

# INVITATION TO SEMINAR (SOMSEM 2016)

## MATHEMATICS OF TUMOUR ECOLOGY AND EVOLUTION



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### OBJECTIVE

Tumour development and response to therapy can be understood as the result of ecological and evolutionary processes at the cellular level. Tumour cells interact with each other and with the non-cellular environment, adapt to their microenvironment and invade distant spatial regions by exploiting fitness trade-offs between proliferation and migration. **Mathematical models can yield useful insights into how these complex tumour cell population dynamics can be controlled** such that a tumor can be kept at small size or even driven to extinction and how new tumour-therapeutic targets can be designed. The main focus of the seminar is the introduction of mathematical models (including game theory, Moran and cellular automaton models) addressing key steps of tumour ecology and evolution by means of oral presentations, discussions, and computer simulations. The final seminar program results from the kickoff meeting.

The seminar is intended for undergraduate/graduate students and researchers in mathematics, physics, biology, medicine, and computer science who are interested in this highly interdisciplinary research area.

### TIME AND LOCATION

The seminar will take place on 4 **Tuesday** afternoons **14.00-17.00**:

**May 24, June 7, June 21 and July 5.**

Location: **APB-1096**, Computer Science Dept. of TU Dresden at **Nöthnitzer Str. 46**

### KICKOFF MEETING AND DISTRIBUTION OF TALKS

**April 12, 14.00-15.00**, APB-1096

### ORGANIZERS

Thomas Buder, Andreas Deutsch, Anja Voss-Böhme, ZIH, TU Dresden

Barbara Klink, Falk Zakrzewski, Institut für Klinische Genetik, TU Dresden

### SEMINAR WEBSITE

[http://www.tu-dresden.de/die\\_tu\\_dresden/zentrale\\_einrichtungen/zih/lehre/bio/ss16\\_sem](http://www.tu-dresden.de/die_tu_dresden/zentrale_einrichtungen/zih/lehre/bio/ss16_sem)

### CONTACT

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