly toward interdisciplinary and translational science, improving our means of forming

connections and rapidly sharing news is needed now more than ever.

The newsletter is designed to foster these connections through special features like "Better Know a Lab" (with apologies to Stephen Colbert), posting of available positions, neuroscience-related events, awards, and opportunities for outreach.

Stephanie Willard has taken on this challenge as part of her service as student councilor to the Chapter. I hope you'll support her and our other students and postdoctoral trainees with your ideas and enthusiasm as they build this important resource, and contribute your own articles and ideas for improvement.

WNCSfN: Annual Research and Outreach Awards

by *Stephanie Willard, WNCSfN Student Councilor*

Thanks to everyone who participated in and attended the Annual WNCSN Pizza/Poster session on December 3, 2008. The poster session was a terrific success, with both student and postdoctoral presenters conveying great enthusiasm and excitement about their projects.

Given the high quality of posters and the diverse representation of scientific topics, the poster award judges definitely had their work cut out for them! Posters were divided into four categories, and Mary A. Bell cash prize awards (\$100) were given the best presenter within each group. The 2008 winners of the Mary A. Bell awards include: 1) Behavioral Category: **Keri Chiodo**, Neuroscience Program; 2) Cellular Category: **John Graef**, Neuroscience Program; 3) Systems Category: **Amy Arnold**, Department of Physiology & Pharmacology and

Hypertension & Vascular Research; and 4) Postdoctoral Fellow: **Tiffany Huitt**, Department of Neurobiology and Anatomy.

Following the poster session, members of the WNCSfN engaged in a celebration of community involvement and outreach. **Dr. David Friedman**, a recent winner of the national SFN educator award, and representatives of the student-led **Brain Awareness Council** informed local chapter members of current outreach activities and how to become involved.

The newly created Synapse Awards were also presented to **Keri Chiodo, David Hairston, Christina Hugenschmidt, Marc Yelle and David Friedman** for their "Leadership and Service Communicating the Wonders of the Brain to the Public". The Synapse Award was established to acknowledge outstanding efforts in neuroscience outreach by students, faculty and staff.

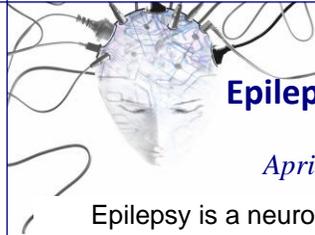


The [39th Annual Meeting of the Society for Neuroscience](#) will be held in Chicago, IL, October 17-21, 2009. [Chicago](#) was ranked by *Travel + Leisure Magazine* as the third "best city in America." Don't forget to mark your calendars - Abstract submission opens April 23 and closes May 14.

NeuroJobs

Looking for neuroscience-related employment opportunities? Check out SfN's online career center for neuroscience post-docs, faculty position, industry jobs, and alternative careers!

Check it out!
[Neuroscience in the News](#)



Brainstorm:

Epilepsy Through the Lens of New Technologies

*WNCSfN Annual Spring Symposium,
April 6th 2009, Nutrition Center Commons, 10am-12pm*

Epilepsy is a neurological condition that produces brief disturbances in the normal electrical activity of the brain.

Epilepsy and seizures affect over 3 million Americans of all ages, at an estimated annual cost of \$15.5 billion in direct and indirect costs. According to the Epilepsy Foundation one in ten Americans will suffer a seizure sometime in their lives.

When someone has epilepsy, normal patterns of activity may be interrupted by intense rhythmic bursts of electrical energy that may affect a person's consciousness, bodily movements or sensations for a short time. Seizures can even result in death, as underscored by the recent tragic death of actors John Travolta and Kelly Preston's 16-year-old son, Jett, on January 2 in the

Bahamas.

The WNCSfN will host a mini symposium on epilepsy on April 6th featuring Drs. James McNamara and Hal Blumenfeld. Dr. McNamara (Carl R. Deane Professor of Neuroscience, Duke University Dept Neurobiology) will speak about his research on trophic factors and development of epilepsy, while Dr. Blumenfeld (Dept Neurology and Neurobiology, Yale Epilepsy Program) will speak about the relationship between epilepsy and consciousness. Both investigators are characterized by their use of multiple approaches to epilepsy.

Our yearly symposia are traditionally big events that draw basic scientists and clinicians as well as interested members of the public. We hope to see you there.

Better Know a Lab

by Jonathan Morgan, Neuroscience Graduate Student

Growing evidence suggests that young children exposed to anesthetics may be at risk for serious brain injury. Thus, there is a pressing need to define both the scope of injury as well as underlying mechanisms. Christopher Turner, an Assistant Professor in the Department of Neurobiology & Anatomy, is working on just that. Using NMDA receptor blockade as a model of anesthesia-induced CNS injury, his lab has shown that selective damage is induced in P7 but not older rats.

Research in Dr. Turner's lab revolves around the central hypothesis that an optimal level of calcium is required for survival. Using a variety of approaches (cell culture, brain slice, Westerns, histology), over the last ten years his lab has shown that developing neurons are especially sensitive to changes in intracellular calcium. This developmentally regulated vulnerability is correlated with a more limited capacity of younger neurons to buffer changes in Ca^{2+} . More recently, they show a reversal of NMDAR-blockade-induced injury following treatment with a Ca^{2+} channel agonist.

Dr. Turner's lab hope to determine what makes the P7 brain so vulnerable, establish the behavioral consequences of this CNS damage, as well as develop clinical strategies that may prevent this injury. However, further insight into the nature of this injury will require a multi-disciplinary approach beyond the scope of any one lab. Thus, microarray analysis, determining specific loci of injury in sensory pathways, or identifying novel cognitive or psycho-social deficits at later ages could establish new directions at the molecular, systems or behavioral level, respectively. Therefore, his lab would be happy to collaborate with other individuals or groups who feel they can offer something unique to these investigations.

In summary, Dr. Turner's research has shown that maintenance of calcium homeostasis during a still dynamic period of CNS development may be critical to normal brain function. Because his lab specifically focuses on modeling anesthesia-induced neuronal injury, his studies offer research directions that have a high degree of translational potential.

Brain Awareness Week 2009

by the Brain Awareness Council

The WFU Brain Awareness Council (BAC) is a group of graduate student and faculty volunteers from different science-related disciplines with a love for neuroscience and education. We visit local schools and other venues to teach K-12 students about their brains. During a typical visit, students are divided into groups and rotate through a variety of age-appropriate stations where they have the opportunity to participate in exciting, hands-on activities to learn about neuroscience. Our most popular stations include:

<i>Human Brains</i>	<i>Comparative Brains</i>
<i>Drugs of Abuse</i>	<i>Build a Neuron</i>
<i>Hearing</i>	<i>Visual Adaptation</i>
<i>Visual Illusions</i>	<i>Careers in Science</i>
<i>Vision</i>	<i>Memory</i>
<i>Multisensory Integration</i>	

Brain Awareness Week (BAW) 2009

is an international effort organized by the Dana Alliance for Brain Initiatives and SfN to advance public awareness about the progress and benefits of brain research. Although BAW 2009 is scheduled for March 16-22, this year the BAC is extending their BAW outreach efforts throughout the months of March and April. Together with Targacept, we've planned an exciting line-up of brain-related fun!

This year, we're kicking off our season on March 3rd with Brain Awareness Day at SciWorks (8:30am-4pm). We have over 500 middle and high school students confirmed and are expecting even more. The official sign-up for stations will be posted next week at <http://brainawareness.wikispaces.com/>.

Tuesday, February 24th at 5pm we will hold an informal meeting at SciWorks as an opportunity for newcomers (or veterans wanting to try a new station) to learn the tricks of the trade. No time to volunteer? Check out our **BAC Wish List** (far right)!

Pictures by John Duffy
jduf4@capecod.com



Tuesday February 24th 5pm:
Informal training session
at SciWorks, 400 Hanes Mill Rd, Winston-Salem, NC. *Volunteers welcome!*

Tuesday March 3rd 8:30-4pm:
Brain Awareness Day at SciWorks.
Volunteers needed!

Tuesday March 10th 7pm:
"The Cell Story: Take a Virtual Voyage to Discover the Secret World Inside Your Cells" by Jed Macosko, PhD, at Foothill's Brewery, 638 W Fourth St., Winston-Salem, NC.

What goes on inside your 14 trillion cells? Do they really contain molecular robots marching along nanoscopic highways? Prof. Macosko takes you on a virtual voyage inside one of your cells. Along the way, hear how his research helps fight cancer, Alzheimer's, and Lou Gehrig's disease. *Open to the public!*

Friday March 13th 2-3:30pm:
"Your Brain on Music" at Salem College Fine Arts Center, Winston-Salem, NC. *Open to the public!*

Saturday March 28th 10am-2pm:
"Brain Power" at the Children's Museum, 390 S. Liberty St., Winston-Salem, NC.
Bring the whole family out to the museum to explore the fascinating world of neuroscience! Grad students and scientists will help you understand how the brain works with special exhibits selected for pre-school and elementary age children. *Open to the public! Volunteers needed!*

Friday April 3rd 9 or 10:30am, or 1 or 2:30pm:
"Careers in Neuroscience" at Targacept, 200 E. First St., Suite 300, Winston-Salem, NC.
Targacept invites students and professors from local universities to hear an overview of careers in neuroscience and the world of biopharmaceutical development and tour Targacept's offices and labs.

For more information on these events and other ways to volunteer, visit www.brainawareness.info



BAC Wish List

Don't have the time to volunteer? We can accept goods and services, and have a tax ID number so your donations are tax deductible! Interested in purchasing/donating these items? Contact Katie Martucci, BAC Materials Management Chair: kmartucc@wfubmc.edu.

Equipment:

- Laptop for ppt presentations (used is fine)
- USB flashdrive (any size, used is fine)
- [USB microscope](#)
- Deluxe [Brain Model](#) (shows major features and pathologies) from American Academy of Neurology, catalog #209503, \$89 member, \$106 list price
- [File Storage Boxes](#) (for pamphlets & handouts)

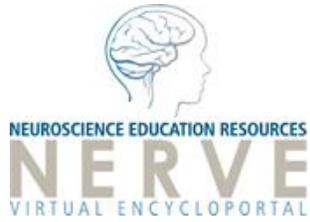
Specimen/tissue:

- Animal Skulls: [cat](#), [rhesus monkey](#), [rat](#), [mouse](#), [pig](#)
- Giant squid axons or other tissues (wet mounts with microscopes)
- Slides for compound microscope (ie. brain tissue, neurons, disease)

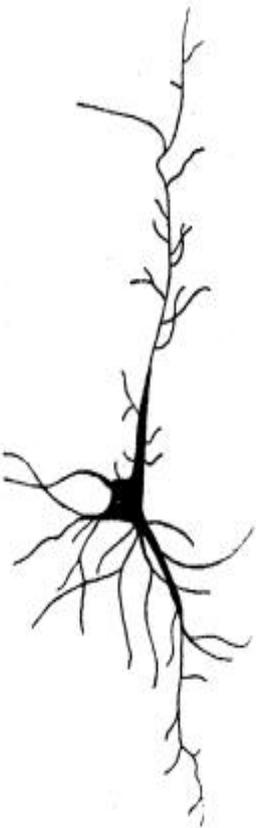
Supplies:

- Things to print our logo on (ie. [brain shaped stress balls](#), [t-shirts](#), pencils, stickers, [backpacks](#))
- Latex/Non-latex [Gloves](#)
- Prize donations for brain art contest, K - 5th grade: (ie. bookstore gift certificates; ice cream gift certificates; brain games like Cranium, Scategories; stickers, puzzles.. etc. Any additional suggestions welcome!)

Special thanks to Dr. David Riddle and Dr. Ron Oppenheim for donating microscopes!



Check out SfN's NERVE portal, designed to function as a tool for K-12 educators to teach about the brain and nervous system. The site contains credible information that has been reviewed by both scientists and educators.



President Signs Economic Recovery Bill that Includes Strong Science Investment

[SfN applauds the signing of the American Recovery and Reinvestment Act](#), which includes a bold investment of \$10 billion for NIH and \$3 billion for NSF. Over the last six weeks, SfN exhibited unmatched advocacy leadership and it was driven by the membership -- nearly 19,000 letters were sent to Congress through SfN's Web site, shattering past records. [SfN President Tom Carew thanks you](#) for your efforts but at the same time, calls upon members to continue their dedication to ensure biomedical research funding will be strong and stable.

Funding Opportunities

- **Sigma Xi Grants-in-Aid of Research program.** [Small grants](#) of up to \$5000 awarded directly to students of all areas of scientific research. *Application deadline: March 15, 2009.*
- www.grants.gov. Search hundreds of grants offered by dozens of government agencies!
- The **McKnight Endowment Fund for Neuroscience** invites applications for the *2010 McKnight Neuroscience of Brain Disorders Awards*. These awards support innovative research designed to bring science closer to the day when diseases of the brain can be accurately diagnosed, prevented, and treated. To this end, the McKnight Neuroscience of Brain Disorders Award assists scientists working to apply the knowledge achieved through basic research to human brain disorders, particularly those that affect memory. LOI due April 1, 2009. See <http://www.mcknight.org/neuroscience/>
- **American Parkinsons Disease Association Research Grants for the Young Investigator.** Deadline: Mar. 1, 2009. <http://www.apdaparkinson.org/user/ViewFellowshipAndGrants.asp>

You won't want to miss...

- **Creativity: Worlds in the Making**, a national symposium at WFU March 18-20, 2009. Come see and participate in lectures, performances, panels, exhibitions, and interactive events designed to advance the national discussion on the creativity imperative in our challenging global environment. This symposium brings together international scholars and artists, colleagues from over 30 higher education institutions, cultural creatives, entrepreneurs and engaged citizens. These individuals will highlight emerging creative research, public outcomes and practice across disciplines and in collaborations between academia and the broader community.

Keynote speakers include David Bornstein, Meredith Monk, David Edwards, Abigail Child, and Josh Frieman. **Panel discussions** led by Robert Root-Bernstein, Andrew Yang, K. Patrick Ober, Clark Lunberry, Lynetter Claire, and Robin Hawes. *Open to the public and free for WFU students, faculty & staff!* Registration and more information: www.wfu.edu/creativity.

- **WFU Graduate Student and Postdoc Research Day & Hot Topics Forum:** "Research in the Physics Department: From Single Molecules to Giant Stars." Monday April 6, 2009, Bridger Field House, 499 Deacon Blvd, Winston-Salem, NC.
Poster Display and Judging 2:30-4:30pm
Hot Topics Forum 4:30-5:30pm
Reception 5:30-6:30pm
- **Be a DNA Ambassador to NC High Schools for DNA Day 2009!** On April 24, post-doc and grad student volunteers will visit high school students to discuss science topics impacted by DNA, share their research interests, and get students excited about scientific careers.
- **"Combining Clinical and Research Careers in Neuroscience" Course**, May 29-30, 2009, Omni Shoreham Hotel, Washington, DC. Academic neurologists will discuss strategies for combining research and clinical activities, as well as tips from NINDS on options for continued research training and support, career development, and debt repayment. *For students with 1 year of neuroscience training in medical school. Application deadline April 1.*

Pickled Brains

by Erika Klorig



Erika Klorig © 2009

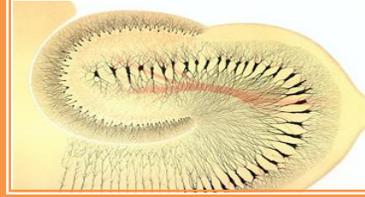


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Neural Eye Candy

Share your cool neuroscience images with *The Neurotransmitter!* Send images to Stephanie Willard (stwillar@wfubmc.edu)



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Interested in becoming a contributing staff member of *The Neurotransmitter*? Please contact Stephanie Willard at: stwillar@wfubmc.edu

Hiring??? Advertise openings for rotating students, post-docs, or other job positions here in *The Neurotransmitter*! Submit your postings to: stwillar@wfubmc.edu

Don't miss the next issue of *The Neurotransmitter*!

- Find out what's happening in the world of neuroscience at UNCG, UNCC, WSSU, ASU, and Davidson College
- More details about abstract and award deadlines, including chapter awards, for SfN 2009
- April BAC School Visit