

Stanford



William Giardino

Assistant Professor (Research) of Psychiatry and Behavioral Sciences (Sleep Medicine)
Psychiatry and Behavioral Sciences - Stanford Center for Sleep Sciences and Medicine

 Curriculum Vitae available Online

Bio

BIO

Assistant Professor, Department of Psychiatry & Behavioral Sciences

Principal Investigator, Giardino Laboratory

ACADEMIC APPOINTMENTS

- Assistant Professor (Research), Psychiatry and Behavioral Sciences - Stanford Center for Sleep Sciences and Medicine
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- K99/R00 Alcohol-Related Sleep Disturbances and Circuit Dynamics of Arousal Neuropeptides, NIH/NIAAA (2018-2024)

PROFESSIONAL EDUCATION

- PhD, Oregon Health & Science University , Behavioral Neuroscience (2013)
- BS, University of Washington , Psychology (2008)

LINKS

- Google Scholar: http://scholar.google.com/citations?user=AG8_N7kAAAAJ&hl=en
- Lab Site: <https://giardinolab.sites.stanford.edu/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The Giardino Lab of Circuits & Systems Neuroscience in Stanford's Department of Psychiatry & Behavioral Sciences is currently accepting applicants for research scientists at all levels of experience. We aim to decipher the neural mechanisms underlying psychiatric conditions of stress, addiction, and sleep disturbances. Our work uses genetic, pharmacological, physiological, anatomical, optical, and computational approaches in freely-behaving mice to monitor, manipulate, and map the neural circuits, synapses, and signaling mechanisms driving approach/avoidance behaviors, drug-seeking, food intake, social interactions, sleep/wake cycles, and other arousal states.

Research Topics:

Stress & Reward

Alcohol Addiction

Sex Differences

Wakefulness/Arousal

Neuropeptide Release & Signaling

Feeding & Metabolism

Research Approaches:

Neuromodulation (optogenetics, chemogenetics)

Neurophysiological recordings (fiber photometry, calcium imaging, EEG/EMG)

Neurogenetics (CRISPR/Cas9 editing, Cre/loxP recombination, viral gene transfer, mouse genetics)

Neuroanatomy (circuit tracing, immunohistochemistry, in situ hybridization, confocal & light sheet microscopy)

Neuropharmacology (alcohol & drug self-administration, receptor mechanisms)

Computation (neural circuit modeling, machine learning analysis of behavioral & physiological datasets)

Behavior and Evolution (rodent model organisms, cross-species comparisons)

Translation (interdisciplinary and clinical collaborations, mental health treatment development)

Publications

PUBLICATIONS

- **Arousal-state dependent alterations in VTA-GABAergic neuronal activity.** *eNeuro*
Eban-Rothschild, A., Borniger, J. C., Rothschild, G., Giardino, W. J., Morrow, J. G., de Lecea, L.
2020
- **The nucleus accumbens and alcoholism: a target for deep brain stimulation** *NEUROSURGICAL FOCUS*
Ho, A. L., Salib, A. N., Pendharkar, A., Sussman, E. S., Giardino, W. J., Halpern, C. H.
2018; 45 (2): E12
- **Parallel circuits from the bed nuclei of stria terminalis to the lateral hypothalamus drive opposing emotional states.** *Nature neuroscience*
Giardino, W. J., Eban-Rothschild, A., Christoffel, D. J., Li, S., Malenka, R. C., de Lecea, L.
2018
- **Optical Probing of Orexin/Hypocretin Receptor Antagonists.** *Sleep*
Li, S. B., Nevárez, N., Giardino, W. J., de Lecea, L.
2018
- **VTA dopaminergic neurons regulate ethologically relevant sleep-wake behaviors.** *Nature neuroscience*
Eban-Rothschild, A., Rothschild, G., Giardino, W. J., Jones, J. R., de Lecea, L.
2016; 19 (10): 1356-1366
- **Hypocretin (orexin) neuromodulation of stress and reward pathways** *CURRENT OPINION IN NEUROBIOLOGY*
Giardino, W. J., de Lecea, L.
2014; 29: 103-108
- **Stress-Related Neuropeptides and Addictive Behaviors: Beyond the Usual Suspects** *NEURON*
Schank, J. R., Ryabinin, A. E., Giardino, W. J., Ciccocioppo, R., Heilig, M.
2012; 76 (1): 192-208
- **Corticotropin-releasing factor: innocent until proven guilty.** *Nature reviews. Neuroscience*
Giardino, W. J., Ryabinin, A. E.
2012; 13 (1): 70-?
- **To sleep or not to sleep: neuronal and ecological insights.** *Current opinion in neurobiology*

- Eban-Rothschild, A., Giardino, W. J., de Lecea, L.
2017; 44: 132-138
- **Contribution of Urocortin to the Development of Excessive Drinking** *ROLE OF NEUROPEPTIDES IN ADDICTION AND DISORDERS OF EXCESSIVE CONSUMPTION*
Ryabinin, A. E., Giardino, W. J., Thiele, T. E.
2017; 136: 275-91
 - **Hypocretins and Arousal.** *Current topics in behavioral neurosciences*
Li, S., Giardino, W. J., de Lecea, L.
2016
 - **Resting easy with a sleep regulator** *ELIFE*
Giardino, W. J., de Lecea, L.
2015; 4
 - **CRF1 Receptor Signaling Regulates Food and Fluid Intake in the Drinking-in-the-Dark Model of Binge Alcohol Consumption** *ALCOHOLISM-CLINICAL AND EXPERIMENTAL RESEARCH*
Giardino, W. J., Ryabinin, A. E.
2013; 37 (7): 1161-1170
 - **Urocortins: CRF's siblings and their potential role in anxiety, depression and alcohol drinking behavior** *ALCOHOL*
Ryabinin, A. E., Tsoory, M. M., Kozicz, T., Thiele, T. E., Neufeld-Cohen, A., Chen, A., Lowery-Gionta, E. G., Giardino, W. J., Kaur, S.
2012; 46 (4): 349-357
 - **Characterization of genetic differences within the centrally projecting Edinger-Westphal nucleus of C57BL/6J and DBA/2J mice by expression profiling** *FRONTIERS IN NEUROANATOMY*
Giardino, W. J., Cote, D. M., Li, J., Ryabinin, A. E.
2012; 6
 - **Dissociation of corticotropin-releasing factor receptor subtype involvement in sensitivity to locomotor effects of methamphetamine and cocaine** *PSYCHOPHARMACOLOGY*
Giardino, W. J., Mark, G. P., Stenzel-Poore, M. P., Ryabinin, A. E.
2012; 219 (4): 1055-1063
 - **Urocortin-1 within the Centrally-Projecting Edinger-Westphal Nucleus Is Critical for Ethanol Preference** *PLOS ONE*
Giardino, W. J., Cocking, D. L., Kaur, S., Cunningham, C. L., Ryabinin, A. E.
2011; 6 (10)
 - **Dissection of corticotropin-releasing factor system involvement in locomotor sensitivity to methamphetamine** *GENES BRAIN AND BEHAVIOR*
Giardino, W. J., Pastor, R., Anacker, A. M., Spangler, E., Cote, D. M., Li, J., Stenzel-Poore, M. P., Phillips, T. J., Ryabinin, A. E.
2011; 10 (1): 78-89
 - **Activation of the kappa opioid receptor in the dorsal raphe nucleus mediates the aversive effects of stress and reinstates drug seeking** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Land, B. B., Bruchas, M. R., Schattauer, S., Giardino, W. J., Aita, M., Messinger, D., Hnasko, T. S., Palmiter, R. D., Chavkin, C.
2009; 106 (45): 19168-19173