



Alexander Gonzalez

Scientific Project Manager
Wu Tsai Human Performance Alliance

Bio

BIO

Alex Gonzalez is a Scientific Project Manager for the Wu Tsai Human Performance Alliance. In this role, Alex contributes to the management of external institutional and industry partners and the Agility Grants program. On the research side, Alex is part of the Digital Athlete moonshot and provides data science and statistical expertise across multiple scientific projects related to neuroscience, human performance, health, and basic physiology. Specifically, Alex develops scalable data infrastructures and algorithms to analyze large data sets to uncover biological principles of human physiology. Current projects include (1): using data from wearable technology to characterize training loads and the relationship to performance and injury; (2) characterization and computational models of female physiology through the menstrual cycle and lifespan, (3) development of computational models that can describe between the interaction of sleep, physical activity and the menstrual cycle.

Alex's academic degrees are in Electrical Engineering, with a concentration in Signal Processing and Machine Learning. In his research, he applied the technical aspects of engineering to neuroscience. In his PhD studies at Stanford, Alex studied how invasive and non-invasive cortical electrical signals related to human memory. In his postdoctoral work, he switched to study rodents, in which he studied signal encoding of navigational circuits. Additional major prior projects include: development for online arrhythmia detection (industry), electrode sensor testing for brain recordings, instrumentation development for stem-cell differentiation into cardiomyocytes.

CURRENT ROLE AT STANFORD

Scientific Project Manager for the Wu Tsai Human Performance Alliance

ACADEMIC APPOINTMENTS

- Research Engineer, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Human Performance Alliance

HONORS AND AWARDS

- Ruth L. Kirschstein National Research Service Award (NRSA), NIH - NIMH (2019-2022)
- DARE Fellowship, Stanford (2015)
- Electrical Engineering Teaching Fellow, Stanford (2015)
- Psychology Department Pilot Research Grant - Transcranial Current Stimulation Experiments, Stanford (2014)
- NIH Training Grant in Biotechnology (T32), Stanford - NIH (2012-2015)
- Alfred P. Sloan PhD Graduate Fellow, Alfred P. Sloan Foundation (2011-2013)
- Neuro Ventures Research Seed Funding (Co-PI) - EEG-fMRI Studies of Memory, Stanford (2011-2013)

- NSF Graduate Research Fellowship, NSF (2010-2013)

PROFESSIONAL EDUCATION

- BS, University of Puerto Rico - Mayaguez , Electrical Engineering (2010)
- PhD, Stanford , Electrical Engineering (2017)
- Postdoc, Stanford , Neurobiology (2022)

LINKS

- LinkedIn: <https://www.linkedin.com/in/alexgonz/>
- Github: <https://github.com/alexgonzl>
- Google Scholar: <https://scholar.google.com/citations?user=6326vUYAAAAJ&hl=en>

Publications

PUBLICATIONS

- **The menstrual cycle through the lens of a wearable device: insights into physiology, sleep, and cycle variability.** *NPJ digital medicine*
Gonzalez, A., O'Day, J. J., Johnson, S. C., Kim, J., Jasinski, S. R., Holmes, K. E., Delp, S. L., Hicks, J. L.
2026
- **NeuroRoots, a bio-inspired, seamless brain machine interface for long-term recording in delicate brain regions.** *AIP advances*
Ferro, M. D., Proctor, C. M., Gonzalez, A., Jayabal, S., Zhao, E., Gagnon, M., Slézia, A., Pas, J., Dijk, G., Donahue, M. J., Williamson, A., Raymond, J., Malliaras, et al
2024; 14 (8): 085109
- **Parahippocampal neurons encode task-relevant information for goal-directed navigation.** *eLife*
Gonzalez, A., Giocomo, L. M.
2024; 12
- **Electrocorticography reveals the temporal dynamics of posterior parietal cortical activity during recognition memory decisions.** *Proceedings of the National Academy of Sciences of the United States of America*
Gonzalez, A., Hutchinson, J. B., Uncapher, M. R., Chen, J., LaRocque, K. F., Foster, B. L., Rangarajan, V., Parvizi, J., Wagner, A. D.
2015; 112 (35): 11066-11071
- **Hippocampal patterns and associative memory: Distinct intracranial EEG temporal encoding patterns support memory.** *bioRxiv : the preprint server for biology*
Xue, A. M., Hsu, S., LaRocque, K. F., Raccach, O., Gonzalez, A., Parvizi, J., Wagner, A. D.
2026
- **From Rats to Humans: how novel behavioral paradigms and reinforcement learning can bridge the gap in translation.** *Lab animal*
Gonzalez, A., Giocomo, L. M.
2022
- **Neuromatch Academy: a 3-week, online summer school in computational neuroscience** *Journal of Open Source Education*
't Hart, B. M., et al
2022
- **TEACHING DIGITAL SIGNAL PROCESSING WITH STANFORD'S LAB-IN-A-BOX**
Mujica, F. A., Esposito, W. J., Gonzalez, A., Qi, C. R., Vassos, C., Wieman, M., Wilcox, R., Kovacs, G. T. A., Schafer, R. W., IEEE
IEEE.2015: 307–12
- **Integrated strain array for cellular mechanobiology studies.** *Journal of micromechanics and microengineering : structures, devices, and systems*
Simmons, C. S., Sim, J. Y., Baechtold, P., Gonzalez, A., Chung, C., Borghi, N., Pruitt, B. L.
2011; 21 (5): 54016-54025