

CENTER FOR SENSORIMOTOR NEURAL ENGINEERING

Improving lives by connecting brains and technology

January, 2016

Awards

- **Darby Losey** (Rao lab, UW) received a Computing Research Association honorable mention as an outstanding undergraduate researcher:
<http://cra.org/about/awards/outstanding-undergraduate-researcher-award/>
- Polina Anikeeva (**Assistant Professor, Department of Materials Science and Engineering, MIT**) and her work with magnetic nanoparticles comes in at #48 on the *Discover* magazine list of the 100 top stories of 2015 (*Discover* magazine, January-February, 2016).

Upcoming Seminars, Lectures, Courses

- **2016 Neural Computation and Engineering Connection**, Thursday-Friday, January 28-29, 2016, CSNE (Thursday) & the HUB (Friday). Registration required:
<http://uwin.washington.edu/ncec/>
- **Sanitta Thongpang** (Lecturer, Department of Biomedical Engineering, Mahidol University, Bangkok, Thailand) will present “Transparent Neural Interface Technology for Optogenetics and Electroretinogram Applications” at the CSNE, January 7, 2016, 1:00-2:00 pm.
- **Adrienne Fairhall** (Associate Professor, Physiology & Biophysics, UW) will give a seminar titled “Beyond Receptive Fields: Frontiers in Neural Coding”, January 13, 2016, 3:30 pm, in PAA-A110, UW.
- **Andre Berndt** (Postdoctoral Fellow, Stanford University) will present a UW Bioengineering Departmental Seminar titled “Molecular Engineering of Optical Tools for Enhanced Control over the Brain” on Thursday, January 7, 2016, 12:30-1:20 pm, in Foege N130.
- **Marcus E. Raichle** (Professor, Professor, Radiology, Neurology, Anatomy and Neurobiology, Washington University) will present “How Intrinsic Activity, Organizes Brain Function” on January 4, 2016, 3:30-4:30 pm, in HSB T-747, UW.
- **Women in Science & Engineering Conference**, Saturday, February 27, 2016, (Husky Union Building on the UW Seattle Campus) :
<http://www.engr.washington.edu/current/studentprogs/wiseconf>
- **Eric Shea-Brown** (Associate Professor, Department of Applied Mathematics, UW) will be teaching “Dynamics of Neurons and Networks (AMATH 534)” during the winter 2016 quarter at the UW.



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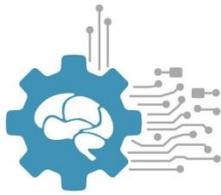
- Applications for the **2016 CSNE International Summer Student Exchange Program** are now available. CSNE students can travel to the University of Freiburg (Freiburg, Germany) and the Indian Institute of Science (Bangalore, India) to conduct research. Students should contact Eric Chudler (chudler@uw.edu) for an application.

CSNE in the News

- **UW News Press Release** (December 29, 2015): “UW center receives \$16M to work on first implantable device to reanimate paralyzed limbs”:
<http://www.washington.edu/news/2015/12/28/uw-center-receives-16m-to-work-on-first-implantable-device-to-reanimate-paralyzed-limbs/>
- **Seattle Times** (December 30, 2015) article “UW working on device that could help paralyzed limbs move again”:
<http://www.seattletimes.com/seattle-news/education/uw-working-on-device-that-could-help-the-paralyzed-move-again/>
- **Emo Todorov** and his work are described in “A Master Algorithm Lets Robots Teach Themselves to Perform Complex Tasks” published in *MIT Technology Review*, December 21, 2015.

Recent Papers of Interest to the CSNE Community

- Jochumsen, M., Niazi, I.K., Dremstrup, K and Nlandu, E., Detecting and classifying three different hand movement types through electroencephalography recordings for neurorehabilitation, *J Med Biol Eng & Comp*, December, 2015,
<http://dx.doi.org/10.1007/s11517-015-1421-5>
- Phillips, B.N., Smedema, S.M., Fleming, A.R., Sung, C. and Allen, M.G., Mediators of disability and hope for people with spinal cord injury, *Disabil Rehabil.*, 17:1-12, 2015.
- Schiefer, M., Tan, D., Sidek, S.M. and Tyler, D.J., Sensory feedback by peripheral nerve stimulation improves task performance in individuals with upper limb loss using a myoelectric prosthesis, *J Neural Eng*, 13:1, 2016.
- Morel, P., Ferrea, E., Taghizadeh-Sarshouri, B., Audí, J.M.C., Ruff, R., Hoffmann, K-P., Lewis, S., Russold, M., Dietl, H. and Abu-Saleh, L., Long-term decoding of movement force and direction with a wireless myoelectric implant, *J Neural Eng*, 13:1, 2016.
- Li, C., Narayan, R.K., Wu, P-M., Rajan, N., Wu, Z., Mehan, N., Golanov, E.V., Ahn, C.H. and Hartings, J.A., Evaluation of microelectrode materials for direct-current electrocorticography, *J Neural Eng*, 13:1, 2016.



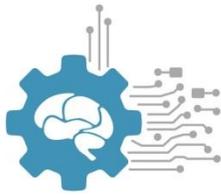
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- Sachs, N.A., Ruiz-Torres, R., Perreault, E.J. and Miller, L.E., Brain-state classification and a dual-state decoder dramatically improve the control of cursor movement through a brain-machine interface, *J Neural Eng*, 13:1, 2016.
- Rabadán, A.T., Neuroethics scope at a glance. *SurgNeurol Intern*. 2015;6:183. doi:10.4103/2152-7806.171249.
- Special Issue – BRAIN, from *IEEE Transactions on Biomedical Engineering*, January, 2016:
<http://tbme.embs.org/2015/12/25/special-issue-brain/>

Grant Opportunities

- NIH Blueprint for Neuroscience Research Short Courses in Neurotherapeutics Development (R25)
<http://grants.nih.gov/grants/guide/rfa-files/RFA-NS-16-017.html>
- Exploratory/Developmental Bioengineering Research Grants (EBRG) (R21)
<http://grants.nih.gov/grants/guide/notice-files/NOT-AR-16-011.html>
- Shared Instrumentation Grant (SIG) Program (S10)
<http://grants.nih.gov/grants/guide/pa-files/PAR-16-054.html>
- High-End Instrumentation (HEI) Grant Program (S10)
<http://grants.nih.gov/grants/guide/pa-files/PAR-16-053.html>
- BRAIN Initiative: New Concepts and Early - Stage Research for Large - Scale Recording and Modulation in the Nervous System (R21)
<http://grants.nih.gov/grants/guide/rfa-files/RFA-EY-16-001.html>
- BRAIN Initiative: Non-Invasive Neuromodulation - New Tools and Techniques for Spatiotemporal Precision
<http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-16-810.html>
- BRAIN Initiative: Non-Invasive Neuromodulation - Mechanisms and Dose/Response Relationships for Targeted CNS Effects (R01)
<http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-16-815.html>
- BRAIN Initiative: New Technologies and Novel Approaches for Large-Scale Recording and Modulation in the Nervous System (U01)
<https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-16-006.html>
- BRAIN Initiative: SBIR Direct to Phase II 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-16-018.html>



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- 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: Optimization of Transformative Technologies for Large Scale Recording and Modulation in the Nervous System (U01)
<https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-16-007.html>
- BRAIN Initiative: Foundations of Non-Invasive Functional Human Brain Imaging and Recording - Bridging Scales and Modalities (R01)
<http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-16-750.html>
- Travel award to the 2016 Annual Meeting of the Japan Neuroscience Society (July 20-22, 2016; Yokohama, Japan)
http://www.neuroscience2016.jnss.org/en/travel_award.html
- Greenwall Foundation, bioethics funding opportunity
<http://greenwall.org/making-a-difference.php>
- Whitehall Foundation, research grants
<http://www.whitehall.org/grants/>

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<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.