



# Zukunftskolleg-Newsletter

## Content

Concerning <i>Zukunftskolleg</i> .....	1
Co-funding .....	1
Summer School 2008 .....	2
First Formal Epistemology Festival .....	4
Past events .....	5
Upcoming events .....	5
Personalalia .....	6
Imprint.....	6

## Concerning *Zukunftskolleg*

The search for a new director of the Zukunftskolleg is still ongoing. Unfortunately, the preferred candidate of the first selection process of April 2008 withdrew his application. The selection committee has continued its search for a director including active headhunting to fill the position as soon as possible. As Prof. Dr. Elke Scheer just became spokesperson of the new Collaborative Research Center "Controlled Nanosystems: Interaction and Interfacing to the Macroscale" (SFB 767) and PD Dr. Thomas Bräuninger has accepted new challenges outside Konstanz effective October 2008 there will be a change in the board of managers after all. The third director of the Zukunftskolleg – Prof. Dr. Gerhart von Graevenitz – will be solely responsible for the Zukunftskolleg effective October 1, 2008.

In an address to the fellows on July 23, 2008 the Rector summarized the Zukunftskolleg's development of the past months and informed about future plans and upcoming events. Afterwards fellows and staff met for a summer reception in beautiful whether on the roof-deck of level V 10.

An innovation coming soon is the redesign of the Jour Fixe next semester to make discussions more interdisciplinary and lively. Your contributions, presentations and suggestions are highly welcome!

## Co-funding

The Zukunftskolleg's Executive Committee has granted a large number of co-funding applications in its June and July sessions.

The Zukunftskolleg finances a research position for 12 months in Dr. Artur **Erbe's** project "Fabrication of electrical contacts to organic molecules on the nanometer scale". The project researcher will be employed to support Artur Erbe in writing a grant application and to carry out accompanying experiments.

Dr. Wolfgang **Freitag** and Dr. Matthias **Schön-ing** received co-funding for the publication of their qualification thesis.

The Zukunftskolleg financed Dr. Helen **Gunter's** participation at the 2nd Conference for the European Society of Evolutionary Developmental Biology at Ghent. Helen Gunter gave a poster presentation, titled "Patterning and development of the cichlid pharyngeal jaw".

Dr. Iris-Tatjana **Kolassa** currently works on a DFG renewal proposal for the project "Psychoneuroimmunology of posttraumatic stress disorder". The aim is to analyze DNA repair mechanisms in situations of extreme posttraumatic stress. For preliminary work prior to the expected project start in March 2009 Dr. Kolassa has been granted a nurse and an assistant medical technician. The

nurse will take 360 blood samples within the next six months; the medical technician will be responsible for the blood centrifugation and related services.

Dr. Shujun **Li** considers security as a major concern in the design of secure multimedia computing systems in his project "Secure Multimedia Computing". The Zukunftskolleg granted the financing of a doctoral project researcher who will help developing software programs and multimedia coding standards. The software programs to be developed aim at increasing chances for third-party funding of the project.

Dr. Marilena **Manea** plans research cooperation with Prof. Dr. Peter Öhlschläger in the context of her project on the "Development of bioconjugates as therapeutic agents for ageing-associated diseases". Marilena Manea evaluates the effect of bioconjugates, free anticancer drugs and GnRHin in vivo on the transgenic adenocarcinoma of the mouse prostate. The Zukunftskolleg's co-funding enables Dr. Manea to purchase the necessary material and to employ a research assistant.

Prof. Dr. Sven **Reichardt** applied for follow-up financing for his doctoral student Anja Bertsch. A 12-months extension of her working contract by the Zukunftskolleg allows Anja Bertsch to finish her dissertation on "Off the beaten track: Alternative youth travel in the FRG (1960s-1980s)" which is a subproject of Prof. Reichardt's "Studies on social and cultural history of the Federal Republic of Germany".

Dr. Nathan **Weisz**, principal investigator of the Emmy Noether project "Large-Scale Oscillatory Brain Activity – From Normal to Phantom Perceptions", successfully applied for a transcranial magnetic stimulation apparatus (TMS). One of the areas of application is the study of chronicle tinnitus treatment.

In order to allow institutional independence and freedom of scientific research for young scientist the Zukunftskolleg has granted a **research al-**

**lowance** to all fellows in 2008. These financial means may be invested flexibly e.g. in personnel or material resources to the benefit of on-going and new research projects.

## Summer School 2008 Observing and Understanding Earth

Twenty-eight researchers from twelve countries met from July 13 to 20, 2008 at Konstanz for the international Zukunftskolleg summer school "Observing and Understanding Earth: Making the Most of Environmental Measurements" organized by Dr. Marc **von Hobe** from *Forschungszentrum Jülich*. "Environmental problems – particularly global climate change – are an ever growing challenge to humankind. Efforts to overcome this challenge and our endeavour to build a sustainable future require a thorough understanding of our planet Earth. In Konstanz, we addressed the question how to use meteorological, physical and chemical data sets and models in the most effective way to improve our knowledge of the earth and its climate. An important aspect the summer school was bringing the different disciplines of Environmental Sciences closer together", Marc von Hobe explains.

Various fields including Atmospheric and Ocean Sciences, Biogeosciences, Climate and Paleoclimate Sciences were represented in Konstanz. Lecture topics included measurement techniques, satellite data and computer modelling as instruments of environmental science, innovative approaches to data interpretation, as well as more general issues of data quality and data homogeneity. One of the lecturers, Prof. Dr. Phil Jones, Director of the Climatic Research Unit of the University of East Anglia and co-author of the Fourth IPCC Assessment Report 2007, also offered insights in the composition of the climate report.

Other lecturers were:

- Dr. Christof Ammann (Swiss federal research station Agroscope ART in Zurich)
- Dr. Anthony J. Kettle (School of Environmental Science, University of East Anglia)
- Prof. Dr. Michael Schaepman (Centre for Geo-Information (CGI), Wageningen University and Research Centre, WUR)
- PD Dr. Thomas von Clarmann (Institut für Meteorologie und Klimaforschung, Forschungszentrum Karlsruhe)
- Prof. Dr. Douglas Wallace (Leibniz-Institut für Meereswissenschaften, IFM-GEOMAR, University of Kiel)

The participants of the summer school presented results from their projects in a poster session. Out of numerous interesting and excellent contributions, the committee of lecturers awarded three "best student posters":

- **Tanja Möbius** (University of Frankfurt) addressed the question „Does the Brewer-Dobson Circulation change? Three decades of mean age of air data derived from stratospheric SF<sub>6</sub> measurements". She reanalyzed stratospheric air samples collected from 1975 to 2006 with balloon-borne whole-air samplers that allow quantifying the mean age of air. In contradiction to the model studies that predict an effect of changes in greenhouse gas loading on the mean meridional circulation of the middle atmosphere (the Brewer-Dobson circulation), Möbius' results show that there was no intensification of the Brewer-Dobson circulation in the past three decades.
- **Anneke Batenburg** (Utrecht University) presented a poster on „The isotopic composition of atmospheric hydrogen (H<sub>2</sub>)". Molecular hydrogen is widely expected to be the energy carrier of the future without much knowledge about the consequences of H<sub>2</sub> emissions into the atmosphere. Batenburg developed a Gas Chromatography – Isotope Ratio Mass Spectrometry (GC-IRMS) measurement system

that allows for the precise determination of hydrogen isotope ratios in the atmosphere. This information is very useful to better understand the processes involving molecular hydrogen on the atmosphere.

- **Anke Schneider** (IFM-GEOMAR, Kiel) works on „Anthropogenic carbon (C<sub>ant</sub>) in the Mediterranean Sea". Her calculations of anthropogenic carbon in the Mediterranean Sea fill an important gap in the global C<sub>ant</sub> inventory.

One of the highlights of the summer school was the one-day excursion to the *Schneefernhaus* Observatory on the Zugspitze. The group had the opportunity to inspect several measurement techniques discussed during the sessions at Konstanz live in action. Along the way to the Zugspitze summit, Enner Alcantara, a participant from Sao Paulo, Brasil experienced the first snowball fight in his life.

Dr. Shailesh Patel from India summarized „The summer school was informative and interdisciplinary. I learned a lot indeed." Other participants agreed with this positive conclusion. The organizer Dr. Marc von Hobe was most satisfied: „We had stimulating discussions, and the enthusiasm of the participants was stunning. I think we will all take home a lot from this event!"

*Marc von Hobe*



*Participants of the Zukunftskolleg Summer School 2008 „Observing and Understanding Earth (Foto: von Hobe)*

## First Formal Epistemology Festival

Konstanz, July 28-30, 2008

The background for the first Formal Epistemology Festival on Conditionals and Ranking Functions in Konstanz, Germany, was the 40<sup>th</sup> anniversary of Robert Stalnaker's *A Theory of Conditionals* and the 20<sup>th</sup> anniversary of Wolfgang Spohn's *Ordinal Conditional Functions. A Dynamic Theory of Epistemic States*. Besides the organizers Franz Huber, Eric Swanson, and Jonathan Weisberg, the other speakers were Igor Douven, David Etlin, Anthony Gillies, Alan Hájek, Hannes Leitgeb, Sarah Moss, Hans Rott, Wolfgang Spohn, Robert Stalnaker, Robert Williams, and Timothy Williamson. We exemplarily summarize four of the talks.

Robert Stalnaker opened the festival with his talk *Nested Conditionals and Iterated Belief Revision*. He drew a comparison between the iteration of modal operators and iterated belief revision. The former was accounted for by Kripke-style accessibility relations. To account for the latter, Stalnaker argued that we have to add structure to the belief model. This can partly be done by using conditionals to represent belief revision policies and thereby making belief dynamics explicit. We also have to understand the input as including meta-information. Stalnaker gave examples that showed that sometimes new information does not yield a change of our beliefs in atomic propositions, but a change of our belief revision behavior and thereby a change of our beliefs about conditionals.

Wolfgang Spohn's talk *Objectivizing Ranking Functions* explained the extent to which ranking functions that describe subjective doxastic states, i.e. subjective grades of disbelief, can be objectively true or false. The basic idea is to uniquely associate propositions that can be true or false with how a given feature is realized in a ranking function and then to uniquely reconstruct the functions from these associated propositions. This

works sometimes, and sometimes it does not. The most exciting positive example is direct causation that can be an objective notion even though its basic explication is a subjective one via ranking functions.

In his talk *Conditionals and Actuality*, Timothy Williamson explored the possibilities for adding a connective for indicative conditionals to a formal language containing an actuality operator. For this, he set up a number of plausible assumptions including an axiom for the actuality operator for an otherwise unspecified propositional language. He then showed that if reflexivity and distribution hold for the indicative conditional, a number of unintuitive consequences arise, since the indicative conditional must then behave like the material conditional in a wide range of cases.

Alan Hájek's talk *Arrows and Haloes: Probabilities of Conditionals and Desire as Belief* focused on the similarities between the debates about the thesis that probabilities of conditionals are conditional probabilities, and about the thesis that the extent to which we desire a proposition to be the case is equal to our degree of belief in the goodness of this proposition. Central to both debates are the triviality results of Lewis. But these results can be avoided in both cases by adopting indexical interpretations of the conditional and the goodness operator, respectively. Hájek discussed further objections and stressed the importance of an exchange between the debates.

The festival was the first of a series of small and thematically focused events in formal epistemology. The festivities of 2009 in Ann Arbor will feature Causal Decision Theory and Scoring Rules; the festivities of 2010 in Toronto will focus on Defeater/Default Logic and Perception.

*Peter Fritz, Robert Michels,  
Maryia Ramanava, Alexandra Zinke*

## Past events

### *Jour fixe*

The Zukunftskolleg had the pleasure to welcome the first Senior Fellow – Prof. Dr. Art **Kramer** – in the Jour Fixe on June 26, 2008. Prof. Kramer's most lively talk on cognitive and physical fitness trainings to prevent cognitive decline in aging met great interest among the fellows. The good news is that physical fitness is associated with cognitive functioning in healthy aging, and physical fitness interventions with elderly people indeed enhance cognitive functioning, even in individuals who already show impairments in memory and cognitive functioning such as persons with mild cognitive impairment or dementia. The disappointing news to anyone who loves computer games is that memory, speed and reasoning training improve performance in the trained task, but that this effect does not transfer to non-trained areas. The best training to retard cognitive decline in ageing is to do physical exercise and to permanently learn "new things". Only the exposure to new situations and new problems secures across-the-board brain fitness.

### *LebensFormen*

The continuation of the lecture series "**Lebens-Formen**" arouse keen interest among the Konstanz public. The local press (*Südkurier*, May 10, 2008) praised the comprehensible presentation of complex research questions dealing with life and death, living will and superstition.

On May 29, 2008 Prof. Dr. Dieter **Birnbacher**, Heinrich-Heine-University Düsseldorf, presented criteria for the definition of death. The philosophical talk ("Was unterscheidet das Leben vom Tod? Der Streit um die Lebensgrenzen") highlighted the problems of a blurred boarder between embryonic existence, life, brain death and death. He sketched the controversial symmetry between a fetus who may only survive due to the

functioning and support of the maternal body and a brain death person who survives thanks to the life-sustaining machinery. According to Birnbacher, one of the most important criteria of death is irreversibility.

Prof. Dr. Harald **zur Hausen**, German Cancer Research Center Heidelberg, held a lecture on the evolution of faith and superstition on June 4, 2008 („Die Entwicklung von Wissenschaft, Glauben und Aberglauben"). From the biological, evolutionary perspective the survival of the offspring is essential. Life and death of a human being is only one element in the chain of mutation and adaption to changing environmental surroundings. Faith combined with religious or ethical norms, however, allow cohabitation in societies and provide shelter from afterlife. The main difference between faith and science, Prof. zur Hausen points out, is that faith allows truth whereas in natural science any dogma is put to test and eventually will be overthrown. Superstition sets in, where scientific findings leave gaps of knowledge.

The LebensFormen lecture series is one first step towards public science. The Zukunftskolleg strongly encourages fellows and alumni to present their research results to a broader audience. We also provide administrative support for public events or help to establish cooperation with the Bürger Uni Konstanz.

## Upcoming events

The inaugural lecture of PD Dr. Michael **Bauer** is scheduled for December 10, 2008.

The *Heidelberger Akademie der Wissenschaften* celebrates its **100<sup>th</sup> anniversary** in 2009. Konstanz University has the honor of hosting one of the jubilee festivities. Fellows of the Zukunftskolleg participate in the scientific coordination of the lectures for the celebration on **June 18, 2009**. The program will be published in due time.

## Personalia

### *Grants, allowances and appointments*

PD Dr. Michael **Bauer** replaces Prof. Dr. Christoph Knill, Chair of Comparative Public Policy and Administration at the Department of Politics and Administration for one year.

PD Dr. Thomas **Bräuninger** and his project partners Prof. Dr. Sylvia Kritzinger (University of Vienna), Dr. Gail McElroy (Trinity College Dublin) and Dr. Georg Lutz (University of Lausanne) were granted EUR 935,000 by the European Science Foundation for the collaborative project "Representation in Europe: Policy Congruence between Citizens and Elites (REPCONG)". For the implementation of his subproject Thomas Bräuninger receives funding from German Research Foundation (DFG).

Dr. Franz **Huber** successfully applied for EUR 9.000 at the Young Scholar Fund. These means allow members of the "Formal Epistemology" Emmy Noether group to continue their research during Dr. Huber's interim professorship.

Dr. Iris-Tatjana **Kolassa** received the DeGPT Award of the Falk-von-Reichenbach Foundation (German Society for Psychotraumatology) amounting to EUR 1.750. Dr. Kolassa was honored for three studies including "A deletion variant of the  $\alpha 2b$ -adrenoceptor is related to emotional memory in Europeans and Africans". This collaborative project of Iris-Tatjana Kolassa with Prof. Dr. Dominique de Quervain (University of Zurich) resulted from the Mentorship Program sponsored by the Zukunftskolleg in 2006. The study examined the role of the  $\alpha 2b$ -adrenoceptor, a receptor for stress hormones, in the formation of emotional memories Dr. Kolassa showed that a deletion variant of the gene encoding this receptor was associated with better emotional memory in healthy Swiss subjects, but also with enhanced reexperiencing symptoms in the form of intrusive memories of the traumatic situation in survivors of the Rwandan civil war.

The University of Bielefeld appointed Prof. Dr. Franz **Neuner** to the Chair of Clinical Psychology. Prof. Neuner will start his new position on October 1, 2008.

### *Habilitation*

PD Dr. Sonja von **Aulock** held her *Habilitation* speech on „Molekulare Mechanismen in der Chronobiologie“ on June 11, 2008.

PD Dr. Michael **Bauer** held his *Habilitation* speech on July 16, 2008. His inaugural lecture is scheduled for December 10, 2008.

### *Alumni*

PD Dr. Anton **Plech** became new member of the *Forschungszentrum Karlsruhe* (Institut für Synchrotronstrahlung) effective July 1, 2008. His current work concentrates mainly on the realization of an experiment on time-resolved X-ray diffraction.

Moreover, Anton Plech received a Heisenberg Scholarship. He will continue his cooperation with the Department of Physics of the University of Konstanz and resume teaching duties as *Privatdozent* at Konstanz in winter term 2008/2009.

### *New staff at the Central Office*

Martina **Ahlborn** started as back office manager of the Zukunftskolleg on July 1, 2008 (phone +49 (0)7531 88-4897).

The **position for IT support** has been advertised anew. Application deadline is August 29, 2008. See also: <http://www.uni-konstanz.de/stellen>

### Imprint

Isabelle Schulze, Anda Lohan, Martina Ahlborn  
Zukunftskolleg, University of Konstanz  
P.O. Box X 916, 78457 Konstanz  
Tel.: +49 (0)7531 / 88 -4897  
Fax: +49 (0)7531 / 88 -4829  
E-Mail: [zukunftskolleg@uni-konstanz.de](mailto:zukunftskolleg@uni-konstanz.de)  
<http://www.uni-konstanz.de/zukunftskolleg>