Saman Abbaspoor

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Harvard Medical School,
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Positions

2024 (Oct-present) Postdoctoral research fellow
Advisor: Jordan Farrell
F.M. Kirby Neurobiology Center, Boston Children's Hospital, Harvard Medical School, Boston, MA

2024 (Jan-Sep) Postdoctoral Fellow
Advisor: Dr. Kari Hoffman
Hoffman Lab,
Department of Psychological Sciences, Vanderbilt University, Nashville, TN

Education and Training

2018-2023 PhD in Psychological Sciences - Neuroscience, Psychology
Advisor: Dr. Kari Hoffman
Vanderbilt University, Nashville, TN

Dissertation title: "Hippocampal circuit dynamics during learning and sleep in freely behaving macaque monkeys" – (Defense and all requirement passed: December 13th, 2023; Date conferred: May 10th, 2024)

2013-2018 BSc. in Cell and Molecular Biology
Advisor: Dr. Ali Asadollahi
Ferdowsi University of Mashhad, Mashhad, Iran

Thesis title: "The role of the midbrain in attention control and eye movement generation in primates"

Research Experience

2024 Postdoc research Hoffman Lab, Vanderbilt University
Advisor: Dr. Kari Hoffman
- Neural population data analysis

2018-2023 Doctoral research Hoffman Lab, Vanderbilt University
Advisor: Dr. Kari Hoffman
- Trained freely-behaving *macaques* on complex cognitive tasks in a 3D immersive environment
- Performed wireless multi-site high-density recordings in freely-behaving macaques

2016–2018 Research assistant Rayan center for neuroscience and behavior, Ferdowsi University of Mashhad
Advisor: Dr. Ali Asadollahi
- Trained *marmosets* on visual tasks

- Performed single-channel recordings in macaques

2015–2016 Neurophysiology Lab, Medical University of Mashhad
Research assistant Advisor: Dr. Mohammad Naser Shafei
- *Rodent* Stereotaxic Surgery and Targeted Drug Delivery

Honors and Awards

2024 Jum Nunnally **Dissertation Award**: This award recognizes a recent outstanding doctoral dissertation in the Department of Psychology, Vanderbilt University

2023 Selected for the Trainee Highlight Award Honorable Mentions in the 9th Brain Initiative Meeting

The Pat Burns Memorial Graduate **Student Research Award**: This award recognizes outstanding achievement in research by a graduate student in the Department of Psychology, Vanderbilt University

2022 The William F. Hodges **Teaching Assistant Award**: This award recognizes outstanding achievement as a Teaching Assistant by a graduate student in the Department of Psychology, Vanderbilt University

2016, 2017 Honored at the university level for graduating among **Top Students**, Ferdowsi University of Mashhad.

The best undergraduate researcher award, Rayan Center for Neuroscience and Behavior, Mashhad, Iran

2006-2013 Awarded a position in NODET organization after an entrance exam. NODET (National Organization for Development of Exceptional Talents) is a state-run organization for Gifted Education, Iran

Grants

2022-2023 Graduate School Travel Grant, Vanderbilt University,

Teaching Experience

2024 [Instructor] Workshop for Multi-Area, High-Density, Laminar Neurophysiology (MaDeLaNe) Data Analysis, Vanderbilt University, Nashville, TN

2022 PSY 3750: Perception (Spring), Vanderbilt University
2021 NSC 6270: Computational Neuroscience (Spring), Vanderbilt University
2020 NSC 3274: Neuroanatomy (fall), Vanderbilt University
PSY 3100: Abnormal Psychology (Spring), Vanderbilt University
2019 PSY 3775: Human Memory (fall), Vanderbilt University

Editorial Activities: Peer Review [Link]

2024-2025 Review for **Trends in neurosciences**
Review for **Journal of neuroscience methods**
Review for **Behavioural brain research**

Publications

1. **Abbaspoor, S.,** Aljishi, A. and Hoffman, K.L., 2025. Experience reorganizes content-specific memory traces in macaques. *bioRxiv*.

2. **Abbaspoor, S.**, & Hoffman, K. L. (2024). Circuit dynamics of superficial and deep CA1 pyramidal cells and inhibitory cells in freely moving macaques. Cell Reports, *43*(8).

3. **Abbaspoor, S.**, Rahman, K., Zinke, W. and Hoffman, K.L., 2023. Learning of object-in-context sequences in freely-moving macaques. bioRxiv.

4. Navas-Olive, A., Rubio, A., **Abbaspoor**, S., Hoffman, K. L., & de la Prida, L. M. (2024). A machine learning toolbox for the analysis of sharp-wave ripples reveals common waveform features across species. Communications Biology, 7(1), 1-15.

5. **Abbaspoor**, S., Hussin, A. T., & Hoffman, K. L. (2023). Theta-and gamma-band oscillatory uncoupling in the macaque hippocampus. Elife, 12, e86548.

6. Hussin, AT, **Abbaspoor** S, and Hoffman KL (2022). Retrosplenial and hippocampal synchrony during retrieval of old memories in macaques. Journal of Neuroscience 42.42, pp. 7947–7956.

7. Liu, AA, Henin S, **Abbaspoor** S, Anatol Bragin, E A Buffalo, J S Farrell, D J Foster, L M Frank, T Gedankien, J Gotman, et al. (2022). A consensus statement on detection of hippocampal sharp wave ripples and differentiation from other fast oscillations. Nature Communications 13.1, pp. 1–14.

8. Hosein P, **Abbaspoor** S, Shafei M, Hosseini M, and Khajavirad A (2018). GABAA receptor in the Pedunculopontine tegmental (PPT) nucleus: Effects on cardiovascular system. Pharmacological Reports 70.5, pp. 1001–1009.

Conference Abstracts

2024 S. **Abbaspoor**., and K. Hoffman. “Selective activation of cell assemblies during sequenced associative learning and their reactivation in subsequent sleep in freely-behaving macaques.” Neuroscience (SfN)

A. Aljishi, S. **Abbaspoor**., and K. Hoffman. “Coupling of hippocampal sharp-wave ripples to spindles signals stronger cell assembly reactivation in sleeping macaques.” Neuroscience (SfN)

S. **Abbaspoor**., and K. Hoffman. “The organization of cell assembly dynamics during learning and sleep in the freely-moving macaques.” 10th Brain Initiative Meeting.

2023 S. **Abbaspoor**., and K. Hoffman. “Layer-specific properties of hippocampal CA1 functional cell types in freely behaving macaques”. Neuroscience (SfN)

S. **Abbaspoor**., KF. Rahman, Zinke W., and K. Hoffman. “Learning of object-in-context sequences in freely moving macaques”. 9th Brain Initiative Meeting.

2022 S. **Abbaspoor**., A. Hussin, and K. and Hoffman. “Theta and gamma band oscillatory decoupling in macaque hippocampus”. Neuroscience (SfN) and Human Single Neuron Meeting

K. Rahman, S. **Abbaspoor**., and K. Hoffman. “Embodied and embedded sequence learning in freely-moving macaques”. Neuroscience (SfN)

Invited Talks and Presentations

2024

- Computational Machinery of Cognition (CMC lab); “Theta-and gamma-band oscillatory uncoupling in the macaque hippocampus” [November 2024]
- F.M. Kirby Neurobiology Center, Harvard Medical School; “Organization of cell assemblies during learning and sleep in the freely-behaving macaques”
- Murthy Lab, Harvard University; “Organization of cell assemblies during learning and sleep in the freely-behaving macaques”
- Psychology Department, Vanderbilt University; “Organization of cell assemblies during learning and sleep in the freely-behaving macaques”

2023

- Neuroscience Brownbag, Psychology Department, Vanderbilt University; “Hippocampal circuit dynamics during learning of item-context sequences in freely behaving macaques”
- Liu Lab, New York University; “Neural dynamics of the monkey hippocampus”
- Winter Conference on Learning and Memory, Park City, Utah

2022

- Neuroscience Brownbag, Psychology Department, Vanderbilt University; Neural dynamics of memory formation in macaques,

2021

- Buzsaki Lab, New York University; “Theta-and gamma-band oscillatory uncoupling in the macaque hippocampus”
- Neuroscience Brownbag, Psychology Department, Vanderbilt University; Neural dynamics of memory consolidation: approaches to wireless multi-site recording in freely behaving monkeys during immersive learning

2019

- Neuroscience Brownbag, Psychology Department, Vanderbilt University; Hippocampo-retrosplenial dynamics during visuospatial memory formation,

Languages

- Persian (native)
- English

References

Dr. Kari Hoffman (kari.hoffman@vanderbilt.edu)
Associate Professor, Department of Psychology, Vanderbilt University

Dr. Thilo Womelsdorf (thilo.womelsdorf@vanderbilt.edu)
Professor, Department of Psychology, Vanderbilt University

Dr. Sean Polyn (sean.polyn@vanderbilt.edu)
Associate Professor, Department of Psychology, Vanderbilt University

Dr. Ivan Soltesz (isoltesz@stanford.edu)
Professor of Neurosurgery And Neurosciences, Stanford University