

Stanford



Leonardo Tozzi

Postdoctoral Research Fellow, Psychiatry

Bio

BIO

Dr. Leonardo Tozzi graduated as a Medical Doctor from Pisa University and Sant'Anna School of Advanced Studies in 2013. Immediately thereafter, his interest in the investigation of mood disorders using Magnetic Resonance Imaging led him to join the R'Birth Consortium, a Marie Curie Initial Training Network spanning across 7 European countries. In 2017, he was awarded his Ph.D. from Trinity College Dublin for his research on the interaction between genetic risk factors, epigenetic modifications and environmental stressors as predictors of structural and functional brain changes related to Major Depression.

Dr. Tozzi joined Williams PANLab at Stanford University at the start of 2018 as a post-doctoral fellow within the framework of the Human Connectome Project. His goal is to use functional and structural connectivity analyses to develop precision psychiatry metrics related to the biology underpinning anxiety and depression. By combining connectomics and predictive algorithms, he also aims to assess the potential of these measures for clinical applications such as guiding treatment selection and estimating therapy response.

HONORS AND AWARDS

- Full Scholarship, Sant'Anna School of Advanced Studies (2008-2013)

PROFESSIONAL EDUCATION

- Diploma, Higher Schl Univ & Adv Stu Sant' Anna (2014)
- Doctor of Medicine, Universita Degli Studi Di Pisa (2013)
- Doctor of Philosophy, University Of Dublin, Trinity College (2017)

Research & Scholarship

LAB AFFILIATIONS

- Leanne Williams, PANLab (1/29/2018)

Publications

PUBLICATIONS

- **Test-retest reliability of the human functional connectome over consecutive days: identifying highly reliable portions and assessing the impact of methodological choices** *NETWORK NEUROSCIENCE*
Tozzi, L., Fleming, S. L., Taylor, Z. D., Raterink, C. D., Williams, L. M.
2020; 4 (3): 925–45
- **Variability in the analysis of a single neuroimaging dataset by many teams** *NATURE*
Botvinik-Nezer, R., Holzmeister, F., Camerer, C. F., Dreber, A., Huber, J., Johannesson, M., Kirchler, M., Iwanir, R., Mumford, J. A., Adcock, R., Avesani, P., Baczkowski, B. M., Bajracharya, et al

2020

- **Clustering of Disordered Emotional States Across Research Domain Criteria Units of Analysis**
Tozzi, L., Holt-Gosselin, B., Chestnut, M., Whicker, C., Hartley, J., Williams, L.
ELSEVIER SCIENCE INC.2020: S373
- **Interactive impact of childhood maltreatment, depression, and age on cortical brain structure: mega-analytic findings from a large multi-site cohort** *PSYCHOLOGICAL MEDICINE*
Tozzi, L., Garczarek, L., Janowitz, D., Stein, D. J., Wittfeld, K., Dobrowolny, H., Lagopoulos, J., Hatton, S. N., Hickie, I. B., Carballedo, A., Brooks, S. J., Vuletic, D., Uhlmann, et al
2020; 50 (6): 1020–31
- **ENIGMA and global neuroscience: A decade of large-scale studies of the brain in health and disease across more than 40 countries.** *Translational psychiatry*
Thompson, P. M., Jahanshad, N., Ching, C. R., Salminen, L. E., Thomopoulos, S. I., Bright, J., Baune, B. T., Bertolin, S., Bralten, J., Bruin, W. B., Bulow, R., Chen, J., Chye, et al
2020; 10 (1): 100
- **The human connectome project for disordered emotional states: Protocol and rationale for a research domain criteria study of brain connectivity in young adult anxiety and depression.** *NeuroImage*
Tozzi, L., Staveland, B., Holt-Gosselin, B., Chesnut, M., Chang, S. E., Choi, D., Shiner, M. L., Wu, H., Lerma-Usabiaga, G., Sporns, O., Barch, D., Gotlib, I. H., Hastie, et al
2020: 116715
- **ENIGMA MDD: seven years of global neuroimaging studies of major depression through worldwide data sharing.** *Translational psychiatry*
Schmaal, L., Pozzi, E., C Ho, T., van Velzen, L. S., Veer, I. M., Opel, N., Van Someren, E. J., Han, L. K., Aftanas, L., Aleman, A., Baune, B. T., Berger, K., Blanken, et al
2020; 10 (1): 172
- **Variability in the analysis of a single neuroimaging dataset by many teams.** *Nature*
Botvinik-Nezer, R., Holzmeister, F., Camerer, C. F., Dreber, A., Huber, J., Johannesson, M., Kirchler, M., Iwanir, R., Mumford, J. A., Adcock, R. A., Avesani, P., Baczkowski, B. M., Bajracharya, et al
2020; 582 (7810): 84–88
- **Using Human Connectome Imaging Within an RDoC Framework to Characterize Disordered Emotional States**
Tozzi, L.
NATURE PUBLISHING GROUP.2019: 43
- **Effects of early life adversity and FKBP5 genotype on hippocampal subfields volume in major depression** *JOURNAL OF AFFECTIVE DISORDERS*
Mikolas, P., Tozzi, L., Doolin, K., Farrell, C., O'Keane, V., Frodl, T.
2019; 252: 152–59
- **Longitudinal diffusion weighted imaging of limbic regions in patients with major depressive disorder after 6 years and partial to full remission** *PSYCHIATRY RESEARCH-NEUROIMAGING*
Doolin, K., Andrews, S., Carballedo, A., McCarthy, H., O'Hanlon, E., Tozzi, L., Frodl, T.
2019; 287: 75–86
- **Interactive impact of childhood maltreatment, depression, and age on cortical brain structure: mega-analytic findings from a large multi-site cohort.** *Psychological medicine*
Tozzi, L., Garczarek, L., Janowitz, D., Stein, D. J., Wittfeld, K., Dobrowolny, H., Lagopoulos, J., Hatton, S. N., Hickie, I. B., Carballedo, A., Brooks, S. J., Vuletic, D., Uhlmann, et al
2019: 1–12
- **Neurobiological correlates of violence perception in martial artists** *BRAIN AND BEHAVIOR*
Schoene, M., Seidenbecher, S., Tozzi, L., Kaufmann, J., Griep, H., Fenker, D., Frodl, T., Bogerts, B., Schiltz, K.
2019; 9 (5)
- **Longitudinal diffusion weighted imaging of limbic regions in patients with major depressive disorder after 6 years and partial to full remission.** *Psychiatry research. Neuroimaging*
Doolin, K., Andrews, S., Carballedo, A., McCarthy, H., O'Hanlon, E., Tozzi, L., Frodl, T.
2019; 287: 75–86

- **Effects of early life adversity and FKBP5 genotype on hippocampal subfields volume in major depression.** *Journal of affective disorders*
Mikolas, P., Tozzi, L., Doolin, K., Farrell, C., O'Keane, V., Frodl, T.
2019; 252: 152–59
- **Aerobic exercise increases hippocampal subfield volumes in younger adults and prevents volume decline in the elderly.** *Brain imaging and behavior*
Frodl, T., Strehl, K., Carballedo, A., Tozzi, L., Doyle, M., Amico, F., Gormley, J., Lavelle, G., O'Keane, V.
2019
- **Neurobiological correlates of violence perception in martial artists.** *Brain and behavior*
Schone, M., Seidenbecher, S., Tozzi, L., Kaufmann, J., Griep, H., Fenker, D., Frodl, T., Bogerts, B., Schiltz, K.
2019: e01276
- **Connectivity of the Cognitive Control Network During Response Inhibition as a Predictive and Response Biomarker in Major Depression: Evidence From a Randomized Clinical Trial.** *Biological psychiatry*
Tozzi, L., Goldstein-Piekarski, A. N., Korgaonkar, M. S., Williams, L. M.
2019
- **White matter disturbances in major depressive disorder: a coordinated analysis across 20 international cohorts in the ENIGMA MDD working group.** *Molecular psychiatry*
van Velzen, L. S., Kelly, S., Isaev, D., Aleman, A., Aftanas, L. I., Bauer, J., Baune, B. T., Brak, I. V., Carballedo, A., Connolly, C. G., Couvy-Duchesne, B., Cullen, K. R., Danilenko, et al
2019
- **The Hippocampus in Depression: More Than the Sum of Its Parts? Advanced Hippocampal Substructure Segmentation in Depression.** *Biological psychiatry*
Roddy, D. W., Farrell, C., Doolin, K., Roman, E., Tozzi, L., Frodl, T., O'Keane, V., O'Hanlon, E.
2018
- **DNA methylation differences at the glucocorticoid receptor gene in depression are related to functional alterations in hypothalamic-pituitary-adrenal axis activity and to early life emotional abuse.** *Psychiatry research*
Farrell, C., Doolin, K., O' Leary, N., Jairaj, C., Roddy, D., Tozzi, L., Morris, D., Harkin, A., Frodl, T., Nemoda, Z., Szyf, M., Booij, L., O'Keane, et al
2018; 265: 341–48
- **Altered tryptophan catabolite concentrations in major depressive disorder and associated changes in hippocampal subfield volumes.** *Psychoneuroendocrinology*
Doolin, K., Allers, K. A., Pleiner, S., Liesener, A., Farrell, C., Tozzi, L., O'Hanlon, E., Roddy, D., Frodl, T., Harkin, A., O'Keane, V.
2018; 95: 8–17
- **Awakening Neuropsychiatric Research Into the Stria Medullaris: Development of a Diffusion-Weighted Imaging Tractography Protocol of This Key Limbic Structure** *FRONTIERS IN NEUROANATOMY*
Roddy, D. W., Roman, E., Rooney, S., Andrews, S., Farrell, C., Doolin, K., Levins, K. J., Tozzi, L., Tierney, P., Barry, D., Frodl, T., O'Keane, V., O'Hanlon, et al
2018; 12: 39
- **Childhood adversity impacts on brain subcortical structures relevant to depression** *JOURNAL OF PSYCHIATRIC RESEARCH*
Frodl, T., Janowitz, D., Schmaal, L., Tozzi, L., Dobrowolny, H., Stein, D. J., Veltman, D. J., Wittfeld, K., van Erp, T. G., Jahanshad, N., Block, A., Hegenscheid, K., Voelzke, et al
2017; 86: 58-65
- **Functional magnetic resonance imaging correlates of emotion recognition and voluntary attentional regulation in depression: A generalized psychophysiological interaction study.** *Journal of affective disorders*
Tozzi, L., Doolin, K., Farrell, C., Joseph, S., O'Keane, V., Frodl, T.
2017; 208: 535-544
- **Epigenetic Changes of FKBP5 as a Link Connecting Genetic and Environmental Risk Factors with Structural and Functional Brain Changes in Major Depression.** *Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology*
Tozzi, L., Farrell, C., Booij, L., Doolin, K., Nemoda, Z., Szyf, M., Pomares, F. B., Chiarella, J., O'Keane, V., Frodl, T.
2017
- **Recent Advances in Translational Magnetic Resonance Imaging in Animal Models of Stress and Depression.** *Frontiers in cellular neuroscience*
McIntosh, A. L., Gormley, S., Tozzi, L., Frodl, T., Harkin, A.
2017; 11: 150

- **Diurnal Hypothalamic-Pituitary-Adrenal Axis Measures and Inflammatory Marker Correlates in Major Depressive Disorder.** *International journal of molecular sciences*
Doolin, K., Farrell, C., Tozzi, L., Harkin, A., Frodl, T., O'Keane, V.
2017; 18 (10)
- **Longitudinal functional connectivity changes correlate with mood improvement after regular exercise in a dose-dependent fashion** *EUROPEAN JOURNAL OF NEUROSCIENCE*
Tozzi, L., Carballedo, A., Lavelle, G., Doolin, K., Doyle, M., Amico, F., McCarthy, H., Gormley, J., Lord, A., O'Keane, V., Frodl, T.
2016; 43 (8): 1089-1096
- **Beyond emotions: A meta-analysis of neural response within face processing system in social anxiety** *EXPERIMENTAL BIOLOGY AND MEDICINE*
Gentili, C., Cristea, I. A., Angstadt, M., Klumpp, H., Tozzi, L., Phan, K. L., Pietrini, P.
2016; 241 (3): 225-237
- **Single-Nucleotide Polymorphism of the FKBP5 Gene and Childhood Maltreatment as Predictors of Structural Changes in Brain Areas Involved in Emotional Processing in Depression** *NEUROPSYCHOPHARMACOLOGY*
Tozzi, L., Carballedo, A., Wetterling, F., McCarthy, H., O'Keane, V., Gill, M., Morris, D., Fahey, C., Meaney, J., Frodl, T.
2016; 41 (2): 487-497
- **Impaired reward processing in the human prefrontal cortex distinguishes between persistent and remittent attention deficit hyperactivity disorder** *HUMAN BRAIN MAPPING*
Wetterling, F., McCarthy, H., Tozzi, L., Skokauskas, N., O'Doherty, J. P., Mulligan, A., Meaney, J., Fagan, A. J., Gill, M., Frodl, T.
2015; 36 (11): 4648-4663
- **Modality Dependent Cross-Modal Functional Reorganization Following Congenital Visual Deprivation within Occipital Areas: A Meta-Analysis of Tactile and Auditory Studies** *MULTISENSORY RESEARCH*
Ricciardi, E., Tozzi, L., Leo, A., Pietrini, P.
2014; 27 (3-4): 247-262
- **Gambling among youths in Switzerland and its association with other addictive behaviours. A population-based study.** *Swiss medical weekly*
Tozzi, L., Akre, C., Fleury-Schubert, A., Suris, J.
2013; 143: w13768-?