

John A. Lynch Lecture Series

Wnt Signaling and Stem Cell Control

FRIDAY, OCTOBER 31

12:30 PM

101 JORDAN HALL

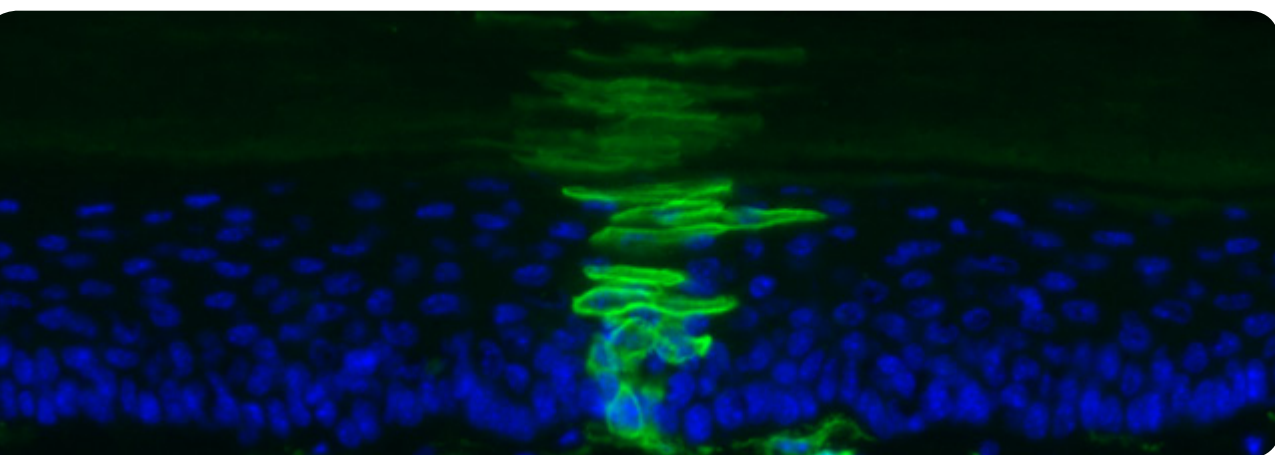
Roel Nusse

Professor of Developmental Biology
Virginia and Daniel K. Ludwig Professor of Cancer Research
Investigator Howard Hughes Medical Institute
Stanford University



Roel Nusse's laboratory is interested in the growth, development and integrity of animal tissues. They study different organs to identify common principles, which they extend to understand processes underlying cancer and injury repair. In most organs, stem cells generate the specialized cell types, but they also self-renew to maintain the tissue. An optimal balance between the number of stem and differentiated cells is essential for proper organ function. Locally acting signals from stem cell niches are important to maintain this balance in a spatially organized manner, and these signals are key to understanding the regulation of growth.

A major focus of the Nusse lab is Wnt signaling, which is essential for regulating stem cells. How this is achieved is far from clear and is the subject of studies in the lab, both in vivo and in cell culture. The types of questions that the Nusse lab investigates are: What role do Wnt-responsive cells play in tissue maintenance and regeneration? How is the expression of Wnt signals regulated, in normal and injured tissues? Does oriented Wnt signaling polarize asymmetrically dividing stem cells, which plays a central role in tissue homeostasis and regeneration.



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