NEURONEWS NEURONEWS NEURONEWS NEURONEWS

Volume 11, No. 2

NEURO NEWS

SPRING 2007

Admissions Committee, Chair Sabine Fuhrmann, Ph.D.

Our recruitment process went very well in early 2006 and we are glad to welcome 10 excellent students into the Neuroscience Graduate Program in Fall 2006: **Eric Bend** (Lewis and Clark College), **Gretchen Carr** (Brigham Young University), **Sean Flynn** (Allegheny College), **John Gaynes** (Binghamton University), **Renee Kruse-Bend** (Lewis and Clark College), **Priyanka Pandit** (College of St. Elizabeth), **Randi Rawson** (Bates College), **Shushruth Shushruth** (Bangalore Medical College), **Vernon Twede** (University of Utah) and **Andrew Zayachkivsky** (Allegheny College). The Admissions Committee reviewed more than 100 completed applications last year (37 domestic and 65 international) and invited 24 candidates out for personal interviews.

The success of our admissions and recruitment activities is highly dependent on the help and enthusiasm of the current graduate students who are hosting the student candidates. Special thanks to **Koji Takahashi, Fred Federer** and **James Anderson** who organized last year's hosting. This year, **Fred Federer, James Anderson** and **Sean Flynn** will play a major role in hosting the student candidates. To give candidates insight into the research activities and interests of the faculty, postdocs and students involved in the Program, we plan to have poster presentations during the evening reception of the admissions interview day. If you would like to present a poster this year, please, send an e-mail to Tracy Marble (tracy.marble@hsc.utah.edu).

This year **Bradley Greger** (Bioengineering), **Shannon Odelberg** (Neurobiology and Anatomy) and **Gary Rose** (Biology) join **Alessandra Angelucci** (Ophthalmology and Visual Sciences), **Jeanne Frederick** (Ophthalmology and Visual Sciences), **Sabine Fuhrmann - Chair** (Ophthalmology and Visual Sciences) and **Ray Kesner** (Psychology) on the Admissions Committee. Kristen Keefe, Rich Dorsky and Bruce Bamber leave after many years of collective and enthusiastic service on the committee while Kevin Flanigan is taking a sabbatical leave. Sadly, Neil Vickers leaves this year after serving for six years as the Chair of the Admissions Committee. Neil did an extraordinary job of leading the Committee, making sure that the admissions process ran smoothly and efficiently. Lastly, special thanks to our Program Coordinator **Tracy Marble** who is invaluable for our admission and recruitment activities.

This year our main admissions interview day will be Friday 16th February and, as usual, there will be a reception at the Jewish Community Center, 2 North Medical Drive, on Friday evening from 6:00-9:00pm. Your participation at the reception is a crucial part for the success of all our admissions activities.

****ALUMNI NEWS****

Matt Schmolesky made it into Science magazine! Okay, it's not a published article, but it's a full-page picture of him regarding the AAAS Fellowship with mention of his new faculty position at Weber State. Science, Vol. 314, pg. 1208 (Nov. 2006)

Inah Lee: **Lee, I.**, Griffin, A.L., Zilli, E.A., Eichenbaum, H., and Hasselmo, M.E. (2006) Gradual Translocation of Spatial Correlates of Neuronal Firing in the Hippocampus toward Prospective Reward Locations. *Neuron*, 51:639-650.

Ben Albensi, University of Manitoba, has been awarded two more grants:
$105,000 Scottish Rite Foundation grant
$35,000 Manitoba Medical Service Foundation grant

Albensi, B.C., Oliver, D.R.,Toupin, J., and Odero, G. Electrical stimulation protocols for hippocampal synaptic plasticity and neuronal hyperexcitability: Are they effective or relevant? *Experimental Neurology,* (in press).

Bob Renden will be taking a postdoctoral position in the laboratory of Dr. Thomas Kuner, at the Max Planck Institute for Medical Research in Heidelberg, Germany, starting in April 2007. He has been awarded funding from both the Human Frontiers Science Program and The Alexander von Humboldt Foundation, to pursue research on targeted viral expression in the rodent auditory brainstem in Dr. Kuner's lab.

David Piper joined Invitrogen at their Discovery Sciences business segment in Madison, WI last year. This group configures assays and services for drug discovery surrounding numerous targets including cytochrome P450's, protein kinases, nuclear receptors, G-protein coupled receptors, and ion channels. Shockingly, David has spent the past year developing cell lines and fluorescent based assays to support the ion channel targets. He was recently nominated for and received "the Most Innovative New Scientist" award which recognizes an individual with the best contribution by the awardee in their first year as a scientist at Invitrogen.

David Piper, PhD, Scientist
Invitrogen Discovery Sciences
Invitrogen Corporation
501 Charmany Drive
Madison, WI 53719
608-204-5061 (direct), 608-204-5200 (fax)
david.piper@invitrogen.com
www.invitrogen.com

****Important Dates****

Feb. 16: 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 16th from 6:00-9:00pm. There will be, *of course*, the usual amounts of food and drink.

March 12-18: National Brain Awareness Week.
Detailed article next column.

****FACULTY AWARDS****

U Biologist Named to Institute of Medicine

Olivera is 30th Utah Researcher Honored by National Academies

Oct. 9, 2006 - Baldomero "Toto" Olivera – a University of Utah biologist who seeks new medications from the toxins of poisonous cone snails – won one of medicine's top honors Monday when he was named as a new member of the Institute of Medicine.

Read more: http://unews.utah.edu/p/?r=100906-1

****
****

****STUDENT AWARDS****

Koji Takahashi (Wilcox lab) and Cameron Metcalf (Bealer lab) were awarded an Epilepsy Foundation Predoctoral Award for $20,000 for next year in conjunction with the ADD Program (**Drs. Dudek and White**)

Molly DuBray (Lainhart lab) and **Janet Lainhart** received funding from Autism Speaks - a Mentor-based Predoctoral Fellowship Award - it is a 2 year fellowship that will fund Molly's research for 2 years.

****

Mark Your Calendar for Brain Awareness Week 2007!!

The Neuroscience program's Brain Awareness Week Committee is excitedly preparing for March 12-18, National Brain Awareness Week!

In conjunction with The Brain Institute, the Neuroscience Program's BAW Committee received funding from the Skaggs Research Institute to help promote educational activities in elementary, middle, and high schools and community centers throughout the Wasatch Front.

For those of you new to BAW, here's what we do: A couple members of the BAW committee and several volunteers visit schools and community centers with kid-friendly, age-appropriate activities that explore several different aspects of the human nervous system. Topics we cover include helmet safety, drug awareness, human and comparative anatomy, as well as going to college and possibly entering a career in life science research. Last year, we met with more than 1,800 students over the course of the week! The kids loved it and we had a blast doing it!

We are actively looking for enthusiastic volunteers for BAW 2007. Anyone interested in volunteering, please contact Eric at eric_veien@yahoo.com, or just keep an eye on your inbox. Please help us educate the Wasatch Front on the importance of brain safety and research.

Sincerely yours,
The Brain Awareness Week Committee

Macular Degeneration Research at the Moran Eye Center listed as #6 in the Top 10 Breakthroughs of the Year in Science Magazine

In December of each year, Science Magazine, one of the most prestigious journals in scientific research, publishes the top ten most significant scientific advances of the year as the Breakthrough of the Year: These breakthroughs encompass all scientific research fields published in any scientific journal. This year's honors include treatments for patients suffering from age-related macular degeneration (AMD) and research aimed at identifying genes and patients who will be susceptible to genetic risk of AMD. "A Ray of Hope for Macular Degeneration Patients" was listed as runner up number six in the December 22 issue of Science, which includes a paper published in Science on AMD gene discovery by a Moran Eye Center team led by Dr. Kang Zhang

Dr. Kang Zhang is one of those researchers who have been at the forefront of discovering the genes responsible for AMD and treatments that could ultimately help physicians and their patients take preventive steps against AMD.

In addition, the Moran retinal team participated in two clinical trials that demonstrated efficacy of Lucentis treatment for wet AMD which were featured in the October issue of The New England Journal of Medicine. This was also mentioned in the Breakthrough of the Year "A Ray of Hope for Macular Degeneration Patients"

Yang, Z., Camp, N.J., Sun, H., Tong, Z., Gibbs, D., **Cameron, D.J.**, Chen, H., Zhao, Y., Pearson, E., Li, X., Chien, J., Dewan, A., Harmon, J., Bernstein, P.S., Shridhar, V., Zabriskie, N.A., Hoh, J., Howes, K., and **Zhang, K.** (2006) A variant of the HTRA1 gene increases susceptibility to age-related macular degeneration. *Science,* 314:992-993. Epub 2006 Oct 19.

Congratulations to the Moran teams!

ACADEMIC DEFENSES

Since the last issue of NeuroNews, the Neuroscience Program has had the following students successfully defend their dissertation; **Liang Qiao**.

Hideaki Tomita (Capecchi lab), Mei-Yee Law (Chien lab), Crystal Sigulinsky (Levine lab), Fred Federer (Angelucci lab) have successfully passed their Qualifying Exams.

Matt Riedy (Keefe lab), Michelle Stamm (Lucero lab), Josh Cameron (Zhang lab) have successfully passed their dissertation proposals.

*****POTPOURRI*****

Congratulations to **Matt Riedy (Keefe lab)** and Jessica Nordstrom who were engaged this fall.

Josh Cameron (Zhang lab) and wife Kristen welcomed a little girl, Elizabeth to their family. She was born on Nov. 30th and weighed a healthy 6 lb. 10 oz.

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

Alexander, A.L., Lee, J.E., Lazar, M., Boudos, R., **DuBray, M.B.**, Oakes, T.R., Miller, J.N., Lu, J., Jeong, E.K., McMahon, W.M., Bigler, E.D., and **Lainhart, J.E.** (2007) Diffusion tensor imaging of the corpus callosum in Autism. *Neuroimage,* Jan 1; 34(1):61-73. Epub 2006 Oct 4.

Bordia, T., Parameswaran, N., Fan, H., Langston, J.W., **McIntosh, J.M.**, and Quik, M. (2006) Partial recovery of striatal nicotinic receptors in 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP)-lesioned monkeys with chronic oral nicotine. *J Pharmacol Exp Ther*, Oct;319(1):285-292.

Burgess, N.K., Sweeten, T.L., McMahon, W.M., and **Fujinami, R.S.** (2006) Hyperserotoninemia and altered immunity in autism. *J. Autism Dev. Disord.,* 36:697-704.

Jurrus, E., Tasdizen, T., Koshevoy, P., Fletcher, T., Hardy, M., **Chien, C.-B.**, Denk, W., and Whitaker, R. (2006) Axon tracking in serial block-face scanning electron microscopy. *Medical Image Computing and Computer-Assisted Intervention (Proceedings)*, in press.

Ivanov, I.P., **Pittman, A.J.**, **Chien, C.-B.**, Gesteland, R.F., and Atkins, J.F. (2006) Novel antizyme gene in Danio rerio expressed in brain and retina. *Gene*, in press.

RECENT PUBLICATIONS CONTINUED:

Li, Y., Wang, G., Dong, B., Sun, X., Turner, M.J., Kamaya, S., and **Zhang, K.** (2006) A novel mutation of the VMD2 gene in a Chinese family with Best vitelliform macular dystrophy. *Ann Acad Med Singapore,* 35, in press.

Libbey, J.E., Tsunoda, I., and **Fujinami, R.S.** (2006) Autologous hematopoietic stem cell transplantation: A cure for multiple sclerosis? *Future Neurol.,* 1(4):403-408.

Mobley, A.S. (1), Mahendra, G. (1), and **Lucero, M.T.** (1). Evidence for Multiple Signaling Pathways in Single Squid Olfactory Receptor Neurons. *The Journal of Comparative Neurology*, (in press).

Mumm, J.S., Williams, P.R., Godinho, L., Koerber, A., **Pittman, A.J.**, Roeser, T., **Chien, C.-B.**, Baier, H., and Wong, R.O.L. (2006) In vivo imaging reveals dendritic targeting of laminated afferents by zebrafish retinal ganglion cells. *Neuron*, in press.

Nozaki, M., Raisler, B.J., Sakurai, E., Sarma, J.V., Barnum, S.R., Lambris, J.D., Chen, Y., **Zhang, K.**, Ambati, B.K., Baffi, J.Z., and Ambati, J. (2006) Drusen complement components C3a and C5a promote choroidal neovascularization. *PNAS*, 103:2328-2333.

Shiembob, D.L., Roberts, R.L., Luetje, C.W., and **McIntosh, J.M.** (2006) Determinants of alpha-conotoxin BuIA selectivity on the nicotinic acetylcholine receptor beta subunit. *Biochemistry,* Sep 19;45(37):11200-11207.

Suli, A., Mortimer, N., Shepherd, I., and **Chien, C.-B.** Netrin/DCC signaling controls contralateral dendrites of octavolateralis efferent neurons. *Journal of Neuroscience*, in press.

Tong, Z., Yang, Z., Meyer, J.J., McInnes, A.W., Xue, L., Azimi, A.M., Baird, J., Zhao, Y., Pearson, E., Wang, C., Chen, Y., and **Zhang, K.** (2006) Genetic Studies for X-linked retinitis pigmentosa. *Ann Acad Med Singapore,* 35, in press.

Vishwanath, V.A., and **McIntosh, J.M.** (2006) Synthesis of Fluorescent Analogs of alpha-Conotoxin MII. *Bioconjug Chem.*, Nov 15;17(6):1612-1617.

Vincler, M., Wittenauer, S., Parker, R., Ellison, M., **Olivera, B.M.**, and **McIntosh, J.M.** (2006) Molecular mechanism for analgesia involving specific
antagonism of alpha9alpha10 nicotinic acetylcholine receptors. *Proc Natl Acad Sci USA,* Nov 21;103(47):17880-17884.

Yang, Z., Camp, N.J., Sun, H., Tong, Z., Gibbs, D., **Cameron, D.J.**, Chen, H., Zhao, Y., Pearson, E., Li, X., Chien, J., Dewan, A., Harmon, J., Bernstein, P.S., Shridhar, V., Zabriskie, N.A., Hoh, J., Howes, K., and **Zhang, K.** (2006) A variant of the HTRA1 gene increases susceptibility to age-related macular degeneration. *Science,* 314:992-993. Epub 2006 Oct 19.

Zolessi, F.R., Poggi, L., Wilkinson, C.J., **Chien, C.-B.**, and Harris, W.A. (2006) Polarization and orientation of retinal ganglion cells in vivo. *Neural Development*, 1:2.

Zou, C., Huang, W., Ying, G., and **Wu, Q.** (2006) Sequence analysis and expression mapping of the rat clustered protocadherin gene repertoires. *Neuroscience* . Epub ahead of print . doi:10.1016/j.neuroscience.2006.10.011

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

MAIL TO: