



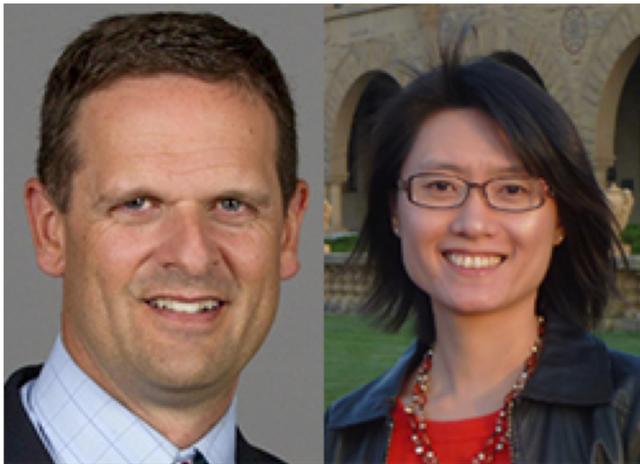
# MATERNAL & CHILD HEALTH RESEARCH INSTITUTE

## SEMINAR SERIES

### Bioengineering Strategies for Advancing Treatment of Brain Cancer

Friday, January 25, 2019 | 12:00pm - 1:00pm

Li Ka Shing Learning & Knowledge Center, Room #101



#### GERALD GRANT, MD, FACS

Professor of Neurosurgery and, by courtesy,  
of Neurology & Neurological Sciences

Recipient of Transdisciplinary Initiative Program Award  
and Arline and Pete Harman Faculty Scholar Award

#### FAN YANG, PHD

Associate Professor of Bioengineering and of  
Orthopaedic Surgery

Recipient of Lucile Packard Foundation for Children's  
Health Faculty Scholar Award

Pediatric brain tumors are the leading cause of cancer-related death among children and adolescents. Only 1 in 5 children with a malignant brain tumor are still alive 5 years after diagnosis. These devastating statistics are due to lack of physiologically relevant in vitro models for effective drug testing, the challenge to achieve targeted drug delivery, and need for better understanding of how to deliver new drugs across the blood-brain barrier.

The brain tumor microenvironment is a complex niche consisting of biochemical and mechanical cues. Previous attempts have relied mostly on standard 2D monolayer culture or animal models to mimic the disease phenotype. However, increasing evidence has shown that cancer cell behavior in 2D differs substantially from the in vivo phenotype, whereas animal models are costly, lengthy to produce, and often cumbersome for mechanistic studies.

In this talk, Drs. Gerald Grant and Fan Yang will discuss about their research designed to develop novel 3D in vitro models that bridge the gap between the 2D culture and animal models. To enhance targeted drug delivery to infiltrating brain cancer cells, an example will be shared on using non-viral engineered stem cells to enhance targeted drug delivery to glioblastoma using a mouse model. Finally, recent progress on overcoming the blood-brain barrier to improve drug delivery to pediatric brain tumors will be discussed.

*The seminars series is open to all, including faculty, staff, trainees, postdocs, and all members of the research community. Seats are limited, and reservation is required. Limited lunch will be provided on a first come, first served basis.*

Register here: <https://mchri-seminar-jan25.eventbrite.com>