

# NEURO NEWS

## \*\*\*\*From the Director\*\*\*\*

Welcome to fall 2020 COVID-19 style. We have had some interesting challenges these past several months. We are forging ahead into another semester 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. Please check out our new recruitment video at: <https://www.youtube.com/embed/UBkm-Z6c7HE>

## \*\*\*\*2020 Incoming Students\*\*\*\*

**Samuel Alper**, Lewis and Clark College  
**Jordan Bolling**, University of Alabama  
**Kayla Eschenbacher**, University of Washington  
**Maci Jacobson**, Brigham Young University  
**Nicole McCarthy**, Carthage College  
**Jennie Nelson**, Idaho State University  
**Emily Norman**, Assumption College  
**Kaelan Sullivan**, York College  
**Ashley Zachary-Savella**, University of Maryland (MD/PhD)

## \*\*\*\*ACADEMIC DEFENSES\*\*\*\*

Since the last issue of NeuroNews, the Neuroscience Program congratulates the following students on successfully passing their qualifying exams: **Nathaniel Ghena (Vetter lab)**, **Madelyn Haller (Chow lab)**, **Tatsuya Hayashi (Caron lab)**, **Christopher Rudzitis (Krizaj lab)**, **Alicia Goin (Shepherd lab)**, **Alexander MacKenzie (Caron lab)**, **Ava Niazi (Park lab)** and **Danlei Wang (Maricq lab)**,

and dissertation proposals:  
**Arnulfo Tunon-Ortiz (Williams lab)**,

and dissertation defenses: **Nancy William (Coon lab)**, **Sasha Luks-Morgan (Douglass lab)**, **Patrick Parker (Brennan lab)**, **Andrew Taibi (Shepherd lab)**, and **Punitha Subramaniam (Yurgelun-Todd lab)**.

## \*\*\*\*STUDENT AWARDS\*\*\*\*

**Madelyn Haller (Chow lab)** has been awarded the prestigious American Epilepsy Society predoc fellowship for 2020-2021.

**Nate Ghena (Vetter lab)** and **Christopher Rudzitis (Krizaj lab)** have been selected as trainees on the Vision Training Grant for 2020-2021.

## \*\*\*\*SEMINAR SERIES 2020-2021\*\*\*\*

**September 17: Paul Frankland, Ph.D.**, U. of Toronto  
**October 20: Boris Heifets, M.D., Ph.D.**, Stanford U.  
**November 17: Cristina Alberini, Ph.D., L.P.**, New York U.  
**January 19: Kathleen Millen, Ph.D.**, U. of Washington  
**February 16: Jenny Hsieh, Ph.D.**, U. of Texas, San Antonio  
**March 16: Ian Maze, Ph.D.**, Icahn SOM, Mt. Sinai  
**April 20: James Jeanne, Ph.D.**, Yale U., SOM

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

see more details at:

<https://neuroscience.med.utah.edu/meetings.php>

## \*\*\*\*Other Important Dates\*\*\*\*

**Oct. 13: Bioscience Symposium: via Zoom**

**Oct. 19-23: The Society for Neuroscience Annual Meeting** has been cancelled this year.

**Feb. 5, 2021: Neuroscience Program Recruitment Weekend.**

## \*\*\*SfN Intermountain Chapter\*\*\*\*

The Snowbird Symposium poster session is cancelled but we look forward to new fun events! We are starting a regional seminar series by zoom. Each month will highlight neuroscience research at a different university and feature one hour of short talks from faculty and trainees. We are also working on a new website, digitizing a FREE membership sign up, and social media accounts. Look for more info soon!

## \*\*\*Wachowiak lab - postdoctoral position\*\*\*

A postdoctoral position is available studying odor coding and processing in the mouse olfactory system in the University of Utah Department of Neurobiology and Anatomy. A major focus of the Olfactory Systems laboratory is understanding how the olfactory bulb encodes and processes information using a combination of optical and optogenetic tools, genetic and viral targeting of defined cell types, and electrophysiological recordings. Preparations include both anesthetized and awake behaving animals. The lab is well-equipped and funded to support a number of potential projects depending on interest and expertise.

Contact: Matt Wachowiak: [matt.wachowiak@utah.edu](mailto:matt.wachowiak@utah.edu)

\*\*\*\*ALUMNI NEWS\*\*\*\*

**Hui Xu:** Xu, H., Enemchukwu, N., Zhong, X., Zhang, O., and Fu, Y., 2020, Deletion of M-Op sin Prevents M Cone Degeneration in a Mouse Model of Leber Congenital Amaurosis. *Elsevier*, 190(5): 1059-1067. <https://doi.org/10.1016/j.ajpath.2020.01.005>

**Prachee Avasthi:** is now an Associate Professor, Department of Biochemistry and Cell Biology, Geisel School of Medicine, Dartmouth College.

Also: <https://geiselmed.dartmouth.edu/news/2020/new-geisel-faculty-member-receives-national-award-for-excellence-in-cell-biology/?fbclid=IwAR3RwEOmFrj531LQICDOa6NEU3Fx9z4HGqG3QLmCNv32TIAZB5KSusE5nE> Congratulations!

**Kerry-Ann Stewart:** has accepted a tenure track surgeon scientist position as Assistant Professor in the Department of Plastic and Reconstructive Surgery at the Ohio State University, starting October 2020. She will be conducting neuroplastic surgery research, developing a clinical neuroplastic surgery program, and working to improve outcomes for patients undergoing neurosurgical procedures.

**Benedict Albensi:** has been invited to interview this summer on 2 very well-known talk shows. Recordings to both can be obtained at the links below.

Scientific Sense <https://www.scientificsense.com/>. In the Scientific sense podcast he will talk about his work with nuclear factor kappa B (NF-κB) and how it plays important roles in brain inflammation and memory formation.

And Alzheimer's Speaks <https://www.alzheimersspeaks.com/>. Radio show based in the USA (St. Paul, MN). For the Alzheimer's Speaks live radio show, he will talk about his newly accepted paper on disparities in Alzheimers clinical trial enrollment in the indigenous communities in the USA and Canada.

**Jace King:** is now a Research Assistant Professor in the Department of Radiology and Imaging Sciences, University of Utah.

**Andrew Moran:** is starting a Postdoc position in Dr. Diego Restrepo's lab in the Department of Cell and Developmental Biology at the University of Colorado, Anschutz Medical Campus.

He also received an NIDCD T32 Postdoctoral Fellowship through the Department of Otolaryngology to study olfactory-motor integration in the cerebellum and the effect of SARS-CoV2 infection on TRMP5-expressing cells in the nasal epithelium.

\*\*\*\*Wachowiak lab News\*\*\*\*

Shaina Short (postdoc in the **Wachowiak lab**) was awarded a new R21 grant from NIDCD, "Establishing patterns of dopamine signaling in the olfactory bulb". This project will characterize the dynamics of dopamine signaling in the olfactory bulb in vivo. Congrats to Shaina on this exciting project!

\*\*\*\*RECENTLY PUBLISHED\*\*\*\*

Gurgel, R.K., Aylward, A., Naidu, S.R., Mellum, C., **King, J.B., Jones, K.G., Anderson, J.S.**, and Foster, N.L., 2020, Left ear hearing predicts functional activity in the brains of patients with Alzheimer's disease dementia. *Annals of Otolaryngology & Laryngology*, accepted.

Mangale, V\*, Syage, A.R\*, Ekiz, H.A\*, **Skinner, D.D.**, Cheng, Y., Stone, C., Brown, M., O'Connell, M., Green, K., and **Lane, T. E.**, 2020, Microglia influence host defense, disease, and repair following murine coronavirus infection of the central nervous system. *Glia*, 1– 16. <https://doi.org/10.1002/glia.23844>

**Pfeiffer, R.L., Anderson, J.R.**, Emrich, D.P., Dahal, J., **Sigulinsky, C.L.**, Morrison, H.A.B., Yang, J.H., Watt, C.B., Rapp, K.D., Kondo, M., Terasaki, H., Garcia, J.C., **Marc, R.E.**, and **Jones, B.W.**, 2019, Pathoconnectome Analysis of Müller Cells in Early Retinal Remodeling. *Adv Exp Med Biol*, 1185:365-370. doi: 10.1007/978-3-030-27378-1\_60. PMID: 31884639.

**Sigulinsky, C.L., Anderson, J.R.**, Kerzner, E., Rapp, C.N., **Pfeiffer, R.L.**, Rodman, T.M., Emrich, D.P., Rapp, K.D., Nelson, N.T., **Lauritzen, J.S.**, Meyer, M., **Marc, R.E.**, and **Jones, B.W.**, 2020, Network Architecture of Gap Junctional Coupling among Parallel Processing Channels in the Mammalian Retina. *J Neurosci*, Jun 3;40(23):4483-4511. doi: 10.1523/JNEUROSCI.1810-19.2020. Epub 2020 Apr 24. PMID: 32332119

Sawant-Pokam, P., Vail, T., Metcalf, C., Maguire, J., McKean, T., McKean, N., and **Brennan, K.C.**, 2020, Preventing neuronal edema increases network excitability after traumatic brain injury. *Journal of Clinical Investigation*, accepted.

Warthen, K.G., Boyse-Peacor, A., **Jones, K.G.**, Sanford, B., Love, T.M., and **Mickey, B.J.**, 2020, Sex differences in the human reward system: convergent behavioral, autonomic and neural evidence. *Social Cognition and Affective Neuroscience*, nsaa104, <https://doi.org/10.1093/scan/nsaa104>

\*\*\*Faculty News\*\*\*

Congratulations to **Dr. Hilary Coon (Psychiatry)** for her appointment for a five-year term as a H.A. and Edna Benning Presidential Endowed Chair in the Department of Psychiatry at the University of Utah, effective July 1, 2020. The H. A. and Edna Benning Presidential Endowment was created by a gift from the Arthur Benning estate in honor of his parents, H. A. and Edna Benning. The endowment helps fund the work of 12 faculty members, each of whom occupy an H. A. and Edna Benning Presidential Endowed Chair. Appointments as an H. A. and Edna Benning Presidential Endowed Chair are made by the university president in recognition of the dedication and achievement of the university's top medical researchers and for their contribution to his or her respective field. This endowment allows the University of Utah Medical School the ability to retain and recruit the brightest and most talented minds in the country.

\*\*\*\*Jones lab News\*\*\*\*

Got the cover of J. Neurosci: <http://marclub.org/blog/2020/06/03/network-architecture-of-gap-junctional-coupling-among-parallel-processing-channels-in-the-mammalian-retina/>

Lead author: **Crystal Sigulinsky (NP alumni)**

\*\*\*Greg Clark lab media coverage\*\*\*

The Clark lab has been highlighted on the front of the Utah Business website, <https://www.utahbusiness.com/the-new-bionic-arm/>

A nice article featuring our research team's (and others') neuroprosthesis work in the latest issue of IEEE Pulse, <https://ieeexplore.ieee.org/document/9089055>.

BME student, coauthor, and fellow interviewee; Jake George highlighted in both of these articles.

Also: their recent George et al. article, "Biomimetic sensory feedback through peripheral nerve stimulation improves dexterous use of a bionic hand," has been selected and included in the just-published Science Robotics Special Edition Booklet that's being widely distributed.

A free copy of the booklet is available from the link: <http://promo.aaas.org/images/Publishing/Journals/2020/Robotics/ROB20-ScienceRoboticsBookletOnline.pdf>.

As you may remember, this article and research has already received substantial national and international attention in both the scientific community and in the lay press, bringing major attention to BME, COE, SOM, and the U. Inclusion in this Science Robotics special edition will only add to that impact.

Here's a video segment by Colomba Films (Santiago, Chile) for a TV science series, kind of like PBS. It's a high-quality production that showcases our DARPA HAPTIX neuroprosthesis work and past HAPTIX participant Keven Walgamott very nicely.

We've just posted the video on the Center for Neural Interfaces website and on YouTube <https://youtu.be/v5LLgvaApQo>. This excellent video segment by Colomba films (Santiago, Chile) highlights our recent DARPA HAPTIX study and participant, Keven Walgamott. The CNI goal of our HAPTIX (Hand Proprioception and Touch Interfaces) research is to attach a dexterous, sensorized prosthetic arm—the DEKA LUKE arm—to the user's own remaining arm nerves and muscles after hand amputation. In this way, the user can control the arm naturally and intuitively, just by thinking about it. They can also receive biologically realistic feelings of touch and movement back from the arm, and ideally even begin to feel whole again. The video also highlights several members of the University of Utah's Center for Neural Interfaces and their ongoing related research projects. <https://cni.bme.utah.edu/>

We've translated the brief Spanish segments into English subtitles for the video, and added supplementary credits & information.

**FDA Approves EFS-IDE Center for Neural Interfaces (CNI) bionic arm study**  
<https://cni.bme.utah.edu/2020/07/29/fda-approves-an-efs-ide-study-at-the-university-of-utah-for-the-darpa-haptix-bionic-prosthetic-arm-system/>

**CENTER FOR NEURAL INTERFACES (CNI) GRADUATE STUDENT MICHAEL PASKETT RECEIVES FELLOWSHIP FROM NATIONAL INSTITUTE OF HEALTH**  
<https://www.bme.utah.edu/2020/07/30/graduate-student-michael-paskett-receives-fellowship-from-national-institute-of-health/>

**CNI graduate student Jacob George is the 2020 EMBS 1st-place Student Paper Competition winner**  
<https://twitter.com/IEEEembs/status/1286254768780869632?s=20>

**CNI neurorobotics breakthrough seen at theaters playing 'Star Wars' movie (with fun video clip)**  
<https://www.sltrib.com/arts/2019/12/19/university-utah-robotics/>  
(Adopted from The Salt Lake Tribune)

Fans watching the new "Star Wars" movie in Utah theaters got to see some real-life wizardry from the University of Utah's [Center for Neural Interfaces](#), [College of Engineering](#).

A [30-second commercial](#) showing off motor control and sensory feedback made possible by bioelectrical connections to the DEKA LUKE Arm (a motorized, sensorized prosthetic arm for amputees used by biomedical neuroengineers at the U.) played before screenings of "Star Wars: The Rise of Skywalker" at the [Megaplex Theatres](#) chain. In the video, Gregory Clark, associate professor of biomedical engineering, and doctoral student Jacob George demonstrate the capabilities of the LUKE Arm system. (Clark is wearing the lab coat; George is in Jedi gear.) The arm mimics the way a human hand feels objects — in the ad, the hand differentiates between an egg and a lightsaber — by sending corresponding signals to the brain. The fingers in the hand can pick up objects, guided by the user's thoughts.

A paper detailing the team's findings — authored by George, former doctoral student David Kluger, Clark and others — was [published in the July edition](#) of the journal Science Robotics.

For more information, please call BIAU at 801-709-1420 or visit [www.BIAU.org](http://www.BIAU.org)



# 2020 Brain Injury Alliance of Utah Family and Professional Conference

October 1st & 2nd

Participate in an exciting 2-day virtual conference featuring keynote talks from national experts on the main stage, interactive break-out sessions, 1-on-1 networking sessions, and an exhibitor expo where you can visit booths! Join in engaging in-session polls for attendee participation and a fun exhibitor expo booth scavenger hunt for prizes.

### Topics

- Diet & the Microbiome
- Medical Cannabis
- Executive Function
- Post-Traumatic epilepsy
- Mindfulness & Yoga
- Brain Injury Recovery in School Settings
- Brain Injury & Intimate Partner Violence

Scholarships available to educators, individuals with brain injury, and family members

Continuing Medical Education: (CME) credits are offered through the University of Utah. Continuing Education Units (CEU) for Speech Therapy, Occupational Therapy, Physical Therapy, Social Work, Clinical Psychology, School Psychology, and Rehabilitation Counselors will be offered. Licensure points for educators will be available.

Register online at <https://biau.org/> or call 801-709-1420 for assistance.

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](mailto:tracy.marble@hsc.utah.edu)