

Evan Layher, Ph.D.

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EDUCATION

Ph.D. in Psychological and Brain Sciences (2022)

University of California at Santa Barbara (UC Santa Barbara)

Supervisor: Michael Miller, Ph.D.

Dissertation: Who Gives a Criterion Shift? Behavioral and Neural Mechanisms of a Stable Cognitive Trait

- Investigated neural mechanisms of episodic memory and decision-making via EEG, fMRI, tDCS, and TMS

B.A.S. in Psychology and Neurobiology, Physiology, & Behavior (2012)

University of California at Davis (UC Davis)

EMPLOYMENT HISTORY

Post-Doctoral Researcher (2022 – PRESENT)

Cedars-Sinai Medical Center & UC Santa Barbara

Supervisors: Ueli Rutishauser, Ph.D. & Michael Miller, Ph.D.

- Investigating neural mechanisms of episodic memory and decision-making via single neuron recordings in human epilepsy patients

Instructor (2018 – 2019)

UC Santa Barbara

- Summer instructor for the Introduction to Biopsychology course

Teaching Assistant (2015 – 2021)

UC Santa Barbara

- Graduate student teaching assistant for various Psychology courses and laboratories

Junior Specialist (2012 – 2015)

UC Davis Imaging Research Center

Supervisor: J. Daniel Ragland, Ph.D.

- Investigated neural mechanisms of selective episodic memory impairment in individuals with schizophrenia via fMRI, EEG, and MRS

MENTORSHIP PROGRAMS

Laguna Blanca Science Research Program (2020 – 2022)

- Mentored high school student on projects aimed at understanding memory and decision-making processes

Building Infrastructure Leading to Diversity Promoting Opportunities for Diversity in Education & Research (2017)

- Mentored undergraduate student on projects investigating memory and decision-making processes

UC Santa Barbara Summer Applied Biotechnology Research Experience (2016)

- Mentored master's student on TMS project investigating neural mechanisms of criterion shifting

UC Santa Barbara Research Mentorship Program (2016, 2021, 2023)

- Mentored high school students on various projects investigating memory and decision-making processes

AWARDS

Los Angeles Clippers Community Hero (2021)

Kavli Summer Institute in Cognitive Neuroscience, Fellow (2017 & 2018)

NSF Graduate Research Fellowship Program, Honorable Mention (2016)

PEER-REVIEWED PUBLICATIONS

- [7] **Layher, E.**, Santander, T., Chakravarthula, P. N., Marinsek, N., Turner, B. O., Eckstein, M. P., & Miller, M. B. (2023). Widespread frontoparietal fMRI activity is greatly affected by changes in criterion placement, not discriminability, during recognition memory and visual detection tests. *NeuroImage*, 279, 120307. <https://doi.org/10.1016/j.neuroimage.2023.120307>
- [6] **Layher, E.**, Dixit, A., & Miller, M. B. (2020). Who gives a criterion shift? A uniquely individualistic cognitive trait. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 46(11), 2075–2105. <https://doi.org/10.1037/xlm0000951>
- [5] Taylor, C. M., Pritschet, L., Olsen, R. K., **Layher, E.**, Santander, T., Grafton, S. T., & Jacobs, E. G. (2020). Progesterone shapes medial temporal lobe volume across the human menstrual cycle. *NeuroImage*, 220, 117125. <https://doi.org/10.1016/j.neuroimage.2020.117125>
- [4] Pritschet, L., Santander, T., Taylor, C. M., **Layher, E.**, Yu, S., Miller, M. B., Grafton, S. T., & Jacobs, E. G. (2020). Functional reorganization of brain networks across the human menstrual cycle. *NeuroImage*, 220, 117091. <https://doi.org/10.1016/j.neuroimage.2020.117091>
- [3] **Layher, E.**, Santander, T., Volz, L. J., & Miller, M. B. (2018). Failure to Affect Decision Criteria During Recognition Memory With Continuous Theta Burst Stimulation. *Frontiers in Neuroscience*, 12, 1–14. <https://doi.org/10.3389/fnins.2018.00705>
- [2] Ragland, J. D., **Layher, E.**, Hannula, D. E., Niendam, T. A., Lesh, T. A., Solomon, M., Carter, C. S., & Ranganath, C. (2017). Impact of schizophrenia on anterior and posterior hippocampus during memory for complex scenes. *NeuroImage: Clinical*, 13, 82–88. <https://doi.org/10.1016/j.nicl.2016.11.017>
- [1] Ragland, J. D., Ranganath, C., Harms, M. P., Barch, D. M., Gold, J. M., **Layher, E.**, Lesh, T. A., MacDonald, A. W., Niendam, T. A., Phillips, J., Silverstein, S. M., Yonelinas, A. P., & Carter, C. S. (2015). Functional and Neuroanatomic Specificity of Episodic Memory Dysfunction in Schizophrenia. *JAMA Psychiatry*, 72(9), 909-916. <https://doi.org/10.1001/jamapsychiatry.2015.0276>

BOOK CHAPTER

- [1] Ashburn, S., Abugaber, D., Antony, J., Bennion, K., Bridwell, D., Cardenas-Iniguez, C., Doss, M., Fernández, L., Huijsmans, I., Krisst, L., Lapate, R. C., **Layher, E.**, Leong, J., Li, Y., Marquez, F., Munoz-Rubke, F., Musz, L., Patterson, T., Powers, J., Proklova, D., Rapuano, K., Robinson, S., Ross, J., Samaha, J., Sazma, M., Stewart, A., Stickel, A., Stolk, A., Vilgis, V., Zirnstein, M. (2020). Towards a socially responsible, transparent, and reproducible cognitive neuroscience. In D. Poeppel, G. R. Mangun, & M. Gazzaniga (Eds.), *The Cognitive Neurosciences* (6th ed.). Cambridge, MA: MIT Press.

FIRST AUTHOR CONFERENCE PRESENTATIONS (PAST 5 YEARS)

- [10] **Layher, E.**, Miller, M. B., Namelak, A. N., & Rutishauser U. (2024, April 13-16). *Memory-selective neurons in human medial temporal lobe and medial frontal cortex can be modulated by the decision criterion during recognition memory* [Poster]. Cognitive Neuroscience Society, Toronto, ON.
- [9] **Layher, E.**, Miller, M. B., Namelak, A. N., & Rutishauser U. (2023, November 12-15). *Human medial temporal lobe and medial frontal cortex neurons represent metacognitive confidence judgments in a domain-specific manner across recognition memory and visual discrimination tests* [Poster]. Society for Neuroscience, Washington, D.C.
- [8] **Layher, E.**, Eckstein, M. P., & Miller, M. B. (2023, March 25-28). *The intraparietal sulcus may NOT play a domain-specific role in criterion shifting during recognition memory versus visual detection tests* [Poster]. Cognitive Neuroscience Society, San Francisco, CA.
- [7] **Layher, E.**, Santander, T., Babenko, V., Gross, M., & Miller, M. B. (2022, April 23-26). *Dense sampling fMRI during recognition memory reveals widespread frontoparietal networks largely associated with the decision criterion* [Poster]. Cognitive Neuroscience Society, San Francisco, CA.

- [6] **Layher, E.**, Santander, T., Babenko, V., Gross, M., & Miller, M. B. (2021, November 8-11). *Dissociating neural mechanisms of recognition memory and decision criteria in a dense sampling fMRI study* [Poster]. Society for Neuroscience, Virtual.
- [5] **Layher, E.**, Agrawal, A., Bhatia, T., & Miller, M. B. (2021, November 4-7). *Memory or not ... here comes consistent criterion shifting strategies* [Poster]. Psychonomic Society, Virtual.
- [4] **Layher, E.**, Dong, J., & Miller, M. B. (2021, March 13-26). *Individual differences in the effects of trial-by-trial feedback on criterion shifting during recognition memory tests* [Poster]. Cognitive Neuroscience Society, Virtual.
- [3] **Layher, E.**, Abbey, C. K., Durdle, C., Leslie S., Santander, T., & Miller, M. B. (2020, November 19-22). *Simultaneous ROC modeling of prevalence and difficulty across recognition memory tests; the best model is individual specific* [Poster]. Psychonomic Society, Virtual.
- [2] **Layher, E.**, Dong, J., & Miller, M. B. (2020, November 12). *Trial-by-trial feedback during recognition memory tests differentially affects criterion shifting strategies across individuals* [Talk]. Bay Area Memory Meeting, Virtual.
- [1] **Layher, E.**, Durdle, C., Leslie S., Santander, T., & Miller, M. B. (2020, May 2-5). *Dissociating fMRI activity related to familiarity strength vs. decision criteria during recognition memory* [Poster]. Cognitive Neuroscience Society, Virtual.