



# Sara Pedron Haba

## *Biomaterial models of brain diseases*

Research Scientist

Ph.D. Materials Science and Engineering

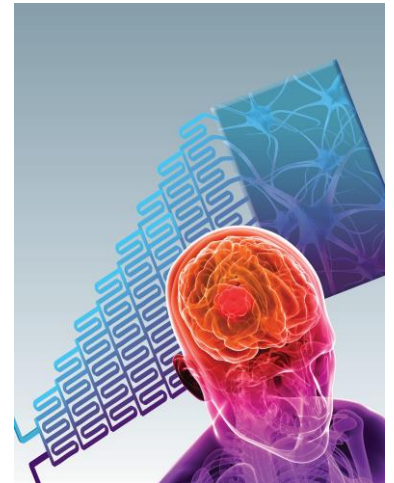
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### ABSTRACT:

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:

- AM Magarinos, S Pedron, DW Pfaff, BAC Harley. The feasibility of encapsulated embryonic medullary reticular cells to grow and differentiate into neurons in functionalized gelatin-based hydrogels. *Frontiers in Materials* 2018, 5:40. doi:10.3389/fmats.2018.00040.
- S. Pedron, J.S. Hanselman, M. Schroeder, J.N. Sarkaria, B.A.C. Harley, 'Extracellular hyaluronic acid influences the efficacy of EGFR tyrosine kinase inhibitors in a biomaterial model of glioblastoma,' *Adv. Healthc. Mater.*, 2017.
- S. Pedron, E. Becka, B.A.C. Harley, 'Spatially-gradated hydrogel platform as a three-dimensional engineered tumor microenvironment,' *Adv. Mater.*, 27(9):1567-72, 2015.



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