Nicholas Jourjine, Ph.D.

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EDUCATION

University of California, Berkeley 2012-2018
Ph.D. in Molecular and Cell Biology Berkeley, CA

Advisor: Dr. Kristin Scott
Dissertation: “Neural Regulation of Hunger and Thirst in *Drosophila melanogaster*”

Brown University 2007-2011
Bachelor of Science in Molecular Biology Providence, RI

Advisor: Dr. David Rand
Honors Thesis: “Mitochondrial Genetics of Physiological Stress Resistance in *Drosophila*”

RESEARCH EXPERIENCE

Harvard University 2018-present
Postdoctoral advisor: Dr. Hopi Hoekstra Cambridge, MA

- Led a team including undergraduates and research technicians to characterize genetic constraints on vocal repertoire evolution in wild mice
- Demonstrated genetic and functional separability of vocal call types in rapidly evolving vocal repertoires
- Identified candidate genetic and neural contributions to vocal repertoire evolution in mice

University of Zürich 2021-2023
Collaborator: Dr. Anna Lindholm Zürich, Switzerland

- Led a team to passively monitor vocal and social behaviors in a wild house mouse population over 1.25 years
- Discovered seasonal fluctuations in social structure and acoustic communication
- Developed hardware and software resources to map mouse vocal behaviors to social functions in the field

University of California, Berkeley 2012-2018
Ph.D. advisor: Dr. Kristin Scott Berkeley, CA

- Discovered neurons that sense signals of thirst in the fruit fly, *Drosophila melanogaster*
- Characterized the molecular mechanism by which these neurons balance sugar and water ingestion

PUBLICATIONS

Google Scholar:
https://scholar.google.com/citations?user=le8Z25cAAAAJ&hl=en

Jourjine N (2025). *Invited dispatch article*. Behavioral Ecology: Wild Mice Speak Up. **Current Biology** *(forthcoming)*

Jourjine N, Goedecker C, König B, Lindholm AK. (2025) Vocal communication is seasonal in social groups of wild, free-living house mice. **Proceedings of the Royal Society B** *292*: 20250995

Jourjine N, Woolfolk ML, Sanguinetti-Scheck JI, Sabatini JE, McFadden S, Lindholm AK, Hoekstra HE. (2023) Two pup vocalization types are genetically and functionally separable in deer mice. **Current Biology** *33*: 1237-1248.

Jourjine N and Hoekstra HE. (2021) *Perspective article*. Expanding evolutionary neuroscience: insights from comparing variation in behavior. **Neuron** *109*: 1084-1099.

Jourjine N (2017). *Invited review article*. Hunger and thirst interact to regulate ingestive behavior in insects and mammals. **BioEssays** *39*: 1600261

Mossman J, Tross JG, Jourjine N, Li N, Wu Z, Rand D. (2017) Mitonuclear interactions mediate transcriptional responses to hypoxia in *Drosophila*. **Molecular Biology and Evolution** *34*: 447-466.

Jourjine N*, Mullaney B*, Mann K, Scott K. (2016) Coupled sensing of hunger and thirst signals balances sugar and water consumption. **Cell** *166*: 855-866. **co-first author*

Deshpande G, Manry D**,** Jourjine N, Smith D, Schedl P. (2016) Role of the ABC transporter *mdr49* in Hedgehog signaling and germ cell migration. **Development** *143*: 2111-2120.

REVIEWED PREPRINTS

González-Segarra AJ, Pontes G, Jourjine N, Del Toro A, Scott K. (2023) Hunger- and thirst-sensing neurons modulate a neuroendocrine network to coordinate sugar and water ingestion **eLife** (https://elifesciences.org/reviewed-preprints/88143v1)

OPEN-SOURCE HARDWARE

Jourjine, N. (2025) *cheap-ultrasonic-speaker*. GitHub. https://github.com/nickjourjine/cheap-ultrasonic-speaker

OPEN-SOURCE DATASETS

Jourjine N, Goedecker C, König B, Lindholm A. (2025) Vocal communication is seasonal in social groups of wild, free-living house mice [Dataset]. Dryad. https://doi.org/10.5061/dryad.kprr4xhfk

Jourjine N, Woolfolk ML, Sanguinetti-Scheck JI, Sabatini JE, McFadden S, Lindholm AK, Hoekstra HE. (2023) Two pup vocalization types are genetically and functionally separable in deer mice [Dataset]. Dryad. https://doi.org/10.5061/dryad.g79cnp5ts

AWARDS AND HONORS

University of Zürich Promoter Funding Grant	2022
Harvard Brain Science Initiative Young Scientist Travel Award	2019
Jane Coffin Childs Postdoctoral Fellowship	2019
NIH Ruth L. Kirschstein National Research Service Award	2017
National Science Foundation Graduate Research Fellowship	2011
German Academic Exchange Service (DAAD) Scholarship	2011
Brown University James F. Kidwell Prize in Population Biology	2011

TEACHING EXPERIENCE

(As Graduate Student teaching assistant at the University of California, Berkeley)

Molecular Biology of the Cell (Undergraduate, Upper Level) 2018
- Developed teaching materials and lectures focusing on molecular genetics, genomics, and cell biology
- Led groups of 15-20 students in hour long, weekly discussion sessions to supplement main lectures
- Led one main lecture (~200 students) as guest instructor

Genetics (Undergraduate, Upper Level) 2017
- Developed teaching materials and lectures focusing on advanced techniques in experimental genetics
- Led groups of 15-20 students in hour long, weekly discussion sessions to supplement main lectures

Neurobiology Laboratory (Undergraduate, Introductory) 2015
- Led weekly hands-on laboratories on topics including electrophysiology, neuroanatomy, and neurogenetics

General Biology Laboratory (Undergraduate, Introductory) 2012
- Led weekly hands-on laboratories on topics including vertebrate anatomy, plant biology, and biochemistry

PEDAGOGICAL TRAINING

Undergraduate Mentoring Workshop Series 2022
- 3-part, 12-hour course from the Harvard Science Education Office focusing on tools and best practices for inclusive undergraduate training, mentoring, and research supervision

ACADEMIC SERVICE

Ph.D. Thesis Committee Member, Caspar Goedecker 2023-present
- Three one-on-one meetings per year to discuss projects
- One yearly formal thesis meeting to assess progress with University of Zürich faculty

Undergraduate Thesis Advisor (Applied Math), John Sabatini 2019-2022
- Thesis Title: "*Computational Bioacoustics of Deer Mice: Identifying and Comparing Vocal Syllables Across Species and Infant Development"*

Conference Chair, Neural Mechanisms of Acoustic Communication Gordon Research Seminar 2024
- Worked with co-chair to develop theme, select speakers, and run the 2-day conference of ~60 people in person
- Worked with chairs of the corresponding GRC to draft grant proposals which supported both conferences
- Initiated, designed, and helped lead a workshop on machine learning methods in vocal behavior research

Founder and Organizer, **Bridging Brains and Bioacoustics** Online Seminar Series 2022-present
- Each month, identify and solicit two speakers working on the neuroscience and bioacoustics of a shared topic (e.g., "Dogs")
- Advertise seminar on social media and through a 100+ recipient e-mail list
- Host the seminar by introducing speakers and managing question and answer session (with mentee, Maya Woolfolk)

Ad hoc peer review 2019-present
Current Biology; Current Zoology; Neuron; Animal Behaviour; eLife; Proceedings of the Royal Society B; Behavioural Brain Research

INVITED RESEARCH TALKS	**Earth Species Project Guest Speaker** (earthspecies.org; virtual)	2025
	Department of Ecology, Evolution, and Organismal Biology Brown University (in person)	2024
	Bioacoustics and AI Online Workshop (virtual)	2024
	Department of Biology, McGill University (in person)	2024
	Neural Mechanisms of Acoustic Communication Gordon Conference (in person)	2024
	International Society for Neuroethology Future of Neuroethology Webinar Series (virtual)	2023
	AudioMoth Online Conference (virtual)	2023
	Virtual Songbird Satellite Series (virtual)	2023
	Max Planck Institute for Brain Research (in person)	2023
	Department of Evolutionary Biology and Environmental Studies University of Zürich (in person)	2021
	UK Acoustics Network Early Career Seminar Series (virtual)	2021
	Cold Spring Harbor Neurobiology of *Drosophila* (in person)	2015

MENTORSHIP	Caspar Goedecker (Ph.D. Candidate, Lindholm Lab)	2023-present
	Maya Woolfolk (Ph.D. Candidate, Hoekstra Lab)	2021-present
	Sade McFadden (Technician, Hoekstra Lab)	2020-2023
	John E. Sabatini (**Undergraduate**, Applied Math)	2019-2022
	Michael Scott (**Undergraduate**, Computer Science)	2018-2020
	Keza Levine (**Undergraduate**, Public Health)	2018-2020

COMMUNITY ENGAGEMENT	Earth.fm contributing sound artist	2024
	Poster Judge, National Collegiate Research Conference	2021
	Cities and Memory Project contributing sound artist	2020
	Bay Area Scientists in Schools Instructor	2012

TECHNICAL TRAINING	**Bioacoustics and AI Workshop** University of Copenhagen (virtual)	2024
	NCCR Evolving Language Vocal Segmentation Workshop University of Zürich (in person)	2023
	4D Advanced Microscopy of Brain Circuits course University of California, Berkeley (in person	2017