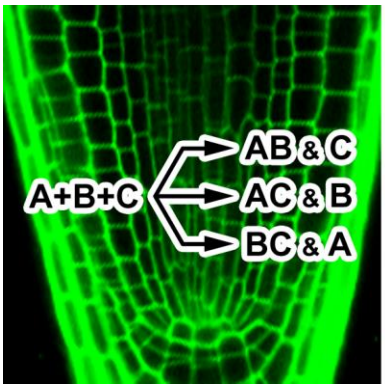
DEPARTMENT OF BIOLOGY | UNIVERSITY of WASHINGTON

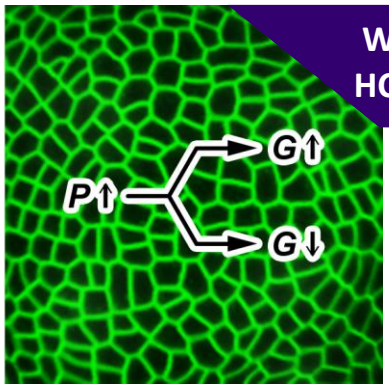
Faculty Search
Biology Seminar

Speaker: Yuchen Long

Univ Lyon, ENS de Lyon | Laboratoire Reproduction et Développement des Plantes (RDP)
http://international.ens-lyon.fr/m-yuchen-long--243179.kjsp?RH=1453193207632

Nonlinearity and local heterogeneity in plant development





Wednesday, March 28, 2018 | 12:00pm
HCK 132 Refreshments at 11:45am

Biological systems can be quite complex for intuitive interpretations. This is especially true in developmental biology, where robust patterns are established and maintained dynamically in ever-changing and inhomogeneous multicellular environments. Despite the discovery of many key regulatory modules in growth, morphogenesis and fate specification, we still understand little on how such modules are precisely executed, particularly when small initial differences may induce sharp segregation of developmental decisions. I will present two case studies to demonstrate the nonlinear regulations in the stem cell pools of the model plant *Arabidopsis thaliana*. Using state-of-the-art optical and biomechanical imaging techniques as well as physical modeling, we revealed how seemingly homogenous inputs, both in transcriptional regulations and biophysical properties, can generate non-random and meaningful heterogeneous developmental outputs. After addressing the “is it” and “how” questions, I will speculate on “why” such developmental programming is important for plants in environmental response and adaptation.

Seminar Speaker Hosts: Veronica di Stilio & Keiko Torii