

**NEURO NEWS**

**FROM THE ADMISSION CHAIR:  
Sabine Fuhrmann, Ph.D.**

I am very pleased to welcome 11 new graduate students (including 1 international student) into the Neuroscience Graduate Program this fall:

**Jason Cooperrider** (The Ohio State University)  
**Danielle Friend** (University of Portland)  
**Patrick Gordon** (University of Minnesota)  
**Scott Lauritzen** (University of Texas, Austin)  
**Renee Madsen** (University of Utah)  
**Adam McPherson** (Clark University)  
**Caitlin Mencio** (Texas Christian University)  
**Whitney Oswald** (Utah State University)  
**Elissa Pastuzyn** (Michigan State University)  
**Trang Pham** (Midland Lutheran College)  
**Christina Rossi** (Boston University)

Congratulations to the first year students **Patrick Gordon**, and **Caitlin Mencio** and the second year students **Robert Duncan**, **Andrea Schwager**, **Elliot Smith** and **James Tucker** for their appointment to the NIH Neuroscience Training Grant.

Our Admissions committee reviewed more than 100 applications and personally interviewed 23 applicants this past spring. In addition, we greatly appreciate the help from additional Neuroscience Faculty who participated in interviewing the candidates. Special thanks to the current graduate students **Sean Flynn** (White Lab), **Andrea Schwager** (Hoffman lab), and **Elliot Smith** (Greger Lab) who hosted the candidates and helped organizing the recruitment days.

And special thanks to **Tracy Marble**, our Program Coordinator, who is invaluable for organizing our admission and recruitment activities. Lastly, I thank all those who presented posters at our successful recruitment reception last February.

For our Admissions efforts in 2009, the Admissions Committee will continue to serve (however, additional members are welcome!). Furthermore, we have a great service opportunity for one of our junior faculty: we are looking for a Chair of Recruitment to enhance our recruitment efforts for future candidate students (e.g. for identifying opportunities to contact US and minority undergraduates in colleges and universities, for attending career day events for

undergrads etc.). Finally, please, mark your calendar for two important events: the 2008 Welcome Reception for our new students will be held on **Thursday, September 25th** at the JCC. The 2009 Recruitment Reception with dinner and poster presentations will be held **February 13th, 2008** (Friday of President's Day weekend).

Sabine Fuhrmann, Ph.D.  
 Assistant Professor  
 Ophthalmology and Visual Sciences  
 Chair, Neuroscience Admissions Committee

**\*\*\*NEW FACULTY\*\*\***

Since the last issue of NeuroNews we have added the following new faculty:

**Stefan-M. Pulst, M.D., Professor and Chair of Neurology**  
 Research: Inherited diseases of the nervous system with an emphasis on spinocerebellar ataxias and Parkinson disease.

**John Hoffman, M.D., Professor of Radiology**  
 Research: Modern imaging techniques.

**Trent Volz, Ph.D., Research Assistant Professor of Pharmacology & Toxicology**  
 Research: Bioanalytical chemistry, neuropharmacology, and enzyme kinetics to study neurotransmitter transporter proteins.

**Joshua Bonkowski, M.D., Ph.D., Assistant Professor of Pediatrics/Division of Pediatric Neurology**  
 Research: Zebrafish models of human disorders.

**Yong Wang, Ph.D., Assistant Professor of Surgery/Division of Otolaryngology/Head & Neck Surgery**  
 Research: Cellular physiology of neurons in the normal and dysfunctional mammalian central auditory system.

## \*\*\*ALUMNI NEWS\*\*\*

**Asim Beg (Jorgensen lab):** moved from New York City where he was doing a postdoc at Columbia University and has accepted a tenure-track Assistant Professor position at the University of Michigan in the Department of Pharmacology in Ann Arbor, MI. His lab's focus will be on the molecular mechanisms of synapse formation and neural connectivity.

**Polly Dhond (Halgren lab):** received a 5-Year NIH-K01 award and became an Assistant in Neuroscience MGH and Instructor Harvard Medical School.

**Jon Danaceau (Lucero lab):** is now the Operations director of the Sports Medicine Research and Testing Lab, a World Anti-Doping Agency accredited anti-doping laboratory. They have been accredited by WADA for almost two years (since Nov., 2006) and recently separated from the University and moved into new space at 560 Arapeen Drive in Research park.

### Recent Publications:

**Danaceau, J.P.,** Morrison, M.S., and Slawson, M.H. (2008) Quantitative Confirmation of Testosterone and Epitestosterone in Human Urine by LC/Q-ToF Mass Spectrometry for Doping Control. *Journal of Mass Spectrometry*, 43(7): 993-1000.

Frankel, P., Hoonakker, A.J., **Danaceau, J.P.**, Hanson, G.R. (2007) Mechanism of an exaggerated locomotor response to a low-dose challenge of methamphetamine. *Pharmacology, Biochemistry and Behavior*, 86(3):511-515.

**Danaceau, J.P.,** Deering, C.E., Day, J.E., Smeal, S.J., Fleckenstein, A.E., Johnson-Davis, K.L., and Wilkins, D.G. (2007) Persistence of tolerance to methamphetamine-induced monoamine deficits. *European J. Pharmacol.*, 559:46-54.

Walsh, J.M., Crouch, D.J., **Danaceau, J.P.**, Cangianelli, L., Liddicott, L., and Adkins, R. (2006) Evaluation of Eleven Oral Fluid Point-of-Collection Drug-Testing Devices. *J. Analytical Tox.*, 31(1):44-54.

**Danaceau, J.P.,** Anderson, G.M., McMahon, W.M., Crouch, D.J. (2003) A Liquid Chromatographic Mass Spectrometric Method for the Analysis of Serotonin and Related Indoles in Human Whole Blood. *J. Analytical Tox.*, 27(7):440-444.

**Josh Cameron (Zhang lab):** received a postdoctoral training grant in the Molecular Bases of Eye Diseases training program run by the Schepens Eye Institute (Harvard Medical School). The title of his project is Gene Expression Profiling, Retinoic Acid, and Early Eye Development in Zebrafish.

**Arie Mobley (Lucero lab):** received a Postdoctoral Training Grant Fellowship in the Neurobiology Dept. at Yale University. She also received a \$1200 Travel award to attend the July meeting of the International Symposium on Olfaction and Taste.

**Bob Renden (Broadie lab):** Smith, S.M., **Renden, R.**, and von Gersdorff, H. (2008) Synaptic vesicle endocytosis: fast and slow modes of membrane retrieval. *Trends in Neurosciences*, in press.

**Matthew Schmolesky (Leventhal lab):** and a colleague, Dr. Barbara Trask, are co-teaching Introduction to Neuroscience to undergraduates at Weber State University this semester. This is the first official neuroscience course to be taught at WSU and may soon be followed by others (e.g. Cellular and Molecular Neuroscience, Neuroscience Laboratory Methods, etc.).

**Jerry Mellem (Maricq lab):** **Mellem, J.E.**, Brockie, P.J., Madsen, D.M., and Maricq, A.V. (2008) Action potentials contribute to neuronal signaling in *C. elegans*. *Nature Neuroscience*, Aug;11(8):865-867.

Kano T.\*, Brockie P.J.\*, Sassa T., Fujimoto H., Kawahara Y., Iino Y., **Mellem J.E.**, Madsen D.M., Hosono R., and Maricq A.V. (2008) Memory in *Caenorhabditis elegans* is mediated by NMDA-type ionotropic glutamate receptors. *Current Biology*, Jul 8;18(13):1010-1015.

## \*\*\*STUDENT AWARDS\*\*\*

**James Anderson (Marc lab)** has been selected as a 2008-2009 University of Utah Graduate Research Fellow. He receives a \$15,000 stipend.

**Michelle Stamm (Lucero lab)** was awarded a student travel award to the International Symposium on Olfaction and Taste - funded by the Polak Foundation and part of The Association for Chemoreception Sciences.

**Katherine Zukor (Odelberg lab)** has been selected to participate as a predoctoral trainee in the NIH Developmental Biology Training Grant. The primary criteria for selection was: (1) scientific excellence and (2) relevance of the proposed research to the general field of developmental biology.

Her fellowship will begin between September 1 and October 1, 2008 and is for two years, with the potential for a third year based on satisfactory progress. The training grant will pay \$20,772 of her stipend plus health insurance and tuition. In addition she is allotted funds for books, journals and/or supplies, and travel.

## \*\*\*FACULTY AWARD\*\*\*

**Karen Wilcox** just started a new R21 from NINDS entitled "Astrocytes and temporal lobe epilepsy."

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## \*\*\*Important Dates\*\*\*

**Sept. 23: Bioscience Symposium.** University Marriott Park Hotel, 1:00-7:00pm. Dinner at 7:00pm. Pre-registration required.

**Sept. 25: New Graduate Student Reception.** Our annual reception devoted to welcoming the incoming Neuroscience graduate students will be held at the Jewish Community Center, 2 North Medical Drive, Thursday from 5:00-8:00 pm. There will be the usual amounts of food and drink.

**Oct. 24-25: Annual Neuroscience Program Symposium @ Snowbird**  
<http://neuroscience.med.utah.edu/Snowbird>.

This year's invited speakers: our own **Mario Capecchi, Ph.D., 2007 Nobel Laureate, Keynote Speaker, Scott Waddell, Ph.D., University of Massachusetts Medical School, Lisa Stowers, Ph.D., The Scripps Research Institute, and Herwig Baier, Ph.D., University of California, San Francisco**

**Nov. 15-19: The Society for Neuroscience Annual Meeting** held this year in Washington, DC.

**Feb. 13: Neuroscience Program Recruitment Reception**

## \*\*\*\*\*Recently Published\*\*\*\*\*

Allen-Brady, K., Miller, J., Matsunami, N., Stevens, J., Block, H., Farley, M., Krasny, L., Pingree, C., **Lainhart, J.**, Leppert, M., McMahon, W.M., and Coon, H. (2008) A high-density SNP genome-wide linkage scan in a large autism extended pedigree. *Molecular Psychiatry*, Feb 19 [Epub ahead of print].

Barton, K.M., and **Levine, E.M.** (2008) Expression patterns and cell cycle profiles of PCNA, MCM6, Cyclin D1, Cyclin A2, Cyclin B1, and phosphorylated Histone H3 in the developing mouse retina. *Developmental Dynamics*, 237:672-682.

Belmonte, M.K., Mazziotta, J.C., Minshew, N.J., Evans, A.C., Courchesne, E., Dager, S.R., Bookheimer, S.Y., Aylward, E.H., Amaral, D.G., Cantor, R.M., Chugani, D.C., Dale, A.M., Davatzikos, C., Gerig, G., Herbert, M.R., **Lainhart, J.E.**, Murphy, D.G., Piven, J., Reiss, A.L., Schultz, R.T., Zeffiro, T.A., Levi-Pearl, S., Lajonchere, C., and Colamarino, S.A. (2007) Offering to share: how to put heads together in autism neuroimaging. *Journal of Autism and Developmental Disorders*, 38:2-13.

Clark, A.M., Yun, S., **Veien, E.S.**, Wu, Y.Y., Chow, R.L., **Dorsky, R.I.**, and **Levine, E.M.** (2008) Negative regulation of Vsx1 by its paralog Chx10 is conserved in the vertebrate retina. *Brain Research*, 1192:99-113 (special issue on retinal development).

Cleavenger, H.B., Bigler, E.D., Johnson, J.L., Lu, J., and **Lainhart, J.E.** (2008) Quantitative magnetic resonance image analysis of the cerebellum in macrocephalic and normocephalic children and adults with autism. *J International Neuropsychological Society*, 14:401-413.

Clément, A., Wiweger, M., von der Hardt, S., Rusch, M.A., Selleck, S.B., **Chien, C.B.**, and Roehl, H.H. (2008) Regulation of zebrafish skeletogenesis by *ext2/dackel* and *papst1/pinscher*. *PLoS Genet*, in press.

Fernandez, F.R., and **White, J.A.** (2008) Artificial synaptic conductances reduce subthreshold oscillations and periodic firing in stellate cells of the entorhinal cortex. *Journal of Neuroscience*, 28:3790-3803.

Jurus, E., Hardy, M., Tasdizen, T., Fletcher, P.T., Koshevoy, P., **Chien, C.B.**, Denk, W., and Whitaker, R. (2008) Axon tracking in serial block-face scanning electron microscopy. *Med Image Anal*, in press.

Keck, T., Lillis, K.P., Zhou, Y.D., and **White, J.A.** (2008) Frequency-dependent glycinergic inhibition modulates plasticity in hippocampus. *Journal of Neuroscience*, 28:7359-7369.

Kilian, S., Brown, W.S., Hallam, B.J., McMahon, W.M., Lu, J., Johnson, M., Bigler, E.D., and **Lainhart, J.** (2008) Regional corpus callosum morphology in autism and macrocephaly. *Developmental Neuropsychology*, 33:74-99.

Lillis, K.P., Eng, A., **White, J.A.**, and Mertz, J. (2008) Two-photon imaging of spatially extended neuronal network dynamics with high temporal resolution. *Journal of Neuroscience Methods*, 172:178-184.

Mazefsky, C., Folstein, S.E., and **Lainhart, J.E.** Overrepresentation of mood and anxiety disorders in adults with autism and their first degree relatives: what does it mean? *Autism Research*, in press.

## \*\*\*ACADEMIC DEFENSES\*\*\*

Since the last issue of NeuroNews, the Neuroscience Program has had the following students successfully defend their dissertation; **Stephanie Plamondon (Rose lab)**.

**Arik Hone (McIntosh lab), Shushruth (Angelucci lab), Eric Bend (Jorgensen lab), Andrew Zayachkivsky (Dudek lab), Sean Flynn (White lab), and Renee Bend (Chien lab)** have successfully passed their Qualifying Exams. **Katherine Zukor (Odelberg lab), Pei-Wen Chu (Fleckenstein lab), and Sarah Farnsworth (Fleckenstein lab),** have successfully passed their dissertation proposals.

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## RECENT PUBLICATIONS CONTINUED:

**Mobley, A.S., Lucero, M.T., and Michel, W.C.** (2008) Cross-species comparison of metabolite profiles in chemosensory epithelia: an indication of metabolite roles in chemosensory cells. *Anatom. Record*, 291:410-432.

**Mobley, A.S., Michel, W.C., and Lucero, M.T.** (2008) Odorant responsiveness of squid olfactory receptor neurons. *Anatom. Record*, 291:763-774.

**Pittman, A.J.\*, Law, M.Y.\*, and Chien, C.B.** (2008) Pathfinding in a large vertebrate axon tract: isotypic interactions guide retinotectal axons at multiple choice points. *Development*, in press. \*equal contributions

**Sigulinsky, C., Green, E.S., Clark, A.M., and Levine, E.M.** (2008) Vsx2/Chx10 ensures the correct timing and magnitude of Sonic Hedgehog signaling in retinal progenitor cells. *Developmental Biology*, 317:560-575.

Smith, M.D., Saunders, G.W., Clausen, R.P., Frølund, B., Krogsgaard-Larsen, P., Larsson, O.M., Schousboe, A., **Wilcox, K.S., and White, H.S.** (2008) Inhibition of the betaine-GABA transporter (mGAT2/BGT-1) modulates spontaneous electrographic bursting in the medial entorhinal cortex (mEC). *Epilepsy Res.*, Mar;79(1):6-13.

Smith, M.D., **Adams, A.C.,** Saunders, G.W., **White, H.S., and Wilcox, K.S.** (2007) Phenytoin- and carbamazepine-resistant spontaneous bursting in rat entorhinal cortex is blocked by retigabine in vitro. *Epilepsy Res.*, May;74(2-3):97-106.

Smith, M.D., **Wilcox, K.S., and White, H.S.** (2007) Discovery of antiepileptic drugs. *Neurotherapeutics*, 4(1):12-17. Review.

South, M., Ozonoff, S., Suchy, Y., **Kesner, R.,** McMahon, W., and **Lainhart, J.** (2008) Intact emotion facilitation for non-social stimuli in autism: is amygdala impairment in autism specific for social stimuli? *Journal of the International Neuropsychological Society*, 14:42-54.

**Wang Y.,** and Manis, P.B. (2008) Short-term synaptic depression and recovery at the mature mammalian endbulb of Held synapse in mice. *J Neurophysiol.*, Jul 16. [Epub ahead of print] .

Wang, G., and **Scott, S.A.** (2008) Retinoid signaling is involved in governing the waiting period for axons in chick hindlimb. *Dev. Biol.*, 321:216-226.

**White, H.S.,** Smith, M.D., and **Wilcox, K.S.** (2007) Mechanisms of action of antiepileptic drugs. *Int Rev Neurobiol.*, 81:85-110. Review.

## \*\*\*Brain Awareness Week 2008\*\*\*

Last March we held another successful Brain Awareness Week. The Governor Jon Huntsman officially declared March 10th – 16th as Utah Brain Awareness Week 2008. We were also awarded a generous grant from the Henry W. and Leslie M. Eskuche Foundation, for which we are very grateful. This year we visited nearly a thousand kids in grades K-12. We brought our BAW program to Northwest Middle School, Juan Diego Catholic High School, Judge Memorial High School, Horizon Elementary, Hawthorne Elementary, the YWCA and the University Partnership. A few new activities were added to our program. In addition to the GFP expressing zebrafish we also had some *C. elegans* for the students to look at through a microscope. Becca and Shushruth worked to put together a new station devoted to optical illusions, which was a big hit with all ages. We will be sure to keep this a regular part of our program in years to come! We also partnered for the first time with the Utah Science Center for one of their Science in Society Public Dialogs entitled, Teens, Brains, Risk – Choices. We set up a table in the foyer of the City Public Library with brains and health information for people to look over and ask questions prior to the dialog. As always, we strive to bring our program to disadvantaged children in the Salt Lake area. This year approximately 63% of the students visited live below the poverty line and 53% were minorities. Bike helmets were donated to children who take part in the University Partnership book program, thanks to the kind contributions from the Brain Injury Awareness Association and Robert J. DeBry. Responses from the students were overwhelmingly positive. 96% of the students said they would like us to come again. At Northwest Middle School, 92% of students said they were more likely to wear a helmet and avoid drugs after taking part in our activities and 35% would consider being a neuroscientist. At Juan Diego High School, 43% of students said that the program will have a positive influence on their decision to pursue science in college and/or as a career.

Brain Awareness Week is only possible with all the help from our volunteers and contributors! This is truly a community effort and we thank everyone who pitched in this year. We hope you will join us again next year in this effort to inspire young students to think more about science!

The Brain Awareness Week Committee

Do you have something to submit in the next issue of NeuroNews?  
Send your information to: Tracy Marble, Program in Neuroscience  
401 MREB, FAX: 581-4233, or e-mail: [tracy.marble@hsc.utah.edu](mailto:tracy.marble@hsc.utah.edu)

MAIL TO:

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