

Sunday, January 3rd – preliminary registration is open at School of Math. Sciences, Tel Aviv University, (rooms M10-M11, basement floor), 9am-3pm
Monday, January 4th

8am – 8.15am	Pick-up bus (8am: Bell and Sea Net, 8.10am: Maxim, Lusky Suites and Holiday2000*, 8.15am – Grand Beach)		
8am – 8.50am	Registration		
8.50am – 9am	Welcoming remarks		
9am – 9.45am**	<i>H. Wolfson, Israel, “Large Macromolecular Assembly Modeling by Computational Integration of Data from Various Experimental Sources”</i>		
9.45am – 11am	Coffee Break and Poster Session I ***		
Participants:	<i>D. Duncan, USA, L. Dorel, Israel, H-M. Teodorescu, USA, S. Trattner, Israel, J. McDaniel, USA, A. Packer, USA, M. Elishmereni, Israel, Y. Kogan, Israel, B. Dembele, USA, C. Tomasetti, USA, , E. Thomas, USA, U. Roll, Israel</i>		
11am – 11.45am	<i>A. Friedman, USA, “Chronic ischemic wounds: a mathematical model and experiments”</i>		
11.45am – 12.30pm	<i>Z. Agur, Israel, “A New Cancer Treatment Personalization Method, Combining Mathematical Models with Xenografted Biopsies, and its Preclinical and Clinical Validation”</i>		
12.30pm – 2pm	Lunch Break		
Parallel sessions	<i>Holcblat Auditorium – Cancer Modeling and Treatment I, Chair Z. Agur</i>	<i>Shenkar, 104 – Medical Imaging I, Chair N. Sochen</i>	<i>Shenkar, 105 – Signaling Pathways and Cell Dynamics, Chair D. Levy</i>
2pm – 2.30pm	<i>C. Wiseman, USA, “Questions from the Fourth Son”</i>	<i>P. Golland, USA, “Modeling Anatomical Heterogeneity in Populations”</i>	<i>T. Lipniacki, Poland, “Robustness of stochastic signal processing in NF-κB pathway controlled by interlinked positive and negative feedback loops”</i>
2.30pm – 3pm	<i>H. Degani, Israel, “Tracking Water diffusion in the Mammary Ductal Trees with MRI: A novel Method for Breast Cancer Detection”</i>	<i>S. Dekel, Israel, “Active Geometric Wavelets”</i>	<i>J. Smieja, Poland, “Analysis of a signaling pathway involved in antiviral immune response and anticancer therapy”</i>
3pm – 3.30pm	<i>L. Hanin, USA, “Does extirpation of the primary breast tumor give boost to growth of metastases? Evidence revealed by mathematical modeling”</i>	<i>L. Cohen, France, “Extraction of tubular and tree structures biomedical images using minimal paths and tubular models”</i>	<i>M. Lachowicz, Poland, “Microscopic descriptions of biological processes”</i>
3.30pm – 4pm	<i>N. Komarova, USA, “Drug resistance in cancer: principles of emergence and prevention”</i>	<i>A. Yendiki, USA, “Computational anatomy of cerebral white matter”</i>	<i>C. Surulescu, Germany, “A nonparametric approach to cell dispersal”</i>

4pm – 4.30pm	Coffee Break		
Parallel sessions	<i>Holcblat Auditorium – Cancer Modeling and Treatment II, Chair H. Schaettler</i>	<i>Shenkar, 104 – Epidemiology, Chair F. Brauer</i>	<i>Shenkar, 105 -- Blood Dynamics and Hematopoietic Disorders, Chair A. Swierniak</i>
4.30pm – 5pm	<i>V. Vainstein, Israel, “Analysis of Epidemiological Data by a Probabilistic Model Supports the One Hit Hypothesis for the Transformation from Myelodysplastic Syndrome to Acute Myeloid Leukemia”</i>	<i>A-A. Yakubu, USA, “Disease-Induced Mortality in Density-Dependent Discrete-Time S-I-S Epidemic Models”</i>	<i>A. Marciniak-Czochra, Germany, “Mathematical models of hemaopoietic stem cell renewal and differentiation”</i>
5pm – 5.30pm	<i>Y. Kuang, USA, “Tumor-Immune Interaction, Surgical Treatment, and Cancer Recurrence in a Mathematical Model of Melanoma”</i>	<i>N. Fefferman, USA, “Epidemiological Pressures on the Evolution of Social Complexity”</i>	<i>E. Afenya, USA, “Some Thoughts on the Development and Control of Hematopoietic Disorders”</i>
5.30pm – 6pm	<i>G. Bencheva, Bulgaria, “Towards computer modelling of the therapy of leukaemia”</i>	<i>A. Uziel, Israel, “Predicting Flu (Influenza) Epidemics”</i>	<i>A. Sequiera, Portugal, “Blood coagulation dynamics: mathematical modeling and stability results”</i>
6pm – 6.30pm	<i>A. d'Onofrio, Italy, “Chemotherapy of vascularised tumours: role of vessel density and the effect of vascular “pruning””</i>	<i>F. Berezovskaya, USA, “On dynamics of predator-(Allee type) prey communities mediated by prey dispersal”</i>	<i>J. Janela, Portugal, “Numerical modelling uncertainty of blood viscosity effects in cerebral aneurysms”</i>
6.30pm – 7.15pm	Welcome Reception at the Cymbalista Building		
7.45pm	Bus leaves the university towards the hotels (Gate #2)		

**Participants staying in Holiday2000 vacation apartments could come to any pick-up point. Contact the organizers for more information.*

*** All plenary talks are taking place at the Auditorium of the Cymbalista Building*

**** The poster sessions are taking place in the hall of the Cymbalista Building*

Tuesday, January 5th

8am – 8.15am	Pick-up bus (8am: <i>Bell and Sea Net</i> , 8.10am: <i>Maxim, Lusky Suites and Holiday2000</i> , 8.15am – <i>Grand Beach</i>)		
8.30am – 9am	Registration		
9am – 9.45am	<i>L. Munn, USA</i> , “ Modeling tumor blood vessel dynamics ”		
9.45am – 11am	Coffee Break and Poster Session II		
Participants:	<i>H. Alon, Israel, Y. Ram, Israel, A. Gueijman, Israel, Y. Ben-Zion, Israel, Y. Maruvka, Israel, A. Weinberger, USA, S. Bunimovich, Israel, E. Priel, Israel, A. Galante, USA, J. Kelkel, Germany, J. Poleszczuk, Poland, B. Cardwell, USA</i>		
11am – 11.45am	<i>E. Meron, Israel</i> , “ Pattern formation and nonlinear dynamics of water-limited ecosystems ”		
11.45am – 12.30pm	<i>C.-F. Westin, USA</i> , “ Bi-modal tensor-valued distributions ”		
12.30pm – 2pm	Lunch Break/SMB Junior Scientist Luncheon “Career Opportunities in Mathematical Biology”		
Parallel sessions	<i>Holeblat Auditorium – Medical Imaging II (MRI)</i> , Chair L. Munn	<i>Shenkar, 104 – Immune System and Infectious Diseases I</i> , Chair U. Forys	<i>Shenkar, 105 – Special Session on Nonlinear Dynamics with Applications to Biology</i> , Chair L. Stone
2pm – 2.30pm	<i>M. Neeman, Israel</i> , “ Imaging angiogenesis ”	<i>S. Ta'asan, USA</i> , “ A System Identification Approach for Modeling Host-Pathogen Interaction ”	<i>E. Ben Jacob, Israel</i> , “ Bacteria Origin of Self-Organization and Swarming Intelligence ”
2.30pm – 3pm	<i>X. Li, USA</i> , “ Water Exchange Effect in Dynamic Contrast Enhanced MRI Pharmacokinetic Modeling ”	<i>V. Rom Kedar, Israel</i> , “ Models of the innate immune system: theory and medical implications ”	<i>N. Cohen, UK</i> , “ Gene regulation: from single cells to populations ”
3pm – 3.30pm	<i>E. Kashdan, Israel</i> , “ Dynamic modeling of capillary system MRI ”	<i>P. Kim, USA</i> , “ Emergent dynamics governed by regulatory cells produce a robust primary T cell response ”	<i>T. Gross, Germany</i> , “ Generalized Models in Community Ecology and Systems Biology ”
3.30pm – 4pm	<i>E. Eyal, Israel</i> , “ Analysis of breast dynamic contrast enhanced MRI using Principal Component Analysis Combined with a Model-Based Method ”	<i>H. Gaff, USA</i> , “ Modeling spread of tick-borne disease ”	<i>Y. Artzy-Randrup, USA</i> , “ Transmission intensity and drug resistance in malaria population dynamics: implications for climate changes ”

4pm – 4.30pm	Coffee Break		
Parallel sessions	<i>Holeblat Auditorium – Cancer Modeling and Treatment III, Chair Y. Kuang</i>	<i>Shenkar, 104 – Taxis Modeling, Chair E. Kashdan</i>	<i>Shenkar, 105 – Special Session on Nonlinear Dynamics with Applications to Biology, Chair L. Stone</i>
4.30pm – 5pm	<i>J. Tuszyński, Canada, “Computational Approaches to the Discovery of New Cancer Drugs”</i>	<i>D. Levy, USA, “Group Dynamics in Phototaxis”</i>	<i>Y. Cohen, USA, “Darwinian evolutionary distributions with time-delays”</i>
5pm – 5.30pm	<i>U. Ledzewicz, USA, “Mathematical Models for Tumor Anti-Angiogenesis: Optimal and Suboptimal Protocols and the Role of Pharmacokinetics”</i>	<i>A. Chertock, USA, “Highly Accurate Numerical Methods for Chemotaxis and Related Models”</i>	<i>B. Blasius, Germany, “Marine bioinvasion in the global network of shipping connections”</i>
5.30pm – 6pm	<i>A. Swierniak, Poland, “Modeling and design of combined antiangiogenic and chemo-therapy”</i>	<i>A. Kurganov, USA, “New models of chemotaxis: analysis and numerics”</i>	<i>N. Shnerb, Israel, “Optimizing metapopulation sustainability: how decoherence prevents extinction”</i>
6pm – 6.30pm	<i>A. Ballesta, France, “A combined biological and mathematical approach to study the anticancer drug Irinotecan molecular pharmacokinetics-pharmacodynamics and their control by the circadian clock”</i>	<i>A. Sokolov, Germany, “A flux-corrected finite element method for chemotaxis problems”</i>	<i>H. Katriel, Israel, “Oscillators coupled through an environment”</i>
7.30pm – 10pm	Workshop Banquet at the Diaspora Museum, Tel Aviv University		

Wednesday, January 6th

7.45am – 8.00am	Pick-up bus (7.45am: <i>Bell and Sea Net</i> , 7.50am: <i>Maxim, Luskay Suites and Holiday2000</i> , 8am – <i>Grand Beach</i>)
8.15am – 8.30am	Registration
8.30am – 9.15am	<i>M. Preul, USA</i> , “ 3D Volumetric MRI Measurements of Glioblastoma Multiforme to Predict Directional Tumor Progression: Modification and Validation of 3D Glioma Growth Model ”
9.15am – 10am	<i>R. A. Gatenby, USA</i> , “ Evolutionary dynamics in cancer therapy ”
10am – 10.15am	Coffee Break
10.15am – 11.15am	Open Panel* “Current Directions and Mathematical Challenges in Medical Research”
11.15am – 12.30pm	Lunch Break
12.30pm	The bus to Jerusalem leaves from gate #2 – no delays!!!

**The panel will take place at the Auditorium of the Cymbalista Building*

Thursday, January 7th

8am – 8.15am	Pick-up bus (8am: Bell and Sea Net, 8.10am: Maxim, Lusky Suites and Holiday2000, 8.15am – Grand Beach)		
8.30am – 9am	Registration		
Parallel sessions	<i>Holeblat Auditorium – Immune System and Infectious Diseases II, Chair S. Ta’asan</i>	<i>Shenkar, 104 – Analysis of Complex Biological Systems, Chair A. Fasano</i>	<i>Shenkar, 105 – Special Session on Nonlinear Dynamics with Applications to Biology, Chair L. Hadany</i>
9am – 9.30am	<i>U. Forys, Poland, “Modelling of tumour-immune system interactions in the presence of HIV virus”</i>	<i>F. Grizzi, Italy, “Fractals and cancer in the era of systems biology”</i>	<i>L. Hadany, Israel, “Stress-induced variation and the evolution of pathogens”</i>
9.30am – 10am	<i>Y. Louzoun, Israel, “Optimal viral immune surveillance evasion strategies”</i>	<i>B. Kazmierczak, Poland, “Prevention of blow-up by infinite diffusion”</i>	<i>A. Ryabov, Germany, “A graphical theory of resource competition in a weakly mixed environment”</i>
10am – 10.30am	<i>J. Day, USA, “Modeling the immune rheostat of macrophages in the lung in response to infection”</i>	<i>P. Hinow, USA, “Predicting the Drug Release Kinetics of Matrix Tablets”</i>	<i>O. Allouche, Israel, “The Markovian Community Dynamics (MCD) framework in Community Ecology”</i>
10.30am – 11am	Coffee Break		
Parallel sessions	<i>Holeblat Auditorium – Medical Imaging III, Chair S. Dekel</i>	<i>Shenkar, 104 – Cancer Modeling and Treatment IV, Chair L. Hanin</i>	<i>Shenkar, 105 – Special Session on Nonlinear Dynamics with Applications to Biology, Chair L. Hadany</i>
11am – 11.30am	<i>N. Sochen, Israel, “Invariant Feature Detection for Abelian and non-Abelian Lie Transformation Groups”</i>	<i>H. Schaettler, USA, “Methods of Optimal Control Applied to Mathematical Methods for Combination Therapy”</i>	<i>N. Brenner, Israel, “Epigenetic transitions and the stability of cooperation”</i>
11.30am – 12pm	<i>T. Riklin-Raviv, USA, “Resolving Clustered C-elagans via Shape Deformation Model”</i>	<i>A. Nowakowski, Poland, “Expert neural network for anti-angiogenic therapy in cancer treatment”</i>	<i>I. Filin, Finland, “A diffusion-based approach to stochastic individual growth and energy budget, with consequences to life-history optimization”</i>
12pm – 12.30pm	<i>R. Kimmel, Israel, “Metric geometry in action: Non-rigid shape acquisition, processing, and analysis”</i>	<i>Y. Kim, USA, “Role of microenvironment in cancer progression: A multiscale approach”</i>	<i>T. Friedlander, Israel, “Adaptive response by state-dependent inactivation”</i>

12.30pm – 2pm	Lunch Break
2pm – 2.45pm	<i>A. Fasano, Italy</i> , “ The role of energy balance in the equilibrium of multicellular spheroids ”
2.45pm – 3.30pm	<i>F. Brauer, Canada</i> , “ Discrete epidemic models ”
3.30pm – 4pm	Coffee Break
4pm – 4.45pm	<i>V. Quaranta, USA</i> , “ Biological Noise and the Heterogeneity of Cancer Cell Traits ”
4.45pm – 5.30pm	Best Poster Awards Ceremony and Farewell Reception
6pm	Bus leaves the university towards the hotels (Gate #2)

Poster Session I, Monday, January 4th, 9.45am – 11am:

D. Duncan, USA, “The Detection of Anomalies in EEG Data Using Diffusion Geometry”

L. Dorel, Israel, “Glucose-insulin regulatory system based on High-Order Integral Sliding Mode technique”

H-M. Teodorescu, USA, “Image re-morphing, noise removal, and feature extraction with swarm algorithm”

S. Trattner, Israel, “Modeling DIC Microscope Image Formation of Thick Biological Specimen”

J. McDaniel, USA, “Towards Forecasting of Brain Tumors”

A. Packer, USA, “Mathematical modeling of prostate cancer from an ecological perspective”

M. Elishmereni, Israel, “Guiding Clinical Trials of Whole-cell Vaccination Therapy in Prostate Cancer by a Clinically Validated Mathematical Model of Antitumor immunity”

Y. Kogan, Israel, “Dickkopf Protein - A Candidate For Diverting Proliferating Breast Cancer Stem Cells to Terminal Differentiation: Evaluation by A Mathematical Model”

B. Dembele, USA, “Malaria Model In Periodic Environments”

C. Tomasetti, USA, “Dynamics of Cancer Resistance to Therapy”

E. Thomas, USA, “The Down Low Effect on the Spread of Non-Curable Sexually Transmitted Diseases”

U. Roll, Israel, “Swine flu in the Holy Land – a case country for studying the onset of a pandemic”

Poster Session II, Tuesday, January 5th, 9.45am – 11am:

H. Alon, Israel, “A quantitative approach to homeostatic regulation of naïve T cell diversity and number”

Y. Ben-Zion, Israel, “Modeling epidemics dynamics on heterogeneous networks”

Y. Maruvka, Israel, “The use of haplotype statistics to infer demographic parameters”

Y. Ram, Israel, “On Stress Induced Hyper-Mutators in Bacteria”

A. Gueijman, Israel, “The evolution of Fitness Associated Outcrossing”

E. Priel, Israel, “Investigation of passive arterial mechanical response by high order finite element methods”

A. Weinberger, USA, “Accelerated immunodeficiency by anti-CCR5 treatment in HIV infection”

S. Bunimovich, Israel, “Bladder cancer: growth and treatment”

A. Galante, USA, “Mathematical Model of B7-H1-positive Tumor and Cytotoxic T Cell Interaction”

J. Kelkel, Germany, “A Multiscale Approach to Cell Migration in Tissue Networks”

J. Poleszczuk, Poland, “Tumour angiogenesis model with variable diffusion coefficient”

B. Cardwell, USA, “Tumor Anti-Angiogenesis: How Modeling Assumptions Effect Optimal Protocols”