Stanford



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, where he combines research with program leadership. On the research side, he is part of the Digital Athlete moonshot and provides data science and statistical expertise across projects in neuroscience, human performance, health, and basic physiology. He led a cohort-scale study of menstrual cycle physiology and sleep from wearable data, published in npj Digital Medicine (2026), and develops scalable data infrastructure and algorithms to uncover biological principles of human physiology. Current projects include: (1) characterizing training loads and their relationship to performance and injury from wearable data; (2) computational models of female physiology across the menstrual cycle and lifespan; and (3) models of the interaction between sleep, physical activity, and the menstrual cycle. On the program side, Alex manages external institutional and industry partnerships and runs the Agility Projects program.

Alex's degrees are in electrical engineering, with a concentration in signal processing and machine learning. His PhD at Stanford examined how invasive and non-invasive cortical electrical signals relate to human memory; his postdoctoral work studied how rodent navigational circuits encode space and behavior. Prior projects include real-time arrhythmia detection algorithms for an FDA-regulated wearable defibrillator, electrode sensor testing for brain recordings, and instrumentation for stem-cell differentiation into cardiomyocytes.

CURRENT ROLE AT STANFORD

Scientific Project Manager for the Wu Tsai Human Performance Alliance

ACADEMIC APPOINTMENTS

- Scientific Project Manager, 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 (2015-2016)
- 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
- Personal Site: https://alexgonzl.github.io/

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., Raccah, 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