

**ABBREVIATED CURRICULUM VITAE: Brian Nils Lundstrom**  
[lundstrom.brian@mayo.edu](mailto:lundstrom.brian@mayo.edu) | [www.adaptingneurons.com](http://www.adaptingneurons.com)

**EDUCATION:**

- Post-graduate: EEG/Epilepsy Fellow, July 2015 – Present  
Mayo Clinic, Rochester, Minnesota
- Neurology Residency Program, July 2012 – July 2015  
Internal Medicine Internship, July 2011 – June 2012  
University of Washington, Seattle, Washington
- Post-doctoral research, June 2008 – March 2009  
With Miguell Maravall and Adrienne Fairhall
- Graduate: MD/PhD program (MSTP), September 2002 – June 2011  
MD, June 2011  
PhD in Physiology and Biophysics, June 2008  
MSc in Physics, March 2008  
University of Washington, Seattle, Washington
- Undergraduate: B.S. Biophysics, B.A. Music, June 2001 (Summa cum laude)  
Walla Walla University, Washington

**RESEARCH EXPERIENCE:**

- 2015 – Present: EEG and Epilepsy  
Greg Worrell, Neurology  
Mayo Clinic, Rochester, Minnesota
- 2008 – 2009: Electrophysiology  
Miguel Maravall, Alicante Neuroscience Institute  
Universidad Miguel Hernández, Spain
- 2004 – 2009: Computational neuroscience and electrophysiology,  
Adrienne Fairhall and William Spain, Physiology and Biophysics  
University of Washington, Seattle, Washington
- 2003: Theoretical and computational neuroscience,  
Rajesh Rao, Computer Science  
University of Washington, Seattle, Washington
- 2001 – 2002: Neuroimaging (fMRI) of human episodic memory  
Martin Ingvar, Clinical Neuroscience  
Karolinska Hospital/Institute, Stockholm, Sweden  
September 2001 – August 2002
- 2000 – 2001: Development biology of *Dictyostelium*  
David Lindsey, Biology  
Walla Walla University, Washington
- 2000: Neuroimaging and mathematical modeling  
Mark Mintun and Marc Raichle, Mallinckrodt Institute of Radiology  
Washington University in St. Louis, Missouri

## PUBLICATIONS:

- Lundstrom BN**, Van Gompel J, Britton J, Nickels K, Wetjen N, Worrell G, Stead M. "Chronic Subthreshold Cortical Stimulation to Treat Focal Epilepsy." *JAMA Neurol.* 2016 Nov 1;73(11):1370-1372. doi: 10.1001/jamaneurol.2016.2857.
- Lundstrom BN**. "Modeling multiple time scale firing rate adaptation in a neural network of local field potentials." *J Comput Neurosci.* 2015 Feb;38(1):189-202. doi: 10.1007/s10827-014-0536-2. Epub 2014 Oct 16.
- Lundstrom BN**, Fairhall AL, Maravall M. "Multiple time scale encoding of slowly varying whisker stimulus envelope in cortical and thalamic neurons in vivo." *J Neurosci.* 2010 Apr 7;30(14):5071-7.
- Lundstrom BN**, Famulare M, Sorensen L, Spain WJ, Fairhall AL. "Sensitivity of firing rate to input fluctuations depends on time scale separation between fast and slow variables in single neurons." *J. Computational Neuroscience.* 2009 Apr 8.
- Lundstrom BN**, Higgs MH, Spain WJ, Fairhall, AL. "Fractional differentiation by neocortical pyramidal neurons." *Nature Neuroscience*, 2008 Nov;11(11):1335-42. Epub 2008 Oct 19.
- Hong S, **Lundstrom BN**, Fairhall AL. "Intrinsic gain modulation and adaptive neural coding." *PLoS Computational Biology*, 2008 Jul 18;4(7):e1000119.
- Lundstrom BN**, Hong S, Higgs MH, Fairhall AL. "Two computational regimes of a single-compartment neuron separated by a planar boundary in conductance space." *Neural Computation*, 2008 May;20(5):1239-60.
- Wark B, **Lundstrom BN**, Fairhall AL. "Sensory adaptation." *Curr Opin Neurobiol.* 2007 Aug;17(4):423-9.
- Arsiero M, Luscher H-R, **Lundstrom BN**, Giugliano M. "The Impact of input fluctuations on the frequency-current relationships of layer 5 pyramidal neurons in the rat medial prefrontal cortex ." *J. Neuroscience*, 2007 Mar 21;27(12):3274-84.
- Lundstrom BN**, Fairhall AL. "Decoding stimulus variance from a distributional neural code of interspike intervals." *J. Neuroscience*, 2006 Aug 30;26(35):9030-7.
- Lundstrom BN**, Ingvar M, Petersson KM. "The role of precuneus and left inferior frontal cortex during source memory retrieval." *NeuroImage.* 2005 Oct;27(4):824-834.
- Lundstrom BN**, Petersson KM, Andersson J, Johansson M, Fransson P, Ingvar M. "Isolating the retrieval of imagined pictures during episodic memory: activation of the left precuneus and left prefrontal cortex." *NeuroImage.* 2003 Dec;20(4):1934-43.
- Mintun MA, **Lundstrom BN**, Snyder AZ, Vlassenko AG, Shulman GL, Raichle ME. "Blood flow and oxygen delivery to human brain during functional activity: Theoretical modeling and experimental data." *Proc Natl Acad Sci U S A.* 2001 Jun 5;98(12):6859-64.

## RESEARCH FUNDING:

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|-----------|--|
| 2008      | Short-term Fellowship with Miguel Maravall, Alicante, Spain<br>International Human Frontier Science Program Organization   |
| 2007-2011 | National Research Service Award for Predoctoral MD/PhD Fellows<br>National Institute Of Neurological Disorders And Stroke (F30NS055650)<br>National Institutes of Health (NIH) |
| 2005-2008 | ARCS Fellowship (\$15,000)<br>ARCS Foundation Inc., Seattle Chapter  |
| 2001-2002 | Fulbright Full Grant, Fulbright Student Program<br>United States Department of State   |

**SELECTED INVITED TALKS:**

- 2016 November "Chronic cortical stimulation to treat focal epilepsy", Karolinska Hospital, Stockholm, Sweden.
- 2015 February "When neurons tire of talking: understanding adaptation of action potentials", Walla Walla University, Washington
- 2011 January "Understanding single neuron function by characterizing firing rates" Institute of Neuroscience, University of Oregon, Eugene
- 2010 October "Describing rate adaptation as fractional differentiation" Max Planck Institute, Dresden, Germany
- 2008-2009 "Fractional differentiation by neocortical pyramidal neurons" Computational Neurobiology Lab, IDIBAPS, Barcelona, Spain  
Instituto de Neurociencias de Alicante, Spain  
Laboratory of Computational Neuroscience, EPFL, Lausanne, Switzerland

**SUMMER COURSES:**

- 2007 Methods in Computational Neuroscience, Marine Biological Laboratory, Woods Hole, MA
- 2006 Okinawa Computational Neuroscience Course Okinawa Institute of Science and Technology, Japan
- 2000 NSF Course in Microelectronics and Physical Chemistry University of Oregon, Eugene
- 1999 ACS/DOE Course in Nuclear and Radiochemistry Brookhaven National Laboratory, New York

**LEADERSHIP AND TEACHING**

- 2014-2015 Chief Resident, Neurology, University of Washington
- 2003-2012 Teaching Assistant for:  
Neuroanatomy (UW med school, 2012)  
Methods in Computational Neurosci. (MBL summer course, 2008, 2010)  
Computational Neuroscience (UW grad, Computer Sci / Neurobiol, 2007)  
Quantitative methods in neuroscience (UW grad, Physiol & Biophys, 2007)  
Neuropathophysiology (UW undergrad, Neurobiol, 2006)  
Anatomy & Physiology (UW med school, 2003, 2010)

**OTHER INTERESTS:**

- Pipe organ: Previous performances at St. Mark's Cathedral, Seattle, WA; Advent-Kirche, Luzern, Switzerland; Christ Episcopal Church, Tacoma, WA; Walla Walla, WA with Walla Walla Symphony
- Acrobatics: volunteer coach at School for Acrobatics and New Circus Arts, Seattle; former national competitor in Sports Acrobatics (Acro Gymnastics); stunt work for internal commercials (Microsoft, Red Robin)
- Language: Intermediate proficiency in German, Spanish, and Swedish
- Travel: Inca Trail in Peru, 2011; Stockholm, 2010; Saxon Switzerland near Dresden, 2010