



**WPA Section on
Personalized Psychiatry**

Activities 2014-2020

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Website: <http://www.personalizedpsychiatry.org>

PERSONALIZED PSYCHIATRY WPA SECTION

A specific website on the section has been created (www.personalizedpsychiatry.com) with education materials included (video, and links to full text of papers related published in pubmed) from several members of the section.

With the aim of developing both education among psychiatrist and scientific exchange among researchers we decided to build a new scientific journal with Elsevier. After a huge effort the journal “**Personalized Medicine in Psychiatry**” is now available and the first issue published (<http://www.personalizedmedpsych.com/current>) with Giampaolo Perna (Chair of the section) and Charles Nemeroff (Co-Chair of the section) and Co-Editors in Chief.

Collaborations aim at research and develop personalized psychiatry tools has been established between the department of Section Chair Giampaolo Perna (including the two other Section members, Daniela Caldirola and Massimiliano Grassi) and both Maastricht University (member of the Section committee: Koen Schruers) and Miami University (Section co-chair: Charles Nemeroff). Relationships with researchers specialized in the field of Personalized Medicine in Psychiatry have been strengthened cooperating in meetings (U. Lueken invited to the AIAMC Congress in Rome, June 2017; T. Schlaepfer invited to the Hermanas Hospitalarias national congress on “Personalized Medicine in Psychiatry” that will be held in Milano next October)

Several symposium and lectures by members of the sections and related to Personalized Psychiatry have been included in well known scientific meeting with relevant participation of colleagues:

- Expo 2015: The future of mental health: feeding, empowering, treating. Milan, Italy, 2015;
- 46th ISPNE Annual Conference, Miami, USA, 2016;
- Anxiety and Depression Conference 2016, Philadelphia, USA, 2016;
- Management of treatment resistant psychiatric disorders. Course of the Neuroscience School of Advanced Studies, Florence, Italia, 2016;
- 2nd Annual Advances in Diagnosis, Neurobiology, and Treatment of Psychiatric Disorders, Universidad de Colombia, Colombia, 2017;
- 27th Annual Summer Seminars: Essential Psychopharmacology 2016: From Neuroscience to Advances in Treatment. Edgartown, USA, 2016;
- APA’s 168th Annual Meeting 2015, Toronto, Canada;
- APA’s 169th Annual Meeting 2016, Atlanta, USA;
- WPA XVII Meeting, Berlin, 2017
- “Anxiety and Depression Conference 2018”, Washington, USA.
- APA’s 171nd Annual Meeting 2018, New York, USA.
- “57th Annual Congress of the ACNP, Hollywood, Florida, USA, 2018.
- “7th European Conference on Schizophrenia Research (ECSR), Berlin, Germany, 2019
- “59th Annual Congress of the ACNP, Orlando, Florida, USA, 2019.

Publications on Personalized Psychiatry from members of the section

Section chair Giampaolo Perna and co-chair Charles Nemeroff opened and co-edited the new Elsevier journal “Personalized Medicine in Psychiatry” (<http://www.personalizedmedpsych.com>).

An editorial describing the aim of the journal: Perna G, Nemeroff CB Personalized Medicine in Psychiatry: Back to the Future. *Personalized Medicine in Psychiatry* 1, 1. and on the website of the journal several several papers are freely available.

Personalized psychiatry papers co-authored by section members in the 2014-2020 triennium (selection):

1. Alhajji L, Nemeroff CB (2015) Personalized Medicine and Mood Disorders. *Psychiatr Clin North Am* 38, 395-403.
2. Arnow BA, Blasey C, Williams LM, Palmer DM, Rekshan W, Schatzberg AF, Etkin A, Kulkarni J, Luther JF, Rush AJ (2015) Depression Subtypes in Predicting Antidepressant Response: A Report From the iSPOT-D Trial. *Am J Psychiatry* 172, 743-750.
3. Arns M, Bruder G, Hegerl U, Spooner C, Palmer DM, Etkin A, Fallahpour K, Gatt JM, Hirshberg L, Gordon E (2016) EEG alpha asymmetry as a gender-specific predictor of outcome to acute treatment with different antidepressant medications in the randomized iSPOT-D study. *Clin Neurophysiol* 127, 509-519.
4. Barak-Corren Y, Castro VM, Javitt S, Hoffnagle AG, Dai Y, Perlis RH, Nock MK, Smoller JW, Reis BY (2017) Predicting Suicidal Behavior From Longitudinal Electronic Health Records. *Am J Psychiatry* 174, 154-162.
5. Bauer M, Glenn T, Alda M, Andreassen OA, Angelopoulos E, Ardu R, Baethge C, Bauer R, Bellivier F, Belmaker RH, Berk M, Bjella TD, Bossini L, Bersudsky Y, Cheung EY, Conell J, Del Zompo M, Dodd S, Etain B, Fagiolini A, Frye MA, Fountoulakis KN, Garneau-Fournier J, Gonzalez-Pinto A, Harima H, Hassel S, Henry C, Iacovides A, Isometsa ET, Kapczinski F, Kliwicki S, Konig B, Krogh R, Kunz M, Lafer B, Larsen ER, Lewitzka U, Lopez-Jaramillo C, MacQueen G, Manchia M, Marsh W, Martinez-Cengotitabengoa M, Melle I, Monteith S, Morken G, Munoz R, Nery FG, O'Donovan C, Osher Y, Pfennig A, Quiroz D, Ramesar R, Rasgon N, Reif A, Ritter P, Rybakowski JK, Sagduyu K, Scippa AM, Severus E, Simhandl C, Stein DJ, Strejilevich S, Hatim Sulaiman A, Suominen K, Tagata H, Tatebayashi Y, Torrent C, Vieta E, Viswanath B, Wanchoo MJ, Zetin M, Whybrow PC (2015) Influence of birth cohort on age of onset cluster analysis in bipolar I disorder. *Eur Psychiatry* 30, 99-105.
6. Blumenthal SR, Castro VM, Clements CC, Rosenfield HR, Murphy SN, Fava M, Weilburg JB, Erb JL, Churchill SE, Kohane IS, Smoller JW, Perlis RH (2014) An electronic health records study of long-term weight gain following antidepressant use. *JAMA Psychiatry* 71, 889-896.
7. Borro M, Simmaco M, Aceti A, Barni S, De Luca A, Fineschi V, Frati P, Girardi P, Miozzo M, Nati G, Nicoletti F, Santini D, Marchetti P (2016) H2020 and Beyond: Skip Discrepancy between Theory and Practice of Personalized Medicine. A Position Paper by the Italian

Society of Personalized Medicine. *Curr Pharm Biotechnol* 17, 926-929.

8. Borsini A, Alboni S, Horowitz MA, Tojo LM, Cannazza G, Su KP, Pariante CM, Zunszain PA (2017). Rescue of IL-1 β -induced reduction of human neurogenesis by omega-3 fatty acids and antidepressants. *Brain Behav Immun*. 2017 Oct;65:230-23
9. Brandl EJ, Kennedy JL, Muller DJ (2014) Pharmacogenetics of antipsychotics. *Can J Psychiatry* 59, 76-88.
10. Brandl EJ, Lett TA, Chowdhury NI, Tiwari AK, Bakanidze G, Meltzer HY, Potkin SG, Lieberman JA, Kennedy JL, Muller DJ (2016) The role of the ITIH3 rs2535629 variant in antipsychotic response. *Schizophr Res* 176, 131-135.
11. Caldirola D, Perna G (2015) Is there a role for pharmacogenetics in the treatment of panic disorder? *Pharmacogenomics* 16, 771-774.
12. Caldirola D., and Perna G., "Toward a personalized therapy for panic disorder: preliminary considerations from a work in progress". *Neuropsychiatric Disease and Treatment*,15:1957-70, 2019.
13. Castro VM, Minnier J, Murphy SN, Kohane I, Churchill SE, Gainer V, Cai T, Hoffnagle AG, Dai Y, Block S, Weill SR, Nadal-Vicens M, Pollastri AR, Rosenquist JN, Goryachev S, Ongur D, Sklar P, Perlis RH, Smoller JW (2015) Validation of electronic health record phenotyping of bipolar disorder cases and controls. *Am J Psychiatry* 172, 363-372.
14. Cattaneo A, Ferrari C, Uher R, Bocchio-Chiavetto L, Riva MA, Pariante CM (2016) Absolute Measurements of Macrophage Migration Inhibitory Factor and Interleukin-1-beta mRNA Levels Accurately Predict Treatment Response in Depressed Patients. *Int J Neuropsychopharmacol* 19.
15. Chekroud AM, Gueorguieva R, Krumholz HM, Trivedi MH, Krystal JH, McCarthy G (2017) Reevaluating the Efficacy and Predictability of Antidepressant Treatments: A Symptom Clustering Approach. *JAMA Psychiatry* 74, 370-378.
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19. Crossley NA, Marques TR, Taylor H, Chaddock C, Dell'Acqua F, Reinders AA, Mondelli V, DiForti M, Simmons A, David AS, Kapur S, Pariante CM, Murray RM, Dazzan P (2017) Connectomic correlates of response to treatment in first-episode psychosis. *Brain* 140, 487-496.
20. Day CV, Gatt JM, Etkin A, DeBattista C, Schatzberg AF, Williams LM (2015) Cognitive and emotional biomarkers of melancholic depression: An iSPOT-D report. *J Affect Disord* 176, 141-150.
21. Day CV, John Rush A, Harris AW, Boyce PM, Rekshan W, Etkin A, DeBattista C, Schatzberg AF, Arnow BA, Williams LM (2015) Impairment and distress patterns distinguishing the melancholic depression subtype: an iSPOT-D report. *J Affect Disord* 174, 493-502.
22. de Medeiros Alves V, ACP ES, de Souza EVM, de Lima Francisco LCF, de Moura EL, de Melo-Neto VL, Nardi AE (2017) Suicide attempt in mental disorders (MeDi): Association

- with 5-HTT, IL-10 and TNF-alpha polymorphisms. *J Psychiatr Res* 91, 36-46.
23. de Medeiros Alves V, Bezerra DG, de Andrade TG, de Melo Neto VL, Nardi AE (2015) Genetic Polymorphisms Might Predict Suicide Attempts in Mental Disorder Patients: A Systematic Review And Meta-Analysis. *CNS Neurol Disord Drug Targets* 14, 820-827.
 24. [Drysdale AT, Grosenick L, Downar J, Dunlop K, Mansouri F, Meng Y, Fetcho RN, Zebley B, Oathes DJ, Etkin A, Schatzberg AF, Sudheimer K, Keller J, Mayberg HS, Gunning FM, Alexopoulos GS, Fox MD, Pascual-Leone A, Voss HU, Casey BJ, Dubin MJ, Liston C (2017) Resting-state connectivity biomarkers define neurophysiological subtypes of depression. *Nat Med* 23, 28-38.
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- in persons at genetic risk for schizophrenia are associated with social competence and activation of the right temporo-parietal junction during emotion processing. *Psychiatry Res* 221, 30-36.
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80. Zugliani MM, Freire RC, Perna G, Crippa JA, Nardi AE (2015) Laboratory, clinical and therapeutic features of respiratory panic disorder subtype. *CNS Neurol Disord Drug Targets* 14, 627-635.

List of lectures/ educational programmes done by members of the Section

Expo 2015 congress “The future of mental health: feeding, empowering, treating”. 19/20 June 2015, Milan, Italy. The congress was endorsed by the WPA and chaired by the Section chair Giampaolo Perna. The members Charles Nemeroff, Koen Schruers, and Daniela Caldirola made personalized psychiatry related presentations at the congress.

Section chair, Giampaolo Perna, delivered academic lessons on personalized medicine in psychiatry for the faculty of psychology at Vita Salute San Raffaele University, Master in Neuropsychology and Clinical Neurosciences for Rome LUMSA University, School of Psychotherapy ASIPSE.

Section co-chair, Charles Nemeroff, gave several lectures and grand rounds. He organized the 46th Annual ISPNE conference (2016) fully focused on personalized medicine in psychiatry.

Alan Schatzberg, Elisabeth Binder, Carmine Pariante gave several lectures and grand rounds on personalized psychiatry. They all were speakers for the 29th CINP World Congress of Neuropsychopharmacology for the symposium “Personalized Medicine in mood and anxiety disorders” (2014).

Amit Etkin was recently recipient of the Chairman's Award for Advancing Science, Stanford University and gave several lectures in international congress, on personalized medicine in psychiatry. Amit Etkin and Alan Schatzberg were speakers for the congress “Personalized Medicine World Conference Mountain View – The Arrival of Actionable Personalized Medicine: The age of Guided Disease Management” (2014).

Elisabeth Binder has given over 70 invited presentations at various universities and scientific conference. She is the co-president of the WASAD congress of the World Association for Stress Related and Anxiety Disorders. She was, recently, speakers for the symposium “Epigenetics prevention and early risk detection” for International Conference of families with parental mental health challenges. In December 2016 he won the Eva King-Killam Research Award for her contribution to neuropsychopharmacology.

Bernard Lerer was recipient of the 2014 inaugural Werner Kalow Responsible Innovation Prize in Global Omics and Personalized Medicine (Pacific Rim Association for Clinical Pharmacogenetics). The prize goes to cultivate transgenerational capacity and recognize of the practice of responsible innovation as an important criterion of 21st century omics science and personalized medicine.

Carmine Pariante gave several lectures on personalized psychiatry. He has given the oral presentation “Using inflammatory biomarkers in the personalized antidepressant treatment” for the 5th Biennial Cambridge and Bedford International Conference of Mental Health (2015). He was awarded during a special plenary lecture of the Anna-Monika Prize (2015). This prize is awarded biannually to clinical scientists who have made outstanding contributions to the understanding of neurobiology of depression and its personalized treatment.

Paolo Girardi is a co-founder of the Italian Association “Lotta allo Stigma” (A.I.L.A.S.). He is member of several international scientific associations, including SIP, SIPS and AEP. His clinical and research activity is addressed to the investigation of personalized treatments in patients with resistant depression. He is chief of the Personalized Mental Health Service of Sant’Andrea Hospital (Rome).

Ned Kalin was awarded during a special plenary lecture of the Anna-Monika Prize (2015). This prize is awarded biannually to clinical scientists who have made outstanding contributions to the understanding of the neurobiological underpinnings of depression and its personalized treatment. From 2019 he is the Editor in Chief of the American Journal of Psychiatry.

Philip Harvey won several prizes, in particular the Alexander Gralnick Schizophrenia Research award of the American Psychiatric Foundation (2014), and the John Blair Barnwell award (2014), the prize for clinic research in all scientific disciplines at the US Department of Veterans affairs.

Manuel Martin Carrasco gave several lectures at international congresses on the topic of personalized medicine and psychiatry. He is president of the Spanish Society of Psychogeriatrics, secretary of Spanish Society of Psychiatry and coordinator of Guida Esencial de Psicogeriatria. He is member of European Psychiatric Association Council of NPAs from 2015.

Rafael C. Freire is involved in a seminal research project about personalized pharmacological treatment for panic disorder.

Antonio Egidio Nardi addresses his research activity to understand the impact of some variables (tobacco and caffeine consumption) in panic disorders and some predictive variables of treatment outcomes in generalized anxiety disorders, in order to improve and personalize the efficacy of treatment in anxiety disorders. He is the Co-Editor in Chief of the Brazilian Journal of Psychiatry.

Rene Hurlmann addresses his research to investigate if the oxytocin system could be involved in pathophysiology, prevention and personalized treatment approaches of social anxiety disorder.

Keith Kendrick, helped by technology support, addresses his research to understand how different brain systems are organized to control a variety of social and emotional behaviours, as basis of personalized treatment.

Joseph Zohar addresses his research to understand the efficacy of pharmacological treatment in psychosis and obsessive-compulsive disorders in order to personalize treatment.