

Workshop on hybrid and multiscale modelling in cell and cell population biology
Paris, Laboratoire Jacques-Louis Lions, UPMC, 16-17-18 March 2015
Jean Clairambault and Vitaly Volpert, organisers

Time schedule principle : 1/2 hour talk + 5 min discussion for everyone

Monday 16/03 09:00->18:00

09:00 -> 09:30 Jacques Demongeot: « Hybrid modelling of cambial growth with application to gastrulation »

09:35 -> 10:05 Alen Tosenberger: « Hybrid model of clot formation in flow and its applications »

10:10 -> 10:40 Luigi Preziosi: « Multiscale Modelling of Cell-ECM Interactions »

10:45 -> 11:15 Coffee break

11:15 -> 11:45 Fabien Crauste: « Multiscale Model of the CD8 T Cell Immune Response »

11:50 -> 12:20 Loïc Barbarroux: « Mathematical Multi-scale modelling of the primary immune response by CD8 T-Cells using a maturity structured partial differential equation »

12:25 -> 12:55 Marcello Delitala: « Tumor-Immune cells competition under the action of immunoboosting »

13:00 -> 14:00 Lunch at L'Ardoise (Parvis Jussieu)

14:00 -> 14:30 Victor Pérez García: « From micro and macro mathematical models to clinical applications in glioblastoma multiforme »

14:35 -> 15:05 Sébastien Benzekry: « Combined in vivo and in silico quantitative modeling of post-surgery metastatic development »

15:10 -> 15:40 Anass Bouchnita: « A hybrid model of multiple myeloma impact on erythropoiesis »

15:45 -> 16:15 Coffee break

16:15 -> 16:45 Anna Marciniak-Czochra: « Mathematical modelling of stem cells-initiated cancer development, treatment and relapse »

16:50 -> 17:20 Tommaso Lorenzi: « Emergence of cytotoxic resistance in cancer cell populations: from individual-level mechanisms to population-level consequences »

17:25 -> 17:55 Laura de Vargas Roditi: « treeSNE utilizes tree metrics to identify and characterize cell subtypes in highdimensional single cell data »

18:00 End of the Monday session

20:00 Dinner for all speakers at the restaurant « Le Buisson Ardent », 25 rue Jussieu

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Tuesday 17/03 09:00->18:00

09:00 -> 09:30 Helen Byrne: « Wnt Signalling: The Subcellular and Cellular Consequences »

09:35 -> 10:05 Mark Chaplain: « Hopf Bifurcation in a Gene Regulatory Network Model: Molecular Movement Causes Oscillations »

10:10 -> 10:40 Florence Hubert: « Mathematical modeling of the microtubule dynamic instabilities »

10:45 -> 11:15 Coffee break

11:15 -> 11:45 Andreas Deutsch: « Cellular automaton models for collective cell migration »

11:50 -> 12:20 Angélique Stephanou: « A hybrid model to test mechanical cues driving cell migration in angiogenesis »

12:25 -> 12:55 Roberto Natalini: « A hybrid model of cell migration in zebrafish embryogenesis »

13:00 -> 14:00 Lunch at L'Ardoise (Parvis Jussieu)

14:00 -> 14:30 Zuzanna Szymańska: « Large Scale Computational Modelling of Cellular Biosystems »

14:35 -> 15:05 Roeland Merks: « Multiscale cell-based modeling of mechanical cell-matrix feedback during collective cell behavior »

15:10 -> 15:40 Arnaud Chauvière: « Multi-scale modeling of multi-cellular systems - A physical approach »

15:45 -> 16:15 Coffee break

16:15 -> 16:45 Jorge Zubelli: « Structured Models for Cell Populations: Direct and Inverse Problems »

16:50 -> 17:20 Dirk Drasdo : « Integrative and multi-level modeling of tissue organization: lessons from liver regeneration»

17:25 -> 17:55 Romain Yvinec: « From Becker-Döring to Lifshitz-Slyozov : deriving the boundary condition »

18:00 End of the Tuesday session

Free evening

Wednesday 18/03 09:00->13:00

Open discussion for those who can stay until then,
with coffee break at 11:00 and lunch at L'Ardoise at 13:00