Scientific report for the "Tissue and Cell Biomechanics" workshop at IST Austria Nov 16&17 2012

The workshop aimed at bringing together a number of high-profile scientists in the field of tissue and cell biomechanics to present and discuss recent findings from their labs and engage in active collaborations. All except one speaker followed our invitation and attended the workshop. We further attracted another ~ 80 attendants from different institutes and universities across Europe and even the United States.
All speakers considered the broad scientific scope of the symposium and started out with an introduction that was sufficiently general and conceptual to capture the interest of the attendants that were largely not familiar with the specific model system. Most importantly all speakers devoted more than half of the speaking time to present unpublished data. All presentations were followed by lively discussions with the audience that filled at least 10, sometimes 15 minutes. In addition to the presentations, there were several coffee breaks and three dinners to which the speakers and a few selected postdocs from the organizing labs were invited. The coffee breaks and dinners triggered more in-depth discussions between the speakers and were instrumental in establishing a trustful atmosphere of the workshop. The symposium was certainly special in the sense that it did not only convene the members of a sub-discipline and hence, several new contacts were established that might lead to future synergies.

There were a number of highly-interesting findings presented at the meeting, of which we have picked four exemplary cases: (1) Kees Weijer presented evidence for oriented cell divisions triggering primitive streak formation and mesodermal cell ingression in chicken gastrulation; (2) Ewa Paluch proposed a biomechanical model how cancer cells generate traction forces by extruding membrane blebs at the leading edge; (3) Kinneret Keren presented biophysical measurements on migrating fragments of fish keratocytes, which challenge the current view how membrane tension is equilibrated in motile cells; (4) Frank Schnorrer introduced data on the molecular and cellular mechanisms underlying muscle fiber attachment in Drosophila development.

Together, this was a highly successful and productive meeting. The spirit among the attendants was particularly open-minded and the atmosphere innovative and informal. The feedback from the participants was positive throughout and the meeting will likely be repeated in the next years.