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Title:

**Personalized Medicine in Psychiatry:
Tracking the Mind to Improve Lives.**

Abstract:

We are using genomics and phenomics to revolutionize psychiatric diagnosis and treatment. Our approach integrates genetic studies, bioinformatics data mining, predictive tests, and a multidimensional model for mental landscape. A higher degree of mathematization and automation of what we do is a desirable next step.

Biography

Alexander B. Niculescu, III, MD, PhD, is a Romanian born, San Diego, California, educated and trained (The Scripps Research Institute, UCSD School of Medicine) scientist and physician. He is an Associate Professor in the Department of Psychiatry at the Indiana University School of Medicine in Indianapolis, Indiana, Director of the Laboratory of Neurophenomics, and an Attending Psychiatrist at the Indianapolis VA Medical Center.

Considered the inventor of Convergent Functional Genomics (CFG), he is a prominent figure in the nascent field of personalized medicine in psychiatry. His early contributions to the psychiatric genetics field include identification of candidate genes, pathways and mechanisms for bipolar disorder using convergent (human and animal model, genetic and gene expression) studies. In particular, his work and that of his collaborators has focused attention on circadian clock genes as core components of mood regulation.

Since these contributions, his research program has expanded to include similar work on schizophrenia, alcoholism, anxiety and stress disorders, leading to the identification of panels of DNA and RNA markers for disease risk prediction and severity of illness. Niculescu pioneered early on the view that psychiatric disorders are genetically complex, heterogeneous, and overlapping, requiring gene level integration of data followed by pathway analyses. The cumulative combinatorics of common variants and environment model he described for bipolar and other complex disorders based on empirical data, is being increasingly supported by evidence from other groups working on psychiatric and non-psychiatric disorders. More recently, he has proposed a comprehensive unifying model (Mindscape) for conceptualizing how the mind works.

Niculescu is a past *NARSAD awards* (2002, 2005) recipient and *Pfizer Fellow* (2002). In 2004, he received the *American Psychiatric Association/ AstraZeneca Young Minds in Psychiatry Award*, and in 2007, the *Theodore Reich Award from the International Society for Psychiatric Genetics*. In 2010, Dr. Niculescu received a prestigious *NIH Directors' New Innovator Award*.