

## NANOFANS WEBINAR ANNOUNCEMENT

## Towards the High-throughput Screening of Brain Organoids on Chip

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## Date: October 27, 2021 (Wednesday) Time: 11:00 AM – 12:00 PM EDT

**Abstract**: Studying brain development is important for our understanding of brain function and dysfunctions such as developmental neurodegenerative diseases and neuropsychiatric disorders. A major difficulty lies in the lack of human-specific model systems to proceed with large-scale studies. Traditional assays using 2D cell cultures lack the 3D structure and associated functionality, while small animal model organisms are not human-specific. Brain organoids appear as an attractive solution as they are physiologically relevant systems that can be produced in large numbers. However, the current methods show challenges in producing homogeneous organoids suitable for large-scale screens. We will show how in the Lu lab, based on our experience in designing high-throughput screening techniques, we are developing methods that specifically target the unique challenges of culturing and monitoring brain organoids. We envision these techniques to find important applications for disease modeling and drug screens.

**Bio**: Guillaume Aubry obtained his M.S. in Optoelectronics and Ph.D. in Physics at the Paris-Sud University, now Paris-Saclay University, France. His Ph.D. focused on developing liquid-state optical microresonators for lab-on-chip biosensing applications. After graduation, he moved to the Georgia Institute of Technology to work with Dr. Hang Lu and created droplet-based microfluidic screening platforms for *C. elegans* model organism. He is currently a Research Scientist in the Lu lab at Georgia Tech where he pursues the development of high-throughput screening techniques for single cells and multi-cellular organisms.

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