

BIOGRAPHICAL SKETCH

NAME Koutsouleris, Nikolaos	POSITION TITLE Professor for Neurodiagnostic Applications in Psychiatry
eRA COMMONS USER NAME (credential, e.g., agency login)	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Ludwig-Maximilian-University (LMU)	Medical license	2003	Medicine
LMU	doctoral thesis	2005	Neurophysiology
LMU	habilitation thesis	2013	Psychiatry & Psychotherapy
LMU	Residency	2012	Psychiatry
LMU	Residency	2013	Neurology
LMU	board-certified consultant	2015	Psychiatry / Psychotherapy

A. Personal Statement

My research aims at extracting predictive and diagnostic information from diverse neurobiological, neurocognitive and clinical data for an improved early recognition of affective and non-affective psychoses. For this purpose, I have been conducting cross-sectional and longitudinal studies of persons at an increased risk of developing psychotic illness and examined them with structural MRI, neuropsychological testing and clinical evaluations within the specialized Early Recognition Service of our Department. Using advanced pattern recognition methods, which I implemented during my postdoctoral work, I was able to identify and cross-validate MRI and neurocognitive biomarkers allowing for an accurate, single-subject prediction of psychoses. As Head of the Department's Early Psychosis Studies and Section for Neurodiagnostic Applications, I am striving to develop and implement prognostic and diagnostic models that (1) enable an effective personalized management of high-risk individuals across different centers and healthcare settings, (2) facilitate the individualized stratification of risk for disease onset, chronicity and poor functional outcomes across different psychiatric disorders, and (3) improve our understanding of the diagnostic boundaries between and within these disease entities based on multivariate subgroup identification methods. Equally important, I train new investigators at the pre- and post-doctoral levels to comprehensively analyze complex, high-dimensional data using multivariate analysis methods.

B. Positions and Honors

Positions and Employment

Full Professor for Neurodiagnostic Applications in Psychiatry, LMU, 2016 to present
 Head of Early Psychosis Studies & Head of Workgroup for Neurodiagnostic Applications at the Department of Psychiatry and Psychotherapy, LMU, 2013 to present
 Resident at the Department of Psychiatry and Psychotherapy, LMU, 2004-2012
 Resident at the Department of Neurology, LMU, 2013 to 2014

Other Experience and Professional Memberships

Member of the German Society for Psychiatry, Psychotherapy and Psychosomatics, 2007 to present

Visiting scholar at the Section for Biomedical Image Analysis, Department of Radiology, University of Pennsylvania, 2011

Honors

Collegium Internationale Neuropsychopharmacologicum (CINP): Max Hamilton Memorial Award, 2016
Bayer Healthcare: Hans-Joerg-Weitbrecht Prize for Clinical Neurosciences, 2015
European Psychiatric Association: BMS Prevention Award, 2011
German Schizophrenia Network: Aretaeus Award
German Society for Psychiatry, Psychotherapy and Psychosomatics: Neuroimaging Award, 2010
European Psychiatric Association: Research Prize, 2010

C. Selected Peer-reviewed Publications (Google Scholar: 132 publications, h-index: 32)

Most relevant to the current application

1. **Koutsouleris N**, Meisenzahl EM, Davatzikos C, Bottlender R, Frodl T, Scheuerecker J, Schmitt G, Zetsche T, Decker P, Reiser M, Möller HJ, Gaser C. Use of neuroanatomical pattern classification to identify subjects in at-risk mental states of psychosis and predict disease transition. *Archives of General Psychiatry*. 2009; 66(7):700-12 (IF: 15.9).
2. **Koutsouleris N**, Meisenzahl EM, Borgwardt S, Riecher-Rössler A, Frodl T, Kambeitz J, Köhler Y, Falkai P, Möller HJ, Reiser M, Davatzikos C. Individualized differential diagnosis of schizophrenia and mood disorders using neuroanatomical biomarkers. *Brain*. 2015 Jul;138(Pt 7):2059-73. IF: 10.2
3. **Koutsouleris N**, Kahn RS, Chekroud AM, Leucht S, Falkai P, Wobrock T, Derks EM, Fleischhacker WW, Hasan A. Multisite prediction of 4-week and 52-week treatment outcomes in patients with first-episode psychosis: a machine learning approach. *Lancet Psychiatry*. 2016 Aug 25. pii: S2215-0366(16)30171-7. doi:10.1016/S2215-0366(16)30171-7, (IF: 5.8)
4. Kambeitz J, Kambeitz-Illankovic L, Leucht S, Wood S, Davatzikos C, Malchow B, Falkai P, **Koutsouleris N**. Detecting neuroimaging biomarkers for schizophrenia: a meta-analysis of multivariate pattern recognition studies. *Neuropsychopharmacology*. 2015 Jun;40(7):1742-51. (IF: 7.5)
5. **Koutsouleris N**, Riecher-Rössler A, Meisenzahl E, Smieskova R, Studerus E, Kambeitz-Illankovic L, von Saldern S, Cabral C, Reiser M, Falkai P, Borgwardt S. Detecting the psychosis prodrome across high-risk populations using neuroanatomical biomarkers. *Schizophrenia Bulletin*. 2014, in press: doi: 10.1093/schbul/sbu078
6. **Koutsouleris N**, Davatzikos C, Borgwardt S, Gaser C, Bottlender R, Frodl T, Falkai P, Riecher-Rössler A, Möller HJ, Reiser M, Pantelis C, Meisenzahl E. Accelerated Brain Aging in Schizophrenia and Beyond: A Neuroanatomical Marker of Psychiatric Disorders. *Schizophrenia Bulletin*. 2014 Sep;40(5):1140-53
7. **Koutsouleris N**, Borgwardt S, Meisenzahl EM, Bottlender R, Möller HJ, Riecher-Rössler A. Disease prediction in the at-risk mental state for psychosis using neuroanatomical biomarkers: results from the FePsy-study. *Schizophrenia Bulletin*. 2012; 38(6):1234-46 (IF: 8.8)
8. **Koutsouleris N**, Davatzikos C, Bottlender R, Patschurek-Kliche K, Scheuerecker J, Decker Petra, Gaser C, Möller HJ; Meisenzahl E. Early recognition and disease prediction in the at-risk mental states for psychosis using neurocognitive pattern classification. *Schizophrenia Bulletin*. 2012; 38(6):1200-15 (IF: 8.8)
9. **Koutsouleris N**, Gaser C, Patschurek-Kliche K, Scheuerecker J, Bottlender R, Decker P, Schmitt G, Reiser M, Möller HJ and Meisenzahl EM. Multivariate patterns of brain–cognition associations relating to vulnerability and clinical outcome in the at-risk mental states for psychosis. *Human Brain Mapping*. 2012; 33(9):2104-2124.(IF: 5.9)
10. **Koutsouleris N**, Gaser C, Bottlender R, Davatzikos C, Decker P, Jäger M, Schmitt G, Reiser M, Möller HJ, Meisenzahl EM, Use of Neuroanatomical Pattern Regression to Predict the Structural Brain Dynamics of Vulnerability and Transition to Psychosis. *Schizophrenia Research*. 2010;123(2-3):175-187 (IF: 4.5).

Additional recent publications of importance to the field (in chronological order)

1. Cabral C, Kambeitz-Illankovic L, Kambeitz J, Calhoun VD, Dwyer DB, von Saldern S, Urquijo MF, Falkai P, **Koutsouleris N**. Classifying Schizophrenia Using Multimodal Multivariate Pattern Recognition Analysis: Evaluating the Impact of Individual Clinical Profiles on the Neurodiagnostic Performance. *Schizophr Bull*. 2016 Jul;42 Suppl 1:S110-7. doi: 10.1093/schbul/sbw053. (IF: 7.8)

Program Director/Principal Investigator (Last, First, Middle): Koutsouleris, Nikolaos

2. Reniers RL, Lin A, Yung AR, **Koutsouleris N**, Nelson B, Cropley VL, Velakoulis D, McGorry PD, Pantelis C, Wood SJ. Neuroanatomical Predictors of Functional Outcome in Individuals at Ultra-High Risk for Psychosis. *Schizophr Bull.* 2016 Jul1. pii: sbw086. (IF: 7.8)
3. Tordesillas-Gutierrez D, **Koutsouleris N**, Roiz-Santiañez R, Meisenzahl E, Ayesa-Arriola R, Marco de Lucas E, Soriano-Mas C, Suarez-Pinilla P, Crespo-Facorro B. Grey matter volume differences in non-affective psychosis and the effects of age of onset on grey matter volumes: A voxelwise study. *Schizophr Res.* 2015 May;164(1-3), (IF 4.3)
4. Klöppel S, Abdulkadir A, Jack CR Jr, **Koutsouleris N**, Mourão-Miranda J, Vemuri P. Diagnostic neuroimaging across diseases. *Neuroimage.* 2012; 61(2):457-463. (IF: 5.93)

D. Research Support

Ongoing Research Support

EU-FP7: **PRONIA (“Personalized Prognostic Tools for Early Psychosis Management”)**, Total budget: 6,000,000€

NIH/NIMH: **HARMONY project**, Total budget: \$375,000

German Science Foundation: **WP1-PsyCourse (Machine learning subproject)**, Total budget: 238,000€

German Science Foundation: **Schizotypy vs. Schizophrenia Project**, Total budget: 170,000€

Completed Research Support in the Past Five Years: None

Pending Research Support: None