

## CENTER FOR SENSORIMOTOR NEURAL ENGINEERING

*Improving lives by connecting brains and technology*

February, 2018

### Honors and Awards

- Congratulations to **Dr. Judy Illes**, University of British Columbia CSNE Faculty Member (Neuroethics), for her appointment to the Order of Canada.

### Upcoming Seminars, Lectures, Courses, Conferences

- UW Bioengineering seminar by **Dr. Azadeh Yazdan** (Washington Research Foundation Innovation Assistant Professor of Neuroengineering in the Departments of Bioengineering and Electrical Engineering, UW), "Building novel neural technologies for neurorehabilitation: A large-scale interface for optogenetics in non-human primates with application to sensorimotor cortical plasticity": Thursday, February 1, 2018, 12:30-1:20 pm, Foege N130.
- UW Graduate Program in Neuroscience seminar by **Dr. Steve Perlmutter** (Research Associate Professor, Dept. Physiology & Biophysics, UW), "Commandeering hebbian plasticity. Can we rewire the brain and improve recovery after CNS damage?": Monday, February 5, 2018, 3:30 pm, HSB T-474.
- Paul G. Allen School of Computer Science & Engineering Colloquium by **Dr. Peter Dayan** (University College London), "Computational psychiatry: When good decisions go bad": Tuesday, February 6, 2018, 3:30 pm, EEB-105. Hosted by CSNE co-Director Dr. Raj Rao.
- UW Biological Structure seminar by **Dr. Kurt Weaver** (Research Assistant Professor, Dept. Radiology, UW), "Direct electrical stimulation of the human cortical surface: unexplained insights and clinical applications": Wednesday, February 7, 2018, 1:00pm, Health Sciences Building (HSB) G-328.
- UW Graduate Program in Neuroscience seminar by **Dr. Eve Marder** (Victor and Gwendolyn Beinfield Professor of Neuroscience, Biology Dept. and Volen Center, Brandeis University), "Variability, degeneracy and robustness in neurons and networks": Monday, February 12, 2018, 3:30 pm, HSB T-474.
- UWIN seminar featuring short talks by **Dr. Chantel Prat** (Associate Professor, Dept. Psychology, Institute for Learning & Brain Sciences, UW), "Neurometrics: Resting-state qEEG predicts second language (L2) learning as well as a standardized language aptitude test" and **Dr. Eric Shea-Brown** (Professor, Dept. Applied Mathematics, UW, "Linking the statistics of network activity and network connectivity": Wednesday, February 14th, 3:30pm, Health Sciences Building (HSB) 337.
- Applications are now being accepted for **the CSNE-BrainLinks/BrainTools (Freiburg, Germany) summer exchange program**. Students interested in this exchange should contact Eric Chudler ([chudler@uw.edu](mailto:chudler@uw.edu)) for details about the program, eligibility, and the application form.



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- Save the date (June 28-29, 2018) for **NeuroFutures 2018**. This annual conference to explore new frontiers in neuroscience and neurotechnology and their clinical application will be held at the University of Washington, Seattle campus. NeuroFutures 2018 will bring together 180 thought leaders in neuroscience and technology with representatives from academic, industry, clinical, and government. Major themes of the meeting will include neural circuit structure and dynamic function, brain mapping, decision making and control systems, healthy and disease states, clinical translation, neurocomputation, and neurotechnology innovations.
- A crowdfunding campaign to raise support for a new episode of the BrainWorks TV show has just launched. CSNE Executive Director **Dr. Eric Chudler** will host this new episode that would feature the latest research about Brain-Computer Interface (BCI) technology and how it can help people with movement issues caused by stroke, spinal cord injury, Parkinson's disease and other neurological disorders. Donate and tell others: <https://uw.useed.net/projects/1010/home/>

### New CSNE Publications

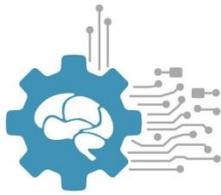
- **Sunshine, M.D., Ganji, C.N.,** Reier, P.J., Fuller, D.D. and **Moritz, C.T.,** Intraspinal microstimulation for respiratory muscle activation. *Exp Neurol.* 2018 Jan 2. pii: S0014-4886(17)30349-7. doi: 10.1016/j.expneurol.2017.12.014.

### CSNE in the News

- “Using thought to control machines” by Andrew Palmer, *The Economist*, January 4, 2018:  
<https://www.economist.com/technology-quarterly/2018-01-06/thought-experiments>
- “Tiny hair-like fibers help create interconnections between brain regions” by Danielle Kirsh, *Medical Design and Outsourcing*, January 10, 2018:  
<https://www.medicaldesignandoutsourcing.com/tiny-hair-like-fibers-create-interconnections-brain/>
- “Breaking down barriers to computer science for students with disabilities” by Jake Goldstein-Street, *The Daily*, January 29, 2018,  
[http://www.dailyuw.com/science/article\\_8336595c-04a2-11e8-8999-6343bf559201.html](http://www.dailyuw.com/science/article_8336595c-04a2-11e8-8999-6343bf559201.html)
- “Signal processing powers next-generation prosthetics” by John Edwards, *IEEE Signal Processing Magazine*, January 2018, pp. 13-16.

### New CSNE Blog Posts

- CSNE member unravels complex neural processes  
<http://csne-erc.org/engage-enable/post/csne-member-unravels-complex-neural-processes>



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### Recent Papers of Interest to the CSNE Community

- Kraus, D., Naros, G., Guggenberger, R., Leão, M.T., Ziemann, U. and Gharabaghi, A., Recruitment of additional corticospinal pathways in the human brain with state-dependent paired associative stimulation, *J. Neurosci*, January 15, 2018, 2893-17; DOI: <https://doi.org/10.1523/JNEUROSCI.2893-17.2017>
- Brandman, D.M., Hosman, T., Saab, J., Burkhart, M.C., Shanahan, B.E., Ciancibello, J.G., Sarma, A.A., Milstein, D.J., Vargas-Irwin, C.E. and Franco, B., Rapid calibration of an intracortical brain-computer interface for people with tetraplegia, *Journal of Neural Engineering*, Volume 15, Number 2

### Job Opportunities

- Tenure-track faculty position in Neural Engineering, University of Virginia: <http://jobs.virginia.edu/applicants/Central?quickFind=83327>
- Postdoc with experience in time-series data analysis (including machine learning and signal processing) for a clinical neuroscience project on electrical stimulation for depression patients, Georgia Institute of Technology: [http://siplab.gatech.edu/neuro\\_postdoc\\_ad.html](http://siplab.gatech.edu/neuro_postdoc_ad.html)
- Postdoc in computational neuroscience and robotics, Turing Centre for Living Systems, Marseille, France: <http://centuri-livingsystems.org/wp-content/uploads/2018/01/PD2018-10-Deep-Learning-and-animal-behavior-modelling.pdf>
- Research Scientist Assistant position available in the Ability & Innovation Lab (UW Mechanical Engineering; Dr. Kat Steele/Dr. Heather Feldner). To apply, go to: <http://hr.uw.edu/jobs>, Req #: 152899.

### Grant Opportunities

- Understanding and Modifying Temporal Dynamics of Coordinated Neural Activity (R21 Clinical Trial Optional) - PAR-18-554  
<https://grants.nih.gov/grants/guide/pa-files/PAR-18-554.html>
- Understanding and Modifying Temporal Dynamics of Coordinated Neural Activity (R01) and Clinical Trial Optional - PAR-18-555  
<https://grants.nih.gov/grants/guide/pa-files/PAR-18-555.html>
- Integrative Strategies for Understanding Neural and Cognitive Systems (NCS); this includes “Neuroengineering and Brain-Inspired Concepts and Designs”  
<https://www.nsf.gov/pubs/2018/nsf18533/nsf18533.htm>

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