Genome Sciences Seminar

Wednesday, 5.17.17 | 3:30 | Foege Auditorium

Dr. Stanislav Shvartsman

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"Quantitative biology of developmental abnormalities"

Shvartsman Lab:

Our lab uses experiments, theory, and computation to develop predictive models of dynamical processes in cells and tissues. We are interested in the extent to which simple physicochemical principles can be discerned in complex biological systems, such as developing embryos. Current projects in the group fall into three broad categories. First, we are developing quantitative descriptions of enzymatic networks. The experimental systems here are *Drosophila* embryos and theory is based on more or less conventional chemical kinetics models. Second, we are studying the processes by which two-dimensional sheets of cells give rise to three-dimensional structures of tissues and organs. Here, experiments are done in developing *Drosophila* eggs and zebrafish embryos and theory relies on either continuum or discrete mechanical models of epithelial tissues. Third, we are studying how developing tissues manage their constant need for energy. This project is still very young; we are exploring multiple avenues for quantitative experiments, from single embryo calorimetry to in vivo imaging of mitochondrial networks and cell metabolism.

Refreshments served outside the Auditorium at 3:20pm
Questions? Contact Brian Giebel at bgiebel@uw.edu or visit the Seminar website at http://www.gs.washington.edu/news/seminars.htm