Stanford

Amira Latif Hernandez

Instructor, Neurology & Neurological Sciences

NIH Biosketch available Online

Bio

BIO

Amira obtained her Ph.D. in Neuroscience from the KU Leuven, Belgium, in summer 2017. During her doctoral studies, she used clinically valid tests of murine cognition, neuronal plasticity measures in hippocampal and cortical slices, brain lesion methods, pharmacological applications and resting state functional magnetic resonance imaging to characterize the pathophysiology of novel mouse models of Alzheimer's disease (AD). One of her most gratifying contributions was the development of a new electrophysiology tool to assess synaptopathies, and the establishment of long-term synaptic plasticity from prefrontal cortex of APP knock-in mice. In Autumn 2017, she moved to Dr. Longo's lab at the Stanford School of Medicine, where she investigates signaling pathways involved in synaptic degeneration. During 3 years of postdoctoral work, she established a multi-electrode array system with eight independent recording chambers that allows high-throughput analyses of multiple long-lasting forms of synaptic plasticity. She also gained experience in RNA-sequencing, molecular biochemistry, signaling mechanisms, target validation and drug development strategies for AD. In October 2020, Amira has been appointed as an Instructor in Neurodegenerative Disease Research, in the Longo lab, to help develop improved and more powerful approaches that will better reveal key synaptic mechanisms and candidate modules associated with neuroplasticity and affected in AD mouse models, by identifying activity-dependent gene expression signatures.

ACADEMIC APPOINTMENTS

- Instructor, Neurology & Neurological Sciences

Publications

PUBLICATIONS

- **Restoring hippocampal glucose metabolism rescues cognition across Alzheimer's disease pathologies.** *Science (New York, N.Y.)*
  Minhas, P. S., Jones, J. R., Latif-Hernandez, A., Sugiura, Y., Durairaj, A. S., Wang, Q., Mhatre, S. D., Uenaka, T., Crapser, J., Conley, T., Ennerfelt, H., Jung, Y. J., Liu, et al
  2024; 385 (6711): eabm6131

- **A TrkB and TrkC partial agonist restores deficits in synaptic function and promotes activity-dependent synaptic and microglial transcriptomic changes in a late-stage Alzheimer's mouse model.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Latif-Hernandez, A., Yang, T., Raymond-Butler, R. 3., Losada, P. M., Minhas, P. S., White, H., Tran, K. C., Liu, H., Simmons, D. A., Langness, V., Andreasson, K. I., Wyss-Coray, T., Longo, et al
  2024

- **Restoring metabolism of myeloid cells reverses cognitive decline in ageing.** *Nature*
  Minhas, P. S., Latif-Hernandez, A., McReynolds, M. R., Durairaj, A. S., Wang, Q., Rubin, A., Joshi, A. U., He, J. Q., Gauba, E., Liu, L., Wang, C., Linde, M., Sugiura, et al
  2021

- **The two faces of synaptic failure in AppNL-G-F knock-in mice.** *Alzheimer's research & therapy*
  Latif-Hernandez, A., Sabanov, V., Ahmed, T., Craessaerts, K., Saito, T., Saido, T., Balschun, D.

2020; 12 (1): 100

- **Commentary: APP as a Mediator of the Synapse Pathology in Alzheimer's Disease.** *Frontiers in cellular neuroscience*
  Schreurs, A., Latif-Hernandez, A., Uwineza, A.
  2018; 12: 150