



Luis Hernandez-Nunez

Assistant Professor of Biology

Bio

BIO

Luis Hernandez-Nunez is a tenure-track professor of biology, a Warren Alpert Distinguished Scholar, a Branco Weiss faculty fellow, and a Burroughs Wellcome Career Award faculty fellow at Stanford University, where he leads the Hernandez-Nunez Lab. Luis' research focuses on the circuit mechanisms underlying heart-brain interactions and on organismal circuits that implement multiorgan coordination and feedback control. Luis did his postdoctoral training with Florian Engert supported by an LSRF fellowship. Luis obtained his Ph.D. in Systems, Synthetic, and Quantitative Biology from Harvard in 2020. He conducted his doctoral research in Aravinthan Samuel's lab, where he identified molecules, cells, and circuits that mediate thermal homeostasis in larval *Drosophila*. Before graduate school, Luis was an undergraduate and then a postbac researcher at Thierry Emonet's lab at Yale University. Before moving to the U.S., Luis studied mechatronics engineering at the National University of Engineering in Peru.

ACADEMIC APPOINTMENTS

- Assistant Professor, Biology
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance
- Faculty Fellow, Sarafan ChEM-H
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Leadership Award, Society for Integrative & Comparative Biology (2026)
- Terman Faculty Fellow, Stanford University (2025-2028)
- Full member of Sigma Xi, Sigma Xi the Scientific Research Honor Society (2025)
- Brain Initiative R34 Interoception Awardee, NIH (2024-2027)
- Mind, Brain, and Behavior Young Investigator Award, Harvard University (2024)
- Branco Weiss Faculty Fellow, ETH Zurich (2023-2028)
- Career Award at the Scientific Interface, Burroughs Wellcome Fund (2023-2028)
- Warren Alpert Distinguished Scholar, Warren Alpert Foundation (2023-2025)
- Intersections Science Fellow, Yale University (2023)
- Next Generation Faculty Fellow, Stanford, UCSF, UC Berkeley (2023)
- Next Generation Leader, Duke University (2023)

- P-SPINE Fellow, University of Pennsylvania (2023)
- Rising Star in Engineering in Health, Columbia, Cornell, and Johns Hopkins University (2023)
- Life Sciences Research Foundation Fellowship, Life Sciences Research Foundation (2022-2025)
- Shenoy Mentor for undergraduate students, Simons Foundation (2022-2024)
- Eddie Mendez Scholar Award, Fred Hutchinson Cancer Research Center (2022)
- Genes, Brain, and Behavior Outstanding Postdoctoral Fellow Award, International Behavioural and Neural Genetics Society (2022)
- Jane Coffin Childs Memorial Fund postdoctoral fellowship, Jane Coffin Childs Memorial Fund (2022)
- Larry Sandler Memorial Award runner-up, Genetics Society of America (2022)
- Rockefeller Exceptional Scholar, Rockefeller University (2022)
- SfN Professional Development Award, Society for Neuroscience (2022)
- Mind, Brain, and Behavior Fellowship, Harvard University (2021-2022)
- AChemS Diversity Award, Association of Chemoreception Sciences (2021)
- Emerging Scholar in Biomedical Engineering, Boston University (2021)
- Mind Brain and Behavior Young Investigator Award, Harvard University (2021)
- Presidential Membership Award, Genetics Society of America (2021)

PROFESSIONAL EDUCATION

- Research Fellow, Harvard University , Neuroscience (2025)
- Ph.D., Harvard University , Systems, Synthetic, and Quantitative Biology (2020)

LINKS

- My Lab Website: <http://hernandez-nunez-lab.com>

Publications

PUBLICATIONS

- **Emergence of Functional Heart-Brain Circuits in a Vertebrate**
Hernandez-Nunez, L., Avrami, J., Shi, S., Markarian, A., Boulanger-Weill, J., Zhargani-Shiraz, A., Ahrens, M., Engert, F., Fishman, M.
bioRxiv.
2025
- **Imaging whole-brain activity to understand behavior.** *Nature reviews. Physics*
Lin, A., Witvliet, D., Hernandez-Nunez, L., Linderman, S. W., Samuel, A. D., Venkatachalam, V.
2022; 4 (5): 292-305
- **Automated Control of Odor Dynamics for Neurophysiology and Behavior**
Hernandez-Nunez, L., Samuel, A. D. T.
OXFORD UNIV PRESS.2021
- **Internal state configures olfactory behavior and early sensory processing in Drosophila larvae** *SCIENCE ADVANCES*
Vogt, K., Zimmerman, D. M., Schlichting, M., Hernandez-Nunez, L., Qin, S., Malacon, K., Rosbash, M., Pehlevan, C., Cardona, A., Samuel, A. D. T.
2021; 7 (1)
- **Synchronous and opponent thermosensors use flexible cross-inhibition to orchestrate thermal homeostasis** *Science Advances*
Hernandez-Nunez, L., Chen, A., Budelli, G., Berck, M., Richter, V., Rist, A., Thum, A., Cardona, A., Klein, M., Garrity, P., Samuel, A. D.
2021
- **A Hybrid Compact Neural Architecture for Visual Place Recognition** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Chancan, M., Hernandez-Nunez, L., Narendra, A., Barron, A. B., Milford, M.

2020; 5 (2): 993-1000

- **The wiring diagram of a glomerular olfactory system.** *eLife*

Berck, M. E., Khandelwal, A., Claus, L., Hernandez-Nunez, L., Si, G., Tabone, C. J., Li, F., Truman, J. W., Fetter, R. D., Louis, M., Samuel, A. D., Cardona, A.

2016; 5

- **Erratum: Multimodal stimulus coding by a gustatory sensory neuron in *Drosophila* larvae.** *Nature communications*

van Giesen, L., Hernandez-Nunez, L., Delasoie-Baranek, S., Colombo, M., Renaud, P., Bruggmann, R., Benton, R., Samuel, A. D., Sprecher, S. G.

2016; 7: 11028

- **Reverse-correlation analysis of navigation dynamics in *Drosophila* larva using optogenetics.** *eLife*

Hernandez-Nunez, L., Belina, J., Klein, M., Si, G., Claus, L., Carlson, J. R., Samuel, A. D.

2015; 4

- **Sensory determinants of behavioral dynamics in *Drosophila* thermotaxis.** *Proceedings of the National Academy of Sciences of the United States of America*

Klein, M., Afonso, B., Vonner, A. J., Hernandez-Nunez, L., Berck, M., Tabone, C. J., Kane, E. A., Pieribone, V. A., Nitabach, M. N., Cardona, A., Zlatic, M., Sprecher, S. G., Gershow, et al

2015; 112 (2): E220-9

- **Limits of Feedback Control in Bacterial Chemotaxis (vol 10, e1003694, 2014)** *PLOS COMPUTATIONAL BIOLOGY*

Dufour, Y. S., Fu, X., Hernandez-Nunez, L., Emonet, T.

2014; 10 (12)

- **Adaptability of non-genetic diversity in bacterial chemotaxis.** *eLife*

Frankel, N. W., Pontius, W., Dufour, Y. S., Long, J., Hernandez-Nunez, L., Emonet, T.

2014; 3