CENTER FOR SENSORIMOTOR NEURAL ENGINEERING

Improving health and function by engineering neural devices

May, 2018

Honors and Awards

- Congratulations to CSNE co-Director **Dr. Chet Moritz** who was appointed as a joint faculty member in the UW Department of Electrical Engineering and Department of Rehabilitation Medicine.

- The 2018 CSNE Hackathon took place April 6-9, 2018, with 15 students divided into five teams. Congratulations to Team “Ditto Rehabilitation System” (team members Claudia Cea from San Diego State University and Chung Hoon Choi and Katie Ly from the University of Washington) for taking home the top prize. A special thanks to CSNE Hackathon coordinator **James Wu** for organizing the event.

- Congratulations to **James Rosenthal,** CSNE graduate student in the Smith Lab at the University of Washington, for receiving a 2018 National Science Foundation (NSF) Graduate Research Fellowship Program for his proposed research titled, "Energy Optimized High Data Rate Backscatter Communication for Bidirectional Brain-Computer Interfaces."

- **Joshua Chen, Alisha Menon and Lucy Lai** were past CSNE Research Experience for Undergraduate (REU) students who have received recent NSF Graduate Research Fellowship Program awards to continue their academic careers.

Upcoming Seminars, Lectures, Courses, Conferences

- **Dr. Eric Shea-Brown** (UW Department of Applied Math) will present a UW Neuroscience Seminar on May 7, 2018 (UW HSB T-747, 3:30-4:30 pm).

- CSNE graduate student **Tim Brown** will speak at the Simpson Center for the Humanities about his experiences with the Humanities Without Walls program on Tuesday, May 8, 2018, 3:30-5:30 pm, UW Communications Building, Room 202.

- Dr. David Perkel (Professor, Departments of Biology and Otolaryngology, University of Washington) and **Dr. Rajiv Saigal (**Assistant Professor, Department of Neurological Surgery, University of Washington) will present short talks in the UW Institute of Neuroengineering seminar series on May 9 at 3:30 pm in UW HUB Room 337.

New CSNE Publications

- Armenta Salas, M., Bashford, L. Kellis, S., Jafari, M., **Jo, H.,** Kramer, D., Shanfield, K., Pejsa, K., Lee, B., Liu, C.Y., **Andersen, R.A.** and Romo, R., Proprioceptive and cutaneous sensations in humans elicited by intracortical microstimulation, eLife 2018;7:e32904, DOI: 10.7554/eLife.32904.

- **Gilbert, F.** and Viana, J.N.M, A personal narrative on living and dealing with psychiatric symptoms after DBS surgery, Narrative Inquiry in Bioethics, 8: 67–77, 2018.

- **Bellman, S., Burgstahler, S. and Chudler, E.H.,** Broadening participation by including more individuals with disabilities in STEM: Promising practices from an Engineering Research Center, American Behavioral Scientist, April 16, 2018, http://journals.sagepub.com/doi/full/10.1177/0002764218768864

- Zhang, T., Su, C., Najafi, A. and **Rudell, J.C.,** Wideband dual-injection path self-interference cancellation architecture for full-duplex transceivers, IEEE Journal of Solid-State Circuits (Early Access), 1-14, March 6, 2018, DOI: 10.1109/JSSC.2018.2805874.

CSNE in the News

- New, non-invasive treatment improves hand and arm function in people with spinal cord injury
  http://www.csne-erc.org/feature-stories/new-non-invasive-treatment-improves-hand-and-arm-function-people-spinal-cord-injury

- UW students compete to invent neural engineering technology with potential for real-world impact
  http://www.csne-erc.org/feature-stories/uw-students-compete-invent-neural-engineering-technology-potential-real-world-impact

- CSNE members explain how to broaden participation of individuals with disabilities in STEM programs
  http://www.csne-erc.org/news/story/csne-members-explain-how-broaden-participation-individuals-disabilities-stem-programs

Recent Papers of Interest to the CSNE Community

- Colachis, S.C., Bockbrader, M.A., Zhang, M., Friedenberg, D.A., Annetta, N.V., Schwemmer, M.A., Skomrock, N.D., Mysiw, W.J., Rezai, A.R., Bresler, H.S. and Sharma, G., Dexterous control of seven functional hand movements using cortically-controlled transcutaneous muscle stimulation in a person with tetraplegia, Frontiers in Neuroscience, vol. 12, 2018, DOI: 10.3389/fnins.2018.00208.

- Asboth, L., Friedli, L., Beauparlant, J., Martinez-Gonzalez, C., Anil, S., Rey, E., Baud, L., Pidpruzhnykova, G., Anderson, M.A., Shkorbatova, P., Batti, L., Pagès, S., Kreider, J., Schneider, B.L., Barraud, Q. and Courtine, G., Cortico-reticulo-spinal circuit reorganization enables functional recovery after severe spinal cord contusion, Nat Neurosci., 21:576-588, 2018.

- Kilteni, K., Andersson, B.J., Houborg, C. and Ehrsson, H.H., Motor imagery involves predicting the sensory consequences of the imagined movement, Nature Communications, 9, Article number: 1617 (2018), doi:10.1038/s41467-018-03989-0.

- Gad, P., Lee, S., Terrafranca, N., Zhong, H., Turner, A., Gerasimenko, Y., Edgerton, V.R., Noninvasive activation of cervical spinal networks after severe paralysis, J. Neurotrauma, Published Online:13 Apr 2018, https://doi.org/10.1089/neu.2017.5461

Grant and Funding Opportunities

- NIH Director's Pioneer Award
  https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-18-007.html

- Science & SciLifeLab Prize for Young Scientists
  http://www.sciencemag.org/science-scilifelab-prize-young-scientists

- BRAIN Initiative: Biology and Biophysics of Neural Stimulation
  https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-018.html

- BRAIN Initiative: Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System
  https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-021.html
  https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-022.html

- BRAIN Initiative: Clinical Studies to Advance Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System
  https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-023.html

Job Opportunities

- Postdoctoral Research Position in the Neuroelectronics Group at UCSD:
  http://neuroelectronics.ucsd.edu/UCSD_Neuroelectronics_Group/Home.html

- Postdoctoral Research Associate (Neural Engineering) in the School of Computer Science and Electronic Engineering at the University of Essex:
  http://www.jobs.ac.uk/job/BJE567/postdoctoral-research-associate-neural-engineering/

Please send additional news and events items for inclusion in this newsletter to Dr. Eric Chudler (CSNE, Executive Director) at chudler@uw.edu.