DR. DOMINIC DWYER

Psychologist
Post-doc Researcher

CONTACT

089/440055757

dominic.dywer@med.uni-muenchen.de

Hospital of the University of Munich

Clinic for Psychiatry and Psychotherapy

Nussbaumstraße 7

80336 München

PROFILE

My research focusses on using machine learning methods to improve diagnoses, prognoses, and treatment selection for psychosis. I work on international projects towards these aims and lead machine learning education programmers. I trained as a clinical neuropsychologist (Melbourne, Australia) and my ultimate goal is to translate results into the clinic.

PUBLICATIONS

Key Publications

- Koutsouleris, N., Dwyer, D. B., Degenhardt, F., Maj, C., Urquijo-Castro, M. F., Sanfelici, R., . . . Meisenzahl, E. (2020). Multimodal Machine Learning Workflows for Prediction of Psychosis in Patients With Clinical High-Risk Syndromes and Recent-Onset Depression. *JAMA Psychiatry*. doi:10.1001/jamapsychiatry.2020.3604
- Dwyer, D. B. … Koutsouleris, N. (2020). An investigation of psychosis subgroups with prognostic validation and exploration of genetic underpinnings, JAMA Psychiatry (IF: 15.9), 77(5), 1-11.
- Sanfelici, R.*, Dwyer, D. B.*, Antonucci, L., Koutsouleris, N. (2020). Individualized diagnostic and prognostic models for patients with psychosis risk syndromes: a meta-analytic view on the state-of-the-art. Biological Psychiatry (IF: 11.5), in press
- Chand, G., Dwyer, D. B.*, … Wolf, D. H., Davatzikos, C. (2020). Two distinct neuroanatomical subtypes of schizophrenia revealed using machine learning, Brain (IF: 11.8), 143(3), 1027-1038
- Dwyer, D. B. & Koutsouleris, N. (2018). Machine learning approaches for clinical psychology and psychiatry, Annual Review of Clinical Psychology (IF: 14), 14, 91-118.
- Dwyer, D. B., Harrison, B. J., Yücel, M., Zalesky, A., Whittle, S., Pantelis, C., Allen, N.B., Fornito, A. (2014). Large-scale brain network dynamics supporting adolescent cognitive control, ***Journal of Neuroscience***, 34(42), 14096-14107.

Book Chapters

- **Dwyer, D. B.**, Harrison, B. J., Yücel, M., Whittle, S., Zalesky, A., Pantelis, C., Allen, N. B., Fornito, A. (2016). Brain Network Dynamics of Adolescent Cognitive Control. In Fink, G., (Ed.), *Stress Concepts and Cognition, Emotion, and Behavior* (pp. 177-185). London: Academic Press. ISBN: 9780128009512.
- **Dwyer, D. B.** & McGuire, P (2016). Structural and functional MRI in the prediction of psychosis: state of the art and future perspectives. In Riecher-Rossler, A. & McGorry, P. (Eds.), *Key Issues in Mental Health (vol. 181): Early Intervention and Intervention in Psychosis* (pp. 83-94). Basel: Karger. ISBN: 9783318056204.

Co-authored publications

- Koutsouleris, N., Dwyer, D. B., Degenhardt, F., Maj, C., Urquijo-Castro, M. F., Sanfelici, R., . . . Meisenzahl, E. (2020). Multimodal Machine Learning Workflows for Prediction of Psychosis in Patients With Clinical High-Risk Syndromes and Recent-Onset Depression. *JAMA Psychiatry*. doi:10.1001/jamapsychiatry.2020.3604
- Popovic, D., Ruef, A., Dwyer, D., Haidl, T., Hedderich, D., Antonucci, L., Eder, J., Sanfelici, R., Kambeitz-Ilankovic, L., Oeztuerk, O., Dong, M., Paolini, M., Paul, R., Kambeitz, J., Ruhrmann, S., Chrisholm, K., Schultze-Lutter, F., Falkai, P., Bertolino, A., Lencer, R., Dannlowski, U., Upthegrove, R., Salokangas, R. K. R., Pantelis, C., Meisenzahl, E., Wood, S. J., Brambilla, P., Borgwardt, S., Koutsouleris, N. (2020). Traces of trauma—a multivariate pattern analysis of childhood trauma, brain structure and clinical phenotypes. Biological Psychiatry, in press.
- Alameda, L., Ashok, A., Avery, S. … Dwyer, D. … & Kilian, S. (2020). The 2019 Schizophrenia International Research Society Conference, 10-14 April, Orlando, Florida: a summary of topics and trends, Psychiatry Research, in press.
- Masaoka Y, Velakoulis D, Brewer WJ, et al. (2020). Impaired olfactory ability associated with larger left hippocampus and rectus volumes at earliest stages of schizophrenia: A sign of neuroinflammation? Psychiatry Res., in press.
- Kambeitz-Ilancovic, L., Haas S., Meisenzahl, E., Dwyer, D. B.; Weiske, J., Peters, H., Möller, H. J., Falkai, P., Koutsouleris, N. (2019). Neurocognitive and neuroanatomical dysmaturation in the clinical high-risk states for psychosis: a pattern recognition study, NeuroImage Clinical, 21, 101624.
- Baldinger-Melich P.*, Urquijo M. F.*, Seiger R., Ruef A., Dwyer D. B., Kranz G. S., Klöbl M., Kambeitz J., Kaufmann U., Windischberger C., Kasper S., Falkai P., Lanzenberger R., Koutsouleris N. (2019). Sex matters – a multivariate pattern analysis of sex- and gender-related neuroanatomical differences in cis- and transgender individuals using structural magnetic resonance imaging, Cerebral Cortex, epub ahead of print.
- Antonucci, L.A., Penzel, N., Pergola, G., Kambeitz-Ilankovic,

L., Dwyer, D., Kambeitz, J., Haas, S.S., Passiatore, R., Fazio, L., Caforio, G. and Falkai, P., Blasi, G., Bertolino, A., & Koutsouleris, N. (2019). Multivariate classification of schizophrenia and its familial risk based on load-dependent attentional control brain functional connectivity. Neuropsychopharmacology, in press

- Antonucci, L. A., Pergola, G., Pigoni, A., Dwyer, D., Kambeitz-Ilankovic, L., Penzel, N., ... & Koutsouleris, N., Bertolino, A. (2019). A pattern of cognitive deficits stratified for gene-and-environment risk reliably classifies patients with schizophrenia from healthy controls. Biological Psychiatry, in press.
- Koutsouleris, N., Wobrock, T., Guse, B., …Dwyer, D. B...., Falkai, P., Hasan, A. (2018). Predicting response to repetitive transcranial magnetic stimulation in patients with schizophrenia using structural magnetic resonance imaging: A multisite machine learning analysis. Schizophrenia Bulletin, 44(5), 1021-1034.
- Koutsouleris, N., Kambeitz-Ilankovic, L., Ruhrmann, S., Rosen, M., Ruef, A., Dwyer, D. B., … Borgwardt, M. D., PRONIA Consortium (2018). Prediction models of functional outcomes for individuals in the clinical high-risk state for psychosis or with recent-onset depression: a multimodal, multisite machine learning analysis, JAMA Psychiatry, 75(11), 1156-1172.
- Hasan, A., Wobrock, T., Guse, B., Langguth, B., Landgrebe, M., Eichhammer, P., Frank, E., Cordes, J., Wölwer, W., Musso, F., Winterer, G., Gaebel, W., Hajak, G., Ohmann, C., Verde, P. E., Rietschel, M., Ahmed, R., Honer, W. G., Dechent, P., Malchow, B., Urquijo, M. F., Dwyer, D. B., Kreuzer, P. M., Poeppl, T., Schneider-Axmann, T., Falkai, P., Koutsouleris, N. (2017) Structural brain changes are associated with response of negative symptoms to prefrontal repetitive transcranial magnetic stimulation in schizophrenia patients. Molecular Psychiatry, 22(6), 857.
- Kambeitz, J., Kambeitz-Ilankovic, L., Cabral, C., Dwyer, D. B., Calhoun, V. D., van den Heuvel, M. P., Falkai, P., Koutsouleris, N., Malchow, B. Aberrant functional whole-brain network architecture in patients with schizophrenia: a meta-analysis. Neuropsychopharmacology, 40(7), 1742 - 1751.
- Cabral, C., Kambeitz-Ilankovic, L., Kambeitz, J., von Saldern, S., Urquijo, M., Dwyer, D. B., Falkai, P., Koutsouleris, N. (2016). Classifying schizophrenia using joint multivariate pattern recognition analysis of brain function and structure. Schizophrenia Bulletin, 42, Suppl 1:S110-117.
- Katagiri, N., Pantelis, C., Nemoto, T., Zalesky, A., Hori, M., Shimoji, K., Saito, J., Ito, S., Dwyer, D., Fukunaga, I., Morita, K., Tsujino, N., Yamaguchi, T., Shiraga, N., Aoki, S., Mizuno, M. (2015). A longitudinal study investigating sub-threshold symptoms and white matter changes in individuals with an 'At Risk Mental State' (ARMS). Schizophrenia Research, 162(1-3), 7-13.
- Klauser, P., Fornito, A., Lorenzetti, V., Davey, C. G., Dwyer, D. B., Allen, N. B., & Yücel, M. (2015). Cortico-limbic

network abnormalities in individuals with current and past major depressive disorder. Journal of Affective Disorders, 173, 45-52.

- Strikwerda-Brown, C., Davey, C. G., Whittle, S., Allen, N. B., Byrne, M. L., Schwartz, O. S., Simmons, J. G., Dwyer, D. B., Harrison, B. J. (2014). Mapping the relationship between subgenual cingulate cortex functional connectivity and depressive symptoms across adolescence. Social Cognitive and Affective Neuroscience, pii: nsu143. [Epub ahead of print].
- Hong, S. B., Dwyer, D., Kim, J.W., Park, E.J., Shin, M.S., Kim, B.N., Yoo, H.J., Cho, I.H., Bhang, S.Y., Hong, Y.C., Pantelis, C., Cho, S.C. (2014) Subthreshold attention-deficit/hyperactivity disorder is associated with functional impairments across domains: a comprehensive analysis in a large-scale community study. European Child and Adolescent Psychiatry, 23(8), 627-636.
- Yücel M., Fornito A., Youssef G., Dwyer D., Whittle S., Wood S.J., Lubman D.I., Simmons J., Pantelis C., Allen N.B. (2012). Inhibitory control in young adolescents: the role of sex, intelligence, and temperament. Neuropsychology, 26(3), 347-356.
- Davey, C. G., Allen, N. B., Harrison, B., Dwyer, D. B., Yücel, M. (2010). Being liked activates primary reward and midline self-related brain regions. Human Brain Mapping, 31(4), 660-668.