

NEURO NEWS

UU Neuroscience Around the World

Neuroscience Education in Africa

Suzanne Stensaas, PhD (Neurobiology and Anatomy) and **David Renner, MD** (Neurology) were invited to the 22ND Pan African Association of Neurological Sciences (PAANS) in Kampala, Uganda in June 2016. With the meeting theme of “Strengthening Neurological Services in Uganda” they focused on the educational factors that help and hinder the selection of neurological specialties among those in training. Their session entitled “Training the next generation of neurologists, neurosurgeons and neuroscientists in Africa” included their presentation entitled “Multimedia Demonstration of Case-Based Teaching for Students and Registrars”. It promoted discussion and interaction with many colleagues.

A double-sided DVD with 7 GB of teaching resources was distributed to attendees making sure that one went to each clinical teaching site or university. The DVD contained anatomical resources including animations for lectures and 26 videos of brain dissections with English subtitles. Ranging from 5-35 minutes each, videos were can be used in case presentations or lectures or as independent learning items on a local server. The outline of a Neurology curriculum and 32 must see neurological cases for students and residents was also included along with some normal neurological exam videos.

Following the meeting they flew to Kigali, Rwanda hosted by Dr. Francois Xavier Nshimiyimana, Neurologist at CHUK, (Centre Hospitalier Universitaire de Kigali) where Dr. Renner lectured on stroke and movement disorders and they shared resources for students and residents. Dr. Stensaas continued on to the old capital, Butare, and the site of undergraduate medical teaching hosted by Jules-Fidèle Nshimiyimana, the Neurologist at (CHUB), Centre Hospitalier Universitaire de Butare. Together they serve a country of 12 million as the only fully trained neurologists. She gave a talk to the students, interns and residents and again resources were shared, wards visited and new contacts made.

Suzanne and David’s shared hope is that more medical students will be introduced to the neurosciences in a problematic and clinically relevant setting early in their career. By making it easier for students to see the link between anatomical location and neurological presentation the subject will hopefully change attitudes and increase the number of internists trained in Neurology. (see photo on page 4)

Neuroscience Education in Nicaragua

Brain Awareness Week (BAW) is an annual, international campaign founded by the Dana Foundation that can be described best as a celebration of the brain. The campaign builds public knowledge of basic brain function and increases awareness of continuing research in neuroscience. In Utah, BAW is typically run by University of Utah graduate students who share their knowledge during visits to elementary, middle, and high schools. **Evan Ratzan**, a graduate student in the Neuroscience Program, conceived of the idea to bring this program to a place he believed could truly benefit from the knowledge: Jalapa, Nicaragua.

With the help of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), the American Association for the Care of Children (AACC), the Neuroscience Initiative, the Office of Health Equity and Inclusion, and a graduate research fellowship from the National Science Foundation (awarded to Neuroscience Program graduate student **Patrick Parker**), Ratzan was able to organize the program and travel to Nicaragua with three others from the University of Utah: graduate students Daniella Chavez (human genetics), Patrick Parker (neurology), and Judith Simcox (post in biochemistry).

What Ratzan, Chavez, Parker, and Simcox saw in Jalapa was startling to them. Extreme poverty and deficits in health care were most evident by unsanitary conditions and lack of care for elderly with dementia, severe cases of arthritis, and other chronic ailments. The aging population was often ignored, and at times left homeless, because their families had neither the resources nor knowledge of how to best care for them.

Ratzan, who had previous ties to Nicaragua through AACC, recognized the very real need for basic education on the brain in Jalapa. Beyond that, he also saw a strong motivation to learn. “They are really thirsty for knowledge,” he said.

As he anticipated, the rural community was excited to come to the lectures given by himself and the BAW team. Held at the Universidad de Martin Lutero, their audience was old and young, and came from both privileged and poor backgrounds, some walking long distances to get there. The U scientists quickly found that their audience had a keen interest in applied topics – nutrition, hygiene, and care – (cont’d on page 3)

2016 Incoming Students**

Lauara Bell, University of Colorado, Colorado Springs
Samantha Chadwick, University of Utah
Jenifer Einstein, University of Massachusetts, Dartmouth
Luke Gangi-Wellman, Juniata College
Charlotte Magee, Washington and Lee University
Nicole Moreno, University of Texas, Dallas
Dominic Skinner, University of Puget Sound
Arnulfo Tunon-Ortiz, Trinity University

****ACADEMIC DEFENSES****

Since the last issue of NeuroNews, the Neuroscience Program congratulates the following students on successfully passing their qualifying exams: **Heidi Febinger (Dorval lab)**, **Anne Gibson (Keefe lab)**, **Jace King (Anderson lab)**, **Evan Ratzan (Deans lab)**, **Michelle Reed (Baehr lab)**, **Ana Santos (Park lab)** and **Nancy William (Coon lab)**;

and dissertation proposals; **Josh Barrios (Douglass lab)**, **Kyle Jenks (Shepherd lab)**, **Patrick Parker (Brennan lab)**, **Sasha Luks-Morgan (Douglass lab)**, and **Tiffanie Dahl (Baehr lab)**.

****STUDENT AWARDS****

Meredith Gibbons Hasenoehrl (Wilcox lab) and **Kyle Jenks (Shepherd lab)** have been selected as University of Utah Graduate Research Fellows. This award covers \$17,700 of their stipend, and 80% of their health insurance.

Tony Umpierre (Wilcox lab), **Kyle Jenks (Shepherd lab)** and **Sarah Anderson (Vetter lab)** have been awarded an NRSA Fellowship.

Jaycie Loewen (Wilcox lab) was awarded a Pre-Doctoral Fellowship in Pharmaceutical Sciences from the American Foundation of Pharmaceutical Education.

****NEW FACULTY****

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

Brian Mickey, M.D./Ph.D., Associate Professor of Psychiatry. Research: Neuroscience of mood disorders.

Sophie Caron, Ph.D., Assistant Professor of Biology. Research: Sensory representations in the *Drosophila* brain.

Clement Chow, Ph.D., Assistant Professor of Human Genetics. Research: Genetic variation, Genomics, ER stress, Disease modifiers.

Yashar Kalani, M.D./Ph.D., Assistant Professor of Neurosurgery. Research: Stem cell biology, regenerative medicine and biomarker development for cerebrovascular disease.

****SEMINAR SERIES 2016-2017****

September 19: Kalanit Grill-Spector, Ph.D., Stanford U.
October 18: John P. Welsh, Ph.D., U. Washington SOM
November 15: Oleg Butovsky, Ph.D., Harvard Medical
January 17: Baljit Khakh, Ph.D., David Geffen SOM, UCLA
February 21: John Huguenard, Ph.D., Stanford U. SOM
March 21: John Mann, M.D., Columbia U.
April 18: Peter W. Kalivas, Ph.D., U. of SC

see more details at:

<http://neuroscience.med.utah.edu/Meetings.html>

****Other Important Dates****

Sept. 15: Neuroscience Program: Meet the New Students Reception
Jewish Community Center; 5-8PM

Sept. 20: Bioscience Symposium

Oct. 28: Annual Neuroscience Program Symposium @ Snowbird
"Neural Circuits and Connectomes"
<http://neuroscience.med.utah.edu/Snowbird>.

This year's invited speakers:

Stephen J. Smith, Ph.D., Allen Institute for Brain Science
Richard D. Mooney, Ph.D., Duke University
Ely Nedivi, Ph.D., Massachusetts Institute of Technology
Alessandra Angelucci, M.D., Ph.D., University of Utah
Sophie Caron, Ph.D., University of Utah
Bryan Jones, Ph.D., University of Utah

Nov. 12-16: The Society for Neuroscience Annual Meeting held this year in San Diego, CA.

Feb. 10, 2017: Neuroscience Program Recruitment Weekend.

****Seeking student volunteers for alma mater visits****

Seeking student volunteers for alma mater visits

The Recruitment committee is preparing for a busy recruitment season and we need your help! We will attend graduate school fairs at SFN, SACNAS, and ABRCAMS this fall. Current NP students and faculty: please let Megan know if you will be attending any of these conferences and would like to help. Also, the neuroscience program has funds to send a limited number of Neuroscience Program students (4th year or above) on recruitment visits to their alma mater undergraduate schools. If interested, please email **Megan Williams** ASAP. These visits must be completed by mid-November. megan.williams@neuro.utah.edu

****ALUMNI NEWS****

Benedict Albensi was elected to be the communications chair for the professional interest area (PIA), Nutrition, Metabolism, & Dementia for the Alzheimers Association (USA).

Albensi lab postdoctoral fellow Dr. Aida Adlimoghaddam was awarded a 2 year grant from Research Manitoba for her work on ammonia in Alzheimers disease.

Joshua Cameron received a promotion to an Associate Professor of Optometry in the College of Optometry at the Western University of Health Sciences.

Wang, Y., Lopez, D., Davey, P.G., **Cameron, D.J.**, Nguyen, K., Tran, J., Marquez, E., Liu, Y., Bi, X., and Baudry, M. (2016) Calpain-1 and calpain-2 play opposite roles in retinal ganglion cell degeneration induced by retinal ischemia/reperfusion injury. *Neurobiol Dis*, Sep;93:121-8. doi: 10.1016/j.nbd.2016.05.007. Epub 2016 May 13.

Tim Simeone: Simeone, T.A., Matthews, S.A., Samson, K.K., and Simeone, K.A. (2016) Regulation of brain PPARgamma2 contributes to ketogenic diet anti-seizure efficacy. *Exp Neurol*, doi: 10.1016/j.expneurol.2016.08.006.

Simeone, K.A., Matthews, S.A., Rho, J.M., and **Simeone, T.A.** (2016) Ketogenic diet treatment increases longevity in Kcna1-null mice, a model of sudden unexpected death in epilepsy. *Epilepsia*. 57(8):e178-82. doi: 10.1111/epi.13444.

Daniel Ryskamp: was recently engaged to Jade Francetich. Within 24 hours of the proposal, Jade had a stroke with several small infarcts in her right hemisphere and preferential thalamic damage. The emboli probably relate to oral contraceptives. She has mostly recovered other than some moderate tactile and fine motor deficits in her left hand. The cerebral angiography and other tests looked good, so the likelihood of a future stroke is very low. Also, Daniel received a F32 NRSA postdoctoral fellowship for research on synaptic calcium dysregulation in Huntington's disease at UT Southwestern Medical Center.

***Ryskamp D.A.**, *Frye A.M., *Phuong T.T., Yarishkin O., Jo A.O., Xu Y., Lakk M., Iuso A., Redmon S.N., **Ambati B.**, Hageman G., Prestwich G.D., Torrejon K.Y., and **Križaj D.** (2016) TRPV4 regulates calcium homeostasis, cytoskeletal remodeling, conventional outflow and intraocular pressure in the mammalian eye. *Scientific Reports*, 6:30583. doi: 10.1038/srep30583

*Wu, J., ***Ryskamp, D.A.**, Liang, X., Egorova, P., Zakharova, O., Hung, G., and Bezprozvanny, I. (2016) Enhanced store-operated calcium entry leads to striatal synaptic loss in a Huntington's disease mouse model. *The Journal of Neuroscience*, 36(1):125-141. doi: 10.1523/JNEUROSCI.1038-15.2016

Fisher A., Bezprozvanny I., Wu L., **Ryskamp D.A.**, Bar-Ner N., Natan N., Brandeis R., Elkon H., Nahum V., Gershonov E., LaFerla F.M., and Medeiros R. (2016) AF710B, a novel M1/σ1 agonist with therapeutic efficacy in animal models of alzheimer's disease. *Neurodegenerative Diseases*, 16(1-2):95-110. doi: 10.1159/000440864

Scott Lauritzen: Lauritzen, J.S., Sigulinsky, C.L., Anderson, J.R., Kalloniatis, M., Nelson, N.T., Emrich, D.P., Rapp, C., McCarthy, N., Kerzner, E., Meyer, M., **Jones, B.W.**, and **Marc, R.E.** (2016) Rod-cone crossover connectome of mammalian bipolar cells. *J Comp Neurol*. Jul 22. doi: 10.1002/cne.24084. [Epub ahead of print]

****NICARAGUA cont'd****

more so than in the standard undergraduate lectures on neuroanatomy, or learning and memory.

The audience showed their interest by peppering them with questions, the answers to some of which have serious implications: What are the temperatures you need to heat your food to kill bacteria? Isn't vegetarianism bad for you? How can we feed our children well if we can't afford to feed ourselves? "The need for education in basic health was a bit of a surprise," said Parker. "We adapted and gave more focus to these topics than we originally planned."

Simcox, who led the lectures on nutrition and hygiene, said about a dozen people would stay after each of her lectures to learn more. Based on their questions, she worked with a translator to create material designed to address them. For example, the translator helped her understand what people would be willing to do if they wanted to lose weight. She learned that they considered it important to eat "good food", which to them was mostly red meat. From that feedback she developed new materials such as explaining what a calorie is, how to calculate the number of calories needed daily, and how many calories should be consumed from each of the food groups. "People would individually come up to me, give me a hug or shake my hand and tell me how important it was for them," she said.



****U. UTAH NEUROSCIENCE INITIATIVE NEWS****

During the past year and half, Dr. Rebecca Parker has served as Program Manager of the University of Utah Neuroscience Initiative. She did a truly remarkable job, and was responsible for many successes, including faculty recruitment, grant submissions, a successful seed grant program and multiple symposia and seminars. Becca has stepped down from this role to pursue an exciting new opportunity at Recursion Pharmaceuticals in Research Park. I know that many of you had the privilege to work with Becca, and will join me in thanking her and wishing her success in her new position.

I am pleased to welcome Dr. Sumit Bhattacharya as the new Program Manager for the Neuroscience Initiative beginning September 1, 2016. He earned his Ph.D. in biomedical sciences specializing in Neurosciences from University of Toledo in 2012, followed by a postdoctoral fellowship in Neuro-Ophthalmology at Harvard Medical School. After completing his postdoctoral fellowship, he worked as a research scientist on biomarker discovery and clinical drug trial in the Department of Neurosciences at the University of Toledo. We welcome him to the team of the SVPHS Research Unit, and look forward to working with him to help further grow neuroscience at the University of Utah.

Monica Vetter
Chair, Neuroscience Initiative Scientific Advisory Board

RECENTLY PUBLISHED

Bogdanov, V.B., Middleton, N.A., Theriot, J.J., **Parker, P.D.**, Abdullah, O.M., Ju, Y.S., Hartings, J.A., and **Brennan KC.** (2016) Susceptibility of Primary Sensory Cortex to Spreading Depolarizations. *J Neurosci*, Apr 27;36(17):4733-43. doi: 10.1523/JNEUROSCI.3694-15.2016.

Jones, B.W., Pfeiffer, R.L., Ferrell, W.D., Watt, C.B., Marmor, M., and **Marc, R.E.** (2016) Retinal remodeling in human retinitis pigmentosa. *Exp Eye Res*, doi: 10.1016/j.exer.2016.03.018

Jones, B.W., Pfeiffer, R.L., Ferrell, W.D., Watt, C.B., **Tucker, J.F.**, and **Marc, R.E.** (2016) Retinal Remodeling And Metabolic Alterations in Human AMD. *Frontiers in cellular neuroscience*, 10(103).

Libbey, J.E., **Hanak, T.J.**, Doty, D.J., **Wilcox, K.S.**, and **Fujinami, R.S.** (2016) NBQX, a highly selective competitive antagonist of AMPA and KA ionotropic glutamate receptors, increases seizures and mortality following picornavirus infection. *Exp Neurol*, Jun;280:89-96. doi: 10.1016/j.expneurol.2016.04.010. Epub 2016 Apr 9.

Loewen, J.L., Barker-Haliski, M.L., Dahle, E.J., White, H.S., and **Wilcox, K.S.** (2016) Neuronal Injury, Gliosis, and Glial Proliferation in Two Models of Temporal Lobe Epilepsy. *J Neuropathol Exp Neurol*, Apr;75(4):366-378.

Pfeiffer, R.L., Marc, R.E., Kondo, M., Terasaki, H., and **Jones, B.W.** (2016) Muller cell metabolic chaos during retinal degeneration. *Exp Eye Res*, Doi:10.1016/j.exer.2016.04.22

Sawant-Pokam, P.M., **Suryavanshi, P.**, Mendez, J.M., **Dudek, F.E.**, and **Brennan, K.C.** (2016) Mechanisms of Neuronal Silencing After Cortical Spreading Depression. *Cereb Cortex*, Jan 4. pii: bhv328. [Epub ahead of print]

Umpierre, A.D., Bennett, I.V., Nebeker, L.D., Newell, T.G., Tian, B.B., Thomson, K.E., White, H.S., White, S.A., and **Wilcox, K.S.** (2016) Repeated low-dose kainate administration in C57BL/6J mice produces temporal lobe epilepsy pathology but infrequent spontaneous seizures. *Experimental Neurology*, 279:116-126.



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