



CDB SEMINAR

Speaker: **Pierre Gönczy**
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Swiss Federal Institute of Technology (EPFL)
Lausanne, Switzerland >

Title: “Mechanisms of asymmetric cell division
in *C. elegans* embryos”

Date: Friday, September 30
Time: 2:00 P.M. - 3:00 P.M.
Place: 7F Conference Room of Building A

Summary:

In animal cells, formation of daughter cells that differ in size relies on the mitotic spindle being asymmetrically positioned. In one-cell stage *C. elegans* embryos, the spindle elongates asymmetrically towards the posterior in response to A-P polarity cues. This is achieved by an imbalance of forces pulling on spindle poles: because a larger net force pulls on the posterior spindle pole, the spindle elongates asymmetrically and the first division is unequal. The mechanical basis underlying such force generation is not known. We will discuss ongoing experiments in the laboratory aimed at testing two possible models: 1) force generation by cortically anchored cytoplasmic dynein; 2) microtubule-depolymerization coupled movements. In addition, we will discuss what we have learned about the respective contribution of the G α proteins GOA-1 and GPA-16, as well as their regulators GPR-1/2, RIC-8 and LIN-5, thus providing novel insight into the mechanisms of asymmetric cell division.

Host: **Asako Sugimoto** <Developmental Genomics, CDB>
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