ABSTRACT:
I work on establishing biomaterial platforms for evaluating microenvironmental pressures impacting tumor evolution and neurodegeneration. I have developed adaptable ex vivo platforms using hydrogel photochemistry, bio-conjugation techniques and microfluidic forming technologies to provide defined, instructive signals that better replicate the native glioblastoma tumor tissue.

These platforms allow us to investigate the dynamics of tumor development, progression, and therapy on multiple scales. Moreover, reproducing crucial features of neurodegenerative diseases, such as multiple sclerosis, in a biomimetic system may increase our knowledge of the mechanisms of currently incurable diseases and expedite drug discovery.

PUBLICATIONS: