Stanford

Ethan Solomon

Instructor, Psychiatry and Behavioral Sciences

CLINICAL OFFICE (PRIMARY)

- **Psychiatry**

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Bio

BIO

Dr. Solomon is an Instructor in the Department and Psychiatry and Behavioral Sciences and a member of the Stanford Precision Neurotherapeutics Lab. He earned his MD and PhD in Bioengineering through the Medical Scientist Training Program at the University of Pennsylvania, and completed residency training in psychiatry at the Stanford School of Medicine. His research focuses on electrophysiological techniques (stereo-EEG/ECoG, scalp EEG) and brain stimulation technologies (direct electrical stimulation, deep brain stimulation, and transcranial magnetic stimulation) to understand cognitive and perceptual processes in psychiatric illness. Dr. Solomon is a recipient of an NIMH K99 grant to study the use of theta burst stimulation in hippocampal-cortical networks of patients with schizophrenia.

CLINICAL FOCUS

- Psychiatry
- Interventional psychiatry
- Schizophrenia
- Transcranial Magnetic Stimulation

ACADEMIC APPOINTMENTS

- Instructor, Psychiatry and Behavioral Sciences

ADMINISTRATIVE APPOINTMENTS

- Chief Resident (research-track), Stanford Health Care, Dept. of Psychiatry, (2024-2025)

HONORS AND AWARDS

- K99/R00 Career Development Award, National Institute of Mental Health (2025)
- Participant, Career Development Institute for Psychiatry (2025)
- Rising Star Showcase Presentation, Society of Biological Psychiatry (2025)
- Young Investigator Award, Brain and Behavior Research Foundation (2025)

- NIMH T32 Postdoctoral Fellow, Stanford Dept. of Psychiatry (2024)
- Rising Star Showcase Presentation, Society of Biological Psychiatry (2024)
- Travel Award, American College of Neuropsychopharmacology (2023)
- ITMAT Prize for Clinical/Translational Research, University of Pennsylvania (2020)
- Travel Award, COSYNE (2019)
- Trainee Professional Development Award, Society for Neuroscience (2018)
- T32 in Neuroengineering and Medicine, University of Pennsylvania (2016)
- Medical Scientist Training Program (MSTP), National Institutes of Health (2013)
- Hans-Lukas Teuber Award for Outstanding Academics, Massachusetts Institute of Technology, Dept. of Brain and Cognitive Sciences (2012)
- Walle J.H. Nauta Award for Outstanding Research, Massachusetts Institute of Technology, Dept. of Brain and Cognitive Sciences (2012)
- William L. Stewart Award for Extracurricular Activities, Massachusetts Institute of Technology (2012)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Diplomate, American Board of Psychiatry and Neurology (2025 - present)

PROFESSIONAL EDUCATION

- Board Certification: Psychiatry, American Board of Psychiatry and Neurology (2025)
- PhD, University of Pennsylvania , Bioengineering (2019)
- MD, University of Pennsylvania (2021)
- SB, Massachusetts Institute of Technology , Brain and Cognitive Sciences (2012)
- Residency: Stanford University Psychiatry and Behavioral Sciences (2025) CA
- Medical Education: Perelman School of Medicine University of Pennsylvania (2021) PA

Research & Scholarship

CLINICAL TRIALS

- Brain Stimulation to the Hippocampus in Schizophrenia, Not Specified

Publications

PUBLICATIONS

- **LOCAL THETA POWER CHANGES AS A RELIABLE BIOMARKER OF ITBS TARGET ENGAGEMENT**
  Solomon, E., Cline, C., Hassan, U., Truong, J., Hartford, W., Forman, L., Keller, C.
  SPRINGERNATURE.2026

- **DLPFC TMS Suppresses High-Frequency Neural Activity in the Human sgACC.** *Brain stimulation*
  Solomon, E. A., Hassan, U., Trapp, N. T., Boes, A. D., Keller, C. J.
  2025

- **Electroconvulsive Therapy and Clozapine Augmentation in an Older Adult With Bipolar Disorder With Psychotic Features: Case Report** *JOURNAL OF ECT*
  Lomayesva, N., Solomon, E., Hardamon, C., Lan, L., Saxena, P.
  2025; 41 (2): e26-e28

- **Conserved brain-wide emergence of emotional response from sensory experience in humans and mice.** *Science (New York, N.Y.)*
  Kauvar, I., Richman, E. B., Liu, T. X., Li, C., Vesuna, S., Chibukhchyan, A., Yamada, L., Fogarty, A., Solomon, E., Choi, E. Y., Mortazavi, L., Chau Loo Kung, G., Mukunda, et al
  2025; 388 (6750): eadt3971

- **Ketamine Increases Theta Oscillations and Cortical Connectivity of the Human Hippocampus**
  Solomon, E., Liu, T., Kauvar, I., Vesuna, S., Chibukhchyan, A., Yamada, L., Fogarty, A., Mukunda, P., Patron, K., Nuyujukian, P., Rodriguez, C., Buch, V., Deisseroth, et al
  ELSEVIER SCIENCE INC.2025
- **Scalp EEG predicts intracranial brain activity in humans.** *bioRxiv : the preprint server for biology*
  Subramanian, A. K., Talbot, A., Kim, N., Parmigiani, S., Cline, C. C., Solomon, E. A., Hartford, J. W., Huang, Y., Mikulan, E., Zauli, F. M., d'Orio, P., Cardinale, F., Mannini, et al
  2025
- **DLPFC Stimulation Suppresses High-Frequency Neural Activity in the Human sgACC.** *bioRxiv : the preprint server for biology*
  Solomon, E. A., Hassan, U., Trapp, N. T., Boes, A. D., Keller, C. J.
  2025
- **TMS provokes target-dependent intracranial rhythms across human cortical and subcortical sites.** *Brain stimulation*
  Solomon, E. A., Wang, J. B., Oya, H., Howard, M. A., Trapp, N. T., Uitermarkt, B. D., Boes, A. D., Keller, C. J.
  2024
- **TMS Provokes Target-Dependent Intracranial Rhythms Across Human Cortical and Subcortical Sites**
  Solomon, E., Wang, J., Oya, H., Howard, M., Trapp, N., Uitermarkt, B., Boes, A., Keller, C.
  ELSEVIER SCIENCE INC.2024: S75
- **TMS Provokes Target-Dependent Intracranial Rhythms Across Human Cortical and Subcortical Sites**
  Solomon, E., Wang, J., Oya, H., Howard, M., Trapp, N., Uitermarkt, B., Boes, A., Keller, C.
  SPRINGERNATURE.2023: 323-324
- **TMS provokes target-dependent intracranial rhythms across human cortical and subcortical sites.** *bioRxiv : the preprint server for biology*
  Solomon, E. A., Wang, J. B., Oya, H., Howard, M. A., Trapp, N. T., Uitermarkt, B. D., Boes, A. D., Keller, C. J.
  2023
- **Theta-burst stimulation entrains frequency-specific oscillatory responses.** *Brain stimulation*
  Solomon, E. A., Sperling, M. R., Sharan, A. D., Wanda, P. A., Levy, D. F., Lyalenko, A., Pedisich, I., Rizzuto, D. S., Kahana, M. J.
  2021; 14 (5): 1271-1284
- **Steroid-Responsive Mania Secondary to Pachymeningitis of the Right Frontal Lobe** *JOURNAL OF THE ACADEMY OF CONSULTATION-LIAISON PSYCHIATRY*
  Solomon, E. A., Murphy, A., Siegel, A. M., Taylor, G.
  2021; 62 (1): 89-96
- **Biomarkers of memory variability in traumatic brain injury** *BRAIN COMMUNICATIONS*
  Adamovich-Zeitlin, R., Wanda, P. A., Solomon, E., Phan, T., Lega, B., Jobst, B. C., Gross, R. E., Ding, K., Diaz-Arrastia, R., Kahana, M. J.
  2021; 3 (1): fcaa202
- **Theta Oscillations in Human Memory** *TRENDS IN COGNITIVE SCIENCES*
  Herweg, N. A., Solomon, E. A., Kahana, M. J.
  2020; 24 (3): 208-227
- **Hippocampal theta codes for distances in semantic and temporal spaces** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Solomon, E. A., Lega, B. C., Sperling, M. R., Kahana, M. J.
  2019; 116 (48): 24343-24352
- **Multivariate stochastic volatility modeling of neural data** *ELIFE*
  Phan, T. D., Wachter, J. A., Solomon, E. A., Kahana, M. J.
  2019; 8
- **Dynamic Theta Networks in the Human Medial Temporal Lobe Support Episodic Memory** *CURRENT BIOLOGY*
  Solomon, E. A., Stein, J. M., Das, S., Gorniak, R., Sperling, M. R., Worrell, G., Inman, C. S., Tan, R. J., Jobst, B. C., Rizzuto, D. S., Kahana, M. J.
  2019; 29 (7): 1100-+

- **Functional control of electrophysiological network architecture using direct neurostimulation in humans** *NETWORK NEUROSCIENCE*
  Khambhati, A. N., Kahn, A. E., Costantini, J., Ezzyat, Y., Solomon, E. A., Gross, R. E., Jobst, B. C., Sheth, S. A., Zaghloul, K. A., Worrell, G., Seger, S., Lega, B. C., Weiss, et al
  2019; 3 (3): 848-877

- **Medial temporal lobe functional connectivity predicts stimulation-induced theta power** *NATURE COMMUNICATIONS*
  Solomon, E. A., Kragel, J. E., Gross, R., Lega, B., Sperling, M. R., Worrell, G., Sheth, S. A., Zaghloul, K. A., Jobst, B. C., Stein, J. M., Das, S., Gorniak, R., Inman, et al
  2018; 9: 4437

- **Widespread theta synchrony and high-frequency desynchronization underlies enhanced cognition** *NATURE COMMUNICATIONS*
  Solomon, E. A., Kragel, J. E., Sperling, M. R., Sharan, A., Worrell, G., Kucewicz, M., Inman, C. S., Lega, B., Davis, K. A., Stein, J. M., Jobst, B. C., Zaghloul, K. A., Sheth, et al
  2017; 8: 1704

- **Simple Learned Weighted Sums of Inferior Temporal Neuronal Firing Rates Accurately Predict Human Core Object Recognition Performance** *JOURNAL OF NEUROSCIENCE*
  Majaj, N. J., Hong, H., Solomon, E. A., DiCarlo, J. J.
  2015; 35 (39): 13402-13418

- **Deep Neural Networks Rival the Representation of Primate IT Cortex for Core Visual Object Recognition** *PLOS COMPUTATIONAL BIOLOGY*
  Cadieu, C. F., Hong, H., Yamins, D. L. K., Pinto, N., Ardila, D., Solomon, E. A., Majaj, N. J., DiCarlo, J. J.
  2014; 10 (12): e1003963

- **Performance-optimized hierarchical models predict neural responses in higher visual cortex** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Yamins, D. L. K., Hong, H., Cadieu, C. F., Solomon, E. A., Seibert, D., DiCarlo, J. J.
  2014; 111 (23): 8619-8624