

Exponent®
Engineering & Scientific Consulting

Zoe Dobler, Ph.D.

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Professional Profile

Dr. Dobler has expertise in sensory processing and perception, specializing in how the brain adapts to ever-changing environments. She applies her expertise to address and analyze human factors contributions to automobile accidents, trips, slips and falls, and warning and safety issues.

Dr. Dobler earned her Ph.D. in Neuroscience from the University of California, Los Angeles (UCLA) Neuroscience Interdepartmental Program. Her doctoral research focused on the population dynamics and circuit mechanisms underlying sensory processing. Using techniques such as in vivo imaging and optogenetics, she characterized sensory adaptation in brain areas important for processing tactile stimuli. Before beginning her doctoral studies, she completed a Fulbright scholarship investigating the genetic mechanisms underlying neurodevelopmental disorders.

Academic Credentials & Professional Honors

Ph.D., Neuroscience, University of California, Los Angeles (UCLA), 2024

B.A., Biology, West Virginia University, 2018

UCLA Brain Research Institute/Semel Institute Graduate Travel Award (2023)

Jessamine Hilliard Neurobiology Graduate Student Grant (2023)

Science Communication Training Award, UCLA Brain Research Institute (2021)

Honorable Mention, National Science Foundation Graduate Research Fellowship Program (2021)

Fulbright Austrian-Marshall Plan Foundation Award in Science and Technology (2018)

Prior Experience

Graduate Student Researcher, UCLA, 2019-2024

Acting Editor in Chief, Knowing Neurons, 2023-2024

Senior Editor, Knowing Neurons, 2023

Teaching Assistant, UCLA, 2023

Editor and Social Media Manager, Knowing Neurons, 2020-2023

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Fulbright Scholar, Institute of Science and Technology Austria, 2018-2019

Summer Intern, New York University Langone Medical Center, 2018

Professional Affiliations

Human Factors and Ergonomics Society

Society for Neuroscience

Publications

Kourdougli N., Nomura T., Wu M.W., Heuvelmans A., Dobler Z., Contractor A., Portera-Cailliau C. The NKCC1 Inhibitor Bumetanide Restores Cortical Feedforward Inhibition and Lessens Sensory Hypersensitivity in Early Postnatal Fragile X Mice. Biological Psychiatry 2025; 97(5): 507-516.

Dobler Z., Suresh A., Chari T., Mula S., Tran A., Buonomano D.V., Portera-Cailliau C. Adapting and facilitating responses in mouse somatosensory cortex are dynamic and shaped by experience. Current Biology 2024; 34(15): 3506-3521.e5.

Coltogirone, R.A., Sherfinski, E.I., Dobler, Z.A., Peterson, S.N., Andlinger, A.R., Fadel, L.C., Patrick, R.L., Bergeron, S.A. Gsx2, but not Gsx1, is necessary for early forebrain patterning and long-term survival in zebrafish. Developmental Dynamics 2023; 252(3): 377-399.

Morandell J., Schwarz L.A., Basilico B., Tasciyan S., Dimchev G., Nicolas A., Sommer C., Kreuzinger C., Dotter C.P., Knaus L.S., Dobler Z., Cacci E., Schur F.K.M., Danzl J.G., Novarino G. Cul3 regulates cytoskeleton protein homeostasis and cell migration during a critical window of brain development. Nature Communications 2021; 12(1): 3058.

Presentations

Dobler Z., Chari T., Mula S., Portera-Cailliau C. Adapting and facilitating responses of excitatory neuron populations in mouse somatosensory cortex are dynamic and shaped by experience across days. Poster presentation, Neuroscience 2023, Washington, D.C., 2023.

Dobler Z., Mula S., Portera-Cailliau C. Adapting and facilitating responses of excitatory neuron populations in mouse somatosensory cortex are dynamic and shaped by experience across days. Poster presentation, Structure, Function, and Development of Neural Circuits, Irvine, CA 2023.

Dobler Z., Mula S., Portera-Cailliau C. The remarkably dynamic identity of adapting and facilitating neurons in mouse somatosensory cortex. Poster presentation, Neuroscience 2022, San Diego, CA, 2022.

Dobler Z., Mula S., Portera-Cailliau C. The remarkably dynamic identity of adapting and facilitating neurons in mouse somatosensory cortex. Poster presentation, Barrels Meeting, San Diego, CA, 2022.

Dobler Z., Portera-Cailliau C. Sensory adaptation over behaviorally relevant timescales in mouse barrel cortex. Poster presentation, Cold Spring Harbor Laboratory Neuronal Circuits Meeting, Cold Spring Harbor, NY, 2022.

Dobler Z., Portera-Cailliau C. Mechanisms of sensory adaptation over behaviorally relevant time scales in mouse barrel cortex. Poster presentation, Neuroscience 2021, Virtual, 2021.

Dobler Z., Szigeti K., & Novarino, G. Characterizing synaptic changes in a mouse model of autism spectrum disorder and intellectual disability. Poster presentation, Fulbright Seminar in American Studies, Strobl, Austria, 2019.

Dobler Z.A., Robich R.A., Sherfinski E.I., Patrick R.L., Bergeron S.A. Identifying and validating transcriptional targets of the homeobox transcription factors Gsx1 and Gsx2 in zebrafish. Poster presentation, West Virginia University Spring Undergraduate Symposium, Morgantown, WV, 2018.

Dobler Z.A. Identifying transcriptional targets of Gsx1 and Gsx2 in zebrafish. Presentation to Biology Department faculty and graduate students. Oral presentation, West Virginia University Genomics Group Meeting, Morgantown, WV 2017.

Dobler Z.A., Sherfinski E.I., Patrick R.L., Bergeron, S.A. Identifying target genes of the homeobox transcription factors Gsx1 and Gsx2 in zebrafish. Poster presentation, oSTEM National Conference, Chicago, IL, 2017.

Dobler Z.A., Patrick R.L., Bergeron S.A. Identifying target genes of the homeobox transcription factor Gsx1 in zebrafish. Poster presentation, West Virginia University Summer Undergraduate Research Symposium, Morgantown, WV, 2017.

Dobler Z.A., Patrick R.L., Bergeron S.A. Identifying target genes of the homeobox transcription factor Gsx1 in zebrafish. Poster presentation, Duquesne University Summer Undergraduate Research Symposium, Pittsburgh, PA, 2017.

Dobler Z.A., Patrick R.L., Bergeron S.A. Identifying target genes of the homeobox transcription factor Gsx1 in zebrafish. West Virginia University Neuroscience Retreat, Davis, WV, 2017.

Robich R.A., Dobler Z.A., Fadel L.C., Peterson S.N., Bergeron S.A. Putative targets and developmental expression patterns of the non-clustered homeobox transcription factors Gsx1 and Gsx2. Midwest Zebrafish Conference, Cincinnati, OH, 2017.