

## NANOFANS WEBINAR ANNOUNCEMENT

## Novel Hydrogel-based Microvasculature-on-chips for Studying Microvascular Occlusion and Thrombosis in Disease

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**Abstract:** Microvascular dysfunction is associated with the pathophysiology of many diseases, such as sickle cell disease. However, due to the small size scale and its location deep inside the tissues, the pathological events that occur in the microvasculature are commonly invisible under the clinical settings and difficult to study using animal models as well. Therefore, the underlying mechanisms of microvascular dysfunction in disease are poorly understood. To address this challenge, we are developing novel hydrogel-based microvasculature-on-chips by harnessing microfabrication and material science to model microvasculature with long-term physiologically relevant properties, which allows us to recapitulate and monitor the pathological events of microvascular dysfunction in disease with high resolution. Here I will present the development of the hydrogel-based microvasculature-on-chip system and our recent progress in using this novel system to study the microvascular occlusion and test the therapeutics in sickle cell disease.

**Bio:** Yongzhi Qiu is an Assistant Professor in the Department of Pediatrics at Emory University School of Medicine where he works in Dr. Wilbur Lam's Lab. He joined Dr. Lam's lab in 2012 as a postdoctoral fellow where he received training in experimental hematology. He was promoted to Assistant Professor in 2020. His research has been focused on investigating platelet mechanics in hematological diseases and developing microvasculature-on-chip technologies for advancing research in the field of hematology. Before joining Dr. Wilbur Lam's Lab, he worked with Dr. Johnna Temenoff at Georgia Tech as a postdoctoral fellow where he obtained training in tendon/ligament tissue engineering. He received his Ph.D. in Bioengineering at Clemson University. He received his bachelor's and master's degrees, both in Polymer Science and Engineering at Nanjing University, China.

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