

OLIVIA C. WINTER

contact me: olivia dot winter at gmail dot com

EDUCATION

Stanford University, School of Medicine, Neurosciences PhD Candidate *June 2010-present*
Jennifer Raymond Laboratory, Department of Neurobiology *joined thesis lab in June, 2011*

Oberlin College, Oberlin, Ohio *September 2004 – December 2008*
Bachelor of Arts degree in Neuroscience (*with High Honors*) and Psychology. Cumulative GPA 3.76

AWARDS, MEMBERSHIPS, GRANTS, & SCHOLARSHIPS

National Science Foundation Graduate Research Fellowship (NSF GRFP), fellow *April 2011*

Nancy Robell Memorial Prize in Neuroscience/Biopsychology, sole recipient of class *May 2009*

Sigma Xi, The Scientific Research Society, inducted Associate Member *April 2008*

SPSP Undergraduate Diversity Registration Award, SPSP annual meeting *February 2008*

Shansi Winter-in-Asia Study Grant, recipient *January 2008*

McNair Post Baccalaureate Achievement Program Scholarship, scholar *summer 2006 & 2007*

RESEARCH EXPERIENCE

Neurosciences Doctorate Candidate, Dr. Jennifer Raymond, Dept of Neurobiology, Stanford *June 2011-present*
Thesis-level systems neurobiology research on cerebellum-dependent motor learning and memory. Examining the circuit mechanisms underlying learning principles of gain changes of the vestibular ocular reflex (VOR) and structural alterations of neurons related to memory formation, consolidation, and retention. Designing experiments, setting up techniques, giving poster talks, journal clubs and lab meetings, and using a range of research methods including: optogenetics, *in vivo* neural physiology, mouse stereotaxic surgery, and staining and imaging techniques.

Neurosciences Rotation Student in 5 laboratories, Stanford, University, Stanford, CA *July 2010-June 2011*
Conducted independent experimental research projects in a wide range of neuroscience laboratories at Stanford University: slice electrophysiology in visual cortex (Dr. Shaul Hestrin); optogenetic regulation of sleep circuitry (Dr. Luis de Lecea); regulatory factors of induced neuronal cells (Dr. Marius Wernig); tool development for the genetic dissection of fly motion vision circuitry (Dr. Thomas Clandinin), and analysis of retention of learning and site of synaptic plasticity in the vestibular ocular reflex (Dr. Jennifer Raymond). All projects were conducted independently after training, and presentations were given in each laboratory as part of first year graduate program.

Research Assistant, Dr. John Wemmie, Dept of Psychiatry, Veterans Affairs, Iowa City, IA *Jan 2009 – July 2010*
Designed, conducted, analyzed, and presented cellular, molecular, and behavioral studies of the Acid Sensing Ion Channel (ASIC). Presented findings at lab and public meetings, assisted with grant and paper writing, and taught and supervised undergraduate assistants, in addition to troubleshooting and developing laboratory protocols. Techniques used include: qRT-PCR; PCR; Western blotting; plasmid sub-cloning; *in vivo* electrochemical biosensing; primary neuronal and cell line culture; tissue preservation, sectioning, and immunohistochemistry; confocal microscopy, stereotaxic microinjections and implants; tracheotomy; mouse handling and injections; and behavior assays.

- Neuroscience Honors Student**, Dr. Jan Thornton, Dept of Neuroscience, Oberlin College *Feb 2008 – Dec 2008*
Investigated the role of luteinizing hormone/human chorionic gonadotropin in the timing of hippocampus-dependent spatial memory, using female rats. Performed stereotaxic brain surgery, ovariectomies, injections, and behavioral tests. Wrote and defended thesis.
- Neuroimaging Lab Summer Researcher**, Dr. Nancy Andreasen, PINC, University of Iowa *May – Aug 2008*
Designed and ran independent research investigating side effects of neuroleptic medication using longitudinal structural MRI's of schizophrenic patients' brains, looking specifically at the pituitary gland. Presented findings in meetings and conference and wrote manuscript for publication.
- Primary Research Assistant**, Dr. Cindy Frantz, Dept of Psychology, Oberlin College *fall 2005 – Feb 2008*
Involved in every aspect of 5+ social and environmental psychology experiments. Designed studies, conducted literature reviews using PsycInfo, wrote Institutional Review Board proposals, edited NSF and institutional grants, coded data, conducted survey and experimental studies, collected physiological data, designed surveys in Survey Monkey.
- Scholar**, McNair Post Baccalaureate Achievement Program *summer 2006 & 2007*
Designed, conducted, and analyzed two independent, quantitative, experimental psychology research projects. Presented findings of each project on two separate occasions.
- Head Research Assistant**, Dr. William Friedman, Dept of Psychology, Oberlin College *May 2006 – May 2007*
Created complex counterbalancing scheme and prepared materials for 5 day, 80 subject study of memory loss. Instructed other research assistants and coordinated all study details.
- Research Assistant**, Dr. Nancy Darling, Dept of Psychology, Oberlin College *January 2006*
Utilized BioLog to record psychophysiological data from psychology study participants.

PUBLICATIONS, POSTERS & PRESENTATIONS

- Winter, O.C.**, Li, L., and Raymond, J., *Is motor learning encoded by structural alterations of parallel fibers?* Society for Neuroscience Annual Meeting (October, 2012)
- Winter, O.C.**, et al. *Are acid-sensing ion channels located in blood vessels?* Health Sciences Research Week, Carver College of Medicine, Iowa City, IA (April, 2010)
- Sluka, K.A., **Winter, O.C.**, and Wemmie, J.A. *Acid-Sensing Ion Channels: A new target for pain and CNS diseases* (2009), *Current Opinion in Drug Discovery and Development*, 12(5): 693-704
- Taugher, R.J., Wunsch, A.M., **Winter, O.C.**, and Wemmie, J.A. *Behavioral effects of restoring ASIC1a expression to specific fear circuit sites in ASIC1a-null mice.* Society for Neuroscience Annual Meeting (October, 2009)
- Winter, O.C.**, Zelnik, C.S., Karuzis, V., and Thornton, J.E. *Human chorionic gonadotropin is slow to impair spatial memory in female rats.* Society for Behavioral Neuroendocrinology Annual Meeting (June, 2009)
- Winter, O.C.** *Human chorionic gonadotropin (a luteinizing hormone homologue) does not rapidly impair spatial memory in ovariectomized estrogen supplemented female rats.* Oberlin College Neuroscience Program public presentation (December, 2008)
- Winter, O.C.**, Ziebell, S., Andreasen, N.C. *Increased pituitary volume with risperidone exposure.* University of Iowa Summer Undergraduate Research Conference (August, 2008)
- Frantz, C., **Winter, O.C.**, Mayer, S. *Nature as an alternative way to maintain a subjective sense of belonging.* Presentation at the Society for Personality and Social Psychology Annual Meeting (February, 2008)

Winter, O.C. *Mother nature, brother sky: The human relationship to the natural world and psychological need fulfillment.* Presentation at the McNair at Oberlin Conference (August, 2007)

Winter, O.C. *Differential Discrimination: Race as a moderator of stereotypes against working and stay-at-home moms.* Presentation at the McNair at Oberlin Conference (August, 2006)

LEADERSHIP POSITIONS

Life Coaching Course Teaching Assistant, Empowering Emerging Scientists, Stanford *October 2012-present*
Designed the implementation of this course at Stanford. Managed the course website's videos, materials, and assignments. Set-up and activated distance-learning technology during bi-weekly classes. Interfaced among instructors, students, course supervisors, and coaches in this 50-student, 2-quarter newly launched life coaching course for Stanford School of Medicine students (SOMGEN210, Empowering Emerging Scientists). Previous experience with Handel Group methodology, and working in tight collaboration with Samantha Sutton of the Handel Group.

Scholastic Aptitude Test (SAT) Tutor, Boys and Girls Club of the Peninsula *January-June, 2011*
Volunteer tutor of disadvantaged high school students in preparation for taking the SAT. Designed curriculum, assigned homework, and worked weekly one-on-one with three sophomores & juniors.

Volunteer Neuroscience Educator, SPLASH and Brain Day courses, Stanford, CA *January-June, 2011*
Taught basic principles and conducted hands-on demonstrations of neuroscience. Interacted with several classrooms of middle school children, as well as two large groups of high school students.

Academic Ambassador, Office of the Dean of Studies, Oberlin College *May 2008 – Nov 2008*
Facilitated first-year students' smooth transition into academia. Held informational sessions, one-on-one mentoring, email check-ins, and other forms of academic and personal support.

Health Program Coordinator, HIV Peer Testers, Student Health Services, Oberlin College *June 2007 – Dec 2008*
Planned and conducted training programs for volunteer HIV testers. Wrote a funded grant proposal for rapid blood HIV testing kits. Oversaw scheduling, organization of office, documentation, website, and special programs. Was on call for testing and results shifts. Met regularly with Lorain County Public Health official. Wrote letters of recommendations for volunteers to future jobs.

Research Methods I & II Tutor, Dept of Psychology, Oberlin College *spring 2005 – Dec 2007*
Tutored students in conceptual, computational, and practical statistics and psychology research methodology. Individually instructed in the use of SPSS and Microsoft Excel for data analysis.