CENTER FOR SENSORIMOTOR NEURAL ENGINEERING

Improving lives by connecting brains and technology

October, 2016

Upcoming Seminars, Lectures, Courses, Conferences

- The Center for Sensorimotor Neural Engineering (CSNE) will sponsor a **post-baccalaureate program** for the 2017 Winter and Spring quarters - January 3, 2017 to June 9, 2017 - at the University of Washington in Seattle. To be eligible for this program, students must have received their undergraduate degrees by December 31, 2016. Applications are due November 15, 2016. Please contact Eric H. Chudler, Ph.D. (chudler@uw.edu) for more information and an application form.

- CSNE/Kavli Seminar, **Krishna Shenoy, Ph.D.,** (Professor, Departments of Electrical Engineering, Bioengineering & Neurobiology Stanford University) will present "Brain-machine interfaces: From basic science to clinical trials" on Thursday, October 6, 2016, 3:30 pm at the CSNE.

- CSNE/Kavli Seminar, **Mehrdad Jazayeri, Ph.D.,** (Assistant Professor, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology; CSNE Faculty Member), will present "A system identification approach to infer neural codes from neural dynamics" on October 11, 2016 at 3:30 pm at the CSNE.

- University of Washington Institute of Neuroengineering (UWIN) Seminar; Wednesday, October 12, 3:30pm, Health Sciences Building K-06. Short talks:

    - "Neural inspired sparse sensors": **Bing Brunton,** Washington Research Foundation Innovation Assistant Professor in Neuroengineering, Department of Biology, University of Washington
    - "Navigation across spatial scales": **David Gire**, Assistant Professor, Department of Psychology, University of Washington

- University of Washington Health Innovation Practicum Course, Fall 2016 quarter, Thursdays, 4-6 pm, 2 credits, Cross-listed as ENTRE490/579

New CSNE Publications

- **Pepin, E., Uehlin, J., Micheletti, D., Perlmutter, S.I., and Rudell, J.C.,** A High-Voltage Compliant, Electrode-Invariant Neural Stimulator Front-End in 65nm Bulk-CMOS, European Solid-State Circuits Conference, 2016.

- **Brown, T., Thompson, M.C., Herron, J., Ko, A., Chizeck, H. and Goering, S.,** Controlling our brains – a case study on the implications of brain-computer interface-triggered deep brain stimulation for essential tremor, Brain-Computer Interfaces, pages 1-6, 14 Sep 2016, http://dx.doi.org/10.1080/2326263X.2016.1207494.

CSNE in the News

- "How **Kat Steele** applied her engineering roots to health care," Puget Sound Business Journal, September 1, 2016.

- Disabilities, Opportunities, Internetworking, and Technology (DO-IT), Interning with the CSNE: http://www.washington.edu/doit/interning-csne

- University of Washington, The Whole U Faculty Friday: **Sara Goering;** September 16, 2016: http://www.washington.edu/wholeu/2016/09/16/faculty-friday-sara-goering/

- "AccessSTEM aims to make STEM careers a reality for students of all abilities" by Madeline Szrom, in Insight Into Diversity (September 2016) describes the work of the **DO-IT Center** (**Scott Bellman and Sheryl Burgstahler**) including its partnership with the CSNE: http://www.insightintodiversity.com/wp-content/media/digitalissues/september2016/

New CSNE Blog Posts

- RET participants design and pilot neural engineering and neuroethics curriculum: http://www.csne-erc.org/engage-enable/post/ret-participants-design-and-pilot-neural-engineering-and-neuroethics-curriculum

Recent Papers of Interest to the CSNE Community

- Choi, J.S., Brockmeier, A.J., McNiel, D.B., von Kraus, L.M., Príncipe, J.C. and Francis, J.T., Eliciting naturalistic cortical responses with a sensory prosthesis via optimized microstimulation, J. Neural Engineering, Volume 13, Number 5

- Schweisfurth, M.A., Markovic, M., Dosen, S., Teich, F., Graimann, B. and Farina, D., Electrotactile EMG feedback improves the control of prosthesis grasping force, J. Neural Engineering, Volume 13, Number 5

- Nuyujukian, P., Kao, J.C., Ryu, S.I., and Shenoy, K.V., A Nonhuman primate brain–computer typing interface, Proceedings of the IEEE, PP:99.

- Grillner, S., Ip, N., Koch, C., Koroshetz, W., Okano, H., Polachek, M., Poo, M. and Sejnowski, T.J., Worldwide initiatives to advance brain research, Nature Neuroscience, 19, 1118–1122, 2016.

- Kellmeyer, P., Cochrane, T., Muller, O., Mitchell, C., Ball, T., Fins, J.J. and Biller-Andorno, N., The effects of closed-loop medical devices on the autonomy and accountability of persons and systems, Cambridge Quarterly of Healthcare Ethics, 25:623-633, 2016.

Grant Opportunities

- BRAIN Initiative: Non-Invasive Neuromodulation - Mechanisms and Dose/Response Relationships for Targeted CNS Effects (R01) - Deadline: November 23, 2016 http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-245.html

- BRAIN Initiative: Non-Invasive Neuromodulation - New Tools and Techniques for Spatiotemporal Precision (R01) - Deadline: November 23, 2016
http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-245.html

- BRAIN Initiative: Foundations of Non-Invasive Functional Human Brain Imaging and Recording - Bridging Scales and Modalities (R01) - Deadline: November 23, 2016
http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-235.html

- BRAIN Initiative: Development and Validation of Novel Tools to Analyze Cell-Specific and Circuit-Specific Processes in the Brain (R01) - Deadline: November 2, 2016
http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-220.html

- BRAIN Initiative Fellows: Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (F32) – Letter of Intent due: February 15, 2017; Deadline: March 15, 2017
http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-250.html

- BRAIN Initiative: New Concepts and Early-Stage Research for Large-Scale Recording and Modulation in the Nervous System (R21) – Deadline: December 7, 2016
http://grants.nih.gov/grants/guide/rfa-files/RFA-EY-17-001.html

- BRAIN Initiative: Integration and Analysis of BRAIN Initiative Data (R24) – Deadline: January 19, 2017:
http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-257.html

- BRAIN Initiative: Data Archives for the BRAIN Initiative (R24):
http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-255.html

- BRAIN Initiative: Standards to Define Experiments Related to the BRAIN Initiative (R24) – Deadline: January 10, 2017:
http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-256.html

- BRAIN Initiative: New Technologies and Novel Approaches for Large-Scale Recording and Modulation in the Nervous System (U01)
http://www.grants.gov/web/grants/view-opportunity.html?oppId=289210

- BRAIN Initiative: Optimization of Transformative Technologies for Large Scale Recording and Modulation in the Nervous System (U01)
http://www.grants.gov/web/grants/view-opportunity.html?oppId=289211

- BRAIN Initiative: Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (U44)
http://www.grants.gov/web/grants/view-opportunity.html?oppId=289234

- BRAIN Initiative: Clinical Studies to Advance Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (UH3)
  http://www.grants.gov/web/grants/view-opportunity.html?oppId=289235

- BRAIN Initiative: Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (UG3/UH3)
  http://www.grants.gov/web/grants/view-opportunity.html?oppId=289252

- BRAIN Initiative: SBIR Direct to Phase II Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (U44)
  http://www.grants.gov/web/grants/view-opportunity.html?oppId=289253

- NIH High Impact Neuroscience Research Resource Grants (R24):
  http://grants.nih.gov/grants/guide/rfa-files/RFA-NS-17-002.html

- NSF Collaborative Research in Computational Neuroscience (CRCNS) – Deadline: December 19, 2016:
  http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5147&org=IIS

Join the CSNE Facebook site at:
https://www.facebook.com/groups/134997836537779/

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