



2nd Summer School of the MCRTN

Modelling, Mathematical Methods and Computer Simulation of Tumor Growth and Therapy

15-19 July 2006
Orthodox Academy of Crete
Kolymbari

Schedule of Talks

Saturday, July 15th

Evening:

5:00 p.m. - 5:20 p.m. Welcome

5:20 p.m. - 6:05 p.m. Matthias Simon, *Universitätskliniken Bonn*
Introduction to Tumor Biology

6:10 p.m. – 6:30 p.m. Coffee Break

6:30 – 7:15 Georg Breier, *Uniklinikum Dresden*
Introduction to Tumor Angiogenesis

8:00 p.m. – 10:00 p.m. Dinner

With the support of



Marie Curie Actions – 6th Framework Programme,
&
IACM / FORTH, (Vassilika Vouton, Heraklion),

Sunday, July 16th

Morning:

10:15 a.m.– 11:00 a.m. Breakfast

11:00 a.m. - 11:45 a.m. Matthias Simon, *Universitätskliniken Bonn*
Introduction to Tumor Biology

12:00 p.m. - 12:45 p.m. Georg Breier, *Uniklinikum Dresden*
Introduction to Tumor Angiogenesis

1:00 p.m. – 5:00 p.m. Lunch Break

Evening:

5:00 p.m. – 5:45 p.m. Theodore Fotsis, *University of Ioannina Medical School*
Anti-Angiogenic Therapies

6:00 pm – 6:30 p.m. Coffee Break

6:30 p.m. – 7:15 p.m. Zvia Agur, *IMBM*
A new cancer drug regimen for Mesenchymal Chondro Sarcoma patients based on the interplay between tumor growth and angiogenesis – Predictions of a mathematical model validated in xenografts

7:20 p.m. – 7:35 p.m. Moran Elishmereni, *IMBM*
Cancer Immunotherapy by Interleukin-21: Potential Treatment Strategies Evaluated in a Mathematical Model

8:00 p.m. – 10:00 p.m. Dinner

Monday, July 17th

Morning:

Mechanical aspects of tumor biology

9:00 a.m. – 9:45 a.m. Helen Byrne, *Univ. Nottingham*
Multiphase and mechanical models of tumour growth

10:00 a.m. – 10:15 a.m. Gabriela Litcanu, *MIMUW-Warsaw*
A mathematical model of invasive processes

10:20 a.m. – 10:35 a.m. Cristian Morales-Rodrigo, *MIMUW-Warsaw*
Analysis of a tissue invasion model

10:35 a.m. – 11:00 a.m. Coffee Break

11:00 a.m. – 11:45 a.m. Claude Verdier, *UJF-Grenoble*
Rheological properties and cell interactions in cancer

12:00 p.m. – 12:15 p.m. Andreea Iordan, *UJF-Grenoble*
The Rheology of concentrated cell suspensions

12:20 p.m. – 12:35 p.m. Gerrit Danker, *UJF-Grenoble*
Analytical study of vesicle dynamics for a rheological model of dilute cell suspensions

1:00 p.m. – 5:00 p.m. Lunch Break

Evening:

Discrete and continuum models of tumor growth

5:00 p.m. - 5:15 p.m. Sebastiano De Franciscis, *TU-Dresden*
Fractal scaling analysis: a mathematical tool to analyze tumour dynamics

5:20 p.m. - 5:35 p.m. David Basanta, *TU-Dresden*
Carcinogenesis modelling with Cellular Automata

5:40 p.m. - 5:55 p.m. Haralambos Hatzikirou, *TU-Dresden*
Invasion in a lattice-gas cellular automaton model of glioma tumour

6:00 p.m. – 6:15 p.m. . Remigiusz Kowalczyk, *MIMUW-Warsaw*
Analysis of the Aggregation Model

6:20-6:50 p.m Coffee Break

6:50- 7:05 p.m. Krzysztof Psiuk-Maksymowicz, *Goteborg Univ.*
PhasTraM-model result:Local combination of sufficiently strong hypogammaglobulinemia and inflammation as one of the causes of oncogeny

7:10-7:25 p.m. Sergey Astanin *Politecnico di Torino*
Mathematical model of lengthwise growth of tumour cord

7:30 – 7:45 p.m. Olivier Saut, *Univ. Bordeaux*
A mathematical model for avascular tumor growth

8:00 p.m. – **Dinner & Cretan night !!**

Tuesday, July 18th

Morning:

Multiphase and Mechanical Aspects of tumor biology

9:00 a.m. – 9:45 a.m. Helen Byrne, *Univ. Nottingham*
Multiphase and mechanical models of tumour growth

10:00 a.m. – 10:15 a.m. Angelique Stephanou, *F. Medecine, Grenoble*
Mechanical aspects in tumour angiogenesis

10:20 a.m. – 11:00 a.m. Coffee Break

11:00 a.m. – 11:15 a.m. Johanna Stamper, *Univ. Nottingham*
Modelling the role of angiogenesis and vasculogenesis in solid tumour growth

11:20 a.m. – 11:35 a.m. Arnaud Chauviere, *Politecnico di Torino*
Continuum models for cell movement in network tissues

11:40 a.m. – 11:55 a.m. Cecile Couzon, *UJF-Grenoble*
Cell response to shear flow in a microchannel

1:00 p.m. – 5 p.m. Lunch Break

Evening:

Cell cycle / Circadian clock

5:00 p.m. – 5:45 p.m. Jean Clairambault, *INRIA Rocquencourt*
Cell cycle and molecular PK-PD modelling for cancer chronotherapeutics

6:00 p.m. – 6:30 p.m. Coffee Break

6:30 p.m. – 7:15 p.m. Piotr Gwiazda, *MIMUW-Warsaw* / Philippe Michel, *ENS-Paris*
Mathematical analysis of structured population equations and fitness optimisation

8:00 p.m. – 10:00 p.m. Dinner

Wednesday, July 19th

Morning:

Cell Cycle / Cell proliferation

9:00 a.m. - 9:45 a.m., Urszula Forys, *Warsaw University*

Delays as a possible mechanism of destabilisation in tumour dynamics

10:00 a.m. – 10:15 a.m. Monika Piotrowska, *University of Witten/Herdecke*

Stem and Cancer Cells Proliferation Controlled by Transcription Nuclear Factor kappa B

10:20 a.m. – 10:35 a.m. Fadia Bekkal-Brikci

A cell population model with proliferation and quiescence for healthy and tumoral tissue

10:40 – 11:00 a.m. **Coffee Break**

11:00 a.m. – 11:15 a.m. Samuel Bernard, *IACM-FORTH*

Chronotherapy of cancers: It's about time

Tumor therapy

11:20 a.m. – 11:35 a.m. Katerina Kaouri, *University of Nottingham*

Mathematical modelling of two novel cancer therapies using magnetic macrophages

11:40 a.m. – 11:55 a.m. Benjamin Ribba, *Univ. Lyon*

A mathematical model of avascular tumor growth to investigate the therapeutic benefit of anti-invasive agents