

# ALife XII (August, 19<sup>th</sup> – 24<sup>th</sup>, 2010) – The Program

	Thursday, Aug. 19th	Friday, Aug. 20th	Saturday, Aug. 21th	Sunday, Aug. 22th	Monday, Aug. 23th	Tuesday, Aug. 24th
08:00		Registration	Registration	Registration	Registration	
08:30						
08:45		Opening				
09:00			Keynote: T. Yomo	Keynote: S. Kernbach	Keynote: C. DeDuve	
09:30		Keynote: J. McCaskill				
			Plenum: M. Egbert	Plenum: J. Bollen	Plenum: A. Davies	
10:00		Plenum: H. Lipson	Coffee	Coffee	Coffee	
10:30		Coffee	Parallel Sessions: CompNets II	Parallel Sessions: AChem	Parallel Sessions: ChemAssem II	
11:00		Parallel Sessions: ChemAssem I	Bottomup Cells I IntelLearn II	Robotics I MiniCog I	EvolDyn IV Phil II	
11:30		CompNets I	EmEng	EvolDyn I	BioChemIT II	

		TheoComp I Phil I			
12:00					
12:30					
	Satellite		Lunch	Lunch	Lunch
	Workshops				
13:00	<u>Architecture</u> <u>AChem</u> <u>COSMOS</u>	Lunch			
13:30			Parallel Sessions:	Parallel Sessions:	Parallel Sessions:
			CompNets III	Bottomup Cells II	EvolDyn V
			OrigLife II	BioChemIT I	SysBiol II
14:00		Parallel Sessions:	Ecol	Robotics II	SocTec II
		OrigLife I	IntelLearn II	EvolDyn II	MiniCog_II
		IntelLearn I	CollectInt I	CollectInt_II	Living Technology
14:30		TheoComp II			Workshop
		SocTec I			
15:00			Coffee	Coffee	Closing
15:30			Panel Discsson	Parallel Sessions:	
		Posters		SysBiol I	
				Robotics III	Satellite
16:00					

15:30						
16:00		Posters	Panel Discssion	EvoDyn III TheoComp III		
16:30						
17:00					Workshops	
17:30		Satellite Workshops	Satellite Workshops/ Posters	Transportation to the hotels and later to the riverboat		
	Registration and Welcome Reception	/Posters	EvoGrid			
18:00		SelfOrg				
18:30						
19:00						
			Guided tour of Odense – In the footsteps of Hans Christian Andersen	Riverboat Conference Dinner		
20:00						

## Important!!!

All oral presentations will be **15 minutes + 5 minutes** Questions and Answers.

As the talk duration is relatively short, presenting authors are invited to bring a poster featuring their work that can serve as basis for offline discussion of details.

Note: Poster spots are limited and will be given to the presenters upon on site registration until the available poster space is exceeded.

## AChem - Artificial Chemistries (Wolfgang Banzhaf, coorganized with OrigLife II)

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**AChem I** (chair: Wolfgang Banzhaf) - **Sunday, 22nd, 10:30-12:00h, room: U82**

- 88 L. Yamamoto and W. Banzhaf: Catalytic Search in Dynamic Environments
- 62 A. Faulconbridge, S. Stepney, J. Miller and L. Caves: RBN-World: The hunt for a rich AChem
- 54 A. Nellis and S. Stepney: Automatically moving between levels in Artificial Chemistries
- 48 P. Gerlee and T. Lundh: Rock-Scissor-Paper dynamics in a digital ecology

see also coorganized session [OrigLife II](#)

## BioChemIT - Biological and Chemical Information Processing and Production (John McCaskill)

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**BioChemIT I** (chair: John MacCaskill) - **Sunday 22nd, 13:30-15:00h, room:U82**

- 177 A. Goni-Moreno and M. Amos: Engineered microbial communication for population-level behaviour
- 5 N. Zabet, A. Hone and D. Chu: Design principles of transcriptional logic circuits
- 105 R. Watson, C. Buckley, R. Mills and A. Davies: Associative memory in gene regulation

networks

- 174 M. Joachimczak and B. Wrobel: Processing Signals with Evolving Artificial Gene Regulatory Networks

**BioChemIT II** (chair: John MacCaskill) - **Monday 23rd, 10:30-12:00h, room:O96**

- 34 B. Gil: "Doctor in a cell": vision and accomplishments
- 127 M. Heymann, K. Harrington, J. Pollack and S. Fraden: En route to signal inversion in chemical computing
- 53 U. Tangen: The emergence of replication in a digital evolution system using a secondary structure approach
- 158 S. Dijk, D. Polani and C. Nehaniv: What do You Want to do Today? Relevant-Information Bookkeeping in Goal-Oriented Behaviour

## BottomUpCells - Bottomup Synthetic Cells (Pierre-Alain Monnard)

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**BottomUpCells I** (chair: P.A. Monnard) - **Saturday, 21st, 10:30-12:00h, room: U100**

- 117 S. Maurer, A. Albertsen, J. Cape, J. Boncella, S. Rasmussen, H. Ziock, P. Monnard and L. Spencer: Designing a protocell: Attempt at a systemic design linking information, metabolism and container
- 201 H. Fellermann and S. Rasmussen: Physically grounded simulations of a self-replicating chemical aggregate

163 P. Stano and P. Luisi: Synthetic (Constructive) Biology: From Vesicles Self-Reproduction to Semi-Synthetic Minimal Cells

168 F. Mavelli: Ribocell Modeling

**ButtopUpCells II** (chair: P.A. Monnard) - **Sunday 22nd, 13:30-15:00h, room:U100**

20 N. Ichihashi, Y. Bansyo, T. Matsuura and T. Yomo: Constructing an artificial self-replication system of genetic information from RNA and proteins

22 T. Ishida: Simulation of self-reproduction phenomenon of cells in two-dimensional cellular automata

41 J. Shin and v. noireaux: Approach to synthetic cell with a cell-free system

104 B. Shirt-Ediss, F. Mavelli and K. Ruiz-Mirazo: To Burst or Not To Burst: Osmotic Regulation in a Protocell Model - Through Precursor Mechano-Sensitive Channels

## **ChemAssem** - Chemical Self-Assembly and Complexity (Jerzy Maselko)

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**ChemAssem I** (chair: Jerzy Maselko) - **Friday 20th, 11:00-12:30h, room: U99**

89 J. Maselko: Self-assembly and self- construction

7 R. Plasson, A. Brandenburg, L. Jullien and H. Bersini: Autocatalyses

4 H. Cleaves: Spontaneous Assembly of Cell-Like Structures from Likely Prebiotic Materials: Problems and Prospects

149 M. Doerr, P. Löffler and P. Monnard: Possible role of ice in the synthesis of polymeric compounds

**ChemAssem II** (chair: Jerzy Maselko) - **Monday 23rd, 10:30-12:00h, room: U100**

3 G. Ashkenasy: Light induced Replication and Selection in Peptide Networks

11 A. Fontana: Devo co-evolution of shape and metabolism in a virtual organ

19 S. Hickenbotham, E. Clark, S. Stepney, T. Clarke, A. Nellis, M. Pay and P. Young: Diversity

from a monoculture: effects of mutation-on-copy in a string-based artificial chemistry

164 H. Sayama: Swarm Chemistry Evolving

## **CollectInt** - Collective Intelligence (Johan Bollen)

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**CollectInt I** (chair: Johan Bollen or Carlos Gershensen) - **Saturday, 21st, 13:30-15:00h, room: U77**

17 N. Gessler: Fostering Creative Emergences in Artificial Cultures

61 J. Peronard: The Human Use of Living Technology: Toward a Cultural Understanding of Robots

114 T. Buecheler, J. Sieg, R. Fuchsli and R. Pfeifer: Crowdsourcing, Open Innovation and Collective Intelligence in the Scientific Method: A Research Agenda and Operational Framework

185 S. Sadat and R. Vaughan: SO-LOST: An Ant-Trail Algorithm for Multi-Robot Navigation with Active Interference Reduction

**CollectInt II** (chair: Johan Bollen) - **Sunday 22nd, 13:30-15:00h, room:U81**

58 S. Bullock and M. Kerby: Multi-modal swarm construction

91 C. Salge and D. Polani: From Infotaxis to Boids-like Swarm Behaviour

81 S. Tsuda and J. Jones: The Emergence of Complex Oscillatory Behaviour in Physarum polycephalum and its Particle Approximation

161 A. Haidar and L. Rocha: Collective Classification of Biomedical Articles using T-Cell Cross-regulation

## **CompNets** - Complex Networks (Carlos Gershensen and Mikhail Prokopenko)

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**CompNets I** - **Friday 20th, 11:00-12:30h, room: U71**

- J. D. Haynes, invited presentation

96 M. Brede: Optimizing spatially embedded networks for synchronization

167 R. Poblanno-Balp and C. Gershenson: Modular Random Boolean Networks

### **CompNets II - Saturday, 21st, 10:30-12:00h, room: U71**

170 L. Yaeger, O. Sporns, S. Williams, X. Shuai and S. Dougherty: Evolutionary Selection of Network Structure and Function

113 N. Geard, J. Bryden, S. Funk, V. Jansen and S. Bullock: Stability in flux: group dynamics in adaptive networks

60 M. Piraveenan, M. Prokopenko and A. Zomaya: Classifying complex networks using unbiased local assortativity

73 R. Wang, J. Lizier and M. Prokopenko: A Fisher Information Study of Phase Transitions in Random Boolean Networks

### **CompNets III - Saturday, 21st, 13:30-15:00h, room: U71**

35 R. Standish: Network Complexity of Foodwebs

110 A. Dorin and K. Korb: Network Measures of Ecosystem Complexity

147 M. Beurton-Aimar, N. Parisey, F. Vallee and S. Colombié: Identification of functional hubs through metabolic networks.

203 M. Joachimczak and B. Wrobel: Evolving Gene Regulatory Networks for Real Time Control of Foraging Behaviours

## **Ecol - Ecology (Seth Bullock)**

### **Ecol - Saturday, 21st, 13:30-15:00h, room: U82**

98 J. McCormack: Enhancing Creativity with Niche Construction

77 J. Shao and T. Ray: Maintenance of Species Diversity by Predation in the Tierra Simulation System

151 M. Bardeen: Patch-level Selection in Darwinian Daisyworld

27 J. Dyke: The Daisystat: A model to explore multidimensional homeostasis

## **EvoDyn - Evolutionary Dynamics (Chris Adami)**

### **EvoDyn I - Sunday, 22nd, 10:30-12:00h, room: U81**

145 N. Chaumont and C. Adami: Potential and Promise of Open-Ended Evolution in Artificial Life

118 J. Whitacre: Neutral evolution and cryptic genetic variation: evidence of complementary pathways to adaptive change in degenerate multi-agent systems

64 B. Corominas-Murtra, H. Fellermann, R. Solé and S. Rasmussen: On the interplay of kinetics, thermodynamics, and information in simple replicating systems

72 S. Arnold, R. Suzuki and T. Arita: Evolving learning ability in cyclically dynamic environments: The structuring force of environmental heterogeneity

### **EvoDyn II - Sunday 22nd, 13:30-15:00h, room:U81**

134 M. Buck and C. Nehaniv: Evolution of Cooperation and Developmental Constraints: a GA-driven Approach

180 A. Hintze and C. Adami: Darwinian Evolution of Cooperation via Punishment in the "Public Goods" Game

188 J. Auerbach and J. Bongard: Dynamic Resolution in the Co-Evolution of Morphology and Control

132 H. Williams: Virus-host coevolution, killing the winner, and the Red Queen

### **EvoDyn III - Sunday 22nd, 15:30-17:00h, room:U100**

33 S. Gavrillets: Dynamics of adaptive radiation

138 B. Connelly, L. Zaman, C. Ofria and P. McKinley: Social Structure and the Maintenance of Biodiversity

148 J. Bryden and V. Jansen: The impact of clonal mixing on the evolution of social behaviour in aphids

40 R. Suzuki and T. Arita: Effects of Temporal Locality of Ecological Processes on Coevolution of Learning and Niche Construction

#### **EvoIDyn IV - Monday 23rd, 10:30-12:00h, room: O99**

6 B. White: Aipotu: a simulated microworld based on a realistic model of gene expression and protein folding.

133 D. Parsons, C. Knibbe and G. Beslon: Importance of the rearrangement rates on the organization of genome transcription

25 J. Martins, R. Kouyos, T. Hinkley, C. Chappey, M. Haddad, J. Whitcomb, C. Petropoulos and S. Bonhoeffer: Evolution of recombination on an HIV-1 derived fitness landscape

153 A. Araujo, P. Bentley and B. Baum: Modelling the Role of Aneuploidy in Tumour Evolution

#### **EvoIDyn V - Monday, 23rd, 13:30-15:00h, room: U100**

67 B. Østman, A. Hintze and C. Adami: Critical properties of complex fitness landscapes

46 G. Turk: Sticky Feet: Evolution in a Multi-Creature Physical Simulation

184 C. Reynolds: Interactive Evolution of Camouflage

44 P. Gerlee, D. Basanta and A. Anderson: Evolving homeostatic tissue using genetic algorithms

## **EmEng - Emergent Engineering (Norman Packard)**

#### **EmEng - Saturday, 21h, 10:30-12:00h, room: U82**

119 J. Whitacre: evolution-inspired approaches for engineering emergent robustness within an uncertain and dynamic world

84 V. Trianni and S. Nolfi: Re-Engineering Evolution: A Study In Self-Organising Synchronisation

32 T. Lints: How to Facilitate Variability

115 A. Penn, R. Watson, A. Kraaijeveld and J. Webb: Systems Aikido: A Novel Approach to Managing Natural Systems

## **IntelLearn - Intelligence and Learning (Takashi Ikegami)**

#### **IntelLearn I - Friday 20th, 14:00-15:30h, room: O99**

36 R. Schulz, G. Wyeth and J. Wiles: Language Change across Generations for Robots using Cognitive Maps

111 A. Mukherjee, A. Baronchelli, V. Loreto, A. Puglisi and F. Tria: Aging in the Emergence of Linguistic Categories

120 E. Tuci, T. Ferrauto, G. Massera and S. Nolfi: The Evolution of Behavioural and Linguistic Skills to Execute and Generate Two-word Instructions in Agents Controlled by Dynamical Neural Networks

157 M. Harder, D. Polani and C. Nehaniv: Two Agents Acting as One

#### **IntelLearn II - Saturday, 21h, 10:30-12:00h, room: U81**

173 M. Rohde: Multisensory Perceptual Discrimination in Evolved Networks and Agents

136 J. Noble, T. Hebborn, J. Horst, R. Mills, S. Powers and R. Watson: Selection pressures for a theory-of-mind faculty in artificial agents

87 R. Silva and R. Gudwin: A Conscious-based Mind for an Artificial Creature

124 T. Ikegami and Y. Ogai: Self-organization of Subjective Time and Sustainable Autonomy in Mind Time Machine

#### **IntelLearn III - Saturday, 21st, 13:30-15:00h, room: U81**

37 K. Diwold, M. Beekman and M. Middendorf: Bee Nest Site Selection as an Optimization Process

107 G. Khan and J. Miller: Learning Games using Single Developmental Neuron

99 T. Schmickl, H. Hamann, J. Stradner, R. Mayet and K. Crailsheim: Complex Taxis-Behaviour in a Novel Bio-Inspired Robot Controller

175 M. Sim and D. Kim: Identifying the Location of a Target Object in the Weakly Electric Fish through Spatiotemporal Filtering Process

## MiniCog - Minimal Cognition and Physical Intelligence (Martin Hanczyc)

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**MiniCog I** (chair: Martin Hanczyc) - **Sunday, 22nd, 10:30-12:00h, room: U100**

160 D. Görlich and P. Dittrich: On the semantic capacity of (bio-)chemical systems

126 N. Horibe, K. Kobayashi, M. Hanczyc and T. Ikegami: Mode switching and collective behavior in chemical oil droplets

190 J. Rieffel and B. Trimmer: Body/Brain Co-Evolution in Soft Robots

78 T. Marchel, M. Shuhei, R. Fuchslin, K. Nakajima, M. Göldi and R. Pfeifer: Self-organized Segregation Effect on Water Based Self-Assembling Robots

**MiniCog II** (chair: Martin Hanczyc) - **Monday, 23rd, 13:30-15:00h, room: U77**

100 O. Wiljes, R. Elburg, M. Biehl and F. Keijzer: Early Nervous Systems: Theoretical background and a preliminary model of neuronal processes

83 G. Khan and J. Miller: Solving Mazes using an Artificial Developmental Neuron

131 S. Tripodi, P. Ballet and V. Rodin: Self-organization of a virtual multicellular organism by adding a shape model in the Cellular Potts Model

125 L. Grabowski, D. Bryson, R. Pennock, F. Dyer and C. Ofria: Early evolution of memory usage in digital organisms

## OrigLife - Origin of Life (Mark Doerr and Bruce Damer)

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**OrigLife I** (chair: Mark Doerr) - **Friday 20th, 14:00-15:30h, room: U77**

43 K. Kawamura: Temperature Limit for the Emergence of Life-like System Deduced from the Prebiotic Chemical Kinetics under the Hydrothermal Conditions

23 C. Fernando: The Origin of Life by Serial Dilution of a Primordial Soup

71 A. Pratt: Evolution, Selection and the Metabolic Foundations of the RNA World

101 A. Ullrich, C. Flamm, M. Rohrschneider and P. Stadler: In silico Evolution of Early Metabolism

**OrigLife II** (chair: Bruce Damer, coorganized with AChem) - **Saturday, 21st, 13:30-15:00h, room: U100**

123 R. Fuchslin, A. Filisetti, R. Serra, M. Villani, D. Lucrezia and I. Poli: Dynamical Stability of Autocatalytic Sets

152 B. Damer, P. Newman, R. Gordon, T. Barbalet, D. Deamer and R. Norkus: The EvoGrid: A Framework for Distributed Artificial Chemistry Cameo Simulations Supporting Computational Origins of Life Endeavors

196 R. Watson, R. Mills, C. Buckley, S. Powers, A. Penn, A. Davies, J. Noble and S. Bullock: Adaptation without natural selection

70 S. Hickinbotham, A. Faulconbridge and A. Nellis: The Blind Watchmaker's Workshop: three Artificial Chemistries around Eigen's Paradox

## Phil - Philosophy (Mark Bedau)

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**Phil I** (chair: Mark Bedau) - **Friday 20th, 10:30-12:00h, room: U100**

208 P. Humphreys: What Simulations can do that Experiments cannot, and vice versa.

29 J. Misra: Algorithmic Feasibility of Observing Artificial Life Evolution

112 O. Holland: If there is something it is like to be Alife, what is it?

121 M. Segerstahl: Systems definition of an organism – a formal basis for modelling life

**Phil II** (chair: Mark Bedau) - **Monday, 23rd, 10:30-12:00h, room: U77**

- 169 E. Silverman and T. Ikegami: Robust Explanations in Artificial Life
- 162 H. Thorén and P. Gerlee: Weak Emergence and Complexity
- 210 M. Bedau: The suppleness of life and mind
- 207 R. Pennock: Models of Artificial Life: Herbert Simon and Evolutionary Computation

## Robotics - Robots (Kasper Stoy)

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### Robotics I (chair: Chris Melhuis or Robert Lowe) - Sunday, 22nd, 10:30-12:00h, room: U71

193 R. Lowe, A. Montebelli, I. Ieropoulos, J. Greenman, C. Melhuish and T. Ziemke: Grounding Motivation in Energy Autonomy: A Study of Artificial Metabolism Constrained Robot Dynamics

205 I. Ieropoulos, J. Greenman, C. Melhuish and I. Horsfield: EcoBot-III: a robot with guts

183 Y. Litus and R. Vaughan: What a Sunflower Can Teach a Robot? Efficient Robot Queuing by Reverse Phyllotaxis

194 A. Montebelli, R. Lowe, I. Ieropoulos, C. Melhuish, J. Greenman and T. Ziemke: Microbial Fuel Cell driven behavioral dynamics in robot simulations

### Robotics II (chair: P. Husbands or S. Kernbach) - Sunday, 22nd, 13:30-15:00h, room: U71

55 Y. Shim and P. Husbands: Chaotic Search of Emergent Locomotion Patterns for a Bodily Coupled Robotic System

9 Y. Meng, Y. Zhang and Y. Jin: A Morphogenetic Approach to Self-Reconfigurable Modular Robots using a Hybrid Hierarchical Gene Regulatory Network

57 H. Hamann, J. Stradner, T. Schmickl and K. Crailsheim: Artificial Hormone Reaction Networks: Towards Higher Evolvability in Evolutionary Multi-Modular Robotics

128 S. Kernbach: Adaptive Action Selection Mechanisms for Evolutionary Multimodular Robotics

### Robotics III (chair: Richard Vaughan or Hod Lipson) - Sunday, 22nd, 15:30-17:00h, room: U71

154 J. Wawerla and R. Vaughan: Online Robot Task Switching Under Diminishing Returns

200 C. Richter and H. Lipson: Hovering Flapping Flight of a 3D-Printed Mechanical Insect

93 D. Ball, S. Heath, M. Milford, G. Wyeth and J. Wiles: A Navigating Rat Animat

102 C. O'Bryne and L. Camero: Emotion in Decisions of Life and Death - Its Role in Brain-Body-Environment Interactions for Predator and Prey

## SocTec - Socio-Technical Systems (Kristian Lindgren)

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### SocTec I - Friday 20th, 14:00-15:30h, room: U100

79 P. Mariano and L. Correia: Partner Selection: Finding the Right Combination of Players

143 K. Suzuki, R. Uno and T. Ikegami: Language as Autopoiesis : Experimental Approach to Agency in Linguistic Communication

182 A. Loula, R. Gudwin and J. Queiroz: On the emergence of indexical and symbolic interpretation in artificial creatures, or What is this I hear?

191 E. Vallejo and C. Taylor: A self-supervised classifier ensemble for source recognition in acoustic sensor arrays

### SocTec II - Monday, 23rd, 13:30-15:00h, room: U99

39 J. Bullinaria: Memes in Artificial Life Simulations of Life History Evolution

195 A. Buchanan, N. Packard and M. Bedau: Darwinian evolution of culture as reflected in patent records

199 D. Chalmers, C. Francis, N. Pepper and M. Bedau: Evolution of Word Clouds in Patented Technology

51 A. Mutoh, S. Kato, H. Itoh and N. Inuzuka: Expression of Fashion in Female Preferences for a Mate by Conformity and Differentiation Genes

## SysBiol - Systems Biology (Luis Delaye)

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### SysBiol I - Sunday 22nd, 15:30-17:00h, room: U81

186 S. Montagna, N. Donati and A. Omicini: An agent-based model for the pattern formation in *Drosophila Melanogaster*

103 S. Cussat-Blanc, J. Pascalie, H. Luga and Y. Duthen: Morphogen positioning by the means of a hydrodynamic engine

24 D. Aguilar, A. Córdoba, M. Lemos, F. Casares, M. Domínguez and M. Tavares: Computational approach to the gene regulatory network in the mus musculus mouse eye development

137 L. Schramm, V. Martins, Y. Jin and B. Sendhoff: Analysis of Gene Regulatory Network Motifs in Evolutionary Development of Multicellular Organisms

### **SysBiol II - Monday, 23rd, 13:30-15:00h, room: O95**

85 I. Delaye, C. González-Domenech and A. Moya: Towards a simpler photoautotrophic cell: conserved and variable genes in *Synechococcus elongatus*

211 A. Chaudhary, G. Waldo, W. Hlavacek and C. Tung: Systems Biology Approaches for Developing Artificial Pathogen Detection Networks

144 J. Letelier, S. Jaramillo, R. Honorato-Zimmer, U. Pereira, D. Contreras, B. Reynaert, V. Hernandez, J. Soto-Andrade, M. Cardenas and A. Cornish-Bowden: (M,R) systems and RAF sets: common ideas, tools and projections

12 A. Fontana: An artificial life model for carcinogenesis

## **TheoComp** - Theoretical and Computational Frameworks (Peter Dittrich)

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### **TheoComp I - Friday 20th, 11:00-12:30h, room: O95**

129 I. Balaz and D. Mihailovic: Algebraic Representation and Modeling of Evolutionary Innovation and Adaptation in Biological Systems

21 T. Haruna: A Theoretical Study on Molecular Discreteness

108 J. Midgaard-Olesen, C. Baldauf and D. Merkle: Barrier Trees for Continuous Fitness Landscapes

142 I. Harvey and N. Tomko: Binomics: Where Metagenomics meets the Binary World

### **TheoComp II - Friday 20th, 14:00-15:30h, room: O95**

94 Z. Brain and M. Addicoat: Using Meta-Genetic Algorithms to tune parameters of Genetic Algorithms to find lowest energy Molecular Conformers

52 T. Hoverd and S. Stepney: Formalising Harmony Seeking Rules of Morphogenesis

204 B. Santos, P. Husbands and T. Froese: Accommodating homeostatically stable dynamical regimes to cope with different environmental conditions

### **TheoComp III - Sunday 22nd, 15:30-17:00h, room:U77**

95 K. Nakamura: Asynchronous Parallel Self-Replication Based on Logic Molecular Model

59 H. Sayama: An Artificial Life View to the Collatz Problem

69 S. Ninagawa: Search for computationally universal cellular automata guided by  $1/f$  noise

189 J. Rieffel and S. Smith: A Face-Encoding Grammar for the Generation of Tetrahedral-Mesh Soft Bodies

## ALifeXII - Satellite Workshops and Events

Proposer	Title	Time and Place	Links
<b>Bruce Damer, Steen Rasmussen, Harold Fellermann, Martin Hanczyc, Tom Barbalet, Richard Gordon, David Deamer and Doron Lancet</b>	<i>CompOrigins: A new Generation of Computing Supporting Origin of Life Research</i>	Saturday, 21.08.10; 17:00-19:00h; room O97	<a href="http://www.alife12.org/events/">http://www.alife12.org/events/</a>
<b>Paul Andrews, Susan Stepney, Adam Sampson, Peter Welch</b>	<i>3rd Complex Systems Modelling and Simulation Workshop (CoSMoS)</i>	Thursday, 19.08.10; 9:00h- 16:00h; room U99	<a href="#">cosmos-workshop-2010</a>
<b>Rachel Armstrong, Neil Spiller</b>	<i>New materials for the bottom up assembly of architecture</i>	Thursday, 19.08.10; 9:00h- 16:00h; room O95	<a href="#">Program</a>
<b>Hideaki Suzuki</b>	<i>Artificial Chemistry tutorial</i>	Thursday, 19.08.10; 13:00h- 15:00h; room U97	<a href="#">Artificial Chemistry</a>
<b>Mark Doerr, Andrew Pratt and Pasquale Stano</b>	<i>Open Workshop on Self Organization and Prebiotic Chemistry</i>	Saturday, 21.08.10; 17:00-19:00h; room O95	<a href="http://selforg.ismeralda.org/">http://selforg.ismeralda.org/</a>
<b>Initiative for Science, Society, and Policies (ISSP)</b>	<i>Living Technology — Putting People in the Present</i>	Tuesday, August 24th, 2010; 17:30h-20:30h; room U100	<a href="http://www.science-society-policy.org/events/2010/living-technology-putting-people-in-the-present/index.html/">http://www.science-society-policy.org/events/2010/living-technology-putting-people-in-the-present/index.html/</a>