



Zukunftskolleg Newsletter

Konstanz | October 2014 - March 2015 | Issue No. 20

What has been going on at the Zukunftskolleg over winter term 2014/2015? The response to various calls for our funding programs was tremendous, not only for the 2-year Postdoctoral and 5-year Research Fellowships, but also for the programs we recently launched: Interdisciplinary Collaborative Projects and Transdepartmental Collaborative Teaching. The first call for the new Intersectoral Cooperation Program – that aims to develop cooperations between Zukunftskolleg Fellows and the non-academic sector – is still ongoing (application deadlines: April 1 and June 1) and in the next Newsletter we will report on the results, as well as on the latest call for the Mentorship program (application deadline: April 15).

During the last few months, the Zukunftskolleg community held a Scientific Retreat at Kloster Hegne, we welcomed new 2-year Postdoctoral and 5-year Research Fellows, as well as Senior Fellows, Mentors and Associate Fellows. At the same time, some of the “old” Fellows left us and took on challenging positions in academia. All Fellows were successful in obtaining grants, giving lectures or publishing their latest research results. Read more on the following pages!

Funding Instruments

2nd Call for Interdisciplinary Collaborative Projects

(Application deadline: January 20, 2015)

The Zukunftskolleg offered up to 5 grants of up to 10,000 euros to initiate interdisciplinary collaborative research projects. The funding program aims to promote research collaboration within the Zukunftskolleg or between a Fellow of the Zukunftskolleg and other researchers. An interdisciplinary research project gives grant holders the opportunity to identify and explore new, innovative and/or risky research perspectives with neighboring disciplines and across disciplines. The grant should facilitate expert-intensive and inspiring research, and offer recipients the chance to work together with colleagues from different disciplines, as well as to develop cross-cutting methods and topics. The grant can cover consumables, staff (student assistants) or the costs for a scientific retreat.

The following projects will be funded:

1. Elena Rosseeva (Chemistry) and Torsten Pietsch (Physics): “Mesocrystals from Magnetic Nanoparticle Assembly: From Structure-Properties Relation to Applications,” 9,669 euros
2. Michael Pester (Biology/Microbiology) and Wayne Dawson (Biology/Ecology): “Looking inside the ‘black box’ of soil in plant-soil feedback experiments: does the plant root microbiome differ according to plant species identity and plant phylogenetic history?, ” 9,912 euros

2nd Call for Transdepartmental Collaborative Teaching

(Application deadline: January 20, 2015)

The Zukunftskolleg offered up to 5 grants of up to 5,000 euros to initiate transdepartmental collaborative teaching. This funding program aims at promoting the development of new teaching courses and contributing to the departmental syllabi. The program gives grant-holders the opportunity to explore new, innovative topics in teaching, to further develop their teaching skills and to evolve teaching approaches across disciplines. The courses are taught by young researchers (pre-professor) from at least two departments, and involve at least one Fellow of the Zukunftskolleg. The courses will be listed in the teaching curriculum of at least two departments. Financial support will be provided, e.g. to invite guest speakers, organize visits to archives and museums, or perform experiments.

The following courses will be funded:

1. Julia Boll (Literature) in collaboration with Thomas Böttcher (Chemistry), Gianluca Rastelli (Physics), Andreas Thum (Biology) and Giovanni Galizia (Biology): “Science/Stage, ” 1,953 euros
2. Sarang Dalal (Psychology) and Maciej Gratkowski (Computer Science): “Principles of Electrophysiology in the Real World, ” 3,640 euros

Recent call for 2-year ZIF and 5-year ZuKo and ZIF Fellowships

In its most recent call for 2-year Postdoctoral and 5-year Research Fellowships (the closing date for applications was August 31, 2014), the Zukunftskolleg received 172 applications.

At its first meeting on October 1, the Recruitment Committee chose the finalists for the 2-year Postdoctoral Fellowships. In its second meeting on December 4, the best candidates chosen from among these finalists were offered a 2-year position. On the same day, the Committee chose the finalists applying for a 5-year Research Fellowship, who were invited to the “Workshop on Future Research Directions” on January 15, 2015.

The Zukunftskolleg offered the following Fellowships:

- **ZIF Marie Curie 2-year Postdoctoral Fellowships** (for any discipline represented at the University of Konstanz, Salary Scale 13 TV-L) for researchers in the early stage of their career to enable them to develop and carry out individual and independent research projects. This call for proposals is part of the *Zukunftskolleg Incoming Fellowship Program (ZIF)* and is financed by the Seventh Framework Program (FP7) Marie Curie Actions – People (co-funded by regional, national and international programs), the German Research Foundation (DFG) and the University of Konstanz. The rules and ethical principles for FP7 and the DFG guidelines apply.
- **Zukunftskolleg Research Fellowships and ZIF Marie Curie 5-year Research Fellowships** (for any discipline represented at the University of Konstanz, Salary Scale 14 TV-L) to develop and carry out individual research projects. This call for proposals is part of the *Zukunftskolleg Incoming Fellowship Program (ZIF)* and is financed by the Seventh Framework Program (FP7) Marie Curie Actions – People (co-funding for regional, national

and international programs), the German Research Foundation (DFG) and the University of Konstanz. The rules and ethical principles for FP7 and the DFG guidelines apply.

Co-funding

The Executive Committee and the Director of the Zukunftscolleg approved 52 applications for start-up funding, student assistants, travel allowances and consumables between September 2014 and March 2015 for a total of 171,078.12 euros.

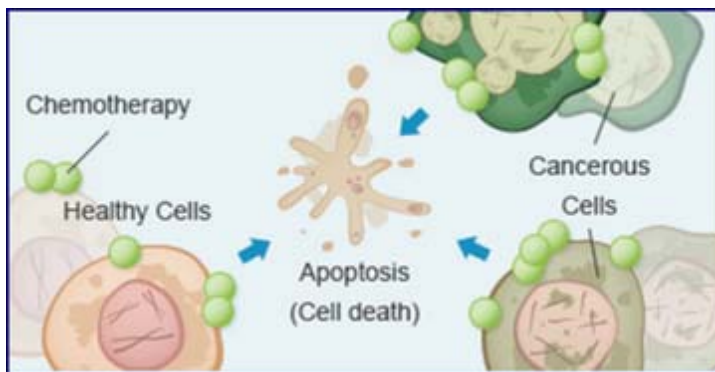
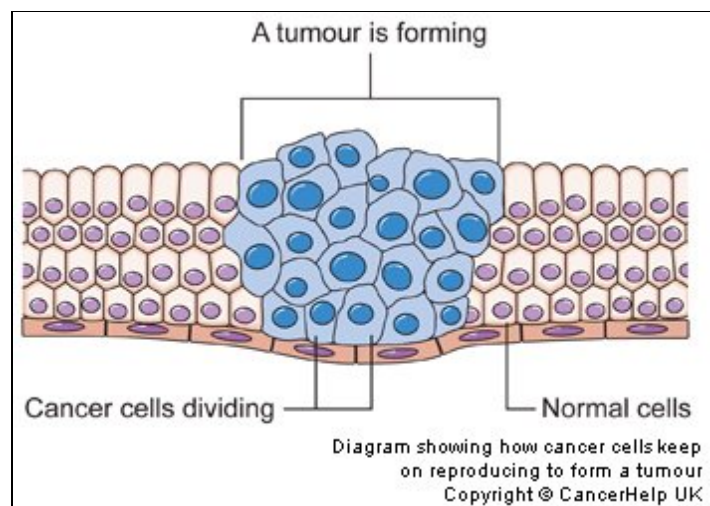
Events

Jour Fixe

Good Chemistry between Romania and Germany

Jour Fixe talk by Marilena Manea on October 16, 2014

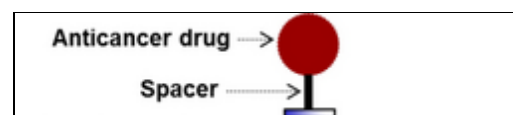
As the University of Konstanz this year celebrates 20 years of partnership with the University A.I.I. Cuza in Iasi, Romania, the Zukunftscolleg participated in the festivities with an extraordinary Jour Fixe on October 16. Silvia Mergenthal (Vice Rector, International and Equal Opportunities) and Giovanni Galizia opened the session, before Marilena Manea talked about “Targeted Cancer Chemotherapy: Peptide-based Anticancer Drug Delivery Systems.”



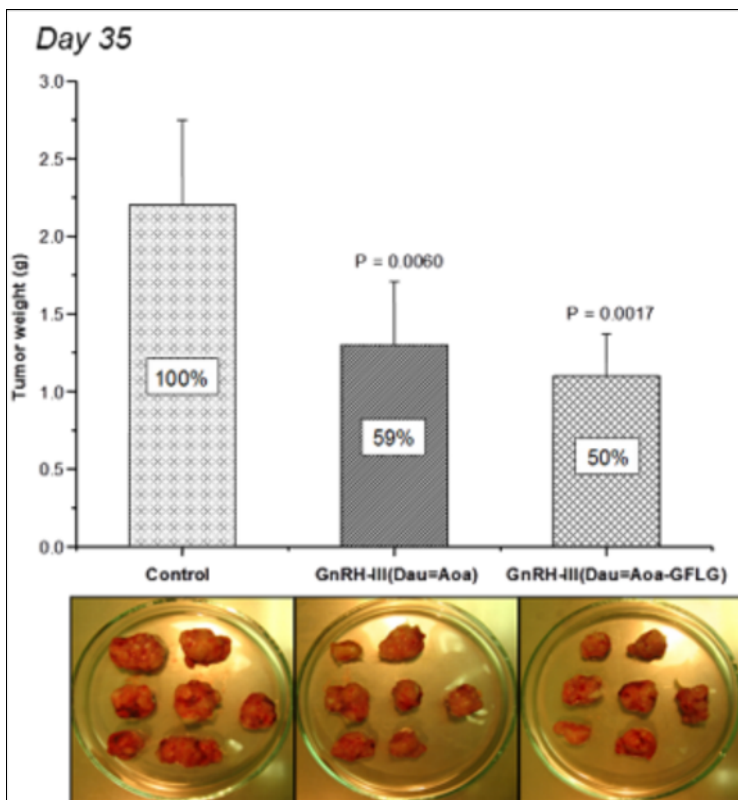
Marilena Manea represents the perfect link between Konstanz and Iasi: Born in Romania, she studied chemistry and physics at the University A.I.I. Cuza from 1995 until 1999, followed by master studies in enzymology and biotechnology. In October 2000, she came to Konstanz to do the experimental part of her master's thesis. Her doctoral thesis, which she defended in 2006, was also completed at the

University of Konstanz. Subsequently she worked as a postdoc in the Department of Chemistry, before becoming a Zukunftscolleg Fellow in 2008. One of her major research interests is the development of targeted cancer chemotherapeutics, in particular peptide-based anticancer drug delivery systems.

Cancer is a major public health problem and the second-leading cause of death. Marilena Manea aims at developing a cancer chemotherapeutic approach that



targets tumors with peptides. The most common treatments for cancer are surgery, radiation therapy and chemotherapy. However, in the case of advanced or metastatic cancer, chemotherapy is still the main therapeutic approach. Due mostly to their lack of selectivity, the administration of free chemotherapeutic agents (i.e. conventional chemotherapy) is followed by side-effects, such as a decreased production of blood cells, immunosuppression, nausea and vomiting, digestive problems, hair loss, etc. Therefore, the development of an alternative targeted chemotherapeutic method, providing increased selectivity and decreased systemic toxicity, is of interest for Marilena Manea.



In the case of targeted chemotherapy, the anticancer drug is attached to a so-called targeting moiety, for instance a peptide, which specifically binds to its receptors expressed on the surface of cancer cells. Thus, the hybrid cytotoxic compound (i.e. anticancer drug-peptide bioconjugate) enters the cancer cells by a receptor-mediated pathway. It has been found that several regulatory peptides have membrane-bound receptors on different types of tumors. One of these peptides – that the chemist uses in her work – is the gonadotropin-releasing hormone (GnRH). GnRH receptors are highly expressed on cancer cells, with limited expression in healthy tissues. Hence, they are important molecular targets for cancer therapy. GnRH derivatives are employed as targeting moieties for the attachment

and subsequent delivery of anticancer drugs to tumors expressing GnRH receptors. In her work, Marilena Manea employs modified GnRH peptides to obtain the best results in targeting the tumors and reducing the side-effects of chemotherapeutic agents. But this is also what makes her research extremely difficult, and it will undoubtedly be some years before she finds a targeted chemotherapeutic agent with potential applications in humans.

At the end of her talk, she thanked the University A.I. Cuza and the Zukunftskolleg for supporting her work and said she was looking forward to further collaborations between Konstanz and Iasi.

More information about Marilena Manea

Against Iron Piracy

Jour Fixe talk by Thomas Böttcher on October 30, 2014

Why should we try to understand microbes? – By asking this question Thomas Böttcher started his presentation “From Signals to Language: Insights into Bacterial Population Behavior” and made clear the importance of his research. While the human body contains about 10 trillion human cells, ten times more or 100 trillion microbial cells live in and on us. Of these 100 trillion microbial cells, many are beneficial to us and even determine who we are, but many can cause diseases. Worldwide approximately 17 million deaths per year are caused by infectious diseases, mainly bacteria.

The chemist’s aim therefore is to understand microbial behavior and find alternatives to antibiotics. Specifically, he wants to investigate the signals involved in the control of bacterial population behavior, discover small molecules to manipulate bacterial behavior, and finally develop novel drugs to treat bacterial infections.

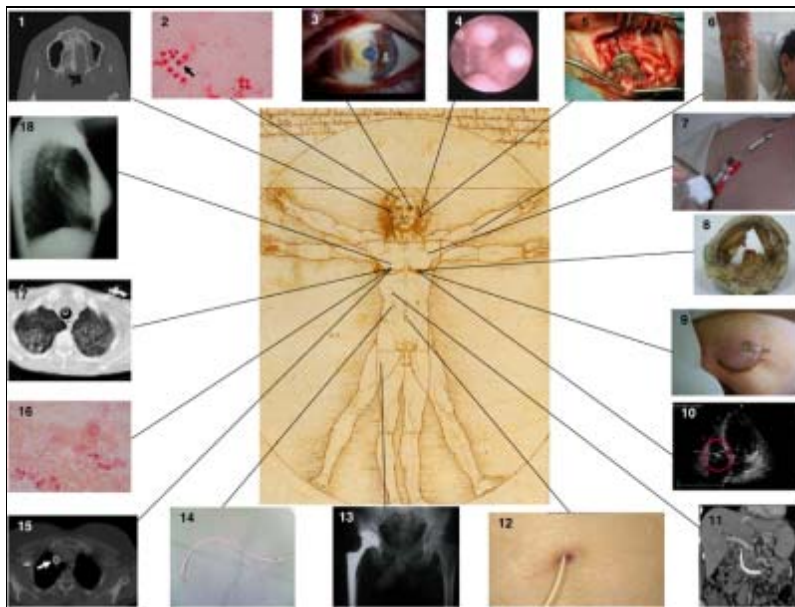


Photo: J.L. Del Pozo, R. Patel (2007) Clin. Pharmacol Ther. 82(2):204-9

Understanding microbial behavior means understanding microbial communication. Microbes communicate in order to achieve coordinated population behavior. In larger collectives, the behavior of bacteria is controlled by a process known as quorum sensing that uses self-produced signaling molecules as a measure for the number bacteria in a given volume. The presence of a sufficiently high population density of bacteria in a particular environment leads to a rapid increase in the concentration of these signaling molecules. When the concentration exceeds a certain threshold, a molecular switch is flicked, which results in the expression of certain genes, e.g. enzymes required for the formation or degradation of biofilms. Biofilms are, besides swarming, one extreme of bacterial population behavior which cause 90% of human diseases. Biofilms are a physical barrier and give the bacteria increased resistance to antibiotics.

Signaling molecules of this kind can also be produced by one organism in order to manipulate the behavior of another. Thomas Böttcher found that the bacterium *Shewanella algae* produces a previously unreported molecule that inhibits the bacterium *Vibrio*



alginolyticus from swarming in its vicinity. This molecule is a siderophore, an iron-binding compound used by bacteria for taking up iron from their environment. Biologically available iron is usually relatively limited and in great demand.



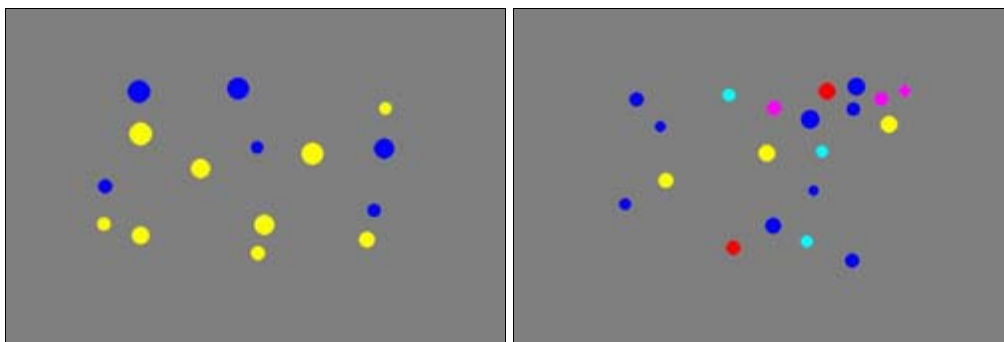
Such siderophores can often be used not only by the bacteria that produce them, but also by other strains. However, the molecule called avaroferrin binds iron in a way that prevents bacteria other than the producer from using it. Avaroferrin therefore prevents *Vibrio alginolyticus* from pirating iron and secures this essential resource for its producer. Foreign organisms are thus cut off from the iron source and are unable to grow effectively. Accordingly, avaroferrin has great potential as a biotechnological tool, for example for the treatment of bacterial infections.

More information about Thomas Böttcher

Most Interesting!

Jour Fixe talk by Paul Pietroski on November 13, 2014

As a guest of the Zukunftskolleg's Foundation of Semantics working group, Paul Pietroski was invited to give a talk at the Jour Fixe. He is a Professor of Philosophy and Linguistics at the University of Maryland. His main research interests lie at the intersection of these fields. Recently, his work has focused on how grammatical structure is related to logical form, how meaning is related to truth, and how human concepts are related to linguistic understanding. His research group relies on insights from the study of vision in their experimental studies of linguistic meaning. In his lecture titled "Semantic Framing: The Meaning of 'Most'," Paul Pietroski presented a case study in which the meaning of *most* was investigated. Twelve naive adults were given 360 trials each; each trial was based on 5-17 dots of two or more different colors (e.g. blue and yellow). The trials varied by ratio (from 1:2 to 9:10) and type. Each "dot scene" was displayed for 200ms. The target sentence was: *Are most of the dots yellow?* The participants could answer 'yes' or 'no' by pressing buttons on a keyboard and the correct answers were randomized.



Are most of the dots yellow?

Paul Pietroski and his collaborators wanted to find out how the interrogative sentence is understood, and what conditions make the interrogative easy/hard to answer? They expected that their analyses might provide clues about how the sentence is understood (given decent accounts of the information available to human beings in those conditions).

They applied a model of “Approximate Number System” (key feature: ratio-dependence of discriminability), which proved that distinguishing 8 dots from 4 (or 16 from 8) is easier than distinguishing 10 dots from 8 (or 20 from 10). In correlation, as the number of dots rises, “acuity” for estimating cardinality decreases, but still in a ratio-dependent way, with wider “normal spreads” centered on right answers.

Further they discovered that the performance of the participants was better if the question was not posed with *most*. Framing the question with *most* has effects that are expected if the question is understood in terms of cardinality comparison. It also has effects that are expected if the question is understood in terms of cardinality subtraction.

In scenes with two colors, e.g. blue and red, the *non-blues* can be identified with the reds. The visual system “selects” the *dots*, the *blue dots*, and the *red dots*; these 3 sets are estimated for cardinality, but adding colors makes it harder (and with 5 colors, impossible) to obtain a cardinality estimate for each color.

Based on these findings Paul Pietroski concludes that the way you ask the question is more important than the number of dots – as people seem to hate counting – which means that semantic framing has an effect on the meaning of words such as *most*.

More information about Paul Pietroski

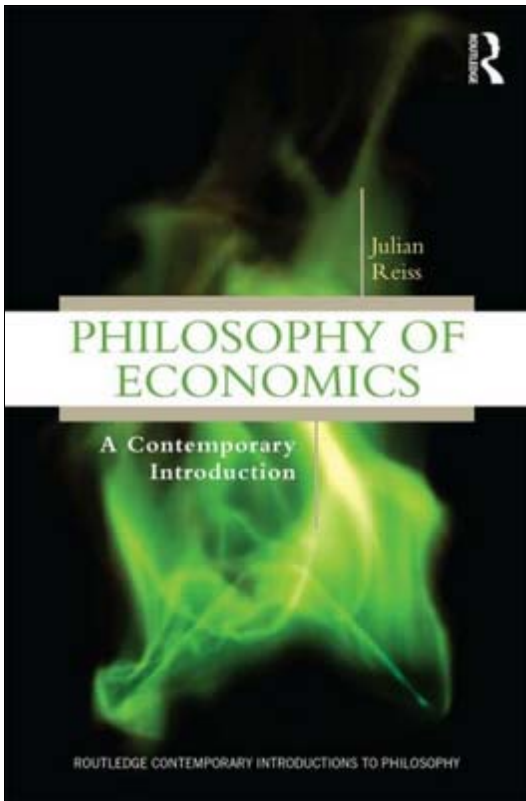
What causes what?

Jour Fixe talk by Julian Reiss on November 27, 2014

Julian Reiss, Mentor of Associated Fellow Tobias Henschen, was invited to present his research at a Jour Fixe. He talked about “Cause, Causatives, and Theories of Causation” and addressed his main concern: Providing a satisfactory account of causation in the sciences. His work focuses on the biomedical and social sciences, taking a closer look at the causal language that is employed in science.

Instead of starting with metaphysical intuitions and policing what scientists say according to a priori principles, Reiss proposes to take the language scientists employ at face value and develop a philosophical theory from there. His specific target is attempts to explicate causation by means of the expression “C causes E iff ‘...’” — theories to which he refers as “Straightjacket Theories of Causation.” Straightjacket theories have difficulty making sense of three features of scientific language: Indispensability of Causatives, Metaphysical Anarchy and Polysemy. The first means that scientific language is full of causatives, such as push, bond, attract, crunch, but it seems to be unclear whether you can always translate these into “cause + x”. Therefore, straightjacket theories cannot account for the large majority of causal claims in science. Metaphysical Anarchy means that scientific language is extremely flexible with respect to the “C’s” and “E’s” that are being causally related, or indeed with respect to what is represented by a causal claim. According to Julian Reiss, a theory of causation must be a theory of causal claims. The third feature says that

causatives are polysemous. What they mean depends on context. Therefore a theory of causation should be a theory of causal claims in a context.



Considering all these features, Julian Reiss opts for an alternative, namely inferentialism. He argues: “Causation and inference are clearly related. Causal claims, in conjunction with other knowledge, such as observations, allow inferences to future and past states of affairs. Observations, in conjunction with background knowledge, allow inferences to causal claims. The content of a causal claim is given by the set of propositions from which it follows and those which follow from it.”

Inferential systems consist of an inferential base (essentially, the evidence – RCTs, controlled experiments, statements describing experimental design, observational studies, statements describing how confounders and biases are ruled out, background knowledge, etc.), inferential targets (which account for the fact that causal claims are rarely established for their own sake, but rather, for their ‘cash value’: explanations, attributions of blame and praise, predictions, propositions about effective strategies), and the causal claim itself. To determine the content of

a causal claim, you have to ask: What is its inferential system? He gave an example: The inferential system of the sentence “Billy’s throw caused the iPad to shatter” (in a context when the iPad would have shattered anyway because of Suzy’s throw) consists of: critical observation as inferential base, which means observation plus critical background — assumptions that are contextually justified and claims such as “Billy’s throw explains the shattering” and “It was Billy’s fault” in the inferential target. Importantly, there is no counterfactual statement such as “Had Billy not thrown it, the iPad wouldn’t have shattered” in the inferential target, because we are entitled to infer this claim only in contexts when there are no backup causes.

He concluded his talk by summarizing how the inferential account deals with the three features about causal language in science. 1. Indispensability of Causatives: It makes no difference between sentences in which “cause” appears and those in which it doesn’t. For any sentence in a scientific publication, we can ask what the inferential system for this sentence is. Neither does “cause” vs. causative make a principled difference, nor whether the sentence is a causal claim at all. 2. Metaphysical Anarchy: As causation has to do with our reasoning practices and not with what the world is like, anything goes, metaphysically speaking, and no general metaphysical principles are assumed. 3. Polysemy: There is no principled difference between causal and non-causal claims; to what extent a claim is causal depends on the family resemblance of inferential systems. And family resemblance is much more than hand-waving in this case: We know the typical kinds of proposition in inferential base and target.



More information about Julian Reiss

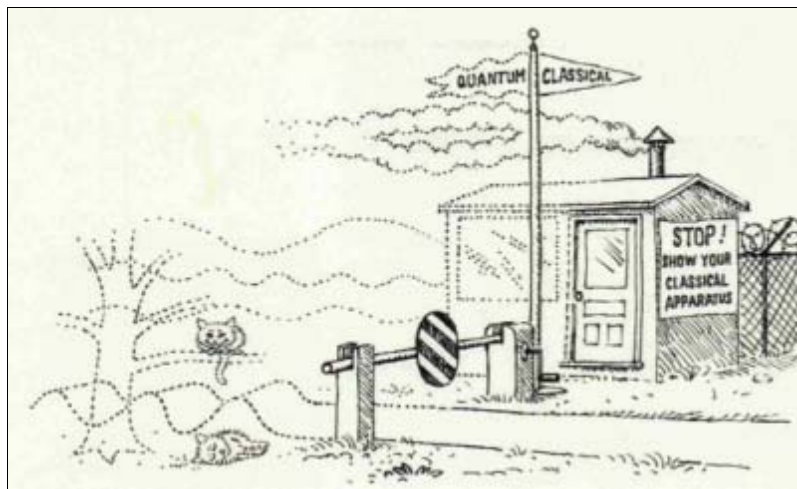
Spintronics meets Nanomechanics

Jour Fixe talk by Gianluca Rastelli on December 11, 2014

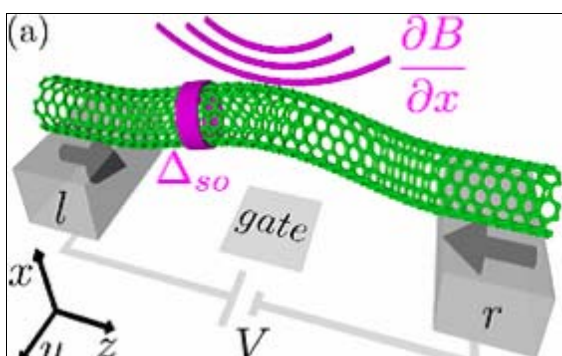
“The paradox is only a conflict between reality and your feeling of what reality ought to be.”

This quote by Richard Feynman can to some extent be seen as basis of Gianluca Rastelli’s research on quantum mechanics.

In short, quantum mechanics is the study of matter (atoms) and radiation starting from the atomic (microscopic) level. But what is its benefit? “Quantum mechanics offers a complex and fascinating worldview,” says the physicist. “It represents a unified description of the laws of nature. Its principles and concepts are fundamental and important in Chemistry, Biology, Electronic Engineering, Informatics, etc. Although its discovery dates back to the beginning of the past century, quantum mechanics only recently has shown its outstanding potential applications (nanosciences and quantum information). The investigation of these fundamental issues will be useful for many future technologies, such as for the development of new nanoscale optical/electronic devices, or perhaps even for the building of quantum computers and quantum communication.”



The study of quantum physics began in the early 20th century, when some experiments produced results which could not be explained by classical physics, the science developed by Galileo Galilei, Isaac Newton, James Maxwell, etc., which aimed at explaining physical objects larger than atoms and molecules.



Having two approaches, classical physics vs. quantum mechanics, produced open questions: Where is the border between the microscopic, purely quantum realm and our macroscopic world? Can we observe quantum phenomena in macroscopic systems (composed by a huge number of atoms)? What about quantum experiments with objects large enough to be visible to the naked eye?

Gianluca Rastelli has focused his research on quantum effects in solid macroscopic objects, especially on nano-electro-mechanical systems (NEMS). These are nano-electronic devices with a mechanical resonator. They can be applied in ultra-sensitive detectors for mass, forces at the microscopic scales and for charge and spin detection. The first solid object to be put into a quantum state was a mechanical drum. It was succeeded to convert such a large object to a quantum superposition state of moving (excited energy state) and not moving (ground state). The mechanical drum was formed by $N=1000000$ (millions) atoms.

The physicist explained: “Spintronics is an emerging technology exploiting both the intrinsic spin of the electron and its associated magnetic moment, in addition to its fundamental electronic charge, in solid-state devices.” He aims at analyzing how to drive the carbon resonator in a quantum regime, how to control its quantum states, and how to detect it. His objective is the control of carbon nano-mechanical resonators using spin-dependent quantum transport.

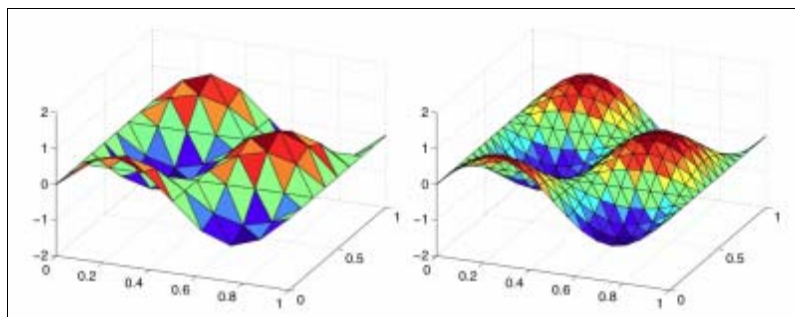


More information about Gianluca Rastelli

Reduce and Optimize

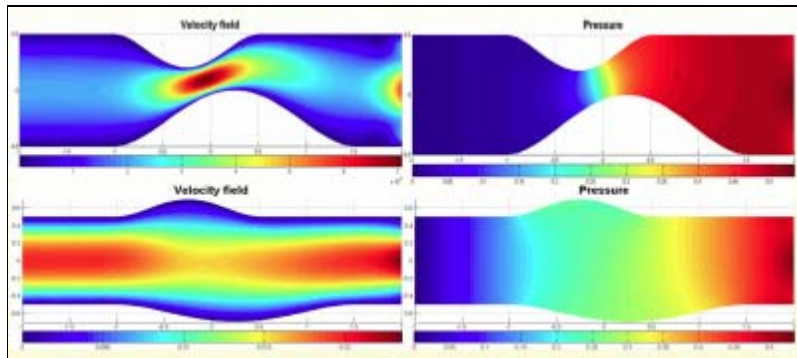
Jour Fixe talk by Laura Iapichino on January 22, 2015

The velocity of a car or plane is in large part dependent on its shape. But how can its ideal shape be defined exactly? This is one of the questions Laura Iapichino deals with in her research that she presented in her talk on “Reduced Basis Method and Optimization Strategies for Solving Complex Systems in Real Applications”.



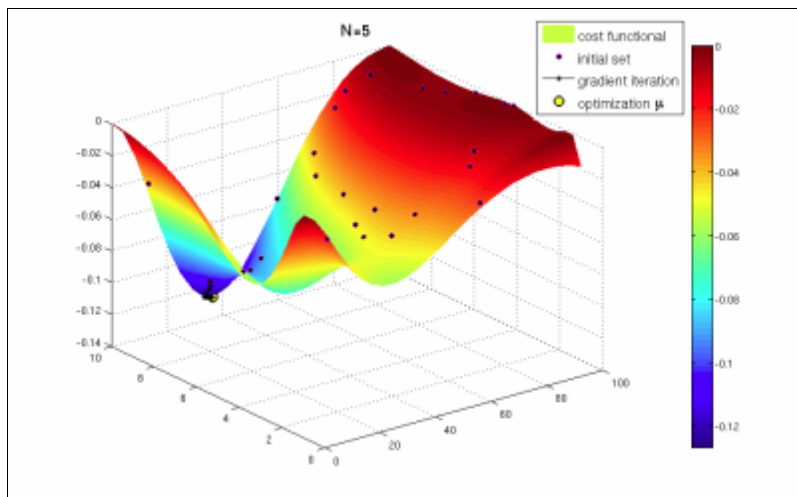
She works with mathematical models: a set of equations that interpret a phenomenon in the abstract terms of mathematics. A physical model often is represented by a set of partial differential equations (PDEs) in which a set of parameters characterizes the system of interest and describes physical quantities (like source terms, boundary conditions, material properties) and/or geometrical configuration, so that the system solution is parameter-dependent. The original physical problem (e.g. optimizing the shape of a car) can be seen as a “problem of infinite dimension” that requires an infinite number of information to precisely represent it. Computers can only deal with a finite number of information. Hence, an important role of numerical analysis is to project an infinite dimensional problem to a finite dimensional problem. Model order reduction further reduces the dimension of the problem by reducing the number of data needed to

solve the problem, while keeping the same level of accuracy of a method that requires a significantly larger number and requiring very little computational time.



The general idea of Laura Iapichino’s project is 1. To replace the full-order, expensive finite element (FE) approximation with a reduced-order inexpensive solution obtained by the Reduced Basis (RB) method and to apply this procedure among several kinds of applications and methodologies; and 2. To efficiently use the RB method to define the prediction of the system solution required for each different value of the parameters by providing efficient and rigorous error estimation.

“Our research goal is not only to use the reduced basis (RB) method for solving parametric complex systems, but also to trying to improve the method itself, in order to improve results and expand the range of applications,” explains the mathematician. “Moreover, we are interested in optimal control problems where suitable functions of state variables have to be minimized. These problems can be efficiently solved by applying the RB method, since state variables are solutions of the parametric PDEs representing a constraint for the minimization problem.”

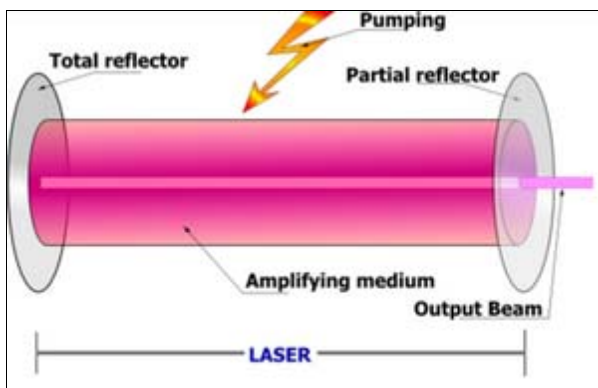


Lastly, Laura Iapichino summarized the possibilities of the RB method: “With a classical technique, such as the FE method, 3-D models of large structures can be solved to simulate how to design under stress, vibrations, heat, and other real-world conditions. These simulations require intensive computation done by powerful computers over many hours. The RB method, which is based FE, can use pre-calculated supercomputer data for a few specific conditions to solve the same model in a few seconds. Thus simulation that could take hours with the conventional FE method, could be done rapidly on an ordinary smartphone.”

More information about Laura Iapichino

Seeing Without Eyes

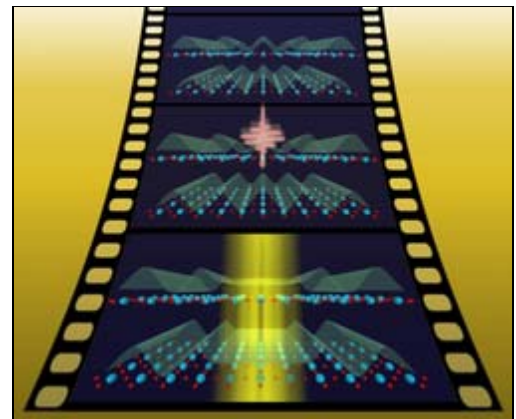
Jour Fixe talk by Daniele Brida on January 29, 2015



Thanks to the invention of photography, we are able to capture events, even if they are moving. But how can we observe something that is so fast that our eyes are unable to see it? In his presentation on “Ultrafast Science: Shedding Light on Nature’s Fastest Events,” Daniele Brida explained how this is possible. “If you want to measure something fast, you need something even faster,” he pointed out. “Our eyes are not a good instrument for studying fast phenomena.” But which scientific tools can we use to follow

events that occur on event faster timescales? A laser is the solution. It can amplify light by stimulating the emission of radiation. Whereas ordinary light/sunlight consists of different colors in different waves, standard lasers emit only one color – they are monochromatic – in a peculiar way (coherent), which allows for a lot of storage energy. “If I only have one color, I only have one energy,” says the experimental physicist. “If you fix the energy, time becomes infinitely extended, which means that monochromatic light implies infinitely extended waves.” To obtain really short pulses, it therefore is necessary to use special lasers that emit a rainbow of different colors at the same time.

In this way, lasers can generate ultrashort pulses down to few femtoseconds (one femtosecond is 10^{-15} seconds), and short pulses from ultraviolet to far-infrared (THz). The tunability is important for studying different – ultrafast – physical phenomena. Daniele Brida works on the generation of ultrafast pulses and the control of electron motion. His research focuses on ultrafast electronic processes (electron-electron and electron-phonon scattering), electron dynamics in layered materials (e.g. graphene), novel ultrafast sources, as well as nonlinear plasmonics (coherent quantum tunneling).



More information about Daniele Brida

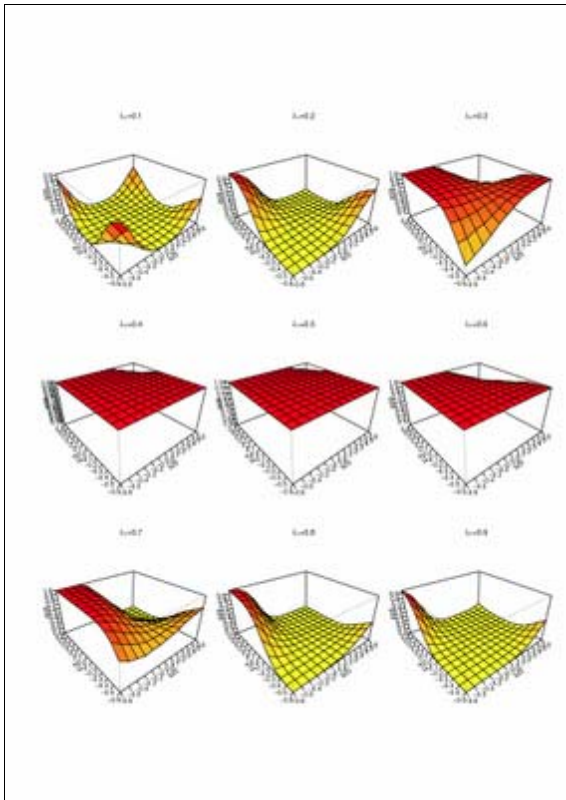
Forecasting Macroeconomic Variables

Jour Fixe talk by Evi Salamaliki on February 5, 2015

What is the causal relationship between female labor supply and fertility in the US? Does economic policy uncertainty play an important role in macroeconomic performance? These are some of the questions Evi Salamaliki deals with in her research and which she presented in her talk on “Trending macroeconomic time series and Granger causality.”

Her work is focused on time series data. A time series is defined as a sequence of values that a

specific variable has taken on over some period of time. The observations have a natural ordering in time, the observation frequency can be monthly (high frequency), quarterly or annual (low frequency).



Examples of economic time series are unemployment rates or a country's real gross domestic product. The main objectives of analyzing economic time series are: forecasting: information about the likely future evolution of economic variables, and the dynamic interrelationships between a number of variables. To analyze these interrelationships, the economist applies the Granger causality concept: "The analysis of Granger (1969) causality is one of the most popular tools in studying the dynamic interrelationships between sets of theory-related economic variables in a VAR (vector autoregressive) framework," she pointed out. "The standard notion of Granger causality restricts prediction improvement to a forecast horizon of one period, while it considers only direct flows of information between the variables of interest (direct causality). In VAR models with more than two variables, the standard Granger causality concept can be extended by examining prediction improvement at higher forecast horizons, so that indirect flows of

information might be revealed through the additional system variables. This concept of causality is also referred to as indirect or multiple horizon causality."

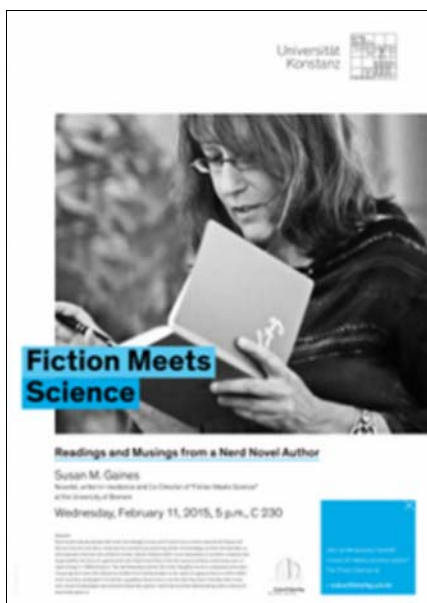
Evi Salamaliki's main research objective is to investigate how predictive ability changes under different trend treatments in VAR models. More precisely, she focuses on the cases of structural shifts in the level and slope of the trend function (which for series in logarithms represents average growth rate changes). Generally, as to trends, the relevant time series literature distinguishes between stochastic trends (shocks induce permanent and non-vanishing effects), deterministic trends (shocks induce transitory effects or effects that die out quickly), and the presence of structural breaks/shifts in the form of infrequent changes in the deterministic trend (or a combination of the aforementioned cases). "Our research is based on simulations under different combinations of breaks and dynamic parameters, as well as on empirical investigations based on specific VAR models."

More information about Evi Salamaliki

Public Lecture

Readings and Musings from a Nerd Novel Author

Susan M. Gaines Combines Fiction and Science, February 11, 2015



“You can take the girl out of the lab, but you can’t take the lab out of the girl.” With these words Julia Boll introduced Susan M. Gaines, whom she had invited to a reading at the Zukunftskolleg. Susan M. Gaines is a novelist, writer-in-residence and Co-Director of “Fiction Meets Science (FMS)” at the University of Bremen. FMS is an initiative that investigates the “world of science under the literary microscope”. Susan M. Gaines did her graduate work in organic chemistry at Scripps Institution of Oceanography before abandoning the laboratory for literary pursuits.

Gaines illustrated how she and other contemporary novelists explore worlds of knowledge, before she entertained the audience with two very different novels: “Carbon Dreams” (2001) and “The Last Naturalist and the Terrorists’ Daughter” (a work-in-progress). The only thing that both books have in common is that they are about human relationships and nature,

and the consequences of human action on a personal level, she explained.

“Carbon Dreams” is the story of a geochemist who gets sucked into the nascent global warming debate in the early 1980s and must come to terms with her conflicting responsibilities to science and society, even as she juggles the demands of vocation, career and love.

“The Last Naturalist and the Terrorists’ Daughter” is about the young bird-lover Gabe, who follows his mother from California back to her native Uruguay at the turn of the millennium. He becomes enamored of the marshes on his family’s land and of a local microbiologist who is studying them. But as his sense of the world and of his own future begins to expand, he finds himself and his lover trapped in a history that he had known nothing about.



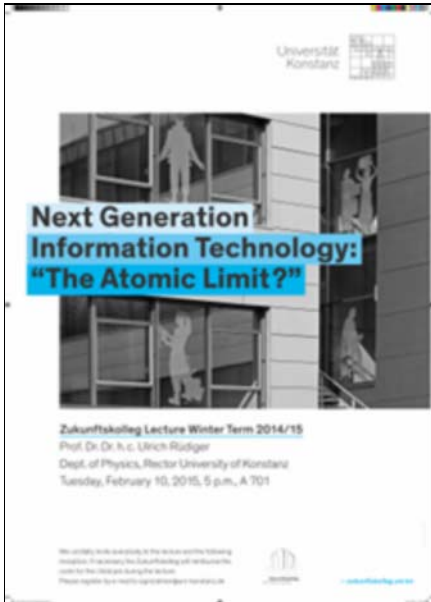
At the end of her reading, the novelist was asked if she has to deal with clashes between telling a story and explaining the science, and how she handles both. She pointed out: “The story comes first and then I try to explain the science. Science has to be plausible, but can be fictional,” or as *The Press Democrat* summed it up: “No contemporary novelist I know of makes science sexier.”

More information: www.fictionmeetsscience.org

Zukunftskolleg Lecture

The Atomic Limit?

Zukunftskolleg Lecture with Rector Ulrich Rüdiger, February 10, 2015



How will data storage of the next generation look like? Can single atoms store information? And is there an atomic limit? –Ulrich Rüdiger, physicist and Rector of the University of Konstanz, addressed these questions in his presentation.

The origin of magnetic data storage goes back to 1888 when the first tape drive was invented. IBM's Random Access Method of Accounting and Control (=RAMAC) was the first magnetic hard disk drive. In 1958 IBM announced its IBM 305 RAMAC, the first commercial computer that used a moving-head hard disk drive (magnetic disk storage). Also the compact cassette goes back to 1960.

What has happened since then?

“Downscaling, downscaling, downscaling,” says Ulrich Rüdiger. Only downscaling was necessary to develop modern technologies.

“The continuous further development of magnetic data storage and the transistor design has shaped information technology over the past 60 years and thus paved the way for its application in day-to-day processes.



The efficiency of the underlying components or concepts has nearly doubled every two years due to consistent miniaturization.” This corresponds to Moore's law from 1965 - named after Gordon E. Moore, co-founder of the Intel Corporation. It says that over the history of computing hardware, the number of transistors, which are the centerpiece of all microprocessors, in a dense integrated circuit doubles approximately every two years.

But according to Ulrich Rüdiger, further downscaling will be stretched to the physical limits of the established technologies in a few years' time. This means that only the introduction of fundamentally new physical approaches for the realization of data storage and processing will allow further miniaturization.

Ulrich Rüdiger conducted an experiment to show that data storage and processing basically is also possible on an atomic level. For that he generated atomic-resolution images of the graphite surface.

The manipulation of individual atoms on crystal surfaces with atomic resolution requires very low temperatures (-270 degrees Celsius) and an ultrahigh vacuum (ca. 10^{-10} mbar). Atomic resolution is based on the exponential decay of the tunneling current on the tip sample distance.



Nevertheless, he concluded his talk by stating that the cost and technology barrier of atomic scale computer devices may be higher than the physical limits of the established technologies.

Giovanni Galizia then honored Ulrich Rüdiger by presenting him with a Zukunftskolleg Lecture Certificate, as well as a new plaque showing the names of all previous Zukunftskolleg Lecture Award-holders - including Ulrich Rüdiger.

Invited Talks

Unai Axtitia Macizo:

“The Role of the Electron-phonon Coupling on Thermally Induced Magnetization Switching,” seminar at the Department of Physics, University of Zaragoza, Spain, December 2, 2014

“Thermally Induced Magnetization Switching in Ferrimagnets,” workshop “Excitation in Magnetism 2014,” University of Barcelona, Spain, December 5, 2014

“The Role of the Electron-phonon Coupling on Thermally Induced Magnetization Switching,” seminar at the Instituto de Ciencia de Materiales Madrid, Spain, December 9, 2014

Brendan Balcerak Jackson:

“Structural Entailment and Semantic Natural Kinds,” semantics colloquium at the Department of Linguistics, Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany, February 5, 2015

“Structural Entailment and Semantic Natural Kinds,” Philosophy Department colloquium, University of Miami (via video conference), USA, March 2, 2015

Francesca Biagioli:

“Are There Neo-Kantian Roots of Structural Realism?,” talk at the conference “FIRB: OntoForMat. Classical Paradigms and Theoretical Foundation in Contemporary Research in Formal and Material Ontology,” Università degli Studi di Milano, Italy, October 21, 2014

“Cohen und Helmholtz zur Frage nach den Grundlagen des Messens,” talk at the conference „Philosophie und Wissenschaft bei Hermann Cohen,” Institut Wiener Kries, University of Vienna, Austria, November 24-26, 2014

“Alois Riehl’s Epistemological Argument for Realism about the Things in Themselves,” research colloquium (Prof. Dr. Wolfgang Spohn), Department of Philosophy, University of Konstanz, January 13, 2015

Julia Boll:

“Objects of Scientific Inquiry: Ethics, Responsibility and Choice in Marianne Boruch’s Poetry Collection ‘Cadaver, Speak’,” invited talk at the annual Fiction Meets Science conference, University of Bremen, Germany, November 19-22, 2014

“Last Girl Standing: über die Kriegsstücke der schottischen Dramatikerin Zinnie Harris,” lecture with discussion as part of the workshop “Von Richard III. bis Pussy Riot. Die Inszenierung des Politischen im Theater und in den Massenmedien Europas,” part of master’s degree programme “Kulturelle Grundlagen Europas,” University of Konstanz, January 30, 2015

“Wasted Lives, Drowned,” research colloquium at the Department of Literature, University of Konstanz, Germany, February 2, 2015

“Objects of Scientific Inquiry: The Question of Ethics in Contemporary Literature on Science,” Research Day, Professor Aleida Assmann, University of Konstanz, Germany, February 13, 2015

Joanna Chojnicka:

“Gender and Sexuality in the Latvian, Lithuanian and Polish Media Discourse,” talk at the event “Gender and Diversity in Progress,” University of Konstanz, Germany, January 22, 2015

“Heterosexism in Latvian, Lithuanian and Polish Media Discourse,” invited open lecture within the event “Gesellschaft. Macht. Geschlecht” (Action week against sexism and homophobia), University of Konstanz, Germany, November 12, 2014

Monika Class:

“From Health Hazard to Respectability: The Transformation of Novel-Reading in 19th-century Britain,” literature colloquium, University of Konstanz, October 20, 2014

“Nature as Guarantee for Peace: Coleridge and Kant in the Late 1790s,” presentation at the research seminar for Eighteenth Century Studies at the English Department of Cambridge University, UK, November 20, 2014: http://www.english.cam.ac.uk/research/eighteenth/?page_id=16

Maité Crespo Garcia:

“How Old Memories Support Learning of New Information,” talk at the Zukunftscolleg Jour Fixe, December 4, 2015

María Cruz Berrocal:

“Hacer arqueología en el Pacífico: metodología, hipótesis, y resultados en Moturiki, grupo Lomaiviti, Fiji,” guest lecture at the Seminario de Estudios sobre Filipinas y el Pacífico ‘Leoncio Cabrera Fernández’, Universidad Complutense de Madrid, December 16, 2014

“Españoles en Taiwán: la colonia de San Salvador de Kelang,” lecture at the workshop “Nexos Coloniales. Iberia, De Colonia A Potencia Colonial,” Colegio de Arqueólogos de Madrid, February 26, 2015

Panteleimon Eleftheriou:

”I am Lying,” Zukunftscolleg Scientific Retreat, Kloster Hegne, November 15, 2014

“Semilinear Groups,” Real Geometry seminar, University of Konstanz, November 28, 2014

“Around Definable Compactness in Weakly o-minimal Structures,” Model Theory seminar, University of Konstanz, December 1, 2014

“O-minimality and Diophantine Geometry,” mathematics colloquium, University of Cyprus, December 12, 2014

Denis Gebauer:

“The Pre-Nucleation Cluster Pathway of Mineral Formation,” invited keynote lecture at the international workshop: “New Frontiers in Biomineral Formation Research: From Pre-nucleation Clusters to the Final Crystal,” Hokkaido University (Organizer: Jun Kawano), Sapporo, Japan, October 7-9, 2014

“Taking Advantage of Amorphous Mineral Precursors in Bio-Inspired Syntheses,” invited talk at the Hiroaki Imai Group Seminar, Keio University, Tokyo, Japan, October 10, 2014

“Advanced Nanohybrids of Calcium Carbonate and Cellulose,” invited talk at the Kick-off Meeting of the Research Consortium “Bio-inspired Materials Synthesis” of the Baden-Württemberg Stiftung gGmbH, Stuttgart, Germany, October 23, 2014

“Recent Insights into the Pre-Nucleation Cluster Pathway,” invited talk at the international workshop “The Granada - Münster Discussion Meeting On Crystal Growth and Biomineralization,” Westfälische Wilhelms-Universität Münster, Germany, November 27-28, 2014

“Mechanisms of Nucleation,” invited lecture at the International Biomineralization Short-Course, organized by MATISSE Laboratory of Excellence, CNRS & UPMC, Université Pierre et Marie Curie, Paris, France, December 1-4, 2014

Barbara Hausmair:

“Object-biographies and the Archaeology of National Socialist Concentration Camps,”

Zukunftskolleg Scientific Retreat, Kloster Hegne, November 15, 2014

Wolf Hütteroth:

“Associative Learning in the Fly – Rewards and their Dopaminergic Neuronal Representations,” tenure-track interview, Rijksuniversiteit Groningen, November 5, 2014

“Insect Neuroanatomy,” 3rd INsecTIME meeting, Rijksuniversiteit Groningen, January 28, 2015

Sven Lauer:

“Doing Things with Words: The Case of Exclamatives,” research colloquium, Department of English, University of Göttingen, January 12, 2015

“Exclamatives: The Conventional Dynamic Effect of an ‘Expressive’ Sentence Type,” colloquium at the Department of Linguistics, University of Konstanz, January 22, 2015

“Conditionalized Modal Sentences: Modus Ponens and Strengthening of the Antecedent,” interdisciplinary logic colloquium, University of Konstanz, February 5, 2015

Bernard Lepetit:

“From Photoprotection to Light Signaling in Diatoms: The Appearance of the Unexpected,” invited talk at the “Botanical colloquium” of the University of Mainz, Germany, January 2015

Marilena Manea:

“Targeted Cancer Chemotherapy: Peptide-based Anticancer Drug Delivery Systems,” Jour Fixe talk on the occasion of the 20th Anniversary of the Partnership between Al.I.Cuza University of Iasi and University of Konstanz, October 16, 2014

Michael Pester:

“The Importance of Minorities: How Low-abundance Species Contribute to Ecosystem Functions,” invited talk at the MPI for Terrestrial Microbiology, Marburg, Germany, October 27, 2014

“The Importance of Minorities: How Low-abundance Species Contribute to Ecosystem Functions,” invited talk at the MPI for Marine Microbiology, Bremen, Germany, November 27, 2014

Beatriz Puente-Ballesteros:

“Tasting Chocolate at the Kangxi Court: Medicine, Politics and Global Trade Flows in the Seventeenth Century,” invited by Professor James Robson, China Humanities seminar, Harvard University, U.S., October 20, 2014

“God’s Gift for the Son of Heaven: The Unsung Story of Chocolate in Early Qing China,” lecture at the international workshop “Globalizing Chinese Medicine in the 17th Century: ‘Translation’ at Work,” organized by Prof. Harold J. Cook at the Department of History, Brown University, Providence, U.S.A., October 16-17, 2014

Gianluca Rastelli:

“Nanomechanics Meets Spintronics: Spin-dependent Transport and Nanomechanical Spin-valve,” seminar “Condensed Matter,” Department of Physics, University of Yale, USA, October 30, 2014

“Nanomechanics Meets Spintronics: Spin-dependent Transport and Control of Vibrational States in a Carbon Resonator,” Condensed Matter Theory & Quantum Computing Group, University of Basel, Switzerland, December 15, 2014

“Control of Vibrational States by Spin-polarized Transport in a Carbon Nanotube Resonator,” Institut für Theoretische Physik, Theorie der kondensierten Materie, Ulm, Germany, January 22, 2015

Tanja Rinker:

„Neurophysiologische Indikatoren rezeptiver Sprachkompetenz bei türkisch-deutschen Kindern und bei Kindern mit SSES“ (with Shafer, V.L.), talk held at the 8th. Interdisziplinäre Tagung über Sprachentwicklungsstörungen, Munich, Germany, November, 2014

Antonio Rotolo:

“Medieval Sicily. History and Archaeology of Landscape in the Trapani Mountains,” Sheff. Tuesday Archaeological Lecture Series, University of Sheffield, Sheffield, February 10, 2015

Jennifer L. Sparr:

“Gender Differences in Political Skills and their Relationship to Career Success,” talk at the workshop “The Promise of Gender Diversity in Teams,” organized by the Chair of Management, esp. Strategy and Leadership (Prof. Boerner) and the Chair of Organizational Studies (Prof. Kunze) as part of the “Gender Research Week” of the Department of Politics and Public Administration, University of Konstanz, November 14, 2014

Gudrun Sproesser:

“Always Look on the Bright Side of ... Eating,” ScienceSlam, organized by LUUPS, Stuttgart, November 24, 2014

“Warum man isst, was man isst: Psychologische Einflussfaktoren auf das normale Essverhalten,” Presentation in the Luisenlinik, Bad Dürkheim February 11, 2015

Margaret Thomas:

“Counting Points and o-minimality,” seminar around o-minimality at the Department of Mathematics, University of Pisa, Italy, November 14, 2014

Andreas Trotzke:

“A Constructionist Approach to Idiom Formation and Interpretation in Current Minimalism” (with Jan-Wouter Zwart), 6. Internationale Konferenz der Deutschen Gesellschaft für Kognitive Linguistik (DGKL 6): Constructions & Cognition, University of Erlangen-Nürnberg, September 30 - October 2, 2014

“Modal Particles and their Homonyms: Meaning Frequency and Interpretation” (with Laura Dörre und Josef Bayer), Experimental Psycholinguistics Conference (ERP) 2014, U Madrid, October 1 - 3, 2014

“Mirativity, Emphasis, and German Word Order,” international conference on Evidentiality and Modality in European Languages, Universidad Complutense Madrid, October 6-8, 2014

“The Grammar of Emotions: Word Order, Particles, and Emphasis”, UC San Diego, March 17, 2015

“The At-issue and Non-at-issue Meaning of Modal Particles and their Counterparts” (with Laura Dörre, Anna Czypionka and Josef Bayer), 28th CUNY Conference on Human Sentence Processing, USC Los Angeles, March 19 – 21, 2015

“From Information Structure to the Expressive Dimension” (with Giuseppina Turco), 28th CUNY Conference on Human Sentence Processing, USC Los Angeles, March 19 – 21, 2015

Participation in Workshops, Symposia, Conferences

Unai Atxitia Macizo:

59th Annual Magnetism & Magnetic Material Conference, Honolulu, Hawaii, November 3-7, 2014

Workshop “Excitation in Magnetism 2014,” University of Barcelona, Spain, December 4-5, 2014

Edgar Luescher Seminars 2015, Klosters, Switzerland, February 7-13, 2015

Brendan Balcerak Jackson:

Workshop on “Semantic Content and Conversational Dynamics,” Universidad de Barcelona, Spain, November 6-8, 2014

Research retreat on “Semantic Pluralism,” University of Konstanz, Germany, January 17-18, 2015

“What If?,” interdisciplinary research retreat, Kloster Hegne, Germany, February 6-8, 2015

Francesca Biagioli:

„Philosophie und Wissenschaft bei Hermann Cohen,” Institut Wiener Kries, University of Vienna, Austria, November 24-26, 2014

“Emergence in Physics Workshop,” University of Leeds, UK, February 27, 2015

“History and Philosophy of Science Seminar,” University of Leeds, UK, weekly from February to March 2015

Julia Boll:

Inaugural meeting of the editorial review board, book series “Off the Fence: Morality, Politics and

Society” (London: Rowman & Littlefield), University of London, Bloomsbury Campus, November 7, 2014

Joanna Chojnicka:

“Resistance. Subjects, Representations, Contexts,” international and interdisciplinary conference with Gayatri Spivak, Carl von Ossietzky University in Oldenburg, Germany, November 6-8, 2014

“Dissident Online Journalism: Investigating Polish LGBTQ Blogs,” panel contribution at conference “Hybridity and the News. Hybrid Forms of Journalism in the 21st Century,” Brussels, Belgium, December 4-5, 2014

“A Post-civil Society? Political Society Beyond Western Constructs,” workshop with Ajay Gudavarthy and Trevor Stack, Zukunftskolleg, University of Konstanz, December 10, 2014

“Climate. Change. Justice,” organization of conference week at the Leuphana University in Lüneburg, chairing project group sessions (presentations of students’ projects) as well as preparing and chairing the plenary discussion on advantages and disadvantages of method-oriented and problem-oriented seminars within the Leuphana Semester program, together with Norman Laws, February 24-26, 2015

Monika Class:

“The Visceral Reader in E. M. Braddon’s Lady Audley’s Secret,” research workshop with Professor Aleida Assmann, University of Konstanz, February 13, 2015

Regular Participation as Research Associate in discussions of the Centre for Medical Humanities at King’s College, London, UK

Maité Crespo Garcia:

MEG symposium in Tuebingen, poster presentation “Beyond Theta: Human Brain Oscillations Contributing to Spatial Navigation Revealed by a Simultaneous Recording of MEG and Intracranial EEG,” October 27-28, 2015

Denis Gebauer:

“Nucleation - A Transition State to the Directed Assembly of Materials,” Faraday discussion, Leeds Beckett University, Leeds, UK, March 30 - April 1, 2015

Sven Lauer:

“Hypothetical Facts and Hypothetical Ideals in the Temporal Dimension” (with Cleo Condoravdi), 37th Annual Meeting of the Deutsche Gesellschaft für Sprachwissenschaft (DGfS), AG 14: Modelling Modality, Leipzig University, Germany, March 4-6, 2015

Marilena Manea:

Participation in the exhibition “Women on the Move,” Akademie am See 2014, Mainau Island, Konstanz, October 9-10, 2014

Michael Pester:

“How Rare Biosphere Members Contribute to Biogeochemical Cycling: The Ecology of Low-abundance Sulfate Reducers in the Hidden Sulfur Cycle of a Model Peatland” (with Hausmann, B., Knorr, K.-H., Malfatti, S., Tringe, S., Glavina del Rio, T., Albertsen, M., Nielsen, P.H., Stingl, U., Loy, A.), VAAM annual conference Dresden, Germany, October 5-8, 2014

Gianluca Rastelli:

Annual plenary and research council meeting of the SFB 767, University of Konstanz, February 5, 2015

Retreat meeting of SFB 767, Bludenz, Austria, October 6-8, 2014

Scientific retreat in Kloster Hegne, Zukunftskolleg, November 14-15, 2014

Tanja Rinker:

”Sprachentwicklung türkisch- deutsch aufwachsender Kinder mit und ohne SSES,” organization of a symposium at the 8. Interdisziplinäre Tagung über Sprachentwicklungsstörungen, Munich, Germany, November, 2014

“Multilingualism in Educational Institutions,” one-year anniversary of the Center for Multilingualism, January 24, 2015, Konstanz

Paraskevi Salamaliki:

8th International Conference on Computational and Financial Econometrics (CFE 2014), Pisa, Italy, December 6-8, 2014, title of the presented paper: “Investigating Economic Policy Uncertainty – Economic Activity Causality: The Role of Infrequent Shifts and Omitted Variables”

Minmin Shen:

IEEE International Conference on Image Processing (ICIP), Paris, France, October 27-30, 2014

Margarita Stolarova:

57. Tagung experimentell arbeitender Psychologen (TeaP), Hildesheim, Germany, March 2015, title of presented poster: “Finding the Odd One out: Trivial Need-of-help is a Salient Social Stimulus for Children”

Contributing to an International University Debate, Media Presence

Unai Atxitia Macizo was asked to consultant on an article about magnetic hard disks in the Spanish national online journal: *eldiario.es*. Link: http://www.eldiario.es/hojaderouter/tecnologia/hardware/disco_duro-almacenamiento-duracion-tecnologia-ordenadores-materiales-big_data_0_348565393.html

Wolf Hütteroth:

The article “Neural Correlates of Water Reward in Thirsty Drosophila” (by Suewei Lin, David

Owald, Vikram Chandra, Clifford Talbot, Wolf Hütteroth, Scott Waddell) in “Nature Neuroscience” (see publications) resulted in several articles in public media:

“The Thirsty Mind,” The New Yorker by Weiner G., September 29, 2014

“Was durstige Fliegen zum Wasser treibt,” Spiegel online by Kuhrt N./dpa, September 29, 2014
„You Can Bring a Fly to Water...but is it Rewarding for it to Drink?,” ars technica by Gitig D., October 4, 2014

“Converting Drosophobia into Drosophila,” Nature Neuroscience 17:1430-1432, News and Views by Shih MFM, Dubnau J., 2014

Tanja Rinker:

The local newspaper *Südkurier* reported on the first anniversary of the Center for Multilingualism: www.suedkurier.de/region/kreis-konstanz/konstanz/Englisch-zu-Hause-deutsch-in-der-Kita;art372448,7566281

Ulrich Sieberer and **Dominik Hierlemann**, on behalf of the Bertelsmann Stiftung, conducted a study on the performance of the German Parliament: the way it debates, the media coverage of these debates, and their perception by citizens. The study found that parliamentary debates seem to be quite boring for the public, thus media coverage of them is poor, and as a consequence people know very little about the work and the decisions taken by their representatives. On the other hand, citizens’ expectations regarding their representatives are very high.

The authors recommend specific steps for reform to make parliamentary debates more attractive to the public and to develop a new model for questioning the government. Their model integrates parts of the established procedure in the Bundestag with aspects of the well-known “Prime Minister’s Questions“ in the United Kingdom. The model provides for regular questioning of the Chancellor, the Vice-Chancellor and cabinet ministers, topically open and short questions, and questions asked by MPs and submitted by citizens.

Read the full study and a short policy brief outlining the new model here (only available in German):

<http://www.bertelsmann-stiftung.de/de/publikationen/publikationen/publikation/did/sichtbare-demokratie/>

<http://www.bertelsmann-stiftung.de/de/publikationen/publikationen/publikation/did/einwurf-42014/>

After the study was published in December 2014, there was extensive media coverage, among others by ZDF, SWR, Sueddeutsche Zeitung, Spiegel Online, Die Zeit, dpa, Deutsche Welle.

Nina Schneider:

The radio station Deutsche Welle Brazil published an interview with Nina Schneider, in which she provides an initial assessment of the final report of the Brazilian Truth Commission that was released on December 10, 2014. She expects that the research activities surrounding the military regime (1964-1985) will continue.

Many families of the disappeared continue to lack information about the whereabouts and circumstances of the death of their loved ones, who disappeared during the dictatorship. The Truth Commission could not solve these cases, because the armed forces failed to deliver the

necessary documentation. The documentation of the military intelligence organs is said to have “disappeared,” according to the military institution.

Read more of the interview (only available in Portuguese):

<http://www.dw.de/brasil-encara-responsabilidade-na-ditadura-diz-historiadora/a-18112450>

as well as in a report:

<http://www.dw.de/cnv-responsabiliza-estado-por-crimes-cometidos-pelo-regime-militar/a-18119408>

Another article appeared at the TJinBrazil Website of Tulane University (in English):

<http://transitionaljusticeinbrazil.com/2014/12/10/brazils-national-truth-commission-releases-its-final-report/>

The final report of the Brazilian Truth Commission also reveals that more than 80 national and international business companies collaborated with the organs of repression during the military regime including several German companies. In another interview with Deutsche Welle, Nina Schneider argues that these firms will have to investigate these cases, as Brazilians are demanding reparations. Volkswagen has already declared that it will investigate the cases and that the company regrets any involvement of their staff in the crimes. Read more here (in Portuguese):

<http://www.dw.de/relat%C3%B3rio-da-cnv-revela-caso-de-tortura-em-f%C3%A1brica-da-volkswagen/a-18126119>

Gudrun Sproesser:

”Keine Angst vor Schoko-Hunger,” hkkMagazin, October 2014

Zukunftskolleg:

Working at the Zukunftskolleg can lead to more innovative topics – at least according to a study entitled “Age and the Trying Out of New Ideas.” Economist Mikko Packalen from the University of Waterloo in Canada and economist Jay Bhattacharya from Stanford University in California conducted an analysis of more than 20 million biomedical papers published over the past 70 years. They found that young researchers are much more likely than older scientists to study exciting innovative topics. More-senior researchers are more likely to publish in hot areas when they are supervising a younger scientist.

Packalen and Bhattacharya also analyzed the career stages of papers’ first authors (who tend to do the bulk of the research) and last authors (who tend to be supervisors), and found that the most innovative combination was an early-career first author and a mid-career last author. “One reading of the results is that we quantified something that a lot of people thought was true: That young people are innovative, but also need some mentorship,” stated Packalen.

The working paper was published by the US National Bureau of Economic Research.

Read more at <http://www.nber.org/papers/w20920.pdf>

Latest Collaborations

Designing the Future of the Zukunftskolleg

Scientific Retreat at Kloster Hegne, November 14-16, 2014

Discussions, presentations and future collaborations – The three days in Hegne were mainly

dedicated to these three activities, and the results were quite productive.



On Friday afternoon, the Fellows started with a discussion of the question: Should we, or could we use the unique feature of the Zukunftskolleg, namely its interdisciplinarity, to gain a better position within the university and to benefit our work and our CVs? María Cruz Berrocal argued: “Interdisciplinarity is the most obvious feature of the Zukunftskolleg, since the departments are designed as nodes of attraction and not necessarily as platforms to channel resources outside through collaboration with other departments. There are also no specific tools they can use in order to foster these collaborations.” A debate ensued concerning whether the Fellows could create these tools and platforms to promote the existing trend of interdisciplinary collaboration and enhance it meaningfully. Concrete ideas resulting from this discussion were pursued in working groups on Sunday.

Dating, Singing and Presenting

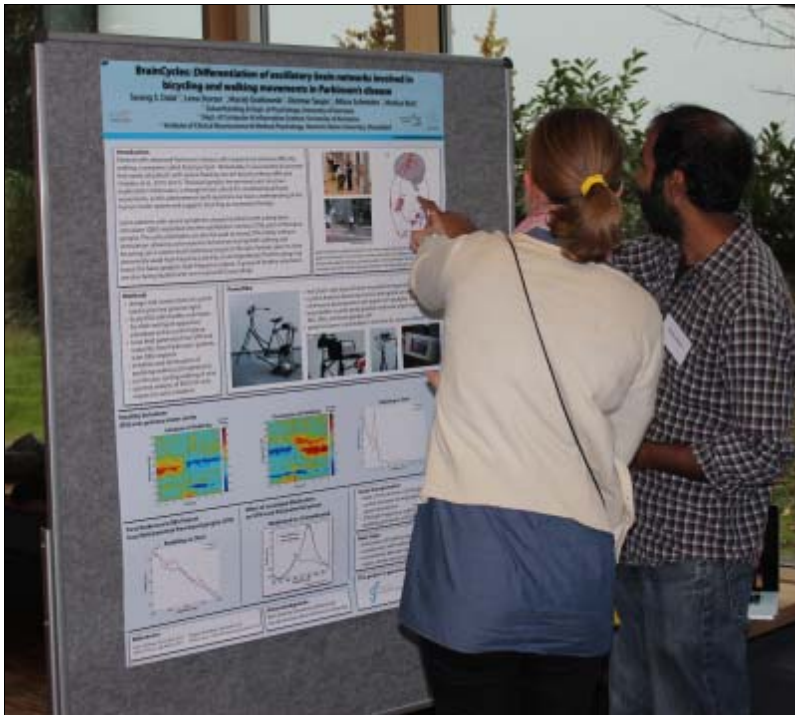
The best way to start new collaborations among Fellows was fostered not only by a research speed dating event held on Friday evening, in which two Fellows “dated” and talked for a few minutes about their projects before rotating to the next “date,” but also by poster sessions on Saturday. In addition, ZuKo members demonstrated their scientific and musical talents in guitar and singing sessions on Friday and Saturday nights!



On Saturday, some Fellows had the opportunity to present their research in detail: Philosopher Francesca Biagioli talked about the “Mathematical and Transcendental Method in Ernst Cassirer's Philosophy of Science.” The presentation addressed the problem of formulating necessary and universally valid principles of knowledge after theory change. She reconsidered Cassirer's argument for continuity across theory change for the use of the mathematical method in defining physical objects.

Archaeologist Barbara Hausmair explained “Object Biographies and the Archaeology of National Socialist Concentration Camps.” She discussed how studying objects stemming from NS concentration camps – looking at their material properties, traces of use, the contexts in which

they occur and connecting them with other historical sources, e.g. the memoirs of survivors – offers the possibility of gaining further insights into the prisoners’ struggle for survival, everyday life and changing conditions in the camps.



Mathematician Pantelis Eleftheriou explored the sentence “I am lying” from a philosophic-mathematical perspective. He stated that the liar sentence “I am lying” is so contradictory in its nature that merely stating it violates Aristotle's principle of two-valued logic. Gödel coded the liar sentence within the language of arithmetic in order to produce a sentence that cannot be evaluated within the formal system of arithmetic, thus refuting Hilbert's dream of axiomatizing the whole of arithmetic. Two by-products of Gödel's work are the notion of a computable function, which has

developed into our computers today and, more generally, that of definability, which has since yielded powerful applications whenever studied in different mathematical settings. Tame geometry is the study of definability in neat geometric languages, and it is the sort of geometry Pantelis Eleftheriou considers in his research work. The talk finished with the intriguing question of whether the liar sentence can be formalized, and if definability can be studied, within other disciplines.

After that, three biology presentations followed: Claudius Kratochwil reported on “The Evolution of Color Diversity” in cichlid fish, Michael Pester explained why studying microbial ecology is so important and Andreas Thum illustrated how a brain works on the basis of Drosophila larvae.

Working in Groups and Designing Futures

Sunday was dedicated to working groups. One group collected core topics for collaborative projects in the context of Future/Diverse Futures, such as “Science & Society,” “Predictability & Risk,” “Life & Nature,” “Knowledge & Communication” and “Sustainability.” Another group worked on “Methods, Toolbox, Using Data” and will draft a questionnaire in which Fellows describe the tools they use in order to start building a database. A Methodological Toolbox of the Zukunftskolleg would be a great ultimate goal. Some Fellows talked about links to the departments, teaching and the visibility of the Zukunftskolleg within the university, and how these issues could be improved. The fourth working group



prepared the DAAD Alumni Scientific Retreat 2015 entitled “International Careers. International Lives,” which will be held on July 23-26, 2015, in Kloster Hegne.



Finally, all four working groups presented their results to the reassembled group, before all participants went out to enjoy the Sunday afternoon sun.

People

Fellows

New ZIF Marie Curie 2-year Postdoctoral Fellows:

- Tuhin Basu (Physics)
- Katherine Fama (Literature)
- Bianca Gaudenzi (History)
- Oleksandra Kukharenko (Chemistry)
- Maria Daniela Poli (Law)
- Grey Violet (Mathematics and Statistics)

New ZuKo 5-year Research Fellows:

- Panteleimon Eleftheriou (Mathematics and Statistics)
- Gianluca Rastelli (Physics)

New ZIF Marie Curie 5-year Research Fellows:

- Klaus Boldt (Chemistry)

Fellowships ending in winter term 2014/15:

- Martin Elff (Politics and Public Administration)
- Laura Iapichino (Mathematics and Statistics)
- Nina Schneider (History and Sociology)
- Ilja Serzants (Linguistics)
- Nils B. Weidmann (Politics and Public Administration)

Senior Fellows and Mentors present in winter term 2014/15:

- Irene Heim (Linguistics), November 10-20, 2014
- Peter Gärdenfors (Philosophy), November 24 - December 5, 2014
- Brian Smith (Biology), March 9 - May 18, 2015

New Associate Fellows

Graduate School Chemical Biology:

- Arthur Fischbach

- Katrin Leinweber

Publications

Unai Atxitia Macizo:

“Ultrafast Demagnetization Rates in Two-component Magnetic Materials” (with O. Chubykalo-Fesenko, J. Barker, and R. W. Chantrell); in: “Ultrafast Magnetism I, Springer Proceedings in Physics” 2015, 159, p. 251-254, DOI: 10.1007/978-3-319-07743-7_78, published: October 15, 2014: http://link.springer.com/chapter/10.1007/978-3-319-07743-7_78

“Multiscale Modeling of Ultrafast Magnetization Dynamics” (with T. A. Ostler, R. F. L. Evans, O. —Hovorka, O. Chubykalo-Fesenko, J. Barker, and R. W. Chantrell); in: “Ultrafast Magnetism I, Springer Proceedings in Physics” 2015, 159, p. 146-149, DOI: 10.1007/978-3-319-07743-7_47, published: October 15, 2014: http://link.springer.com/chapter/10.1007/978-3-319-07743-7_47

“Atomistic Modeling of Magnetization Reversal Modes in FePt Nanodots with Magnetically Soft Edges” (with J.-W Liao, R. F. L. Evans, R. W. Chantrell, and C.-H Lai); in: “Physical Review B” 2014, 90 p. 174415, DOI: 10.1103/PhysRevB.90.174415, published: November 13, 2014: <http://link.aps.org/doi/10.1103/PhysRevB.90.174415>

Gunhild Berg and Zsuzsanna Török and Marcus Twellmann:

Interdisciplinary, international, intergenerational and inter-institutional: a cooperation that started in 2011 involving researchers from the Zukunftskolleg and the Center of Excellence “Cultural Foundations of Social Integration” at the University of Konstanz has now resulted in the volume “Berechnen/Beschreiben. Praktiken statistischen (Nicht-)Wissens 1750-1850.” The editors are the Zukunftskolleg Fellows Gunhild Berg and Zsuzsanna Török and Marcus Twellmann from the Center of Excellence. The volume builds on the results of the workshop “Literatur zwischen Staatenbeschreibung und Statistik. Narrative des (Nicht-)Wissens in Mitteleuropa (1750-1850) [Literature between Descriptions of Nations and Statistics. Narratives of Knowledge and Ignorance in Central Europe, 1750-1850]“ that was held in Konstanz in December 2012. “The project involved both internationally recognized professors and junior scholars. It originated from discussions, debates and interactions among scholars of different generations and in different stages of their careers,” explains Zsuzsanna Török. “What we share is a common interest in the question of knowledge production in the social and political context, in a period crucial for modern European state formation between 1750 and 1850, the so-called “Sattelzeit.” The methodological approach and the research perspective of the volume fosters new interdisciplinary research in the study of scientific and cultural practices in Central Europe.” The Zukunftskolleg co-funded the publishing costs.

Joanna Chojnicka:

“Ja es būtu smuks, es gribētu būt meitene! (‘If I were pretty, I would like to be a girl!’). Debating Transsexualism in the Latvian Parliament”; in: “Gender Studies,” to be published in March 2015

“Contesting Hegemonic Gender and Sexuality Discourses on the Web. Latvian and Polish Discourses of Gender Dissidents”; in: “Critical Approaches to Discourse Analysis Across Disciplines (CADAAD)” 2015, 7.2, to be published in March 2015

“Homophobic Speech in Post-socialist Media: A Preliminary Typology of Homophobic Manipulative Discourse”; in: ”The Journal of Language and Sexuality” 2015, 4 (1), p. 139-174

Monika Class:

Review: “Medicine and Narration in the Eighteenth Century,” edited by Sophie Vasset (SVEC, 2013: 04) Oxford: Voltaire Foundation, 2013; in: “French Studies,” Oxford University Press, March 2015

Contribution to the international publication project “Framing Fashionable Diseases” led by Professors Clark Lawlor and Dr Jonathan Andrews at Northumbria and Newcastle University, UK

María Cruz Berrocal:

“Summary of Excavations in Hoping Dao, Keelung, Taiwan” (with Serrano, E., Torra, M., Walid, S., Consuegra, S., Gener, M., Tsang, Ch.), in: “Monumenta Taiwanica” 2014, 10, p. 129-144.
DOI: 10.6242/twnica.10.6

Denis Gebauer:

”New Insights into the Early Stages of Silica-controlled Barium Carbonate Crystallization” (with Josef Eiblmeier, Ulrich Schürmann, Lorenz Kienle, Werner Kunz and Matthias Kellermeier); in: “Nanoscale” 2014, 6, p. 14939-14949, DOI: 10.1039/C4NR05436A, published: October 9, 2014: <http://pubs.rsc.org/en/Content/ArticleLanding/2014/NR/C4NR05436A>

“High-resolution Insights into the Early Stages of Silver Nucleation and Growth” (with Cornelia Völkle and Helmut Cölfen); in: “Faraday Discussions” 2015, DOI: 10.1039/C4FD00269E, published: January 12, 2015: <http://pubs.rsc.org/en/Content/ArticleLanding/2015/FD/C4FD00269E>

Barbara Hausmair:

”Am Rande des Grabs. Todeskonzepte und Bestattungsritual in der frühmittelalterlichen Alamannia,” Sidestone Press, 2015

Giora Hon:

“Philosophers Meet Biologists” (guest editors of special section, and co-authors: Martin Carrier and Giora Hon); in: “Studies in History and Philosophy of Biology and Biomedical Science,” Elsevier, forthcoming; the publication is based on a workshop that took place in Konstanz in 2013, more information: http://www.zukunftskolleg.uni-konstanz.de/news-events/events/dates-of-events/list-view/2013/05/06/event/3958-Philosophers-meet-Biologists%3A-Experimental-Studies-of-Population-Phenomena/tx_cal_phpicalendar/

Wolf Hütteroth:

“Neural Correlates of Water Reward in Thirsty Drosophila” (with Suewei Lin, David Oswald, Vikram Chandra, Clifford Talbot, Scott Waddell); in: “Nature Neuroscience” 2014, 17, p. 1536-1542, DOI: 10.1038/nn.3827, published: September 28, 2014: <http://www.nature.com/neuro/journal/v17/n11/full/nn.3827.html>

“Hemichannel Composition and Electrical Synaptic Transmission: Molecular Diversity and its Functional Consequences” (with Nicolas Palacios-Prado, Alberto E Pereda); in: “Frontiers of Cellular Neuroscience” 2014, 8:324, DOI: 10.3389/fncel.2014.00324, published: October 15, 2014: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4197764/>

“Sweet Taste and Nutrient Value Subdivide Rewarding Dopaminergic Neurons in *Drosophila*” (with Emanuel Perisse, Suewei Lin, Martín Klappenbach, Christopher Burke, Scott Waddell); in: “Current Biology” 2015, 25 (6), p. 751–758, DOI: 10.1016/j.cub.2015.01.036, published: February 26, 2015: <http://dx.doi.org/10.1016/j.cub.2015.01.036>

Zhongbao Jian:

“Insights into Functional-Group-Tolerant Polymerization Catalysis with Phosphine-Sulfonamide Palladium(II) Complexes” (with Laura Falivene, Philipp Wucher, Philipp Roesle, Lucia Caporaso, Luigi Cavallo, Inigo Göttker-Schnetmann, Stefan Mecking); in: “Chemistry - A European Journal” 2015, 21(5), p. 2062–2075, DOI: 10.1002/chem.201404856, published: December 8, 2014: <http://onlinelibrary.wiley.com/doi/10.1002/chem.201404856/abstract>

“Suppression of Chain Transfer in Catalytic Acrylate Polymerization via Rapid and Selective Secondary Insertion” (with Moritz C. Baier, Stefan Mecking); in: “J. Am. Chem. Soc.” 2015, 137 (8), p. 2836–2839, DOI: 10.1021/jacs.5b00179, published: February 12, 2015: <http://pubs.acs.org/doi/abs/10.1021/jacs.5b00179>

Sven Lauer:

“Preference-conditioned Necessities: Detachment and Practical Reasoning” (with Cleo Condoravdi), in: “Pacific Philosophical Quarterly,” 95(4), 584–621, DOI: 10.1111/papq.12049, published: December 23, 2014

“Biscuits and Provisos: Conveying Unconditional Information by Conditional Means,” in: “Proceedings of Sinn und Bedeutung 19,” published in March 2015

Bernard Lepetit:

“Response of Intertidal Benthic Microalgal Biofilms to a Coupled Light-temperature Stress: Evidence for Latitudinal Adaptation along the Atlantic Coast of Southern Europe”; (with Laviale M., Barnett A., Ezequiel J., Frankenbach S., Méléder V., Serôdio J., Lavaud J.) in: “Environmental Microbiology,” DOI:10.1111/1462-2920.12728, Article first published online February 3, 2015: <http://onlinelibrary.wiley.com/doi/10.1111/1462-2920.12728/abstract>

Katrin Leinweber:

„Biofilm and Capsule Formation of the Diatom *Achnanthes minutissimum* are Affected by a Bacterium (with Windler M., Rio Bartulos C., Philipp B., Kroth P.); „Journal of Phycology“ (1. Feb. 2015): <http://onlinelibrary.wiley.com/doi/10.1111/jpy.12280/abstract>

„Capsules of the Diatom *Achnanthes minutissimum* Arise from Fibrillar Precursors and Foster Attachment of Bacteria“ (with Peter G. Kroth); „PeerJ PrePrints“: <https://peerj.com/articles/858/>

Marilena Manea:

“Oxime Bond-linked Daunorubicin-GnRH-III Bioconjugates Exert Antitumor Activity in Castration-resistant Prostate Cancer Cells via the Type I GnRH Receptor” (with Montagnani Marelli M, Moretti RM, Marzagalli M, Limonta P.); in: “Int J Oncol.” 2015, 46(1), p. 243-253. DOI: 10.3892/ijo.2014.2730, <http://www.spandidos-publications.com/ijo/46/1/243>

“Time- and pH-Dependent Copper Binding to A β (1–16) Peptide: An Electrospray Ionization-Mass Spectrometric Approach” (with Schlosser G., Murariu M.); in: “Int J Pept Res Ther.” 2015, 21(1), p. 125-131. DOI: 10.1007/s10989-014-9437-5, <http://link.springer.com/article/10.1007/s10989-014-9437-5/fulltext.html>

Mirjam Müller from the Academic Staff Development of the University of Konstanz has written a book on “Promotion - Postdoc - Professur. Karriereplanung in der Wissenschaft” (“Doctoral Studies – Postdoc – Professorship. Career Planning in Academia”) that was recently published: http://www.campus.de/promotion_postdoc_professur-8559.html

It serves as reference book for Postdocs in the German-speaking region und describes backgrounds and factors of success for a scientific career between doctoral studies and professorship. Mirjam Müller has been offering professional career counseling and coaching for the Fellows of the Zukunftskolleg for many years.

Doris Penka and Chiara Gianollo:

A cooperation established at the Zukunftskolleg between Doris Penka and Chiara Gianollo resulted in the publication “Language Change at the Syntax-Semantics Interface” (ed. Gianollo, Chiara; Jäger, Agnes; Penka, Doris): <http://www.degruyter.com/view/product/314115>
They thanked the Zukunftskolleg for its support: “It's safe to say that this book definitely wouldn't exist without the Zukunftskolleg. First of all, it originated out of the collaboration that we started at the Zukunftskolleg. The topic also reflects the combination of Chiara's research in historical linguistics and Doris's interest in the syntax-semantics-interface. Second, the book contains several papers that were presented at a workshop held in connection with the 2012 meeting of the German Linguistics Society (DGfS). This workshop was only possible thanks to co-funding by the Zukunftskolleg. Last, but not least, the volume also features a chapter co-authored by Senior Fellow Cleo Condoravdi.”

Michael Pester:

“Phylogenetic and Environmental Diversity of DsrAB-type Dissimilatory (Bi)sulfite Reductases” (with Müller AL, Kjeldsen KU, Rattei T, Loy A); in “ISME Journal,” published online on October 24, 2014. doi: 10.1038/ismej.2014.1208.

“A Dietary Polyunsaturated Fatty Acid Improves Consumer Performance During Challenge with an Opportunistic Bacterial Pathogen” (with Schlotz N, Freese HM, Martin-Creuzburg D); in: “FEMS Microbiology Ecology,” published online on November 1, 2014. doi: 10.1111/1574-6941.12407.

Beatriz Puente-Ballesteros:

“Antoine Thomas S.J. as a ‘Patient’ of the Kangxi Emperor (r. 1662-1722): A Case Study on the Appropriation of Theriac at the Imperial Court”; *Asclepio: Journal for History of Medicine and Science*, 63.2: 213-251; translated by Dong Shaoxin 董少新, Professor at the National Institute for Advanced Humanistic Studies of Fudan University, Shanghai, 2014 白雅诗:《康熙帝的“病

人”安多：对于清宫配用底野迦的个案研究》，《新史学》(New History Journal), 2014, No 12, pp. 231-255

Gianluca Rastelli:

“Control of Vibrational States by Spin-polarized Transport in a Carbon Nanotube Resonator” (with P. Stadler, W. Belzig, Phys. Rev. B 91 , 085432 (2015)

“Bloch Band Dynamics of a Josephson Junction in an Inductive Environment” (with T. Weissl, I. Matei, I. M. Pop, O. Buisson, F. W. J. Hekking, W. Guichard), Phys. Rev. B 91 , 014507 (2015)

Tanja Rinker:

”Neurophysiologische Befunde der frühen Sprachwahrnehmung“ (with Sachse, S.); in: S. Sachse (Ed.), ”Handbuch Sprachentwicklung und Sprachentwicklungsstörungen. Band 3 – Frühe Kindheit,” München: Elsevier

Antonio Rotolo:

“Spunti di riflessione sull’insediamento di epoca islamica nel territorio dei Monti di Trapani” (with Martín Civantos J. M.); in: “Les dynamiques de l’Islamisation en Méditerranée centrale et en Sicile: nouvelles propositions et découvertes récentes - Le dinamiche dell’islamizzazione nel Mediterraneo Centrale e in Sicilia: nuove proposte e scoperte recenti,” Nef A., Ardizzone F. (eds.), Roma-Bari: Edipuglia, 2014, pp. 317- 326

Paraskevi Salamaliki:

“Unit Roots and Trend Breaks in the Greek Labor Market” (with Ioannis A. Venetis); Forthcoming at the Journal of Economic Studies

Minmin Shen:

“Medical Social Media Analytics via Ranking and Big Learning: An Image-based Disease Prediction Study”; in “International Conference on Security, Pattern Analysis, and Cybernetics,” 2014, p. 389-394, DOI: 10.1109/SPAC.2014.6982722. October 18-19, 2014

“Optimizing Feature Pooling and Prediction Models of VQA Algorithms”; in “IEEE International Conference on Image Processing,” 2014, p. 541-545, DOI:10.1109/ICIP.2014.7025108. October 27-30, 2014

“Automated Tracking and Analysis of Behavior in Restrained Insects”; in “Journal of Neuroscience Methods,” 2015, 15 (239), p. 194-205, doi: 10.1016/j.jneumeth.2014.10.021. January 2015

Ulrich Sieberer:

”Die Politik des Ressortzuschnitts zwischen Koalitionsarithmetik und thematischer Profilierung. Eine koalitionspolitische Erklärung für Kompetenzänderungen der Bundesministerien, 1957-2013“; in: „Politische Vierteljahresschrift“ 2015, 56(1).

”Konzeptionalisierung und Messung formalen Institutionenwandels: Das Beispiel

parlamentarische Regeln“ (with Peter Meißner, Julia F. Keh und Wolfgang C. Müller);
„Zeitschrift für Vergleichende Politikwissenschaft“ 2014, 8 (3-4), 237-262, doi:
10.1007/s12286-014-0216-7

”Sichtbare Demokratie. Debatten und Fragestunden im Deutschen Bundestag“ (with Dominik Hierlemann); Gütersloh: Bertelsmann Stiftung 2014: http://docs.dpaq.de/8306-final_bst_parlamentsstudie_sichtbare_demokratie_04_12_2014_2_.pdf.

Gudrun Sproesser:

”Can We Eat Social Belonging? The Dynamic Interplay Between Person and Situation“ (with Schupp, H. & Renner, B.); *The European Health Psychologist*, 16 Supp., 331

”Eating in the Dark: Although We Eat Less, We Think We Eat More“ (with Renner, B. & Schupp, H.); *The European Health Psychologist*, 16 Supp., 330

”Eating in the Dark: Was wir meinen zu essen und was wir wirklich essen“ (with Renner, B. & Schupp, H.); in: O. Güntürkün (Hg.). 49. Kongress der Deutschen Gesellschaft für Psychologie, p. 335, Lengerich: Pabst Science Publishers

”Erfüllte Erwartungen im Verhaltensänderungsprozess – mit dynamischen Schritten zu erfolgreicher Aktivitätssteigerung“ (with Musculus, L., Klusmann, V. & Renner, B.); in: O. Güntürkün (Hg.). 49. Kongress der Deutschen Gesellschaft für Psychologie, p. 27, Lengerich: Pabst Science Publishers

”Kann man soziale Zugehörigkeit essen? Das dynamische Wechselspiel zwischen Person und Situation“ (with Schupp, H. & Renner, B.); in: O. Güntürkün (Hg.). 49. Kongress der Deutschen Gesellschaft für Psychologie, p. 336, Lengerich: Pabst Science Publishers

Andreas Trotzke:

”The Complexity of Narrow Syntax: Minimalism, Representational Economy and Simplest Merge“ (with Jan-Wouter Zwart); in: ”Measuring Grammatical Complexity,” edited by Frederick J. Newmeyer and Laurel B. Preston, p. 128-147, Oxford: Oxford University Press

”Syntactic Complexity across Interfaces“ (with Josef Bayer), Berlin & New York: Mouton de Gruyter

Grants, Approvals, Prizes

Francesca Biagioli:

Senior Visiting Fellowship at the Munich Center for Mathematical Philosophy and a stipend of 1,200 euros for visiting the Center for one month in the academic year 2015-2016

Daniele Brida was successful in applying to the Emmy Noether program. He will receive 1.65 million euros for his project ”Femtosecond Dynamics in Layered Materials.” It is about the study of fundamental processes excited by ultrashort light pulses in materials like graphene. The idea is to observe interactions between photoexcited electrons in systems characterized by the fact that they are confined in two dimensions. The project duration is 5 years. More information on the

Emmy Noether program: http://www.dfg.de/en/research_funding/programmes/individual/emmy_noether/

Sarang Dalal has received an ERC Starting Grant to the amount of 1.5 million euros. His 5-year project is called “The Retinae as Windows to the Brain: An Oscillatory Vision.” “In this project, we will examine in detail how neural oscillations in the human retina code visual information and facilitate communication with cerebral cortex for further processing,” explains Sarang Dalal. “The retina is not simply a sensor, but performs rather sophisticated processing of visual input and can in fact be considered a part of the brain. However, so far interactions between retina and cerebral cortex have remained virtually neglected in human visual neuroscience.”

Barbara Hausmair:

Erwin Wenzl Prize of the state of Upper Austria for her dissertation “Am Rande des Grabs. Todeskonzepte und Bestattungsritual in der frühmittelalterlichen Alamannia.” The prize was honored with 2,500 euros. The award ceremony took place in Linz on December 9, 2014.

Grant of the Austrian state of Vorarlberg and the Wissenschaftsabteilung/Montafon Stand to the amount of 10,600 euros for her project: “Archäologie der Zwangsarbeit - das Lager Suggadin im Montafon” (together with Michael Kasper and Isabella Greußing, both Montafoner Museen)

Marilena Manea:

Grant of the Young Scholar Fund, University of Konstanz, to the amount of 6,000 euros for her project: “Development of Affinity- and Mass Spectrometric-based Approaches for the Identification, Isolation and Primary Structure Characterization of Type I GnRH Receptor Protein”

Michael Pester:

Young Scholar Fund of the University of Konstanz for his project “Sulfur Metabolism in Lake Constance Sediments” to the amount of 39,500 euros

Tanja Rinker:

In time for its first birthday, the Center for Multilingualism received a nice gift: Its application for a transfer platform “Multilingualism in Kindergartens and Schools“ to the amount of 162,680 euros was granted. The project was initiated by Tanja Rinker and Janet Grijzenhout and will be funded by the Excellence Initiative for two years. The goal is to increase and promote multilingualism in educational institutions. “We will collaborate with practitioners from kindergartens and schools. In the first year, a new multilingual lexical instrument (cross-linguistic lexical task), which was originally developed within an EU-network by myself and Natalia Gagarina in 2014, will be used to assess multilingual children in Konstanz,” explains Tanja Rinker. “This lexical instrument will be further developed into a digital reading test for easy use in primary schools. The test can serve to e.g. assess the success of bilingual alphabetization in German and Italian. Secondly, together with the partners (schools and kindergartens in Konstanz as well as the Italian Consulate General in Stuttgart), a one-year training course on various aspects of multilingualism for school and day care teachers will be developed, implemented and evaluated. Plans include implementing this kind of training as a regular program in Konstanz.”

Gianluca Rastelli:

MWK RiSC funding to the amount of 94,990 euros for his project “Many-body Interaction and Decoherence in Superconducting Josephson lattice Qubits”

Denis Seletskiy has been accepted into the Baden-Württemberg Foundation’s elite program for postdoctoral students. For his project “Ultrafast Spectroscopy of Laser Cooling Cycle in Bulk and Nanoscale Solids,” he will receive 113,000 euros for a duration of 3 years, co-funded by the Zukunftskolleg. Thanks to the funding, he will be able to cover personnel and equipment costs. More information about the Elite Program: <http://www.bwstiftung.de/bildung/programme/hochschule/eliteprogramm-fuer-postdocs/>

Ulrich Sieberer was awarded the “Best JLS Paper of the Past 20 Years” by the Editorial Board of the Journal of Legislative Studies for his essay “Party Unity in Parliamentary Democracies. A Comparative Analysis”: <http://www.tandfonline.com/doi/abs/10.1080/13572330600739413#.VQlwjeHzFxJ>

Andreas Thum – in cooperation with Dorit Merhof from the University of Aachen and Katja Bühler from the Centre for Virtual Reality and Visualization (VRVis) in Vienna – has received a grant from the German Research Foundation (DFG) and the Austrian Science Fund (FWF) to the amount of 1,1 million euros. Their joint approach aims at establishing a 4D reconstruction of the entire larval brain (about 10,000 neurons). The project will be realized based on their synergistic expertise in the field of neuroscience and informatics. Andreas Thum’s lab will provide biological data on small groups of larval brain neurons using confocal microscopy. Dorit Merhof’s lab will register these neurons based on its anatomical information onto a newly established standard brain. And Katja Bühler’s lab will process, organize and visualize the processed data in an open access database. In addition, the labs of B. Dickson and J. Truman, both located at the HHMI Janelia Farm Research Campus (USA), will support the endeavor by offering access to the worldwide largest set of genetic tools and anatomical raw data on larval brain anatomy. Andreas Thum summarizes the importance of their study: “Besides reconstructing the larval brain in 4D on the neuronal level, our approach will also define a new set of annotated (in an open access database) and freely accessible neurogenetic tools to investigate the particular function of single neurons within an entire brain. As a result it will be possible for the first time to establish a common resource base in Europe that offers support for the rapidly growing neurobiology community worldwide working on the Drosophila larva.” The project starts in April 2015 and has a duration of 3 years.

Julián Torres Dowdall received a DFG grant to the amount of 324,400 euros to continue his project “Does Side Matter? The Evolution of Asymmetric Genitalia in Livebearing Fish.” “In the next three years, the research money will be used to do next-generation sequencing to answer three questions,” explains the biologist. “1. What are the phylogenetic relationships between Anablepidae fish? 2. Does genital asymmetry result in genetic divergence between asymmetrical morphs? 3. Can we identify regions of the genome that present a signature of natural selection? Are those associated with phenotypic innovations in Anablepidae fish?” Also, Julián Torres Dowdall and his group will conduct fieldwork and mesocosms experiments in order to test for fitness consequences of genetic asymmetry.

Andreas Trotzke:

DFG grant to the amount of 29,400 euros for his project: “The Grammar of Emotions: Emphatic

Word Order and Speech Act Types,” duration: March 2015 to February 2016

Teaching

Unai Atxitia Macizo:

Teaching assistant for the lecture “Computersimulation in der statistischen Physik,” winter term 2014/2015, University of Konstanz

Brendan Balcerak Jackson:

“Possible Worlds Semantics in Language, Mind and Epistemology,” Philosophy Department, winter term 2014/2015, University of Konstanz

Julia Boll:

Hauptseminar/honours and graduate, James Joyce, “Ulysses,” Department of Literature (English Studies), winter term 2014/15, University of Konstanz

Joanna Chojnicka:

BA seminar on “Nachhaltigkeit in Diskursanalyse: Theorien und Methoden,” winter term 2014/15, Leuphana University Lüneburg, Germany

Self-designed course “Sustainability in Discourse – Who Says What Why?,” winter term 2014/15, Leuphana University Lüneburg, Germany

Monika Class:

Seminar “Victorian Women Writers,” Department of Literature, winter term 2014/2015, University of Konstanz

Denis Gebauer:

Lecture “Physikalische Chemie IV — Intermolekulare Wechselwirkungen,” 2 SWS, Department of Chemistry, winter term 2014/2015, University of Konstanz

Barbara Hausmair:

Compact course for BA, MA and PhD Students in History and Sociology: “No History without Space. Hands-on Geographical Information Systems (GIS) for the Humanities” (together with Antonio Rotolo), winter term 2014/2015, University of Konstanz

Marilena Manea:

Advanced course “*Chemical Biology of Polypeptides*” (together with Prof. Michael Przybylski), 4 SWS, Department of Chemistry, winter term 2014/2015, University of Konstanz

Michael Pester:

Supervisor and co-lecturer in the undergraduate course “Kompaktkurs Mikrobiologie,” winter

term 2014/2015, University of Konstanz

Co-lecturer in the graduate course “Microbial Physiology and Ecology / Limnic Microbiology,” winter term 2014/2015, University of Konstanz

Co-lecturer in the lecture series “Methods in Biology” and “Grundlagen der Genforschung,” winter term 2014/2015, University of Konstanz

Beatriz Puente-Ballesteros:

BA course in Medicine: “El hombre enfermo: Aspectos históricos y socioculturales [Man and Disease: Historical and Socio-Cultural Perspectives],” course taught at the Unit of History of Medicine, Department of History of Science, Faculty of Medicine, Complutense University of Madrid, Spain, November 2014, Link to the syllabus:
<http://medicina.ucm.es/el-hombre-enfermo-aspectos-historicos-y-socioculturales>

Gianluca Rastelli:

Two lectures in “Theoretische Festkörperphysik: Konzepte, Trends und Methoden,” winter term 2014/15, and training 2 students for preparing seminars

Tanja Rinker:

Seminar “Mehrsprachigkeit in der Schule,” winter term 2014/2015, University of Konstanz

Lecture series “Mehrsprachigkeit“ (together with J. Grijzenhout), winter term 2014/2015, University of Konstanz

Antonio Rotolo:

Compact course for BA, MA and PhD Students in History and Sociology: “No History without Space. Hands-on Geographical Information Systems (GIS) for the Humanities” (together with Barbara Hausmair), winter term 2014/2015, University of Konstanz

Minmin Shen:

Seminar “Introduction to Image Processing in Biology,” winter term 2014/2015, University of Konstanz

Ulrich Sieberer:

MA and PhD seminar „Vergleichende Parlamentsforschung,“ winter term 2014/2015, University of Konstanz

Jennifer L. Sparr:

Bachelor’s seminar “Veränderung in Organisationen gestalten: Grundlagen des Change Managements,” winter term 2014/2015, University of Konstanz

Master’s seminar “Organisationsdiagnostik als Grundlage strategischer Entscheidungen,” winter term 2014/2015, University of Konstanz

Gudrun Sproesser:

Seminar “The Psychology of Eating,” winter term 2014/15, University of Konstanz

Seminar “Selected Topics of Health Psychology,” winter term 2014/15, University of Konstanz

Julián Torres Dowdall:

“Sexual Selection,” invited lecture in the Evolution course of Prof. Axel Meyer, winter term 2014/2015, University of Konstanz

Andreas Trotzke:

Seminar “Grammar and Speech Acts,” Department of Linguistics, winter term 2014/2015, University of Konstanz

Careers

Brendan Balcerak Jackson received a Heisenberg Stipend from the German Research Foundation for his research project “Semantic Structure and the Structure of Rationality.” Only researchers who fulfil all the requirements for tenured professorships may apply for the Heisenberg Program. The stipend is funded for 36 months, with the possibility of a 24-month extension.

Francesca Biagioli:

Visiting Fellowship at the Centre for History and Philosophy of Science at the University of Leeds, UK, February 2015 to April 2016

Julia Boll:

Assistant Professor (Wissenschaftliche Mitarbeiterin), Department of Literature, University of Konstanz, Chair: Prof. Dr. Christina Wald, Professor in English Literature, March-September 2015

Joanna Chojnicka:

Prolongation of the Associate Fellowship of the Leibniz Graduate School, Marburg, Germany, until December 31, 2015 (previous duration of the fellowship: April to December 2014)

Eleanor Coghill accepted a position at the University of Zurich. In February 2015 she will start working as Postdoctoral Research Fellow in the inter-departmental project “Sprache und Raum” (Language and Space). Nevertheless she will still be in Konstanz and continue her project at the University of Konstanz.

María Cruz Berrocal:

Visiting researcher, Fundación Erigaie, Bogotá, October 2014, funded by the Mentorship program of the Zukunftskolleg

Denis Gebauer:

Member of the executive board of the Graduate School Chemistry, University of Konstanz, since July 2014

Laura Iapichino accepted a postdoc position at Delft University of Technology, Netherlands. She will work at the Department of Precision and Microsystems Engineering in the Section of Structural Optimization and Mechanics (SOM). More information: <http://www.3me.tudelft.nl/?id=2868&L=1>

Ilja Serzants accepted a postdoctoral position at the Johannes-Gutenberg-University of Mainz. In February 2015, he started working as Principal Investigator in the TriMCo project “Triangulation Approach for Modelling Convergence with a High Zoom-In factor.” It aims to uncover the multi-factorial mechanisms leading to the rise of linguistic areas. More information: <https://www.trimco.uni-mainz.de/>

Margarita Stolarova accepted a teaching appointment at the Hochschule Rhein-Waal in Kleve in winter term 2014/15. She taught 4 SWS in the department of Society and Economy.

Andreas Trotzke:

Visiting scientist at the “Computational Psycholinguistics Lab,” University of California, San Diego, March 5-22, 2015

Imprint

Zukunftskolleg - University of Konstanz

Box 216 | 78457 Konstanz | Germany

Tel.: +49 (0)7531 / 88 - 4897 | Fax: +49 (0)7531 / 88 - 4829

Email: zukunftskolleg@uni-konstanz.de

Website: <https://www.zukunftskolleg.uni-konstanz.de>

Photos by Zukunftskolleg, Universität Konstanz, Sigrid Elmer, private

Table of contents

- Funding Instruments
- Events
- Invited Talks
- Participation in Workshops, Symposia, Conferences
- Contributing to an International University Debate,
Media Presence
- Latest Collaborations
- People
- Publications
- Grants, Approvals, Prizes
- Teaching
- Careers



Letzte Änderung: Friday, 10.04.2015 - 10:36 -