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

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

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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• Morphological Study and 3D Reconstruction of the Larva of the Ascidian Halocynthia roretzi JOURNAL OF MARINE SCIENCE AND ENGINEERING
  Manni, L., Caicci, F., Anselmi, C., Vanni, V., Mercurio, S., Pennati, R.
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• Yamanaka Factors in the Budding Tunicate Botryllus schlosseri Show a Shared Spatio-Temporal Expression Pattern in Chordates. *Frontiers in cell and developmental biology*
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• Sexual and asexual development: two distinct programs producing the same tunicate. *Cell reports*
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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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