

1. Transitions in Organization I: From Individuals to Groups, to Superorganisms
2. Transitions in Organization II: From Neurons to Mind
3. Dynamics, Organization, and Reorganization of the Brain
4. Artificial Cognitive Systems for Creativity and Intelligent Behavior
5. Transformation and Change in Human Life and Culture

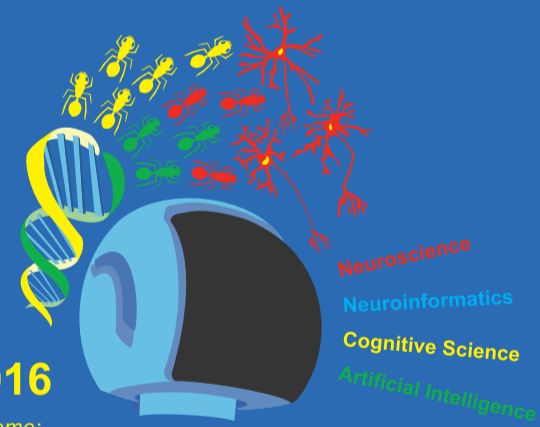
Biological and artificial systems are built around networks of interacting individual elements, collectively creating a whole that becomes more than the sum of its parts. Such systems undergo transitions and transformations, defining changes in the fundamental character of that entity. Organisms undergo natural processes of change, as they transition from juvenile to adult, and on into senescence. Neural and cognitive processes similarly change dynamically across time scales, as individuals respond to their immediate environment, and as they age. Transitional and transformational processes also occur across levels of organization, from the self-organization of cells and the emergence of life, to the emergence of multicellularity, to collections of individuals becoming cohesive societies. In parallel with the natural world, artificial systems also change across time and levels of complexity, and to be functional, must adapt to a constantly changing world. The IK 2016 considers Transitions and Transformations in dynamic interactive systems from diverse perspectives across the natural and AI worlds, presenting research insights in the topic areas of:

Transitions and Transformations in Cognition, Biology, and Interactive Systems

The Interdisciplinary College (IK) is an intense annual one-week spring school, offering a state-of-the-art program in neurobiology, cognitive science, psychology, robotics, neural computation, and artificial intelligence. Each year's theme connects ideas and approaches across the sciences and humanities. The IK provides a unique training opportunity for students, postgraduates and researchers, from academia and industry. Courses are designed to promote dialogue and connectedness, and are taught by top lecturers from across the world; all courses are in English. The course sequence includes introductions to the main fields of the IK, followed by in-depth lectures on the focus topic. The 2016 IK focal topic is:

Heinrich-Lübke-Haus, Günne at Lake Möhne March 4 - 11 Interdisciplinary College 2016

2016



IK 2016
Focus Theme:
Transitions and Transformations in Cognition, Biology, and Interactive Systems

Interdisciplinary College 2016

IK2016
March 04 - 11, 2016

Heinrich-Lübke-Haus
Günne at Lake Möhne



www.interdisciplinary-college.de

2016

- ◆ Athena Aktipis Arizona State University, USA
- ◆ Michael Beetz University of Bremen, DE
- ◆ Thiemo Breyer University of Cologne, DE
- ◆ Lars Chittka Queen Mary University of London, GB
- ◆ Thomas Christaller Moving & Ways of Life Bonn, DE
- ◆ Iain D. Couzin MPI for Ornithology, DE
- ◆ Tanja Döring University of Bremen, DE
- ◆ Katja Franke University of Jena, DE
- ◆ Bertram Gerber Leibniz Institute for Neurobiology Magdeburg, DE
- ◆ Barbara Hammer University of Bielefeld, DE
- ◆ Herbert Jaeger Jacobs University Bremen, DE
- ◆ Frank Jäkel University of Osnabrück, DE
- ◆ Emily J. King University of Bremen, DE
- ◆ Alexandra Kirsch University of Tübingen, DE
- ◆ Michael Kohlhase Jacobs University Bremen, DE
- ◆ Judith Korb University of Freiburg, DE
- ◆ Edward Large University of Connecticut, USA

Speakers | Faculty

- ◆ Jun Tani Korea Advanced Inst. of Science & Technology, Korea
- ◆ Natalie Sebanz Central European University, Hungary
- ◆ Gregor Schöner Ruhr-University Bochum, Germany
- ◆ Justin London Carleton College, USA
- ◆ Ed Large University of Connecticut, USA
- ◆ Arvid Kappas Jacobs University Bremen, Germany
- ◆ Jessica Grahn University of Western Ontario, Canada
- ◆ Taimin Asfour Karlsruhe Institute of Technology
- ◆ Tarek Besold Free University of Bozen-Bolzano
- ◆ Bettina Bläsing University of Bielefeld
- ◆ Ansgar Büschges University of Cologne
- ◆ Jennifer Fellwell Arizona State University
- ◆ Herbert Jaeger Jacobs University Bremen
- ◆ Katharina Krämer University of Cologne
- ◆ Rainer Malaka University of Bremen
- ◆ Stephan de la Rosa MPI for Biological Cybernetics, Tübingen
- ◆ Astrid Rosenthal-von der Pütten University of Tübingen
- ◆ Katja Schüller Technical Univ. of Darmstadt Duisburg-Essen
- ◆ Ronald Sladky University of Vienna
- ◆ Jan Smeddink Bremen University
- ◆ Manfred Spitzer University of Ulm
- ◆ Achim Stephan University of Osnabrück
- ◆ Susan Wache University of Osnabrück
- ◆ Ipke Wachsmuth University of Bielefeld

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- ◆ BC4 Neuroscience: Prof. Hans Straka, LMU München, GER
- ◆ BC5 Behavioral Biology: Prof. Judith Korb, U Freiburg, GER

Executive Committee

Organisation

Registration

Registration is open until **February, 14, 2016** at interdisciplinary-college.de. Early bird registration by **January, 9, 2016**. Registration will be treated on a first come-first serve basis. Your registration will only be effective after you have received a written confirmation and invoice.

Fees

Members of supporting institutions:			
normal fees	600 €	(early bird:	500 €)
PhD-students**	300 €	(early bird:	240 €)
students*	120 €	(early bird:	100 €)
Non-Members:			
normal fees	1.000 €	(early bird:	800 €)
PhD-students**	400 €	(early bird:	320 €)
students*	170 €	(early bird:	140 €)

* proof of student status has to be included with application, only students not older than 27 will receive student reduction
**PhD-students with part-time contracts.
Course materials are included in the conference fee.

Accommodation

Accommodation is not included in the conference fee. Usually, participants will take accommodation in the „Heinrich-Lübke-Haus“ for the duration of the Interdisciplinary College. The following fees are charged (accommodation/full-board, incl. Tuesday Buffet Dinner):

single room	510 €
double room	430 € (p. P.)
triple room	310 € (p. P.)

For participants taking external accommodation, a fee of **300 €** is charged for coffee breaks, meals, and the conference dinner.

Payment

Money transfer must be completed for regular registration by **February, 28**, and for early bird by **January, 14, 2016**. Delays will result in an additional fee of 50 €.

Cancellation

If cancellation is received in writing before **February, 6, 2016**, you will be refunded minus 30 € handling fee. For cancellations received after that date, no refunds will be made.

Poster and Demo Session

We encourage each participant of **IK 2016** to present their latest research projects at the IK Poster and Demo Session. The Session will be organized by Jan Smeddink and Susan Wache. Please submit an abstract before **February, 1, 2016** according to the detailed instructions provided on the IK 2016 website.

Student Stipends

Participants lacking financial support may apply for a scholarship to support their board & lodging. Applications must be made by filling in the web form at **Stipends** and must be submitted by **December, 31, 2015**.

- ◆ SC1 Cancer and Non-Death: Prof. C. Athena Aktipis, ASU, USA
- ◆ SC2 Emergent Behavior: Prof. Stephen Pratt, ASU, USA
- ◆ SC3 Evolution of Sensory Systems and Cognition: Bees as a Model: Prof. Lars Chittka, Queen Mary, University of London, UK
- ◆ SC4 Transformations of Knowledge: Jun.-Prof. Thiemo Breyer, U Köln, GER

Transitions in Organization II: From Neurons to Mind

- ◆ M1 Modeling Dynamical Systems: Prof. Herbert Jaeger, Jacobs U Bremen, GER
- ◆ M2 Hands-On Mobile Robotics: Jochen Sprickerhof, Osnabrück U, GER
- ◆ M3 Mathematical Transforms and Sparsity: Harmonic Analysis and its Applications: Prof. Emily J. King, U Bremen, GER
- ◆ M4 Science Jam: A Crash Course in Human Subject Research: Jan Smeddink, U Bremen, GER
- ◆ M5 Behavioral Biology: Prof. Judith Korb, U Freiburg, GER

Special Courses

- ◆ BC1 Artificial Intelligence: Prof. Alexandra Kirsch, U Tübingen, GER
- ◆ BC2 Machine Learning: Prof. Barbara Hammer, U Bielefeld, GER
- ◆ BC3 Cognitive Science: Prof. Frank Jäkel, Osnabrück U, GER
- ◆ BC4 Neuroscience: Prof. Hans Straka, LMU München, GER
- ◆ BC5 Behavioral Biology: Prof. Judith Korb, U Freiburg, GER

Method Courses

- ◆ BC1 Artificial Intelligence: Prof. Alexandra Kirsch, U Tübingen, GER
- ◆ BC2 Machine Learning: Prof. Barbara Hammer, U Bielefeld, GER
- ◆ BC3 Cognitive Science: Prof. Frank Jäkel, Osnabrück U, GER
- ◆ BC4 Neuroscience: Prof. Hans Straka, LMU München, GER
- ◆ BC5 Behavioral Biology: Prof. Judith Korb, U Freiburg, GER

Basic Courses

- ◆ Regan Mandryk University of Saskatchewan, CA
- ◆ Randoiff Menzel Free University Berlin, DE
- ◆ Sebastian Ocklenburg Ruhr University Bochum, DE
- ◆ Stephen Pratt Arizona State University, USA
- ◆ Rafael Reisenhofer University of Bremen, DE
- ◆ Johannes Schöning Hasselt University, BE
- ◆ Ronald Sladky Medical University of Vienna, AT
- ◆ Jan Smeddink University of Bremen, DE
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- ◆ BC4 Neuroscience: Prof. Hans Straka, LMU München, GER
- ◆ BC5 Behavioral Biology: Prof. Judith Korb, U Freiburg, GER

- ◆ SC5 Turning memory into action: Prof. Bertram Gerber, LIN Magdeburg, GER
- ◆ SC6 Brain Functions and Mappings: Prof. Kai Vogele, U Köln, GER

Dynamics, Organization and Reorganization of the Brain

- ◆ SC7 Evolution of Emotions and the Brain: PD Dr. Sebastian Ocklenburg, RU Bochum, GER
- ◆ SC8 Brain and Aging: Dr. Katja Franke, U Jena, GER
- ◆ SC9 Free Energy Models, Neuroimaging: Dr. Ronald Sladky, Med U Wien, AUT

Changes and Transformations in Human Life and Culture

- ◆ SC10 Ephemeral User Interfaces: Tanja Döring, U Bremen, GER
- ◆ SC11 Games for Behaviour Change: Prof. Regan Mandryk, U Saskatchewan, CA
- ◆ SC12 Music and Cognition: Prof. Ed Large, U Connecticut, USA
- ◆ SC13 "The shortest path is dead" – Navigation in Navigation-Free Environments: Prof. Johannes Schöning, Hasselt University, Belgium

Artificial Cognitive Systems for Creativity and Intelligent Behavior

- ◆ SC14 Computational Creativity: Prof. Tony Veale, U College Dublin, IRE
- ◆ SC15 Robots for Everyday Activities: Prof. Michael Beetz, U Bremen, GER
- ◆ SC16 Building large-scale neural models - Cognitive control with Nengo: Terrence C. Stewart, U Waterloo, CA
- ◆ SC17 Logic-based Approaches to the Semantics of Natural Language: Prof. Michael Kohlhase, Jacobs U Bremen, GER
- ◆ SC18 Computational Models and Cognition: Tomer Ullman, MIT, USA

Evening Talks

- ◆ ET1 Levels of Cognition in a Miniature Brain: The Honeybee: Prof. Randoiff Menzel, FU Berlin, GER
- ◆ ET2 Social Robots, Luc Steels, Inst. for Evolutionary Biology (CSIC-UPF), Barcelona, ES
- ◆ ET3 tbd.: Iain D. Couzin, MPI for Ornithology, GER

Practical Courses

- ◆ PC1 Aikido and Contact Improvisation: Prof. Thomas Christaller, Bonn, GER, Elisabeth Zimmermann, U Wien, AUS

Supporting Institutions

Fritz Thyssen Stiftung; Fraunhofer IAIS
Gesellschaft für Informatik e.V. (GI), FB KI
Gesellschaft für Kognitionswissenschaft e.V. (GK)

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