

Open Postdoc and PhD Positions in the San Miguel Lab @ NC State University

The [San Miguel Lab](#) has open positions for a Postdoctoral researcher and a PhD student to start Spring or Summer of 2021. Individuals with a Bioengineering, Neuroscience, Genetics, or related background are encouraged to apply. Our group works on using microfluidic systems and machine learning to study aging, neurodegeneration, and the stress response in the model organism *C. elegans*. Currently we have three open projects:

- Neuronal beading as a result of aging and other stressors, such as cold-shock. This project involves using machine learning to characterize neuronal beading, and genetic and environmental perturbations, optogenetics and calcium imaging to understand its drivers and functional outcomes, and automated microfluidics-based genetic screening.
- Microfluidics to study traumatic brain injury. This project involves using microfluidic devices to study the effects of mechanical injury on neuronal health.
- Activation of the oxidative stress response by the nervous system and by interacting chemical mixtures. This project involves investigating how combinations of oxidants and other stressors can interact to drive the oxidative stress response, and the role that neuronal sensing plays on driving this response.

Our group uses tools that enable high-throughput, high-content analysis of fluorescence-based readouts (such as cellular and subcellular morphology, protein localization, gene expression, etc). These include computer vision (including deep and machine learning), automation, microfluidics, CRISPR/Cas9 and traditional transgenesis, optogenetics, calcium imaging, etc.

Individuals from under-represented groups are strongly encouraged to apply.

For more information, please contact Dr. Adriana San Miguel (asanmig@ncsu.edu).