# Real Life™

**Larry Goldstein, PhD**
Chair, CIRM Neuro Task Force

Neuro Task Force Meeting #4

May 15, 2023

CIRM
CALIFORNIA'S STEM CELL AGENCY

# Elements Speakers to Address:

1. What aspects of cellular phenotype and behavior do you think are most important and amenable to evaluate in brain organoid cultures? Which are most optimally evaluated in pure cultures of each cell type or in mixed organoid cultures?

2. Single cell RNA evaluation methods are clearly very powerful, but they leave quite a bit unexamined. What aspects of current evaluation methods are incomplete? What would you propose to tackle this challenge?

3. How well do cellular analyses in organoid match cellular analyses in whole tissue?

# Daniel Geschwind, M.D., Ph.D.

Dr. Geschwind is the Gordon and Virginia MacDonald Distinguished Professor of Human Genetics, Neurology and Psychiatry at UCLA. In his capacity as Senior Associate Dean and Associate Vice Chancellor of Precision Health, he leads the Institute for Precision Health (IPH) at UCLA, where he oversees campus precision health initiatives. In his laboratory, his group has pioneered the application of systems biology methods in neurologic and psychiatric disease, with a focus on autism spectrum disorders (ASD) and neurodegenerative conditions. Dr. Geschwind is a pioneer in the transcriptomic and functional genomic analyses of the nervous system. His laboratory showed that gene co-expression has a reproducible network structure that can be used to understand neurobiological mechanisms in health and disease. He led the first studies to define the molecular pathology of autism and several other major psychiatric disorders and has made major contributions to defining the genetic basis of autism. He demonstrated the utility of using gene network approaches to discover new pathways involved in neurodegeneration and new approaches to facilitate neural regeneration.  More recently, his laboratory demonstrated how knowledge of 3-dimensional chromatin structure can be used to understand the functional impact of human genetic variation. Dr. Geschwind has trained over 70 graduate students and post-doctoral research fellows, and is among the highest cited scientists in neurology, neuroscience and genetics (H index > 140). In addition to serving on several scientific advisory boards, including the Faculty of 1000 Medicine, the Scientific Advisory Board for the Allen Institute for Brain Science, the NIMH Advisory Council and the NIH Council of Councils, he currently serves on the editorial boards of the journals Cell, Neuron and Science. He has received several awards for his laboratory's work is an elected Member of the American Association of Physicians and the National Academy of Medicine.

Source: https://www.semel.ucla.edu/profile/daniel-geschwind-md-phd

# Lilia M Iakoucheva, Ph.D.

Dr. Lilia Iakoucheva obtained B.S. in genetics from Kiev State University (Kiev, Ukraine) and Ph.D. in molecular biology and immunology from the Institute of Immunology (Moscow, Russia). After completing postdoctoral training in protein biochemistry at the Pacific Northwest National Laboratory (Richland, WA) she joined the group of Prof. Keith Dunker to study intrinsically disordered proteins. During that time and with active Dr. Iakoucheva's participation, the group made a series of fundamental discoveries about disordered proteins, including their role in cell signaling and cancer, the importance of disorder for post-translational modifications and for interactions with other proteins and ligands. In 2003, Dr. Iakoucheva joined the Rockefeller University (New York, NY) as a Research Assistant Professor, where she continued to investigate functional properties of disordered proteins, at the same time gradually shifting her interests into disease-oriented field. Rapid advancement in the disease gene discovery in the post-genomic era opened new avenues and opportunities for more detailed investigation of protein interaction networks and pathways underlying many human diseases. Dr. Iakoucheva became especially interested in the molecular basis of psychiatric diseases, which she began to explore using systems biology approaches. She joined the Psychiatry Department of the University of California San Diego (La Jolla, CA) as an Assistant Professor in 2010, where she continues to apply her experience in protein structure, disorder and protein-protein interactions analyses towards investigation of autism and schizophrenia. Dr. Iakoucheva has been the principal investigator on research grants from NSF, NCI, NICHD, and NIMH.

Source: https://profiles.ucsd.edu/lilia.sebat