

Drew Schreiner Ph.D.

Duke University | drew (dot) schreiner (at) duke (dot) edu

EDUCATION

University of Colorado at Boulder

2009 - 2013

B.A. Molecular, Cellular, and Developmental Biology

B.A. Psychology with focus in Neuroscience, *magna cum laude*

University of California San Diego

2015 - 2021

Ph.D. Experimental Psychology

- Cognitive and Behavioral Neuroscience Specialization

RESEARCH EXPERIENCE

Postdoctoral Scholar

2021 - Present

Duke University. Advisor: Dr. Richard Mooney

Graduate Student Researcher

2015 - 2021

University of California San Diego. Advisor: Dr. Christina Gremel

Laboratory Technician

2015

ScienceCare, Aurora, Colorado

Professional Research Assistant

2013 - 2014

University of Colorado at Boulder. Advisor: Dr. Ryan Bachtell

Undergraduate Research Assistant

2011 - 2013

University of Colorado at Boulder. Advisor: Dr. Ryan Bachtell

GRANTS AND FELLOWSHIPS

NIH K99/R00 Pathway to Independence Award (K99 NS144525) **\$966,000**

2025 - 2030

NIH F32 NRSA BRAIN Initiative Postdoctoral Fellowship (F32 MH132152) **\$236,000**

2023 - 2025

NIH F31 NRSA Predoctoral Fellowship (F31 AA027439) **\$75,000**

2019 - 2021

Society for Neuroscience Chapter Grant Award for NeuwriteSD (3 awards, **\$1500** each)

2018 - 2020

Howard Hughes Medical Institute Biomedical Sciences Individual Grant **\$2400**

2012 - 2013

Undergraduate Research Opportunity Program Individual Grant **\$2400**

2012

Undergraduate Research Opportunity Program Assistantship Grant **\$600**

2011 - 2012

AWARDS

Society for Neuroscience Trainee Professional Development Award

2025

Best Postdoc Talk, Duke Neurobiology Retreat

2023

NIH Outstanding Scholar in Neuroscience Award

2023

Society for Neuroscience Trainee Professional Development Award

2022

Research Society on Alcoholism Enoch Gordis Award Finalist

2021

Research Society on Alcoholism Student Merit Award

2021

Cosyne New Attendees Travel Grant

2020

UC San Diego Graduate Student Administration Travel Grant

2020

Research Society on Alcoholism Student Merit Award

2019

Society for Neuroscience Trainee Professional Development Award

2018

Research Society on Alcoholism Student Merit Award

2017

Magna cum laude honors in Psychology/Neuroscience

2013

Multiple Dean's Lists

2009 - 2013

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PEER REVIEWED PUBLICATIONS

Schreiner, D.C., Brudner, S.N., Li, A., Pearson, J.M., Mooney, R.D. (2026). A synaptic locus of song learning. *Nature*. <https://doi.org/10.1038/s41586-026-10510-x>

Qi, J., **Schreiner, D.C.**, Martinez, M., Pearson, J.M., Mooney, R.D. (2025). Dual neuromodulatory dynamics underlie birdsong learning. *Nature*, 641(8063), 690-698. <https://doi.org/10.1038/s41586-025-08694-9>

Schreiner, D.C., Wright, A., Baltz, E.T., Wang, T., Cazares, C., Gremel, C.M. (2023). Chronic alcohol exposure alters action control via hyperactive premotor corticostriatal activity. *Cell Reports*, 42(7). <https://doi.org/10.1016/j.celrep.2023.112675>

Cazares, C., **Schreiner, D.C.**, Valencia, M.L., Gremel, C.M. (2022). Orbitofrontal cortex populations are differentially recruited to support actions. *Current Biology*, 32(21), 4676-4687.e5. <https://doi.org/10.1016/j.cub.2022.09.022>

Schreiner, D.C., Cazares, C., Renteria, R., Gremel, C.M. (2022). Information normally considered task-irrelevant drives decision-making and affects premotor circuit recruitment. *Nature Communications*, 13(1), 2134. <https://doi.org/10.1038/s41467-022-29807-2>

Schreiner, D.C., Yalcinbas, E.A., Gremel, C.M. (2021). A push for examining subjective experience in value-based decision-making. *Current Opinion in Behavioral Sciences*, 41, 45-49. <https://doi.org/10.1016/j.cobeha.2021.03.020>

Cazares, C., **Schreiner, D.C.**, Gremel, C.M. (2021). Different effects of alcohol exposure on action and outcome related orbitofrontal cortex activity. *eNeuro*. <https://doi.org/10.1523/ENEURO.0052-21.2021>

Renteria, R., Cazares, C., Baltz, E.T., **Schreiner, D.C.**, Yalcinbas, E.A., Steinkellner, T., Hnasko, T.S., Gremel, C.M. (2021). Mechanisms for differential recruitment of orbitostriatal transmission during actions and outcomes following chronic alcohol exposure. *eLife*, 10, e67065. <https://doi.org/10.7554/eLife.67065>

Schreiner, D.C., Renteria, R., Gremel, C.M. (2019). Fractionating the all or none definition of goal-directed and habitual decision-making. *Journal of Neuroscience Research*, 98(6), 998-1006. <https://doi.org/10.1002/jnr.24545>

Schreiner, D.C., & Gremel, C.M. (2018). Orbital frontal cortex projections to secondary motor cortex mediate exploitation of learned rules. *Scientific Reports*, 8(1). <https://doi.org/10.1038/s41598-018-29285-x>

*Kavanagh, K.A., ***Schreiner, D.C.**, Levis, S.C., O'Neill, C.E., Bachtell, R.K. (2015). Role of adenosine receptor subtypes in methamphetamine reward and reinforcement. *Neuropharmacology*, 89, 265–273. <https://doi.org/10.1016/j.neuropharm.2014.09.030> ***Equal Contribution**

O'Neill, C.E., Levis, S.C., **Schreiner, D.C.**, Amat, J., Maier, S.F., Bachtell, R.K. (2015). Effects of Adolescent Caffeine Consumption on Cocaine Sensitivity. *Neuropsychopharmacology*, 40(4), 813–821. <https://doi.org/10.1038/npp.2014.278>

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INVITED PRESENTATIONS

Dendrites: Molecules, Structure and Function Gordon Conference	March 2027
Emerging Scientist Seminar, Max Planck Institute for Biological Intelligence	Sept. 2026
Neural Mechanisms of Acoustic Communication Gordon Conference	June 2026
Invited Postdoc Seminar, Mount Sinai Neuroscience Dept.	April 2026
Invited GPCR Postdoc Seminar, Vanderbilt University Pharmacology Dept.	March 2026
Future of Neuroethology Webinar, International Society for Neuroethology	March 2026
Penn State University, Dept. of Biology	March 2026
UW-Madison, Dept. of Integrative Biology	Feb. 2026
University of Oxford, Dept. of Biology	Feb. 2026
Basal Ganglia Gordon Research Conference	Feb. 2026
Basal Ganglia Gordon Research Seminar	Feb. 2026
Brain Talks on the Isthmus, UW-Madison Psychology Dept.	Dec. 2025
Max Planck Institute for Biological Cybernetics Symposium	Nov. 2025
University of Southern Denmark Dept. of Biology	June 2025
Virtual Songbird Satellite Symposium	April 2025
Swedish Basal Ganglia Society Annual Meeting	Dec. 2024
NIH Outstanding Scholar in Neuroscience Symposium Presentation	Nov. 2023
Duke Neurobiology Annual Retreat Postdoctoral Presentation	Sept. 2023
Research Society on Alcoholism Enoch Gordis Award Presentation	June 2021

POSTER ABSTRACTS

Schreiner, D.C., Brudner, S.N., Li, A., Pearson, J.M., Mooney, R.D. (2026). A synaptic locus of song learning. Gordon Neural Mech. of Acoustic Communication.

Schreiner, D.C., Brudner, S.N., Li, A., Pearson, J.M., Mooney, R.D. (2026). A corticostriatal locus of birdsong learning. Gordon Basal Ganglia.

Schreiner, D.C., Brudner, S.N., Li, A., Pearson, J.M., Mooney, R.D. (2025). A synaptic locus of song learning. Soc. for Neuro. Abst. 174.23.

Schreiner, D.C., Brudner, S.N., Li, A., Pearson, J.M., Mooney, R.D. (2025). A synaptic locus of song learning. Gordon Neuroethology.

Schreiner, D.C., Brudner, S.N., Pearson, J.M., Mooney, R.D. (2025). A synaptic locus of song learning. Janelia Grounding Cognition in Mechanistic Insight conference.

O’Gorman, E., **Schreiner, D.C.**, Mooney, R.D., Pearson, J.M. (2025). Hacking vocal learning with deep learning: flexible real-time perturbation of zebra finch song. Computational and Systems Neuroscience.

Schreiner, D.C., Brudner, S.N., Pearson, J.M., Mooney, R.D. (2024). A synaptic locus of song learning. Annual BRAIN Initiative Conference. Abst. 613.

Schreiner, D.C., Brudner, S.N., Pearson, J.M., Mooney, R.D. (2024). A synaptic locus of song learning. Gordon Neural Mech. of Acoustic Communication. Abst. 51.

O’Gorman, E., **Schreiner, D.C.**, Mooney, R.D., Pearson, J.M. (2024). Hacking vocal learning with deep learning: flexible real-time perturbation of zebra finch song. Gordon Neural Mech. of Acoustic Communication.

Schreiner, D.C., Brudner, S.N., Pearson, J.M., Mooney, R.D. (2024). A synaptic locus of song learning. Gordon Basal Ganglia. Abst. 32.

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- Schreiner, D.C.**, Brudner, S.N., Pearson, J.M., Mooney, R.D. (2024). A synaptic locus of song learning. Computational and Systems Neuroscience. Abst. 2-070.
- Schreiner, D.C.**, Brudner, S.N., Pearson, J.M., Mooney, R.D. (2023). Basal ganglia-dependent expression of recent song learning in the juvenile finch. Computational and Systems Neuroscience. Abst. 2-003.
- Schreiner, D.C.**, Brudner, S.N., Pearson, J.M., Mooney, R.D. (2022). Expression of recent learning requires basal ganglia activity during juvenile song copying. Soc. for Neuro. Abst. 135.24.
- Schreiner, D.C.**, Renteria, R., Gremel, C.M. (2021). Chronic ethanol exposure increases premotor cortex activity and its control over behavioral flexibility. Res. Soc. on Alcoholism Annual Meeting. Abst. 553.
- Schreiner, D.C.**, Gremel, C.M. (2021). Subjective experience carried by premotor output to striatum supports decision-making. Computational and Systems Neuroscience. Abst. 2-032.
- Schreiner, D.C.**, Gremel, C.M. (2020). Premotor output to striatum carries action history information to support ongoing decision-making. Computational and Systems Neuroscience. Abst. 1-086.
- Schreiner, D.C.**, Renteria, R., Gremel, C.M. (2019). Aberrantly persistent reward seeking following alcohol dependence and its premotor cortical determinants. Res. Soc. on Alcoholism Annual Meeting. Abst. 269.
- Schreiner, D.C.**, Gremel, C.M. (2018). The role of the secondary motor cortex in feedback integration to guide decision-making. Soc. for Neuro. Abst. 507.09.
- Rossa, M., Lovelett, J., **Schreiner, D.C.**, Spencer, B., Kirchgessner, M. (2018). NeuwriteSD: Building skills in science communication through writing. Soc. for Neuro. Abst. 026.19SU.
- Cazares, C., **Schreiner, D.C.**, Gremel, C.M. (2018). Ethanol modulation of orbitofrontal cortex activity during goal-directed action. Res. Soc. on Alcoholism Annual Meeting.
- Renteria, R., Baltz, E.T., **Schreiner, D.C.**, Gremel, C.M. (2018). Chronic ethanol exposure alters dorsomedial striatal D1 receptor function disrupting goal-directed actions. Res. Soc. on Alcoholism Annual Meeting.
- Schreiner, D.C.**, Perez, J., and Gremel, C.M. (2018). The contribution of rodent secondary motor cortex to feedback guided actions. Annual Winter Conference on Brain Research.
- Perez, J.*, **Schreiner, D.C.**, & Gremel, C.M. (2017). Behavioral feedback in mice. Society for Advancement of Chicanos and Native Americans in Science, Salt Lake City, Utah.
**Perez, J. was a mentored undergraduate*
- Schreiner, D.C.**, Renteria, R., Baltz, E.T., Gremel, C.M. (2017). The effect of prior chronic intermittent ethanol and withdrawal on action generalization. Res. Soc. on Alcoholism Annual Meeting. Abst. 054.
- Schreiner, D.C.**, Gremel, C.M. (2016). Role of mouse premotor cortex in action generalization and goal-directed behavior. Soc. for Neuro. Abst. 7805.
- Haynes, N., O'Neill, C.E., Levis, S.C., **Schreiner, D.**, Stafford, J., Bachtell, R.K. (2015). Subpopulations of adenosine A2A receptors in the nucleus accumbens play different roles in cocaine seeking. Soc. for Neuro Abst. 51.15.
- O'Neill, C.E., Levis, S.C., **Schreiner, D.**, Bachtell, R.K. (2014). Blockade of presynaptic and postsynaptic adenosine A2A receptors produces bi-directional effects on cocaine seeking. Neuropsychopharmacology.

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Schreiner, D.C., Bachtell, R.K. (2013). Assessing cocaine addiction vulnerability and neurobiological correlates within the nigrostriatal pathway using a novel model of Dopamine D2 autoreceptor sensitivity. Howard Hughes Medical Institute Biomedical Sciences Grant Poster Session.

TEACHING

Co-instructor, Duke University

Navigating the Postdoctoral Pathway

Summer 2024

Guest Lecturer, Duke University

Concepts in Neurobiology II, Learning and Memory: Birdsong

Spring 2024, 2025

Teaching Assistant, University of California San Diego

- All Teaching Assistant Positions included a guest lecture

Clinical Psychology

Spring 2020

Cognitive Neuroscience

Spring 2019

Criminology

Fall 2016, Fall 2017, Fall 2018

Behavior Modification

Winter 2018

Drugs and Behavior

Winter 2017

Impulse Control Disorders

Winter 2016

MENTORSHIP

As Postdoctoral Mentor

Undergraduates: Autumn Wetzel, Amanda Li

Graduate Students: Jiaxuan Qi, Shuoyi Li, Kate Kaplan

As Graduate Student Mentor

Undergraduates: Esra Elhendy, Ni "Jenny" Zhen, Dolly Mizner, Joselyn Perez

SCIENCE COMMUNICATION, OUTREACH, AND SERVICE

Volunteer, Brain Science Career Day for Historically Black College and University students

2024 - 2026

Co-Editor in Chief, Neuwrite San Diego (NeuwriteSD.org)

2019 - 2021

Steering Committee, Neuwrite San Diego

2015 - 2021

Graduate Application and Mentorship Program (GradAMP)

2020 - 2021

Organizing Committee for annual Communicating Science Conference San Diego

2015 - 2019

Organizing Committee for National Communicating Science Conference

2018 - 2019

Organizing Committee for Taste of Science/Pint of Science

2016 - 2019

REVIEWING

Cell Reports, *Current Biology*, *Science Advances*, *Current Opinion in Neurobiology*, *Cosyne*, Graduate Women in Science National Fellowship Program

PROFESSIONAL DEVELOPMENT

Neuromatch Computational Neuroscience Summer Course

Summer 2022

Introduction to College Teaching

Fall 2019

CURRENT PROFESSIONAL ORGANIZATIONS

International Society for Neuroethology

2021 - Present

Faculty for Undergraduate Neuroscience

2019 - Present

Society for Neuroscience

2015 - Present

OTHER ACHIEVEMENTS

Successfully thru-hiked the 2,185-mile Appalachian Trail from Georgia to Maine

2014

REFERENCES: On Request