

NEURO NEWS

****From the Director****

Welcome to fall 2021. We have had some interesting challenges this past year. We are forging ahead into another year of new changes with the strong support from the Graduate School and our superb faculty and students. I would also like to reiterate that our program has a steadfast, long-standing commitment to inclusion, kindness and mutual support. We encourage diversity and exchange of ideas, honor the uniqueness of each individual and believe everyone has important contributions to make as we explore the mysteries of life.

****2021 Incoming Students****

Donzelle Benton, U. South Carolina
Justin Campbell, Utah State U (MD/PhD)
Megan Croom, Georgetown U.
Pearl Cummins, San Diego State U.
Qwynn Landfield, SUNY, New Paltz
Dani Lopez, Ohio State U.
Anna Ramirez, Utah State U. (MD/PhD)
Corey Shayman, U. Illinois Urbana-Champaign
Sophia Stokes Cerkvenik, Colby C.
Michelle Swarovski, U. California, Davis
Allie White, Middlebury C.
Veronica Zarr, U. Texas, Austin

****Other Important Dates****

September 14: Bioscience Symposium: via Zoom

November 8-11: The Society for Neuroscience Annual Meeting

February 11, 2022: Neuroscience Program Recruitment Weekend.

****SEMINAR SERIES 2021-2022****

September 21: Ukpong Eyo, Ph.D., U. of Virginia SOM
October 19: Lisa Giocomo, Ph.D., Stanford U.
November 16: Lindsay Schwarz, Ph.D., St. Jude Children's Research Hospital
January 18: Richard Edden, M.Sc., Ph.D., John Hopkins U.
February 15: Karin Peterson, Ph.D., National Institute of Allergy and Infectious Diseases
March 15: Kate Wassum, Ph.D., U. of California, Los Angeles
April 19: Dayu Lin, Ph.D., New York U. Langone Health

Fall semester seminars will be virtual via Zoom. Times may vary.

More Information can be found here:
<https://neuroscience.med.utah.edu/meetings.php>

****ACADEMIC DEFENSES****

Since the last issue of NeuroNews, the Neuroscience Program congratulates the following students on successfully passing their qualifying exams: **Erin Bigus (Heys lab)**, **Fei Chang (Vetter lab)**, **Maggie Chvilicek (Rothenfluh lab)**, **Rachel Gatlin (Zelikowsky lab)**, **Mitali Tyagi (Shepherd lab)**, **Kaliana Veros (Wilcox lab)**

and dissertation proposals: **Laura Bell (Wilcox lab)**

and dissertation defenses: **Anne Gibson (Keefe lab)**, **Ana Santos (Park lab)**, **Kevin Huang (Park lab)**, **Pablo Maldonado (Maricq lab)**, **Charlotte Magee (Fleckenstein lab)**, and **Tiffanie Dahl (Baehr lab)**

****STUDENT AWARDS****

Aniket Ramshekar (Hartnett lab) has been selected for an F30 award. The award is for 4 years (2 years graduate school and 2 years medical school).

Rachel Gatlin (Zelikowsky lab) received an honorable mention for NSF GRFP 2021.

Nate Ghena (Vetter lab) and **Kaliana Veros (Wilcox lab)** have been awarded a traineeship on the Neuroimmunology T32. **Christopher Rudzitis (Krizaj lab)** has been awarded a traineeship in the Vision Research T32.

****ALUMNI NEWS****

Benedict Albensi: has accepted the position of Department Chair for the Dept. of Pharmaceutical Sciences in the College of Pharmacy (COP) at Nova Southeastern Univ. in Ft. Lauderdale, Florida, USA. He will also be a Co-Director of the B.R.A.I.N Center (Brain research and integrated nutrition center <https://lnkd.in/gykP4v4>)

Prachee Avasthi: has co-founded a new research institute on the study of emerging research organisms, Arcadia Science, based in Berkeley, CA. <https://www.arcadia.science/about>

Jared Nielsen: Madeline Peterson, **Molly B.D. Prigge,** Erin D. Bigler, Brandon Zielinski, **Jace B. King,** Nicholas Lange, Andrew Alexander, Janet E. Lainhart, and **Jared A. Nielsen,** Evidence for normal extra-axial cerebrospinal fluid volume in autistic males from middle childhood to adulthood, *NeuroImage*, Volume 240, 2021, 118387, ISSN 1053-8119, <https://doi.org/10.1016/j.neuroimage.2021.118387>.

Elliot Smith: along with **John Rolston,** has been awarded a U01 to study representations of abstract spaces in human neuron recordings. They are currently looking for a Postdoc to fill an open position as well.

Tim Simeone: Simeone, T.A., Heruye, S.H., Kostansek, J.A. 4th, Yeh, M.Y., Matthews, S.A., Samson, K.K., and Simeone, K.A., Carbamazepine Reduces Sharp Wave-Ripple Complexes and Exerts Synapse-Specific Inhibition of Neurotransmission in Ex Vivo Hippocampal Slices. *Brain Sci.* 2021 Jun 15;11(6):787. doi: 10.3390/brainsci11060787. PMID: 34203601.

Simeone, K.A., Wilke, J.C., Matthews, S.A., **Simeone, T.A.,** and Rho, J.M., Ketogenic diet-mediated seizure reduction preserves CA1 cell numbers in epileptic Kcna1-null mice: An unbiased stereological assessment. *Epilepsia.* 2021 Jul 7. doi: 10.1111/epi.16983. Online ahead of print. PMID: 34231878.

Faculty News*

Press release coverage for research out of the Perry Renshaw lab: <https://discovery.med.utah.edu/2018/chronic-hypoxia-exposure-worsens-depression/>

****UWiN Neuroscience outreach with the Girl Scouts****

In August, neuroscience students **Emily Norman, Jordan Grammer, Laura Bell, Nicole Losurdo** and faculty **Nikki Link** and **Megan Williams,** hosted a science outreach event at a city park for a Girl Scout troop in Herriman. With sponsorship by the Neurobiology Department and Utah Women in Neuroscience (UWiN), we provided science kits from a group called NerdSquad that the girls got to take home with them to do more experiments. At the event, we lead a workshop on making ooblek and discussed the science of why it acts the way it does. We then had three neuroscience stations for them to rotate through. There was an olfactory station where they learned how taste and smell work together to give you flavor using jelly beans. We had them experience what it is like to have a concussion with concussion goggles and discussed ways to prevent and treat concussions. We also brought human brains for the Girl Scouts to hold and discuss basic neuroanatomy. It was a huge hit and we will hopefully be doing more events like this in the future. Anyone interested to join in future events should contact **Nicole Losurdo (Link lab)** nicole.losurdo@utah.edu.



****RECENTLY PUBLISHED****

A Prescott, R Huber, S Kanekar, D Kondo, J Prisciandaro, D Ongur, and **PF Renshaw**. Effect of Moderate Altitude on Human Cerebral Metabolite Levels: A Preliminary, Multi-Site, Proton Magnetic Resonance Spectroscopy Investigation (2021) *Psychiatry Res. Neuroimaging* 314:111314.

- We tested brain bioenergetic function in healthy people living at altitude in Salt Lake City, UT (4,500ft) vs those at sea level in Belmont, MA or Charleston, SC (20ft).
- Healthy people at altitude were found to exhibit forebrain deficits in the brain energetic marker creatine vs those at sea level.
- Forebrain creatine deficits are linked to clinical depression, thus living at altitude may render people more vulnerable to depressive disorders.

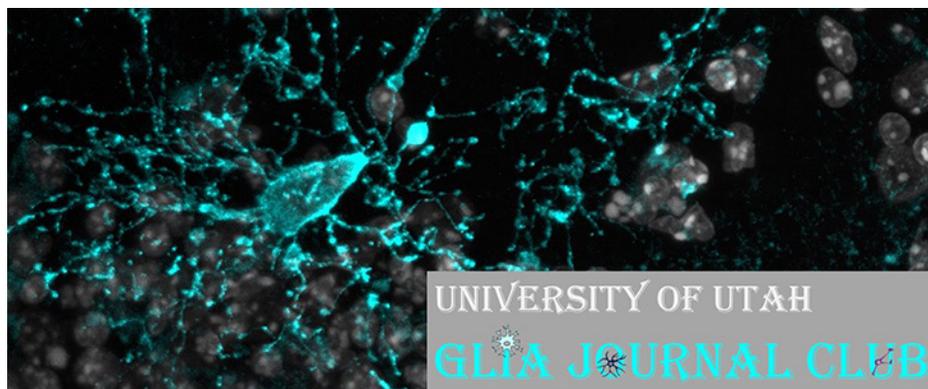
S Kanekar, CS Sheth, HJ Ombach, J Brown, MD Hoffman, R Ettaro, and **PF Renshaw**. Sex-based Changes in Rat Brain Serotonin and Behavior in a Model of Altitude-related Vulnerability to Treatment-Resistant Depression (2021). *Psychopharmacology* (online publ. prior to print) <https://doi.org/10.1007/s00213-021-05902-y>

- This study shows that housing at moderate altitude (4,500ft or 10,000ft) alone can worsen depression status by reducing brain serotonin levels.
- Female rats exhibit consistently low brain serotonin in brain regions linked to depression and consistent worsening of depressive symptoms at altitude, while males vary with time at altitude.
- These studies provide a mechanistic basis for our previous finding: low brain serotonin could be the reason that most SSRIs lose function at altitude.

S Kanekar, R Ettaro, MD Hoffman, HJ Ombach, J Brown, C Lynch, CS Sheth, **PF Renshaw**. Sex-Based Impact of Creatine Supplementation on Depressive Symptoms, Brain Serotonin and SSRI Efficacy in an Animal Model of Treatment-Resistant Depression (2021). *Intl Journal of Molecular Sciences*, special issue on Brain Hypoxia. 22:8195. <https://doi.org/10.3390/ijms22158195>

- We tested the ergonomic compound creatine for efficacy in depression at altitude.
- We find that creatine improves the brain energetic deficit at altitude in both sexes.
- Creatine improves female brain serotonin and reduces male brain serotonin and is antidepressant in females only at altitude.
- Creatine improves efficacy of the SSRI Prozac in males at altitude but not females.
- These studies show sex-based beneficial effects of creatine for depression at altitude.

****GLIA JOURNAL CLUB ****



Glia Journal Club is a new interdepartmental interest group that was formed to discuss new literature and research highlighting roles for glial cells, as well as neuroimmune and neurovascular interactions, in nervous system health and disease. Glia Journal Club meets on the last Friday of every month at 3:00pm via Zoom.

Join our email list to receive updates, calendar invites, and zoom links: <https://forms.gle/Q3yRiZFzhKAX2Yd6>
 Contact **Laura Bell** (laura.bell@utah.edu) for more info.

Do you have something to submit in the next issue of NeuroNews?

Send your information to: Tracy Marble, Program in Neuroscience; 390A BPRB, FAX: 581-4233, or e-mail: tracy.marble@hsc.utah.edu