Nora Wolcott

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Education

PhD in Molecular, Cellular, and Developmental Biology
University of California, Santa Barbara *September 2019 – June 2025*

- GPA = 3.98

Bachelor of Science in Cell and Molecular Biology
Bachelor of Arts in Music Performance
The George Washington University *September 2015 – June 2019*

Professional Experience

Postdoctoral Fellow; Datta Lab *09/01/2025-present*
Harvard Medical School, Boston, MA

- Investigated neural circuits underlying spontaneous behavior using a range of techniques at the molecular, circuit, and behavioral levels

PhD Candidate; Goard Lab *09/01/2019-06/13/2025*
UC Santa Barbara, Santa Barbara, CA

- Engineered technologies to interrogate learning and memory circuits underlying spatial navigation.
- Used multiphoton microscopy to investigate neural plasticity *in vivo.*
- Investigated the role of steroid hormones in the hippocampus using a custom surgically implanted microprism for longitudinal imaging.
- Built a widely adopted GUI-based machine learning platform for classification of hormonal state

Laboratory Assistant; Krashes Lab *06/30/2018-07/15/2019*
National Institutes of Health NIDDK, Bethesda, MD

- Worked to identify the genetic pathways that govern hunger and satiety
- Coordinated an optogenetic paradigm for identifying hypothalamic consummatory drivers.

Research Assistant; Martin Lab *01/13/2016-06/30/2019*
The George Washington University, Washington, DC

- Studied how Hox gene patterning influences development in butterflies using CRISPR/Cas9

Undergraduate Research Assistant; Snell Lab *01/15/2018-06/30/2018*
University of Auckland, Auckland, NZ

- Used RNA seq to investigate the genetic basis of Huntington's disease.

Honors and Awards

Lancaster Dissertation Award, UCSB	*05/18/2025*
SWHR Emerging Scholars in Women's Health Research Award	*03/28/2025*
NIH NINDS F99/K00 Advancement in Neuroscience Award	*06/01/2024*
OSSD Elizabeth Young New Investigator Award	*02/27/2023*
Individual Professional Skills Grant awardee, UCSB	*11/05/2022*
Best Short Talk at MCDB Research Symposium, UCSB	*10/07/2022*
Society for Neuroscience Trainee Professional Development Award	*10/14/2021*
MCDB Graduate Merit Fellowship, UCSB	*09/30/2019*
Presidential Academic Scholar, GWU	*08/28/2015*
Harlan Undergraduate Research Fellow, GWU	*01/14/2017, 05/15/2017*
Presidential Scholar in the Arts, GWU	*08/28/2015*
Steiner Meyers Scholar, GWU	*08/28/2017*
National Merit Scholar	*06/01/2015*

Outreach and Mentorship

Undergraduate Research Assistant Mentor *01/10/2021 - Present*

- Mentored a total of eight RAs in collaborative and independent lab projects, and led them in receiving fellowships (UC LEADs, SURF), internships (Stanford University, Northwestern University, CASPR Inc.), industry positions (Olympic Medical, Leidos), and graduate school acceptances (Harvard University, Carnegie Melon University, USC) across the country.

Teaching Assistant *01/20/2019 – 12/10/2023*

- GWU: Genetic Engineering Laboratory *01/20/2019 – 06/15/2019*
- UCSB: Introduction to Biology Laboratory and Neurobiology *09/29/2019-12/10/2023*

Women in Science and Engineering (WiSE) Mentor *09/01/2020 - Present*

LGBTQ in STEM Mentor *01/10/2021 – Present*

Graduate Representative, Resource Center for Sexual and Gender Diversity *08/28/2023 - Present*

Science Communication

UCSB Donors of Graduate Division Speaker	*10/19/2022*
MCDB/BMSE 25th Annual Symposium Invited Speaker	*10/07/2022*
The Scientist Featured Correspondent	*10/01/2021*
Lemelson Institute Biogen-MIT Summer Speaker	*06/28/2021*
UCSB Grad Slam Runner Up	*03/11/2021*

Skills

Technical: Fluent in Python and MATLAB, with a focus on machine learning. Mastery of object-oriented design and Git workflow.
Laboratory: Significant experience with multiphoton, confocal, and STED super-resolution microscopy, stereotactic microsurgery (cortical windows, microendoscopes, microprisms, and virus injection), fiber photometry, optogenetics, CRISPR-cas9, Nanopore sequencing, immunohistochemistry, cloning, PCR, cell culture, and assay design.

Publications

Wolcott, N., Redman, W., Karpinska, M., Jacobs, E. & Goard, M. The estrous cycle modulates hippocampal spine dynamics, dendritic processing, and spatial coding. *Neuron* (2025).

Wolcott, N., Sit, K., Raimandi, G., Hodges, T., Shansky, R., Galea, L., Ostroff, L. & Goard, M. Automated classification of estrous stage in rodents using deep learning. *Scientific Reports* (2022).

Redman, W., **Wolcott, N.,** Montelisciani, L., Luna, G., Marks, T., Sit, K., Yu, CH., Smith, S. & Goard, M. Long-term transverse imaging of the hippocampus using implanted microperiscopes. *eLife* (2022).

Wolcott, N. Opinion: Neuroscientists Need to Think About Sex (Bias). *The Scientist* (2021).

Mazzone, C., Lian-Guallpa, J., Li, C., **Wolcott, N.**, et al. High fat food biases hypothalamic and mesolimbic expression of consummatory drives. *Nature Neuroscience* (2020).

Martin, A.. **Wolcott, N.** & O'Connell, L. Bringing immersive science to undergraduate laboratory courses using CRISPR gene knockouts in frogs and butterflies. *Journal of Experimental Biol*ogy (2020).

Oral Presentations

Wolcott, N., Jacobs, E. & Goard, M. (2025, June). *Dynamic endocrine factors modulate hippocampal structure and function.* Society for Women's Health Research Symposium, Albuquerque, NM.

Wolcott, N., Jacobs, E. & Goard, M. (2023, May). *Chronic recording of hippocampus reveals sex differences in spatial navigation circuitry.* Organization for the Study of Sex Differences, Calgary, Alberta, CA.

Wolcott, N., Redman, W., Sit, K., Goard, M. (2022, October). *Investigating the role of steroid hormones in hippocampal plasticity.* MCDB/BMSE 25th Annual Symposium, Santa Barbara, CA.

Wolcott, N. (2021, June). *Ways We Study Alzheimer's.* Lemelson Institute Biogen-MIT Biotech in Action Summer Series, Massachusetts Institute of Technology, Boston, MA.

Poster Presentations

Wolcott, N., Redman, R., Jacobs, E. & Goard, M. (2024, October). *The estrous cycle modulates hippocampal spine dynamics and spatial coding.* Society for Neuroscience annual meeting, Chicago, IL.

Wolcott, N., Redman, W. & Goard, M. (2024, March). *Hippocampal spatial representations are modulated by cyclic endocrine factors.* CoSyNe, Lisbon, Portugal.

Wolcott, N., Jacobs, E. & Goard, M. (2023, May). *Chronic recording of hippocampus reveals sex differences in spatial navigation circuitry.* Organization for the Study of Sex Differences Annual Meeting, Calgary, Alberta, CA.

Wolcott, N., Goard, M. (2023, March). *Dynamic endocrine factors shape hippocampal spatial representations.* CoSyNe, Montreal, Quebec, CA.

Wolcott, N., Redman, W., Sit, K., Goard, M. (2021, November). *Structural plasticity of apical dendritic spines in hippocampal CA1 is modulated by sex-specific steroid hormones.* Society for Neuroscience annual meeting, Chicago, IL.

Wolcott, N., Martin, A., Day, C. (2017, August). *CRISPR-mediated Hox gene knockout in Vanessa cardui: the anteroposterior functions of Ubx and Abd-a*. Wilbur V. Harlan Poster Session, The George Washington University, Washington, DC.