



CDB SEMINAR

Speaker:

Claudio Stern

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**Title: “Gastrulation through a primitive streak:
cellular mechanics and signals”**

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| Date: | Tuesday, May 31 |
| Time: | 17:00 - 18:00 |
| Place: | 1F Auditorium of Building C, CDB |

Summary:

Gastrulation has been said to be "the most important event in your life". It is during this time that the three main layers of cells are set up and that the body axis is established, and during which many cells become committed to their fates. However almost all that is known about the mechanisms of gastrulation comes from studying animals with a blastopore (sea urchin, fly, amphibians). Amniotes (mammals and birds) do not have a blastopore and instead gastrulate through a primitive streak. Another important difference between these groups of animals is that amniotes are highly regulative: they do not definitively establish their polarity until gastrulation starts, while lower animals fix their main axis soon after fertilisation. Are the mechanisms of gastrulation also fundamentally different? Using two-photon time-lapse and scanning electron microscopy we will examine cell behaviour during gastrulation in the chick and compare it with the sea urchin. I will show that gastrulation occurs in two distinct steps, similar in both species. Then we will explore the mechanisms that establish polarity in the early embryo. I will show that a cascade of interacting signalling molecules establish polarity - while many of the molecules are similar to those involved in amphibian polarity determination, amniotes possess specific mechanisms to prevent the formation of multiple axes within one embryo.

Host Guojun Sheng < Early Embryogenesis, CDB >

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