Exponent®
Engineering & Scientific Consulting

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Professional Profile

Dr. Jason Landen is a data scientist and neuroscientist with specialized expertis/e in developing advanced statistical and machine learning models to address complex biological and behavioral challenges. His work integrates neuroscience, biosensor technology, and AI-driven analytics to help organizations optimize data acquisition, streamline analysis pipelines, and uncover actionable insights.

Dr. Landen began his career with an initial focus on medicine before pivoting toward the intersection of engineering, technology, and biology. He has experience programming in Python, R, and JavaScript to build tools that enhance data collection and analysis. He also spent three years teaching undergraduate courses on human physiological systems, reflecting his commitment to science communication and education.

Prior to joining Exponent, Dr. Landen completed his graduate studies at the University of Wyoming, where he developed computational tools to investigate neural regulators of metabolic physiology. His research involved biosensor integration, signal processing, and statistical modeling, with a focus on improving the efficiency and quality of biological data streams.

Academic Credentials & Professional Honors

Ph.D., Neuroscience, University of Wyoming, 2025

B.S., Physiology, University of Wyoming, 2021

School of Computing Graduate Fellowship, University of Wyoming, 2023

Prior Experience

High Performance Computing Consultant, University of Wyoming, Summer 2025

Graduate Teaching Assistant, University of Wyoming, 2022-2025

Graduate Research Assistant, University of Wyoming Sensory Biology Center, 2021-2025

Publications

Taylor DS, Allotey AA, Fanelli RE, Satyanarayana SB, Bettadapura SS, Wyatt CR, **Landen JG**, Nelson AC, Schmitt EE, Bruns DR, Bedford NL. Diurnal regulation of urinary behavior and gene expression in aged mice. Preprint at bioRxiv 2025.

Vandendoren M, **Landen JG**, Rogers JF, Killmer S, Alimiri B, Pohlman C, Tattersall GJ, Bedford NL,

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Nelson AC. Oxytocin neurons signal state-dependent transitions to thermogenesis and behavioral arousal in social and non-social settings. Accepted at eLife (In revision) 2025.

Landen JG. Uncovering the coordinated roles of neural circuits, genetic factors and behavioral states in mouse thermoregulation. ProQuest, University of Wyoming 2025.

Landen JG, Vandendoren M, Killmer S, Bedford N, Nelson A. Huddling substates in mice facilitate dynamic changes in body temperature and are modulated by Shank3b and Trpm8 mutation. Commun Biol 2024; 7(1186).

Rogers JF, Vandendoren M, Prather JF, **Landen JG**, Bedford NL, Nelson AC. Neural cell-types and circuits linking thermoregulation and social behavior. Neurosci Biobehav Rev 2024; 161:105667.

Bruno JR, Udoh UG, **Landen JG**, Osborn PO, Asher CJ, Hunt JE, Pratt KG. A circadian-dependent preference for light displayed by Xenopus tadpoles is modulated by serotonin. iScience 2022; 25(11):105375.

Zheng,K, Udoh UG, **Landen JG**, Nelson AC, Pratt, KG. Direction Selective tectal and midbrain tegmental neurons in the Xenopus tadpole. (In prep).

Project Experience

Engineered a computer vision-based tool to detect behavioral and physiological changes in laboratory animals using thermal imaging. Developed and validated a Mask R-CNN model to extract surface temperature data from freely moving mice in naturalistic environments.

Analyzed high-frequency neural recordings using advanced signal processing techniques. Integrated neural data with biosensor outputs to investigate physiological mechanisms underlying thermoregulation and behavioral responses.

Built scalable high-performance computing workflows for processing large biological datasets. Developed modular scripts and comprehensive documentation to support reproducibility and facilitate collaboration with stakeholders.