# INVITATION TO SEMINAR (WS 07/08)
# PRINCIPLES OF BIOLOGICAL DEVELOPMENT

## OBJECTIVE

Biological development typically starts from a single fertilized cell, follows a precisely regulated sequence of steps and finally leads to an intricate pattern of differentiated tissues in the adult organism. It has turned out that biological development can be interpreted as cooperative phenomenon emerging in a system of interacting cells and molecules. Accordingly, mathematical modelling is essential to understand key steps in the developmental dynamics as cell division, signalling, differentiation, segmentation or regeneration. In the seminar, we are focusing on the question: What are the mechanisms of self-organization that govern the pattern formation orchestra and how can suitable mathematical models be analyzed? By means of talks, discussions and computer simulations, key questions of biological development and suitable mathematical models will be introduced.

The seminar is intended for undergraduate and graduate students in mathematics, biology or computer science who are interested in this highly interdisciplinary application field.

## TIME AND LOCATION

The seminar will take place monthly (Friday afternoons, 14.00-16.00). Locations: alternating MPI-CBG, Pfotenhauerstr. 108, and ZIH, TU Dresden, Nöthnitzer Str. 46.

## KICKOFF MEETING (DISTRIBUTION OF TALKS)

October 19, 2007, 13.00-14.00, at ZIH INF1096

## ORGANIZERS

Lutz Brusch, ZIH, TU Dresden
Andreas Deutsch, ZIH, TU Dresden
Andy Oates, Max-Planck-Institut für molekulare Zellbiologie und Genetik (MPI-CBG)

## SEMINAR WEBSITE:

http://www.tu-dresden.de/zih/lehre/bio/ws0708_sem

## APPLICATION AND FURTHER INFORMATION

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