CENTER FOR SENSORIMOTOR NEURAL ENGINEERING

Improving lives by connecting brains and technology

April, 2016

Awards

- Congratulations to **Brian Mogen, Tyler Libey, Lars Crawford and Dimi Gklezakos of Multimodal Health** for winning third place ($2,500) at the Health Innovation Challenge: http://depts.washington.edu/foster/health-innovation-challenge-16-winners

Upcoming Seminars, Lectures, Courses, Conferences

- **Discussion:** The Center for Sensorimotor Neural Engineering (CSNE) Neuroethics Thrust will be holding an **ethics roundtable** on Wednesday, April 6, 11:00 am -12:30 pm, CSNE (Russell Hall). This is a great opportunity for students and researchers to learn about the neuroethics thrust's current projects and to investigate opportunities for collaboration. Please contact Postdoctoral Neuroethics Fellow Dr. Laura Specker Sullivan (specker@uw.edu) if you have any questions.

- **Seminar:** University of Washington Electrical Engineering Colloquium, **Reid Harrison**, Intan Technologies, "Building better tools for neuroscience: Custom microchips for electrophysiology instrumentation, April 5, 2016, 10:30-11:20 am, UW EEB 105.

- **Workshop: STEM Journal Publishing**: What's an Editor to Do? A Panel Discussion for Graduate Students, Post-Docs and Librarians. A panel of four UW STEM faculty members who are also journal editors will address a variety of issues of interest to current and future authors and librarians. Tuesday, April 12, 4:00 - 5:00 pm; Reception, 5:00-5:30 pm, Research Commons, Presentation Place, Allen Library South, UW.

- **Exhibit: Art Neureau,** a neuroscience art exhibit! Perhaps you have a piece of art at the intersection of art and neuroscience? Submit your art by April 10, 2016; the exhibit will take place on May 3, 2016 at the Fremont Abbey (Seattle, WA). Submit your work at: http://tinyurl.com/kel845e

- **Seminar:** University of Washington Institute of Neuroengineering, **Visvesh Sathe**, Assistant Professor, Department of Electrical Engineering, University of Washington, "An implantable, low-power, high-density ECoG recording architecture for chronic Bidirectional Brain Computer Interfaces," Wednesday, April 13, 3:30 pm, UW PAA-A110.

- **Discussion:** University of Washington Institute of Neuroengineering Faculty Entrepreneurship Panel featuring **Josh Smith, Chet Moritz, Beth Buffalo, and Matt Reynolds**, Wednesday, May 4, 3:30 pm, UW PAA-A110

- **Symposium:** SAVE THE DATE! The annual Spring Neuroscience Symposium is scheduled for Tuesday May 24, 2016, 9 am-4 pm at the UW Waterfront Activity Center. This year's theme is: **Neural Mechanisms of Fear and Loathing**.

- **Workshop:** 9th **Bernstein Sparks Workshop**: Recent advances in recurrent network theory: fluctuating correlated dynamics across scales (May 25 - 27, 2016, Göttingen,

Germany; Tutorials: May 24, 2016): http://www.nncn.de/en/news/events/9th-bernstein-sparks-workshop

- **Conference: NeuroFutures 2016,** an annual conference designed to explore the advances in neurotechnology, (June 20-21, 2016, Allen Institute headquarters building, Seattle, WA). Registration is now open at http://neurofutures.us

- **Conference:** 2nd Summer Institute in **Statistics for Big Data** (University of Washington, Seattle, WA, July 11-29, 2016): http://www.biostat.washington.edu/suminst/sisbid/register

- **Workshop: Summer Workshop on the Dynamic Brain**, co-hosted by University of Washington Computational Neuroscience Training Program and the Allen Institute for Brain Science, August 20-September 4, 2016, UW Friday Harbor Laboratories: http://alleninstitute.org/what-we-do/brain-science/events-training/events/summer-workshop-dynamic-brain-2016

- **Workshop: Neurohackweek,** September 5-9, 2016, University of Washington eScience Institute. Seattle, WA; application deadline is April 18, 2016: http://neurohackweek.github.io/

- **Conference:** 2016 Annual Meeting of the **International Neuroethics Society** (San Diego, CA, November 10-11, 2016) call for abstracts is now open: http://www.neuroethicssociety.org/abstracts

New CSNE Publications

- **Moritz, C.T., Ruther, P., Goering, S., Stett, A., Ball, T., Burgard, W., Chudler, E.H. and Rao, R.P.N**., New Perspectives on Neuroengineering and Neurotechnologies: NSF-DFG Workshop Report, IEEE Transactions on Biomedical Engineering, Early Access Publication available at: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7435275&filter%3DAND%28p_IS_Number%3A4359967%29

CSNE in the News

- "Young Women of STEM," SDSU NewsCenter (March 2, 2016): http://newscenter.sdsu.edu/sdsu_newscenter/news_story.aspx?sid=76055

- Cactus Semiconductor Joins the CSNE," Press Release (March 2, 2016): http://www.cactussemiconductor.com/press-release/cactus-semiconductor-joins-the-center-for-sensorimotor-neural-engineering-to-support-development-of-brain-computer-interfaces/

- "MultiModal Health creates VR games to boost occupational therapy for patients," Geekwire (March 6, 2016): http://www.geekwire.com/2016/startup-multimodal-health-hopes-to-launch-virtual-reality-games-next-month/

- "How the Cheap, Creepy Robotic Hand from UW Will Change the Way We Work," Seattle Weekly (March 9, 2016): http://www.seattleweekly.com/news/963301-129/how-the-cheap-creepy-robotic-hand

- "Hands-on learning at UW for Brain Awareness Week," Seattle Times (March 18, 2016): http://www.seattletimes.com/seattle-news/hands-on-learning-at-uw-for-brain-awareness-week/

Recent Papers of Interest to the CSNE Community

- Rajangam, S., Tseng, P-H., Yin, A., Lehew, G., Schwarz, D., Lebedev, M.A., and Nicolelis, M.A.L., Wireless cortical brain-machine interface for whole-body navigation in primates, Scientific Reports 6, Article number: 22170 (2016), doi:10.1038/srep22170: http://www.nature.com/articles/srep22170

- Nature Neuroscience, March 2016, Volume 19, no. 3: Focus on Neural Computation and Theory: http://www.nature.com/neuro/focus/neural-computation-and-theory/index.html

- Yazdan-Shahmorad, A., Diaz-Botia, C., Hanson, T.L., Kharazia, V., Ledochowitsch, P., Maharbiz, M.M., and Sabes, P.N., A large-scale interface for optogenetic stimulation and recording in nonhuman primates, Neuron, 89:927–939, 2016.\

- Bowsher, K., Civillico, E.F., Coburn, J., Collinger, J., Contreras-Vidal, J.L., Denison, T., Donoghue, J., French, J., Getzoff, N. and Hochberg, L.R., Brain–computer interface devices for patients with paralysis and amputation: a meeting report, Journal of Neural Engineering, Volume 13, Number 2

- Hotson, G., McMullen, D.P., Fifer, M.S., Johannes, M.S., Katyal, K.D., Para, M.P., Armiger, R., Anderson, W.S., Thakor, N.V. and Wester, B.A., Individual finger control of a modular prosthetic limb using high-density electrocorticography in a human subject, Journal of Neural Engineering, Volume 13, Number 2

- Bundy, D.T., Pahwa, M., Szrama, N. and Leuthardt, E.C., Decoding three-dimensional reaching movements using electrocorticographic signals in humans, Journal of Neural Engineering, Volume 13, Number 2

- Ionta, S., Villiger, M., Jutzeler, C.R., Freund, P., Curt, A. and Gassert, R., Spinal cord injury affects the interplay between visual and sensorimotor representations of the body, Scientific Reports 6, 20144 (2016), doi:10.1038/srep20144. (http://www.nature.com/articles/srep20144)

Grant Opportunities

- NIH Director's Early Independence Awards (DP5):
  http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-16-006.html

- Pre-application: Stimulating Peripheral Activity to Relieve Conditions (SPARC): Technologies to Understand the Control of Organ Function by the Peripheral Nervous System (OT1)
  http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-16-002.html

- BRAIN Initiative: Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (U44)
  http://grants.nih.gov/grants/guide/rfa-files/RFA-NS-16-011.html

- BRAIN Initiative: Clinical Studies to Advance Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (UH3)
  http://grants.nih.gov/grants/guide/rfa-files/RFA-NS-16-010.html

- International Collaboration Opportunities related to the NSF Investments in Understanding the Brain (NSF)
  http://www.nsf.gov/pubs/2014/nsf14082/nsf14082.jsp

- NSF Cognitive Neuroscience (CogNeuro)
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5316

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