

“Microproteomic analysis of laser capture microdissected cell protrusions”

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Zoom link: <https://fresnostate.zoom.us/j/5592785802>



About the speaker: Dr. Gousset obtained her PhD at UC Davis and did post doctoral work at the Johns Hopkins University, NIH and the Pasteur Institute. She has a broad background in cellular biology, with specific training and expertise in microscopy, virology, molecular biology techniques and microproteomics. The main focus of her laboratory is on the role of tunneling nanotubes (TNTs), a novel mechanism of functional connectivity between cells, in the spreading of viruses, misfolded protein aggregates (leading to neurodegenerative diseases), as well as the role they may play in the proliferation and persistence of cancer.

Abstract: Laser Capture Microdissection (LCM) is uniquely tailored to specifically and reproducibly isolate and enrich individual cells based on morphology and/or using fluorescence markers. Numerous types of cellular protrusions have been described and the majority of studies revolves around their possible functions. Tunneling nanotubes (TNTs), filopodia, growth cones or invadopodia are examples of cellular protrusions known to play a role in major cellular events such as cell differentiation, migration and invasion. They also play critical role in diseases, including neurodegenerative diseases, virus spread and cancer. What has been missing so far is a method to analyze their individual protein composition and identify key differences within these various subsets of cellular protrusions. Here, I will describe an LCM approach that we have developed to specifically isolate cellular protrusions and prepare samples for downstream microproteomics analyses. In this seminar, I will specifically focus on what I have done during my sabbatical in order to advance this research.

