



NEURO NEWS

FROM THE DIRECTOR: Mary T. Lucero, Ph.D.

As we start the new academic year, I would like to thank our students, faculty and Tracy Marble for their continued support of the Neuroscience Program. We welcome the following faculty to their new positions in the program: Dr. Kristen Keefe, Directorate; Dr. Richard Dorsky, Student Advisor; Dr. Alan Light, Course Director for Cellular & Molecular Neuroscience; Dr. Bradley Gregor, Seminar Series Advisor; Dr. Monica Vetter, Curriculum Chair. All faculty are encouraged to participate by taking rotation students, serving on committees, teaching courses, and attending program related events. Along these same lines, I would like to thank Robert Marc, Michael Bastiani and Karen Wilcox for their time in service in the above mentioned positions, sometimes wearing two hats.

I am pleased to announce that we have been awarded an NIH Neuroscience Training Grant for \$900,000 over 5 years! This grant will provide stipend, insurance, and tuition support for 3 first year (**Renee Bend, Gretchen Carr, and John Gaynes**) and 3 second year students (**James Anderson, Danielle Downey, and Molly DuBray**). This prestigious award recognizes our outstanding faculty and students who make the Neuroscience Program at the University of Utah one of the top Neuroscience Programs in the nation.

Many of you may know by now, but all of our Ophthalmology & Visual Sciences faculty and students now reside under one roof in the new John A. Moran Eye Center located just south of the Primary Children's Hospital.

The Curriculum Committee has created and approved a new Neuroscience course. NEUSC 7950: Professional Skills/Grant Writing. This will ease the size of the class our students were taking through the Pharmacology & Toxicology Department. The new course will be on the class schedule for Spring 2007 and will be taught by Dr. Ed Dudek, Physiology.

The aim of this course is to mentor students on some of the practical skills and ethical issues that form the basis for an effective graduate training experience and a successful career as a biomedical scientist. The specific objectives are to help students understand principles concerning the responsible conduct of scientific research, evaluate career options within and in addition to academia, prepare job applications (including a curriculum vitae and resume), give oral presentations (e.g., research seminars), and write and review grant applications. The course will emphasize preparation of student grant proposals, as a critical component of planning for a Ph.D. research project.

Lastly, we would like to welcome our 10 new students to our program: **Eric Bend, Renee Bend, Gretchen Carr, Sean Flynn, John Gaynes, Priyanka Pandit, Randi Rawson, Shushruth, Vernon Twede and Andrew Zayachkivsky**. You can meet all of them at our New Graduate Student Reception on Thursday, September 21st at the JCC. Come help us welcome them to the U.!

ALUMNI NEWS

Inah Lee has taken an Assistant Professor position in the Department of Psychology at the University of Iowa.

Matt Schmolesky and his wife (Joanna Prasher, U of U Molecular Biology Ph.D. 2001) moved back to the Beehive State in July. After finishing his two year stint with the U.S. Department of State, Matt has taken up an Assistant Professorship in the Psychology Department of Weber State University in Ogden. He plans to build upon existing neuroscience related courses (e.g. biological and physiological psychology), establish undergraduate neuroscience research projects and explore possibilities for interdepartmental courses and research in the neurosciences. He can be contacted at: mschmolesky@weber.edu or 801-626-8745.

Jie Zhang has started a biotechnology company called Infogene Inc, located in Silicon Valley, California. <http://infogene.com>

Pengcheng Han has been awarded the Hotchkiss Brain Institute Postdoctoral training grant. It will cover his salary CAN\$ 40,000 per year for two years plus annual travel and lab allowance.

Ben Albensi has been awarded 3 grants: Manitoba Health Research Council Operating grant, \$100,000; Manitoba Health Research Council Establishment grant, \$100,000; and Thorlakson Foundation Fund award, \$29,500.

David Daberkow has a post-doc lined up at U. Illinois-Normal in the lab of Dr. Paul Garris. He will be studying the effects of dopamine depletions on striatal neuron activity using in vivo voltametry. The postdoc position is a 2 year fellowship in 'Neuroscience and behavior'. He will be teaching and doing research.

Sharon Cahoon-Metzger recently changed companies--and is now a Medical Science Liaison with the biotech company, Biogen Idec of Cambridge, MA. She will be working with 2 MS products, Avonex (an interferon) and Tysabri (a monoclonal antibody). Her territory includes Wyoming, Nebraska, Utah, Colorado and New Mexico.

Andrew Pittman, Mick Juryneec and **Sen Wu** have started post-doc positions in the **Chien, Grunwald,** and **Capecchi labs**, respectively.

Christine Fogarty-Celestino will be teaching at Juan Diego High School in Draper, UT.

Important Dates

Sept. 14: Bioscience Symposium. University Marriott Park Hotel, 1:00-7:00pm. Dinner at 7:00pm. Pre-registration required.

Sept. 21: 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. 14-18: The Society for Neuroscience Annual Meeting held this year in Atlanta, GA.

Nov. 3: Annual Neuroscience Program Symposium @ Snowbird
<http://neuroscience.med.utah.edu/Snowbird>

FACULTY AWARDS

U BIOLOGIST NAMED A 'MILLION-DOLLAR PROFESSOR'

Baldomero "Toto" Olivera, a University of Utah biologist who has spent his career developing new medicines from the toxins of deadly cone snails, has won a four-year, \$1 million award as one of 20 new "Million-Dollar Professors" named by the prestigious Howard Hughes Medical Institute (HHMI).

The award is different from HHMI's program of designating researchers as HHMI investigators and paying their salaries. Instead, the Million-Dollar Professor program supports professors in their efforts to "ignite the scientific spark in a new generation of students" through teaching and mentoring.

Olivera plans to use the money to teach children and undergraduates from his native Philippines, Hawaii and U.S. Pacific territories about biodiversity in their environment, and also to implement a neuroscience program for undergraduates at the University of Utah.

In addition, Cognetix, a spinoff company based on Olivera's research, has details of its works developing medicines from cone snail toxins: www.cognetix.com

2006 Graduate Student and Postdoc Scholar Mentor Awards

The Graduate School announce winners of the University of Utah's first Graduate Student and Postdoctoral Scholar mentor award.

The mentor award winners were:

Professor Mary Lucero, Department of Physiology
Professor Cynthia Berg, Department of Psychology
Professor Chris Ireland, Department of Medicinal Chemistry

The award recognizes faculty who effectively guide graduate students and postdoctoral scholars throughout their professional training in a continuing, multifaceted partnership sustained by mutual respect and concern. The effective mentor serves as advisor, teacher, advocate, sponsor, and role model.

Recipients of the Graduate Student and Postdoctoral Scholar Distinguished Mentor Award will receive an award of \$2,500 and be recognized at a formal event in Fall semester.

The creation of these new mentoring awards coincides with the opening of the Office for Postdoctoral Affairs and Professional Programs within the Graduate School, and as part of the Graduate School's ongoing efforts to foster a culture of mentoring throughout the University.

U to Help Build Bionic Arm Work on Realistic Limb May Draw \$10.3 Million over Four Years

April 24, 2006 -University of Utah researchers will receive up to \$10.3 million to help develop a new prosthetic arm that would work, feel and look like a real arm. The Utah work is a key part of a U.S. Department of Defense contract worth up to \$55 million to develop the new device for soldiers and potentially others whose arms were amputated.

Read the whole article: <http://unews.utah.edu/p/?r=042106-1>

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POSTDOC POSITIONS

Epilepsy Research Labs

Epilepsy Research Positions

Research Assistant (B.S.) and Research Associate (M.S. or Ph.D.) positions available to conduct basic and translational research on status epilepticus and epilepsy in the laboratories of **Drs. Ed Dudek, Steve White and Karen Wilcox**. Must be hard-working and responsible. Experience with surgical, electrophysiological (in vivo and/or in vitro), imaging, cell culture, morphometric, and/or data analysis techniques desirable. Please contact: vicki.skelton@hsc.utah.edu.

Pharmacology & Therapeutics

U. of Manitoba & St. Boniface Research Ctr.

Application Deadline = Dec 20, 2006

Looking for person with an MD, PhD, or PharmD interested in learning brain slice electrophysiology (LTP paradigms), calcium/fluorescence imaging, MRI, and methods for testing memory in whole animals (Morris water maze/Barnes maze etc.). In addition, cell & molecular techniques would be learned. Projects include the investigation of pathological mechanisms (ie calcium dysregulation and calcium/NF-kB signaling) associated with epilepsy, stroke, and Alzheimer's disease and novel drug targets. Contact: **Dr Ben Albensi**; Tel: 204-235-3942
Email: balbensi@sbrca.ca; Website: www.sbrca.ca/dnd/

ACADEMIC DEFENSES

Since the last issue of NeuroNews, the Neuroscience Program has had the following students successfully defend their dissertation; **Mick Jurynec (Grunwald lab), Sen Wu (Capecci lab), Christine Fogarty Celestino (Vickers lab), Andrew Pittman (Chien lab), David Daberkow (Keefe lab)** has a dissertation defense date of September 13.

Matt Riedy (Keefe lab), Kerry-Ann Stewart (White lab), Michelle Stamm (Lucero lab), Josh Cameron (Zhang lab), and Katherine Zukor (Condic lab) have successfully passed their Qualifying Exams. **Wei Chen (Vetter lab), Vijay Vishwanath (McIntosh lab), Koji Takahashi (Wilcox lab) and Eric Veien (Dorsky lab)** have successfully passed their dissertation proposals.

*****POTPOURRI*****

Congratulations to **Crystal** (Cornett) and **Jake Sigulinsky** who were married in July. Crystal is in the Ed Levine lab.

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

- Adams, D. H., **Hanson, G. R.**, and **Keefe, K. A.** (2005) 3,4-Methylenedioxymethamphetamine increases neuropeptide messenger RNA expression in rat striatum. *Molecular Brain Research*, 133:131-142.
- Azam, L., and **McIntosh, J. M.** (2006) Characterization of Nicotinic Acetylcholine Receptors that Modulate Nicotine-evoked [3H]Norepinephrine Release from Mouse Hippocampal Synaptosomes. *Mol Pharmacol.*, May 30; [Epub ahead of print].
- Baker, T. C., Quero, C., Ochieng, S. A., and **Vickers, N. J.** (2006) Inheritance of olfactory preferences. II. Olfactory receptor neuron responses from *Heliothis subflexa* x *Heliothis virescens* hybrid males. *Brain, Behavior and Evolution*, 68:75-89.
- Bordia, T., Parameswaran, N., Fan, H., Langston, J. W., **McIntosh, J. M.**, and Quik, M. (2006) Partial recovery of striatal nicotinic receptors in MPTP-lesioned monkeys with chronic oral nicotine. *J Pharmacol Exp Ther.*, Jul 12; [Epub ahead of print].
- Carlson, N. G., Hill, K. E., Tsunoda, I., **Fujinami, R. S.**, and Rose, J. W. (2006) The pathologic role for COX-2 in apoptotic oligodendrocytes in virus induced demyelinating disease: Implications for multiple sclerosis. *J. Neuroimmunol.*, 174(1-2):21-31.
- Chi, S. W., Kim, D. H., **Olivera, B. M.**, **McIntosh, J. M.**, and Han, K. H. (2006) Solution conformation of a neuronal nicotinic acetylcholine receptor antagonist alpha-conotoxin Om1A that discriminates alpha3 vs. alpha6 nAChR subtypes. *Biochem Biophys Res Commun.*, Jun 23;345(1):248-54. Epub 2006 Apr 27.
- Daberkow, D. P., Kesner, R. P.**, and **Keefe, K. A.** (2005) Relation of methamphetamine-induced monoamine loss to basal ganglia-dependent learning. *Pharmacology, Biochemistry, and Behavior*, 81:198-204.
- Fujinami, R. S.** (2006) Neurons tame T cells. *Nat. Med.*, 12(5):503-504.
- Fujinami, R. S.**, von Herrath, M. G., Christen, U., and Whitton, J. L. (2006) Molecular mimicry, bystander activation or viral persistence: Infections and autoimmune disease. *Clin. Microbiol. Rev.*, 19(1):80-94.
- Han, P.**, and **Lucero, M. T.** (2006) Pituitary adenylate cyclase activating polypeptide reduces expression of Kv1.4 and Kv4.2 subunits underlying A-type K(+) current in adult mouse olfactory neuroepithelia. *Neuroscience*, 138:411-419.
- Hegg, C. C.**, and **Lucero, M. T.** (2006) Purinergic receptor antagonists inhibit odorant-induced heat shock protein 25 induction in mouse olfactory epithelium. *Glia*, 53:182-190.
- Hillier, N. K.*, Kleinedam, C.*, and **Vickers, N. J.** (2006) Physiology and glomerular projections of olfactory receptor neurons on the antenna of female *Heliothis virescens* (Lepidoptera: Noctuidae) responsive to behaviorally relevant odors. *Journal of Comparative Physiology A.*, 192:199-219.

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RECENT PUBLICATIONS CONTINUED:

Horner, K. A., Adams, D. H., **Hanson, G. R.**, and **Keefe, K. A.** (2005) Blockade of stimulant-induced preprodynorphin messenger RNA expression in the striatal matrix by serotonin depletion. *Neuroscience*, 131:67-77.

Horner, K. A. and **Keefe, K. A.** (2006) Regulation of psychostimulant-induced preprodynorphin, c-fos, and zif/268 messenger RNA expression in the rat dorsal striatum by mu opioid receptor blockade. *European Journal of Pharmacology*, 532:61-73.

Horner, K. A., Westwood, S. C., **Hanson, G. R.**, and **Keefe, K. A.** Multiple, high doses of methamphetamine increase the number of preproneuropeptide Y mRNA-expressing neurons in the striatum of rat via a dopamine D1 receptor-dependent mechanism. *Journal of Pharmacology and Experimental Therapeutics*, in press.

Jevince, A., Kadison, S. R., **Pittman, A.**, **Chien, C-B.**, and Kaprielian, Z. (2006) Distribution of EphB receptors and ephrinB1 in the developing vertebrate spinal cord. *Journal of Comparative Neurology*, 497:734-50.

Kamendi, H., Stephens, C., Dergacheva, O., Wang, X., Huang, Z. G., Bouairi, E., Gorini, C., **McIntosh, J. M.**, and Mendelowitz, D. (2006) Prenatal nicotine exposure alters the nicotinic receptor subtypes that modulate excitation of parasympathetic cardiac neurons in the nucleus ambiguus from primarily alpha3beta2 and/or alpha6betaX to alpha3beta4. *Neuropharmacology*, Jul;51(1):60-6. Epub 2006 May 9.

Kopinke, D., Sasine, J., Swift, J., Stephens, W. Z., and **Piotrowski, T.** (2006) Retinoic acid is required for endodermal pouch morphogenesis and not for pharyngeal endoderm specification. *Dev Dyn.*, Jul 26; [Epub ahead of print].

Libbey, J. E., Peterson, L. K., Tsunoda, I., and **Fujinami, R. S.** (2006) Monoclonal MOG-reactive autoantibody from progressive EAE has the characteristics of a natural antibody. *J. Neuroimmunol.*, 173(1-2):135-145.

McCallum, S. E., Parameswaran, N., Bordia, T., Fan, H., **McIntosh, J. M.**, and Quik, M. (2006) Differential regulation of mesolimbic alpha3/alpha6beta2 and alpha4beta2 nicotinic acetylcholine receptor sites and function after long-term oral nicotine to monkeys. *J Pharmacol Exp Ther.*, Jul;318(1):381-8. Epub 2006 Apr 18.

McCoy, L., Tsunoda, I., and **Fujinami, R. S.** (2006) Multiple sclerosis and virus induced immune responses: Autoimmunity can be primed by molecular mimicry and augmented by bystander activation. *Autoimmunity*, 39(1):9-19.

Rentz, A. C.*, Libbey, J. E.*, **Fujinami, R. S.**, Whitby, F. G., and Byington, C. L. (2006) Investigation of treatment failure in neonatal echovirus 7 infection. *Ped. Infect. Dis. J.*, 25(3):259-262 (*equal contribution). [Figures printed online *Ped. Infect. Dis. J.* 25(3):e5-e6, 2006].

Smeal, R. M., **Gaspar, R. C.**, **Keefe, K. A.**, and **Wilcox, K. S.** A rat brain slice preparation for characterizing both thalamostriatal and corticostriatal afferents. *Journal of Neuroscience Methods*, in press.

Talley, T. T., **Olivera, B. M.**, Han, K. H., Christensen, S. B., Dowell, C., Tsigelny, I., Ho, K. Y., Taylor, P., and **McIntosh, J. M.** (2006) alpha-conotoxin OMIA is a potent ligand for the acetylcholine binding protein as well as alpha 3beta 2 and alpha 7 nicotinic acetylcholine receptors. *J Biol Chem.*, Jun 27; [Epub ahead of print].

Tsunoda, I., and **Fujinami, R. S.** (2005) TMEV and neuroantigens: Myelin genes and proteins, molecular mimicry, epitope spreading and autoantibody-mediated remyelination. In: *Experimental Models of Multiple Sclerosis*. E Lavi and CS Constantinescu (Eds.), Springer, New York, pp. 593-616.

Tsunoda, I., Libbey, J. E., Kobayashi-Warren, M., and **Fujinami, R. S.** (2006) IFN-g production and astrocyte killing by autoreactive T cells induced by Theiler's virus infection: Role of viral strains and capsid proteins. *J. Neuroimmunol.*, 172(1-2):85-93.

Vickers, N. J. (2006) Inheritance of olfactory preferences. I. Pheromone-mediated behavioral responses of *Heliothis subflexa* x *Heliothis virescens* hybrid males. *Brain, Behavior and Evolution*, 68:63-74.

Vickers, N. J. (2006) Inheritance of olfactory preferences. III. Processing of pheromonal signals in the antennal lobe of *Heliothis subflexa* x *Heliothis virescens* hybrid males. *Brain, Behavior and Evolution*, 68:90-108.

Wilson*, B. D., Ii*, M., Park*, K. W., Suli*, A., Sorensen, L. K., Larrieu-Lahargue, F., Urness, L. D., Suh, W., Asai, J., Kock, G. A. H., Thorne, T., Silver, M., Thomas, K. R., **Chien, C-B.**, Losordo, D. W., and Li, D. Y. (2006) Netrins promote developmental and therapeutic angiogenesis. *Science*, in press.*=equal contributions.

*Do you have something to submit in the next issue of NeuroNews?
Send your information to: Tracy Marble, Program in Neuroscience*

