

Actual Scientific Program of FEBSysBio2005

Edition 4/18/2005 12:47 PM

Saturday

March 12

Course Registration & Hotel Check-In

11:00 am - 6:00 pm

Welcome Reception

6:00 pm - 6:45 pm

Official Course Opening

6:45 pm - 6:55 pm

Hans Westerhoff and Karl Kuchler

FEBS Opening Lecture

(M-L2) **Boris Kholodenko**

7:00 pm – 8:00 pm

Systems biology of receptor tyrosine kinase signaling

Welcome Dinner &

Musical performance

8:30 pm - open end

Subhendu Ghosh

Patterns of Passion

AstraZeneca Opening Lecture

(M-L2) **Douglas Kell**

10:30 pm – 11:30 pm

Metabolomics, machine learning and modelling in systems biology: towards an understanding of the language of cells

Sunday

March 13

Breakfast 7:00 - 8:30 am

P rinciples of Systems Biology

Lectures

8:30 am - 12:30 pm

Chair: Hans Westerhoff

Co-chair: Lilia Alberghina

P-L1 **Reinhart Heinrich** 8:30 - 9:15

Dynamics and design of cellular reaction networks

P-L2 **John Doyle** 9:15 - 10:00

Organizational complexity

Coffee & Refreshment Break 10:00 - 10:20

P-L3 **Albert Goldbeter** 10:20 - 11:05

Computational approaches to cellular rhythms

P-L4 **Stefan Schuster** 11:05 - 11:50

Fundamentals and applications of metabolic pathway analysis

Break 11:50 - 12:00

Guided General Discussion: Identifying issues; SB Principles 12:00 - 12:30 pm

Lunch & Afternoon Break 12:30 - 4:30 pm

Coffee and Tea Break 4:00 - 4:30 pm

Chalk/Blackboard teaching 4 in parallel 4:30 - 5:10 pm

PT-B1 Uri Alon Motifs and networks

PT-B2 Reinhart Heinrich/Stefan Schuster Stability and flux mode analysis

PT-B3 Jacky Snoep/Hans Westerhoff Control analysis and Silicon cells

PT-B4 Jörg Stelling/Frank Bruggeman Robustness, network identification and engineering

P rinciples of Systems Biology

Workshop & Short Talks

5:15 - 7:00 pm

Chair: Lilia Alberghina

Co-chair: Hans Westerhoff

P-W1 **Dennis Vitkup** 5:15 - 5:35

Expression dynamics of a cellular metabolic network

P-S1 **Frank Bruggeman** 5:35 - 5:50

Smart regulation of ammonium assimilation by *Escherichia coli*: modularity, robustness, and flux regulation

Coffee & Refreshment Break 5:50 - 6:10

P-W2 **Sinisa Zampera** 6:10 - 6:30

An adaptive system approach for the modelling of genetic regulatory networks

Glucose metabolism study in the yeast

P-S2 **Markus Kollmann** 6:30 - 6:45

Design principles of signal transduction pathways to attenuate noise

P-S3	Esa Pitkänen	6:45- 7:00
	On pathways and distances in metabolic networks	
	Resumed General Discussion: Addressing the issues; SB principles	7:00 - 7:30
<i>Dinner</i>		7:30 - 9:00 pm
	Poster Session 1	9:00 - 11:00 pm
	Viewing posters	9:00 - 9:45
	Free poster wandering	9:45 – 10:30
	Round table poster discussion (presenters and teachers only)	10:30 – 11:00

Monday

March 14

<i>Breakfast</i>		7:00 - 8:30 am
T	ools and methods (part 1)	
	Lectures	8:30 am - 12:30 pm
	<i>Chair: Karl Kuchler</i>	
	<i>Co-chair: Igor Goryanin</i>	
T-L1	Rudi Aebersold	8:30 - 9:15
	Quantitative Proteomics: An essential component of systems biology	
T-L2	Roland Eils	9:15 - 10:00
	Modelling and simulation of large-scale signal transduction networks	
	<i>Coffee & Refreshment Break</i>	10:00 - 10:20
U-L5*	Uri Alon	10:20 - 11:05
	Simplicity in Biology	
T-L4	Charlie Boone	11:05 - 11:50
	Global mapping of synthetic genetic interactions in yeast	
<i>Break</i>		11:50 – 12:00
	Guided General Discussion: Identifying issues; Tools, Methods	12:00 - 12:30
	<i>Lunch & Afternoon Break</i>	12:30 - 4:30 pm
	<i>Coffee and Tea Break</i>	4:00 – 4:30 pm
	Chalk/Blackboard teaching	4 in parallel (repeat)
		4:30 – 5:10 pm
PT-B1	Uri Alon	Motifs and networks
PT-B2	Reinhart Heinrich/Stefan Schuster	Stability and flux mode analysis
PT-B3	Jacky Snoep/Hans Westerhoff	Control analysis and Silicon cells
PT-B4	Jörg Stelling/Frank Bruggeman	Robustness, network identification and engineering
	<i>Coffee & Refreshment Break</i>	5:10 - 5:35

Tools and methods

Workshop & Short talks

5:35 - 7:00 pm

Chair: Igor Goryanin

Co-chair: Karl Kuchler

T-W1	An-Ping Zeng	5:35 - 5:55
	An integrated interaction network of <i>Escherichia coli</i> for studying genotype-phenotype relationship	
T-S1	Sune Danø	5:55 - 6:10
	Oscillatory mechanisms derived from phase and amplitude information	
	<i>Coffee & Refreshment Break</i>	5:50 - 6:10
T-S2	Adrienne James	6:10 - 6:30
	Application of modelling and simulation to drug discovery: The ErbB system	
T-S3	Konstantin Kozlov	6:30 - 6:45
	Combined optimization technique for biological data fitting	
T-S4	Balázs Papp	6:45 - 7:00
	Systematic identification and characterisation of synthetic lethal interactions in the metabolic network of yeast	
	Resumed General Discussion: Addressing the issues Tools & Methods	7:00 - 7:30
<i>Dinner</i>		7:30 - 9:00 pm
	Poster Session 2	9:00 - 11:00 pm
	Viewing posters	9:00 - 9:45
	Free poster wandering	9:45 - 10:30
	Round table poster discussion (presenters and teachers only)	10:30 - 11:00

Tuesday

March 15

Breakfast **7:00 - 8:30 am**

Tools & Methods (part 2)

Lectures

8:30 am - 10:00 pm

Chair: Karl Kuchler

T-L5	Jacky Snoep	8:30 - 9:15
	The Silicon Cell approach to building detailed kinetic models of biological systems	
T-L6	Ursula Kummer	9:15 - 10:00
	Mathematical modelling: Choosing the right simulation method	
	<i>Coffee & Refreshment Break</i>	10:10 - 10:20

Unicellular Organisms (part 1)

Lectures

10:20 am - 12:35 pm

Chair: Stefan Hohmann

U-L7*	Masaru Tomita	10:20 - 11:05
	Metabolome analysis and systems biology	

U-L2	Matthias Reuss	11:05 - 11:50
	Hiding behind the population average - cell cycle dynamics of energy metabolism during the lifelines of individual yeast cells	
U-L3	Jörg Stelling	11:50 - 12:35
	Knowledge and data requirements for systems analysis of cellular networks	
<i>Lunch & Afternoon Break</i>		12:35 – 13:15
VISIT to SALZBURG		13:30 – 23:00 pm
Buses will leave Hotel at		13:30 pm
<i>Dinner in Salzburg</i>		
Return from Salzburg to the venue		22:00 pm

Wednesday

March 16

<i>Breakfast</i>		7:00 - 8:30 am
U unicellular Organisms (part 2)	Lectures	8:30 am - 12:30 pm
	Chair: Stefan Hohmann	
	Co-chair: Matthias Reuss	
U-L4	Uwe Sauer	8:30 - 9:15
	<i>In vivo</i> operation of metabolic pathways	
U-L7 ¹	Igor Goryanin	9:15 - 10:00
	Computational Systems Biology: Applications for the Pharmaceutical Industry	
<i>Coffee & Refreshment Break</i>		10:00 - 10:20
U-L6	Barry Wanner	10:20 - 11:05
	Stochastic activation of the response regulator PhoB by noncognate histidine kinases	
U-L1 ¹	Edda Klipp	11:05 - 11:50
	Mathematical modeling of stress response in yeast	
<i>Break</i>		11:50 – 12:00
Guided General Discussion: Identifying issues; unicellular organisms		12:00 - 12:30
<i>Lunch & Afternoon Break</i>		12:30 - 4:30 pm
<i>Coffee and Tea Break</i>		4:00 – 4:30 pm
U unicellular Organisms	Workshop & Short Talks	4:30 - 6:50 pm
	Chair: Matthias Reuss	
	Co-chair: Stefan Hohmann	
U-W1	Guillaume Beslon	4:30 - 4:50
	Modelling evolution of prokaryotic genomes: an integrative approach	

U-W2	Victor Sourjik	4:50 - 5:10
	Signal processing in bacterial chemotaxis	
U-W3	Bas Teusink	5:10 - 5:30
	Combining experimental data and <i>in silico</i> analysis to model the metabolic and regulatory network of <i>Lactobacillus plantarum</i>	
	<i>Coffee & Refreshment Break</i>	5:30 - 5:50
U-S1	Attila Csikasz-Nagy	5:50 - 6:05
	Modelling fission yeast morphogenesis	
U-S2	Silvia De Monte	6:05 - 6:20
	Metabolic quorum sensing: onset of density-dependent oscillations	
U-S3	Ana Sofia Figueiredo	6:20 - 6:35
	Integration of software tools for the <i>in silico</i> design of metabolic pathways using flux balance analysis	
U-S4	Douglas Murray	6:35 - 6:50
	Uncovering the control of the respiratory clock in yeast	
	Resumed General Discussion: Addressing the issues; unicellular organisms	6:50 - 7:30
	<i>Dinner</i>	7:30 - 9:00 pm
	Poster Session 3	9:00 - 11:00 pm
	Viewing posters	9:00 - 9:45
	Free poster wandering	9:45 - 10:30
	Round table poster discussion (presenters and teachers only)	10:30 - 11:00

Thursday

March 17

Breakfast 7:00 - 8:30 am

Multicellular Organisms

Lectures

8:30 am - 12:30 pm

Chair: Hiraoki Kitano

Co-chair: Mattias Reuss

M-L1	Michel Eichelbaum	8:30 - 9:15
	Pharmacogenomics: a holistic approach to drug organism interaction	
T-L3*	Shoshana Wodak	9:15 - 10:00
	Analysing networks of biochemical processes: Bioinformatics meets systems biology	
		9:15 - 10:00
	<i>Coffee & Refreshment Break</i>	10:00 - 10:20
M-L3	Nicolas Le Novère	10:20 - 11:05
	Computational systems biology of neuronal signalling	
M-L4	Ursula Klingmüller	11:05 - 11:50
	Signal transduction and cancer – generation of high quality quantitative data	

<i>Break</i>	11:50 – 12:00
Guided General Discussion: Identifying issues; multicellular organisms	12:00 - 12:30
<i>Lunch & Afternoon Break</i>	12:30 - 4:30 pm
<i>Coffee and Tea Break</i>	4:00 – 4:30 pm



Multicellular Organisms	Workshop & Short Talks	4:30 -5:55 pm
	Chair: Mattias Reuss	
	<i>Co-chair: Hiraoki Kitano</i>	

M-W1	Mariko Hatakeyama	4:30 - 4:50
	Computer simulation analysis of ErbB signaling for understanding of cellular transformation mechanism	
M-W2	Thomas Höfer	4:50 - 5:10
	Integration of signal transduction and cytokine expression in T lymphocytes	
M-S1	Nils Bluethgen	5:10 - 5:25
	Inferring feedback mechanisms in cellular transformation due to oncogenic RAS	
M-S2	Silvia Santos	5:25 - 5:40
	Regulation of MAPK signalling determining cell fate in PC-12 cells - a step beyond biochemistry	
M-S3	Thomas Sauter	5:40- 5:55
	Mathematical modeling of neuronal response to neuropeptides: Angiotensin II signaling via G-protein coupled receptor	
	<i>Coffee & Refreshment Break</i>	5:55 - 6:15
	Resumed General Discussion: Addressing the issues; multicellular organisms	6:15 - 6:45

NovoNordisk Closing Lecture

Denis Noble	7:00 pm – 8:00 pm
<i>Highlights of SysBio2005: From genes to whole organs</i>	
Vertical integration using mathematical simulation	

Presentation of “Gosau YOUNG SysBio INVESTIGATOR AWARDS”	8:00 - 8:15
Marta Cascante, Lilia Alberghina, Roel van Driel, Stefan Hohmann	

Banquet (Restaurant)	8:15 pm – 9:45
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Official Course Closure	9:45 - 10:00
Hans Westerhoff and Karl Kuchler	

Farewell Party (Lecture Hall)	10:00 pm - open end
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