

Stanford



Ryan T. Ash

- Affiliate, Dean's Office Operations - Dean Other
- Resident in Psychiatry and Behavioral Sciences

Bio

BIO

I am a PGY3 research track resident in the Stanford Psychiatry department. I completed my MD-PhD at Baylor College of Medicine, working in the labs of Stelios Smirnakis and Huda Zoghbi, studying learning-associated synaptic plasticity in motor cortex of the MECP2 Duplication Syndrome mouse model using in vivo 2-photon imaging. I completed a post-doctoral fellowship at Brigham and Women's Hospital, Harvard Medical School, studying changes in neuronal population activity in MeCP2 disorders with 2-photon genetically encoded calcium indicator imaging.

I am currently developing methods to study the regulation of synaptic plasticity by affective state and mindful presence, using neuronavigated transcranial magnetic stimulation and source-localized EEG. I am also interested in studying alterations in the functional organization of somatomotor/interoceptive brain areas in trauma. My clinical interests include integrated psychodynamic- and mindfulness-based approaches, rTMS, and psychedelic-assisted psychotherapy.

CLINICAL FOCUS

- Residency

Publications

PUBLICATIONS

- **Contribution of apical and basal dendrites to orientation encoding in mouse V1 L2/3 pyramidal neurons.** *Nature communications*
Park, J., Papoutsi, A., Ash, R. T., Marin, M. A., Poirazi, P., Smirnakis, S. M.
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- **Increased Axonal Bouton Stability during Learning in the Mouse Model of MECP2 Duplication Syndrome** *ENEURO*
Ash, R. T., Fahey, P. G., Park, J., Zoghbi, H. Y., Smirnakis, S. M.
2018; 5 (3)
- **Loss and Gain of MeCP2 Cause Similar Hippocampal Circuit Dysfunction that Is Rescued by Deep Brain Stimulation in a Rett Syndrome Mouse Model.** *Neuron*
Lu, H., Ash, R. T., He, L., Kee, S. E., Wang, W., Yu, D., Hao, S., Meng, X., Ure, K., Ito-Ishida, A., Tang, B., Sun, Y., Ji, et al
2016; 91 (4): 739–47
- **Dynamic Control of Excitatory Synapse Development by a Rac1 GEF/GAP Regulatory Complex** *DEVELOPMENTAL CELL*
Um, K., Niu, S., Duman, J. G., Cheng, J. X., Tu, Y., Schwechter, B., Liu, F., Hiles, L., Narayanan, A. S., Ash, R. T., Mulherkar, S., Alpadri, K., Smirnakis, et al
2014; 29 (6): 701–15
- **Viral transduction of the neonatal brain delivers controllable genetic mosaicism for visualising and manipulating neuronal circuits in vivo** *EUROPEAN JOURNAL OF NEUROSCIENCE*
Kim, J., Ash, R. T., Ceballos-Diaz, C., Levites, Y., Golde, T. E., Smirnakis, S. M., Jankowsky, J. L.
2013; 37 (8): 1203–20

- **Dendritic arborization and spine dynamics are abnormal in the mouse model of MECP2 duplication syndrome.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
Jiang, M., Ash, R. T., Baker, S. A., Suter, B., Ferguson, A., Park, J., Rudy, J., Torsky, S. P., Chao, H. T., Zoghbi, H. Y., Smirnakis, S. M.
2013; 33 (50): 19518–33