



## Seminar

### “IRTG: Soft Matter Science “

# The plasticity of cancerous cells and the cell nucleus

*Patricia Davidson*  
IRTG-Soft Matter Science

*Patricia Davidson, Olivia Fromigué, Pierre Marie, Gerhard Baaken, Jurgen Rühle, Günter Reiter, Karine Anselme*

Considerable effort has been made recently to understand the architecture and balance of forces within the cell. A biologist would intuitively expect that only the outer parts of cells can interact with surfaces having micron-sized topographical features but that the interior of the cell (its organelles) would not be affected. However, we have shown that surface topography can be used to alter not only the shape of the cell as a whole, but also the shape of the nucleus. We show that the nuclei of living cells can be severely deformed and forced to adopt the surface morphology of the material with which the cell was in contact. We tentatively interpret our results via changes of the organization of the cytoskeleton inside the cell. Understanding the plasticity of cancerous cells is important in developing new strategies to combat cancer and metastasis, in which cancerous cells are able to travel through the body and create a new tumor elsewhere. These results point to important differences in plasticity but more importantly of the balance of intracellular forces with oncogenicity.

**Wednesday, April 6, 14h15**

*“Hörsaal Makromolekulare Chemie”, Stefan-Meier-Str. 31, Freiburg“*