

JULIE E. MILLER, PHD

Assistant Professor, Depts. of Neuroscience and Speech, Language and Hearing Sciences
School of Mind, Brain & Behavior, University of Arizona
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EDUCATION

- 1999-2005 Ph.D. Neuroscience, University of 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”

EMPLOYMENT & RESEARCH EXPERIENCE

- 2014-** **Assistant Professor tenure-track, University of Arizona, Tucson**
- 2011-2013 Assistant Researcher, University of California Los Angeles (UCLA)
- 2013 Summer writing tutor, Amgen Summer Scholars Program for Undergraduate Student Research at UCLA
- 2005-2011 Postdoctoral Training, UCLA
Mentor: Stephanie A. White, Ph.D., Professor of Integrative Biology & Physiology
Research: neurogenetics underlying normal and abnormal vocal behavior
- 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 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

FUNDED GRANTS

Internal & Foundation

1. University of Arizona Core Facilities Pilot Grant, 2019-2020, “Immunohistochemical Protein Detection in the Finch Brain: Relevance to Vocal Communication.” (Direct costs-\$9,075 for one year), Role: Principal Investigator (no salary support)
2. University of Arizona internal Accelerate for Success Grant, 2018-2019, “Identifying Gene Targets for Progressive Speech Deficits in Parkinson’s Disease.” (Direct costs-\$100,000, 1 year), Role: Principal Investigator (no salary support), Collaborators: UA faculty Lalitha Madhavan (Center for Innovation in Brain Science-UA), Fiona McCarthy (Animal and Comparative Biomedical Sciences-UA), Beate Peter (College of Health Solutions-ASU)
3. University of Arizona internal Faculty Seed Grant, 2014-2015, “A Role For Synaptotagmin IV in Birdsong and Human Speech?” (Direct costs-\$10,000, 1 year), Role: Principal Investigator (no salary support), Note: This seed grant extended upon the studies conducted in the NIH R03 award.
4. Private Foundation: Parkinson’s and Movement Disorder Foundation (PMDF) to University of Arizona, 2014-2015, “How Dopamine Loss Contributes to Speech Deficits in Parkinson’s Disease.” (Direct costs-\$10,000, 1 year) Role: Principal Investigator (no salary support)

Federal

1. NIH NINDS R03 Grant #NS078511, 2012-2014. “Synaptotagmin 4: Role in Vocal Motor Function and Parkinson’s Disease.” (Direct + indirect costs: \$154,034, 2 years), University of California-Los Angeles, Role: Principal Investigator This grant supported supplies and salary for my Master’s student to finish the project at my former institution, UCLA, during my first year as faculty at the University of Arizona and facilitate publication of Miller et al. 2015.
2. NIH R21 #DC016135, 2017-2019, “Communication Dysfunction in Parkinson disease: integrated genetic and protein expression analysis of neural pathways to identify treatment targets.” (Direct + indirect costs- \$759,000) P.I.: Cindi Nelson, Role: Consultant, no person months

FEDERAL AND STATE GRANTS PENDING (AT CURRENT RANK)

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| 2020 (Feb) | NIH R21 #AG070187-01, Title: “Vocalizations and the Aging Brain.” Role: Principal Investigator (Direct + indirect costs-\$425,125 for two years), Role: Principal Investigator, 1 summer month, Co-Investigator: Robin Samlan (SLHS, UA), Consultants: Art Riegel (Pharmacology, UA), Beate Peter (College of Health Solutions, Arizona State University), Michelle Ciucci (Surgery and Communication Sciences & Disorders, University of Wisconsin-Madison) |
| 2020 (Feb) | Arizona Alzheimer’s Consortium Core Center Pilot Grant, Title: “Neurogenetics of Aging Vocalizations.” (Direct + indirect costs-\$46,050 for one year) Role: Principal Investigator, 0.25 summer months, Consultants: Robin Samlan (SLHS, UA) and Beate Peter (College of Health Solutions, Arizona State University) |
| 2020 (Mar) | American Parkinson Disease Association Research Grant, Title: “Alpha-synuclein Neuropathology in Vocal Production Deficits in Parkinson’s Disease.” (Direct costs only-\$75,000 for one year), Role: Principal Investigator, 0.5 summer months |

HONORS, AWARDS, FELLOWSHIPS

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| 2018 | Nominee, UA Women’s Volleyball Faculty Appreciation night |
| 2018 | Invited Participant, Lessons for Success grant workshop sponsored by the American Speech Hearing Association and NIDCD, NIH |
| 2017 | Excellence in Undergraduate Mentoring Award, Honors College, University of Arizona |

- 2017 Inducted, Nu Rho Psi Honor Society, Arizona chapter for Neuroscience
 2016 Profiled in University News, 'UA News' "Birdsong Could Offer Clues to Human Speech Disorders."
 2015 Selected as the University of Arizona institutional nominee for the Brain Research Foundation Fay/Frank Seed Grant Application
 2014 Selected for Profile in Arizona Daily Star Newspaper, Science Section 'UA Scientists'
 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

INVITED TALKS

- 2019 (Aug) Arizona Senior Academy Village, "What Birdsong Can Teach Us About How We Communicate."
 2019 & 2017 (Apr) University of Arizona, "Neural Circuits for Behavior, from Development through Adulthood."
 Research Seminar, BIOC395A, Minority Biomedical Research Colloquium class
 2019 (Feb) University of Arizona, College of Science, Science Café Public Series, "What Birdsong Can Teach Us About How We Communicate."
 2019 (Jan) Arizona Science National Public Interview, episode 163. "How Birdsong Can Help Us Understand Human Speech." <https://radio.azpm.org/p/radio-azscience/2019/1/10/144130-episode-163-how-birdsong-can-help-us-understand-human-speech/>
 2018 (Nov) University of Arizona, Neuroscience Ph.D. Program Datablitz, "Voice, Aging and Parkinson's Disease."
 2017 (Nov) University of Arizona, Neurology Department Datablitz, "Neuropathological Mechanisms Driving Speech Problems in Parkinson's Disease."
 2017 (June) The Benton Symposium, Wellesley College, "Neural Circuits for Vocal Behavior...from development through adulthood."
 2016 (Dec) Dept. of Speech and Hearing Sciences, Arizona State University, "Neuromolecular Mechanisms for Speech Motor Control."
 2016 (Sept) University of Arizona Speech, Language and Hearing Sciences Colloquium Series, "Neuromolecular Mechanisms for Speech Motor Control."
 2016 (Aug) Southwest Brain, Cognition and Vocal Behavior Meeting, "Molecular Substrates for Vocal Plasticity in the Zebra Finch."
 2016 (May) University of Arizona Health Sciences Center Neurology Journal Club
 2016 (March) University of Arizona Cognitive Science Seminar Series, "The Role of the Basal Ganglia in Neural Control of Speech (and Language)."
 2014 (May) University of Arizona SLHS Colloquium Series
 2014 (May) University Animal Care & AALAS meeting. "The Songbird Model: A Window into Understanding Neural & Peripheral Mechanisms Supporting Voice and Speech."
 2014 (Feb) University of Arizona Undergraduate Biology Program 'Conversations with Faculty' series
 2014 (Jan) Neuroscience Data Blitz, Ph.D. Program in Neuroscience, Tucson Botanical Gardens
 2013 American Speech-Language-Hearing Association Conference, Chicago, IL
 "The Songbird Model: A Window into Understanding Neural and Peripheral Mechanisms Supporting Voice and Speech."
 2011 Co-Chair & Speaker, American Speech-Language-Hearing 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:"

PUBLICATIONS

1. *Badwal, A., Borgstrom, M., Samlan, R.A., and **Miller, J.E.** (2020). Middle Age: a Key Timepoint for Changes in Birdsong and Human Voice. *Behavioral Neuroscience*. doi: 10.1037/bne0000363. [Epub ahead of print]
PMID: 32162938. *undergraduate student author
2. *Badwal, A., *Poertner, J., Samlan, R. A., and **Miller, J. E.** (2018). Common Terminology and Acoustic Measures for Human Voice and Birdsong. *Journal of Speech, Language, and Hearing Research*. doi: 10.1044/2018_JSLHR-S-18-0218. PMID: 30540871 PMID: 30540871 *undergraduate student authors
3. L.Y. *So, S.J. Munger and **J.E. Miller.** (2018) Social Context-Dependent Singing Alters Molecular Markers of Dopaminergic and Glutamatergic Signaling in Finch Basal Ganglia Area X. *Behav Brain Res*. doi: 10.1016/j.bbr.2018.12.004 PMID: 30521933 *graduate student author
4. ***Miller J.E.**, *Hafzalla G.W., *Burkett Z.D, Fox C.M. and S.A. White (2015) Reduced Vocal Variability in a Zebra Finch model of Dopamine Depletion: Implications for Parkinson disease. *Physiol Rep*, 3 (11), 2015, e12599, doi: 10.14814/phy2.12599; *equal authorship, PMID: 26564062 *graduate student authors
5. *Grant L.M., *F.R. Richter, **J.E. Miller**, S.A. White, C.M. Fox, C. Zhu, M.F. Chesselet and M.R. Ciucci (2014) Vocalization Deficits in Mice Over-expressing Alpha-synuclein, a Model of Pre-manifest Parkinson’s disease. *Behav Neurosci* 128: 110-121.*equal authorship; PMID: 24773432.
6. *Hilliard A.T., **J.E. Miller**, S. Horvath, and S.A. White (2012) Distinct Neurogenomic States in Basal Ganglia Subregions Relate Differently to Singing Behavior in Songbirds. *PloS Comput Biol* Nov 8 (11):e1002773. PMID: 23144607 *graduate student author
7. *Hilliard A.T., **J.E. Miller***, E.R. *Fraleay, 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 *equal authorship, *graduate student authors
8. **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; 5(1): e8592. PMID: 20066039 *graduate student author
9. **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 * graduate student author, **undergraduate author
10. **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
11. **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
12. 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
13. 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
14. 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

National/International Conference, Poster Presentations at faculty rank

Miller, J.E., Hafzalla, G., and White, S.A. (August, 2014). Consequences of Experimental Dopamine Depletion in the Songbird Basal Ganglia. Presented at the International Congress on Neuroethology, Sapporo, Japan.

Munger, S.J., **Medina, C.A., **So, L.Y., *Church, K.B., *Ritter, J.L. and Miller, J.E. (June, 2016). Role of Alpha-Synuclein in Area X of Adult Male Zebra Finches: implications for acoustic variability in birdsong. presented at the Society for Neuroscience meeting (SFN), San Diego, CA. *undergraduate; **graduate student

**So, L.Y., Munger, S.J. and Miller, J.E. (June, 2016). Behavioral regulation of dopamine biomarkers in Area X of adult male zebra finch songbirds. presented at the Society for Neuroscience meeting (SFN), San Diego, CA. **graduate student

*Badwal, A., **Medina, C.A., Munger, S.J., and Miller, J.E. (August, 2019). An Alpha-synuclein Overexpression Model of Vocal Symptoms in Parkinson's Disease. Presented at the Microscopy Society of America meeting, Portland, OR. published in conference proceedings as doi:10.1017/S1431927619007025, in *Microsc. Microanal.* 25 (Suppl 2), 2019. *undergraduate; **graduate student

*Ibrahim, N., *Vargas, E., **Medina, C.A., Munger, S., and Miller, J.E. (November, 2019). Effects of Alpha-synuclein Overexpression on Time Spent Singing in a Zebra Finch Model of Parkinson's Disease. Annual Biomedical Research Conference for Minority Students (ABRCMS) in Anaheim, CA. *undergraduate; **graduate student

University of Arizona undergraduate poster sessions at faculty rank

Badwal, A., Poertner, J., Samlan, R., and Miller, J. Birdsong as a Model for Aging Voice (January 2017; May 2019). UBRP Conference; NSCS Senior Thesis Poster Session.

Dicenso, S.M, So, L.Y., and Miller, J.E. (August 2018). Zebra Finch Model of Parkinson's Disease Voice Deficits. Border Latino & American Indian Summer Exposure to Research (BLAISER) Program.

*Ibrahim, N., **Medina, C., Munger, S., and Miller, J. (August 2019). Effects of Alpha-synuclein Overexpression on Song Timing in a Zebra Finch Model of Parkinson's Disease. Maximizing Access to Research Careers (MARC) Program in UA Summer Poster Session and UBRP Winter 2020 Poster Conference. *undergraduate, **graduate student

*Vargas, E., **Medina, C.A., Munger, S.J., and Miller, J.E. (January 2020). Alpha-synuclein Overexpression Leads to Reduced Singing in a Zebra Finch Model of Parkinson's Disease. UBRP Winter Poster Conference. *undergraduate, **graduate student

Postdoctoral/Assistant Researcher Rank at UCLA

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.

Graduate Studies and Post-Baccalaureate

1. **Miller J.E.** and R.B. Levine. Steroid Hormone Activation of Locomotion in the Insect *Manduca sexta*. Univ. Arizona, **Miller, J.E.**

SFN, 2003.

2. 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.

Undergraduate Studies

1. 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.
2. Harzsch S., **J. Miller**, J. Benton and B. Beltz. Neurogenesis in the Developing Lobster CNS. *SFN*, 1997.
3. 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.

LABORATORY MENTORING, UNIVERSITY OF ARIZONA

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| Fall 2019- | Undergraduate honors student Joanna Eckhardt, major in Neuroscience & Cognitive Science; award recipient College of Science Galileo Scholarship, 2019 |
| Summer 2019- | Undergraduate honors student, Naya Ibrahim, MARC student, major in Neuroscience & Cognitive Science |
| Summer 2019 | Kelly Hsu, Visiting Undergraduate student from Wellesley College |
| Fall 2018- | Undergraduate honors student, Eddie Vargas, major in Neuroscience & Cognitive Science, Undergraduate Biology Research Program (UBRP) summer funding 2019 and UA College of Medicine BLAISER summer program funding 2020; award recipient College of Science Galileo Scholarship, 2019 |
| Fall 2017-Summer 2019 | Undergraduate student, Stefano DiCenso, major in Neuroscience & Cognitive Science 2018: Summer Research Fellowship from University of Arizona College of Medicine, Border Latino and American Indian Summer Exposure to Research Program (BLAISER) Current status: entering Case Western Medical School, summer of 2020 |
| Summer 2016-Summer 2019 | Undergraduate honors student, Areen Badwal, major in Neuroscience & Cognitive Science,
2016: Summer Research Fellowship from the Neuroscience & Cognitive Science Undergraduate Program
2017: Inducted into Nu Rho Psi, Neuroscience Honor Society
2017: Undergraduate Biology Research Program (UBRP) summer funding
2017, 2019: College of Science Galileo Scholarship for Academic and Research Achievements
2018: Research Scholarship from the Microscopy Society of America
2019: Senior Honors Thesis Completed
Current status: entering Creighton University Medical School, summer of 2020 |
| Fall 2014-2016 | Undergraduate Research, Joshua Ritter, major in Speech & Hearing Sciences
Current status; production assistant, Burbank, CA |
| Fall 2015-Spring 2017 | Undergraduate Kendall Church, major in Speech and Hearing Sciences
Current status: speech-language pathologist in Phoenix, AZ |
| Summer 2015 | Undergraduate Melissa Gottschlich, co-mentored with Dr. Robin Samlan |
| Spring 2016- | Cesar Medina, Ph.D. student, GIDP Program in Neuroscience |

Awards in 2016: Neuroscience Ph.D. Program Travel Award and Graduate and Professional Student's Council Travel Award for the Society for Neuroscience
 2017: National Science Foundation Graduate Fellowship (NSF-GRF) for three yrs
 2018 STEM Diversity Award
 2020 Outstanding Graduate Student Mentor, UA-wide Undergraduate Biology Research Program

Spring 2015-Summer 2020 Lisa So, Ph.D. student, GIDP Program in Neuroscience
 Awards in 2016: Neuroscience Ph.D. Program Travel Award and University of Arizona Herbert Carter Travel Award for the Society for Neuroscience meeting
 Award in 2020: Marshall Foundation Dissertation Fellowship

Spring 2015 Oscar Mendez, Neuroscience Ph.D. student, Lab Rotation

Fall 2014 Cecilia Brown, Neuroscience Ph.D. student, Lab Rotation

Other Undergraduate Mentoring & classroom teaching assistants:

Fall 2015-Spring 2019 Undergraduate honors student Amaris Tapia, ASEMS Program
 Spring 2020 Preceptors for NSCS 200: Amelia Proudfoot, Joanna Eckhardt, Curtis Josephs, Noah Close, Mallory Klinger, Jordan Riffer, Laasya Vallabhaneni; Teaching Assistant: Daniel Horschler
 Spring 2019 Preceptor for NSCS 200: Nadia De Stefano; Teaching Assistants: Lisa So, Matthew Schmidt, Austin Flohrschutz
 Spring 2018 Preceptors for NSCS 200: Tiffany Cho, Benjamin Meyer; Teaching Assistants: Lisa So, J.P. Wiegand
 Spring 2017 Teaching Assistants for NSCS 200: Lisa So, J.P. Wiegand, Oscar Mendez
 Spring 2016 Teaching Assistants for NSCS 200: Samer Masri, Katie Newman-Smith, Stacey Pest
 Spring 2015 Preceptors for SLHS 261: Angelica McCarron, Lupita De Los Santos, Lauren Milovich, Katie Russell, Christina Logan, Julia Harris, Megan Clarke; Teaching Assistants: Sam Deitering, Sam Ricks, Sarah Olson, Jacklyn Hellman
 Spring 2014 Preceptors for SLHS 261: Jaclyn Bendroff, Alyssa Heeman, Jaclyn Tom, Teaching Assistants: Marissa Kryger, Matthew Ricca, Sam Deitering, Sam Ricks

TEACHING & PROFESSIONAL DEVELOPMENT, UNIVERSITY OF ARIZONA

Fa 2017, Spr 2019, 2020 Guest lecturer, The World of Sound: Speech, Music and mp3s, SLHS 263, Gen Ed undergraduate course "Birdsong & Relevance to Human Vocal Learning and Production," for Dept. of Speech, Language and Hearing Science
 Spring 2017 Guest lecturer, Speech Perception Graduate Class, SLHS 568, for Dept. of Speech, Language and Hearing Science
 Fall 2016 Guest instructor (2 weeks), NROS 412: Molecular Mechanisms of Learning and Memory
 Spring 2016-on-going Co-Instructor, NSCS 200: Fundamentals of Neuroscience and Cognitive Science
 Spring 2014, 2015 Primary Instructor, SLHS 261, Anatomy and Physiology of the Speech Mechanism
 Spring 2015 Member, STEM Faculty Learning Community
 2002 Graduate Teaching Associate, Neural Systems and Behavior, Marine Biological Laboratory, Woods Hole, MA
 2000 Graduate Teaching Associate, Introduction to Neurobiology

TEACHING & MENTORING, UCLA

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

Undergraduate:

- 2010-2013 Debora Lee, Ecology and Evolutionary Biology
Two-time Fellowship Recipient, Junior Undergraduate Research Scholars Program,
College of Letters and Science
Current status: medical student, UC Irvine, NIH research fellow
- 2010-2011 Venus Vakhshori, Neuroscience
Award Recipient Undergraduate Neuroscience Poster Day, 2011
Current status: medical resident, University of Southern California (USC)
- 2008 Ryan Dosumu-Johnson, Minority Access to Research Careers student
co-author on Miller et al. *Journal of Neurophysiology*, 2008
Current status: MD/Ph.D. student, Harvard Medical School
- 2005-2007 Carol's Montes, CARE scholar
Current status: medical student, UC Davis

Graduate (co-authors on publications):

- 2012-2014 George Hafzalla, Master's Degree Candidate in Physiological Science
co-author on Miller et al., *Physiol Rep*, 2015, Current status: medical student, Wake Forest University
- 2010-2012 Austin Hilliard, Ph.D., Neuroscience, co-author on Hilliard, Miller et al. *Neuron*, *PloS Comp Biol*, 2012
Current status: Veteran's Administration, CA
- 2010-2011 Elizabeth Fraley, Ph.D. Candidate in Molecular, Cellular, Integrative Physiology Program
co-author on Hilliard, Miller et al. *Neuron*, 2012; Current status: Cirque du Soleil company
- 2008-2010 Zachary D. Burkett, Master's Degree Candidate in Physiological Science
co-author on Miller et al., *Physiological Reports*, 2015; Current status: Bio-Rad, Inc.
- 2007-2008 Mike C. Condro, Ph.D., Molecular, Cellular, Integrative Physiology Program
co-author on Miller et al., *J Neurophysiol*, 2008
Current status: Research staff, UCLA

INTERNAL SERVICE

- 2020- Member, Dean's Five Year Review Committee for Neuroscience Dept Chair
- 2019- Member, Neuroscience and Cognitive Science Executive Steering Committee
- 2019- Member, Neuroscience GIDP Curriculum Committee
- 2014-2019 Member, Neuroscience Department faculty search committee
- 2020- Comprehensive Exam and Dissertation Committee Member, Physiology Ph.D. student Kelsey Bernard
- 2018- Comprehensive Exam and Dissertation Committee Member, EEB Ph.D. student Katie Chenard
- 2018 (Fall) Reviewer, RDS University Equipment Grants
- 2018 (Fall)-2020 Dissertation Committee Member, Audiology Graduate Student Kayla Ichiba
- 2017 (Mar) Reviewer, University Faculty Seed Grants
- 2016-2017 Member, Curriculum Committee, Undergraduate Program in Neuroscience and Cognitive Science
- 2016 Member, APR Self-Study Committee for Department and NSCS Program
- 2016- Dissertation Committee Member for Oscar Mendez, Neuroscience Ph.D. student
- 2016 Comprehensive Exam Committee for Samer Masri, Neuroscience Ph.D. student
- Fa 2015- Co-organizer of Speech, Language and Hearing Sciences Colloquium Series
- Fall 2014-Jan 2015 Admissions Committee, Ph.D. Program in Neuroscience
- 2014-on-going Speaker Selection Committee, GIDP Neuroscience program
- 2014- Dissertation Committee Member for Judith Tello, Ph.D. candidate in Neuroscience
- 2014-2015 Dissertation Committee Member for Milos Babic, Ph.D. candidate in Neuroscience
- 1999-2000 Student Representative, Graduate Admissions and Recruitment Committee, University of Arizona

EXTERNAL SERVICE

- 2020 Reviewer, *Zoology*
- 2019 Reviewer, *Nature Communications*, *PloS ONE*, *Frontiers in Neuroscience*
- 2018,2019 Reviewer, *Neuroscience Letters*
- 2014 Reviewer, *Development Neurobiology*
- 2013 Reviewer, *European Journal of Neuroscience*
- 2011 Reviewer, *Journal of Experimental Biology*

2010 Invited External Reviewer, Academic Program Review Committee for the University of Arizona
Ph.D. GIDP Program in Neuroscience

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)

PROFESSIONAL SOCIETIES

2002- Member, Society for Neuroscience
2014- Member, American Speech-Language-Hearing Association (ASHA)