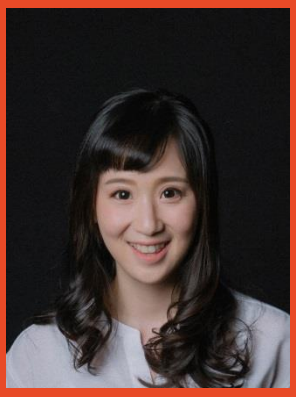


Jee Wei Emily Chen

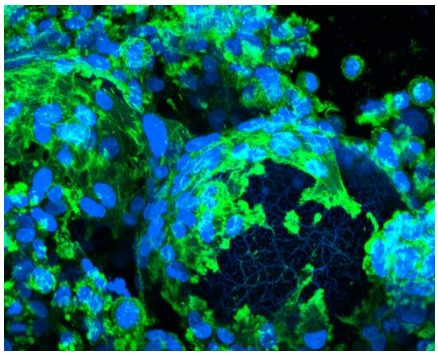
The influence of extracellular HA and hypoxia on the invasive phenotype of GBM stem cells

Ph.D. candidate, Chemical and Biomolecular Engineering
B.S. Chemical Engineering, National Tsing Hua University (Taiwan)

Hometown: Hsin-Chu City, Taiwan

ABSTRACT:

Glioblastoma (GBM) is the most common and lethal brain cancer among the world associated with short median (~15 months) and 5 year+ long term survival rate less than 15%. The heterogenous tumor microenvironment (TME) complicates the GBM study both in vitro and in vivo. Current standard treatment includes surgical debulking tumor followed by radio- and chemo- therapy but with limited effects and GBM still has a very high recurrence rate (~7 months).



My project focuses on utilizing a TME-inspired in vitro hydrogel (GelMA and HAMA) platform to understand how the matrix composition, nutrient transition and the heterogeneous cellular population influence on GBM invasion and how GBM stem cells affects GBM malignancy as well as therapeutic outcomes. My work ultimately aims to develop biomaterial platforms to understand cellular cross-talk, to provide a personalized cancer diagnostic tool, and to develop personalized treatment plans.

AWARDS/PUBLICATIONS:

- Mavis Future Faculty Fellow (2018-2019)
- NIH T32 Fellow, Tissue Microenvironment (2016-2018)
- 2017 Phi Tau Phi Scholarship Award (September 2017)
- J.-W. E. Chen et al. “Influence of hyaluronic acid transitions in tumor microenvironment on glioblastoma malignancy and invasive behavior” *Frontiers Material* (2018)
- J.-W. E. Chen et al. “Hypoxia activates enhanced invasive potential and endogenous hyaluronic acid production by glioblastoma cells,” *Biomaterials Science* (2018)
- J.-W. E. Chen et al. “The combined influence of hydrogel stiffness and matrix-bound hyaluronic acid content on glioma migration”, *Macromolecular Bioscience* (2017)