Bio

My expertise is in the areas of regeneration, evolution, the nervous system and cell biology. I use a marine colonial tunicate, Botryllus schlosseri, characterized by having robust regenerative capabilities and an assayable and frequent (weekly) CNS (Central nervous system) tissue regeneration and loss throughout adult life. I believe that comparative studies on a simple chordate can help us elucidate the principal mechanisms that are the foundation of regeneration and aging. I use a multidisciplinary methodology that integrates advanced single cell RNAseq, imaging, multi-parameter flow cytometric isolation of cellular populations and transplantation assays to elucidate the cellular and genetic changes associated with neuronal degeneration process in young and old colonies.

STANFORD ADVISORS

- Irving Weissman, Postdoctoral Faculty Sponsor
- Ayelet Voskoboynik, Postdoctoral Research Mentor

Research & Scholarship

LAB AFFILIATIONS

- Irving Weissman (9/1/2019)

Publications

PUBLICATIONS

- **Multiple Forms of Neural Cell Death in the Cyclical Brain Degeneration of A Colonial Chordate.** *Cells*  
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- **Contributions from both the brain and the vascular network guide behavior in the colonial tunicate Botryllus schlosseri.** *The Journal of experimental biology*  
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- **Two distinct evolutionary conserved neural degeneration pathways characterized in a colonial chordate.** *Proceedings of the National Academy of Sciences of the United States of America*  
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- **Morphological Study and 3D Reconstruction of the Larva of the Ascidian Halocynthia roretzi** *JOURNAL OF MARINE SCIENCE AND ENGINEERING*  
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• Sixty years of experimental studies on the blastogenesis of the colonial tunicate Botryllus schlosseri *DEVELOPMENTAL BIOLOGY*
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• High-precision morphology: bifocal 4D-microscopy enables the comparison of detailed cell lineages of two chordate species separated for more than 525 million years *BMC BIOLOGY*
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