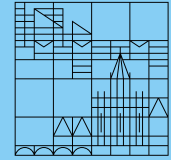


Zukunftskolleg
Annual Report
2018 | 2019

Universität
Konstanz



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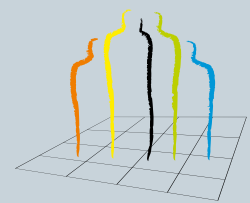
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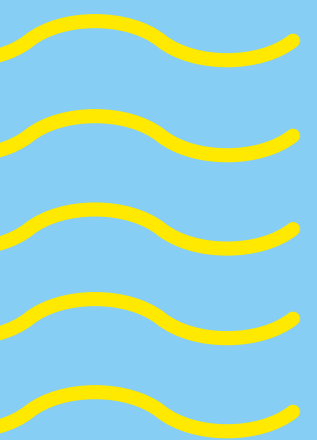
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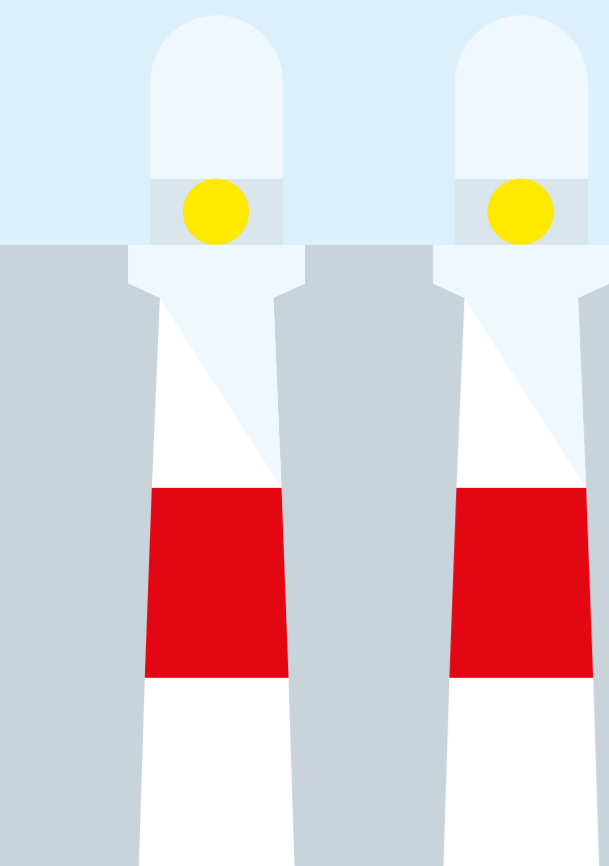
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Zukunftskolleg



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Giovanni Galizia
Director of the Zukunftskolleg

Dear readers,

The date 19 July 2019 will remain etched in our memories for the happy news it brought us. About 16:15, the German minister of education and research, Anja Karliczek (CDU) announced the results of the German Excellence Strategy competition. The University of Konstanz, along with 16 other universities and university networks, was competing for the title “University of Excellence”. From the start, it was clear that only 11 universities or university networks would earn the title. Thankfully, we can now say that we made it!

The University of Konstanz is one of only six universities nationwide that have been continuously successful in the excellence competitions since they began in 2007. I agree wholeheartedly with our rector, Kerstin Krieglstein, who said: “To be selected as a University of Excellence for a third time after 2007 and 2012 speaks to the exceptional performance record and high international standards our university has achieved at such a young age”.

The Zukunftskolleg is part of this exceptional performance and these high international standards: As a pioneer in the promotion of early career researchers, the Institute for Advanced Study has been facilitating independent research in an international, intergenerational and interdisciplinary community since 2007. The Zukunftskolleg is one of the light houses of our university’s strategy of excellence and was listed as one of the university’s three priority projects in the application. This model institution at the University of Konstanz for researchers after their doctoral phase and before their first professorship will

be further developed within the framework of the Excellence Strategy. Besides the existing 2-year Postdoctoral and 5-year Research Fellowships, a new Synergy Fellowship Programme will allow two fellows from different fields of research to carry out interdisciplinary research together. The Zukunftskolleg will reinforce its internationalization strategy by offering fellowships specifically for exceptional early career researchers from Africa, Asia and Latin America. The first round of those short-term fellows have already joined us at the Zukunftskolleg. Read more about them on pages 63–67.

The Zukunftskolleg also pursues particular topics that we examine across disciplines and in different formats. This year, for example, we were fascinated by the subject of “migration” and named it our “topic of the term”, inspired by the “topic of the year” pursued by the international UBIAS network (University-Based Institutes of Advanced Study), which we are a member of. “Migration” is currently a hot topic. On the one hand, the term conjures up images of streams of people and desperate situations in border regions as well as boats filled to the brim with passengers in search of a safe haven, but who are mostly unwanted. On the other hand, it also brings to mind migratory birds flying harmoniously in swarms to their winter homes in the south!

During the summer semester of 2019, we hosted our weekly Jour fixe as well as a public event with short presentations on migration by researchers from all three of the university’s Clusters of Excellence (“The Politics of Inequality”, “Centre for the Advanced Study of Collective Behaviour” and “Cultural Foundations of Social Integration”). We also organized an exhibition by George Butler. The London-based artist understands migration to include both human migration and animal migration as well as the interaction between the two.

The Excellence Strategy competition and “migration” were certainly two topics that really moved us in the last year.

This report on the academic year 2018|2019 will also give you an overview of how successful our fellows have been and continue to be.

I hope you enjoy and are inspired by their stories.

Yours sincerely
Giovanni Galizia

A handwritten signature in black ink, appearing to read 'G. Galizia', written in a cursive style.

Fellow Reports

The fellow reports are divided into two parts: On the left, our fellows report on their greatest project|success at the Zukunfts-kolleg during the academic year 2018|2019. On the right, you find a visual abstract* that describes and illustrates the fellow's project in general.

* The reports of four fellows without visual abstract are visualized by photos.



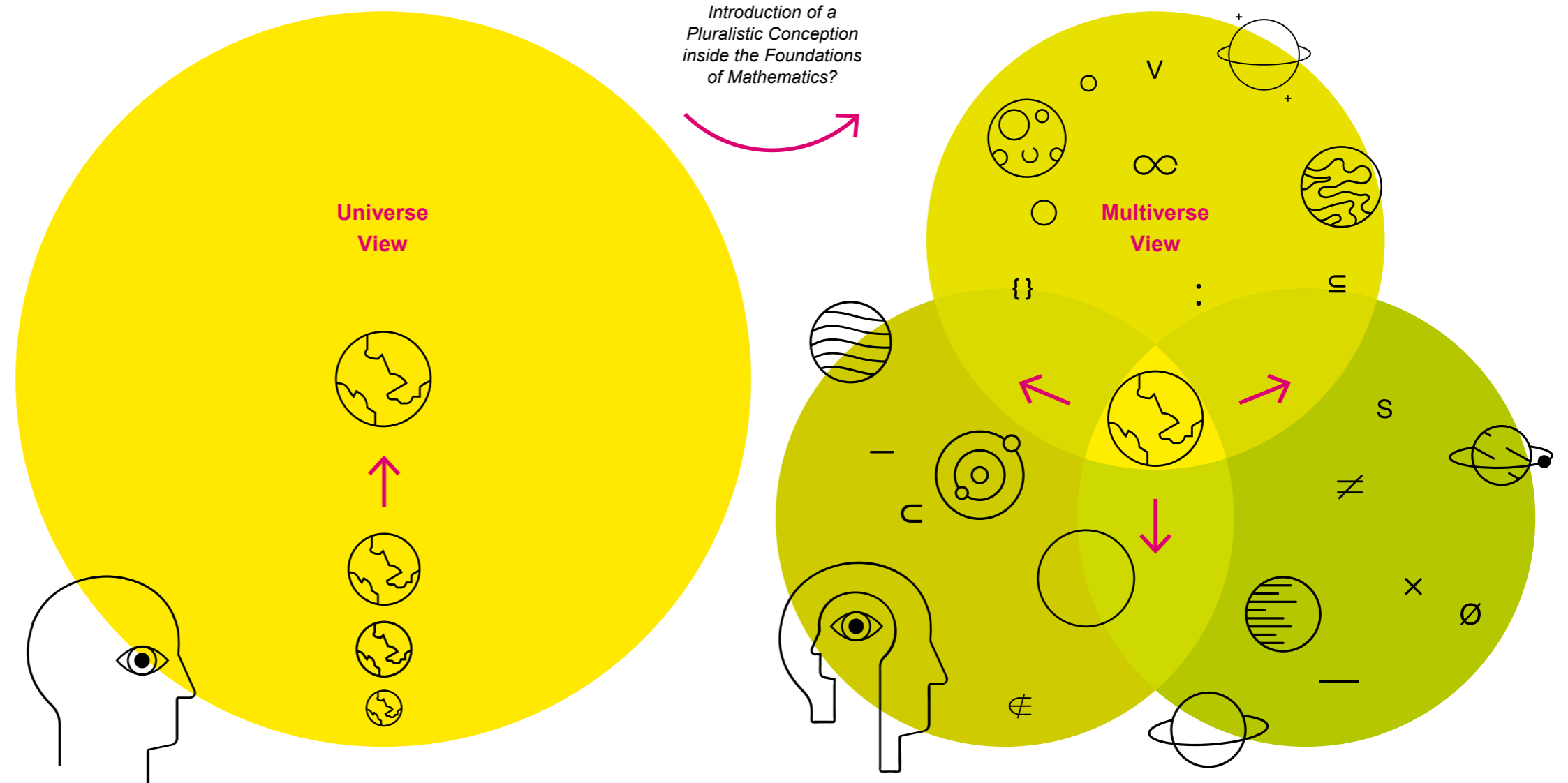
Carolin Antos-Kuby

Fellow since 07|2016
Department of Philosophy

Inconsistent multiverse?

A mathematical theory is labeled inconsistent if it can be shown that a contradiction holds in it. This is usually a worst case scenario and, if this happens, such a theory is normally regarded as useless and should be changed or abandoned. As part of my Zukunftskolleg project "Forcing: Conceptual change in the foundation of mathematics" I am investigating if and how the so-called set theoretic multiverse has components that could be considered inconsistent while at the same time being accepted by the community of working set-theorists.

The set-theoretic multiverse consists of a number of models of set theory each single one of which can be assumed to be consistent. The inconsistency only comes up when comparing different models. It happens frequently that a mathematical sentence A holds in one model, while its negation $non-A$ holds in a different model. As these models are all part of the multiverse, the multiverse gives rise to a situation where such a sentence considered over all the models in the multiverse is sometimes true and sometimes false. To judge how much this constitutes an inconsistency, we analyze different ways to describe such a multiverse picture, for example, by considering it as a possible world in a Kripke frame.



Conceptual change in the foundations of mathematics

In mathematics, the truth of a statement seems to be clearly decidable: Every statement that can be proven is true; every statement that can be disproven is false.

However this is not correct. There is a large class of mathematical statements that are undecidable, i.e. they cannot be shown to be true or false via means of proving or disproving them. These sentences are studied in set theory and, over the last 50 years, different kinds of mathematics have been developed in which different kinds of undecidable statements hold or fail.

In a philosophical reflection on this mathematical development, we study how much of a conceptual change this signifies and whether the development introduces a pluralistic conception of the foundations of mathematics.



Thomas Böttcher

Fellow since 03|2014
Department of Chemistry

Ultra-narrow spectrum antibiotics

Antibiotic resistance is on the rise and, thus novel antibiotics urgently need to be developed. At the same time, the many and diverse microbes colonizing our body are of major importance for human health. Autoimmune diseases, diabetes, certain types of cancer and even psychiatric disorders are increasingly understood as the results of a dysfunctional microbiome. Already short treatments with broad spectrum antibiotics may have deleterious effects on the composition of a microbiome and cause permanent changes that may, in a later stage, lead to disease. We thus aim to develop ultra-narrow spectrum antibiotics for high-precision treatment of pathogenic bacteria. We have recently demonstrated that quinolone derivatives are privileged structures with great promise for these approaches. We could, for example, customize synthetic compounds to target the bacterium *Moraxella catarrhalis*, a nasopharyngeal pathogen that causes middle ear infections in children. Our compounds exhibited unprecedented selectivity for the pathogen, while commensal microbes and even closely-related species of the same genus were entirely unaffected. We are currently exploring the molecular target responsible for this ultra-narrow spectrum selectivity which may pave the way to the development of novel generations of customizable species-selective antibiotics.

Reference

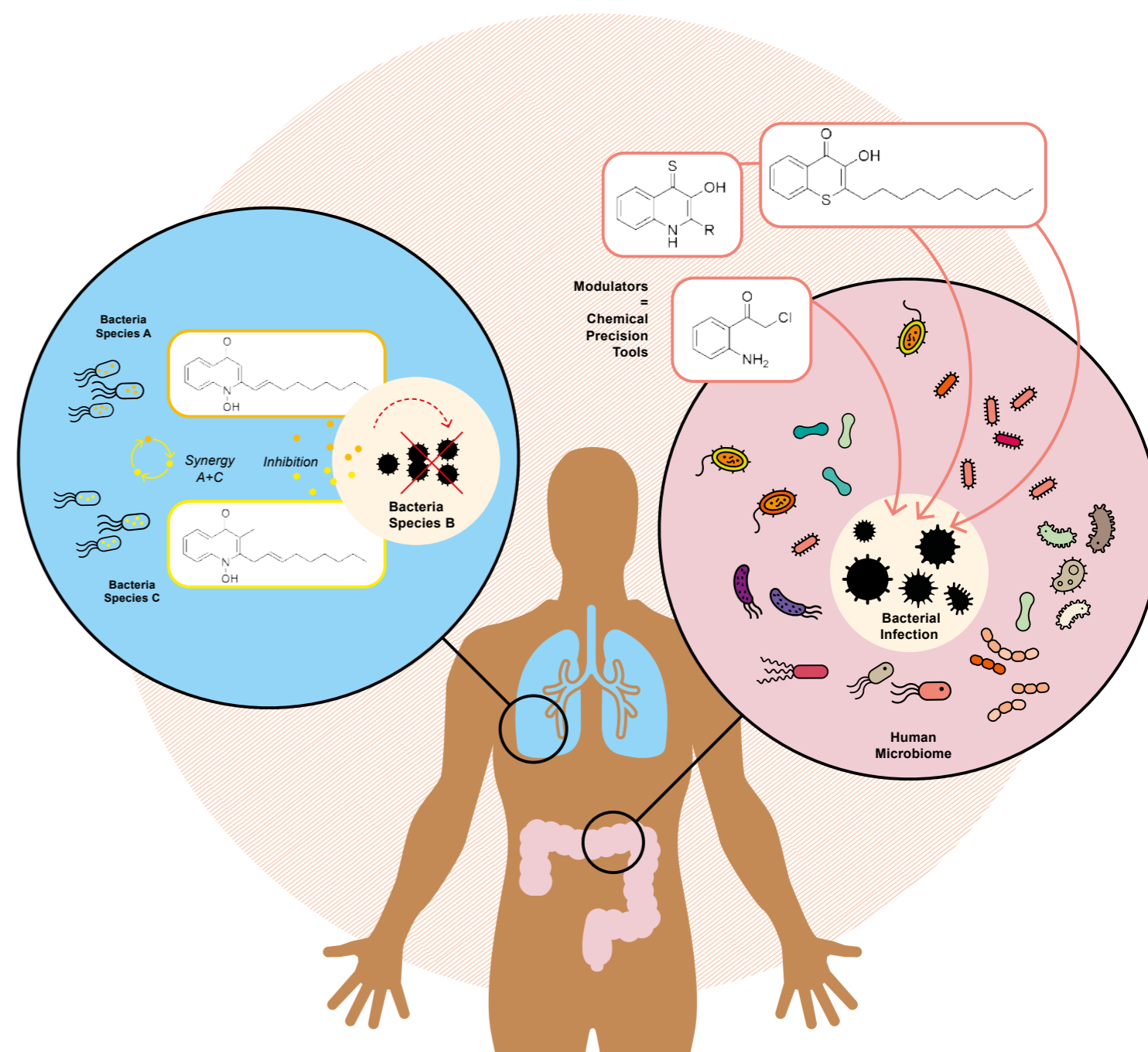
D. Szamosvári, T. Schuhmacher, C. Hauck, T. Böttcher (2019) A thiochromenone antibiotic derived from *Pseudomonas* quinolone signal selectively targets the Gram-negative pathogen *Moraxella catarrhalis*. *Chem. Sci.* 10: 6624-6628.

Small molecules and bacterial pathogens

The human body is host to an enormous number and diversity of microbes – the so called human microbiome. Microbes play an important role in influencing health and disease, often with the assistance of microbial metabolites. Additionally, the composition of our microbiome depends on competitive and synergistic chemical interactions between different microbial species.

We investigate the molecules involved in these activities and explore strategies to exploit them for the customized treatment of human diseases. Furthermore, we develop and synthesize modulators for the control of microbial behaviours like toxin production or motility.

Our vision is to map and dissect the chemical interactions in our microbiome and to discover and design chemical tools that study and inhibit bacterial infections with great precision.





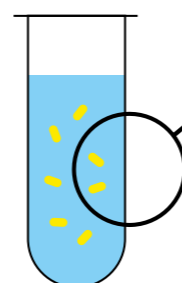
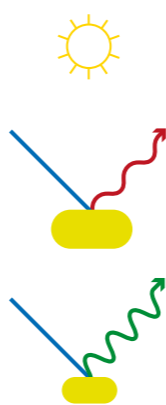
Klaus Boldt

Fellow since 04|2015
Department of Chemistry

Switchable dissociation of excited charge carriers bound at nano-heterojunctions

In 2018, I concluded a three-year project on the preparation and spectroscopic analysis of nanorods consisting of two materials, which are connected over an axial interface. This results in a structure with two opposite sides, thus forming the basis for a directional process. For example, positive and negative charge carriers can be excited by light and transported to the opposite ends of the rod in order to drive a nanoscale solar cell or a photocatalytic reaction. I was able to demonstrate, using combination ultrafast transient absorption spectroscopy and quantum mechanical modelling, that excited charges do not split apart but, instead, may form a bound state at the interface where they quickly recombine. This effect results from three approximately equal contributions: crystal lattice distortion, coulomb attraction of the charges and the quantum size effect. Removing one of the contributions is, therefore, enough to delocalize the charges and allow them to react as intended. This forms a powerful basis for chemically triggered switches.

Nanocrystals
absorb and emit Light
depending on their Size

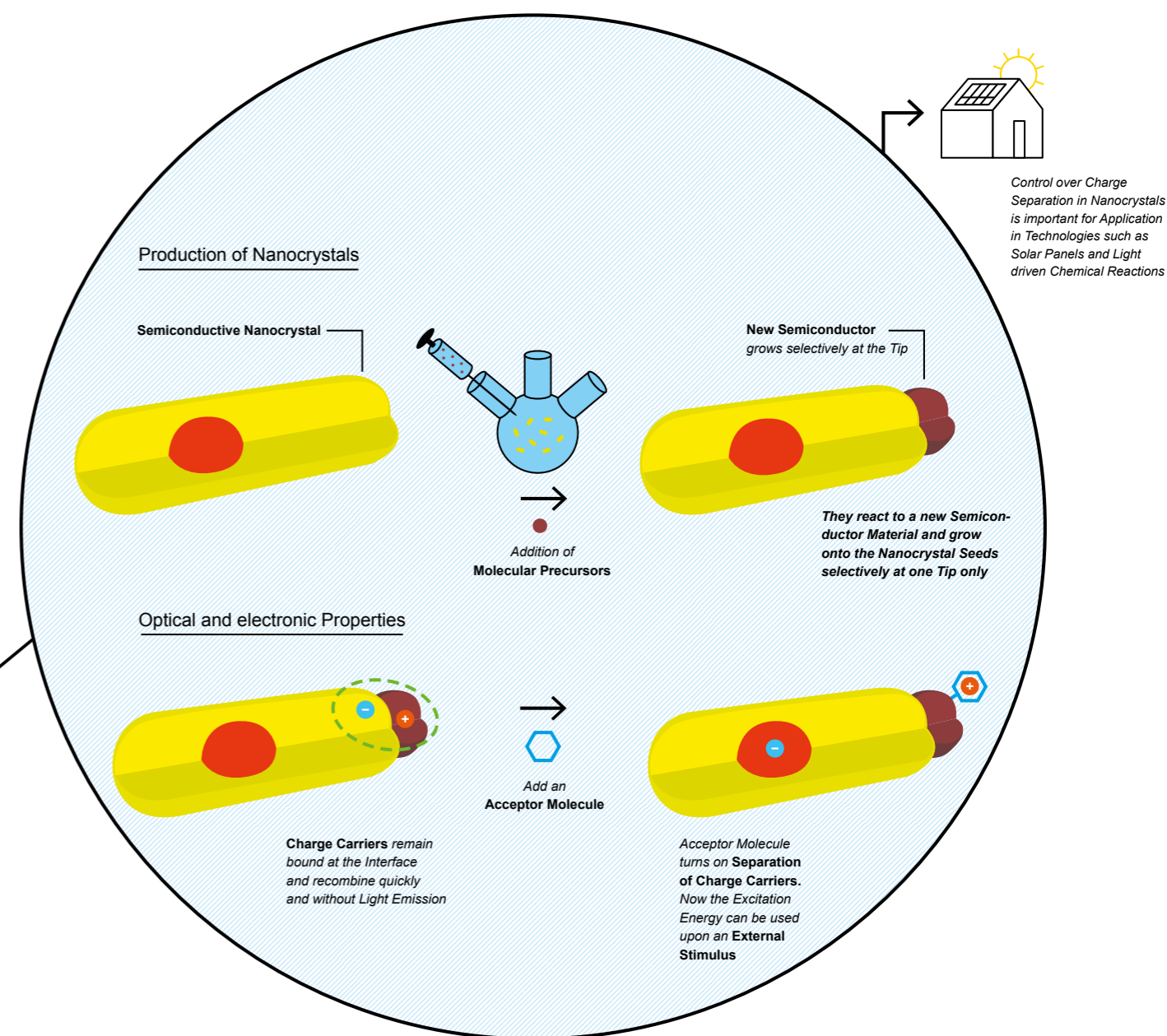


Synthesis and physical properties of nanocrystals

Semiconductor nanocrystals, sometimes referred to as “artificial atoms”, are extremely interesting materials for many areas of modern technology, because they absorb and emit light depending on their size. When two or more materials are combined, the resulting interface creates a new functionality that can be used, e.g. in solar cells, photocatalysis, or optical switches. In molecules, many strategies have been developed to add functionalities at specific atomic positions. It is difficult to fabricate analogous „artificial molecules“ from nanocrystals.

I work on regio-selective methods of growing nanocrystals and heterostructures that exhibit optical and electronic properties with a preferred directionality.

Charge carriers in the nanoparticles can be excited by light and their dynamics can be controlled by how the interfaces between the nanocrystal components are designed.





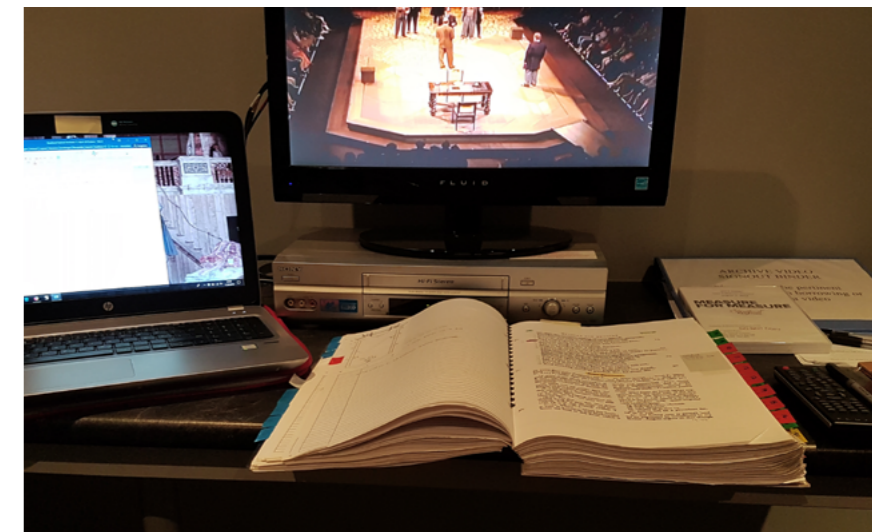
Julia Boll

Fellow since 03|2013
Department of Literature

Archival research on contemporary productions of early modern plays in Stratford | Ontario

In my research, I diachronically trace the theatrical representation of a figure called "the bare life" and the associated discourse from its origins in classical performance and thought up to the present day. In October 2018, I was awarded a scholarship in the Baden-Württemberg-Ontario Faculty Mobility Program, which enabled me to spend six weeks in the spring of 2019 at the Department of English Studies at Western University, Ontario.

During my research stay, I had the opportunity to work with Professor Kim Solga, who holds the chair for theatre at Western. Drawing on the pronounced early modern and Shakespeare expertise at Western University, I specifically focused my research activities on the representation of the excluded, the banished, the non-citizen and the sacred in early modern theatrical texts. These included, for example, Christopher Marlowe's *Edward II* (c. 1592), the multi-authored *Sir Thomas More* (c.1596-1601), William Shakespeare's *King Richard II* (c. 1595) *King John* (1596), *The Merchant of Venice* (c. 1596-97) and Shakespeare's various shipwrecked and banished or exiled figures in other works. I had access to the extensive archives of Ontario's Stratford Festival Theater, where I spent several days viewing and evaluating contemporary productions of early modern plays, which present these plays in different societal and cultural-political contexts.





Udith Dematagoda

Fellow since 12|2017
Department of Literature

Machine men, machine minds, machine hearts

This year, I have been working on the manuscript for my main research project at the Zukunftskolleg, an exploration of masculinity, technology and fascism in European modernist literature. I submitted the proposal for publication in late summer.

In addition to this main project, I have recently been contracted as the editor of a scholarly edition of the English writer Wyndham Lewis's controversial political work *Left Wings Over Europe*, as vol. 35 of *the Collected Works of Wyndham Lewis* which will also be published by Oxford University Press in 2021. As an editor, I have been invited to join a group of established international scholars from Birmingham, Oxford, Cambridge, Duke, Birmingham, McGill, Sussex, Exeter, East Anglia and Iowa among others. Lewis remains one of the least researched of the major literary modernists, although this situation is changing rapidly.

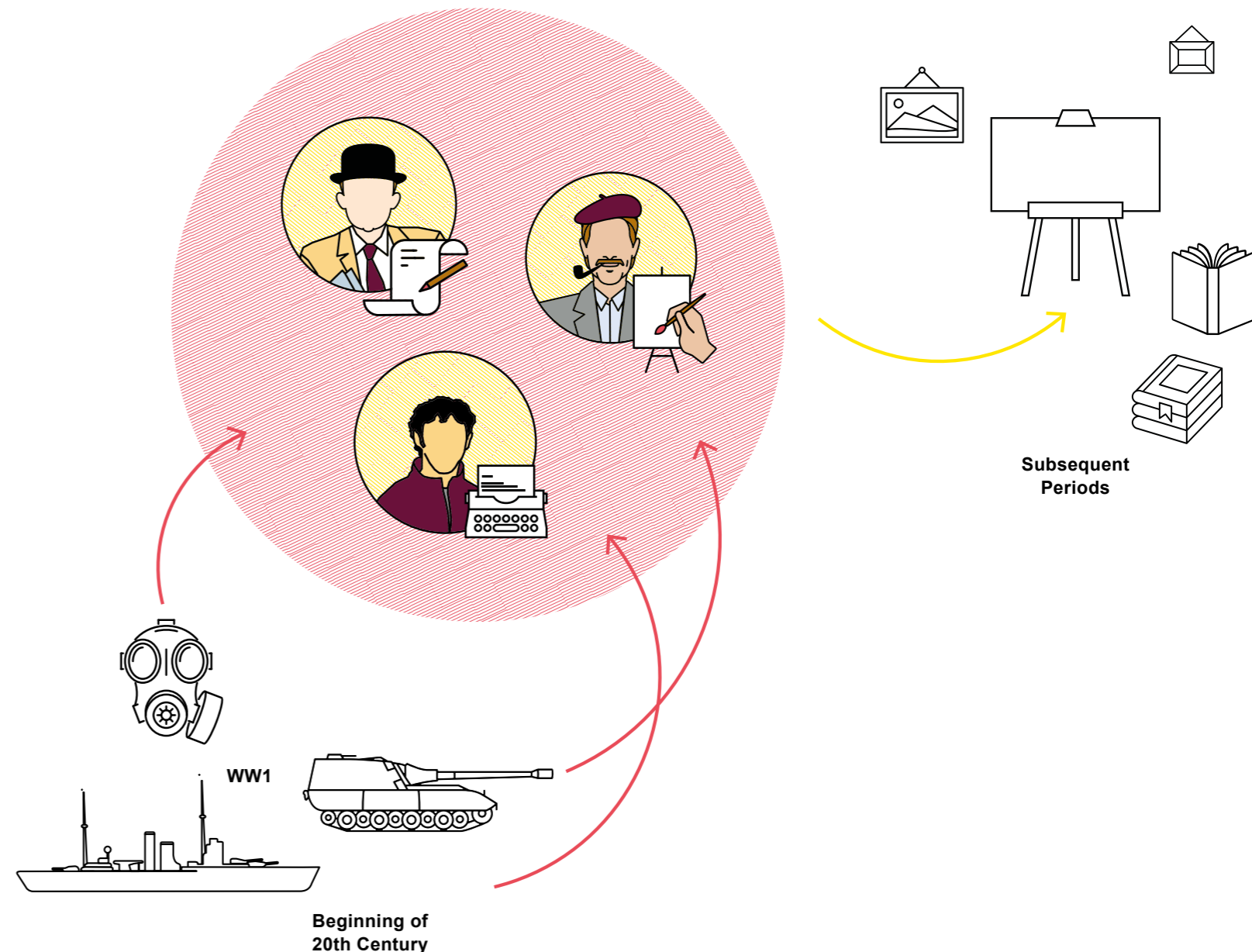
Earlier in 2019, I was a Visiting Scholar at Waseda University in Tokyo, Japan. I was hosted by Professor Koji Toba and did some research into a planned article on the Japanese writer Yukio Mishima. In late 2019, I will be a visiting scholar at Johns Hopkins University, hosted by Professor Douglas Mao. I have two articles forthcoming, one in the *Journal of Wyndham Lewis Studies* – and the second in *Modernist Cultures*.

I have also been conceptualizing and preparing a third-party grant application to lead a Junior Research Group on a critical theory project: *The Ideological Aesthetic: New Perceptions*. The project will explore the interrelatedness of ideology and aesthetics from the modernist period to our contemporary moment, taking in new perceptions of aesthetic experience influenced by post-humanism and artificial intelligence.

Technology, masculinity and fascist modernities

It is easy to believe that our current predicament is unique to human history. Yet many of the perturbing recent developments within our contemporary societies that have been facilitated by rapid technological advancement, such as a rise in extremism and populism, were also experienced at the beginning of the twentieth century.

My research focuses on a group of European male modernist writers and artists from this period, and aims to explain how their experience of the technological brutality of the First World War, and the type of society left in its wake, had an indelible influence on their subsequent work and political development.





Panteleimon Eleftheriou

Fellow since 05|2015

Department of Mathematics and Statistics

Successful workshop on *tame expansions of o-minimal structures*

On 1-4 October, 2018, P. Hieronymi (UIUC) and I organized a workshop entitled “Tame Expansions of O-minimal Structures” at the University of Konstanz. This workshop was a sequel to the Konstanz “Summer School in Tame Geometry” that I had co-organized in the summer of 2016. The goal of the workshop was to bring together model theorists who work on different aspects of tame geometry in order to share their latest developments on the subject. We focused on (a) classification theory (tame vs non-tame), (b) structure theorems (cone decompositions) and (c) applications (definable groups, counting theorems).

The workshop was a full success, with top experts and active researchers in the field attending. The participants presented their recent results via lectures, stated open problems in specifically designed sessions and collaborated in working groups. Even after the workshop ended, the collaboration continued, leading to several new publications.

A total of 25 participants registered, who came from 13 different countries: 8 doctoral researchers, 8 postdocs and 9 professors.

The workshop was kindly funded by the Zukunftskolleg and the International Office of the University of Konstanz.

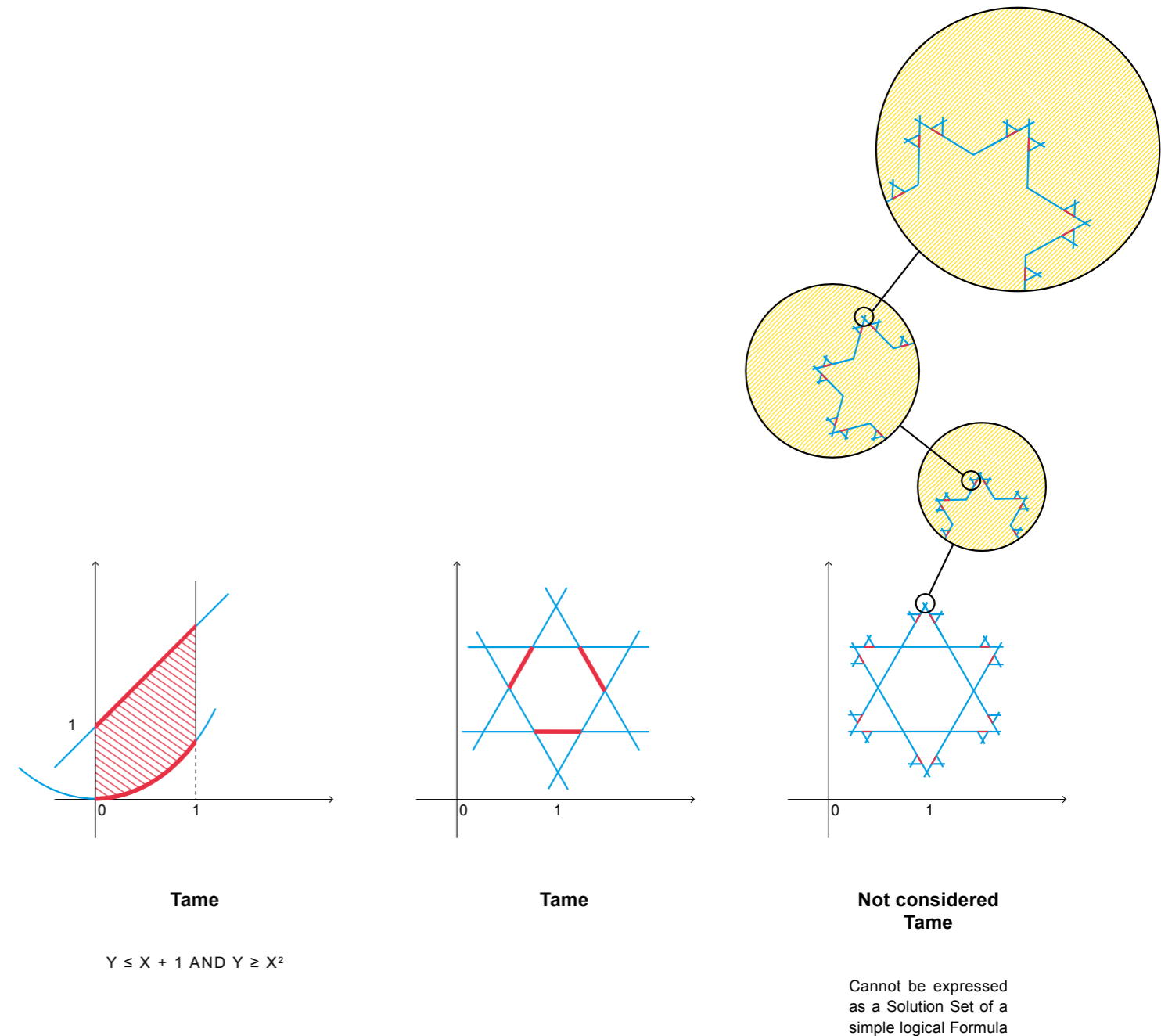
↗ math.uni-konstanz.de/~eleftheriou/tame

Groups definable in tame expansions of o-minimal structures

Tame Geometry is an area of mathematics, where geometric objects satisfying certain tameness conditions imposed by logic are studied. An algebraic set is defined using polynomial equations and inequalities and the logical symbol “AND”. It is considered tame, as its basic properties, such as volume and dimension, are easy to calculate.

On the other hand, a fractal, such as the Koch snowflake, exhibits peculiar and abnormal properties and is not considered tame.

Tame Geometry strives to identify exactly those geometric objects which, although large in scope, still exhibit tame behavior.



Benjamin Eva

Fellow since 04|2019
Department of Philosophy

Comparativist epistemology

A lot of my research is in the branch of philosophy known as 'formal epistemology'. Broadly construed, formal epistemology is the part of philosophy that attempts to explore and clarify the nature of knowledge and reasoning using formal mathematical tools. Historically, this area is dominated by two main paradigms.

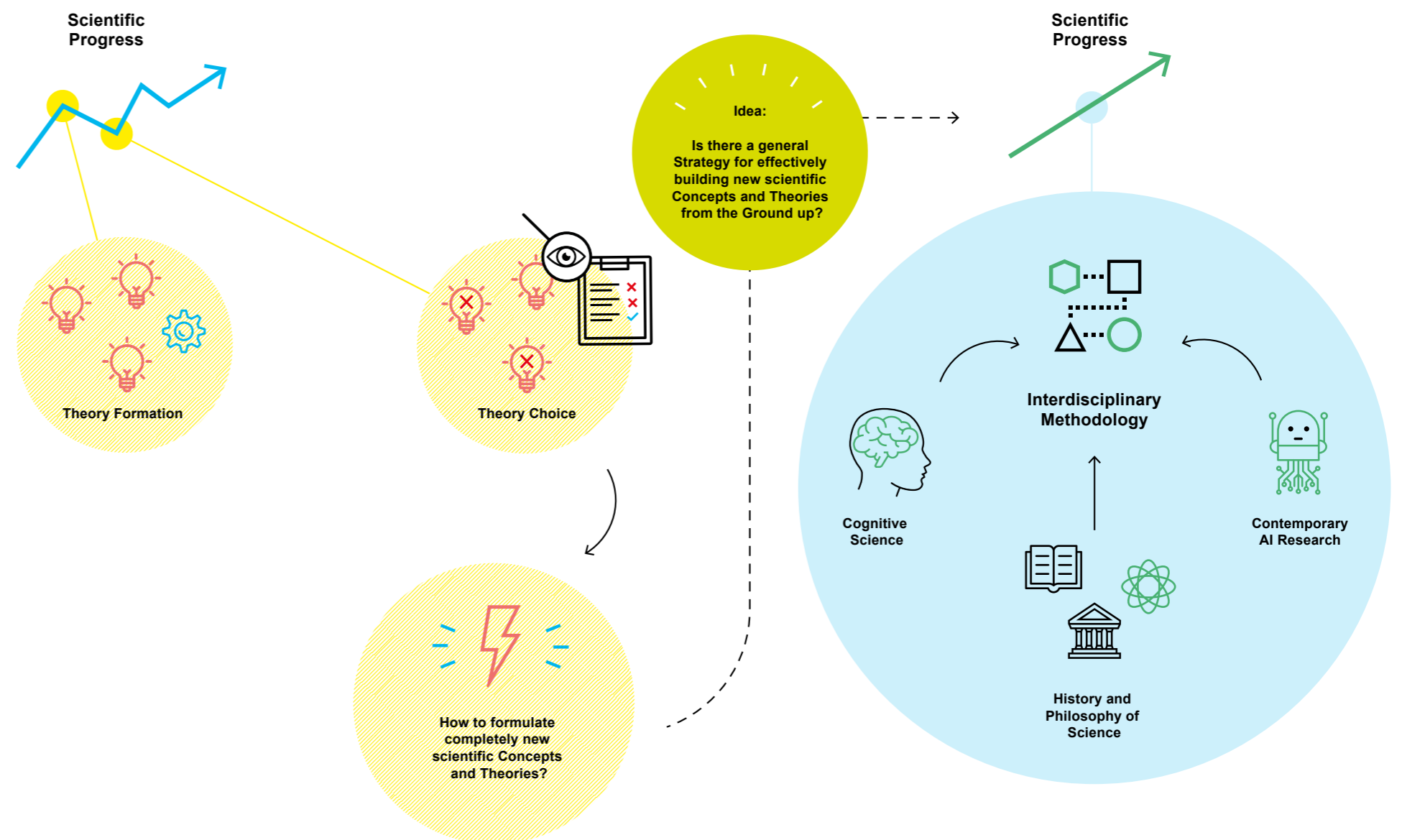
The first paradigm focuses on the notion of 'probability' - that is to say, it attempts to explicate the laws of good reasoning by utilizing the mathematical theory of probability. The second paradigm focuses on the notion of 'belief'. In contrast to the probabilistic tradition, it mainly aims to explicate the laws of good reasoning in the language of formal logic. In the last year, I've worked a lot on reviving an old but currently neglected third approach to formally explicating the laws of good reasoning. This approach is formulated in terms of 'comparative confidence judgements' like 'I am more confident in p than I am in q' or 'I am equally confident in p and q'. Over the last year, I've written a series of papers on this topic, one of which was recently published in *The Journal of Philosophy*. In the next year, I expect to publish several more articles in this area and apply for funding for an international research network to facilitate collaboration with other researchers in the field.



Defining general strategies for building new scientific concepts and theories

Scientific progress relies on two basic processes. First, scientists need to invent concepts and theories that provide fruitful descriptions of the world. We call this the process of 'theory formation'. Second, scientists need to test and evaluate these theories in order to select the 'best' theories. We call this the process of 'theory choice'. Until now, scholars of the scientific method have focused almost exclusively on identifying the rules that scientists should follow in process of theory choice. By contrast, very little has been said about the norms of theory formation.

In my project, I explore the possibility of defining general strategies for building new scientific concepts and theories effectively. I use a highly interdisciplinary methodology that utilizes insights and resources from cognitive science, the history and philosophy of science and contemporary AI research. In addition to shedding light on the nature of scientific progress, I aim to make real progress in automating some of the most mysterious and creative parts of the scientific enterprise.





Bianca Gaudenzi

Fellow since 03|2015
Department of History and Sociology

The return of beauty? Uncovering postwar cultural restitution practices in Italy's archives

On 19 July 2019, German Foreign Minister Heiko Maas, joined with the Italian Cultural Heritage and Foreign Ministers and the Uffizi Gallery's director, Eike Schmidt, in celebrating the momentous restitution of 'Vase with Flowers' by Jan van Huysum, which had been looted by the Nazis during World War II.

This tradition of restitution goes back much further, however, as, after the devastations of Fascism and war, in the immediate postwar years the restitution of national heritage became an integral part of the reconstruction of the newly-established Italian Republic. Through a number of well-publicized exhibitions, extensive press coverage and public events partly financed by the Western Allies – the U.S. in particular –, Italy staged the restitution of its national patrimony as a cathartic rite of passage through which it would be reborn as a rightful member of the international 'Western' community and could whitewash its Fascist past by placing all the blame onto Nazi Germany.

The restitution of private Jewish-owned property, by contrast, became a prolonged affair in Italy, often marred by "institutional silence" on the part of officials, and oblivion on the part of the owners that stopped asking since it was too complicated or expensive. This process can only be

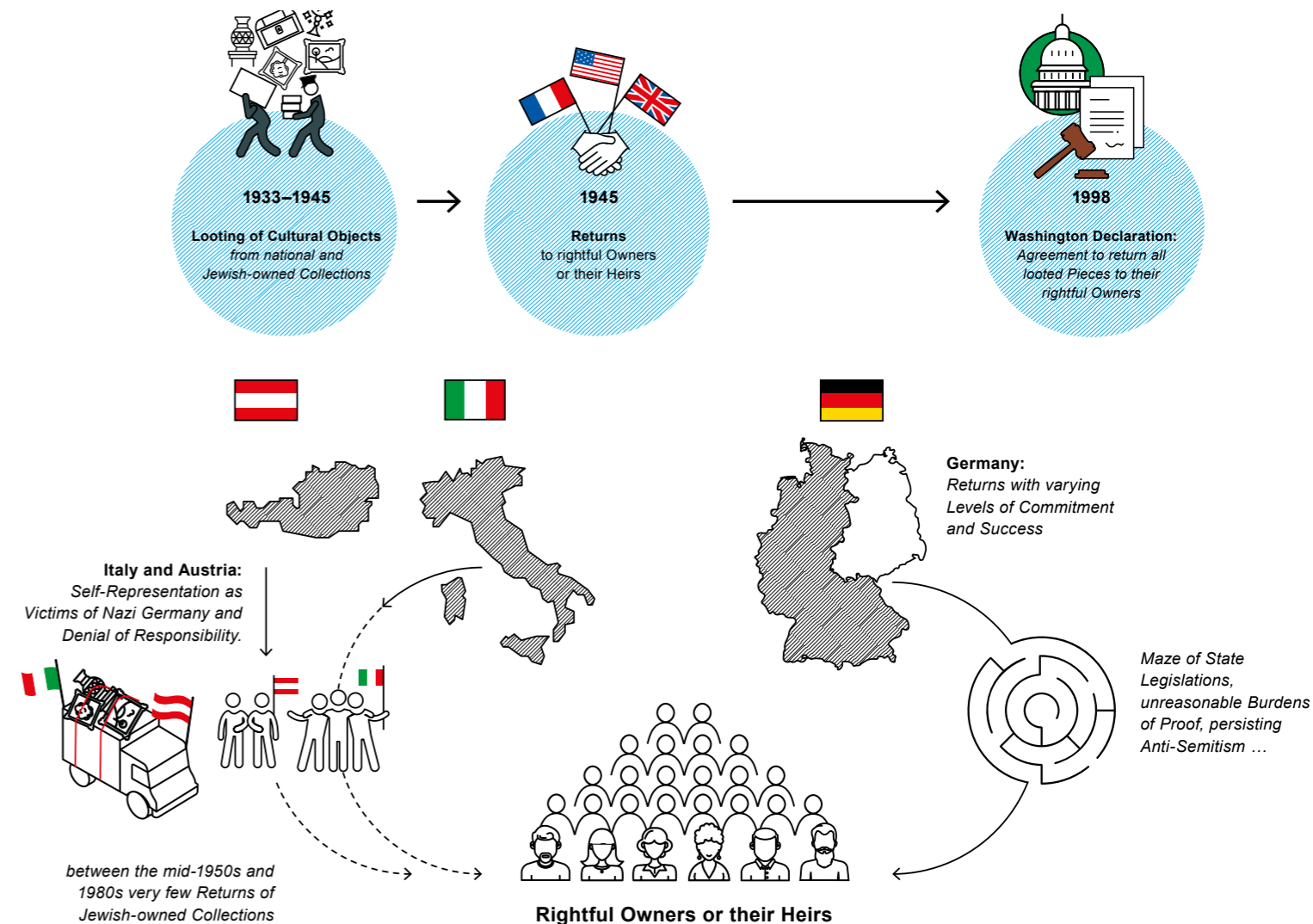
reconstructed by painstakingly piecing together a variety of primary sources. These include police and court files, private correspondence and auction catalogues – information that is held in several different archives across Italy. In order to consult these invaluable sources, I am currently on a research stay at the German Historical Institute in Rome, which has been most generously supported by the Zukunftskolleg.

Restitution of looted cultural property in Austria, Italy and the Federal Republic of Germany, 1945–1998

In the years 1933–1945, National Socialists and their accomplices looted millions of cultural objects from national and Jewish-owned collections. After the war, the western Allies set out to return these objects to their rightful owners, with varying results.

This was especially the case for the three main post-fascist countries of Western Europe, the Federal Republic of Germany, Italy and Austria, for whom restitution played an important political role. (West) Germany immediately appeared keen to return looted property – even though actual restitution often remained unattainable and responsibility was initially limited to certain state sectors and the Nazi party. Italy and Austria instead staged the restitution of national collections as a cathartic rite of passage, through which they presented themselves as victims of Nazism and denied any responsibility, while returning little Jewish property to its original owners or heirs.

This project analyses how all three nations eventually came to sign the 1998 Washington Declaration, where they agreed to return all looted art to their rightful owners.

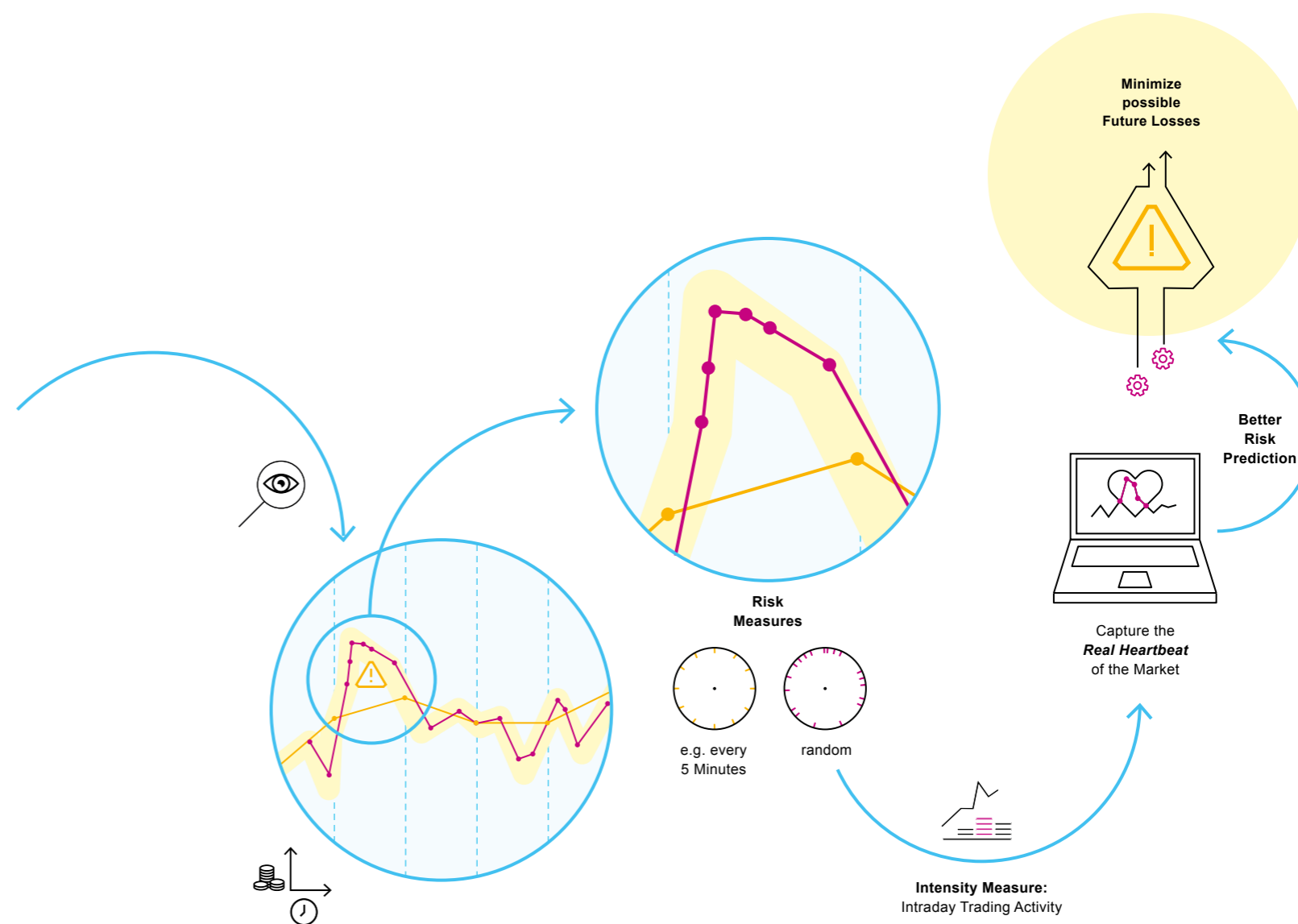
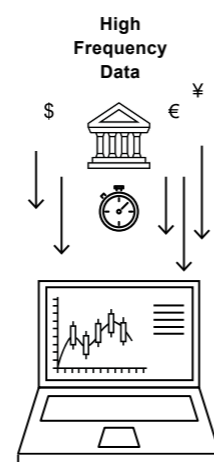


Roxana Halbleib

Fellow since 10|2013
Department of Economics

Financial risks in the intrinsic time dimension

In the last academic year, my research has mainly focused on developing methodologies to predict high dimensional financial risks. In particular, I have been working (1) on estimating latent dynamic factor models with conditional heteroskedasticity to capture the long memory and common dynamics of large panels of realized volatilities; (2) on developing a latent factor model with underlying Wishart distribution to capture the long memory and common dynamics of the components of high-dimensional realized covariance matrices and (3) on developing daily variance (volatility) estimates from financial high-frequency data. For the latter focus, the high frequency data are sampled in an intrinsic time dimension, which aims to capture the real “heartbeat” of the market’s activity and, thus, provide more valuable information about extreme risks than the data sampled in classical calendar time (e.g., every 5 minutes). The intrinsic time dimension is driven by various market intensity measures, such as the intraday volatility pattern or by the number of transactions. As a result of a project in which I measured financial risks in the intrinsic time dimension, I was accepted to the Heisenberg Programme of the German Research Foundation in December 2018.



Predicting financial risks

Risk is part of every human endeavour. The goal of all individuals is to assess, understand and minimize risk and the potential loss that comes with it.

My research deals with financial risks at the juncture between data science, finance and statistics/econometrics. My approach to providing accurate predictions of the risk is to exploit the richness of the information content of big high-frequency financial data currently available.

I undertake a non-standard approach of sampling this big data not equidistantly in clock time, but more often when the market is active and less often when the market is calm. The motivation is that the events triggering risks do not occur regularly in time.

Based on this data, I develop mathematical models that help predict the risks more accurately when they are needed most. They are built on the principal of subordination, which means replacing the fixed clock time with a random transformation of it.

Jolle W. Jolles

Fellow since 03|2018
Department of Biology

Fruitful international collaboration thanks to Mentorship Grant

I have benefited tremendously from the broad support provided by the Zukunftskolleg. One prominent example is the collaboration I have been able to establish with Dr Shaun Killen, a lecturer in fish physiology at the University of Glasgow, with help from a Zukunftskolleg Mentorship grant. During the programme, Dr Killen and I visited each other a number of times, and I gave a departmental seminar at his institution. After I became involved in the co-supervision of a couple of exciting projects in his group that focused on understanding the role of physiology in the schooling behaviour of fish, Dr Killen and I started to work on a theoretical paper on this topic. Our research provided a holistic framework for understanding the mechanistic role of individual differences in animal societies and their social and ecological consequences. Happily, our paper, which interlinks the distinct fields of animal physiology, behavioural ecology and collective behaviour, is currently under review at the prestigious journal *Trends in Ecology and Evolution*, and Dr Killen and I have more papers and collaborative projects planned for the future.

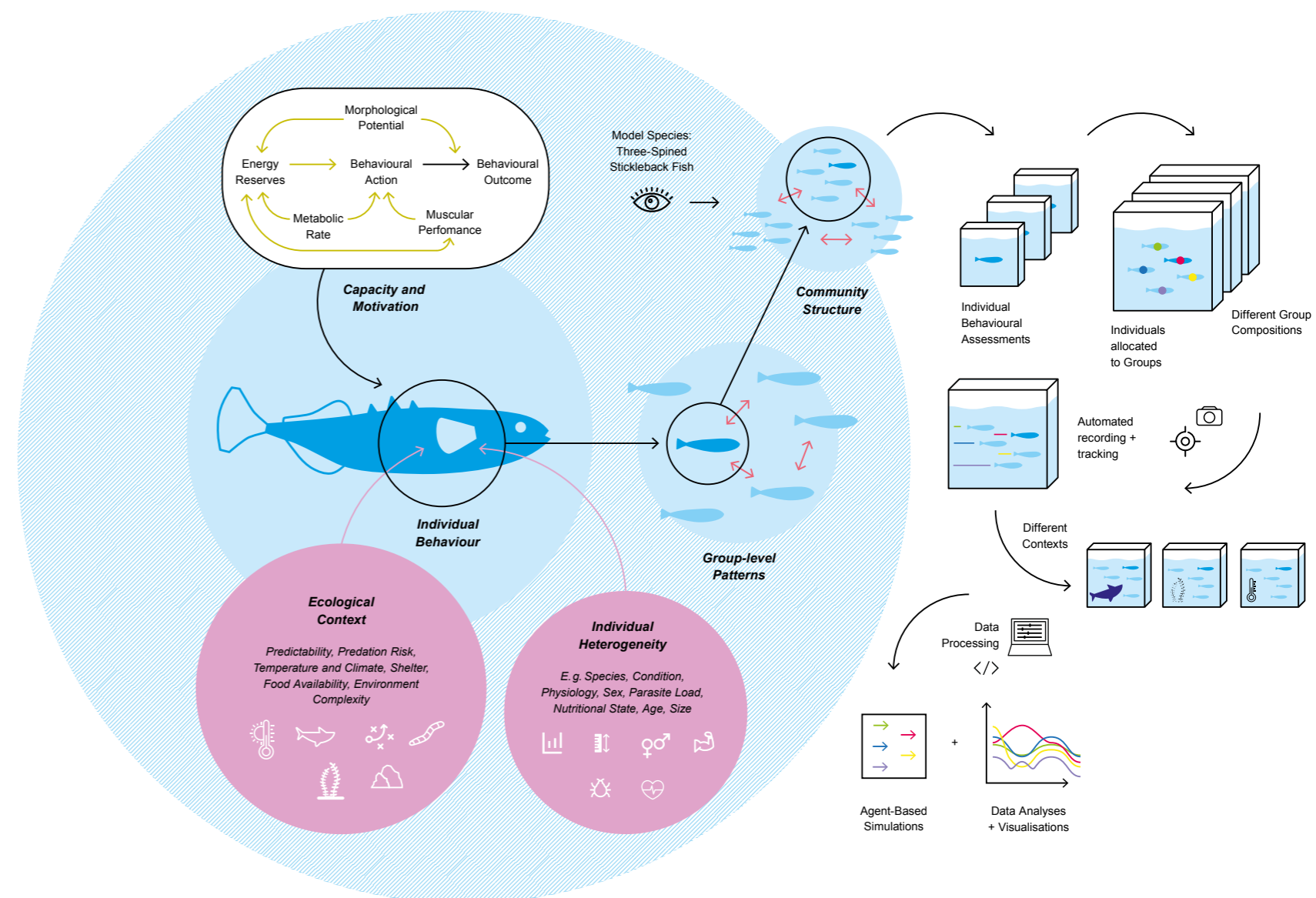


The role of individual differences in collective animal behaviour

Throughout the animal kingdom, animals live and move together in groups. From the small-scale interactions among individual group members, seemingly complex large scale collective patterns emerge that are often strikingly beautiful, such as the highly synchronized movements of schools of fish and flocks of birds.

My research is focused on understanding what role individual differences play in the emergence of collective behaviour. Using three-spined stickleback fish as my model species, I investigate how personality differences, such as boldness, activity and sociability, and other levels of heterogeneity, e.g. the sex and parasitic state of individuals, drive collective behaviour.

By combining laboratory experiments, in which we track individual fish, with field observations, we have demonstrated that individual heterogeneity has large consequences across social and ecological scales, including variation in the structure, leadership, movement dynamics, and functional capabilities of groups.





Cornelia Klocker

Fellow since 04|2019
Department of Law

An empirical study of the European Court of Human Rights' understanding of the term *group* in its non-discrimination case law

My research at the Zukunftskolleg is concerned with the non-discrimination case law of the European Court of Human Rights (ECtHR) and the ramifications of the Court's understanding and definition of affected groups such as Roma, the LGBT+ community, women or people with disabilities. By undertaking a qualitative empirical study, the project aims at gathering data on recurring terminology used by the Court to address groups and at analyzing the impact thereof on the advancement of rights held by groups based on their collective interests.

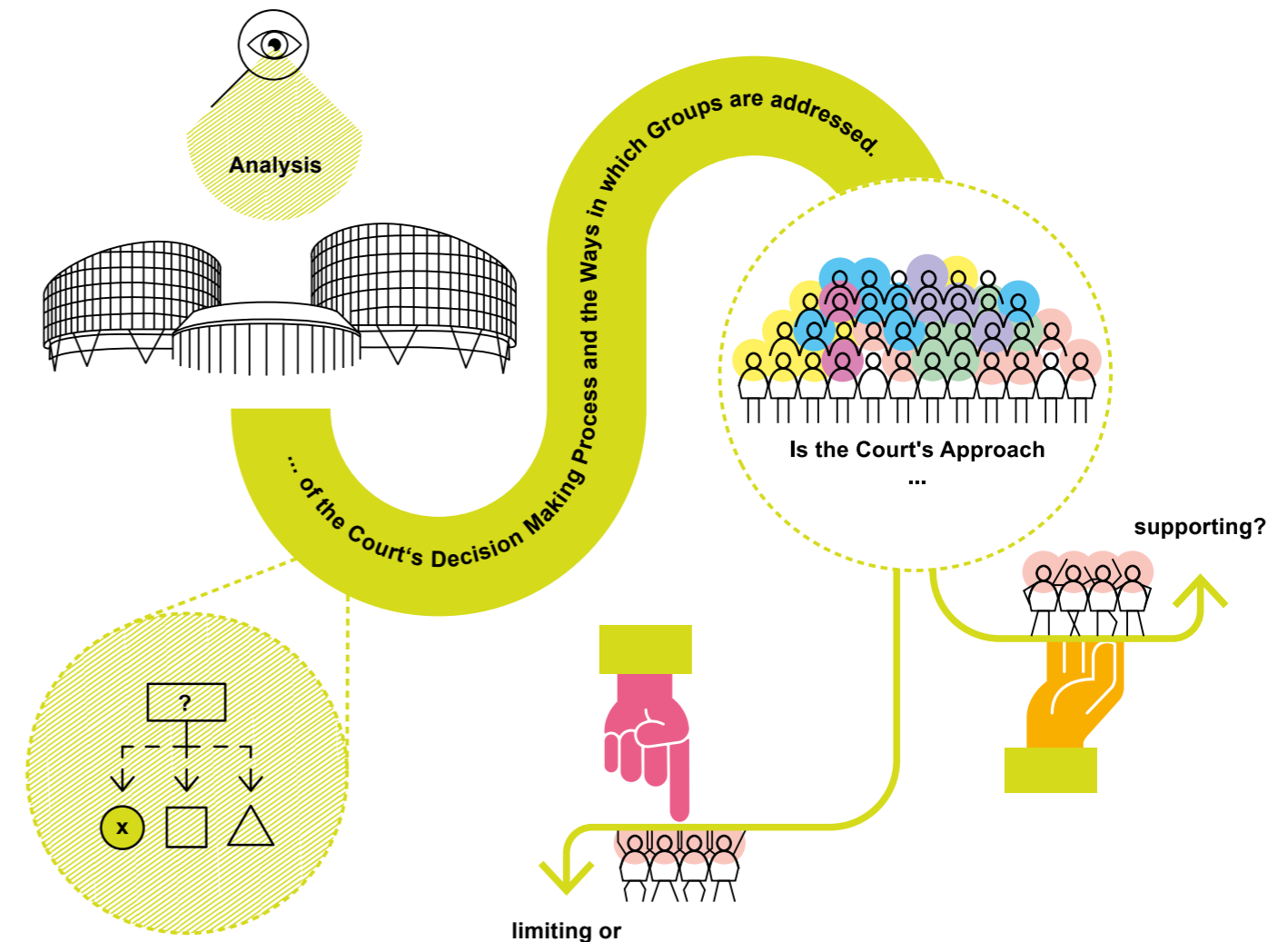
Although there is much research on the question of group rights in general and a fair amount on the theoretical implications of human rights held by groups, a comprehensive empirical review of the ECtHR's non-discrimination case law and the role of groups or collectivities in this context has not been undertaken so far. The practice-oriented perspective of this study enriches existing theoretical foundations for group rights by investigating the nature and composition of groups as defined by the Court.

I have also been accepted as a Visiting Scholar at the Waseda Institute for Advanced Study in Tokyo and I will complete a one-month research visit in spring 2020 where I am planning to do research on the rights of indigenous peoples and ethnic minorities in Japan and Russia in collaboration with Prof. Shuichi Furuya from Waseda Graduate School of Law.

What makes a group?

Research on group or collective rights is mostly conducted on a theoretical level by outlining the general conditions for such rights to exist. Although these are crucial preconditions for any debate on group rights, some difficult questions in practice remain: How are such groups defined? Do they consist of ethnic or national minorities, people with disabilities, workers or a religious community? Or do they include all of them? Are such categorizations useful for the advancement of group rights based on collective interests? My research aims to find out which, if any, criteria the European Court of Human Rights refers to when categorizing a group or collectivity within its non-discrimination case law. I also investigate the extent to which additional denominators such as „vulnerable groups“ affect the Court's decision-making process.

By analyzing the ways in which the European Court of Human Rights describes groups in its non-discrimination case law and whether this approach limits or supports rights held by groups, my study contributes a practical perspective to the current body of group rights research.





Gisela Kopp

Fellow since 03|2018
Department of Biology

Introducing students to animal sociality

One of the research priorities at the University of Konstanz is “Collective Behaviour & Ecology”. Despite our excellence in research and the growing number of students interested in this field, there is currently a lack of animal behaviour courses offered in the university’s study programmes.

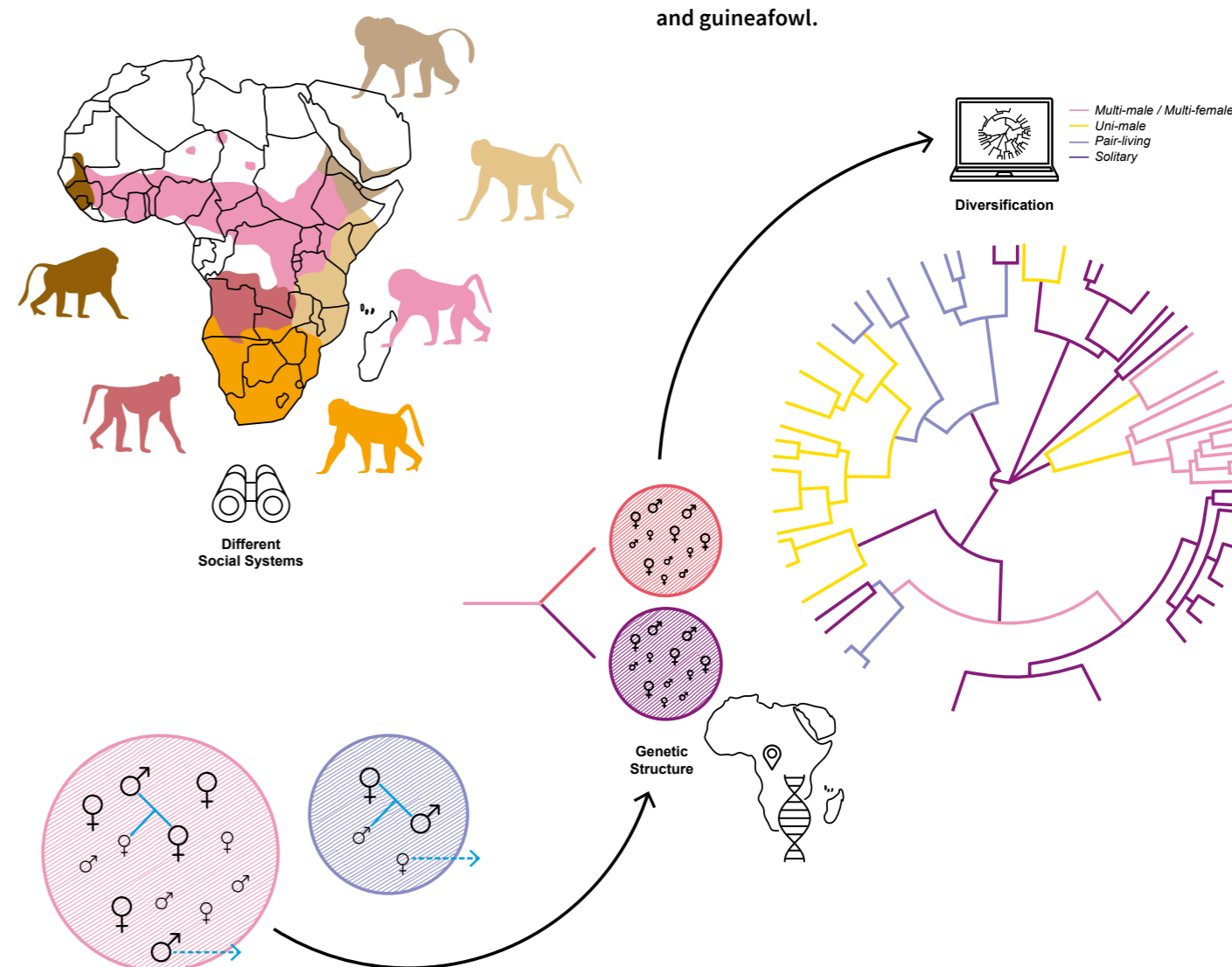
To meet the demand of interested students and equip them with the essential theoretical background for understanding this field, I started the seminar “Animal Sociality”, funded both by the Zukunftskolleg and the International Office. For this seminar, I invited four internationally-recognized scientists, covering different topics in the field of animal behaviour, to participate. Students prepared class presentations using literature made available to them. In the week preceding their talk, students met for a preparatory seminar in which they consolidated their knowledge of the topic and its main concepts. After giving their presentations, students actively participated in the discussion period and then completed a paper in which they outline key aspects of their topic. After the talk, there was also a joint lunch in the Mensa to promote additional dialogue between the students and researchers. This seminar thus provided students with a solid theoretical background on animal societies and introduced them to cutting-edge original research. At the same time, it trained them to discuss current results and hypotheses with leading experts and facilitated interaction between students and scientists.

Sociality and evolution

Why and how do closely related species evolve different societies and how do these behavioural traits influence evolutionary trajectories? While the role of ecology in genetic differentiation and speciation is well understood, the broader impacts of behavioural differences in diversification processes have been neglected. I am developing a framework to identify the factors and processes that link behavioural traits with genomic evolution and diversification processes.

The key questions are: I. Which data and analyses are needed to efficiently describe diverse social systems in a quantitative way? II. Do these descriptors consistently correlate with measures of genetic structure and diversity across taxa? III. Is genetic structure and diversity a predictor of diversification and species richness? IV. Do certain behavioural traits impact diversification patterns on a macroevolutionary scale?

To achieve this, I combine meta-analyses across a diverse set of animals, with case studies, for which behavioural and genomic data is collected in wild populations, for example in baboons, bats, gazelles and guineafowl.



Claudius Kratochwil

Fellow since 09|2013
Department of Biology



How evolution repeats itself

More than 1200 species of colourful ‘cichlid’ fish species can be found in the large African lakes Malawi, Victoria and Tanganyika. Because of their species richness and diversity, they have become a prime study system for evolutionary biologists. An interesting phenomenon is that these fish diversified not only in their body shapes, colour patterns and other biological aspects, but that, at the same time, certain features repeatedly evolved in different lakes. If similar colours and body shapes have emerged in several evolutionary lines independently from each other, this means that evolutionary development reacted to similar environmental conditions in the same way. The question is how this is driven by changes in the genome of these fishes?

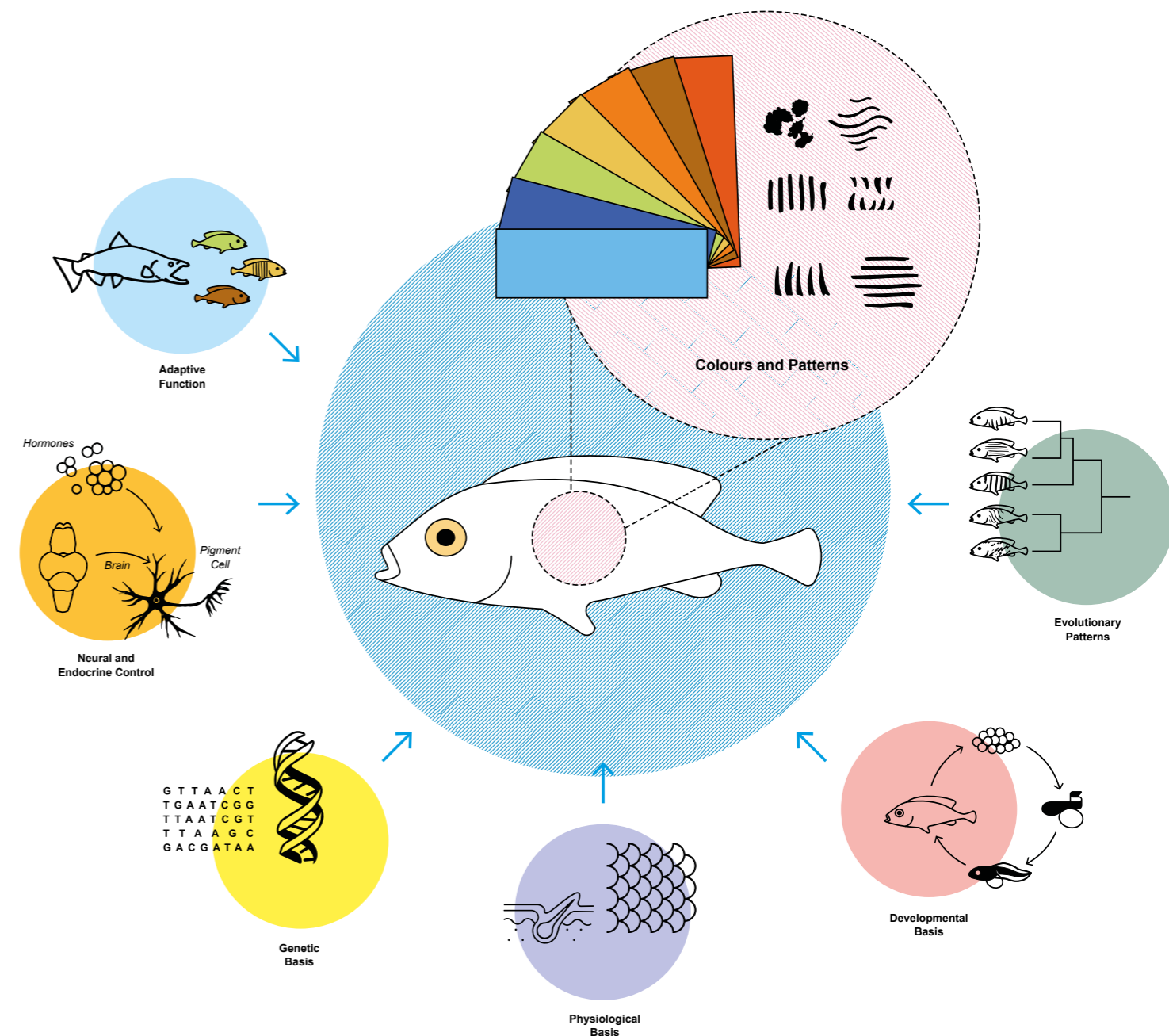
In a recent work published in *Science* (Kratochwil et al., 2018), we identified a single gene that drives the repeated evolution of stripe patterns. This “stripe gene” *agrp2* shows a higher activity (expression) in species without stripes and blocks the formation of this conspicuous pattern. The gene is less active in striped species, however, and permits the formation of the pattern. Interestingly, the same gene and change in activity is also responsible for the repeated evolution and loss of cichlid stripes — even across different lakes. Therefore, our research provides insight into the genomic basis of the striking evolutionary phenomenon of repeated evolution.

The genetics of colouration

Colouration is an important and fascinating feature in the biology of an organism. Animals use colouration and colour patterns for communication, recognition and camouflage. But how are such complex patterns as the stripes of a zebra, the spots on a butterfly wing or the iridescent color of coral reef fishes generated?

In my work, I study a particularly diverse and colourful family of fish, the cichlids. We investigate how colour patterns in these tropical fish form during the development organisms.

We study what parts of the genetic code define colouration and colour patterns and we ask how changes in this genetic code result in the diversity of differences that we see between species.





Oleksandra Kukharenko

Fellow since 03|2015
Department of Chemistry

Efficient sampling and characterization of free energy landscapes of ion-peptide systems

Biomaterials often exhibit outstanding mechanical properties outperforming pure mineral phases. Some of the main components of biomaterials besides the mineral itself are macromolecules which appear to be the key for understanding the mechanisms behind the formation of such complex structures.

Molecular dynamics (MD) simulations are, in principal, an ideal tool to mechanistically investigate processes of early stage biomineralization. However, classical MD and analysis techniques face a number of challenges connected with the high-energy barriers for breaking strong ion-peptide sidechain contacts and the complexity of state spaces for such systems. In our manuscript "Efficient sampling and characterization of free energy landscapes of ion-peptide systems" we successfully addressed all those issues. We first proposed a new set of parameters for accelerated simulations of aspartic acid oligopeptides in the presence of calcium ions. Next, in order to assess the conformational variety and stability of different structures, we introduced and compared three methods for state characterization. Finally, to get a quantitative esti-

mate for the statistical weights of the defined states, we tested and compared unbiasing techniques. In summary, we provided a complete workflow on how to efficiently sample and characterize free energy landscapes of ion-peptide systems. This, in turn, allows us to gain further insight into the role of peptides in the early stages of biomineralization.

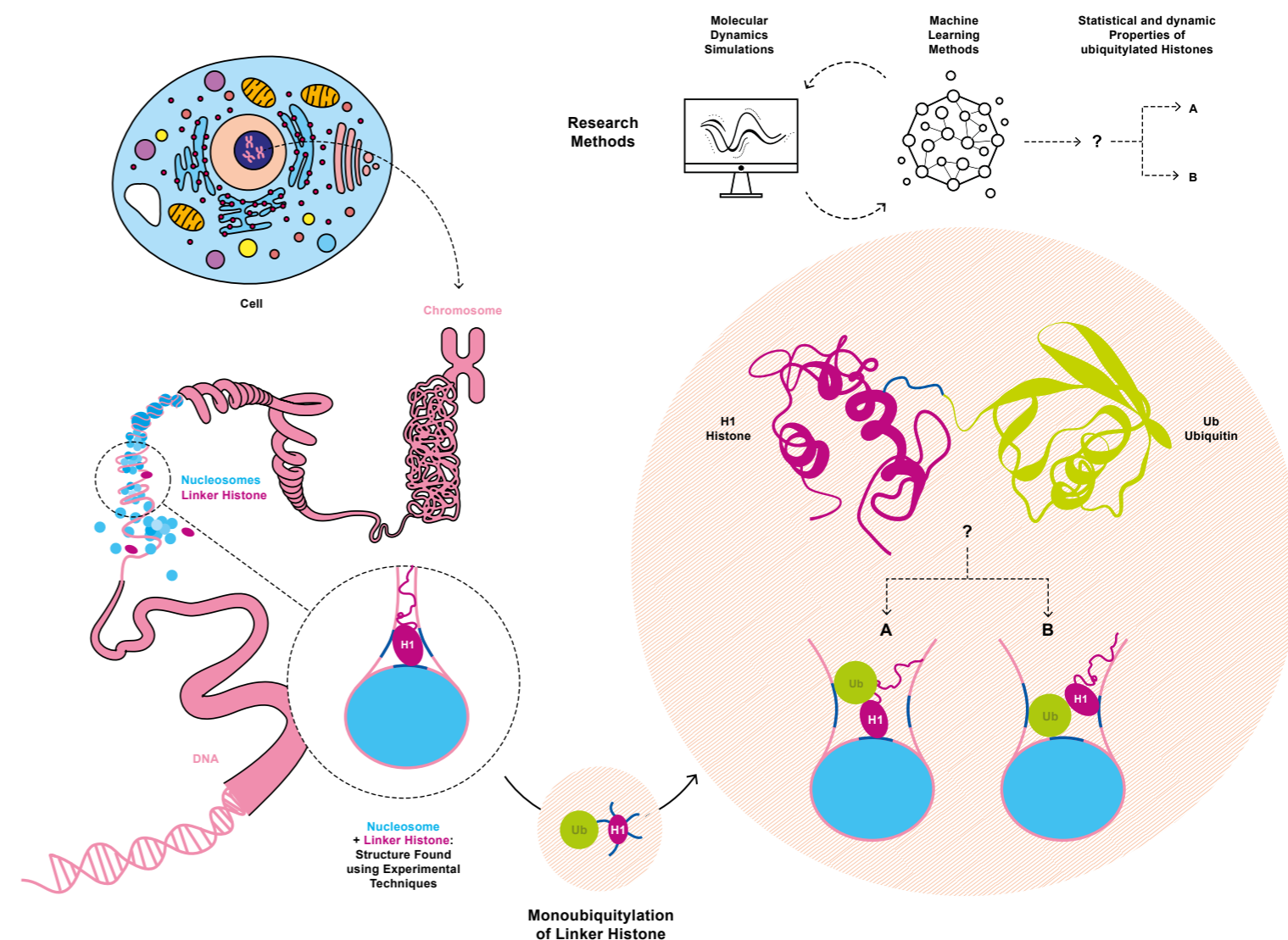
Quantitative analysis of linker histones ubiquitylation

In every cell, DNA is folded in an organized way, creating chromatin structures that form the chromosomes. The folding is coordinated by histones, large biological molecules. There are various ways to modify histones, for example, by attaching an ubiquitin molecule to them (monoubiquitylation).

My project focuses on the development and application of computational methods and mathematical tools to study the influence of monoubiquitylation on histones and subsequently on the ability of DNA to form chromatin structures.

I use classical molecular dynamics simulations with different resolution levels in combination with novel machine learning techniques to investigate changes in the ubiquitylated histones (Ub-H1).

Obtaining comprehensive kinetic and thermodynamic information is of fundamental importance to the interpretation of experimental data and the planning of future experiments. In addition, the theoretical methods developed and modified during this project will be used to investigate other multi-body systems.





Takayuki Kurihara

Fellow since 04|2018
Department of Physics

Noise spectroscopy method

Noise is often neglected or disliked in our daily lives, but it actually contains a lot of important information about the physics of microscopic worlds. Even though the macroscopic properties of materials that we observe everyday (like the shape, colour and magnetic moments of solids) look changeless and still, this is actually not the case in the small dimension and across fast time scales. That means, due to the quantum and thermal noises, these properties are actually fluctuating so fast we cannot see it with the naked eye. However, it can be expected that if we had an ultrafast “strobe” that is capable of recording them at a time scale much shorter than the duration of the fluctuation itself, we could use them to estimate how much fluctuation there is by statistically analyzing the snapshots. At the Zukunfts-kolleg, I have proposed such a “noise spectroscopy” method from the viewpoint of ultrafast photonics technology and am currently working to establish it as a novel and fundamental experimental platform for studying condensed matter physics. So far, we have finalized the construction of our light sources, have set up experimental systems and have begun our first proof-of-principle measurements. Our test sample is an orthoferrite magnet, which was specially fabricated by collaborating researchers in Japan. It shows a unique magnetic phase transition at room temperature, wherein the fluctuation of the magnetic moment is expected to diverge. We have already

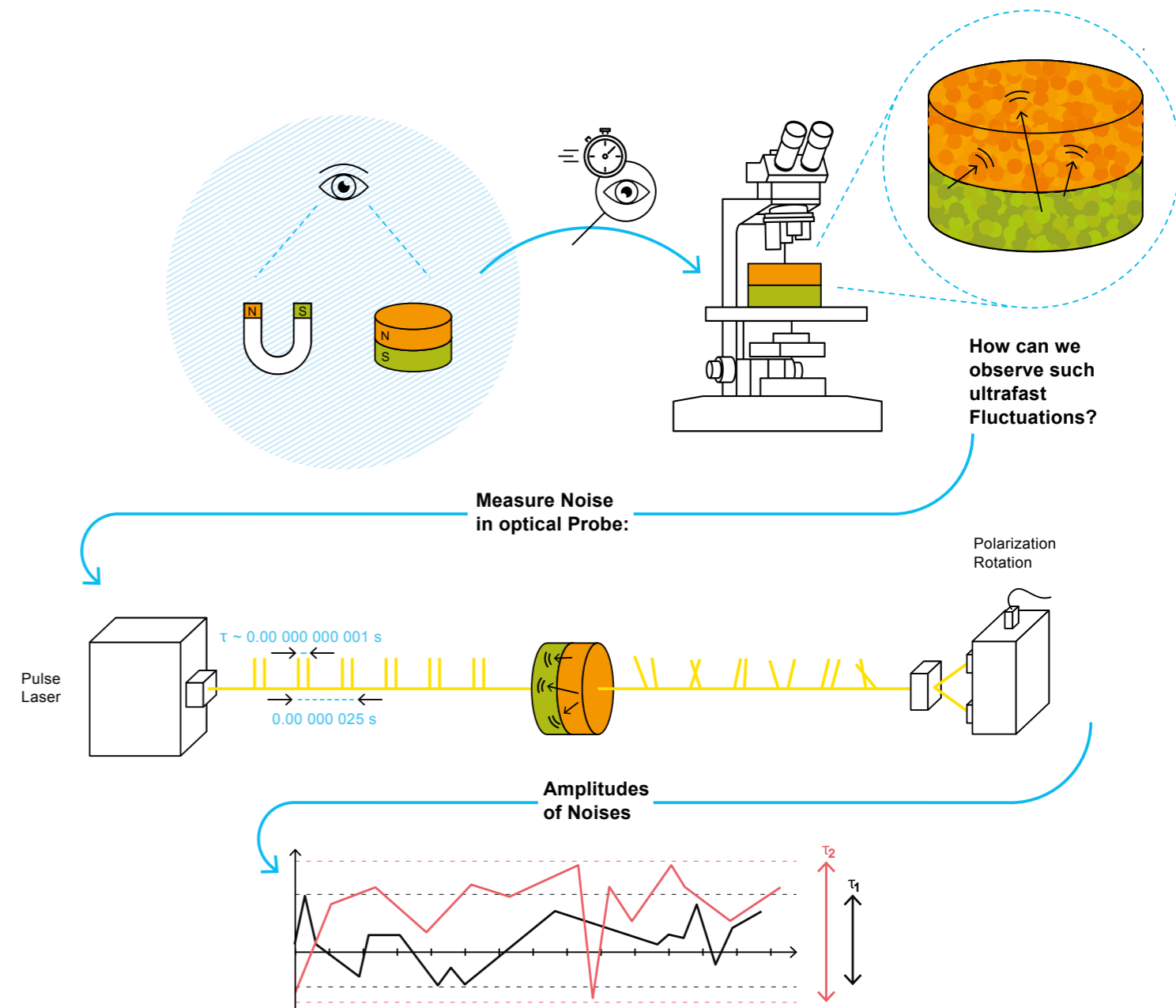
obtained some preliminary data sets and are on the way towards further investigation. Once successful, this method is expected to offer tremendous application possibilities for materials science.

Listening to ultrafast noises in magnets

Properties of solid materials that we see in our daily lives – shape of stones, colour of metals, strength of magnets – look very still and changeless to our eyes. However, that is not exactly true from a microscopic perspective. Due to thermal and quantum dynamics, everything in the world is ceaselessly fluctuating. This is very important for the occurrence of many exciting phenomena in nature, such as in phase transition (water turning into ice, iron becoming magnetized, etc.). Is it possible to observe such microscopic fluctuations?

I am working to develop a unique experimental technique that would enable such experiments by using light, targeting magnets. By using a laser pulse that has very short time duration as a strobe, we can record fluctuations in magnetization by carefully measuring the noise pattern contained in the polarization of the optical pulse.

Ultimately, we can reveal quantum mechanical features of magnetism in femtosecond timescales.





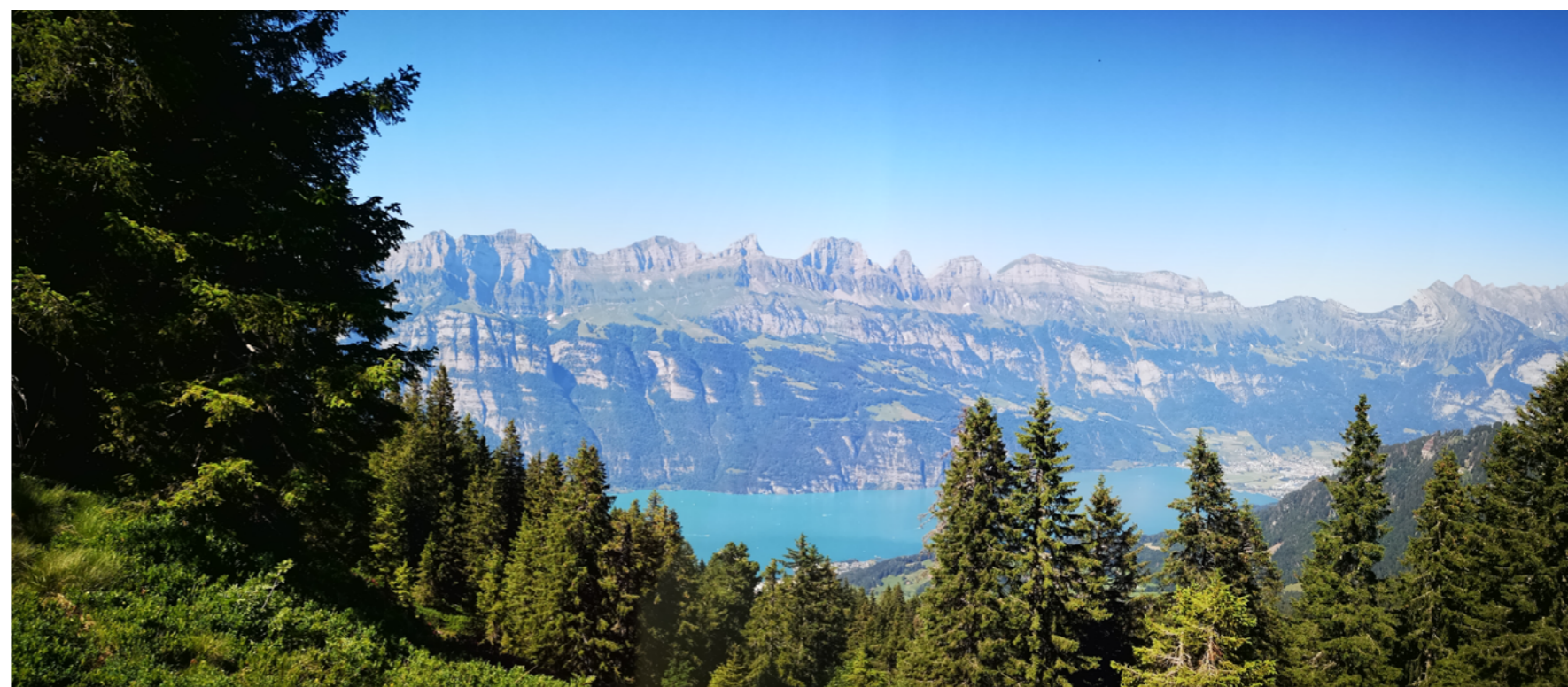
Bernard Lepetit

Fellow since 09|2013
Department of Biology

Methods bridging disciplines: from Chemistry to Biology – an interdisciplinary seminar

Usually, natural scientists have a portfolio of experimental methods that is specific to their respective field. In order to answer a scientific question, however, often multiple techniques are required, which no single lab can master by itself. Therefore, a plethora of scientific articles are based on collaborations between thematically very diverse groups. However, in order to extract the most from the experimental results, everybody involved in the project needs to understand the methodology behind the different experiments. This kind of holistic understanding should thus be developed as early as possible in researchers. In pursuit of this goal, Michael Kovermann, Andreas Lorbach, Thomas Böttcher and I used a “Zukunftskolleg Transdepartmental Collaborative Teaching Grant” to offer a course for master’s students studying biology, life science, chemistry, and nanoscience called “Methods bridging disciplines: from Chemistry to Biology”. First, each of us offered a 180 min lecture explaining different methodologies such as NMR spectroscopy, activity-based protein profiling, synthesis of boron containing complexes, and gene editing methods. We then went to the Swiss Alps for a weekend, where each of the 19 students presented a groundbrea-

king scientific article covering the topics of the lectures. In this stimulating environment which also included a breathtaking hiking tour, we were all able to gain unexpected insights into different methodologies.



Morgane Nouvian

Fellow since 04|2019
Department of Biology



Behavioural and neurobiological bases of regulatory mechanisms in honeybees

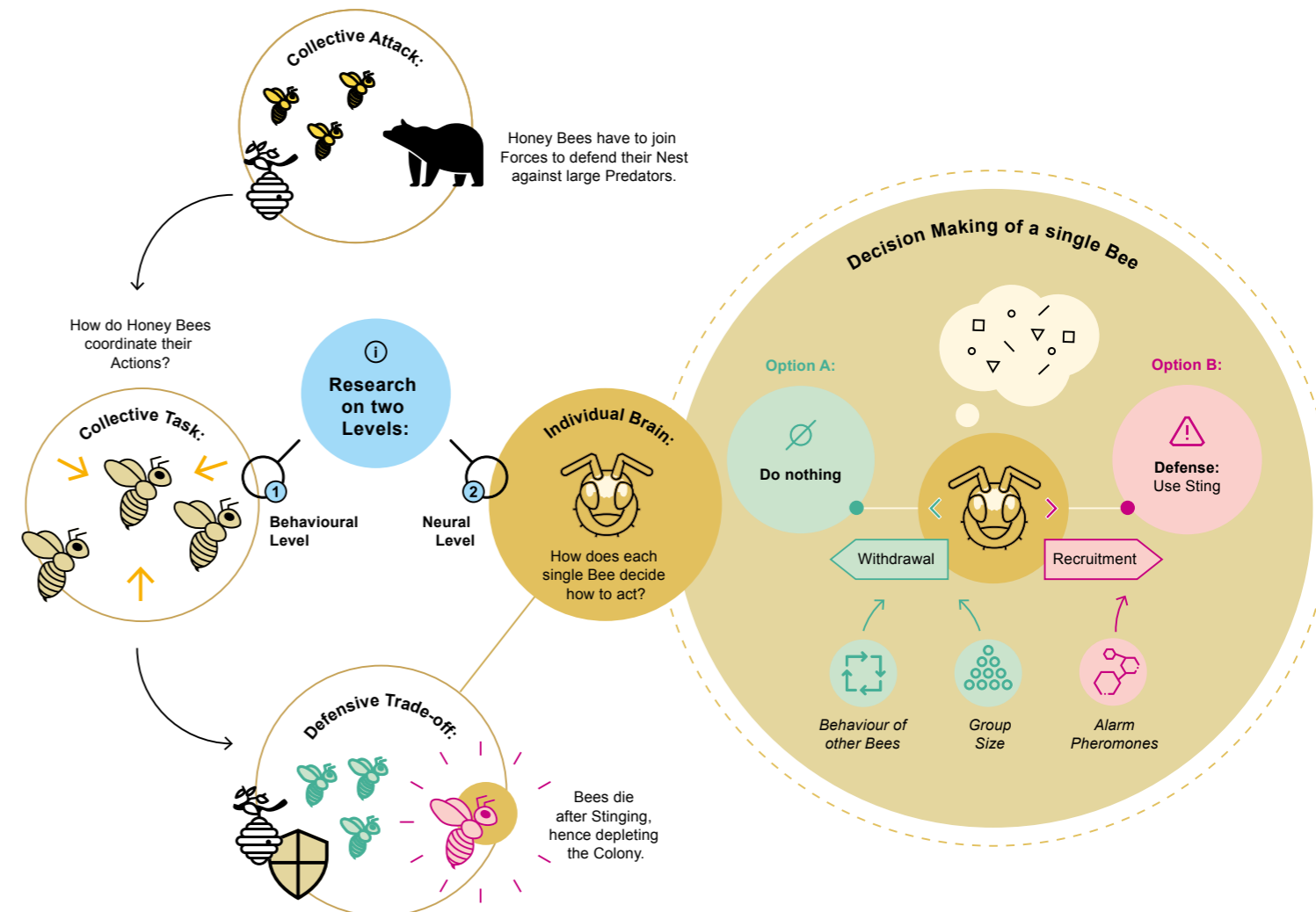
Honeybees defend their nest against large predators using a collective effort to harass and sting the intruder. The stinger apparatus has evolved to detach upon stinging elastic skin (such as ours) in order to maximize venom delivery, but the drawback is that the mutilated bee will then die within a few hours. Thus, the honeybee colony under threat must achieve a delicate balance: enough bees need to respond so that the intruder is successfully deterred, but without unnecessarily depleting the colony of its workforce. What are the mechanisms regulating the decision of each individual about whether to engage in this collective response so that this balance is reached?

I propose that honeybees integrate information about the behaviour of their nestmates (social feedback) to fine tune their own responses. The aim of my project is to study both the behavioural and the neurobiological bases of this regulatory mechanism. After performing behavioural experiments, I will characterize the postulated social feedback and identify the sensory channels involved. In order to study the neurobiological mechanism underlying this regulation, I will also investigate the role of known and putative neuro-modulators of honeybee aggression. Characteri-

zation of the neurons involved will then provide a starting point for unravelling the neuronal circuitry mediating the stinging response of honeybees.

Individual brains, collective task: social regulation of stinging behaviour in honeybees

A vast amount of resources is concentrated within a bee nest, from the pollen and honey to the brood. Because of this, bees have to defend their colony against many predators, some of them a million times bigger than the bees themselves. To deter such enemies, honeybees have to join forces in a collective attack, during which they make use of their painful sting. However, in doing so, the bees give their lives. The aim of my project is to study this interesting paradox: how do honeybees coordinate their actions to achieve an efficient defense of the nest without sacrificing too many individuals? I would like to answer this question at the behavioural level, as well as at the neural level. Thus, my second question is: how is the decision whether to contribute to nest defense taken within the brain of each bee?



Doris Penka

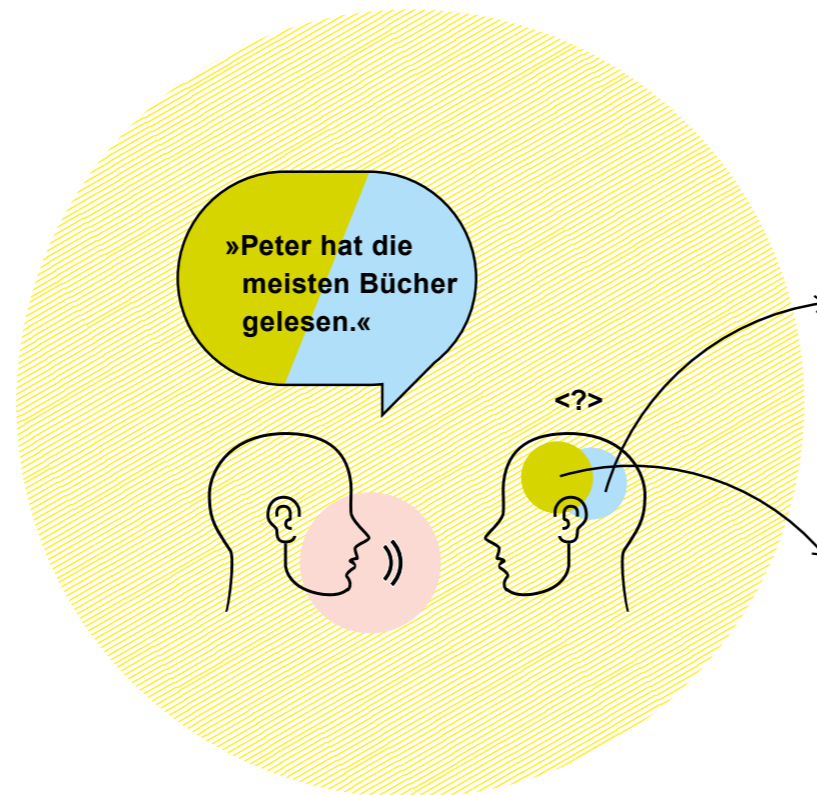
Fellow since 08|2008
Department of Linguistics

Expressing uncertainty in language

When someone tells you “I wrote at least ten papers last year”, why do you conclude that the speaker has lost track of his|her own output and is uncertain about the exact number of papers he|she wrote? Why, instead, do you reach the opposite conclusion when you are told “You have to publish at least ten papers to get tenure,” where the speaker indicates his|her precise knowledge of the requirements?

I investigate these questions and others like them in my research project on the meaning of expressions like “at least” and their German cognates. I apply methods from formal semantics and pragmatics to explain why these expressions convey speaker uncertainty and why uncertainty inferences are systematically absent in certain contexts.

During the past year, I have presented my work on several occasions, including at the annual meeting of the German Linguistics Society (DGfS) in March 2019 in Bremen. Particularly challenging, but also very rewarding for me was the presentation of my research at the “Uncertainty” workshop hosted by Zukunftskolleg and Martin-Buber Society in Jerusalem in November 2018. One of the many angles from which the topic of uncertainty was approached at the workshop was my work exploring the ways a speaker can express that he or she is uncertain about a particular issue by using certain words.



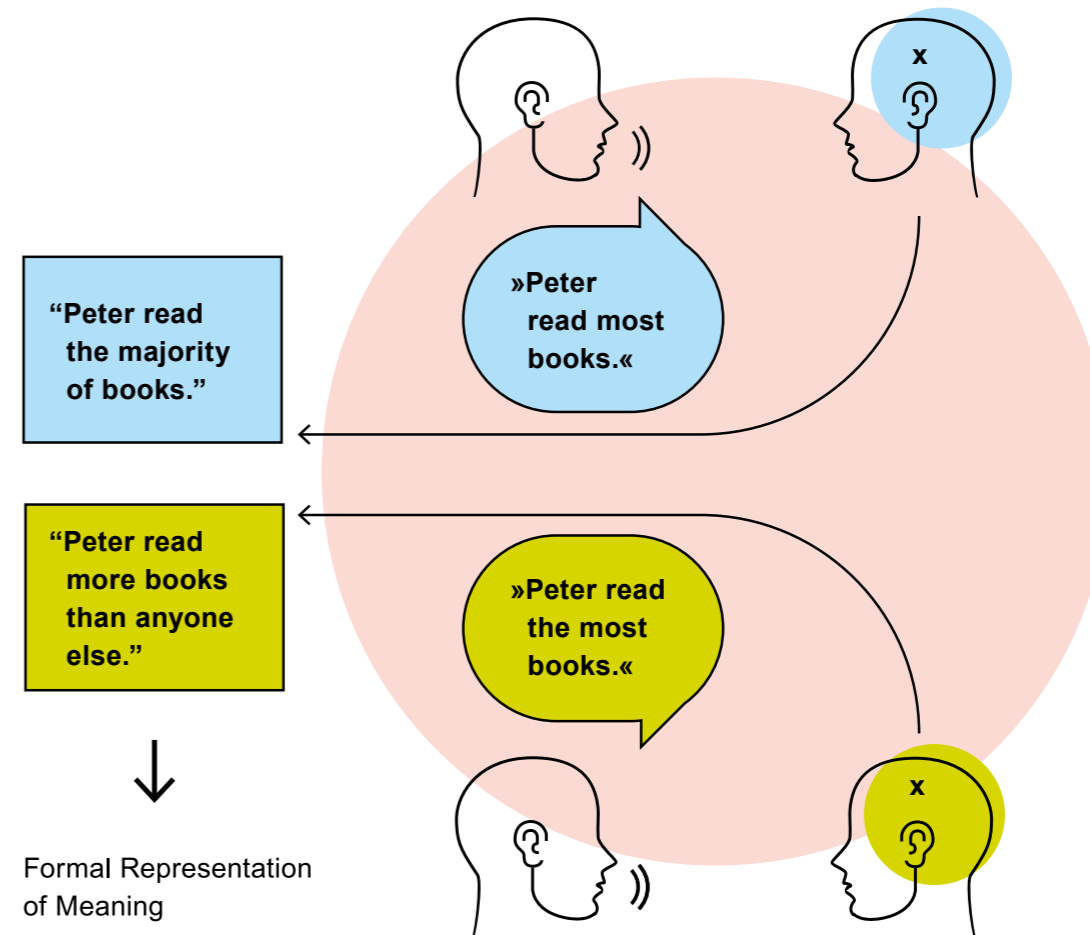
Microvariation in the expression of meaning

One of the most remarkable abilities of humans is the use of language. We can produce and understand sentences we have never heard before. I am currently investigating how humans associate sentences of a language with their meaning.

For example, why does a speaker who says “There are at least three possible solutions” convey that he does not know the precise number of possible solutions while this is not conveyed by the prima facie equivalent sentence “There are more than three possible solutions”?

To investigate this and similar questions, I also compare how different languages vary in their expression of meaning.

For example, the German sentence “Peter hat die meisten Bücher gelesen” is ambiguous: it can either mean that Peter read the majority of books or that Peter read more books than anyone else. English in contrast is unambiguous: “Peter read most books” only has the former meaning, while “Peter read the most books” only has the second.



$$\exists n [\exists x [\text{books}(x) \wedge |x|=n \wedge \text{read}(\text{Peter},x)] \wedge \forall y [y \neq \text{Peter} \rightarrow \neg \exists z [\text{books}(z) \wedge |z|=n \wedge \text{read}(y,z)]]]$$

Jennifer Randerath

Fellow since 07|2015
Department of Psychology



When daily life actions cause problems

Patients with brain damage often face severe functional impairments, including clearly apparent deficits in language comprehension or production (aphasia) and motor function (hemiplegia). Motor-cognitive impairments affecting the planning of daily life actions are often not detected immediately, however, and their effects on patients remain underestimated. For example, limb apraxia is a motor cognitive disorder affecting skilled movement, not caused by weakness or paralysis. In the past year, we demonstrated that particularly patients with left hemisphere damage after stroke or patients with dementia are highly likely to show signs of impairment that can range from mild to severe deficiencies in several subcomponents. These patient groups may have trouble imitating movements, producing gestures or choosing the correct tool. They may even be unable to recall how to use tools properly.

In our lab, the Naturalistic Action Therapy approach was designed to train patients with impaired real tool use and related anosognosia in daily life actions. The therapy concept can and is anticipated to be adapted for miscellaneous everyday tasks that may need to be retrained in a rehabilitation institute or at home. The main neurorehabilitation aspects of the Naturalistic Action Therapy are shaping, errorless learning and performance monitoring. The approach has already been suc-

cessfully tested in two stroke patients. Our manual is now available online and contains a description of example tasks trained in our laboratory as well as additional video-material and evaluation sheets designed to facilitate application of the therapy: moco.uni-konstanz.de/en/publications/assessments

With this project, we managed to transfer diagnostic and therapeutic tools that were developed at the University of Konstanz's Zukunfts-kolleg into the neurorehabilitation context of local clinics.

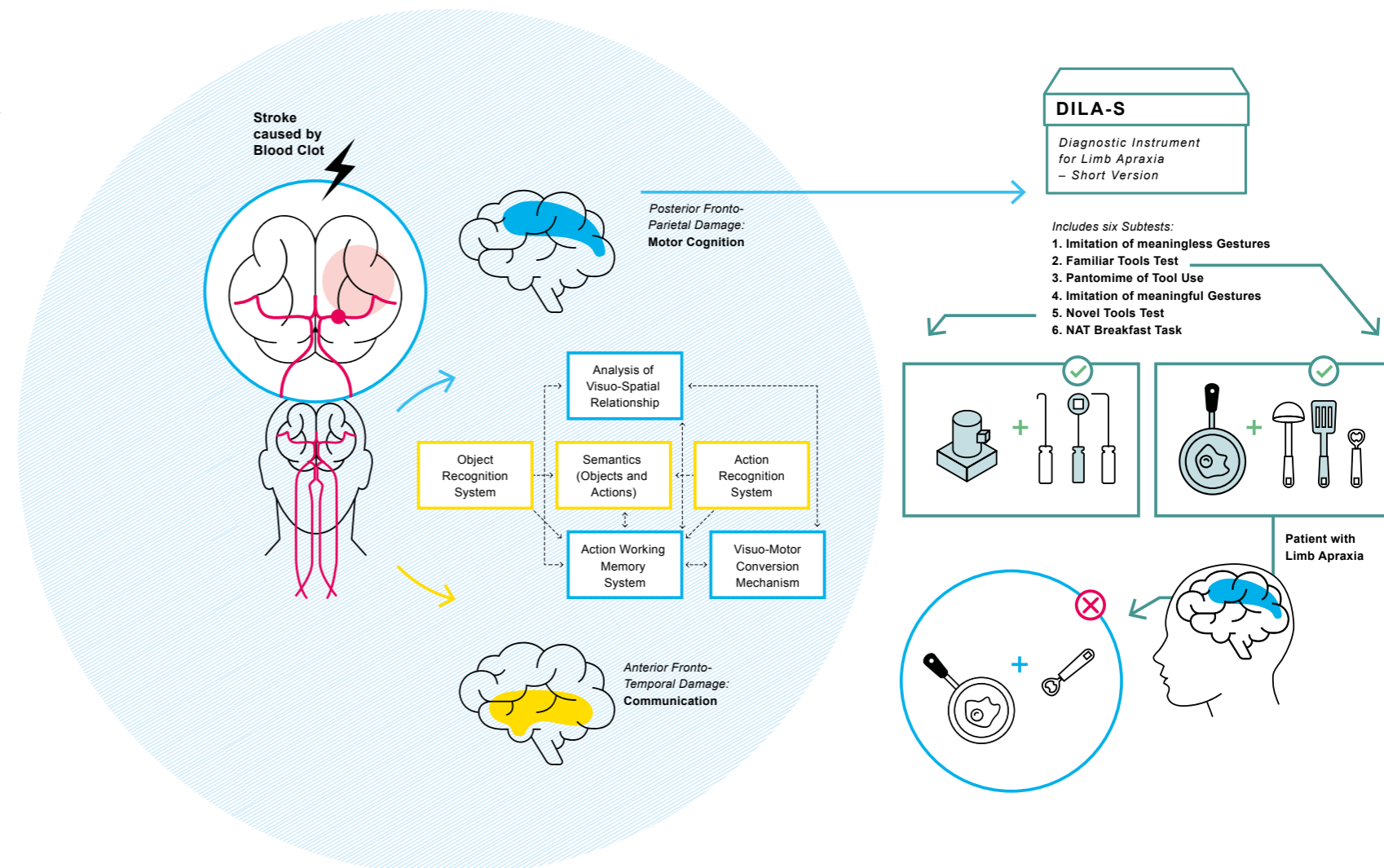
Motor Cognition: behavioural and neural principles as well as clinical implications

The central aspect in our research is Motor-Cognition: how we select, plan and produce movements and actions, especially when these involve tools or objects. Our ageing society and ageing-related diseases such as stroke confront us with the challenge of diagnosing and rehabilitating the resulting deficient behaviours.

We develop diagnostic and therapeutic approaches, and we aim to contribute to a better understanding of the underlying mechanisms of motor-cognitive abilities.

Major questions our group addresses are: How do we manage to skillfully use tools (project: limb apraxia)? How do we decide whether a cup of coffee is reachable (project: affordance perception)? How do we plan simple actions efficiently (project: alternate routes)? And what regions in the brain are essential for these daily functions?

We link pragmatic clinical needs inspired by our collaborative work with local clinics (i.e. Kliniken Schmieder) with fundamental theoretical questions developed in the laboratory context at the university (i.e. Zukunfts-kolleg, Department of Psychology), an approach which capitalizes on valuable synergies.





Gianluca Rastelli

Fellow since 03|2013
Department of Physics

Resonantly-induced friction in driven nanomechanical systems

The physics of friction is of interest to diverse fields and at different spatial scales ranging from cold atoms to electrons on helium and the locomotion of devices and animals.

An important type of system where friction plays a critical role and which has been studied in depth, both theoretically and experimentally, are vibrational systems. The simplest form of friction in these (and many other) systems is viscous friction. Recently, a large number of experiments on various kinds of vibrational systems have investigated nano- and micromechanical modes and electromagnetic cavity modes.

In vibrational systems, viscous friction is often called linear friction, to distinguish it from nonlinear friction. In our work, we proposed a new mechanism of friction in resonantly-driven vibrational systems. The form of the friction force is the result of the respective time- and spatial-symmetry arguments. We considered a microscopic mechanism of this resonant force in nanomechanical systems. The friction can be negative, leading to the instability of forced vibrations of a nanoresonator and the onset of self-sustained oscillations in the rotating frame. We discuss the local heating as a possible microscopic mechanism that generates such an unusual form of friction.

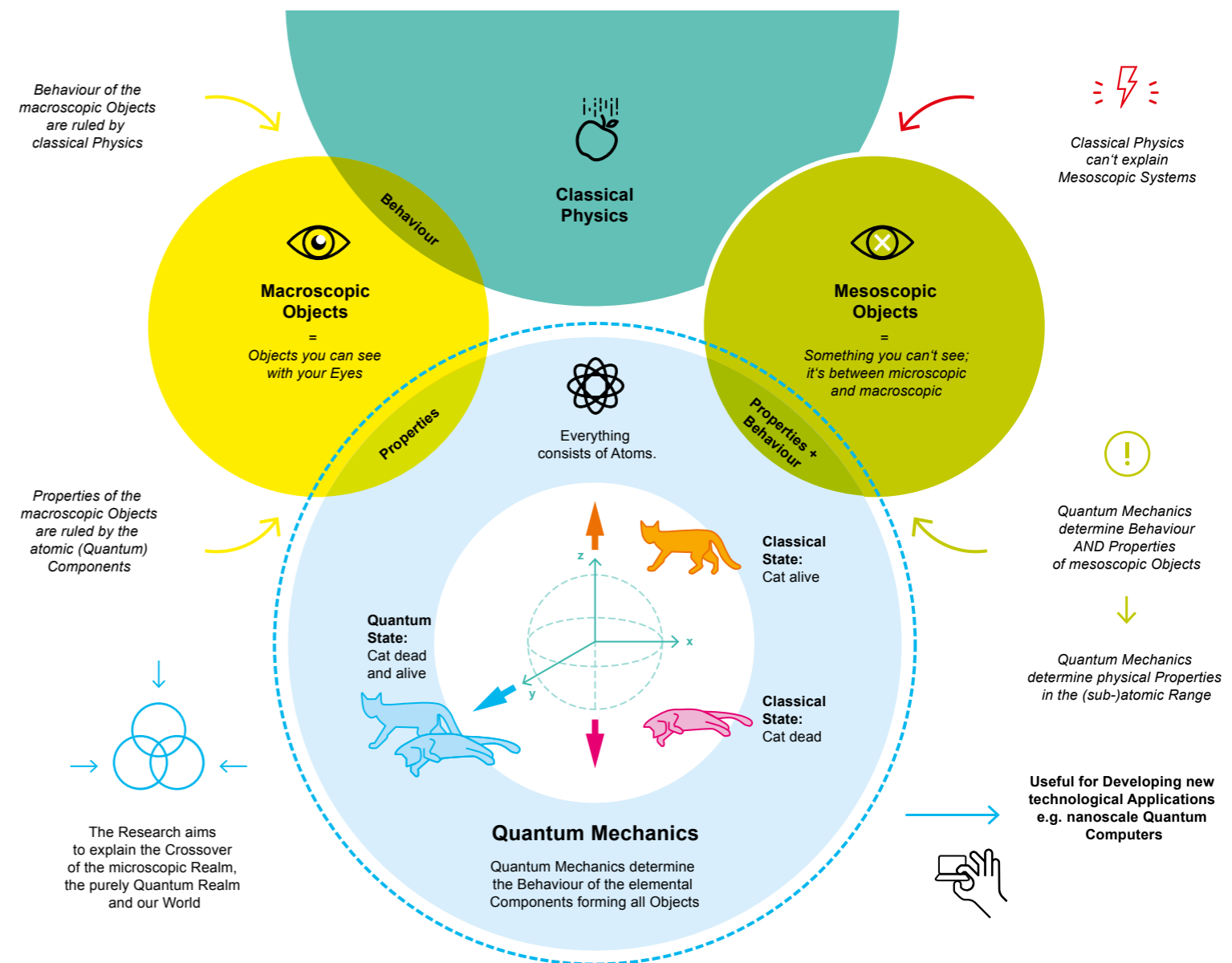
In conclusion, we unveiled this unknown mechanism of dissipation. Our findings represent a breakthrough in the physics of nonlinear resonators and elastic medium.

This work was completed in collaboration with Professor Mark Dykman (Michigan State University), Senior Fellow of the Zukunfts Kolleg since June 2018.

Theory of engineered quantum systems

Quantum theory told us almost a hundred years ago that matter as well as light have a particle and a wave-like character. This wave-particle duality leads to a strange quantum world in which atoms and light fields can exist in superposition states, suspended, so to speak, between different classical realities. This situation is impossible to comprehend intuitively for us if we look at macroscopic objects. However, nowadays there is a host of mesoscopic devices that reveal quantum mechanical properties.

I investigate strategies for creating, detecting and eventually controlling quantum states in engineered coherent systems. My aim is to reach a theoretical understanding of the interplay between quantum coherence, interactions and non-linearity in quantum mesoscopic systems.





Philip Rathgeb

Fellow since 02|2018

Department of Politics and Public Administration

A new chapter begins...

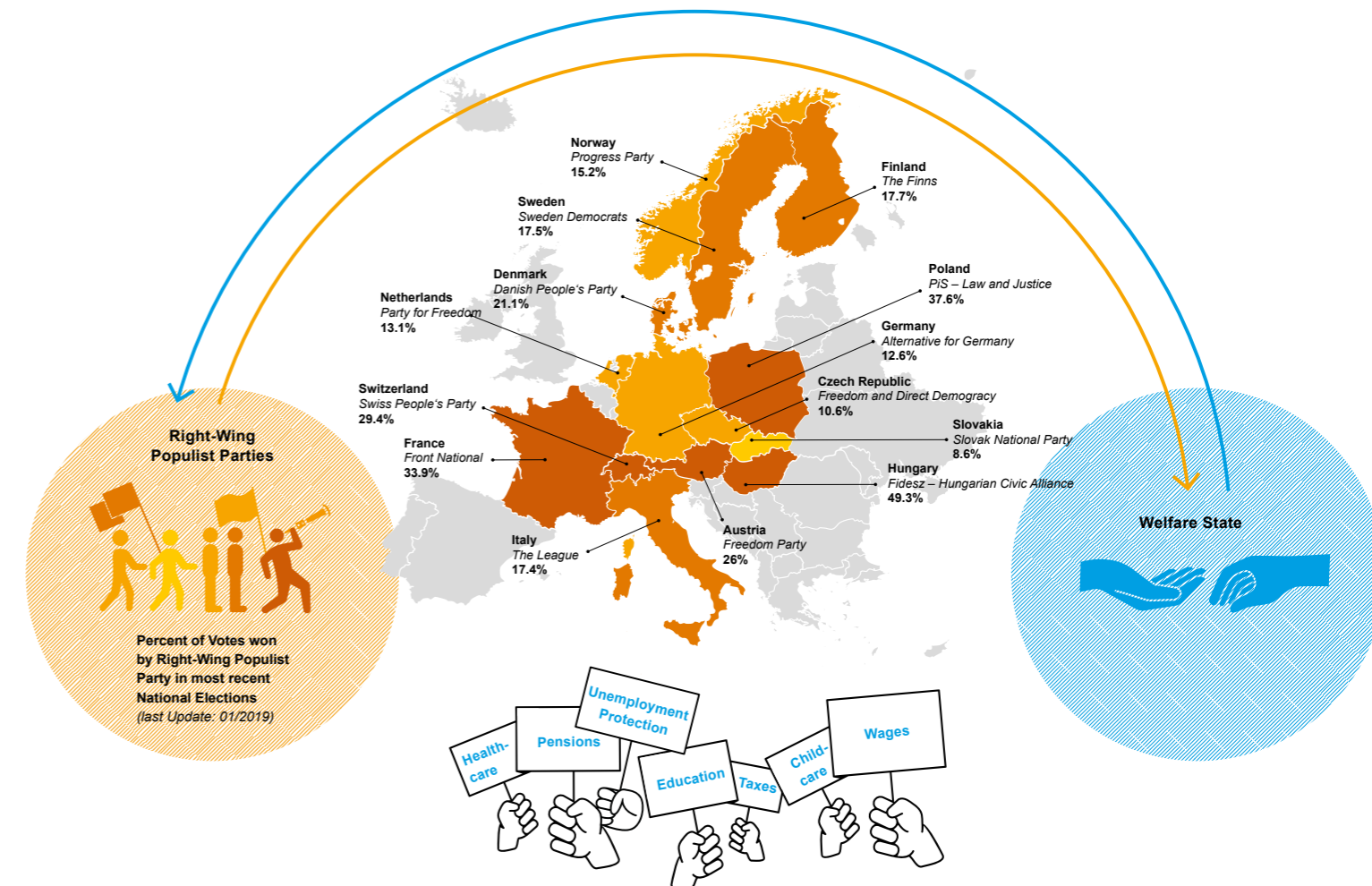
A postdoctoral fellowship at the Zukunftskolleg not only allowed me to kick-start my new project; it was also essential to me being able to develop it further in the stimulating environment of Harvard University. I started off the academic year 2018|2019 with an extremely inspiring Visiting Fellowship in the Center for European Studies at Harvard (October – December 2018). I was very fortunate to have had the financial and organizational support of the Zukunftskolleg throughout the entire application process and research stay. During this period, I reached first results on the project's main question: How do right wing populist parties shape social policies when they are in government? Another success was my stay in the Danish Centre for Welfare Studies (DaWS) at the University of Southern Denmark (SDU, May 2019), where I benefitted from an insightful exchange on my case study research on Danish politics, which is part of my new project.

Perhaps my greatest academic achievement in this year was the publication of my first book entitled “Strong Governments, Precarious Workers” with Cornell University Press. By looking at labour market policy change, I explored the conditions under which political actors respond to the social needs of unemployed and non-standard workers. I promoted the publication with op-eds, a media interview and a book launch event. There are even upcoming conference panels (“author meets critics”) planned in Madrid (CES) and New York City (NYC). All in all, I feel that the Zukunftskolleg was crucial for me being able to finish my PhD project with a book publication and pursue my current project.

The social policy impact of the radical right in Europe

The rise of populist radical right parties (PRRPs) can be witnessed across most European democracies. Political scientists have many explanations for the causes of this political development, but we still know very little about its consequences for the welfare state, although it comprises the largest part of public spending.

This is what my current research project studies (2019–2022). My principal objective is to identify and explain how European PRRPs influence the welfare state when they are in government, i.e. their social policy impact.





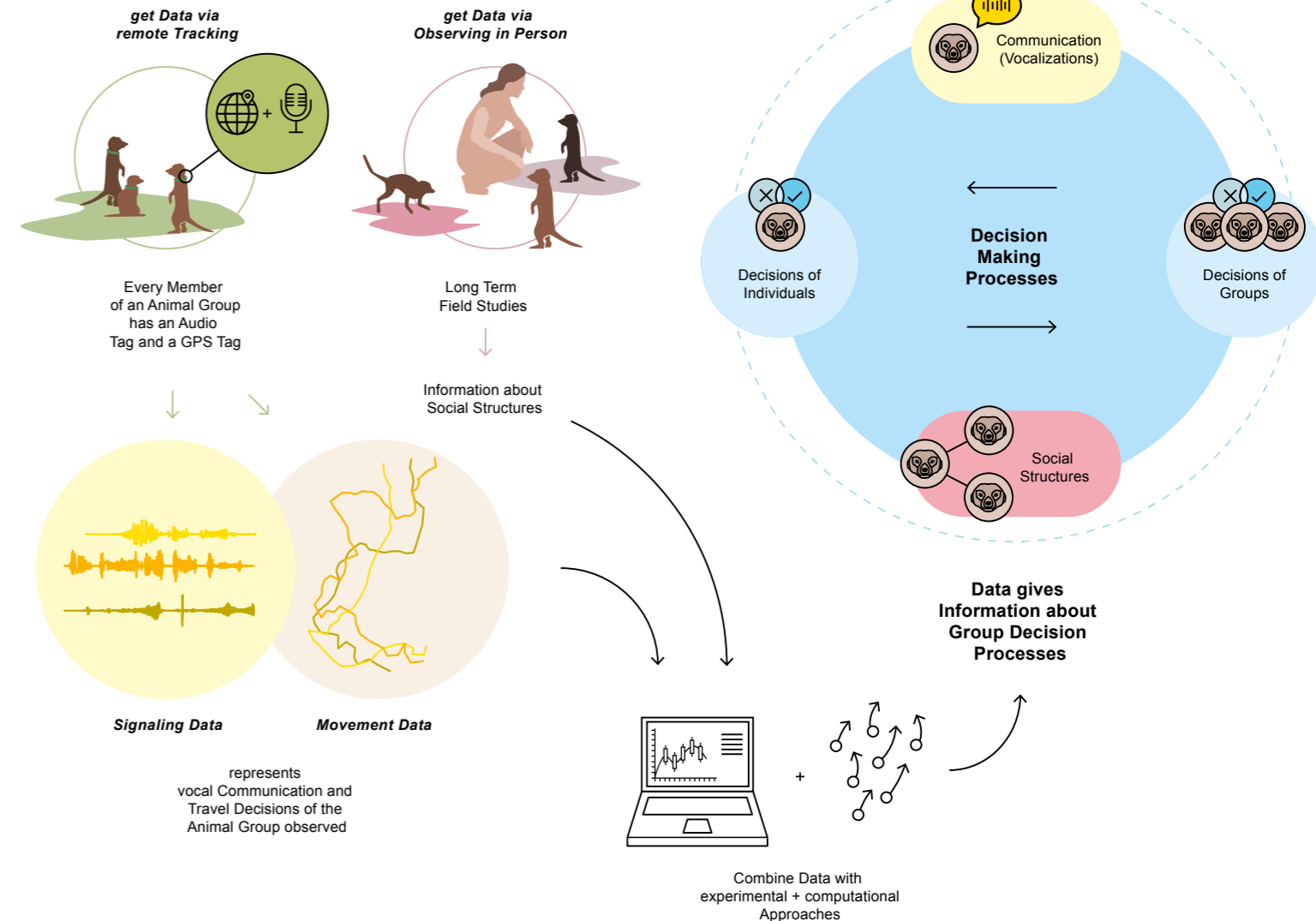
Ariana Strandburg-Peshkin

Fellow since 03|2019
Department of Biology

Understanding the success or failure of collective decisions across human and animal societies

Both animal and human groups must often coordinate with one another and come to consensus on collective decisions. The ability to coordinate may be affected both by the preferences of group members and by how they communicate with one another. This year, I teamed up with social psychologists Helge Giese and Felix Gaisbauer to explore how the network of communication in social groups affects their ability to come to consensus. Funded by an Interdisciplinary Collaborative Project Grant from the Zukunftskolleg, we are conducting online experiments with human groups in which people must solve coordination tasks under different constraints. Participants in our experiment play an online “coordination game” where they must come to agreement on one of two colours while only being able to see the colour choices of a subset of their group mates. By varying who can see whom, we can experimentally control the communication network and test whether certain network structures lead to more efficient decision-making. We also investigate what happens in cases where certain individuals are incentivized to prefer one colour over the other: are they able to sway the

group to their preferred colour, or does the group end up in deadlock? We hope that our results will hold relevance for understanding the success or failure of collective decisions across human and animal societies.



How do groups make decisions?

How do groups come to consensus on collective decisions, such as where to travel? In social groups where members interact repeatedly with one another, these decisions are often strongly affected by the social relationships among group members and the ways in which they communicate with one another. I study how such social structures and communication shape group decision-making processes across multiple species of social mammals, including meerkats, coatis and spotted hyenas. In particular, I am interested in how these collective decisions are mediated by vocal communication. My collaborators and I use GPS and audio tags to get a detailed picture of where all group members go and what vocalizations they produce as they are interacting. We then combine these data with experimental and computational approaches to explore how communication and social relationships affect the decisions individuals make and, ultimately, how these decisions scale up to determine the outcomes of collective decisions for entire social groups.

Stephan Streuber

Fellow since 06|2019
Department of Computer and
Information Science



Studying collective behaviour and social interaction using Virtual Reality technology

Many social phenomena that occur in human and non-human collectives – from the coordination of movements and internal states (e.g. intentions, emotions, thought) to the evolution of social norms, culture or language – are not yet well understood and remain difficult to model. These phenomena often emerge within an interactive social context of a network of simultaneously interacting agents. Therefore, one part of understanding collective behaviour is investigating how individuals operate in the context of other agents. However, current experimental paradigms often lack a natural social context (e.g. participants are asked to press buttons in response to social stimuli).

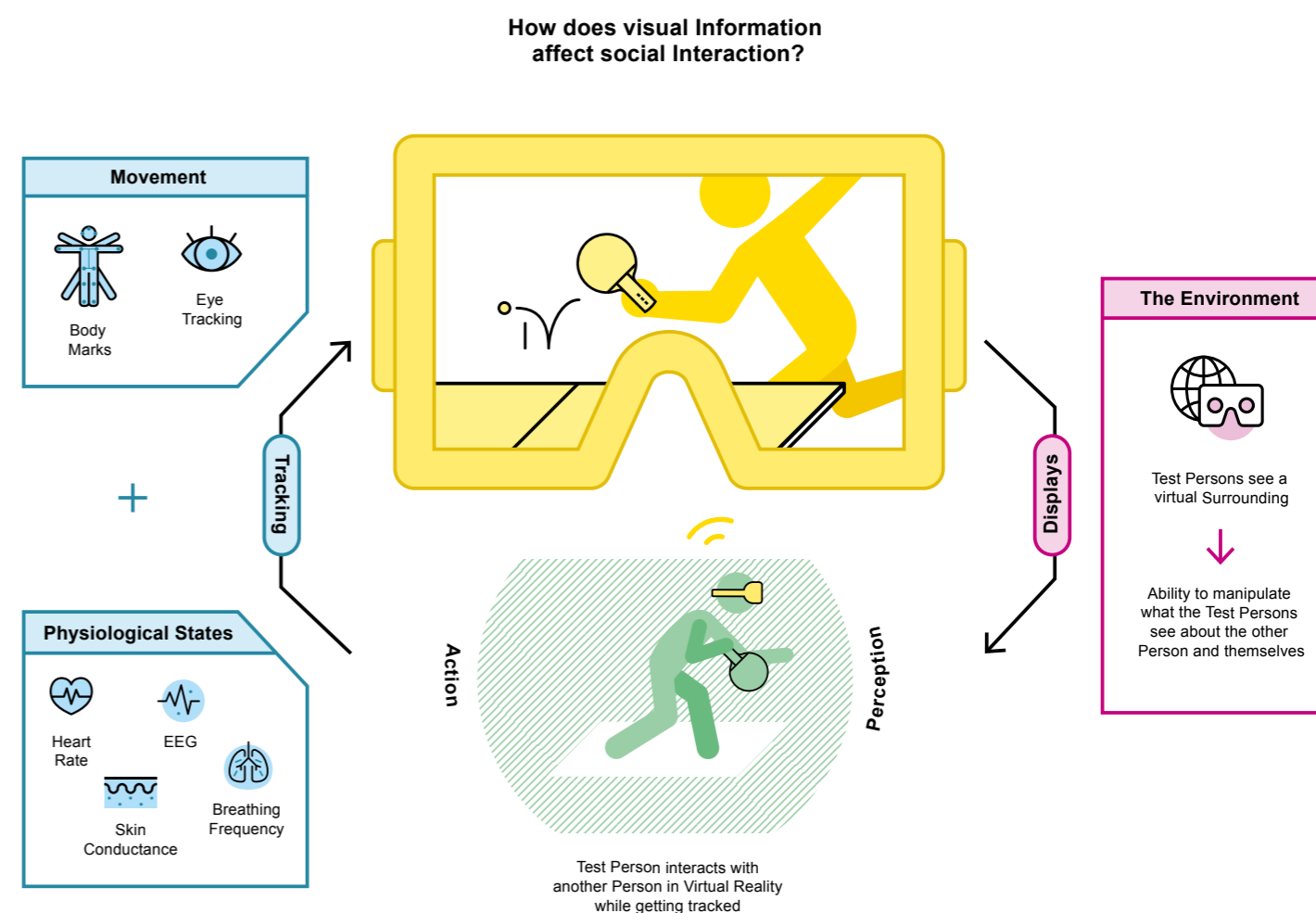
The goal of my project at Zukunftskolleg is to develop new interactive experimental paradigms to study collective behaviour and social interaction under close-to-natural experimental conditions using virtual reality. Virtual reality makes it possible to immerse study participants in social situations where they interact with other study participants or with intelligent virtual agents. Using virtual reality, I can also manipulate visual information about each interaction partner during social interactions to better understand the role of visual information in generating social behaviours. My goals is to use these paradigms to study coordination, body

perception, stereotypes and affective states in the context of social interaction and collective behaviour.

Using Virtual Reality to understand social interaction

Humans are social beings, and they coordinate their own actions with others all the time, for instance when dancing salsa, carrying a sofa together, handing over a cup of coffee to another person or playing a ping pong game. All these joint activities require an enormous amount of interpersonal coordination.

How do humans accomplish this remarkable feat? And how can we study these everyday social interactions in the laboratory? In order to tackle both questions, we develop novel virtual reality paradigms which allow us to study real-life social interactions under close-to-natural and controlled experimental conditions. We immerse pairs or groups of people in computer-generated synthetic worlds and ask them to perform everyday social interactions such as playing a ping pong game or carrying an object together. Virtual reality allows us to precisely manipulate what each person sees about the other person and about themselves. This allows us, for example, to investigate how visual information affects behaviour in social interactions. Virtual reality also enables us to investigate other factors relevant for social interactions such as body perception, social bias, stereotypes and affective states.



Elena Sturm (née Rosseeva)

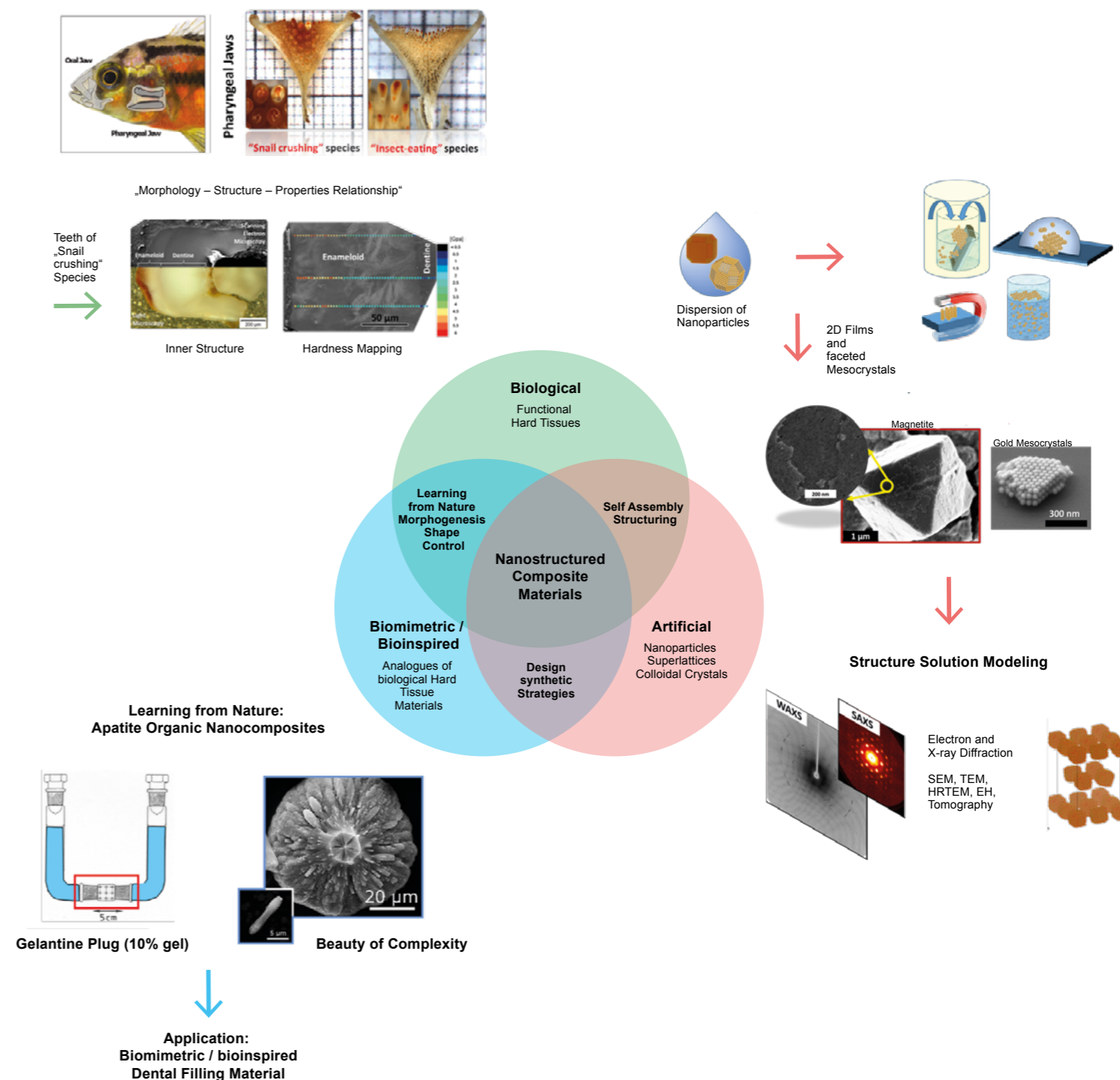
Fellow since 03|2013
Department of Chemistry

Nanostructured and composite materials

Hierarchical self-organized nanostructured materials are in the focus of today's nano- and materials science and are important, not only for basic research, but also for a number of recent and desirable applications in the fields of building materials, medical implants and sensors, just to name a few. My research aims to gain deeper insight into the fundamental principles behind the structuring, organization and formation of nanocomposite materials, from the self-assembly of nanoparticles to biological and biomimetic/bioinspired systems in order to understand how these complex and unique systems form and function. My research topics are usually very interdisciplinary and thus include a lot of collaboration with researchers in the fields of chemistry, physics and biology. In the past years, we have synthesized and structurally characterized self-assembled mesocrystals based on metallic and magnetic nanoparticles. Furthermore, we are also studying the complex structure of the teeth of "snail-crushing" cichlid fishes that are comprised of highly mechanically-durable and fracture-resistant materials. This knowledge inspires the development of new approaches to the biomimetic design of new materials, especially in biomedical applications.



Self-assemblies of nanoparticles, biological and bioinspired materials



Nihan Toprakkiran

Fellow since 04|2019
Department of Politics and
Public Administration

Explaining support for home-country populism

My new research project at the Zukunfts Kolleg examines the external voting behaviour of immigrants, that is, the voting behaviour of immigrants in their countries of origin. I focus on people with Turkish, Polish and Italian backgrounds living in Germany and try to explain the support that populist parties in Turkey, Poland and Italy find among these groups of external voters. I am especially interested in identifying any links between their views about home-country politics and their own experiences as immigrants in Germany.

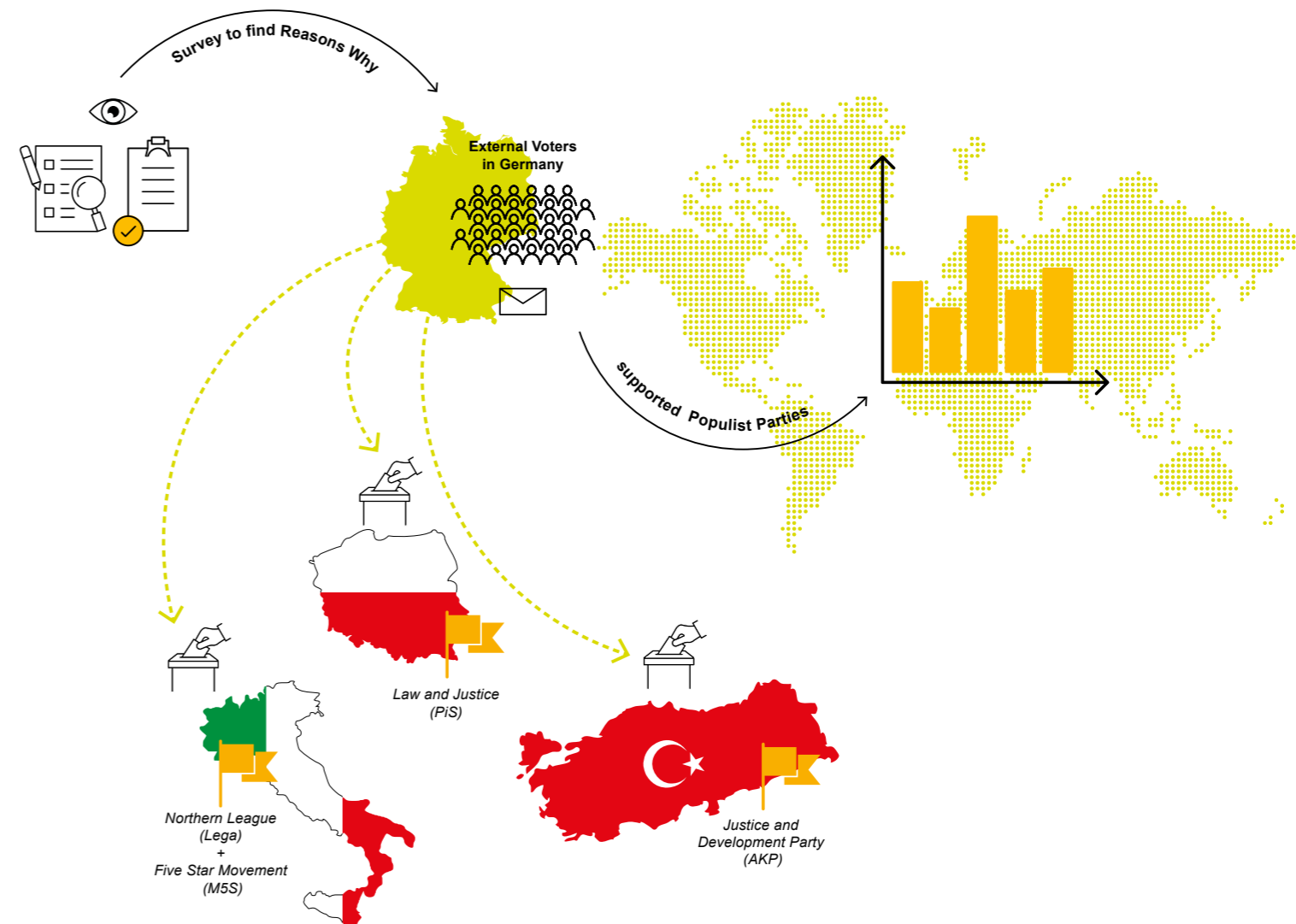
The biggest challenge for this research is the lack of data currently available on external political preferences. For this reason, my project involves collecting data using an original survey. The survey, which I am currently designing, includes questions about the migration background, access to social and political rights and level of integration of the respondents in Germany, while asking about their political views and party support in their countries of origin. By gathering this information, I am hoping to incorporate insights from the sociological literature on migration and integration and to contribute to research on external voting which is understudied in the field of political science.



Immigrants in Germany as external voters

My research investigates two contemporary political developments: the spread of external voting, or voting in national elections from abroad, and the rise of populism. Not only have these two phenomena drawn the attention of the public recently, but some immigrant groups are also particularly inclined to vote for populist parties in their countries of origin. This raises the following question: How can populist parties, with their anti-European and anti-immigration attitudes and opposition to liberal democratic principles, find support among immigrants who reside in a Western European democracy?

In order to answer this question, I examine the party preferences of people with Turkish, Polish and Italian backgrounds living in Germany when voting in their countries of origin, and try to identify links between their views and their experience as immigrants.



Julián Torres-Dowdall

Fellow since 08|2013
Department of Biology



Evolution of asymmetric genitalia in fish

My project at the Zukunftskolleg aims to understand the selection pressures that favoured the evolution and allow for the maintenance of a very peculiar trait: asymmetric penises in fish. Commonly, fish lay eggs that are externally fertilized. In a family of South American fish, the anablepids, however, females carry their developing embryos in their abdominal cavity and provide nutrition to them. Males, in turn, have evolved an intromittent organ for internal fertilization, which resembles a penis. Curiously, this structure is asymmetrical and both, right- and left-sided males are found within populations.

In a series of studies published and presented at conferences this year, we showed that the asymmetry of the gonopodium correlates with a species' mating behaviour and their asymmetry in sensory organs, while improving male performance during copulation. Since all copulations are forced in these fish, this improved performance is needed. As a consequence, there are very high levels of multiple paternity, meaning that within one brood there are offspring that were sired by up to nine different males! By contrast, in species with only left-sided males the number of sires is much lower, and one male fathers the majority of the offspring. This shows that variation in the direction of genital asymmetry results in variation in the reproductive success of males, suggesting interesting evolutionary dynamics driven by sexual selection.

There are only a few potential solutions to the challenges of living in extreme environments

As part of my research on the evolution of livebearing fish, we recently discovered and described a new species we called *Jenynsia sulfurica*. The curiosity about this new fish is that it inhabits a sulfide spring in northern Argentina, an extremely toxic environment to most organisms. So far, less than 20 species of fish (out of more than 26,000!) have been found to live in such environments. These "extremophile" fish tend to evolve remarkable adaptations to cope with the toxic and hypoxic conditions of sulfide springs. *Jenynsia sulfurica* is no exception. Notably, it has an enlarged head area allowing for an increase in gill surface area, which is highly advantageous in the oxygen poor sulfide spring. At the molecular level we also see adaptive changes, particularly in proteins involved in molecular respiration. The most remarkable aspect of this new species is that these characteristics are very similar (convergent) to those found in other fish that have independently colonized sulfide springs in Mexico. These fishes diverged more than 60 million years ago and belong to completely different lineages, yet they show convergent adaptations in morphology, behaviour and molecular characteristics. Thus, such species are very valuable to biologists as they offer information on the limits of tolerance to abiotic conditions, on the process of adaptive divergence and the predictability of evolution.



male



female

Jour Fixe

The Jour fixe is the weekly interdisciplinary session for fellows from all departments. The meeting focuses on presentations of new projects and results of current projects, introduction of new junior research groups, as well as topical discussions and debates concerning higher education policies. The fellows discuss the progress of their work, present results, share and encounter questions from other disciplines, and explore the possibilities of interdisciplinary collaboration.

Winter term 2018|2019

October 16, 2018

Zukunftskolleg Lecture winter term 2018|2019: *The Power and Pitfalls of Sonic Solidarity – A Lesson from the 20th Century* → [Ruth HaCohen](#), [Artur Rubinstein](#), Professor of Musicology, The Hebrew University of Jerusalem

October 23, 2018

How I left Academia to become a Technopreneur: my journey from Archeology to Ludwig → [Antonio Rotolo](#), Alumnus, Dept. of History and Sociology

October 30, 2018

Studying Reactive Conflict Dynamics → [Sebastian Schutte](#), Research Fellow, Dept. of Politics and Public Administration

November 6, 2018

Scientific Advisory Board Meeting

November 13, 2018

A Step Towards Curing Parkinson's Disease → [Volodymyr Shvadchak](#), Researcher at the Institute of Organic Chemistry and Biochemistry, Prague, Czech Republic

November 20, 2018

Special Jour Fixe: Funding Programme “Research Visit”

A Research Visit to Northern Spain: Exploring field-work potential → [Jolle Jolles](#), Postdoctoral Fellow Dept. of Biology

Introducing Project SALMEA (Self-Accomplishment and Local Moralities in Eastern Africa) → [Yonatan Gez](#), Research Visit Fellow

Dept. of History and Sociology
Home university: Martin Buber Society in Jerusalem, Israel

Lessons from Visiting Zukunfts-kolleg → [Kazuhisa Takemura](#), Research Visit Fellow, Dept. of Psychology, Home university: Waseda Institute for Advanced Study in Tokyo, Japan

November 27, 2018

Film Screening “Visions of Europe” and Discussion

December 4, 2018

Election of one new member to the Executive Committee

Special Jour Fixe: Intersectoral Cooperation Project “100 Spectres – The meaning of water in our life”: Panel discussion with [Sarah Bildstein](#) (artist), [Gianluca Rastelli](#) (Physics), [Dennis Pinggen](#) (Chemistry), [Tanja Klemm](#) (History of Art), and [Wolfgang Kornberger](#) (Biology)

Social event and vernissage of the exhibition “*Life on the Line*” – a travelling game on “Ageing” provided by the Medical Museion Copenhagen

December 11, 2018

Special Jour Fixe on topic of the year “Ageing”: *The Science and Fiction of Ageing* → [Jeff Kochan](#), Associated Fellow, Dept. of Philosophy, [Jennifer Randerath](#), Research Fellow, Dept. of Psychology

December 18, 2018

Christmas Jour Fixe on topic of the year “Ageing”: *0-99, The Ageing Game* → [Anna Sophie Santner](#), Artist, Vienna, Austria

January 08, 2019

Special Jour Fixe on topic of the

year “Ageing”: *The Role of Age in Leadership and Entrepreneurship* → [Hannes Zacher](#), Professor of Work and Organizational Psychology, University of Leipzig, Germany

January 15, 2019

Can we teach “Just Science”? Discussion on how much ethics we need to integrate in science classes → [Gisela Kopp](#), Research Fellow, Dept. of Biology

January 22, 2019

The Social Policy Impact of the Radical Right in Europe → [Philip Rathgeb](#), Postdoctoral Fellow, Dept. of Politics and Public Administration

January 29, 2019

Critical Thinking in Education and Research – Why and How? → [Gerd Folkers](#), Professor of Science Studies, ETH Zurich, Switzerland

Summer term 2019

April 16, 2019

Opening event summer term 2019; Get-to-know each other; Short presentations from all Fellows

April 23, 2019

Film Discussion “*The Cakemaker*”

April 30, 2019

Studying Collective Behavior Using Virtual Reality → [Stephan Streuber](#), Dept. of Computer and Information Science

The European Court of Human Rights and Non-Discrimination: Exploring Collective Dimensions → [Cornelia Klocker](#), Postdoctoral Fellow, Dept. of Law

May 7, 2019

Open Mic Jour Fixe (I): *How Changes in the Genetic Code explain the Wide Diversity of Animals on our Planet* → [Claudius Kratochwil](#), Postdoctoral Fellow, Dept. of Biology

Studying the Financial Markets from an Intrinsic Time Perspective → [Roxana Halbleib](#), Research Fellow, Dept. of Economics

Navigational Capabilities of Migratory Birds → [Andreas Scherer](#), Associated Fellow, → Dept. of Chemistry

May 14, 2019

Preparatory Meeting for Visit of Rector Kerstin Krieglstein on 4 June

May 21, 2019

Open Mic Jour Fixe (II): *Academia needs to be Equal and Inclusive* → [Sasa Kosanic](#), Associated Fellow, Dept. of Biology

Diversity Within and Among Animal Groups: The Costs and Benefits of Being Equal → [Jolle W. Jolles](#), Postdoctoral Fellow, Dept. of Biology

Diversity at Work – Opportunities and Challenges for Teams → [Max Reinwald](#), Associated Fellow, Dept. of Politics and Public Administration

May 28, 2019

Open Access: [Anja Oberländer](#), KIM, University of Konstanz

June 4, 2019

Visit of Rector Kerstin Krieglstein

June 11, 2019

Special Jour Fixe on topic of the term “Migration”: *Animal Migration – A Quick Introduction to the Terminology* → [Gisela Kopp](#), Research Fellow, Dept. of Biology

Migration of the White Stork

→ [Andrea Flack](#), Center for the Advanced Study of Collective Behavior, Dept. of Biology

June 18, 2019

Special Jour Fixe on topic of the term “Migration”: *Human Mobility and Internet Usage: Evidence from Nigerian Micro-Level Data* → [Maurizio Strazzeri](#), Associated Fellow, Graduate School “Decision Sciences”, Dept. of Economics

Beyond the Border: Transnational Film Culture between Germany and Great Britain → [John Hoffmann](#), Research Visit Fellow Dept. of Literature, Home university: Johns Hopkins University in Baltimore, USA

June 25, 2019

Special Jour Fixe on topic of the term “Migration”: Lightning Talks and Discussion on “Migration”, Midissage of the Exhibition “Anima Mundi” → with [George Butler](#), BibCafé of the Library, University of Konstanz

July 2, 2019

Individual Brains, Collective Task: Social Regulation of Stinging Behavior in Honeybees → [Morgane Nouvian](#), Research Fellow, Dept. of Biology

Immigrant Support for Home-Country Populism: A Comparative Look at the Turkish, Polish and Italian Communities in Germany → [Nihan Toprakkiran](#), Postdoctoral Fellow, Dept. of Politics and Public Administration

July 9, 2019

Open Mic Jour Fixe (III): *Numerical Optimal Control for Nonlocal Parabolic Equations Modeling the Evolutionary Dynamics of Cancer Cell Populations under Cytotoxic Therapy* → [Giulia Fabrini](#), Associated Fellow, Dept. of Mathematics and Statistics

New Advances on Locally Definable and Approximate Groups in Tame Expansions of O-minimal Structures → [Eliana Barriga](#), Research Visit Fellow, Dept. of Mathematics, Home university: Universidad de los Andes in Bogotá, Colombia

The Family Reunification of Refugees in Brazil → [Patrícia Nabuco Martuscelli](#), AAA Fellow, Dept. of Political Science, Home university: Universidade de Sao Paulo, Brazil

An Axiomatic Approach for Foundations of Constructive Reasoning → [Makoto Fujiwara](#), Research Visit Fellow, Dept. of Mathematics, Home University: Meiji University, Japan

July 16, 2019

Video Award: Selection of the best out of 8 newly produced research videos of fellows Assembly of Members; Election of two new members to the Executive Committee

Facts and Figures

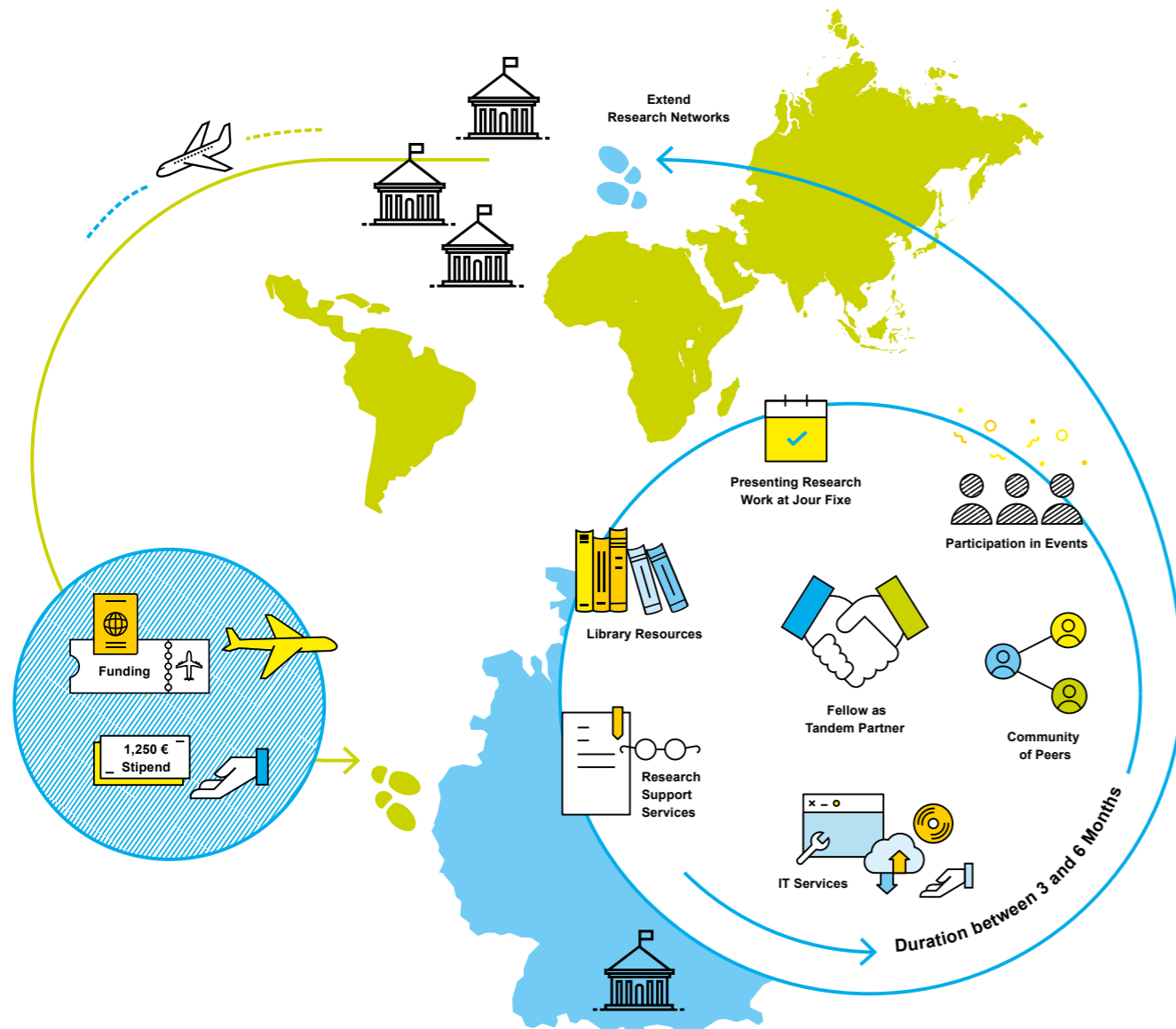
Africa, Asia and Latin America Fellowship

The Zukunftskolleg recently introduced AAA* Fellowships to support early career researchers from Africa, Asia and Latin America. The new fellowships will strengthen the cultural diversity at the Zukunftskolleg and stimulate the intellectual and integrative discourse amongst its fellows. By broadening its academic horizons, the Zukunftskolleg aims to promote greater intercontinental dialogue in research.

The AAA Fellowships last three to six months, which gives the fellows enough time to extend their research networks into new regions and initiate intercontinental research partnerships. The research stays at the Zukunftskolleg also enable AAA Fellows to get to know the research environment at the University of Konstanz and enrich the scientific discussions within the university, while maintaining ties to their home university.

In its first call for AAA Fellowships (the deadline for applications was 30 April 2019), the Zukunftskolleg received 206 applications for consideration.

*After the publication of this call, we learned that in the 1970s and 1980s the acronym "AAA" also referred to paramilitary organizations in Argentina, Colombia and Spain. We distance ourselves from these political movements and will change the title of the fellowship with the next call.



The following six applicants were selected and have joined the Zukunftskolleg:

- Hamadjam Abboubakar, *Mathematics and Statistics, Cameroon*
- Leila Abdala, *Cultural Theory and Social Anthropology, Argentina*
- Denisha Gounden, *Chemistry, South Africa*
- Patrícia Nabuco Martuscelli, *Political Science, Brazil*
- Sana Shams, *Linguistics, Pakistan*
- Abena Yalley, *Gender Studies, Ghana*



Hamadjam Abboubakar

began his fellowship in August. He is affiliated with the research group of Professor Reinhard Racke in Analysis and Numerics at the Department of Mathematics and Statistics.

Hamadjam did his PhD at the University of Ngaoundere, Cameroon. Before coming to Konstanz, he taught some courses in Mathematics at the University Institute of Technology of Ngaoundere, Cameroon. His research project at the Zukunftskolleg concerns the mathematical modeling and control of a transmission dynamics model for typhoid fever.

Leila Abdala

began her fellowship in July. She is affiliated with the Department of Literature, Art and Media Studies.

Since 2017, Leila has been a research fellow of the Instituto de Humanidades y Ciencias at the National University of Litoral (UNL) and the CONICET (National Council of Scientific and Technological Research of Argentina).

Furthermore, she is currently completing her PhD in the social sciences at the University of Buenos Aires. “The aim of my doctoral research is to enquire, describe and understand the ways in which women perform motherhood in groups that promote the humanization of childbirth and natural and respectful upbringing. I use an ethnographic approach in the city of Santa Fe, Argentina”, Leila explains.

At the Zukunftskolleg, she is going to collaborate with Professor Kirsten Mahlke on a new research project about the global midwifery crisis. Her interest lies in a comparative study of the midwifery situations in Germany and Argentina. Specifically, she studies how – despite these countries having different socioeconomic structures and regulatory frameworks – agreement on this topic can be found, since the demand for the humanization of birth has been established globally.

“I’m very interested in women’s rights with regard to birth, midwifery and obstetric violence”, says Leila.





Denisha Gounden

began her fellowship in August. She is affiliated with the Department of Chemistry, where she has joined the Hybrid Nanostructures group, headed by Professor Lukas Schmidt-Mende.

Denisha completed her undergraduate and postgraduate studies at the University of KwaZulu-Natal (UKZN), South Africa. She is currently a PhD researcher in the School of Chemistry and Physics at UKZN. Her research is focused on energy production, which she considers to be one of the most important social challenges the world is currently facing. "Due to the ever-increasing demand, there is an urgent need to develop new materials and devices for solar energy conversion. My doctoral research focuses on the construction of efficient and economical solar cells for solar harvesting. My goal is to design and fabricate novel components to replace existing solar cell components so as to enhance their photovoltaic efficiency and provide economically viable alternatives. The combination of perovskites, phthalocyanines and possibly nanocellulose materials is expected to harvest a greater amount of light than traditional photovoltaics, which means we can have high current outputs at a lower cost", she explains.

Her research programme involves constructing inverted planar heterojunction solar cells where the active light absorbing layer made of perovskites and synthesized phthalocyanines behaves as the hole transport material (HTM). The efficiency of these cells will be tested against industrial standards.

Patricia Martuscelli

started her fellowship in June. She is affiliated with the Department of Political Science and Public Administration.

Patricia was a visiting scholar at the Population Center at the University of North Carolina-Chapel Hill, USA between August 2017 and July 2018. Under the supervision of Professor Krista Perreira, she performed research on US organizations providing services to unaccompanied migrant children arriving in the USA. She also spent six months at the Jacobs Center for Productive Youth Development in Zurich.

During her fellowship at the Zukunftscolleg, Patricia is interested in investigating the changes in family-reunification policies in Brazil since 1997. Her project, titled "The Family Reunification Policy for refugees in Brazil", aims to improve the understanding of best practices and challenges in family reunification procedures for refugees in Brazil. Using different quantitative and qualitative methodologies, she analyzes various phenomenological interviews with refugees who requested family reunification in São Paulo in addition to key-informant interviews with Brazilian authorities and organizations involved in the family reunification process.



Sana Shams

began her fellowship in August. She is affiliated with the Department of Linguistics. Sana is a senior research manager at the Center for Language Engineering, KICS, University of Engineering and Technology, Lahore, Pakistan, where she is also doing her PhD in Computational Linguistics.

Sana has extensive experience completing research projects focused on enabling ICT access in local languages for digitally divided groups, e.g. women survivors of violence, remote rural communities, visually impaired communities, etc. Her research interests are in ICT4D, localization and the intersection between the two.

Sana's research project at the Zukunftscolleg focuses on recognizing a user's intent from his|her web search queries. She is working with Professor Miriam Butt and aims to use computational semantics with deep neural networks to study how linguistic features can effectively help recognize user intent from text-based web queries.

Abena Yalley

began her fellowship in August. She is affiliated with the Department of Linguistics.

Abena is an ECOWAS (Economic Community of West African States) fellow at the University of Ibadan, Nigeria, where she is completing her PhD in gender studies. Prior to her doctoral research, she was the country representative for the ECOWAS Mobility Research Project on gender and security at Ghana's eastern Togolese border in Aflao, a project funded by the British Department for International Development (DFID). Her research interests are gender inequality and discrimination, masculinity, transnational feminism, development, migration and security.

Abena's research project at the Zukunftscolleg focuses on police intervention strategies for handling cases of domestic violence against women in Southern Ghana and Lagos, Nigeria. She uses the qualitative research methodology to examine how the masculine occupational culture of the Ghana Police Service and the Nigeria Police Force affects the domestic violence intervention process and its outcomes.



Funding Programmes

The Zukunftskolleg offers its fellows a close-knit and diverse network of support. This not only creates ideal working conditions for young scholars but also provides the best possible preparation for their scientific careers. Some support measures are also open to Senior Fellows, Associated Fellows, and postdoctoral researchers at the University of Konstanz.



Co-Funding

This programme offers financial support to co-fund the human and material resources needed for projects at the Zukunftskolleg, e.g. for student or research assistants, conferences, equipment, research trips or consumables. Listed are some examples for granted Co-Funding applications.

Carolyn Antos-Kuby (Dept. of Philosophy)
Funding for hiring student assistants | Funding of a conference "Set theory: bridging mathematics and set theory" at the University of Konstanz | Funding of research equipment

Thomas Böttcher (Dept. of Chemistry)
Funding for travel costs of an incoming research visit | Funding for an artwork to highlight a research article on the cover of a high ranking journal

Udith Dematagoda (Dept. of Literature)
Funding for a research visit including a honorarium for Prof. Douglas Mao (Russ Family Professor in the Humanities, Johns Hopkins University, USA) | Funding to participate in a reading group and a summer school | Funding for hiring student assistants

Panteleimon Eleftheriou (Dept. of Mathematics)
Funding for a doctoral student exchange between the University of Konstanz (PhD student: Alex Savatovsky) and the University of Illinois at Urbana-Champaign, USA (PhD student: Alexi Block Gorman)

Bianca Gaudenzi (Dept. of History and Sociology)
Funding of research visits in Cambridge

James Griffiths (Dept. of Linguistics)
Funding of publication costs

Roxana Halbleib (Dept. of Economics)
Funding to participate in the CFE conference in Pisa in December 2018

Jolle Jolles (Dept. of Biology)
Funding for field work equipment | Funding for an art|science exhibition within intersectoral project

Cornelia Klocker (Dept. of Law)
Funding to participate in conferences

Gisela Kopp (Dept. of Biology)
Funding for solar GSP tags and additional research equipment | Funding to invite four speakers for the seminar "Animal Sociality" at the University of Konstanz / Funding for hiring student assistants

Oleksandra Kukharenko (Dept. of Chemistry)
Funding for hiring a student assistant

Takayuki Kurihara (Dept. of Physics)
Funding for a high-precision optical polarization detector



Mentorship

The Mentorship Programme enables Fellows and postdoctoral researchers at the University of Konstanz to network with distinguished colleagues both in Germany and abroad, and to maintain these contacts through mutual research visits.

Giulia Fabrini (Dept. of Mathematics)
Mentor: Tommaso Lorenzi (Univ. of St. Andrews, UK)

Stefan Fischer (Dept. of Philosophy)
Mentor: David Copp (Univ. of California, Davis USA)

Robert Hussein (Dept. of Physics)
Mentor: Sigmund Kohler (Instituto de Ciencia de Materiales de Madrid (CSIC), Spain)

Natalia Korotkova (Dept. of Linguistics)
Mentor: Tyler Peterson (Arizona State Univ. USA)

Sasha Kosanic (Dept. of Biology)
Mentor: Jen Dyer (Univ. of Leeds, UK)

Ritwik Mondal (Dept. of Physics)
Mentor: Peter Oppeneer (Uppsala Univ., Sweden)

Mialy Razanajatovo (Dept. of Biology)
Mentor: Eva Knop (Univ. of Bern, Switzerland)

Michael Smith (Dept. of Biology)
Mentor: Tim Landgraf (FU Berlin)

Maria Zhukova (Dept. of Literature)
Mentor: Stephen Hutchings (Univ. of Manchester, UK)

Katarina Zigova (Dept. of Economics)
Mentor: Chris Doucouliagos (Deakin University of Melbourne, Australia)

Bernard Lepetit (Dept. of Biology)
Funding for hiring a student assistant

Morgane Nuvian (Dept. of Biology)
Funding for hiring a student assistant

Denis Pingen (Dept. of Chemistry)
Funding for chemicals

Jennifer Randerath (Dept. of Psychology)
Funding for equipment for improving experimental procedures by new technology | Funding for pilot experiments | Funding for English corrections for a paper

Gianluca Rastelli (Dept. of Physics)
Funding for research equipment

Philip Rathgeb (Dept. of Politics and Public Administration)
Funding for hiring a student assistant

Elena Sturm (Dept. of Chemistry)
Funding for the research stay of a guest | Funding for hiring a student assistant

Stephan Streuber
(Dept. of Computer and Information Science)
Funding for participants in an experiment | Funding for hiring student assistants

Nihan Toprakkiran
(Dept. of Politics and Public Administration)
Funding for Participation in a Migration Workshop at the Waseda Institute for Advanced Study in Tokyo, Japan | Funding for hiring student assistants

Maria Zhukova (Dept. of Literature)
Funding for joint book presentations with following discussion to the topic Representing Television under Communism: Georgi Gospodinov (Bulgaria) and Maria Kapajeva (Estonia|UK), including the recording of the event



Interdisciplinary Collaborative Projects

This programme aims to promote research collaborations between junior researchers. An interdisciplinary research project gives grant holders the opportunity to identify and explore new, innovative and/or risky research perspectives with neighbouring disciplines and across disciplines.

Eugenia Delgado (Biological Pharmacy) and **Barbara Franke** (Biology): "Investigating mutual regulation by master switches of intestinal cell death and inflammation"

Liang Li (Biology) and **Hanhe Lin** (Computer Science): "A high-performance closed-loop platform for collective fish behaviour experiments"

Anna Pia Plazzo (Biology) and **Thomas Böttcher** (Chemistry): "Modulation of the host nuclear receptor LHR-1 by intestinal microbiota"

Mialy Razanajatovo (Biology), **Jan Petzold** (Geography, Alfred-Wegener-Institute for Polar and Marine Research Bremen) and **Sasha Kosanic** (Biology): "Cultural ecosystem services and human well-being in Madagascar under climate change"

Ariana Strandburg-Peshkin (Biology) and **Helge Giese** (Psychology): "The communication network in collective decision-making: How does group structure affect decision dynamics and outcomes?"

Jennifer Flemming (Biology) and **Christoph Globisch** (Chemistry): "Exploring emerging mechanisms of ubiquitin signalling in muscle regulation"

Elena Sturm (Chemistry) and **Dmytro Sysoiev** (Biochemistry): "Multifunctional Gold Mesocrystals: How to create light-induced "Switches"?"



Transdepartmental Collaborative Teaching

This programme aims to promote the development of new teaching formats and expand departmental syllabi. It gives grant holders the opportunity to explore new, innovative topics in teaching and to further develop their teaching skills and teaching approach across disciplines.

Thomas Böttcher (Chemistry), **Bernard Lepetit** (Biology), **Andreas Lorbach** (Chemistry) and **Michael Kovermann** (Chemistry): "Methods bridging disciplines: from Chemistry to Biology"

Tanja Klemm (Literature) and **Sarah Bildstein** (Artist): "100 Spectres" – An Interdisciplinary Art Exhibition about Water"



Intersectoral Cooperation Programme

The Intersectoral Cooperative Programme aims to develop cooperation between postdoctoral researchers and the non-academic sector. Grants are given to support cooperations that foster joint research projects with industrial partners, companies, social institutions, cultural institutions, archives, public bodies, or non-profit organisations.

Moritz von Brescius (Dept. of History and Sociology) and the **Alpines Museum, Munich**: "The art of expeditionary science: Asia in the images of the Schlagintweit Brothers"

Torsten Twardawski (Dept. of Economics) and **Inrate AG**: "The impact of sustainability ratings on corporations and investment performance"



Research Visit

New to the network of support measures, this programme seeks to enhance international research cooperation and to support international mobility of early career researchers. It funds temporary research stays both at the Zukunftskolleg and abroad for intercultural exchange among peers. Outgoing Research Visits encourage temporary assignments for our fellows to a partner Institute for Advanced Study or any international research university. Within the Incoming Research Visit programme, our fellows can nominate international early career researchers for a Research Visit at the Zukunftskolleg (or early career researchers from partner IAS apply). Between August 2018 and July 2019 the following Research Visits were granted:

Klaus Boldt (Dept. of Chemistry)
Outgoing Research Visit to Australian Synchrotron in Melbourne, Australia

Eliana Barriga (Dept. of Mathematics)
Incoming Research Visit from Universidad de los Andes in Bogotá, Colombia

Udith Dematagoda (Dept. of Literature)
Outgoing Research Visit to Graduate School of Arts and Sciences at Waseda University, Japan
Outgoing Research Visit to Johns Hopkins University in Baltimore, USA

Makoto Fujiwara (Dept. of Mathematics)
Incoming Research Visit from Meiji University in Tokyo, Japan

Yonatan Gez (Dept. of History and Sociology)
Incoming Research Visit from Martin Buber Society in Jerusalem, Israel

John Hoffmann (Dept. of Literature)
Incoming Research Visit from Johns Hopkins University in Baltimore, USA

Jolle Jolles (Dept. of Biology)
Outgoing Research Visit to Institute of Aquatic Ecology in Girona, Spain

Kazuhisa Takemura (Dept. of Psychology)
Incoming Research Visit from Waseda Institute for Advanced Study in Tokyo, Japan

Akanksha Rathore (Dept. of Biology)
Incoming Research Visit from CES, Indian Institute of Science in Bangalore, India

Cornelia Klocker (Dept. of Law)
Outgoing Research Visit at Waseda University, Japan

Events

Events organized by the Zukunftskolleg and its fellows.

→

2018

7–9 September

GAIN conference

Career counselling for postdoctoral researchers and presentation by Thomas Böttcher at the German science and research career fair in Boston, USA

1–4 October

Tame Expansions of O-minimal Structures
Workshop by Panteleimon Eleftheriou at the University of Konstanz

11–13 October

Motorische Kognition in der Neuropsychologie
Symposium Chair and Talk by Jennifer Randerath, Jahrestagung der Gesellschaft für Neuropsychologie, Bielefeld

16 October

The Power and Pitfalls of Sonic Solidarity – A Lesson from the 20th Century
Zukunftskolleg Lecture with Ruth HaCohen, Artur Rubinstein Professor of Musicology at the Hebrew University of Jerusalem

20 October

School of lights
Exhibition organized by Jolle Jolles in collaboration with Dutch Design studio Toer, at the international Dutch Design Week, Eindhoven, Netherlands

6–7 November

Scientific Advisory Board Meeting of the Zukunftskolleg

16 November

Selective Internationality? Baseline Study and Counteractive Measures
Joint workshop of the Zukunftskolleg and the International Office of the University of Konstanz

16 November

From Reading to Writing
Readings by Lauren Pope and Russell Jones (Edinburgh) at the University of Konstanz

8 November

Is it art and/or science?
"Universitätstag 2018" hosted by the Hegau-Bodensee-Seminar, the Cluster of Excellence "Cultural Foundations of Social Integration" and the Zukunftskolleg at the University of Konstanz

14–16 December

Advances in Time Series and Financial Econometrics
Invited session by Roxana Halbleib at the 11th International Conference on Computational and Financial Econometrics in London, United Kingdom

→

2019

28 January

Why we should all be Feminists!
Lecture by Andrea Lailach-Hennrich (Associated Fellow / Dept. of Politics and Public Administration)

5–6 February

Workshop on Future Research Directions
Selection workshop for the 5-year Research Fellowships at the Zukunftskolleg

9–10 April

Politics meets Physics
Two-days-trip for the members of the Zukunftskolleg to the United Nations and CERN in Geneva

10–15 May

Ultrafast Carrier Dynamics in Graphite Studied by Visible/Multi-THz 2D Spectroscopy
Contribution to CLEO-US Conference on Lasers and Electro-Optics by Jonas Allerbeck, Laurens Spitzner, Takayuki Kurihara, Alfred Leitenstorfer and Daniele Brida in San Jose, California, USA

15 May

German Science in the Age of Empire. Enterprise, Opportunity and the Schlagintweit Brothers
Book launch by Moritz von Brescius (Associated Fellow / Dept. of History) at the University of Bern

3–6 June

Quantitative Finance and Financial Econometrics
International Conference and Spring School co-organized with L. Bauwens, E. Girardin, C. Hurlin and S. Laurent in Aix-Marseille School of Economics (AMSE), University of Marseille, France

11 June–12 July

Exhibition "Anima Mundi" by Illustrator George Butler (London)

23–27 June

Visible/Multi-THz 2D Spectroscopy for Phase Sensitive Investigation of Ultrafast Carrier Dynamics
Contribution to CLEO-EU Conference on Lasers and Electro-Optics by Jonas Allerbeck, Laurens Spitzner, Takayuki Kurihara, Alfred Leitenstorfer and Daniele Brida in Munich

25 June

Migration Stories
Lightning talks and discussion on "Migration", midissage of "Anima Mundi" exhibition with illustrator George Butler within the UBIAS / Jour Fixe topic of the year "Migration"

27 June

Populist Parties, Welfare States and Labour Markets
Conference workshop (SASE, Society for the Advancement of Socio-Economics) by Philip Rathgeb at The New School in New York City, USA

29–30 June

Methods bridging disciplines: from Chemistry to Biology
Seminar organized by Michael Kovermann, Thomas Böttcher, Andreas Lorbach and Bernard Lepetit, Funded by a Zukunftskolleg Transdepartmental Collaborative Teaching Grant. Quarten, Switzerland

6 July

Northern Bald Ibis flight training camp
Excursion organized by Gisela Kopp within the UBIAS / Jour Fixe topic of the year "Migration", flight training camp "Waldrappteam" in Heiligenberg, Germany

8–12 July

Political Performances Working Group
Julia Boll as Co-Convenor, with Dr Cristina Delgado-Garcia (Glasgow University) and Dr Trish Read (Kingston University) at the Conference 'Theatre, Performance, and Urbanism. IFTR World Congress' at the Shanghai Theatre Academy, China

29–31 July

Dynamical Systems and Brain-Inspired Information Processing
Workshop by Oleksandra Kukharenska in Konstanz

28 July–1 August

Set theory: Bridging mathematics and philosophy
Second Networking Conference of the Forcing Project, Co-organized by Carolin Antos-Kuby, Neil Barton, Deborah Kant and Daniel Kuby at the University of Konstanz

Talks

Carolin Antos-Kuby

Multiverse conceptions reconsidered, ICLA 2019, IIT Delhi (India), March 2019

Forcing approaches are not philosophically neutral, Seminar of the MCMP, LMU Munich (Germany), January 2019

Set theory for philosophers, One-week workshop, Sommerakademie of the Department of Philosophy, LMU Munich (Germany), September 2018

Thomas Böttcher

Chemical strategies for controlling microbial growth and virulence, “Uni Konstanz meets Trinity Translation Medicine Institute”, Konstanz (Germany), 28 June 2019

Bacterial quinolones and derivatives: New drugs for bad bugs, Invited lecture, Bioheterocycles 2019: XVIII International Conference on Heterocycles in Bioorganic Chemistry, Ghent (Belgium), 17 June 2019

Of molecules and microbes – the chemistry of bacterial virulence and microbial interactions, University of Vienna (Austria), 6 June 2019

Chemische Interaktionen im menschlichen Mikrobiom, Manfred Fuchs award lecture, Heidelberg Academy of Sciences and Humanities (Germany), 17 May 2019

Live-cell profiling for inhibitors of quinolone biosynthesis, ABPP

Symposium 2019, Leuven (Belgium), 28 March 2019

Bacterial quinolones: Privileged structures for tools and drugs, Chemiedozententagung 2019, Koblenz (Germany), 19 March 2019

Customized antibiotics and modulators of bacterial behavior, Invited lecture, Naturstofftage 2019, Irsee (Germany), 20 February 2019

Chemical strategies for controlling microbial growth and virulence, Invited seminar talk, microbiology seminar, University of Tübingen (Germany), 7 February 2019

Live-cell profiling for inhibitors of quinolone biosynthesis, DECHEMA: Advances in Chemical Biology conference 2019, Frankfurt (Germany), 22 January 2019

Synthetische Biologie – Ein Blick in die Zukunft, Rotary Club Konstanz (Germany), 13 December 2018

Small molecules modulating bacterial interactions and virulence, Seminar, Harvard Medical School, Boston (USA), 6 September 2018

Klaus Boldt

Switchable dissociation of excitons bound at strained CdTe/CdS interfaces, Bunsen Conference, Jena (Germany), 31 May 2019

Unravelling the emergence of anisotropy in nanocrystals, Invited lecture, University of Melbourne (Australia), 12 April 2019

Nanomachines with increasing complexity: Controlling dynamics over many timescales, Invited lecture, University of Vienna (Austria), 14 March 2019

Charge localisation at strained, axial heterojunctions in 1D semiconductor nanocrystals, NanoGe fall meeting, Torremolinos (Spain), 22 October 2018

Soft matter intermediates determine the shape anisotropy of nanocrystals, SFB 1214 Symposium, University of Konstanz (Germany), 26 September 2018

Julia Boll

War as palimpsest: David Greig’s Dunsinane, Invited lecture, Friedrich Schiller University, Jena (Germany), 1 July 2019

Teaching medieval theatre on a wagon stage, Invited talk, “Creative Pedagogies Workshop”, Manchester Metropolitan University (UK), 15 April 2019

Crossing waters: Plays on the refugee crisis and the bare life on stage, Invited talk, Department of English and Writing Studies, University of Western Ontario (Canada), 9 April 2019

“I am the interrupted exception”: Liz Lochhead’s *Blood and Ice* and Annie Loui/Antoinette LaFarge’s *Reading Frankenstein*, Invited talk, “Frankenstein’s Legacy: 200 Years of Myths, Monsters and Mysteries”, University of Bremen (Germany), 21 December 2018

Das nackte Leben auf der Bühne, Invited talk, Rotary Club Radolfzell-Hegau (Germany), 4 December 2018

Udith Dematagoda

The ideological aesthetic: New perceptions, Friedrich Schlegel Graduate School for Literary Studies, Free University of Berlin (Germany), 4 July 2019

An introduction to academic opportunities in Germany and Europe, Invited presentation, Department of English Literature, University of Birmingham (UK), 13 December 2018

Machinic desire: Wyndham Lewis, masculinity and technological war, Invited public lecture, Center for Modernist Cultures, University of Birmingham (UK), 11 December 2018

Hunted with howitzers: The sublime horror of technological war in Wyndham Lewis’s “Blasting and Bombardiering”, International Conference of the European Network for Avant-Garde and Modernism Studies (EAM): “The Realisms of the Avant-Garde”, University of Münster (Germany), 5–7 September 2018

Panteleimon Eleftheriou

Characterizing o-minimal groups in tame expansions of o-minimal structures, Workshop on NIP and groups, University of Leeds (UK), January 2019

From logic to geometry, Symposium for 90 years of mathematics, Aristotle University of Thessaloniki (Greece), December 2018

Benjamin Eva

Four approaches to supposition, (Co-authored with Ted Shear and Branden Fitelson), Formal Epistemology Workshop 2019, University of Turin (Italy), June 2019

Bianca Gaudenzi

Brokering identity through restitution: The return of Nazi-looted art in Austria, the FRG and Italy, 1945–1998, International workshop, “Cultural Brokerage and Materiality”, Jesus College, University of Cambridge (UK), 14–15 December 2018

Roxana Halbleib

Estimating realized variance: An intrinsic time approach, Conference, 12th Annual Society for Financial Econometrics (SoFiE), Fudan University, Shanghai (China), 11–14 June 2019

Modelling and forecasting covariance matrices: A parsimonious approach, Conference, 12th Annual Society for Financial Econometrics (SoFiE), Fudan University, Shanghai (China), 11–14 June 2019

A simple estimation of multivariate factor stochastic volatility models, Poster presentation, conference, 12th Annual Society for Financial Econometrics (SoFiE), Fudan University, Shanghai (China), 11–14 June 2019

Modelling and forecasting covariance matrices: A parsimonious approach, Keynote session, workshop on modelling economic and financial time series, University of Carlos III de Madrid (Spain), 8 June 2019

Presentation at Quantitative, Finance and Financial Econometrics Conference, Marseille (France), 3–6 June 2019

Use the market’s heartbeat to predict extreme financial risks, Keynote speaker, 2nd International Conference on Economics and Social Sciences, Bucharest University of Economic Studies (Romania), 4 April 2019

Modelling and forecasting covariance matrices: A parsimonious approach, Special invited session, 12th International Conference on Computational and Financial Econometrics, Pisa (Italy), 14–16 December 2018

How informative is high-frequency data for tail risk estimation and forecasting? An intrinsic time perspective, 9th CEQUA Conference on Advances in Financial and Insurance Risk Management, Munich (Germany), 4–5 October 2018

Modelling realized covariance matrices with stochastic volatility latent factors: filter, likelihood, forecast, Annual Meeting of the German Economic Association, University of Freiburg (Germany), September 2018

Jolle Jolles

Phenotypic variation in collective animal behaviour: Mechanisms and consequences across social and ecological scales, Invited departmental seminar, Limnological Institute, University of Konstanz (Germany), 26 June 2019

The role of individual differences in collective animal behaviour across social scales,

Poster presentation, ISBE conference, Minneapolis (USA), 12 August 2018

Gisela Kopp

The impact of ranging behaviour on genetic diversity in mammals, Evolution: II Joint Congress on Evolutionary Biology, Montpellier (France), 19–22 August 2018

Claudius Kratochwil

How cichlid fishes lost and gained their stripes, again and again, DZG Evo-Devo meeting, Göttingen (Germany), 5 May 2019

A genetic perspective on the evolution of color patterns, CMCB Green Seminar, CRTD Dresden (Germany), 8 March 2019

Agouti-related peptide 2 drives convergent evolution of stripe patterns across cichlid fish radiations, German Zoological Society (DZG), Greifswald (Germany), 10–15 September 2018

The genomic basis of color pattern diversification and repeated evolution, Japanese-German Frontiers of Science Symposium, Kyoto (Japan), 6–9 September 2018

Oleksandra Kukharensko

Analysis of dynamical systems in application to chemical data and beyond, Public seminar, Max Planck Institute for Polymer Research, Mainz (Germany), 15 May 2019

Advanced state characterization of proteins and protein complexes, SFB969-Symposium, “Two Days of Proteostasis in Konstanz”,

University of Konstanz (Germany), October 2018

Takayuki Kurihara

Visible/multi-THz 2D spectroscopy for phase sensitive investigation of ultrafast carrier dynamics, (With Jonas Allerbeck, Laurens Spitzner, Alfred Leitenstorfer, Daniele Brida), CLEO-EU: Conference on Lasers and Electro-Optics, Munich (Germany), 23–27 June 2019

Ultrafast carrier dynamics in graphite studied by visible/multi-THz 2D spectroscopy, (With Jonas Allerbeck, Laurens Spitzner, Alfred Leitenstorfer, Daniele Brida), CLEO-US: Conference on Lasers and Electro-Optics, San Jose, California (USA), 10–15 May 2019

Bernard Lepetit

The molecular mechanism of thermal dissipation in diatoms, Invited talk, biochemical-molecular biology colloquium, Humboldt University Berlin (Germany), 11 July 2019

Revealing the molecular key players of thermal dissipation in diatoms, Lecture, departmental seminar, University of Konstanz (Germany), 2 May 2019

Revealing the molecular key players of thermal dissipation in diatoms, Invited talk, colloquium of plant physiology and cell biology, University of Marburg (Germany), 25 February 2019

Is retrograde signaling present in diatoms?, ISE-G conference, Bremerhaven (Germany), 24 September 2018

Doris Penka

A closer look at concessive at least in English and German, Workshop, “Concessives vs. Adversatives: Opposing Oppositions”, annual meeting of the German Linguistics Society (DGfS), University of Bremen (Germany), 6 March 2019

Quantification over alternatives in the semantics of concessive at least, Invited talk, SFB 883, University of Tübingen (Germany), 12 February 2019

Expressing uncertainty in language: the case of at least, Workshop “Un/Certainty reconsidered”, Hebrew University, Jerusalem (Israel), 29 November 2018

Jennifer Randerath

Behavioral and neuronal correlates of motor cognition, Invited talk, Colloquium Cognitive Sciences, University of Tübingen (Germany), 2019

Gianluca Rastelli

Decoherence of topological states in extended quantum Ising models, Invited talk, conference, Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT’19), Prague (Czech Republic), 17 July 2019

Electron-vibration and electron-photon interaction in nanoscale systems, Invited lecture, Victoria University, Wellington (New Zealand), 27 February 2019

Electron-vibration and electron-photon interaction in nanoscale systems, Invited talk,

conference, International Advanced Materials and Nanotechnology (AMN9), Wellington (New Zealand), 12 February 2019

Single-atom lasers in quantum dots, Invited lecture, NEST, Scuola Normale Superiore, Pisa (Italy), 21 November 2018

Philip Rathgeb

Strong governments, precarious workers: Labor market policy in the era of liberalisation, Invited talk, FAOS (Employment Relations Research Centre), University of Copenhagen (Denmark), 29 May 2019

Makers against takers: The socio-economic ideology and policy of the Austrian Freedom Party, Lunch seminar meetings, Danish Centre for Welfare Studies (DaWS), University of Southern Denmark, 14 May 2019

Makers against takers: The socio-economic ideology and policy of the Austrian Freedom Party, Paper presentation, conference, ESPANET (European Social Policy Network), University of Innsbruck (Austria), 25–26 April 2019

Makers against takers: The socio-economic ideology and policy of the Austrian Freedom Party, Paper presentation, DVPW Annual Conference of the Section on Comparative Politics, Technical University of Munich (Germany), 21–23 March 2019

Makers against takers: The socio-economic ideology and policy of the Austrian Freedom Party, Paper presentation, Dreiländertagung of the Austrian,

German, and Swiss Political Science Associations, ETH Zurich (Swiss), 15 February 2019

The social policy impact of the radical right in Europe, Visiting scholars seminar series: “New Research on Europe”, Minda de Gunzburg Center for European Studies, Harvard University (USA), 10 October 2018

Ariana Strandburg-Peshkin

Vocal turn-taking in meerkat groups, Conference talk, Behavior 2019, Chicago (USA), 26 July 2019

Communication and collective movement in animal societies, Invited talk, departmental seminar, University of Glasgow (UK), 14 May 2019

Elena Sturm

Structural chemistry and morphogenesis of self-assembled mesocrystals, Invited lecture, scientific seminar, Eindhoven University of Technology (Netherlands), 22 November 2018

On crystal branching and spherulite formation, Invited lecture, scientific seminar, LMU, München (Germany), 15 November 2018

Cracking the structural and morphogenetic basis of tooth bio-mineralization in snail-crushing cichlid fishes, Invited talk, 31st European Crystallographic Meeting, Oviedo (Spain), 22–27 August 2018

Nihan Toprakkiran

Immigrant support for home-country populism: A comparative look at the Turkish, Polish and Italian

communities in Germany, ISTKON Student Exchange Conference 2019, Konstanz (Germany), 17 May 2019

Publications

Carolin Antos-Kuby

Antos, Carolin (forthcoming). *Notion of set vs notion of infinity in operative mathematics, Proceeding of the conference on Paul Lorenzen, Series Logic, Epistemology and the Unity of Science*, Springer.

Antos, Carolin, Viktoria Gitman (forthcoming). *An introduction to class forcing*. In: Research Trends in Contemporary Logic. College Publications.

Antos, Carolin, Sy-David Friedman, Victoria Gitman (forthcoming). *Boolean-valued Class Forcing*. In: Archive of Symbolic Logic.

Antos, Carolin, Neil Barton, Sy-David Friedman (forthcoming). *Universism and Extensions of V*. In: Review of Symbolic Logic.

Tuhin Basu

Basu, Tuhin Shuvra, Simon Diesch, Manuel Obergfell, Jure Demsar, Elke Scheer, 2019. *Energy scales and dynamics of electronic excitations in functionalized gold nanoparticles measured at the single particle level*. In: Physical Chemistry Chemical Physics (PCCP). 21(25), pp. 13446-13452. doi: 10.1039/c9cp02378j

Thomas Böttcher

Rütschlin, Sina, Thomas Böttcher, 2019. *Inhibitors of Bacterial Swarming Behavior*. In: *Chemistry – A European Journal*. doi: 10.1002/chem.201901961

David Szamosvári, Tamara Schuhmacher, Christof R. Hauck, Thomas Böttcher, 2019. *A thiochromenone antibiotic derived from Pseudomonas quinolone signal selectively targets the Gram-negative pathogen Moraxella catarrhalis*. In: Chem. Sci. 10, pp. 6624-6628.

Szamosvari, David, Kayla Sylvester, Philipp Schmid, Kuan-Yi Lu, Emily R. Derbyshire, Thomas Böttcher, 2019. *Close the ring to break the cycle: tandem quinolone-alkyne-cyclisation gives access to tricyclic pyrrolo[1,2-a]quinolin-5-ones with potent anti-protozoal activity*. In: Chemical Communications: ChemComm.

55(49), pp. 7009-7012. doi: 10.1039/C9CC01689A

Vazques, Ollala, Thomas Böttcher, 2019. *Advances in Chemical Biology 2019. Von Enzyminhibitoren bis Synthetische Biologie*. In: BIoSpektrum. 03(19), 315. [conference report]

Vazques, Ollala, Thomas Böttcher, 2019. *Advances in Chemical Biology 2019*. In: Nachr. Chem. 67(04), 79. [conference report]

Böttcher, Thomas, 2019. *Replik auf: Wie viele Wasseranomalien gibt es? In: Endesfelder, Ulrike, ed., Miriam Ackermann, ed., Jonas Peters, ed. Jahreskalender. Ich frag' ja nur – Grenzen unseres Wissens 2019*. Ostfildern: Jan Thorbecke Verlag.

Thomas Böttcher, 2019. *Wo ist das Leben entstanden? In: Endesfelder, Ulrike, ed., Miriam Ackermann, ed., Jonas Peters, ed. Jahreskalender. Ich frag' ja nur – Grenzen unseres Wissens 2019*. Ostfildern: Jan Thorbecke Verlag.

Prothiwa, Michaela, Felix, Englmaier, Thomas Böttcher, 2018. *Competitive Live-Cell Profiling Strategy for Discovering Inhibitors of the Quinolone Biosynthesis of Pseudomonas aeruginosa*. In: Journal of the American Chemical Society: JACS. 140(43), pp. 14019-14023.

Rütschlin, Sina, Thomas Böttcher, 2018. *Dissecting the mechanism of oligomerization and macrocyclization reactions of NRPS independent siderophore synthetases*. In: Chemistry - A European Journal. 24(60), pp. 16044-16051. doi: 10.1002/chem.201803494

Rütschlin, Sina, Thomas Böttcher, 2018. *Eine vielseitige Enzymklasse für die Synthese ringförmiger Siderophore*. In: BIoSpektrum. 24(5), pp. 484-487. doi: 10.1007/s12268-018-0950-5

Klaus Boldt

Kirkwood, Nicholas, Klaus Boldt, 2018. *Protic Additives determine the Pathway of CdSe Nanocrystal Growth*. In: Nanoscale. 10, pp. 18238-18248.

Enders, Florian, Arne Budweg, Peng Zeng, Jannika Lauth, Trevor A. Smith, Daniele Brida, Klaus Boldt, 2018. *Switchable Dissociation of Excitons bound at Strained CdTe|CdS Interfaces*. In: Nanoscale. 10, pp. 22362-22373.

Julia Boll

Boll, Julia, 2019 (forthcoming). *Entanglements: Transaction and Intra-Action with the Devil in How to Hold Your Breath*. In: Aragay, Mireia, ed., Cristina Delgado García, ed. Martin Middeke, ed. *Affect(s) and 21st-Century British Theatre*. Basingstoke: Palgrave Macmillan.

Boll, Julia, 2019 (forthcoming). *Making the Audience Cry: Witnessing Violence and the Ethics of Compelled Empathy*. In: Aragay, Mireia, ed., Paola Botham, ed., Avraham Oz, ed., Lloyd Peters, ed., José Ramón Prado, ed. *Political performances: Theory and practice (Vol. II)*. Leiden: Brill.

Boll, Julia, 2019. *“Fear and Anxiety in Contemporary Drama”: 27th Annual Conference of the German Society for Contemporary Theatre and Drama in English (CDE)*. In: The ESSE Messenger Online. no page. [conference report]

Boll, Julia, 2019. *Sara Soncini. Forms of Conflict. Contemporary Wars on the British Stages*. Palgrave Macmillan, 2014. In: Journal of Contemporary Theatre and Drama in English. 7(1), pp. 139-143. doi: 10.1515/jcde-2019-0010 [review]

Boll, Julia, 2018. *The Sum of Our Parts: the Voices of the Human Genre Project*. In: Huber, Irmtraud, ed., Wolfgang Funk, ed. *European Journal of English Studies (Issue: Poetry, Science and Technology)*. 22(3), pp. 317-330. doi: 10.1080/13825577.2018.1513702

Boll, Julia, 2018. *L'homo sacer et le théâtre: entre Richard II de Shakespeare et Le Dernier Caravansérail du Théâtre du Soleil*. In: Grief. Revue sur les mondes du droit. 5, pp. 105-119.

Boll, Julia, 2018. *Kerstin Frank and Caroline Lusin (eds.). Finance, Terror, and Science on Stage. Current Public Concerns in 21st-Century British Drama. Narr Francke Attempto, 2017*. In: International Journal of English Studies. 29(2), pp. 168-169.

Boll, Julia, Gad Guterman, 2018. *Performance, Identity, and Immigration Law. A Theatre of Undocumentedness*. Palgrave Macmillan, 2014. + Emma Cox. *Theatre & Migration*. Basingstoke: Palgrave Macmillan, 2014. In: Journal of Contemporary Theatre and Drama in English. 6(2), pp. 407-413. doi: 10.1515/jcde-2018-0011 [combined review]

Daniele Brida

Enders, Florian, Arne Budweg, Peng Zeng, Jannika Lauth, Trevor A. Smith, Daniele Brida, Klaus Boldt, 2018. *Switchable Dissociation of Excitons bound at Strained CdTe/CdS Interfaces*. In: Nanoscale. 10, pp. 22362-22373.

Udith Dematagoda

Dematagoda, Udith (forthcoming). *Machinic Desire: Wyndham Lewis, Masculinity and the Sublime Horror of Technological War*. In: Modernist Cultures. Edinburgh: Edinburgh University Press.

Dematagoda, Udith (forthcoming). *National Allegory as Negative Dialectic in Wyndham Lewis's Tarr*. In: The Journal of Wyndham Lewis Studies.

Dematagoda, Udith, 2018. *Nabokov's Mimicry of Freud: Art as Science by Teckyoung Kwon*. In: Studies in the Novel. Baltimore: Johns Hopkins University Press.

Panteleimon Eleftheriou

Eleftheriou, Pantelis E., 2019 (forthcoming). *Characterizing o-minimal groups in tame expansions of o-minimal structures*. In: Journal of the Institute of Mathematics of Jussieu.

Eleftheriou, Pantelis E., 2019 (forthcoming). *Small sets in dense pairs*. In: Israel Journal of Mathematics. doi: doi.org/10.1007/s11856-019-1892-4

Benjamin Eva

Eva, Benjamin, 2019 (forthcoming). *Principles of Indifference*. In: The Journal of Philosophy.

Eva, Benjamin, Stephan Hartmann, 2019 (forthcoming). *On the Origins of Old Evidence*. In: Australasian Journal of Philosophy.

Eva, Benjamin, Stephan Hartmann, Henrik Singmann, 2019 (forthcoming). *A New Probabilistic Explanation of the Modus Ponens-Modus Tollens Asymmetry*. In: Proceedings of the 41st Annual Meeting of the Cognitive Science Society.

Roxana Halbleib

Calzolari, Giorgio, Roxana Halbleib, 2019. *Modelling and Forecasting covariance matrices: a parsimonious approach*. [working paper]

Calzolari, Giorgio, Roxana Halbleib, Aygul Zagidullina, 2019. *A latent factor model for forecasting realized variances*. Resubmitted to Journal of Financial Econometrics.

Jolle Jolles

Jolles, Jolle W., Helen D. Briggs, Yimen Araya-Ajoy, Neeltje J. Boogert, 2019. *Personality, plasticity and predictability in sticklebacks: bold fish are less plastic and more predictable than shy fish*. In: The Animal Behavior. 154, pp. 193-202. doi: 10.1016/j.anbehav.2019.06.022

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Cornelia Klocker

Klocker, Cornelia, 2019. *Punitive house burning in Chechnya: Is collective punishment outside armed conflict prohibited?* In: Review of Central and East European Law. 44(1), pp. 31-57.

Gisela Kopp

Rogers, Jeffrey, Muthuswamy Raveendran, R. Alan Harris, Thomas Mailund, Kalle Leppälä, Georgius Athanasiadis, Mikkel Heide Schirup, Jade Cheng, Kasper Munch, Gisela H. Kopp et al., 2019. *The comparative genomics and complex population history of Papio baboons*. In: Science Advances. 5(1). doi: 10.1126/sciadv.aau6947

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Claudius Kratochwil

Kratochwil, Claudius F., 2019. *Molecular mechanisms of convergent color pattern evolution*. In: Zoology. 134, pp. 66-68. doi: 10.1016/j.zool.2019.04.004

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Kratochwil, Claudius F., Sabine Urban, Axel Meyer, 2019. *Genome of the Malawi golden cichlid fish (Melanochromis auratus) reveals exon loss of oca2 in an amelanistic morph*. In: Pigment Cell & Melanoma Research. doi: 10.1111/pcmr.12799

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Baohu Wu, Marina Krumova., Sebastian Sturm, 2018. *Cracking the structural and morphogenetic basis of tooth biomineralization in snail-crushing cichlid fishes*. In: Acta Crystallographica Section A. 74(e60).

Oleksandra Kukharenko

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Takayuki Kurihara

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Bernard Lepetit

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Morgane Nouvian

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Nouvian, Morgane, Giovanni C. Galizia, 2019. *Aversive training of honey bees in an automated Y-maze*. In: Frontiers in Physiology. 10(678). doi: 10.3389/fphys.2019.00678

Doris Penka

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Jennifer Randerath

Buchmann, Ilka, Lisa Finkel, Mareike Dangel, Dorothee Erz, Kathi Maren Harscher, Moritz Kaupp-Merkle, Joachim Liepert, Brigitte Rockstroh, Jennifer Randerath, 2019. *A combined therapy for limb apraxia and related anosognosia*. In: Neuropsychological Rehabilitation. doi: 10.1080/09602011.2019.1628075

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ments in young and older adults. In: PLoS ONE. 14(2). doi: 10.1371/journal.pone.0212709

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Gianluca Rastelli

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Philip Rathgeb

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Elena Sturm

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Julián Torres-Dowdall

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Grants and Awards

External grants and awards that our fellows obtained during the last academic year.

Carolin Antos-Kuby

• Volkswagen Foundation, PhD project “Independence and Naturalness in Set Theory” (with Deobrah Kant) as part of the project “Forcing: Conceptual Change in the Foundations of Mathematics”, 131 700 EUR (funding period 04|2019–03|2022)

Thomas Böttcher

• Heidelberg Academy of Sciences and Humanities, member of the collegium (2019)
• Heidelberg Academy of Sciences and Humanities, Manfred-Fuchs-Preis (2019)
• Academics, 3rd place at academics-Nachwuchspreis (2019)

Julia Boll

• University of Konstanz (DFG Excellence Initiative), Konstanzia Bridge Fellowship, funding of six months full-time post-doctoral research position (02|2019)
• University of Brighton (UK), CAPPE Visiting Scholars Fellowship (12|2018)
• Gladstone's Library, Hawarden (UK), The Canon Denys Ruddy Memorial Scholarship (11|2018)
• Ministry of Science, Research and the Arts, Baden-Württemberg-Ontario Faculty Mobility Program, funding of two months research stay at the Theater Department of the University of Western Ontario at London, 3 600 EUR (11|2018)

Panteleimon Eleftheriou

• German Research Foundation (DFG), grant for organization of

the conference “Practical and Structural Model Theory” on the occasion of the 60th birthdays of Kobi Peterzil and Sergei Starchenko (with Assaf Hasson and Tobias Kaiser), Passau (Germany), 27–31 July 2020, 20 000 EUR

Benjamin Eva

• Alexander von Humboldt Foundation, 12-month extension of Humboldt Research Fellowship for Postdoctoral Researchers (05|2019)

Bianca Gaudenzi

• German Research Foundation (DFG), 2-year Visiting Research Fellow at the German Historical Institute in Rome, Max Weber Stiftung, as part of her 5-year Research Fellowship with the project “The Restitution of looted cultural property in Austria, the Federal Republic of Germany and Italy, 1945-1998” (12|2018–11|2020)

Roxana Halbleib

• German Research Foundation (DFG), Heisenberg-Program, funding of “Econometric Analysis and Forecasts of Financial Risks based on High-frequency Data”, approx. 600 000 EUR
• Deutsch-Französische Hochschule (DFH), grant for co-organizing the International Conference and Spring School “Quantitative Finance and Financial Econometrics”, 3–7 June 2019, ca. 6 000 EUR

Gisela Kopp

• University of Konstanz, International Office, funding of the event series “Animal Sociality Seminar”,

2 410 EUR (03|2019–10|2019)

• University of Konstanz, Young Scholar Fund, funding of “Population genomics of a fission-fusion society: the influence of relatedness on social networks in Thomson’s Gazelles”, 13 500 EUR (funding period 01|2018–01|2019)

Claudius Kratochwil

• German Research Foundation (DFG), funding of “An integrative approach to understanding the molecular mechanisms of color pattern formation and evolution in cichlid fishes”, 311 650 EUR (funding period 05|2019–04|2022)
• University of Konstanz, Faculty for Biology, Best Paper Award (02|2019)

Morgane Nouvian

• German Research Foundation (DFG), funding of “Individual brains, collective task: social regulation of stinging behaviour in honeybees” (funding period 3 years)

Philip Rathgeb

• University of Southern Denmark, funding of “The Social Policy Impact of the Radical Right in Europe”, 1 700 EUR (05|2019)

Ariana Strandburg-Peshkin

• Human Frontier Science Program, collaborative research grant across multiple institutions, funding of “Communication and the coordination of collective behavior across scales in animal societies” (with Marta Manser, Ben Hirsch, Kay Holekamp and Marie Roch), 1 350 000 USD (funding period 12|2019–12|2022)

Teaching

Thomas Böttcher

SS 2019: Methods bridging disciplines: from chemistry to biology, lecture/seminar (co-taught with Bernard Lepetit, Michael Kovermann and Andreas Lorbach)
SS 2019: Organic chemistry for biologists, lecture and tutorial

Klaus Boldt

WS 2018|19: Current issues and methods in nanoscience, master and doctoral lecture and seminar

Julia Boll

WS 2018|19: From reading to writing: creative interaction with contemporary poetry and its authors, block seminar (co-taught with Silvia Mergenthal)

Benjamin Eva

SS 2019: Philosophy of cognitive science, proseminar

Roxana Halbleib

WS 2018|19: Financial econometrics, lecture

Jolle Jolles

WS 2018|19: The role of individual differences in collective animal behaviour within Collective animal behaviour, lecture

Cornelia Klocker

WS 2018|19: Python block course, master and doctoral lecture

Gisela Kopp

SS 2019: Animal sociality, seminar
WS 2018|19: Molecular ecology computer lab, lecture

Claudius Kratochwil

SS 2019: Introductory on epigenetics and evolution and methods

in evolutionary biology within Advanced course molecular evolutionary biology, lecture
WS 2018|19: Mammals within Journal club: Evolution and zoology, seminar
WS 2018|19: Methods for linking phenotypes to genotypes within Methods in biology, lecture
WS 2018|19: Evolutionary developmental biology within Evolution and behaviour, lecture

Oleksandra Kukhareenko

WS 2018|19: Python block course, master and doctoral lecture

Bernard Lepetit

SS 2019: Methods bridging disciplines: from chemistry to biology, lecture/seminar (co-taught with Thomas Böttcher, Michael Kovermann and Andreas Lorbach)
SS 2019: Light signaling within Advanced course physiology, ecology and molecular biology of algae and plants, research colloquium
SS 2019: Photosynthetic light reactions and photoprotection within Advanced course physiology, ecology and molecular biology of algae and plants, research colloquium
WS 2018|19: Grundlagen der Gentechnik within Einführung in die Genetik und Gentechnologie (für Nichtbiologen), ring lecture
WS 2018|19: Photosynthetische Reaktionen in zellfreien Systemen within Kompaktkurs Physiologie der Pflanzen, practical course

Morgane Nouvian

SS 2019: Pheromones and pheromone processing within Advanced course behavioral neurobiology, lecture

Doris Penka

WS 2018|19: Structure and history of English III: Negation and polarity, seminar
WS 2018|19: Structural differences between English and German, seminar at Eberhard Karls Universität, Tübingen (Germany)

Jennifer Randerath

SS 2019: Motor cognition, research colloquium
WS 2018|19: Motor cognition, research colloquium
WS 2018|19: Apraxie within Motor rehabilitation studies, workshop/seminar

Ariana Strandburg-Peshkin

SS 2019: Current trends in computational modelling of collective systems, seminar (co-taught with Tatjana Petrov and Jacob Davidson)

Elena Sturm

SS 2019: Materialanalytik, lecture (co-taught with Helmut Cölfen)
WS 2018/19: Nanochemistry and -analytics, lecture and practical course (co-taught with Helmut Cölfen)

Julián Torres-Dowdall

SS 2019: Experimental design and the scientific method and Evolutionary ecology within Advanced course molecular evolutionary biology, lecture
SS 2019: Advanced course: Quantitative methods in marine behavioural ecology, lecture (mainly organized by Alex Jordan)
WS 2018/19: Deep homology? An Evo-Devo look at what humans and flies have in common, master seminar (co-taught with Joost Woltering)

People and Connections

Scientific Advisory Board

The Scientific Advisory Board consists of internationally renowned researchers and representatives from industry, arts and funding agencies from Germany and abroad. It is appointed by the University Rectorate of the University of Konstanz.

Alexandra Brand

- Chief Sustainability Officer, Syngenta, Basel, Switzerland.

- Member of the University Council, University of Konstanz.

Michael Hannon

- Professor and Chair of Chemical Biology, University of Birmingham, UK.

- Director of the Institute of Advanced Studies, University of Birmingham, UK. (until 2019)

- Director of the EPSRC Research and Training Centre in Physical Sciences for Health, University of Birmingham, UK.

- President of the Society of Biological Inorganic Chemistry, USA.

Henrike Hartmann

- Head of the Executive Management of the Volkswagen Foundation, Hannover.

- Membership in the board of trustees at the Max-Planck-Institute for Biology of Ageing, Munich, and for Metabolism Research, Cologne.

Thomas Hengartner †

- Director of Collegium Helveticum, Zürich, Switzerland. (2016-2018)

- Professor of Anthropology, University of Zürich, Switzerland. (2010-2018)

- Vice Dean of Research of the Philosophical Faculty, University of Zürich, Switzerland. (2012-2018)

Jean-Baptiste Joly

- Director of the Akademie Schloss Solitude, Stuttgart. (1989-2018)

- Honorary Professor at the School of Art Weißensee, College of Design, Berlin.

Rainer Maria Kiesow

- Professor of Law at École des hautes études en sciences sociales (EHESS), Paris, France.

Manuela Nocker

- Representative for the PRME programme on Principles of Responsible Management Education, Essex Business School, UK.

- Senior Lecturer in Organization and Sustainability, University of Essex, UK.

- Vice President of the University Council, Free University of Bozen-Bolzano, Italy. (2014-2018)

Dagmar Schmieder

- President of Kliniken Schmieder, Konstanz.

- Founder of the Lurja Institute, University of Konstanz

- Senator of Honour, University of Konstanz.

Dorothea Wagner

- Professor for Computer Sciences, University of Karlsruhe.

- Member of the German Research Council (Wissenschaftsrat), Köln.

- Member of the Committee for Strategic Planning, Leibniz Gemeinschaft, Berlin.

Senior Fellows

Senior Fellows are established guest researchers from the natural sciences, humanities or social sciences who join the Zukunftskolleg for a research stay and work with our fellows. This support and inspiration is a mutual advantage, the Senior Fellows profit from the impulses provided by the younger generation and vice versa.

Hans Adler

Department of German
University of Wisconsin-Madison,
USA → nominated by Gunhild Berg

Irene Albers

Peter Szondi-Institut for
Comparative Literature
Free University of Berlin, Germany
→ nominated by Johanna Kißler

Jeffrey-Alan Barrett

Department of Logic and
Philosophy of Science
University of California, USA
→ nominated by Franz Huber

Gyorgy Buzsáki

Langone Medical Center,
Neuroscience Institute
New York University, USA
→ nominated by Nathan Weisz

Alex Byrne

Department of Linguistics
and Philosophy
Massachusetts Institute of
Technology, USA
→ nominated by Julia Langkau
and Magdalena Balcerak Jackson

Yoram Carmeli

Department of Sociology
and Anthropology
University of Haifa, Israel
→ nominated by Anna Lipphardt

Brett Clementz

Department of Psychology
University of Georgia, USA
→ nominated by Johanna Kißler

Cleo Condoravdi

Natural Language Theory and
Technology Group
Stanford University, USA
→ nominated by Gerhart von
Graevenitz

Mark Dykman

Department of Physics and
Astronomy
Michigan State University, USA
→ nominated by Gianluca Rastelli

Marcia Esparza

Department of Criminal Justice
JJAY College, New York, USA
→ nominated by Nina Schneider

Christoph Fehige

Institute for Philosophy
Saarland University, Germany
→ nominated by Attila Tanyi

Bernard Frischer

Department of Informatics
Indiana University, Bloomington,
USA → nominated by Karsten
Lambers

Peter Gärdenfors

Department of Philosophy
Lund University, Sweden
→ nominated by Brendan Balcerak
Jackson

Julian D. Gale

Department of Chemistry
Curtin University, Perth, Australia
→ nominated by Denis Gebauer

Daniel R. Gamelin

Department of Chemistry
University of Washington, USA
→ nominated by Rudolf Brat-
schitsch

Dimitri Ginev

Department of Philosophy
University of Sofia, Bulgaria
→ nominated by Jeff Kochan

Leonid Glazman

Department of Physics
Yale University, USA
→ nominated by Gianluca Rastelli

Adelheid Godt

Department of Chemistry
University of Bielefeld, Germany
→ nominated by Malte Drescher

Joachim Gross

Institute of Neuroscience & Psy-
chology
University of Glasgow, UK
→ nominated by Nathan Weisz

David Gugerli

Institute for History
ETH Zurich, Switzerland
→ nominated by Gerhart von
Graevenitz

Joseph Y. Halpern

Department of Computer Science
Cornell University, USA
→ nominated by Franz Huber

Irene Heim

Department of Linguistics and
Philosophy
MIT, Cambridge, USA
→ nominated by Doris Penka

Giora Hon

Department of Philosophy
University of Haifa, Israel
→ nominated by Samuel Schindler,
Helen Gunter, and Julia Jones

Gunnar Jeschke

Department of Chemistry and
Applied Biosciences
ETH Zurich, Switzerland
→ nominated by Malte Drescher

Viktor V. Kabanov

Department for Complex Matter
Jozef Stefan Institute, Ljubljana,
Slovenia → nominated by Jure
Demsar

Paul Kiparsky

Department of Linguistics
Stanford University, USA
→ nominated by Chiara Gianollo

Arthur Kramer

Department Psychology
University of Illinois Urbana-Cham-
paign, USA → nominated by
Iris-Tatjana Kolassa

David Leep

Department of Mathematics
University of Kentucky, USA
→ nominated by Karim Becher

Yaron Matras

School of Languages, Linguistics
and Cultures
University of Manchester, UK
→ nominated by Eleanor Coghill

Jennifer McDowell

Department of Neuroscience,
Biomedicine Research Center
University of Georgia, Athens, USA
→ nominated by Johanna Kißler

Randolf Menzel

Department of Neurobiology
Free University of Berlin, Germany
→ nominated by Andreas Thum

Gregory A. Miller

Departments of Psychology
University of Illinois Urbana-
Champaign, USA
→ nominated by Johanna Kißler,
Iris-Tatjana Kolassa, and Nathan
Weisz

Frank Moorhouse

Freelance Author
Sydney, Australia → nominated by
Gerhart von Graevenitz

Paul Mulvaney

Department of Chemistry
University of Melbourne, Australia
→ nominated by Klaus Boldt

Robert Philibert

Carver College of Medicine,
Department of Psychiatry
University of Iowa, USA
→ nominated by Helen Gunter

Wilson Poon

School of Physics and Astronomy
The University of Edinburgh, UK
→ nominated by Thomas Voigtman

Paul Rozin

Department of Psychology
University of Pennsylvania, USA
→ nominated by Gudrun Sprösser

Alexander Schellow

Freelance Artist
Berlin, Germany
→ nominated by David Ganz and
Zsuzsanna Török

Heike Schmoll

Journalist
Frankfurter Allgemeine Zeitung
(FAZ), Germany
→ nominated by Gerhart von
Graevenitz

Valerie Shafer

The Graduate School, Speech and
Hearing Sciences
The City University of New York,
USA → nominated by Tanja Rinker

Brian Smith

School of Life Sciences
Arizona State University, USA
→ nominated by Andreas Thum

David Sobel

Department of Philosophy
Syracuse University, New York,
USA → nominated by Attila Tanyi

Patrick Speissegger

Dept. of Mathematics & Statistics
Mc Master University, Ontario,
Canada → nominated by Margaret
Thomas

Vinod Subramaniam

Rector Magnificus
Free University of Amsterdam,
Netherlands
→ nominated by Malte Drescher

Jean-Pierre Tignol

Department of Mathematics
University of Louvain, Belgium
→ nominated by Karim Becher

Patrick Tresset

Freelance Artist
London, UK → nominated by
Giovanni Galizia

Sandeep Verma
 Department of Chemistry
 Indian Institute of Technology
 Kanpur, India
 → nominated by Jörg S. Hartig

Klaus von Heusinger
 Department of German
 Language and Literature
 University of Cologne, Germany
 → nominated by Gerhart von
 Graevenitz

Sabine von Heusinger
 Department of History
 University of Cologne, Germany
 → nominated by Gerhart von
 Graevenitz

Associated Fellows

Early career researchers of the University of Konstanz who have been awarded within the Zukunftskolleg's funding programmes are Associated Fellows of the Zukunftskolleg. Ph.D. students or part of the project staff of a fellow as well as other cooperation partners of both fellows and Senior Fellows can also be appointed as Associated Fellows.

Raúl Acosta-García
 Dept. of History and Sociology
 upon application

Janina Beiser-McGrath
 Dept. of Politics and Public
 Administration
 upon application

Tina Bögel
 Dept. of Linguistics
 Mentorship

Kathrin Breuinig
 Dept. of Economics
 Mentorship

Daniele Brida
 Dept. of Physics
 upon application

Anselm Crombach
 Dept. of Psychology
 Mentorship

María Cruz Berrocal
 Dept. of History and Sociology
 upon application

Giulia Fabrini
 Dept. of Mathematics and
 Statistics
 Mentorship

Maroussia Favre
 Dept. of Politics and Public
 Administration
 upon application

Stefan Fischer
 Dept. of Philosophy
 Mentorship

James Griffiths
 Dept. of Linguistics
 upon application

Lucia Görke
 Dept. of Politics and Public
 Administration
 Doctoral Fellowship

Nora Hangel
 Dept. of Philosophy
 upon application

Robert Hussein
 Dept. of Physics
 Mentorship

Jeff Kochan
 Dept. of Philosophy
 upon application

Natasha Korotkova
 Dept. of Linguistics
 Mentorship

Sasha Kosanic
 Dept. of Biology
 upon application

Michael Kovermann
 Dept. of Chemistry
 upon application
 Mentorship

Annika Krüger
 Dept. of Chemistry
 Doctoral Fellowship

Andrea Lailach-Hennrich
 Dept. of Philosophy
 upon application

Ritwik Mondal
 Dept. of Physics
 Mentorship

Marie Laura Niedermeier
 Dept. of Chemistry
 Doctoral Fellowship

Sandro Liniger
 Dept. of History and Sociology
 Mentorship

Carlotta Martelli
 Dept. of Biology
 Mentorship

Fabian Offensperger
 Dept. of Biology
 Doctoral Fellowship

Nathalie Popovic
 Dept. of Psychology
 Doctoral Fellowship

**Mialy Harindra
 Razanajatovo**
 Dept. of Biology
 Mentorship

Max Valentin Reinwald
 Dept. of Politics and Public
 Administration
 Doctoral Fellowship

Tanja Rinker
 Dept. of Linguistics
 upon application

Antje Rumberg
 Dept. of Philosophy
 Mentorship

Inga Schalinski
 Dept. of Psychology
 Mentorship

Andreas Scherer
 Dept. of Chemistry
 Doctoral Fellowship

Michael Smith
 Dept. of Biology
 Mentorship

Antje Strauß
 Dept. of Linguistics
 Bridge Fellowship

Maurizio Strazzeri
 Dept. of Economics
 Doctoral Fellowship

Andreas Trotzke
 Dept. of Linguistics
 Mentorship

Moritz von Brescius
 Dept. of History and Sociology
 upon application

Maria Zhukova
 Dept. of Literature
 upon application

Katarina Zigova
 Dept. of Economics
 Mentorship

Alumni

The Zukunftskolleg's purpose is to provide early career researchers with everything they need to build an academic career. The careers of former members show that we are on the right track. (This list includes fellows that joined the Zentrum für den wissenschaftlichen Nachwuchs [ZWN] and built the first community of the Zukunftskolleg.)

Christof Aegerter (2006–2009)
Lecturer and Group Leader at the Physics Institute
University of Zürich, Switzerland

Unai Atxitia (2014–2016)
Junior Research Group Leader, Department of Physics
FU Berlin, Germany

Tuhin Basu (2015–2019)
JSPS postdoctoral fellow,
NIMS, Tsukuba, Japan

Brendan Balcerak Jackson (2014–2015)
Assistant Professor at the Dept. of Philosophy
University of Miami, USA

Magdalena Balcerak Jackson (2013–2015)
Assistant Professor at the Dept. of Philosophy
University of Miami, USA

Michael W. Bauer (2005–2009)
Professor at the Department of Public Administration
University of Administrative Sciences, Speyer, Germany

Karim J. Becher (2008–2013)
Professor at the Dept. of Mathematics and Computer Sciences
University of Antwerp, Belgium

Gunhild Berg (2009–2013)
Researcher and project leader in the [D-3] Project
Martin-Luther University Halle-Wittenberg, Germany

Julien Bernard (2013–2015)
Maître de conférences at the Dept. of Philosophy
University of Aix-Marseille, France

Francesca Biagioli (2014–2017)
Researcher at the Dept. of Philosophy
University of Turin, Italy

Steffen Bogen (2006–2010)
Lecturer for the Science of Art at the Department of Literature
University of Konstanz, Germany

Rudolf Bratschitsch (2007–2010)
Professor at the Institute of Physics
University of Münster, Germany

Martin Bruder (2010–2013)
Head of Dept.
German Institute for Development Evaluation (Deval), Bonn, Germany

Joanna Chojnicka (2013–2015)
Research Fellow at the Faculty of Linguistics and Literary Studies
University of Bremen, Germany

Monika Class (2014–2016)
Junior Professor at the Dept. of English and Linguistics
University of Mainz, Germany

Eleanor Coghill (2010–2016)
Professor at the Dept. of Linguistics and Philology
University of Uppsala, Sweden

Maité Crespo Garcia (2014–2016)
Newton International Fellow,
University of Cambridge, UK

Sarang Dalal (2011–2015)
Professor at the Center of Functionally Integrative Neuroscience
Aarhus University, Denmark

Martin Dege (2014–2016)
Assistant Professor at the Dept. of Psychology
American University of Paris, France

Jure Demsar (2007–2012)
Professor at the Department of Physics
Johannes Gutenberg University, Mainz, Germany

Malte Drescher (2008–2013)
Vice Rector for Research and Academic Staff Development
University of Konstanz, Germany

Martin Elff (2013–2015)
Professor and Chair of the Dept. of Political Sociology
Zeppelin University, Friedrichshafen, Germany

Arthur Erbe (2006–2009)
Head of Department “Skalierungsphänomene”
Helmholtz-Zentrum Dresden-Rossendorf, Germany

Thomas E. Exner (2007–2012)
Chief Scientific Officer (CSO) at Douglas Connect
Basel, Switzerland

Katherine Fama (2015–2016)
Assistant Professor at the School of English, Drama & Film
University College, Dublin, Ireland

Wolfgang Freitag (2006–2011)
Professor for Epistemology and the Theory of Science
University of Freiburg, Germany

David Ganz (2007–2012)
Professor at the Department of Art History
University of Zürich, Switzerland

Denis Gebauer (2014–2019)
Professor at the Institute of Inorganic Chemistry
Leibniz University Hannover, Germany

Chiara Gianollo (2008–2011)
Associate Professor at the Dept. of Classical Philology and Italian Studies
University of Bologna, Italy

Thomas Gisler (2004–2009)
Senior Scientist Spectroscopy
Metrohm AG, Herisau, Switzerland

Helen Gunter (2008–2014)
Project Manager at Edinburgh Genomics
University of Edinburgh, UK

Simon Hanslmayr (2010–2013)
Senior Lecturer at the School of Psychology
University of Birmingham, UK

Jörg S. Hartig (2007–2011)
Professor at the Department of Chemistry
University of Konstanz, Germany

Tamir Hassan (2013–2014)
Automated Publishing Researcher
Hewlett-Packard Laboratories, Wien, Austria

Barbara Hausmair (2014–2016)
Researcher
State Office for Cultural Heritage Baden-Württemberg, Germany

Anne Hauswald (2008–2012)
Senior Scientist at the Center of Cognitive Neuroscience (CCNS)
University of Salzburg, Austria

Corinna Hermann (2002–2008)
Department of Immunology|Global Preclinical R&D
Baxter Innovations, Wien, Austria

Franz Huber (2008–2012)
Associate Professor at
University of Toronto Toronto, Canada

Wolf Hütteroth (2014–2017)
Group leader at the Department of Genetics
University of Leipzig, Germany

Laura Iapichino (2013–2015)
Assistant Professor at the Dept. of Mathematics and Computer Science
Eindhoven University of Technology, Netherlands

Zhongbao Jian (2013–2015)
Professor at the Changchun Institute of Applied Chemistry
Chinese Academy Of Sciences, China

Georg Jochum (2003–2008)
Chair for Public Law, Tax and European Law, and Regulatory Law
Zeppelin University, Friedrichshafen, Germany

Julia Jones (2008–2013)
Researcher Institute for Bee Research
Hohen Neuendorf, Germany

Andreas Karrenbauer (2010–2012)
Senior Researcher at the Dept. of Informatics
Max Planck Institute, Saarbrücken, Germany

Johanna Maria Kißler (2003–2010)
Professor at the Department of Psychology and Physical Education
University of Bielefeld, Germany

Matthias Kläui (2006–2010)
Professor at the Institute of Physics
Johannes Gutenberg University, Mainz, Germany

Iris-Tatjana Kolassa (2006–2010)
Professor at the Institute of Psychology and Education
University of Ulm, Germany

Albert Kümmel-Schnur (2006–2011)
Lecturer at the Department of Literature
University of Konstanz, Germany

Karsten Lambers (2008–2013)
Associate Professor at the Dept. of Archaeology
University of Leiden, Netherlands

Benjamin Lambert (2013–2017)
Research Associate at the Dept.
of Mathematics
University College London, UK

Julia Langkau (2013–2016)
Postdoctoral Researcher at the
Dept. of Philosophy
University of Zürich, Switzerland

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Network Memberships

The Zukunftskolleg is member in two international networks of Institutes for Advances Studies: NetIAS and UBIAS. These memberships offer new links to partners around Europe and the whole world – they foster networking between similar institutes for new ideas and best practices. For the fellows of the Zukunftskolleg, it provides first-hand contact to renowned institutes around the world and encourages collaborations with international research partners.

NetIAS

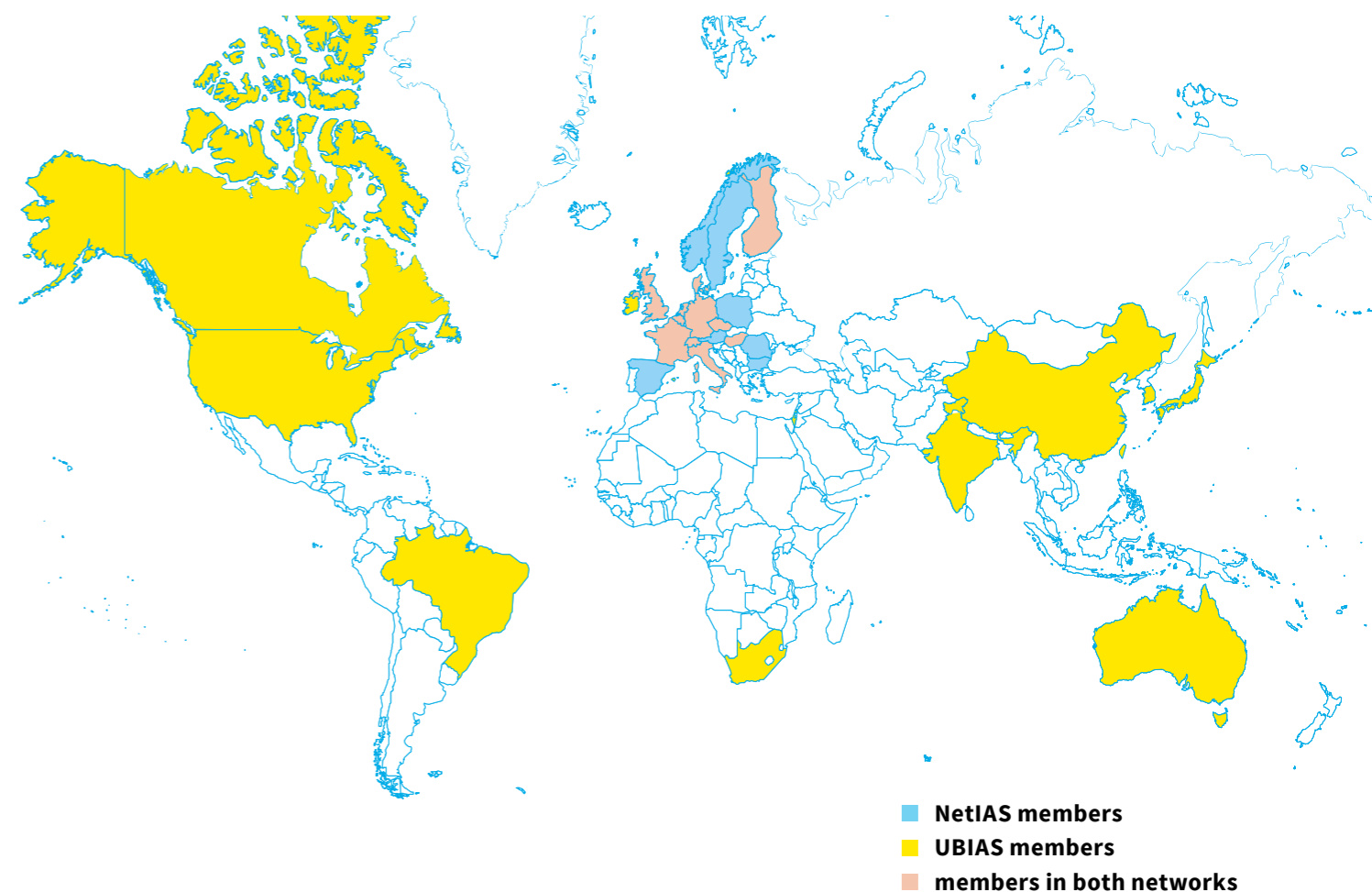
*Network of European
Institutes for
Advanced Study*

NetIAS brings together 24 Institutes for Advanced Study across Europe. It was created in 2004 to stimulate a dialogue on IAS practices and possible forms of cooperation. NetIAS members share the objective of creating international and multidisciplinary learning communities. This openness and the freedom the fellows enjoy for their researches serve to promote scientific and intellectual exchanges. IAS tend to break from the intellectual routines, thus fostering the emergence of new perspectives, approaches and paradigms. While sharing a common vision concerning the freedom of research, and representing an alternative to the national institutions of higher education and research, the IAS offer a considerable diversity in terms of fellowship conditions. Furthermore, their scientific policies are characterized by different thematic or geographical orientations, a diverse openness to natural and hard sciences, or a special commitment to promoting early career researchers.

UBIAS

*University-Based
Institutes for
Advanced Study*

UBIAS is a network of 44 university-based Institutes for Advanced Study worldwide. Initiated in 2010, the network was established to enable structured forms of exchange in this growing segment, including biennial conferences and joint programmes between partner institutes. Unlike traditional Institutes for Advanced Study, UBIAS institutes are associated with or embedded within a university, and actively contribute to the academic culture and the scientific achievements of their home university. UBIAS is committed to equality, inclusivity and diversity. In 2019, the Zukunftskolleg took up the UBIAS' Topic of the Year 'Migration' in its weekly Jour Fixe and organized an art exhibition with other research institutes at the University of Konstanz.



Cooperation Partners

The Zukunftskolleg cooperates with different institutions from Germany and around the world. These collaborations advance the scientific dialogue on the academic level, but also strengthen knowledge communication with the public. Exchange in matters of organization helps to further develop the concept of the Zukunftskolleg continuously. The cooperation with major academic institutions, who offer to host the Zukunftskolleg Fellows, serves networking and exchange of experience. Therefore, the foundation of collaborative projects and international research partnerships can be initiated.

NATIONAL COOPERATION PARTNERS

Akademie Schloss Solitude (Stuttgart)

With its international programmes, the Akademie Schloss Solitude supports young and particularly gifted artists. Apart from those, also scientists of such disciplines as Music or Arts are welcome to apply for scholarships. The Schloss Solitude is not only a place for artistic and scientific exchange, but also a possibility for young scientists and artists to retire from their daily life. This way Zukunftskolleg Fellows are given the opportunity to attend a retreat from one up to three months' time.

Baden-Württemberg-Stiftung (Stuttgart)

The Eliteprogramm für Postdoktorandinnen und Postdoktoranden addresses outstanding young researchers. With this programme the Baden-Württemberg Stiftung supports annually around 20 postdoctoral candidates financially, who aim to pursue their research at a university within the federal state of Baden-Württemberg and who have made it their home base. A number of Zukunftskolleg Fellows have already received the institution's support.

Hector Foundation (Weinheim)

The foundation supports medical research, provides assistance to social programmes – especially in regard to disabled persons – and funds artistic and cultural projects. A further focus is the support of gifted young people, especially in the natural sciences and mathematics. In this context, the Hector Foundation II finances the Hector Pioneer Fellowship of the Zukunftskolleg.

Hegau-Bodensee-Seminar (Konstanz)

The Hegau-Bodensee Seminar offers interested high school pupils a possibility to take advantage of further education beyond school contents. Supported by lectures, workshops and excursions the pupils tackle chosen topics in collaborating working groups. "University Day" is a fixed part of the Hegau-Bodensee Seminar, which provides the chance for pupils to do research directly with scientists and experience recent research done at universities at eye level. In the last years, Zukunftskolleg Fellows held lectures and seminars in the framework of the University Day. In 2018, the topic was "Art or Science?".

Lindau Nobel Laureate Meetings (Lindau)

The annual Lindau Nobel Laureate Meeting is a worldwide recognized forum for the exchange between generations and scientists. Young scientists are chosen from a worldwide network of academic partners in order to participate in panel discussions, seminars and other forms of communication connected to the event. This way the aspiring generation receives a unique opportunity to meet and network with Nobel laureates for Physics, Chemistry, Medicine and Economics. The Zukunftskolleg is a partner of this meeting and fellows are regularly nominated to join the event. In 2018, Takayuki Kurihara (Research Fellow | Dept. of Physics) was invited to join the Lindau Nobel Laureate Meeting on Economic Sciences.

Volkswagen Foundation (Hannover)

Through its funding initiative "Postdoctoral Fellowships in the Humanities at Universities and Research Institutes in Germany and the USA", the Volkswagen foundation aims to enable postdoctoral researchers based at academic institutions in the U.S. to spend some time conducting studies at universities or research institutes in Germany. These studies can either be undertaken at a university or research institute of the candidate's choice or at a cooperating institute. The Zukunftskolleg is one of 14 host institutions for the fellowships.

INTERNATIONAL COOPERATION PARTNERS

a. Alexandru Ioan Cuza University of Iași (Romania)

UAIC is the oldest higher education institution in Romania, being ranked in top 3 in National rankings of universities. With over 752 teachers, 23.000 students (among them 850 PhD students), 319 researchers (part-time and full-time researchers including postdoctoral researchers), the university enjoys high prestige at national and international level. UAIC is a member of some of the most important university networks and associations: the Coimbra Group, EUA – European University Association, Utrecht Network, International Association of Universities, University Agency of Francophony and the Balkan University Network. UAIC also has two Interdisciplinary Research Departments: one in the field of science and in social science and humanities.

b. Centre for Liberal Arts and Social Sciences (Singapore)

The CLASS is a major research centre of the College of Humanities, Arts and Social Sciences at the Nanyang Technological University (Singapore). Established in 2006, CLASS facilitates, coordinates, and encourages interdisciplinary research at Nanyang Technological University, and acts as a platform for interaction among local and international scholars from various disciplines. Some of the activities organised at the Centre include presentations for working papers, seminars, CLASS Distinguished Lectures, multi-disciplinary workshops and conferences.

c. Collegium Helveticum (Switzerland)

The Collegium Helveticum (Zurich, Switzerland) is a think tank and laboratory for transdisciplinary research. It aims to provide a meeting place and forum for dialogue between the humanities, social sciences,

physical sciences, engineering, medical science and the arts. It is sponsored by the University of Zurich, ETH Zurich and the Zurich University of the Arts. Alongside the transdisciplinary research of its fellows and members, the Collegium organises international events on fundamental issues in science and the arts in general, as well as on the current research topic (2016–2020) of 'digital societies' in the role as an institute for advanced study. Zukunftskolleg and Collegium organize joint research workshops (e.g. "World Government or Else?" in 2018) and have recently published a joint prize question ("Disrupted Order?") for their fellows. The collaborative events seek to promote interdisciplinary thinking and exchange across nation borders.

d. Darwin College Cambridge (United Kingdom)

Darwin College is a constituent college of the University of Cambridge (UK) and has been founded in 1964. It is a supportive, interdisciplinary community in which graduate students, researchers and fellows meet together, so as to enrich and enlarge their scholarship and personal experiences. The colleges are one of Cambridge's strengths, academic communities that cross the disciplines. Darwin College has 65 fellows who hold faculty or research positions in the university and associated institutes, and about 650 students who come from the UK and some 70 other countries. Darwin College fosters an informal and egalitarian atmosphere for this multi-disciplinary, international community. Students and fellows meet and talk at academic get-togethers and seminars, over meals and at social and sporting events and in running the annual Darwin College lecture series (a major public event with luminary speakers every week of the Lent Term). Unlike most other colleges our students and fellows are not segregated and students are members of many of the college's governing committees.

e. Israel Institute for Advanced Study (Israel)

Israel Institute for Advanced Studies (IIAS) of Jerusalem is a national institution devoted to academic research. Located at The Hebrew University of

Jerusalem, the IAS is a self-governing body, both in its administrative function as well as its academic pursuit. The primary function of the Institute is to encourage and support collaborative research. Along with collaborative research groups, the institute annually hosts six advanced schools as well as many conferences. The Institute is similar in concept to several existing Institutes of Advanced Study, yet also unique in its sponsoring unrestricted academic research and hosting collaborative teams throughout the more than forty years since its establishment.

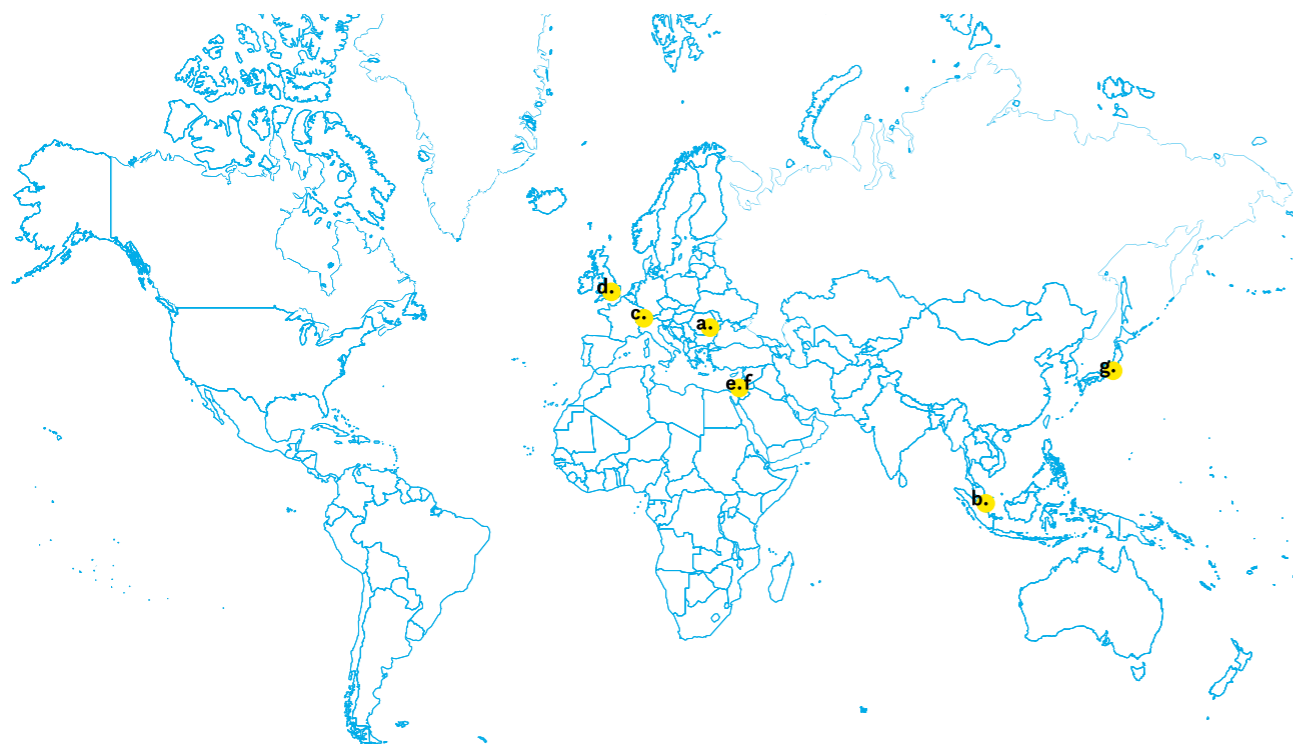
f.
Martin Buber Society of Fellows
in the Humanities
 (Israel)

The Martin Buber Society of Fellows in the Humanities and Social Sciences at the Hebrew University of Jerusalem (Israel) aims to offer young and outstanding scientists of Humanities and Social Science a creative and vivid research landscape. Its fellowship programme fosters the German-Israeli dialogue within the Society and beyond, and with the vital academic and intellectual connections that the fellows have created in the encounters the programme facilitates. Just like the Zukunftskolleg the Martin Buber Society is interdisciplinary oriented and supports excellent research. Therefore, collaboration and

exchange between the two institutions bears high potential and proved to be fruitful. A “Memorandum of Understanding – To Establish a Programm of Scholarly Exchange and Cooperation“ has been signed in 2011 and renewed in 2015. Moreover, workshops for larger groups are being held in Jerusalem and Konstanz. In 2018, a joint symposium entitled ‘Un/certainty’ has taken its first round in Konstanz in June 2018, its second part in November 2018 in Jerusalem.

g.
Waseda Institute for Advanced Study
 (Japan)

The Waseda Institute for Advanced Study (WIAS) in Tokyo (Japan) was established in 2006 as a research institute to provide young researchers with opportunities to dedicate themselves to their research. WIAS offers an independent research environment for young researchers and fosters them to be next-generation researchers. Currently, about 40 researchers are working in the fields of natural sciences, humanities, social sciences and interdisciplinary areas at WIAS. They are engaged in leading research activities that fully demonstrate their flexible thinking and abilities. WIAS also accepts overseas distinguished researchers who stay at Waseda for a short-term to engage in cooperative research with Waseda faculty members or WIAS researchers.



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The Zukunftskolleg is an Institute for Advanced Study at the University of Konstanz promoting early independence for early career researchers. With its 2-year and 5-year Fellowships as well as a diverse network of support, scholars in the humanities, social and natural sciences come to Konstanz from across the world to perform first-class research.

The Zukunftskolleg is one of three light house projects within the university's Excellence Strategy – together with the e-science strategy and the Forum Konstanz.

The University of Konstanz has received funding for its Zukunftskonzept (institutional strategy to promote top-level research during the German Excellence Initiative) since 2007. The new concept *creative.together* builds on the previous university strategy and further develops its *culture of creativity* in a systematic way.

