

NEURO NEWS

A letter from the Director, Kristen A. Keefe, Ph.D.

Dear Neuroscience Students, Post-docs, and Faculty,

Happy 2012 everyone! It is, as usual, hard to believe how quickly another year has flown by. This spring will be great as we host a new round of applicants for the graduate program on February 17th (please mark your calendars if you haven't already), enjoy the Annual Neuroscience Student Symposium (see blurb in this newsletter about speaking opportunities), and participate in Brain Awareness Week March 12-18. I look forward to seeing everyone at these activities!

This past December, we held a "State of the Program Address." The Powerpoint from that presentation is now on the website for your perusal (<http://neuroscience.med.utah.edu/FacultyInfo.html>), but I'd like to highlight a few points from that presentation for those who could not attend. Last year marked the 25th year of the program since Tom Parks founded it in 1986! We continue to be the only interdepartmental graduate program at the University that offers a Ph.D. degree! We're also good at what we do! For the classes beginning between 2000-2007, we had a 77% overall completion rate, a six-year completion rate of 54% (national average is 46%), and a median time to degree of 6 years (national average is 5.68). Of the students entering between 2000-2006, 96% of them were in science-related positions in 2011! So, we're good at training our students, we do it in a relatively timely manner, and our students are successful in pursuing their careers in science after they leave here with their degree! So, kudos to students and faculty alike for the hard work you put into this program and the successes you have brought it!

Now, having gotten you all jazzed up, here's the rub. We are so great because of all you do, but we need more of you to do it and we need you to do a bit more! Current weaknesses in our program include prolonged tenure of faculty on program committees and in teaching, the slightly elevated time to degree, and a relative lack of diversity among our student body (37% women, 10%

underrepresented/disadvantaged backgrounds) and faculty (27% women, 0% underrepresented/disadvantaged backgrounds). To address these weaknesses, we need more faculty willing to serve on some committees. We also need a new faculty member for the student advisory committee and some faculty to serve on the Recruitment Committee under the direction of Ed Levine. The Recruitment committee, in particular, needs help as we have unprecedented opportunities to increase recruitment of students from a broad range of backgrounds, but we need the faculty elbow grease to do so! If you're willing to serve on any of these committees, please let me or Tracy Marble know! Finally, course directors always love getting e-mails from faculty volunteering to teach in the Program's core courses, and the student love faculty offering a variety of electives! Second, we need to make sure students are moving through the program in a timely manner. As noted above, our time to degree is all right, but slightly higher than the national average. Students should be having regular committee meetings. Students, if your project is lagging, that's a great time to have a committee meeting in order to get advice on how to get the project moving along again. Mentors and committees should be proactive in keeping students on task in finishing up and helping students navigate technical difficulties that might hinder their progress. Addressing these two areas of weakness will considerably strengthen our program.

I know that everyone is beyond busy, and so asking for more from each person in the program is not trivial. In this era of tightening budgets and increasing demands on everyone's time, the biggest threat to our program, as I see it, is that the program has no real teeth with which to chomp into you and drag you into the work that needs to be done. So, as we begin moving into the next 25 years of the Interdepartmental Program in Neuroscience, I simply come with my hands out, kind of like a beggar, saying "thank you all again for your commitment to this excellent program" and encouraging you to remain involved or to become even more involved to ensure the continued great success that we've enjoyed as a program over the past quarter century!

Kristen Keefe

Chi-Bin Chien, Ph.D.
11/3/1965 ~ 12/2/2011

Our friend and colleague Chi-Bin Chien died on December 2, 2011 after a long and courageous fight with cancer. He was Professor of Neurobiology and Anatomy and had been a member of the faculty since 1998. His research was focused on the molecular mechanisms underlying neural connectivity, vascular guidance and eye morphogenesis using zebrafish as a model system. He was a talented scientist, a dedicated mentor, and a wonderful colleague. His generous nature and positive spirit will be missed by all.



******REMAINING SEMINARS******

January 17: Thomas Bozza, M.D., Northwestern University
Professor, Department of Neurobiology
“Genetic analysis of odor representations in the mouse olfactory system”
Faculty host: Megan Williams, Neurobiology & Anatomy
Student host: Andrew Haack

February 21: Nancy Minshev, M.D., University of Pittsburgh
Professor, Departments of Psychiatry and Neurology,
Director of the Autism Center of Excellence
“What We Don’t Know About Autism”
Faculty host: Janet Lainhart, Psychiatry
Student host: Jason Cooperrider

March 20: Baerbel Rohrer, Ph.D., Medical University of SC
Associate Professor, Departments of Ophthalmology &
Neuroscience
“Sublytic Complement Activation in Age-related Macular
Degeneration”
Faculty host: Robert Marc, Ophthalmology & Visual Sciences
Student host: Scott Lauritzen

April 17: Nelson Spruston, Ph.D., Howard Hughes Medical
Institute
Scientific Program Director, Janelia Farm
“Neural Signal Integration in Dendrites and Axons in the
Hippocampus”
Faculty host: John White
Student host: Christina Rossi

****NEW FACULTY****

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

Richard King, M.D., Ph.D., Assistant Professor of Neurology.

Research: The use of advanced neuroimaging analysis tools to study morphometric changes in the brain associated with neurodegenerative diseases.

****Important Dates****

Feb. 17: Neuroscience Program Recruitment. Our annual reception devoted to recruiting student candidates for the upcoming academic year will be held at the Jewish Community Center, 2 North Medical Drive, Friday, February 18th from 5:00-9:00pm. There will be, *of course*, the usual amounts of food and drink.

March 12-18: National Brain Awareness Week. Caitlin Mencio and Jeff Yarch are co-chairs of the committee this year.

May 17: Annual Neuroscience Student Symposium
Student organizer: **Scott Lauritzen**

Nov. 2: Annual Snowbird Symposium

****ALUMNI NEWS****

Benedict C. Albeni was on CJOB's Health Report on Sunday, Oct. 30th. His interview was on Neuro-stimulation in epilepsy.

Kerry-Ann Stewart:Published in "Stanford Medicine Notable People" 2011: Stewart, a second-year medical student, is the recipient of a 2010 Minority Scholars Award presented by the American Medical Association. Stewart, who hopes to become a neurosurgeon, is one of 13 medical students in the country to receive a \$10,000 scholarship in recognition of scholastic achievement and commitment to improving minority health.

****ACADEMIC DEFENSES****

Since the last issue of NeuroNews, the Neuroscience Program has had the following students successfully defend their dissertation: **Arik Hone (McIntosh lab)**, and **Coni Stacher-Horndli (Chien lab)**.

Since the last issue of NeuroNews, the Neuroscience Program has had the following students successfully pass their qualifying exam: **Kevin Breen (Vetter lab)**, **Daniel Ryskamp (Krizaj lab)**, and **Jared Nielsen (Lainhart lab)** and dissertation proposal; **Shaili Johri (Letsou lab)**, **Ryan Constantine (Baehr lab)**, **Eerik Elias (Maricq lab)**, **Andrea Schwager (Taha lab)**, and **James Tucker (Marc lab)**.

****POSTDOC OPPORTUNITIES****

Jun Yang lab (Dept of Ophthalmology):

A postdoctoral position is available in a research laboratory at the John A. Moran Eye Center, University of Utah (<http://junyanglab.hsc.utah.edu/>). This position is for a highly motivated individual with 0-2 years of postdoctoral experience to study the cell biology of photoreceptors/hair cells, disease mechanisms of retinal degeneration/hearing loss, and the potential treatments for these diseases, at the molecular level using mouse models and cultured cells.

Applicants should hold a Ph.D. degree and have a strong background and expertise in molecular and cellular biology, biochemistry, genetics, physiology and/or neuroscience. Please email curriculum vitae, statement of research interests and career goals, and contact information of three references to Dr. Jun Yang at jun.yang@hsc.utah.edu.

Requirement for student research presentations

Predoctoral students in the Program are required to give three, talks/seminars based on their research prior to their dissertation defense seminar. Students must receive formal written feedback from at least two faculty for each of the three presentations. At least one of these presentations must be at the Snowbird Symposium or the Spring Student Symposium. The other two talks should be given on campus (e.g. student retreat, department RIPs, department seminar series, special lecture opportunities on campus, research interest groups, etc.) and be attended by at least two faculty who provide the student with written feedback. The student is responsible for enlisting the faculty who will give the feedback and for submitting copies of the evaluations to the Program office for their files. Mentors/dissertation supervisory committees will have ultimate responsibility for making sure the student has completed this requirement before the student can defend the dissertation."

Current students who entered the program in 2007-2008 can submit the venue, duration, and date of a third presentation to Tracy Marble, even if they did not get formal feedback from faculty on that presentation. Alternatively, if they so choose, they can do an additional talk, get feedback, and submit it to Tracy Marble. For students who entered the program in 2005-2006, at least two presentations on campus are required. The dates, durations, and venues of presentations should be submitted to Tracy Marble if they have already taken place. In addition, copies of any faculty feedback, if received, should be submitted to Tracy Marble as well.

NEURONEWS NEURONEWS NEURONEWS NEURONEWS

*****Recently Published*****

Anderson, J.S., Druzgal, T.J., Froehlich, A., **DuBray, M.B.**, Lange, N., Alexander, A.L., Abildskov, T., **Nielsen, J.A.**, Cariello, A.N., **Cooperrider, J.R.**, Bigler, E.D., and **Lainhart, J.E.** (2011) Decreased interhemispheric functional connectivity in autism. *Cereb Cortex*, May;21(5):1134-46. Epub 2010 Oct 12.

Anderson, J.S., Ferguson, M.A., Lopez-Larson, M., and **Yurgelun-Todd, D.** (2011) Connectivity Gradients Between the Default Mode and Attention Control Networks. *Brain Connect*, 1(2):147-157.

Anderson, J.S., **Nielsen, J.A.**, Froehlich, A.L., **Dubray, M.B.**, Druzgal, T.J., Cariello, A.N., **Cooperrider, J.R.**, Zielinski, B.A., Ravichandran, C., Fletcher, P.T., Alexander, A.L., Bigler, E.D., Lange, N., and **Lainhart, J.E.** (2011) Functional connectivity magnetic resonance imaging classification of autism. *Brain*, 134(12): 3742-3754.

Ferguson, M.A., and **Anderson, J.S.** (2011) Dynamical stability of intrinsic connectivity networks. *Neuroimage*, Oct 26. [Epub ahead of print]

Hone, A.J., Meyer, E.L., McIntyre, M., and **McIntosh, J.M.** (2011) Nicotinic acetylcholine receptors in dorsal root ganglion neurons include the $\alpha 6\beta 4^*$ subtype. *The FASEB Journal*, PMID 22024738.

Huang, W., Xing, W., **Ryskamp, D.A.**, Punzo, C., and **Krizaj, D.** (2011) Localization and phenotype-specific expression of ryanodine calcium release channels in C57BL6 and DBA/2J mouse strains. *Exp Eye Res*, 93:700-709.

Kwan, K.M., Otsuna, H., Kidokoro, H., Carney, K., **Saijoh, Y.**, and **Chien, C.-B.** (2011) A Complex Choreography of Cell Movements Shapes the Vertebrate Eye. *Development*, (accepted).

Lainhart, J.E., and Lange, N. (2011) Increased neuron number and head size in autism. *JAMA*, Nov 9;306(18):2031-2. No abstract available.

Lee, D., Vázquez-Chona, F.R., Ferrell, W.D., Tam, B., Jones, B., **Marc, R.**, and Moritz, O. Dysmorphic photoreceptors in a P23H mutant rhodopsin model of retinitis pigmentosa are metabolically active and capable of regenerating to reverse retinal degeneration. *J Neuros.*, in press.

Pastuzyn, E.D., Chapman, D.E., **Wilcox, K.S.**, and **Keefe, K.A.** (2011) Altered learning and Arc-regulated consolidation of learning in striatum by methamphetamine-induced neurotoxicity. *Neuropsychopharmacology*, Epub 9 Nov 11. doi: 10.1038/npp.2011.265. PMID: 22071872.

Pastuzyn, E.P., and **Keefe, K.A.** (2011) Altered Arc-regulated striatal learning in rats pretreated with a neurotoxic regimen of methamphetamine. *Neuropsychopharmacology*, Nov 9. doi: 10.1038/npp.2011.265. [Epub ahead of print] 2011.

Southwick, J.S., Bigler, E.D., Froehlich, A., **Dubray, M.B.**, Alexander, A.L., Lange, N., and **Lainhart, J.E.** (2011) Memory functioning in children and adolescents with autism. *Neuropsychology*, Nov;25(6):702-710.

Vázquez-Chona, F.R., and Geisert, E.E. Jr. Networks modulating the retinal response to injury: insights from microarrays, expression genetics and bioinformatics. *Adv. Exp. Med. Biol.*, in press.

Vázquez-Chona, F.R., Swan, A., Ferrell, D.W., Jiang, L., **Baehr, W.**, Chien, W.-M., Fero, M., **Marc, R.E.**, and **Levine, E.M.** (2011) Proliferative reactive gliosis is compatible with retinal metabolic support and function. *BMC Neurosci.*, 12:98. 21985191. Highly Accessed.

Wang, L., Zou, J.H., Shen, Z., Song, E., and **Yang, J.** Whirlin interacts with espin and modulates its actin-regulatory function: an insight into the mechanism of Usher syndrome type II. *Hum Mol Genet.*, (in press).

Yang, J., Wang, L., Song, H., and Sokolov, M. (2012) Current understanding of Usher syndrome type II. *Frontiers in Bioscience*, 17:1165-1183.

Yang J. Usher syndrome: genes, proteins, models, molecular mechanisms, and therapies. In Sadaf Naz (Ed.), Hearing loss. Rijeka: Intech, ISBN 979-953-307-271-4, in press).

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