JULIE E. MILLER, PHD
UCLA Department of Integrative Biology & Physiology
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EDUCATION

2011-Present	Assistant Researcher, University of California Los Angeles (UCLA)
2005-2011	Postdoctoral Training, UCLA Mentor: Stephanie A. White, Ph.D. Associate Professor of Integrative Biology & Physiology Research: neurogenetics underlying normal and abnormal vocal behavior
1999-2005	Ph.D. Neuroscience, University of Arizona Tucson (Univ. Arizona) Mentor: Richard B. Levine, Ph.D. Professor of Neuroscience Thesis: "Wandering behavior in *Manduca sexta*: investigating steroid hormone effects on neural circuits for locomotor behavior"
1993-1997	B.A. *cum laude*, Biology and History, Honors in Biology, Wellesley College, MA Mentor: Barbara S. Beltz, Ph.D. Professor of Biology Thesis: "Neurogenesis in the embryonic and adult lobster"

OTHER SCIENTIFIC EMPLOYMENT

1999	Intern, American Association for the Advancement of Science, Washington D.C. Office of Government Relations (formerly Center for Science, Technology & Congress) Supervisor: Joanne Carney, Director Activities: Researched federal funding trends, assisted with Congressional briefings, attended Congressional hearings and federal advisory committee meetings and reported on science and technology legislation
1997-1998	Predoctoral Intramural Research Trainee, National Institutes of Health, Bethesda, MD Pain and Neurosensory Mechanisms Branch, National Institute of Dental & Craniofacial Research Mentor: Maryann Ruda, Ph.D. Research: sex differences in molecular and behavioral neuropathic pain response in a rodent model Activities: co-organized the first NIH conference on sex differences in pain pathways
1995	Undergraduate Researcher, Massachusetts Institute of Technology (MIT), Boston, MA Mentor: David B. Schauer, Ph.D. Professor of Biological Engineering & Comparative Medicine Research: cloning strategies for investigating bacterial pathogenesis in humans
1991,1993	Summer High School Student Research Volunteer, Albany Medical College, Albany, NY Mentor: Frank Blumenstock, Ph.D. Professor of Physiology Research: investigation of circulatory proteins following burn injury in a rodent model

HONORS, AWARDS AND FELLOWSHIPS

2011	Co-Chair & Speaker, American Speech-Hearing-Language Association Conference, San Diego, CA Invited Symposium, 'Vocalization Deficits in Parkinson's Disease: Insights From Multiple Species'
2010	Chair & Speaker, Annual Meeting Society for Neuroscience (*SFN*), San Diego, CA Selected Minisymposium, 'Neural Mechanisms Underlying Vocalization in Multiple Species: A Special Focus on Parkinson's Disease'
2010	Invited Speaker, Conference on Motor Speech, Savannah, GA 'Vocal Motor Deficits in a Songbird Model of Parkinson Disease'
2009	'Hot topic' Abstract Selection, *SFN*, Chicago, IL 'Birdsong as a Model System for Early Detection of Parkinson Disease'
2009	Travel Award, UCLA Brain Research/Semel Institute, *SFN*

2007-2008	NIH Postdoctoral Training Fellowship, UCLA Mental Retardation Research Center T32HD0007032
2006	Travel Award, Women in Neuroscience Committee, *SFN*
2006	Travel Award, UCLA Brain Research Institute/Fine Science Tools, *SFN*
2005-2007	NIH Postdoctoral Training Fellowship, UCLA Laboratory of Neuroendocrinology T32HD07228-24
2001-2003	NIH Predoctoral Training Fellowship, Univ. Arizona Motor Control Neurobiology T32NS07309
2000	Graduate Leadership Award, Univ. Arizona
2000	Flinn Foundation Predoctoral Developmental Neuroscience Fellowship, Univ. Arizona
1997	Biology Departmental Honors for Senior Thesis, Virginia Fiske Senior Prize in Biology, Sigma XI science honor society inductee, Wellesley College
1995	Undergraduate Summer Science Research Fellowship, MIT

GRANTS

FUNDED
1 R03 NS078511-01A1 (sole PI) 9/1/12-8/31/14
NIH/NINDS
Impact Score of 20, 8th Percentile
"Synaptotagmin 4: Role in Vocal Motor Function and Parkinson's Disease"
The major goal of this project is to investigate dopaminergic regulation of the gene Synaptotagmin 4 within the basal ganglia circuitry dedicated to learned vocalizations in the songbird model.

PUBLICATIONS

1. Grant L.M., F. Richter, J.N. Basken, **J.E. Miller**, S.A. White, C.M. Fox, M-F. Chesselet and M.R. Ciucci "Early Vocalization Deficits in a Transgenic Mouse Model of Parkinson's Disease." *in preparation for Experimental Neurology.*
2. Hilliard A.T., **J.E. Miller**, S. Horvath, and S.A. White. "Distinct Neurogenomic States in Basal Ganglia Subregions Relate Differently to Singing Behavior in Songbirds." *in press, PloS Computational Biology,* September 2012.
3. Hilliard A.T.*****, **J.E. Miller*,** E.R. Fraley, S. Horvath, and S.A. White (2012) "Molecular Microcircuitry Underlies Functional Specification in a Basal Ganglia Circuit Dedicated to Vocal Learning." *Neuron*, Feb 9 Epub. 73: 537–552. PMID: 22325205 ***co-first authors**
4. **Miller JE**, A.T. Hilliard and S.A. White (2010) Song Practice Promotes Acute Vocal Variability at a Key Stage of Sensorimotor Learning. *PLoS One* Jan 6 Epub, 5(1): e8592. PMID: 20066039
5. **Miller J.E**., E. Spiteri, M.C. Condro, R.T. Dosumu-Johnson*, D.H. Geschwind and S.A.White (2008) Birdsong Decreases Protein Levels of FoxP2, a Molecule Required for Human Speech. *J Neurophysiol* 100: 2015-2025. PMID: 18701760 *****undergraduate author
6. **Miller J.E.** and S.A. White (2007) "The Sleeping Bird Gets the Song," Focus on 'HVC Neural Sleep Activity Increases With Development and Parallels Nightly Changes in Song Behavior.' *J Neurophysiol* 98: 3-4. PMID: 17475721
7. **Miller J.E**. and R.B. Levine (2006) Steroid Hormone Activation of Wandering in the Isolated Nervous System of *Manduca sexta. J Comp Physiol A Sens Neur Behav* 192: 1049-62. PMID: 16788816
8. Bradshaw H.B., **J. Miller**, Q. Ling, K. Malsnee and M.A. Ruda (2000) Sex Differences and Phases of the Estrous Cycle Alter the Response of Spinal Cord Dynorphin Neurons to Peripheral Inflammation and Hyperalgesia. *Pain* 85: 93-99. PMID: 10692607
9. Harzsch S., **J. Miller**, J. Benton and B. Beltz (1999) From Embryo to Adult: Persistent Neurogenesis and Apoptotic Cell Death Shape the Lobster Deutocerebrum. *J Neurosci* 19: 3472-3485. PMID: 10212307
10. Harzsch S., **J. Miller**, J. Benton, R.R. Dawirs and B. Beltz (1998) Neurogenesis in the Thoracic Neuromeres of Two Crustaceans with Different Styles of Metamorphic Development *J Exp Biol 201: 2465-2479*, also cover illustration. PMID: 9698581.

ABSTRACTS/PRESENTATIONS

Postdoctoral

1. Characterization of Dopamine Levels and Vocal Motor Deficits in Zebra Finch After Injection of 6-Hydroxydopamine into Area X. *Lee D.L**,** G.W. Hafzalla, Z.D. Burkett, **J.E. Miller** and S.A. White. *undergraduate author, Undergraduate Poster Day, 2012.
2. Ultrasonic Vocalizations in Mice Overexpressing Human Wild-type Alpha-Synuclein. Shier J.N., L.M. Grant, F. Richter, K. De La Rosa**, J.E. Miller**, C.M. Fox, S.A. White, E. Masliah, M-F. Chesselet, and M.R. Ciucci *SFN*, 2011.
3. Autism Susceptibility Gene Contactin Associated Protein-like 2 Expression in a Songbird Model for Vocal Learning. Condro M.C., **J. E. Miller** and S.A.White, *SFN*, 2011.
4. Vocal Motor Deficits in a Songbird Model of Parkinson's Disease. **Miller J.E.,** Z.D. Burkett, C. M. Fox, and S. A. White. *Movement Disorder Society's 15th International Congress*, 2011, Toronto, ON, Canada.
5. Ultrasonic Vocalizations in Mice Overexpressing Wild-Type Human α-Synuclein. Richter F., J. N Shier, L. Grant, **J.E. Miller**, C. M. Fox, S. A White, M-F. Chesselet and M. R. Ciucci. *UCLA – Oxford Parkinson's Conference*, 2010.
6. Investigation of Vocal and Non-Vocal Motor Deficits in a Songbird Parkinson's Disease Model. Burkett Z.D., V. Vakhshori*, **J.E. Miller**, C.M. Fox and S.A. White *UCLA – Oxford Parkinson's Conference*, 2010. *undergraduate author.
7. Hilliard A.T., **J.E. Miller**, S. Horvath and S.A. White. Differential Gene Network Connectivity Underlies Unique Behavior-Driven Gene Regulation in Songbird Striatal Region Area X, *SFN,* 2010.
8. **Miller J.E.**, Z. D. Burkett and S.A. White. Birdsong as a Model System for Early Detection of Parkinson Disease. *SFN*, 2009.
9. Hilliard A.T., **J.E. Miller** and S.A. White. Network Analysis of Gene Expression in Area X During Singing. *SFN*, 2009.
10. **Miller J.E**., E. Spiteri, D.H. Geschwind and S.A White. On-line Regulation of FoxP2 Protein in Adult Songbirds. *SFN*, 2006.

Predoctoral, Post-Baccalaureate & Undergraduate

11. **Miller J.E**. and R.B. Levine. Steroid Hormone Activation of Locomotion in the Insect *Manduca sexta*. Univ. Arizona, *SFN*, 2003.
12. Ruda M.A., H.B. Bradshaw, **J.E. Miller,** and Q.D. Ling. Comparisons of Pain Responses in Male Rats Versus Female Rats During Different Stages of the Estrous Cycle. Pain and Neurosensory Mechanisms Branch, NIDCR, NIH, *SFN,* 1998.
13. Harzsch S., **J. Miller**, J. Benton and B. Beltz. Persistent Neurogenesis and Apoptotic Cell Death in the Developing Crustacean Deutocerebrum: Evidence for a Turnover of Olfactory Interneurons. Dept of Biology, Wellesley College, *SFN,* 1998.
14. Harzsch S., **J. Miller**, J. Benton and B. Beltz. Neurogenesis in the Developing Lobster CNS. *SFN*, 1997.
15. Harzsch S., **J. Miller**, J. Benton and B. Beltz. Embryonic Development of the CNS in the American Lobster: Neurogenesis, Expression of Engrailed, and Neuropil Formation. *Annual German Neurosciences Meeting,* 1997.

TEACHING

UCLA

2012 Instructor, Physiological Science 177: Neuroethology (undergraduate)
2013 Instructor, Neuroscience 101: Neurobiology of Birdsong Module (undergraduate) lecture & laboratory
2009 Guest lecturer, Physiological Science 149: Molecular Mechanisms of Disease (undergraduate)
2009 Guest lecturer, Physiological Science 177: Neuroethology (undergraduate)

Extramural

2002 Teaching Associate, Neural Systems and Behavior, Marine Biological Laboratory, Woods Hole, MA (graduate)
2000 Teaching Associate, Introduction to Neurobiology, Univ. Arizona (undergraduate)

MENTORING, UCLA

Graduate:

2012-Present George Hafzalla, Master's Degree Candidate in Physiological Science
2010-2011 Elizabeth Fraley, Ph.D. Candidate in Molecular, Cellular, Integrative Physiology Program
co-author on Hilliard, Miller et al. 2012
2008-2010 Zachary D. Burkett, Master's Degree Candidate in Physiological Science
Current position: Ph.D. Candidate in Molecular, Cellular, Integrative Physiology Program

Undergraduate:

2010-Present Debora Lee, Ecology and Evolutionary Biology
Two-time Fellowship Recipient, Junior Undergraduate Research Scholars Program, College of Letters and Science
2010-2011 Venus Vakshori, Neuroscience
Award Recipient Undergraduate Neuroscience Poster Day, 2011
Current position: medical student, University of Pennsylvania
2008 Ryan Dosumu-Johnson, Minority Access to Research Careers student
co-author on Miller et al. 2008
Current position: Medical Scientist Training Program, Harvard Medical School
2005-2007 Carol's Montes, CARE scholar
Current position: Harbor-UCLA Pre-medical Internship

COLLABORATIONS

2010-Present 'Ultrasonic Vocalizations in Parkinson's Mice': laboratory of Dr. M-F. Chesselet, Dept. of Neurology, David Geffen School of Medicine, UCLA; laboratory of Dr. M.R. Ciucci , Dept. of Communicative Disorders, Univ. Wisconsin Madison, Dr. C.M. Fox, National Center for Voice and Speech, Univ. Colorado Denver and the Lee Silverman Voice Treatment Foundation.

1998 "Sex Differences in Pain Response in a Rodent Model" in collaboration with Dr. Heather Bradshaw, Assistant Professor, Dept. of Psychological and Brain Sciences, Indiana University Bloomington.

PUBLIC OUTREACH

2003 Guest lecturer, Southern Arizona Health Borders Program
Sunnyside High School, Tucson, AZ
2000-2004 Demonstrator, Brain Awareness Week, Univ. Arizona
2001-2002 Host, middle school students visit to graduate research laboratory
2000 Guest lecturer, Pistor Middle School, Tucson, AZ (laboratory exercises)

SERVICE

2011 Reviewer, Journal of Experimental Biology
2010 Invited External Reviewer, Academic Program Review Committee for the Univ. Arizona Ph.D. Program in Neuroscience
1999-2000 Student Representative, Graduate Admissions and Recruitment Committee, Univ. Arizona

PROFESSIONAL SOCIETIES

2002-Present Member, Society for Neuroscience