

# Stanford

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## Keren Haroush

Assistant Professor of Neurobiology

### Bio

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#### ACADEMIC APPOINTMENTS

- Assistant Professor, Neurobiology
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

#### HONORS AND AWARDS

- NIH Director's New Innovator Award, National Institute of Health (2020-2025)
- Whitehall Foundation Research Grant, Whitehall Foundation (2020-2023)
- Sloan Research Fellow, Alfred P. Sloan Foundation (2019 - 2021)
- NARSAD Young Investigator Grant, Brain and Behavior Foundation (2017 - 2019)
- SFARI Bridge to Independence Award, Simon's Foundation (2016 - 2022)
- Peter and Patricia Gruber International Research Award, Society for Neuroscience and The Gruber Foundation (2015)

#### PROGRAM AFFILIATIONS

- Symbolic Systems Program

#### PROFESSIONAL EDUCATION

- Ph.D., The Hebrew University, Jerusalem, Israel , Neurobiology

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our laboratory studies the mechanisms by which highly complex behaviors are mediated at the neuronal level, mainly focusing on the example of dynamic social interactions and the neural circuits that drive them. From dyadic interactions to group dynamics and collective decision making, the lab seeks a mechanistic understanding for the fundamental building blocks of societies, such as cooperation, empathy, fairness and reciprocity.

The computations underlying social interactions are highly distributed across many brain areas. Our lab is interested in which specific areas are involved in a particular function, why such an architecture arises and how activity in multiple networks is coordinated. Our goal is to develop a roadmap of the social brain and use it for guiding restorative treatments for conditions in which social behavior is impaired, such as Autism Spectrum Disorders and Schizophrenia.

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We have open positions for currently enrolled graduate students (through available rotation opportunities) and prospective postdoctoral fellows (supported by federal funding) for studying the neuronal basis of dynamic social interactions. We perform cutting-edge large-scale recordings and targeted perturbation in rich social tasks based on game-theory combined with advanced analytical approaches, brain-computer interface, machine vision and deep learning to understand the single neuron and population level underpinnings of complex social computations. We are looking to recruit bright, highly motivated, and friendly individuals with strong interest (for students) or background (for postdoctoral applicants) in neurophysiology and/or computation. Individuals from groups under-represented in STEM are especially encouraged to apply. For more details, please email Keren Haroush directly at [kharoush@stanford.edu](mailto:kharoush@stanford.edu).

## Teaching

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### COURSES

#### 2024-25

- Cellular/Molecular Neuroscience Laboratory: NEPR 288 (Aut)

#### 2023-24

- Cellular/Molecular Neuroscience Laboratory: NEPR 288 (Aut)

#### 2022-23

- Cellular/Molecular Neuroscience Laboratory: NEPR 288 (Aut)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Matthew Bauer

#### Postdoctoral Faculty Sponsor

Sia Ahmadi, Xiaosheng Chen, Seyed Javad Saghravani, Tohar Yarden

#### Doctoral Dissertation Advisor (AC)

Yun Hwang

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (Phd Program)
- Neurosciences (Phd Program)

## Publications

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### PUBLICATIONS

- **Toward a neurobiological model of human performance under pressure.** *Proceedings of the National Academy of Sciences of the United States of America*  
Saikley, A., Haroush, K.  
2021; 118 (36)
- **Current practices in nutrition management and disease incidence of common marmosets (*Callithrix jacchus*).** *Journal of medical primatology*  
Goodroe, A., Wachtman, L., Benedict, W., Allen-Worthington, K., Bakker, J., Burns, M., Diaz, L. L., Dick, E., Dickerson, M., Eliades, S. J., Gonzalez, O., Graf, D., Haroush, et al  
2021
- **Dorsolateral prefrontal neurons mediate subjective decisions and their variation in humans** *NATURE NEUROSCIENCE*  
Jamali, M., Grannan, B., Haroush, K., Moses, Z. B., Eskandar, E. N., Herrington, T., Patel, S., Williams, Z. M.  
2019; 22 (6): 1010+
- **Dorsolateral prefrontal neurons mediate subjective decisions and their variation in humans.** *Nature neuroscience*  
Jamali, M., Grannan, B., Haroush, K., Moses, Z. B., Eskandar, E. N., Herrington, T., Patel, S., Williams, Z. M.

2019

- **Neuronal Prediction of Opponent's Behavior during Cooperative Social Interchange in Primates** *CELL*  
Haroush, K., Williams, Z. M.  
2015; 160 (6): 1233-1245
- **Hearing While Blinking: Multisensory Attentional Blink Revisited** *JOURNAL OF NEUROSCIENCE*  
Haroush, K., Deouell, L. Y., Hochstein, S.  
2011; 31 (3): 922-927
- **Momentary Fluctuations in Allocation of Attention: Cross-modal Effects of Visual Task Load on Auditory Discrimination** *JOURNAL OF COGNITIVE NEUROSCIENCE*  
Haroush, K., Hochstein, S., Deouell, L. Y.  
2010; 22 (7): 1440-1451