OMB No. 3145-0279 (Expiration Date 10/31/2026)

NIH BIOGRAPHICAL SKETCH COMMON FORM

Name: Lasky-Nielson, Noah K.

Persistent Identifier (PID) of the Senior/Key Person: https://orcid.org/0009-0009-6258-5642

Position Title: Graduate Student Research Assistant

Organization and Location: University of Pittsburgh, Pittsburgh, Pennsylvania, United States

PROFESSIONAL PREPARATION

INSTITUTION AND LOCATION	DEGREE	Start Date	Completion Date	FIELD OF STUDY
University of Pittsburgh, Pittsburgh, Pennsylvania, United States	Doctor of Philosophy (PHD)	08/2025	05/2031	Neurobiology
Brandeis University, Waltham, Massachusetts, United States	Bachelor of Science (BS)	08/2019	05/2023	Neuroscience

Appointments and Positions

2025 - present Graduate Student Research Assistant, University of Pittsburgh, Pittsburgh, Pennsylvania, United States
2023 - 2025 Postbaccalaureate Research Fellow, National Eye Institute, Bethesda, Maryland, United States
2020 - 2023 Undergraduate Student Research Assistant, Brandeis University, Waltham, Massachusetts, United States

Products

Products Closely Related to the Proposed Project

1. Ding W, Niyogi A, Taylor JA, Tsay JS. Hypothesis testing governs strategic motor learning. NPJ Sci Learn. 2026 May 5;11(1) PubMed Central PMCID: PMC13346944.
2. Trautmann EM, Hesse JK, Stine GM, Xia R, Zhu S, O'Shea DJ, Karsh B, Colonell J, Lanfranchi FF, Vyas S, Zimnik A, Amematsro E, Steinemann NA, Wagenaar DA, Pachitariu M, Andrei A, Lopez CM, O'Callaghan J, Putzeys J, Raducanu BC, Welkenhuysen M, Churchland M, Moore T, Shadlen M, Shenoy K, Tsao D, Dutta B, Harris T. Large-scale high-density brain-wide neural recording in nonhuman primates. Nat Neurosci. 2025 Jul;28(7):1562-1575. PubMed Central PMCID: PMC12229894.

Other Significant Products Highlighting Contributions to Science

1. Casanova VMS, Lasky-Nielson NK, Ye L, Touboul JD, Ribot J, Van Hooser SD. Functional architecture for speed tuning in primary visual cortex of carnivores. bioRxiv. 2025 Nov 5; PubMed Central PMCID: PMC12637459.

Certification:

I certify that the information provided is current, accurate, and complete. This includes, but is not limited to, information related to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. § 6605.

In accordance with Section 10632 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19232), each individual identified as a senior/key person must certify that they are not a party to a malign foreign talent recruitment program.

Research Security Training Requirement for Federal Award Personnel: In accordance with Section 10634 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19234), each individual identified as a senior/key person must certify that they have completed the requisite research security training that meets the requirements specified in Item 2 of Important Notice No. 149 within 12 months prior to proposal submission.

Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§287, 1001, 1031 and 31 U.S.C. §§3729-3733 and 3802.

Certified by Lasky-Nielson, Noah K. in SciENcv on 2026-07-20 06:54:41

NIH BIOGRAPHICAL SKETCH SUPPLEMENT

Name: Lasky-Nielson, Noah K.

Persistent Identifier (PID) of the Senior/Key Person: https://orcid.org/0009-0009-6258-5642

Position Title: Graduate Student Research Assistant

Organization and Location: University of Pittsburgh, Pittsburgh, Pennsylvania, United States

Personal Statement

I am keen to understand the neural computations underlying intelligent behaviors including flexible problem solving, abstraction, and working memory. I am further interested in studying the variability of those computations between and within individuals. My experiences studying neuroscience have ingrained in me a strong desire to understand these computations through interdisciplinary research; the opportunity to study neuroscience experimentally, theoretically, and philosophically brings me unparalleled exhilaration. As a sophomore at Brandeis University, I joined the laboratory of Dr. Stephen Van Hooser to study the processing of speed and direction in early visual cortex of ferrets. In recognition of my work, I was awarded my bachelor's degree in neuroscience with high honors and am involved in a publication effort for this project (Casanova et al., 2025). At the conclusion of my undergraduate degree, I moved to the National Eye Institute to conduct full-time research in the laboratory of Dr. Bevil Conway. During my time in his group, I studied the brain areas underlying the association between color and shape and the functional properties of human visual cortex. These projects resulted in a poster and seminar presentation to the greater National Institutes of Health community. For my graduate studies at the University of Pittsburgh, I shifted from vision and visual cognition to studying problem solving using brain-wide electrophysiology (Trautmann et al., 2025) in the laboratory of Dr. Saurabh Vyas and a specific form of cognitive control (Ding et al., 2026) behaviorally in the group of Dr. Jonathan Tsay at Carnegie Mellon University. I am currently involved in the construction and maintenance of an experimental apparatus and the development of software and hardware to study cognitive variability and control across humans and non-human primates. I am extremely fortunate to have the opportunity to experience the process of building the infrastructure for my group and am excited to continue my work in elucidating the computations underlying generalization and problem solving.

Honors

2024	National Eye Institute Director's Award, National Eye Institute
2023	High Honors in Neuroscience, Brandeis University
2023	Summa Cum Laude, Brandeis University
2023 - 2025	Intramural Research Training Award, National Eye Institute
2022 - 2023	Laura B. Fixman '82 Scholarship, Brandeis University
2019 - 2023	Dean's List, Brandeis University

Contributions to Science

1. **Undergraduate Research**

   As an undergraduate, I was involved in a project studying the processing of speed and direction in early visual cortex of ferrets in the laboratory of Dr. Stephen Van Hooser. The focus in the group is on the development of the mammalian visual cortex. In particular, the group studies the development of neurons in the primary visual cortex with a focus on tuning properties using optical and optogenetic techniques. I developed a mathematical algorithm for fitting a model to the firing rates of neurons recorded at various depths in primary visual cortex. I found that approximately one-quarter of ferret primary visual cortex neurons were tuned for speed, one-quarter exhibited no tuning for speed, and one-half possessed tuning properties somewhere in between. I am currently involved in a publication effort for this project (Casanova et al., 2025).

2. **Postbaccalaureate Research**

Following the completion of my undergraduate degree, I received a postbaccalaureate research fellowship to conduct full-time research as part of the National Eye Institute. I joined the laboratory of Dr. Bevil Conway who studies the neural pathways and computations involved in the transformation of visual input into behavior with a focus on the role of color. During my time in the group, I was primarily involved in two projects. The first project focused on understanding the brain areas underlying the association between color and shape, an association that provides the backbone for visual concepts. Working alongside other members of the group, I ran experiments with rhesus monkeys trained to recognize objects with distinct color and shape using functional magnetic resonance imaging and employed computational methods for neural decoding. The second project sought to elucidate the functional properties of human visual cortex with functional magnetic resonance imaging. I utilized population receptive field mapping, drifting gratings varying in color, contrast, and spatial frequency, and a hypothesis-free feature extraction algorithm. This project is currently ongoing.

3. **Graduate Research**

My first-year graduate studies at the University of Pittsburgh comprised of rotations in the groups of Drs. Diego Mendoza-Halliday and Saurabh Vyas. In my rotation with Dr. Diego Mendoza-Halliday, I trained a rhesus monkey on a visual rotation working memory task, found preliminary results showing a distinct layer-specific oscillatory motif in monkey superior colliculus, and secured electrophysiology recordings in the monkey hippocampus from a group at Vanderbilt University. During my rotation with Dr. Saurabh Vyas, I helped in the ongoing construction of an experimental apparatus suitable for the collection of electrophysiological recordings from rhesus monkeys and trained two monkeys to execute simple commands in preparation for their eventual training in the experimental apparatus. I am currently involved in developing software and hardware to study the variability in neural computations underlying intelligent behaviors between and within individuals and across species alongside Drs. Saurabh Vyas and Jonathan Tsay. The findings from this research could assist in developing individual-based strategies for the treatment of neurological disorders impacting cognitive abilities.

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