

Luke Rosedahl

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Education:

University of California: Santa Barbara

Doctor of Philosophy, Dynamical Neuroscience, Expected: June, 2019 GPA: 3.85

University of Minnesota: Twin Cities

Bachelor of Science, Biomedical Engineering: Neural Engineering, May, 2015

College of Science and Engineering, Honors Program; GPA: 3.650/4.000: *Magna Cum Laude*

Rochester Community and Technical College

PSEO: Joint High School Student, May 2011

Post-Secondary Enrollment Options, GPA: 3.81/4.00

Scholarships/Fellowships:

University of California Santa Barbara Regent's Fellowship

2016-2017

Sage Center for the Study of the Mind Fellowship

2015-2016

University of Minnesota Maroon and Gold Leadership Scholarship

2011-2015

Thomas J. Watson Memorial Scholarship

2011-2015

Sons of Norway: Kristiania Lodge Scholarship

2011-2013

Lemberg Engineering Freshman Scholarship

2011-2012

Research Experience:

Graduate Student Researcher, University of California: Santa Barbara

Santa Barbara, CA. August 2015-Current

- ♣ Add a moving NMDA threshold to a category learning model to account for long-term learning behavior (Fall 2015-Current)
- ♣ Develop a foveated model of human vision (Fall 2015-Current)
- ♣ Develop a Biologically Relevant Measurement for Categorization Difficulty (Winter 2015-Current)
- ♣ Test for Retinal Transfer in Category Learning (Winter 2015-Current)

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Research Assistant, University of Minnesota: Twin Cities

Minneapolis, MN. May 2013 – July 2015

- ⤴ Developed an electronically controlled 3D printed micro-drive system for micro-electrode insertion (Summer 2014-Summer 2015)
- ⤴ Analyzed phase-amplitude coupling in Parkinson's patients using MEG (Fall 2014-Summer 2015)
- ⤴ Added features to the neurosurgical planning software Monkey Cicerone (Summer 2013-Spring 2015)
- ⤴ Wrote code in Matlab to streamline the process of mapping brain areas (Summer/Fall 2013)
- ⤴ Created a Matlab GUI to assist users in warping brain maps to fit MRI scans (Summer/Fall 2013)

Researcher in Computational Neuroscience, Center for the Neural Basis of Cognition

Pittsburgh, PA. May 2014 – August 2014

- ⤴ Participated in the CNBC's NIH sponsored research experience for undergraduates
- ⤴ Worked with the lab members of the Schwartz lab (schwartzlab.neurobio.pitt.edu) to assist in their research
- ⤴ Developed a system for active vs. idle detection during brain control of a robotic arm
 - Analyzed Local Field Potentials using Gabor Wavelets
 - Trained a Linear Discriminant Analysis model on hand control and manually labeled brain control data
 - Compared LDA model output for the LFP data with LDA model output for spike rate data

Talks:

Rosedahl, L. Grado, L. Johnson, M. *Open Source System for Controlling Microelectrode Depth Within Subcortical Brain Structures*. Presented at: BMES Annual Meeting. October 7th-10th, 2015. Tampa, FL.

Posters:

Pena E, **Rosedahl L**, et al. *Phase-amplitude coupling heterogeneity in the parkinsonian sensorimotor cortex*. Presented at: Movement Disorder Society International Congress; June 14-18, 2015; San Diego, CA.

Rosedahl L, Johnson M. *Open-Source System for Independent Control of Microelectrodes within the Brain*. Presented at: Minnesota Neuromodulation Symposium; April 17th, 2015. Minneapolis, MN

Rosedahl L. *Neurosurgical Planning Software with Multi-Electrode Mapping Capabilities*. Presented at: Institute for Engineering in Medicine Retreat; September 22nd, 2014. Minneapolis, MN.

Rosedahl L, Kanning T, et al. *Gaze Controlled Robotic Arm*. Presented at: Biomedical Engineering Design Show; May 7th, 2014. Minneapolis, MN

Professional Experience:

Vice President of Budget and Finance, UCSB Graduate Student Association

Santa Barbara, CA. July 2016 – Current

- ⤴ Develop and manage budget
- ⤴ Approve and process grant requests
- ⤴ Document all financial transactions

Engineering Intern, NuAire

Plymouth, MN. May 2013 – August 2013

- ⤴ Worked with the engineers to assist in the development of their product lines
- ⤴ Designed and performed tests on products given specific criterion and parameters
- ⤴ Wrote and updated product manuals
- ⤴ Created, tested, and suggested modifications for product prototypes

Research Associate, Hennepin County Medical Center

Minneapolis, MN. January 2012 – June 2012

- ⤴ Screened for and enrolled patients in medical studies
- ⤴ Explained studies to patients and obtained their legal consent
- ⤴ Worked closely with medical staff and patients to ensure quality patient care
- ⤴ Took vital signs, monitored airways, and performed other healthcare activities

Math Tutor, Rochester Community and Technical College

Rochester, MN. August 2009 - May 2011

- ⤴ Explained concepts in Algebra through Calculus 4 to college students
- ⤴ Gave the students better learning opportunities by assigning homework and writing extra practice tests for them to complete in addition to their class assignments
- ⤴ Inspired students through motivational talks, explaining the application of the concepts in their future career field, and positive feedback

Extracurricular and Volunteer Experience:

Dedicated Answerer, UCSB Scienceline

Santa Barbara, CA. August 2016-Current

- ⤴ Answer science and research questions for local K-12 students
- ⤴ Provide interesting, relatable examples of scientific concepts

Research Mentor, Condor Techs and SIMS Programs, UCSB

Santa Barbara, CA. August 2016 (Two Week Programs)

- ⤴ Mentored groups of Community College students and incoming UCSB Freshmen on research projects
- ⤴ Taught the basics of the neuroscience behind the project and how research is performed
- ⤴ Guided students through performing their own experiment and analyzing the results

Treasurer, University of Minnesota West Coast Swing Club

Minneapolis, MN. August 2013 – August 2014

- ⤴ Managed finances and dues collection for the club
- ⤴ Wrote grants and presented briefings to grant committees
- ⤴ Worked closely with the other officers of the group to ensure fundraising goals are being met

Athlete, University of Minnesota Competitive Ballroom Dance Team

Minneapolis, MN. August 2012 – August 2014

- ⤴ Practiced and competed in a variety of ballroom dances (Waltz, Tango, Foxtrot, Chacha, Rumba, etc.)
- ⤴ Worked closely with instructors to develop better technique
- ⤴ Practiced with partners outside of lessons to develop proper communication and partnership dynamic
- ⤴ Provided critique of other dancers in a positive, beneficial way
- ⤴ Placed 1st in Foxtrot, 2nd in Tango, and 2nd in Waltz at the 2012 National Collegiate Dancesport Championships in the Newcomer Division

Luke Rosedahl

Officer, Civil Air Patrol

Rochester, MN. November 2008 - November 2011

- ▲ Organized meetings and set long-term goals
- ▲ Directed my team in leadership excellence by teaching courses on followership, leadership styles, personal leadership philosophies, time management, goal setting, integrity, ethics, public speaking, and other aspect of being a leader
- ▲ Held monthly meetings to discover the goals of the members and ensure they were being met

Executive Vice President, Rochester Community and Technical College Physics Club

Rochester, MN. August 2010 - May 2011

- ▲ Assisted the President in scheduling meetings
- ▲ Worked with the faculty mentor to organize activities such as the physics demo show
- ▲ Ensured that all members felt like active participants

Conferences Attended:

Annual Biomedical Engineering Society Meeting

October 7th-10th, 2015. Tampa, FL.

Minnesota Neuromodulation Symposium

April 16th-17th, 2015. Minneapolis, MN

Design of Medical Devices Conference

April 13th-16th, 2015. Minneapolis, MN.

Institute for Engineering in Medicine Retreat

September 22nd, 2014. Minneapolis, MN.

Design of Medical Devices Conference

April 7th-10th, 2014. Minneapolis, MN.

IEEE Workshop: MRI Safety/Compatibility Considerations for Medical Devices

September 26th, 2013. Minneapolis, MN.

Design of Medical Devices Conference

April 8th-11th, 2013. Minneapolis, MN.

IEEE Workshop: Wireless Biosensors and Medical Devices

November 7th, 2012. Minneapolis, MN.