



WEBINAR SERIES ESHG-IFHGS-15th ICHG (October 2026)

SPEAKERS:

1. Dr. Simoni Avansini (from Brasil)

- **Title:** Stem cell-based organoid models of neurodevelopmental disorders
- **Abstract:** Neurodevelopmental disorders (NDDs) associated with epilepsy are complex, polygenic conditions with limited therapeutic options, mainly due to an incomplete understanding of their genetic basis and the lack of representative human models. In this presentation, I will discuss the use of human brain organoids derived from induced pluripotent stem cells of NDD patients. I will also present findings from brain organoids generated from patients with Focal Cortical Dysplasia, which recapitulate key disease hallmarks, including impaired proliferation, cellular abnormalities, and neuronal network hyperexcitability. These models provide a relevant platform to investigate disease mechanisms and enable therapeutic screening.
- Dr. Avansini is a researcher at the University of Campinas (Brazil), where her work focuses on epilepsy, molecular biology, malformations of cortical development, and disease modeling using stem cells. Since 2010, she has been studying focal cortical dysplasia (FCD), aiming to understand the pathophysiology of this cortical malformation and ultimately accelerate the development of new treatments. Recently, she began her career as an independent researcher, with a particular interest in neurodevelopment and, more specifically, epileptogenesis in FCD using human brain models. Her contributions to science are focused on epilepsy and malformations of cortical development using molecular biology, genetics, and stem cell biology. She has published 17 full papers in peer-reviewed journals, with 902 citations and an H-index of 14 according to Google Scholar.

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2. Dr. Andrés Moreno Estrada (from Mexico)

Title: Population medical genomics in Latin America: The Mexican Biobank Project

- Dr. Moreno received his medical degree from the University of Guadalajara (2002) and is a specialist in human genetics with a postgraduate degree in biomedical research from Pompeu Fabra University in Barcelona, Spain (2009) and completed postdoctoral training in population genomics from both Cornell University, New York,





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and Stanford University, California, USA (2010–2014); where he later served as a research associate before returning to Mexico in 2015. He is the author of the most detailed study of the genetic structure of the Mexican population, including the first description of the genome of 20 indigenous groups from various regions of Mexico. In a joint effort with INMEGEN and other national and international institutions, he demonstrated that the genetic composition of Mexico's cosmopolitan population reflects the substructure of the ancestral lineages of each region's indigenous roots. He showed that these genetic differences have important implications for traits of biomedical and clinical interest. The study was published in the journal Science in June 2014. Dr. Moreno has led similar studies in the Caribbean region (PLOS Genetics 2013), South America (PLOS Genetics 2015, AJHG 2022), and has now extended his research to describe the genetic map of other Latin American countries such as Chile, Colombia, and Peru, and even the Pacific Ocean, particularly Polynesia, including the important study on the genome diversity of the Rapanui natives of Easter Island, published in the journal Nature in 2020. He currently heads the Mexican biobank project (MX Biobank), generating the most comprehensive genomic catalog of the Mexican population, which was featured on the cover of Nature (October 2023) and Nature Medicine (January 2026). These studies have contributed to improving the representation of understudied populations in global genetic variation catalogs. For his research in biomedicine among Latin American populations, he was recognized in 2012 with the George Rosenkranz Prize for Health Care Research in Developing Countries, awarded by the Institute for International Studies (FSI) at Stanford University. He has trained more than a dozen international students in Europe, the United States, and Latin America. He has authored more than 55 peer-reviewed publications with over 32,000 citations, including high-impact journals such as Science, Nature, PNAS, AJHG, and PLOS Genetics, among others. He is a member of the SNI Level III and from 2015 to 2021 he was in charge of the Genomic Services Area of the National Laboratory of Genomics for Biodiversity (LANGE BIO). He is currently Principal Investigator of the Population and Evolutionary Genomics Laboratory at the South Campus of Cinvestav in Mexico City. He has participated in the launch of international consortia such as the 1000 Genomes Project, the International Common Disease Alliance (ICDA), and the LatinGenomes initiative, and leads the "Latin American Human Cell Diversity Map" (LatinCells) project funded by the Chan-Zuckerberg Initiative (CZI), contributing to the diversity of global efforts such as the Human Cell Atlas.

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March 1-5

2027 Guadalajara, México.

**From Roots to Revelations:
Human Genetics in Multi-Ancestry Contexts.**

