Mathematical Models in Cancer
July 20 - July 21, 2018

Goals:
The workshop will provide mathematicians, experimentalists, and clinicians, an opportunity to discuss recent advances in mathematical biology and medicine.

The meeting will be used to identify new problems that require innovative mathematical approaches and to foster new collaborations.

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For more information: www.wpi.ac.at
ramona.bluma@univie.ac.at
Mathematical Models in Cancer

Wolfgang Pauli Institute, Vienna
www.wpi.ac.at

July 20 – July 21, 2018

Workshop Venue:
WPI
Fakultät f. Mathematik, Univ. Wien
Oskar Morgenstern Platz 1, 1090

Organizers:
- Michael Bergmann (Medical University of Vienna)
- Marie Doumic Jauffret (INRIA and WPI)
- Doron Levy (University of Maryland)
- Norbert J. Mauser (WPI c/o U. Vienna)
Workshop: Mathematical Models in Cancer  
Wolfgang Pauli Institute, Vienna  
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Friday – July 20, 2018

9:00–9:10  Norbert Mauser (WPI Director)  
Opening Remarks

9:10–9:50  Philip Maini (Oxford University)  
Mathematical Modelling of Angiogenesis

9:50–10:30  Michael Bergmann (Medical University of Vienna)  
Understanding and Modulation of the Immune infiltrate in Solid Cancer

10:30–11:00  COFFEE BREAK

11:00–11:40  Florian Grebien (Ludwig Boltzmann Institute for Cancer Research, Vienna)  
Identification of Actionable Nodes in Cancer-Specific Protein Networks

11:40–12:20  Sebastien Benzekry (INRIA Bordeaux-Sud Ouest)  
Mathematical Modeling and Prediction of Clinical Metastasis

12:20–14:00  LUNCH

14:00–14:40  Diane Peurichard (INRIA & LJI, Sorbonne Université, Paris)  
A Multi-Scale Approach for Models of Tumor Growth: From Short-Range Repulsion to Hele-Shaw Problems

14:40–15:20  Marius Mayerhöfer (Medical University of Vienna / MSKCC New York)  
Novel Trends in Cancer Imaging: From Hybrid Techniques to Radiomics

15:20–15:45  COFFEE BREAK

15:45–16:25  Jesús M. Seoane (Universidad Rey Juan Carlos)  
Dynamics of Tumor and Immune Cell Aggregates

16:25–16:55  Karl-Heinz Nenning (Medical University of Vienna)  
The changing global functional connectivity structure in patients with glioblastoma

19:30  DINNER
Saturday – July 21, 2018

9:00–9:40  **Jean Clairambault**  (INRIA & LJLL, Sorbonne Université, Paris)
*Evolutionary Viewpoint on Drug Resistance in Cancer Cell Populations with Perspectives in Therapeutic Control, and Open General Questions on Cancer with Respect to Evolution*

9:40-10:20  **Ursula Klingmüller**  (German Cancer Research Center, DKFZ)
*Model-Based Optimization of Personalized Anemia Treatment in Chronic Diseases*

10:20–10:40  COFFEE BREAK

10:40–11:20  **Francesca Cordero**  (University of Torino)
*Multiscale Models to Investigate IntraTumor Heterogeneity.*

11:20–12:20  **Jana Geverz**  (College of New Jersey)
*Identifying Robust Optimal Cancer Treatment Protocols from Small Experimental Datasets*

12:20–14:00  LUNCH

14:00–14:40  **Anna Kicheva**  (IST Austria)
*Coordination of Progenitor Specification and Growth in the Developing Spinal Cord*

14:40–15:20  **Ronald Kefurt**  (Medical University of Vienna)
*TBA*

15:20–15:45  COFFEE BREAK

15:45–16:25  **Alexander Lorz**  (KAUST & LJLL, Sorbonne Université, Paris)
*Mathematics Meets Oncology: from Adaptive evolution to Zebrafish*

16:25–16:30  **Doron Levy**  (University of Maryland)
*Closing Remarks*