PhD project: "Mechanics of Cell Intercalation"

Research Group: "Self-Organization of Multicellular Systems" (Pierre Haas) at the Center for Systems Biology in Dresden (`http://www.csbdresden.de/`).

Project Description: Cell sheet deformations are driven by processes including cell division, cell shape changes, and cell intercalation, but continuum descriptions of cell intercalation (during which cells change their neighbours) are still lacking. In a first step, this project will incorporate this cell intercalation into an elastic model of a cell sheet. In a second step, in collaboration with Pavel Tomancak's group at MPI-CBG, this model will be applied to intercalation during epiboly (epithelial sheet closure) in *Tribolium* [1] to elucidate, for example, the mechanical role of the heterogeneity of the actomyosin cable driving the process.

[1] A. Jain *et al.*, *Nat. Commun.* **11**, 5604 (2020).

Qualifications of the candidate: Theoretical biophysics, applied mathematics, continuum mechanics.

For further information about this project and / or research flavour, please contact Pierre Haas at `haas at maths.ox.ac.uk` or see the (preliminary) group webpage:

`https://www.mpi-cbg.de/research-groups/current-groups/pierre-haas/research-focus/`

Although this is primarily a theoretical project, there may be opportunities for a suitably qualified and inclined candidate to get involved in experimental work in Pavel Tomancak's group at MPI-CBG.

Applications are via the International Max Planck Research School for Cell, Developmental, and Systems Biology. Applications are assessed continuously. For further information, please see:

`https://www.imprs-celldevosys.de/`