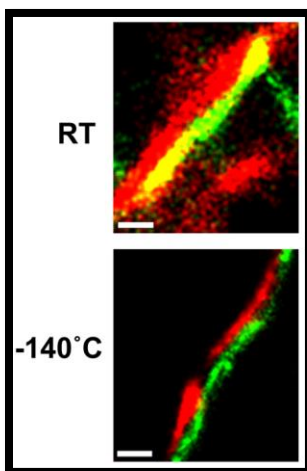


Biology Seminar

By: Marc Nahmani

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High numerical aperture cryogenic localization microscopy: a technique for increased precision of super-resolution reconstructions



Monday, April 24, 2017 | 12:00pm
HCK 132 Refreshments at 11:45am

The precision of localization-based super-resolution microscopy techniques fundamentally relies on the point-spread function of the optical system and the number of photons one can collect. Here, we report that by using a high-numerical aperture objective lens and a custom cryogenic stage, we are able to increase photon yield by 2-3 fold over room temperature, thereby achieving more precise super-resolution reconstructions of complex subcellular structures.



Marc is originally from the Washington, D.C. area, following which he lived and worked in Wisconsin and then in Tampico, Mexico. He did his graduate work in Alev Erisir's lab at the University of Virginia, elucidating the mechanisms surrounding 'critical period' plasticity in the visual system using correlative confocal and electron microscopy. Most recently, Marc was a postdoctoral fellow in Gina Turrigiano's lab at Brandeis University outside of Boston, where he worked on super-resolution projects while continuing to investigate visual system plasticity using techniques that coupled structural (EM) and functional (optogenetics and electrophysiology) analyses. Currently, Marc is an Assistant Professor of Neurobiology at the University of Washington Tacoma, where his lab is pursuing two main aims: (1) To investigate the relationship between the plasticity of neuronal networks during heightened periods of plasticity ('critical periods') in development, with that of injury-induced plasticity and regeneration, and (2) To adapt and improve upon current super-resolution techniques toward a more comprehensive mapping of neuronal architecture.

Marc and his family (wife, son (5) and daughter (3)) are thrilled to have moved to the Left Coast and to be living in Tacoma. Marc's family are avid hikers and backpackers, and enjoy pretty much anything having to do with rivers, lakes and oceans. Marc is also a lover of spicy foods, loves traveling and becoming immersed in new cultures & traditions, enjoys watching/debating/quoting movies, and will almost never turn down an offer for karaoke.

