Drew Schreiner, Ph.D.

drew.schreiner@duke.edu | drewschreiner.github.io | 720-371-3642

EDUCATION

University of California San Diego 2015 – 2021
Ph.D. Experimental Psychology; Cognitive and Behavioral Neuroscience Specialization

University of Colorado Boulder 2009 – 2013
B.A. Molecular, Cellular, and Developmental Biology
B.A. Psychology with focus in Neuroscience, *magna cum laude*

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
Science Care, 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) – $4,500 2018 – 2020
Howard Hughes Medical Institute, CU Undergraduate Biomedical Sciences Grant – $2,400 2012 – 2013
Undergraduate Research Opportunity Program Individual Grant – $2,400 2012
Undergraduate Research Opportunity Program Assistantship Grant – $600 2011 – 2012

AWARDS

STAT Wunderkind. *Award recognizing outstanding early-career researchers in science and medicine* 2026
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 Association 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
Dean's List 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, 655*(8124), 997–1005. 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), 112675. 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*, *8*(2), ENEURO.0052-21.2021. 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-nothing 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*, 10979. 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 SEMINARS AND ORAL PRESENTATIONS

Emerging Scientist Seminar, Max Planck Institute for Biological Intelligence	June 2027
Dendrites: Molecules, Structure and Function Gordon Conference	March 2027
NEUROYES Seminar, University of Rochester, Del Monte Institute for Neuroscience	Dec 2026
P-SPINE Philadelphia Neuroscience Postdoc Seminar. UPenn, Jefferson, Drexel, and Temple	Oct. 2026
NEURO-ROOT Seminar, University of Iowa, Neuroscience and Pharmacology	Oct. 2026
Duke Neurobiology Annual Retreat	Sept. 2026
University of Colorado Anschutz School of Medicine, Pharmacology	July 2026
Neural Mechanisms of Acoustic Communication Gordon Conference	June 2026
Invited Postdoc MSN Seminar, Mount Sinai, Neuroscience	April 2026
Invited GPCR Postdoc Seminar, Vanderbilt University, Pharmacology	March 2026
Future of Neuroethology Webinar, International Society for Neuroethology	March 2026
Penn State University, Biology	March 2026
University of Wisconsin–Madison, Integrative Biology	Feb. 2026
Basal Ganglia Gordon Conference	Feb. 2026
Basal Ganglia Gordon Seminar	Feb. 2026
University of Oxford, Biology	Feb. 2026
Brain Talks on the Isthmus, University of Wisconsin–Madison, Psychology	Dec. 2025
Max Planck Institute for Biological Cybernetics Symposium	Nov. 2025
Lake Conference on Neural Coding and Dynamics	Oct. 2025
University of Southern Denmark, Biology	June 2025
Virtual Songbird Satellite Symposium	April 2025
Swedish Basal Ganglia Society Annual Meeting	Dec. 2024
NIH Outstanding Scholar in Neuroscience Symposium	Nov. 2023
Duke Neurobiology Annual Retreat	Sept. 2023
Research Society on Alcoholism Enoch Gordis Award Presentation	June 2021

POSTER ABSTRACTS

Schreiner, D.C., Li, A., Mercer, A.A., Pearson, J.M., Mooney, R.D. (2026). From synaptic locus towards molecular mechanism of song learning. Soc. for Neuro. Abst. 6057.

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.

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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.

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., 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.

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. ACNP Annual Meeting.

O'Neill, C.E., Levis, S.C., **Schreiner, D.**, Bachtell, R.K. (2014). Opposing effects of pre- and postsynaptic adenosine A2A receptor blockade on cocaine seeking. Soc. for Neuro. Abst. 430.09.

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

Graduate Teaching, Duke University

Co-designed and co-instructed *Navigating the Postdoctoral Pathway* — Summer 2024

Guest Lecturer, *Concepts in Neurobiology II*, Learning and Memory: Birdsong — Spring 2024, 2025

Undergraduate Teaching, University of California San Diego

- 8 teaching assistant appointments
- Delivered at least one guest lecture in every appointment; 95% of 89 student evaluations recommended me as a TA; all faculty supervisors rated my performance "Excellent"

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

Research Mentor, Duke University – 5 trainees

Graduate students

Jiaxuan Qi (first author, *Nature*, 2025; now LSRF Postdoctoral Fellow, Witten Lab, Princeton University)
Shuoyi Li (current Ph.D. student)
Kate Kaplan (current Ph.D. student)

Undergraduates

Amanda Li (current undergraduate, Duke BME Pratt Research Fellow, co-author *Nature*, 2026)
Autumn Wetzel (subsequently Research Technician, Mooney Lab)

Research Mentor, UC San Diego – 4 undergraduate trainees

Joselyn Perez (subsequently post-baccalaureate researcher, IUPUI; Ph.D., University of Connecticut, 2026)
Ni "Jenny" Zhen (subsequently Lab Manager, University of Chicago; now at Stripe)
Dolly Mizner (subsequently trained in applied behavior analysis; now Board Certified Behavior Analyst)
Esra Elhendy

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SCIENCE COMMUNICATION, OUTREACH, AND SERVICE

Mentor, Brain Sciences Career Day for Historically Black Colleges and Universities 2024 – 2026
Reviewed CVs and conducted mock interviews for HBCU students pursuing graduate or medical school

Co-Editor-in-Chief, NeuWrite San Diego (NeuWriteSD.org) 2019 – 2021
Led publication of 91 public-facing neuroscience articles, including 3 authored personally; 168,000 views

Steering Committee, NeuWrite San Diego 2015 – 2021
Before becoming Co-Editor-in-Chief, helped lead publication of 187 articles, including 8 authored personally; 250,000 views; secured three Society for Neuroscience outreach grants ($4,500 total)

Mentor, Graduate Application and Mentorship Program 2020 – 2021
Mentored prospective graduate students through the application process

Organizing Committee, Communicating Science Conference San Diego 2015 – 2019
Regional conference that trained graduate students and postdocs in science communication

Organizing Committee, National Communicating Science Conference 2018 – 2019
National conference that trained graduate students and postdocs in science communication

Organizing Committee, Taste of Science/Pint of Science 2016 – 2019
Helped organize public science talks bringing researchers into community venues

REVIEWING

Ad hoc reviewer: *Cell Reports*, *Current Biology, Science Advances, Current Opinion in Neurobiology, Nature Communications*, Cosyne, Graduate Women in Science National Fellowship Program

PROFESSIONAL DEVELOPMENT

Neuromatch Computational Neuroscience Summer Course — Summer 2022
Introduction to College Teaching — Fall 2019

PROFESSIONAL ORGANIZATIONS

International Society for Neuroethology — 2021 – Present
Society for Neuroscience — 2015 – Present
Faculty for Undergraduate Neuroscience — 2019 – 2025
Science Communicators of North Carolina — 2022 – 2024
San Diego Science Writers Association — 2019 – 2021
Research Society on Alcoholism — 2016 – 2021

OTHER ACHIEVEMENTS

Thru-hiked the 2,185-mile Appalachian Trail from Georgia to Maine — 2014

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REFERENCES

Postdoctoral Advisor
Richard Mooney, Ph.D. George Barth Geller Professor of Neurobiology, Department of Neurobiology. Duke University. 919-684-5025. mooney@neuro.duke.edu

Graduate Advisor
Christina Gremel, Ph.D. Professor, Department of Psychology. Neuroscience Graduate Program. University of California San Diego. 971-219-4925. cgremel@ucsd.edu

Collaborator
John Pearson, Ph.D. Associate Professor, Center for Neural Science, New York University. 919-613-8338 john.pearson@nyu.edu

ADDITIONAL REFERENCES

Colleague
Nuo Li, Ph.D. Associate Professor, Department of Neurobiology, Duke University. nuo.li@duke.edu

Graduate Committee Member
Timothy Gentner, Ph.D. Professor, Department of Psychology, University of California San Diego. 858-822-6763. tgentner@ucsd.edu

Undergraduate Advisor
Ryan Bachtell, Ph.D. Associate Professor, Department of Psychology and Neuroscience, University of Colorado at Boulder. 303-735-1012. ryan.bachtell@colorado.edu