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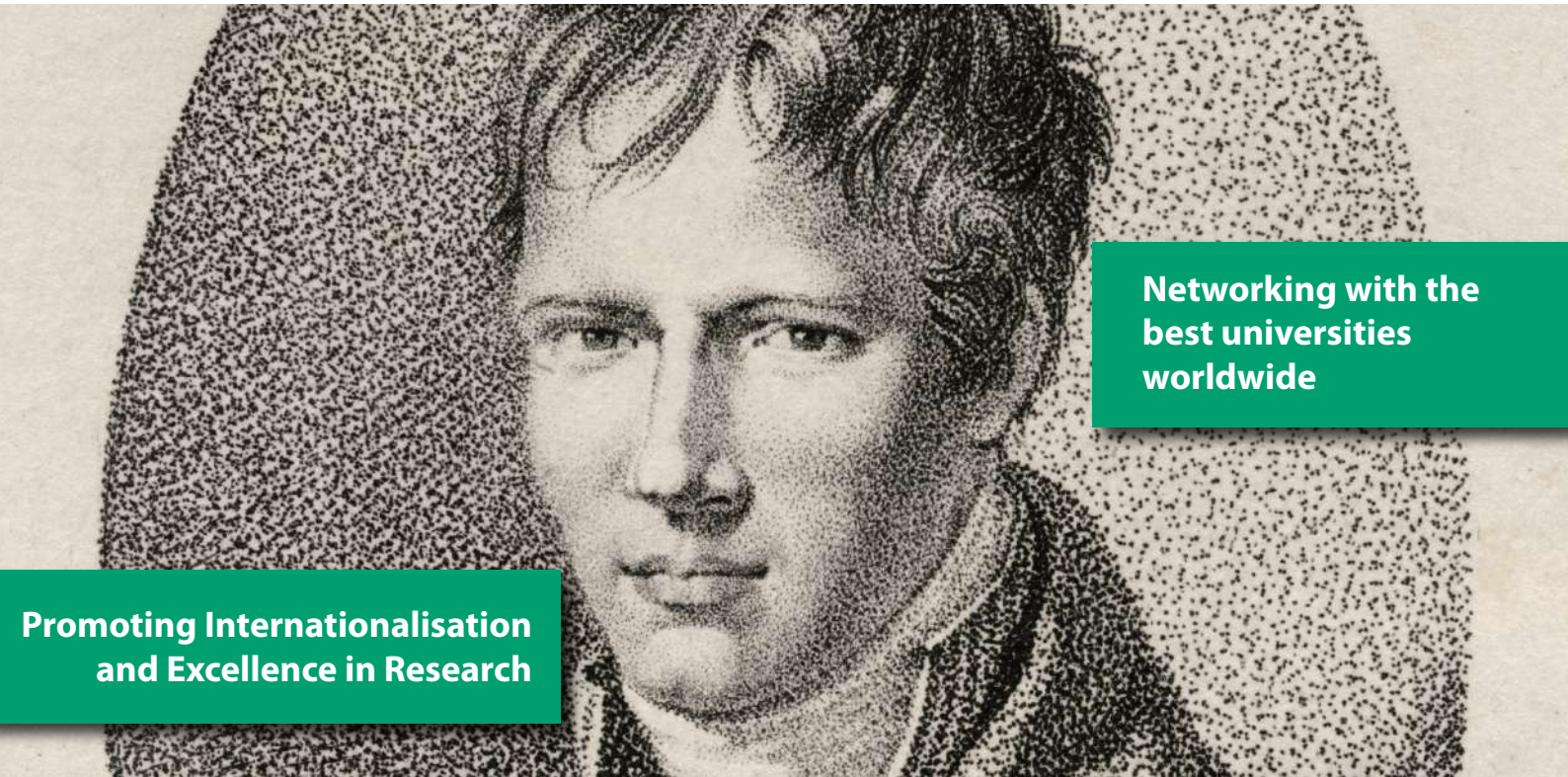
UNIVERSITÄT BAYREUTH

University of Bayreuth Centre of International Excellence "Alexander von Humboldt"

Sponsorship Programmes for Excellent International Researchers: Prospectus 2021



Networking with the best universities worldwide

Promoting Internationalisation and Excellence in Research

Prof. Dr. Stefan Leible
President of the University of Bayreuth

The University of Bayreuth Centre of International Excellence "Alexander von Humboldt" – Our Roadmap to Excellence

When the Bayreuth Humboldt Centre was founded during Alexander von Humboldt's 250th birthday celebrations in 2019, it was our ambition to promote courageous research that links us to one of the most audacious explorers of his age. In Upper Franconia, the world-famous naturalist first revolutionised both mining technology and occupational safety before he embarked on his celebrated sojourn to the Americas. His relentless spirit, his networking skills, and his notorious candour continue to teach us to investigate the complex connections between natural phenomena, and to encourage the conversation between countries, cultures, and disciplines – all paradigms we seek to foster at the University of Bayreuth.

These complex connections ultimately ask for international networking in research. Without international cooperation and networking and without the insights of creative minds who dare to think differently, innovative and sustainable solutions are hardly conceivable. More than ever, we rely on the free discourse of the brightest minds, on personal exchange: not only in video calls, collaborative software and online bar camps, but, more importantly, through direct encounter in labs, lecture halls and libraries.

Our Senior and Junior Fellows and Grantees with their Bayreuth hosts as well as our Strategic Scientific Workshop consortia are prime examples of international research collaboration and networking across borders. They already join us from around the globe and from a broad spectrum of research areas. They investigate, for example, the social and political power of narratives (Sarah Colvin), the ways by which plants manage climate change (Celia Rodríguez Domínguez), the potential of bamboo charcoal bionanocomposites as multifunctional materials (Yu Dong), or the benefit in building a pan-European network of heritage hydrological observatories (Heather Viles).

This prospectus portrays researchers and collaborative efforts we have granted so far, and it also invites you to take part in this endeavour to internationalise research at the University of Bayreuth. Ultimately, these collaborations will not stop after the end of individual research stays or joint papers published – they are designed to keep the promise of ongoing output and sustainable synergies to further promote creative, courageous and innovative solutions. As Alexander von Humboldt put it in a letter from Venezuela in 1799, "Ideas can only be of use if they start living in many minds" – and in many generations to come.

Prof. Dr. Stefan Leible

Sponsorship Programmes for Excellent Research Across Borders

The heart of our university. From here, all paths radiate to the faculties on campus thus connecting quite literally research areas, administration and, of course, people.

The University of Bayreuth Centre of International Excellence "Alexander von Humboldt" supports academic exchange across existing boundaries: across disciplines, different (research) cultures and countries, and between established and younger colleagues. To this end, the Centre invites outstanding international researchers to short and longer visits to the university, and it sponsors Strategic Scientific Workshops that are conducted by Bayreuth researchers in cooperation with international partners at UBT. Our funding formats at a glance:

Senior and Junior Fellowships	Short Term Grants	Strategic Scientific Workshops
Duration: ■ Case-by-case (typically 3-6 months) Financial support: ■ 50,000 € (Seniors) ■ 30,000 € (Juniors) Host: ■ 1-2 Hosts Monthly grant for main host: ■ 500 € Humanities / Social Sciences ■ 800 € Natural Sciences / Engineering Sciences Call for applications and selection: ■ Calls for proposals once a year ■ Selection by External Advisory Board	Duration: ■ One to three weeks Financial support: ■ Reimbursement of travel expenses to Bayreuth and back ■ Accommodation costs in Bayreuth ■ Visa fees (if applicable) ■ Daily allowance ■ Max. 3,500 € Host: ■ 1-2 Hosts (without monthly grant) Call for applications and selection: ■ Calls for proposals twice a year ■ Selection by Executive Board	Purpose: ■ Workshops of UBT researchers in cooperation with international colleagues ■ Mainly with privileged and strategic partner institutions from strategic destinations Financial support: ■ Max. 20,000 € per event Call for applicatoins and selection: ■ Call for porposals once a year ■ Selection by Executive Board

Board of Directors and Executive Board

The Bayreuth Humboldt Centre is headed by a two-member Board of Directors that oversees the Centre's activities and its strategic development to further internationalise research at the University of Bayreuth. The Executive Board consists of the Board of Directors together with the acting Vice President for Research & Junior Scholars as well as the Vice President for Internationalisation, Gender Equality & Diversity.

Anna Köhler is Professor of Soft Matter Optoelectronics (Experimental Physics II) at the University of Bayreuth and the Executive Director of the Bayreuth Humboldt Centre. From 2013 to 2016 she was the Vice President for International Affairs and Diversity.

Bernhard Herz is Professor of International Economics & Finance (Economics I) at the University of Bayreuth and the Deputy Director of the Bayreuth Humboldt Centre. He was the Vice President for International Relations from 2007 to 2010.

The Executive Board selects all international guest researchers who apply for Short Term Grants and the Strategic Scientific Workshops at the University of Bayreuth as well as advises and reports to the University Governing Board. All Executive Board members are dedicated researchers of international recognition as well as avid networkers committed to increasing the international visibility and reputation of the University of Bayreuth.

Christian Laforsch is Professor of Animal Ecology I as well as the acting Vice President for Research & Junior Scholars of the University of Bayreuth since 2014.

Thomas Scheibel is Professor of Biomaterials and the acting Vice President for Internationalisation, Gender Equality & Diversity of the University of Bayreuth since 2016.

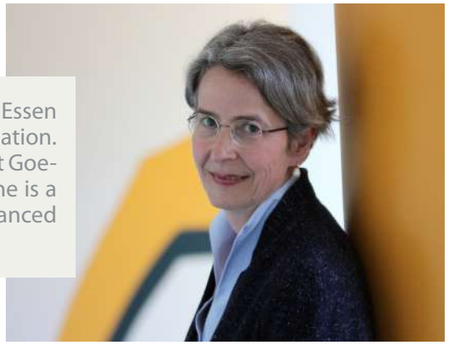
External Advisory Board for the Selection of Senior and Junior Fellows

The Bayreuth Humboldt Centre has established a rigorous evaluation process to ensure a competitive selection of excellent international researchers and collaborative projects. Within the sponsorship programme "Senior and Junior Fellowships", the Centre seeks expert reviews from qualified international peers who attest to the scientific achievements and broad recognition of each applicant within the research community. The final selection lies with an External Advisory Board of seven internationally distinguished external researchers and science managers, all highly renowned in their respective fields.

Arndt Bode is Professor emeritus of informatics and former CIO at the Technical University of Munich and one of the leading researchers of computer architecture and computer engineering. He is the acting President of the Bavarian Research Foundation as well as the Vice President of the Bavarian Academy of Sciences and Humanities and member of the Advisory Board at the Leibniz Supercomputing Centre (LRZ) of the Bavarian Academy.

Christian Bode is the former Secretary General of the German Academic Exchange Service (DAAD). He currently serves as the chairman of the DAAD Alumni & Friends. For his longstanding commitment to internationalisation he has received several honorary doctorates, awards and medals, including the Order of Merit of the Federal Republic of Germany.

Richard Cogdell FRS holds the Hooker Chair of Botany at the University of Glasgow and was the Deputy Head of College of Medical Veterinary and Life Sciences at the University of Glasgow for nearly a decade. He is a Fellow of the Royal Society, has received the prestigious Alexander von Humboldt Research Award and is a frequent internationally sought-after advisory board member and reviewer, e.g. for the German Excellence Strategy.



Julika Griem is the Director of the Kulturwissenschaftliches Institut Essen (KWI) and, since 2016, Vice President of the German Research Foundation. Her previous positions include professorships for English Literature at Goethe University Frankfurt and Darmstadt University of Technology. She is a member of the steering committee of the Freiburg Institute for Advanced Studies.

Olav Gjelsvik is a full Professor of Philosophy at the University of Oslo and former Director of the Centre for the Study of Mind in Nature, a centre of excellence at the University of Oslo. He held various prestigious positions at, inter alia, UC Berkeley and the University of Oxford, and is a member of the Norwegian Academy of Science and Letters.

Senior and Junior Fellows 2020

Michael Sander is a senior scientist and research group leader in Environmental Chemistry at the Swiss Federal Institute of Technology (ETH) Zurich. With comprehensive bachelor and master-level training in Environmental Sciences from the University of Bayreuth, he received a PhD in Chemical Engineering from Yale University in 2005. Michael Sander's research group has expertise in three major areas: redox biogeochemistry, environmental macromolecular chemistry, and environmental chemistry of micropollutants.

Natalie Stingelin FRSC is a full Professor of Materials Science at the Georgia Institute of Technology, Atlanta. She held prior positions at Imperial College London; the University of Cambridge; Queen Mary University of London; the Philips Research Laboratories, Eindhoven; and ETH Zurich. She holds a Chaire Internationale Associée by the Excellence Initiative of the Université de Bordeaux since 2016 and is a former Senior FRIAS Fellow at the Freiburg Institute for Advanced Studies.

Junior and Senior Fellowships are presented as awards to renowned scientists who work at research institutions abroad, and who will carry out a research project in close cooperation with researchers in Bayreuth. The Fellowships are meant to establish, strengthen, and deepen structural and individual ties to researchers at the University.

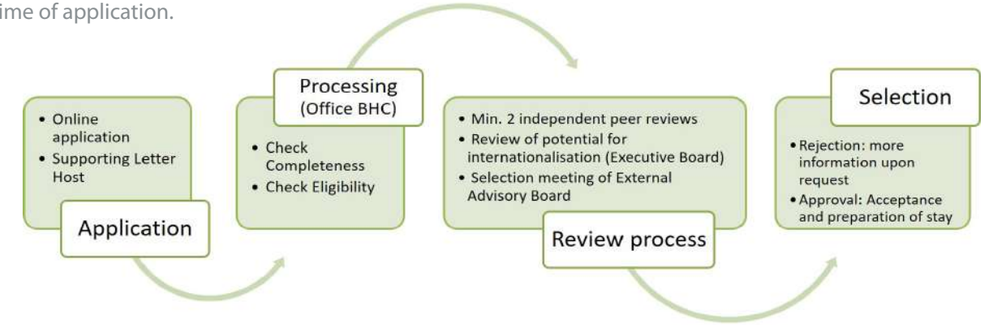
The awards are presented once a year as the result of a competitive selection process. Our External Advisory Board selects all Fellows. The selection is strictly merit-based and the overall selection criteria are the academic excellence of both the applicant and the cooperative project.

Overview Senior Fellowships

- All Fellows are invited to spend typically three to six months at the University of Bayreuth together with their host(s). The stay can be divided into several stages.
- Senior Fellowships are open to researchers who have completed their doctorate more than six years ago at the time of application.
- The Senior Fellowship value totals €50,000. Fellows may use the award to cover costs in the context of the collaborative research project.
- Senior Fellows may also use part of the award to include junior researchers from their research group in the execution of the cooperative research project.

Overview Junior Fellowships

- Junior Fellowships are open to researchers who have successfully completed their doctorate up to six years prior to the application.
- The Junior Fellowships totals €30,000. Fellows may use the award to cover costs in the context of the collaborative research project.
- For the duration of their stay the host scientist of a Fellow receives a monthly subsidy of €500 in the humanities and social sciences, and €800 in the natural sciences and engineering to compensate for local costs.



Senior Fellow

Professor Dr. Sarah Colvin
University of Cambridge, United Kingdom

Project:
Towards a Politics of Fiction

Host: PD Dr. Kyung-Ho Cha,
Contemporary German Literary Studies

In a time when distinctions between truth and fiction are a potentially world-changing political issue, it becomes necessary to re-examine the political and social power of stories. This project develops current thinking about narrative environments, narrative exclusion, and epistemic violence, to assess stories' potential to create and overcome divisions. It investigates contemporary narrative engagement with politics in and beyond the nation-state and addresses the meaning of aesthetic form for the political dimension of cultural production. By developing a taxonomy of the politics of fiction we will enable new understanding of the social and political power of stories.

Sarah Colvin holds a BA, MA, and DPhil from the University of Oxford and is the Schröder Professor of German and a Fellow of Jesus College in the University of Cambridge. She has held Chairs at the Universities of Edinburgh, Birmingham (as Director of the DAAD Institute for German Studies) and Warwick, a Humboldt Senior Fellowship at the University of Potsdam, and a Guest Lecturership at Bielefeld's Graduate School in History and Sociology. She is the representative for literary studies on the international Committee of Experts for the DFG's Excellence Strategy. She currently leads the research group Cultural Production and Social Justice.

Senior Fellow

Dr. Vincent Merckx
Naturalis Biodiversity Center, Leiden, The Netherlands

Project:
Carbon Transfer in Arbuscular Mycorrhizal Networks

Hosts: Professor Dr. Gerhard Gebauer, Laboratory of Isotope Biogeochemistry, and Jun.-Prof. Dr. Johanna Pausch, Agroecology

In the mycorrhizal mutualism – one of the most widespread symbioses on earth – plants and their root-associated fungal symbionts mutually exchange carbon for water and soil nutrients in complex underground networks. However, the existence of several 'cheater' plant lineages – plants that exploit mycorrhizal fungi for carbon – demonstrates that this 'fair-trade' mycorrhizal mutualism is vulnerable to subversion. We aim to test the hypothesis that cheating plays a significant role in forest ecosystems with an in-depth study, which fuses stable isotope abundance analyses, RNA sequencing, and growth experiments. The results will increase our understanding of how plants compete and coexist in terrestrial ecosystems.

Vincent Merckx (*1980) started his scientific career at the University of Leuven (Belgium) in 2004, with a PhD study on the evolution of mycoheterotrophic plants. Following stays at the labs of Prof. Tom Bruns and Prof. Chelsea Specht at UC Berkeley (USA), where he worked on fungal associations of mycoheterotrophic plants, he moved to the Netherlands to work at the Naturalis Biodiversity Center in Leiden. At Naturalis, he leads the Understanding Evolution research group, which aims to address macro-evolutionary questions in plants and fungi. In addition, he is an Associate Professor at the University of Amsterdam.

Senior and Junior Fellowships 2020

Senior Fellow

Professor Dr. Philip Smith
Yale University, New Haven, USA

Project:
Wagner, Bayreuth and the Negotiation of Sacred Meaning

Host: Dr. Florian Stoll,
Department of Sociology

Using the perspective of cultural sociology this mixed-method project examines the personal and public meanings attached to Richard Wagner, his operatic works and the Bayreuth Wagner Festival. These are characterized by complexity and unease. On the one hand Wagner's music is associated with humanism and feelings of spiritual and aesthetic transcendence. On the other hand there is the taint of Wagner's antisemitism, the festival's profound connections to National Socialism, and social exclusivity. Topics of the research include the experience of the festival and music, the relation between aesthetics and morals, and the pragmatics of seeking deep experiences.

Philip Smith is Professor of Sociology at Yale University where he is known as a key figure in the Strong Program in cultural sociology. He has a PhD from UCLA in Sociology and an MA in Social Anthropology from Edinburgh University. Smith has written widely in the areas of social and cultural theory and cultural sociology. His most recent book "After Durkheim" (Polity Press, 2020) considers the evolution of the Durkheimian tradition in sociology, anthropology and social theory over the past 130 years.

Senior Fellow

Dr. Heikki Takala
University of Helsinki, Finland

Project:
Phytochrome-based Biotechnology in Bacteria

Host: Professor Dr. Andreas Möglich,
Biochemistry III: Photobiochemistry

Photoreceptor proteins allow organisms to sense and respond to light. In optogenetics, they enable the precise light-driven manipulation of various biological processes. Phytochromes are red/far-red light sensing family of photoreceptors. Here, we study the signal transduction mechanisms in bacterial phytochromes and apply them for optogenetics. We characterize a novel phytochrome type that acts as a light-gated transcription factor. We harness this and other phytochromes for the optogenetic regulation of bacterial gene expression, which also yields an efficient screening platform for the discovery and analysis of other phytochrome variants. The project provides unprecedented insight into phytochrome signaling and novel optogenetic implements.

Heikki Takala attained his PhD in the field of cell- and molecular biology in the University of Jyväskylä in 2011. After a postdoctoral period in Jyväskylä, he visited Dr. Sebastian Westenhoff at the University of Gothenburg as a postdoctoral researcher in 2013-2015. This period was followed by an Academy of Finland Postdoctoral Researcher position in the University of Helsinki in 2015-2018. To date, Dr. Takala works as an independent group leader in The University of Helsinki. His research vision is to understand the mechanisms underlying the function of light-driven proteins, especially phytochromes, and apply them for novel optogenetic tools.

Senior and Junior Fellowships 2020

Junior Fellow

Dr. Celia Rodríguez Domínguez
IRNAS-CSIC, Seville, Spain

Project:
Connecting the Dots Between Root, Xylem and Stomata

Hosts: Professor Dr. Andrea Carminati, Soil Physics, and Jun.-Prof. Dr. Johanna Pausch, Agroecology

Understanding the physical constraints to transpiration and photosynthesis during drought is of paramount importance to (i) predicting vegetation response to climate change and (ii) identifying plant traits that confer drought tolerance. Stomatal closure is one of the first response to drought, making plants to conserve water but also limiting their carbon assimilation. However, its trigger during soil drying remains contentious. We aim to combine physiological and imaging experiments to investigate whether the loss in belowground conductivities and/or xylem cavitation represent important limitations to stomatal conductance.

Celia started her PhD at the University of Seville (2010, Spain) studying the control of transpiration in fruit trees by combining plant-based sensors with stomatal mechanistic models. She spent research stays at Sonoma State University (Dr. Tom Buckley, 2011, USA) and the University of California, Los Angeles (Dr. Lawren Sack, 2012, USA). After a 3-year postdoc at the School of Plant Sciences of the University of Tasmania (Prof. Tim Brodribb, 2016, Australia), she moved to IRNAS-CSIC where she finished her studies as a Marie-Sklodowska-Curie Fellow. Currently, she is a Juan de la Cierva postdoctoral researcher at IRNAS-CSIC where she continues exploring innovative ways to determine the optimal provision of water for crops based on key plant physiological traits.

Junior Fellow

Dr. Yannig Luthra
University of Essex, United Kingdom

Project:
Social Freedom and Unfreedom

Hosts: Professor Dr. Cristina Borgoni Gonçalves, Epistemology, and Professor Dr. Gabriel Wollner, Political Philosophy

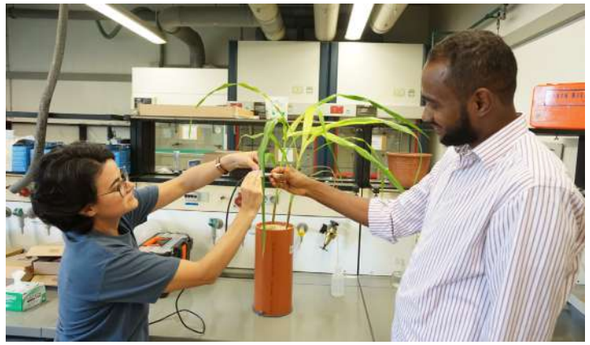
My project critically examines a liberal tradition that casts social freedom as a matter of limitations on an individual's option space. I explore a contrasting idea that unfreedom lies in the enactment of instrumentalized social roles. Unfreedom exists where it is fundamental to one's role as a participant in a social formation that one is to act as an instrument set to the purposes of power holders. Social freedom, in turn, lies in a social form of agency, a kind of living together, that is precluded by the instrumentalizing power relations of domination.

I am an independent researcher affiliated with the University of Essex. I am working toward an integrated understanding of the unfreedom inflicted in domination, social power, the intersection of sociality and individuality, and a kind of freedom marked by forms of agency that are characteristic of persons. I have a PhD in Philosophy from UCLA.

Senior and Junior Fellowships 2020

Science Must Go On – Soil-Plant Research From Seville to Bayreuth to Paris

When Junior Fellow Celia Rodríguez Domínguez arrived in Bayreuth for her first research visit in September 2020, she and postdoctoral researcher Mutez Ahmed from the Soil Physics group were on a tight schedule: they had scored precious (and pricey) beamtime at the SOLEIL synchrotron in Paris, which allowed them to forward their experiments on soil-plant responses - a collaboration generously funded by the Bayreuth Humboldt Centre. Celia on the origins and goals of their collaborative project and the importance of international mobility for research.



Hard at work: Junior Fellow Dr. Celia Rodríguez Domínguez and Dr. Mutez Ahmed from the group of Soil Physics at UBT in September 2020

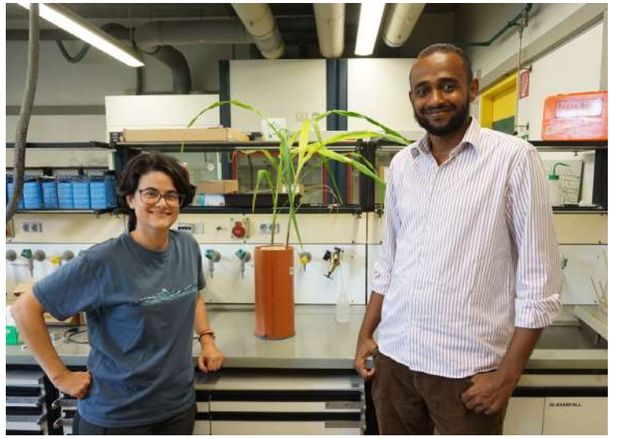
What is your joint research about?

Celia Rodríguez Domínguez: Our collaboration is based on joining the insights from plant physiologists and soil scientists to better understand the main constraints of plant water use. Plant and soil are two crucial perspectives that we need to fully understand for comprehending plant response to drought. Almost independently, one group from the other, we found that an increase in the hydraulic resistance between the soil and the roots act as an important constraint to plant transpiration by limiting leaf stomatal conductance, which is the gas exchange that occurs through the pores on the leaf surfaces called stomata. Since stomatal responses to drought greatly impact crop production and ecosystem function across the globe, our work together aims at disentangling the role of each component from the soil-plant-atmosphere continuum on the decrease observed in stomatal conductance during drought (see also Celia's profile on the previous page).

What has happened so far?

We had the opportunity to collaborate with a team from the University of Bordeaux and from INRAE in France and attend a campaign of experiments at the SOLEIL synchrotron in Paris last September. I spent a couple of weeks at UBT prior to our trip to Paris under excellent conditions at both the University (laboratories, the Bayreuth Humboldt Centre,…) and the city (accommodation, facilities…). During this time, we prepared the plants and additional material for our experiment in Paris. Our aim was to "see" how plants (roots) disconnect from the soil during drought with excellent, high-quality images obtained from intact roots at the synchrotron. Currently, I am conducting an experiment at IRNAS-CSIC (Spain) to add the second part of the story, the stomatal characterisation during drought of the same plants (maize). Our results will add more knowledge to the question, among others, of "what is limiting plant water use during drought?".

What do international research – and mobility – mean to you?



International networking is fundamental within the paths of a research career. It helps to standardise methodologies, and to address specific goals from different perspectives, giving them a pivotal multidisciplinary approach. Situations like the one we are currently living in are complicating, for instance, students and early-career researchers to visit new laboratories or attend workshops where basic techniques are learned and practiced. Although "thoughts" and ideas can be still shared by several media platforms, practical trainings are impossible unless international research mobility is permitted. In my case, my longer visit to Bayreuth University had to be postponed for 2021. Nevertheless, we were able to conduct this very important experiment between UBT and the SOLEIL synchrotron in Paris. Despite the restrictions that could have slowed down experiment performance, we succeeded and obtained outstanding results from that experiment. Science should and must go on. *mhs*

Senior and Junior Fellowships 2020

Strategic Cooperation, Social Freedom and the Consequences of Philosophy at a Distance

Philosophy is the age-old tradition to ask fundamental questions, to engage in critical discourse and to present rational argument. Since antiquity this has happened often in dialogue to map the process of 'how we come to know'. Junior Fellow Yannig Luthra and his hosts, Professor Cristina Borgoni Gonçalves (Epistemology) and Professor Gabriel Wollner (Political Philosophy), on their collaborations and on linking well-tried and novel modes of work.

What is your joint research about?

Yannig Luthra: With Cristina I share a project about different ways of thinking about cooperation between people. The dominant way is to see cooperation as a mutual beneficial coordination and so people involved have to find some plan that works for them. In addition, we are interested in the concepts of play and talk and other relational kinds of interaction that exhibit cooperativeness between people.

Cristina Borgoni Gonçalves: Our leading question concerns what it means to think about cooperation in strategic terms and to link that to the Philosophy & Economics programme in Bayreuth. To give an example: we had a look at parenting books that apply game theory to parenting, i.e. how you can manipulate your child to do what you want. This implies a way of cooperation that is guided by a strategic mindset; and there are other books that accept the autonomy of the child, so cooperation has to work differently. So cooperation is complex and that is not represented in the leading notion put forth by economic theory, which has a lot of explanatory power to model behaviour; but if we want to look at people's interaction in a more humane way, we need to find a different, currently unexplored notion of cooperation.

YL: The second axis of my Junior Fellowship takes place with Gabriel Wollner in that we are interested in shared agency or shared practical life as an important social ideal and how this is connected to ideals of freedom and liberty.

Gabriel Wollner: We have two areas that overlap: Yannig is writing a book that emphasises the social dimension of freedom, how freedom is something that is possible between people, acting together in a particular way. And I'm interested in political and economic institutions where the standard question is: Is it a just institution that succeeds in delivering welfare to everyone? But the better question is actually: Is this the kind of institution that makes the right kind of collective action possible? As we cooperate through institutions, e.g. markets, the state, or property rights regimes, do they facilitate the right kind of collective action? And what is collective action and how are we applying this standard to institutions? I consider this a promising avenue for assessing institutions, and also a promising vantage point to revisit the history of political theory. So Yannig and I can connect through the relation of social freedom and joint action of people in a political context.

Regarding the pandemic, but also with respect to Brexit and resurging nationalisms across the globe: What do international research and mobility mean to you?

YL: It is nice to have more access to conversations with colleagues in a place, but you do not necessarily need to go to another country to meet people; with Brexit for some people international research mobility is certainly impeded, and I appreciate the Fellowship of the Bayreuth Humboldt Centre as a way to counter this new reality of Brexit.

GW: Covid and Brexit are two different things: Covid will go away at some point, hopefully. But the Brexit effect is more lasting: sending students to the UK for graduate studies in particular to the UK is becoming more expensive and also less attractive, as they develop a bad image of the UK, again in connection with the pandemic. In philosophy, it has certainly become more difficult to cooperate with British universities as longstanding partners.

How do you adapt your work to the current challenges? How does philosophical dialogue take place these days?

CBG: Yannig and my work has suffered because we couldn't meet in person which we consider essential as travelling and being present add a different quality. We are also working on that extra energy level, which we can't keep up forever. Finally, I see the hard impact in terms of gender: as we learned, women have produced way less papers during the pandemic, so there's an obvious disadvantage with an increasing gap. Nevertheless, we have a very active semester; Yannig has been attending all of our workshops and forums including our Philosophy Breakfast, and he has really become a member of the department with the Fellowship.

Professor Cristina Borgoni Gonçalves, Junior Fellow Yannig Luthra and Professor Gabriel Wollner (from top left)

GW: We had bilateral discussions while reading and commenting on each others' work, and we are also involved in an online workshop series in the philosophy department called "BaRoC" with Erasmus University Rotterdam; this semester it was dedicated to the research theme "The value of collective action and social freedom" and Yannig was already one of the featured speakers. We certainly see the benefit of online meetings: As Zoom and online formats have become more widespread, we could open up the audience and discussion. The links to the workshops, for example, went sort of viral and we had unexpected researchers joining from New York or elsewhere. We actually sort of came back to this romantic stereotype of philosophy: I happen to live in Berlin for some days of the week, as Yannig is right now. So with the current restrictions, we resumed to the age-old practice of the philosophical walk, of course complying with the distance of 1.5 m in the park of Schloss Charlottenburg. We have enjoyed the views in the park and at the same time discuss each others' philosophical views, immersed in thought and reviving this millennium-old conversational tradition. *mhs*

Senior and Junior Fellowships 2020

Short Term Grantees 2019/20

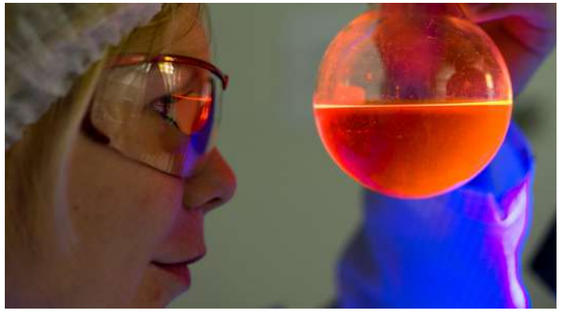
With its Short Term Grants, the Bayreuth Humboldt Centre invites scientists and scholars working abroad to spend a short research stay of one to three weeks at the University of Bayreuth in order to engage in dialogue with a host scientist from the University of Bayreuth.

The reasons for coming to Bayreuth by means of a Short Term Grant are manifold: International researchers may initiate joint projects with Bayreuth researchers to explore potentials for collaboration just as much as they may continue and deepen promising, yet existing innovative endeavours.

Overview Short Term Grants

The Short Term Grants include the reimbursement of travel costs between the place of work outside of Germany and Bayreuth, accommodation costs in Bayreuth, as well as additional costs such as visa fees and a daily allowance. Costs will be reimbursed upon request up to a maximum of €3,500.

The selection of all Short Term Grants is made by the Executive Board of the Bayreuth Humboldt Centre.



Professor Dr. Nilufer E. Bharucha
CoHaB Indian Diaspora Centre, University of Mumbai, India

Disciplines: Diaspora Studies (Literature and Cinema), Ethnoreligious Literature, Indian Diaspora in Africa, Gender in Indian English Literature

Host: Professor Dr. Florian Klaeger, Chair of English Literature

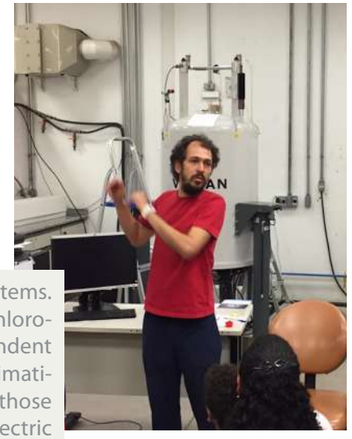
The aim of Professor Bharucha's visit is to explore the potential, at Bayreuth, for an institutionalised platform for graduate research on diasporic literature and culture. This school would focus on representations of migration and diaspora, in particular with a view to concepts of the future. It would be situated within UBT's emerging field "Cultural Encounters and Transcultural Processes". In order to initiate conversations on this topic, Professor Bharucha will visit UBT in the summer of 2021 and deliver a lecture on the literature of the Indian diaspora. She has already contributed a print version of this lecture – originially scheduled to be delivered in March 2020 – to an edited volume on *Symbols of the Future. The Future of Symbolism* by the host, Professor Klaeger (de Gruyter, December 2020).

Professor Dr. Thiago Branquinho de Queiroz
Universidade Federal do ABC, Centro de Ciências Naturais e Humanas, Santo André, Brazil

Project: Charge Transfer Mechanisms in Light Converting Systems from Time-Dependent Density Functional Theory

Disciplines: Condensed Matter Physics, Quantum Mechanics

Host: Professor Dr. Stephan Kümmel, Theoretical Physics IV



We aim to investigate light converting mechanisms in both artificial and nature systems. Donor-acceptor materials that can be used in organic solar cells and bacteriochlorophyll complexes from photosynthetic bacteria will be studied using Time Dependent Density Functional Theory. An important aspect of our work is the use of approximations that are capable of correctly treating charge transfer excitations. We combine those with an appropriate treatment of intermolecular interactions and long-range dielectric screening coming from solvation effects. Our long-term aim is to contribute to the development of materials that can efficiently convert light to other useful forms of energy.

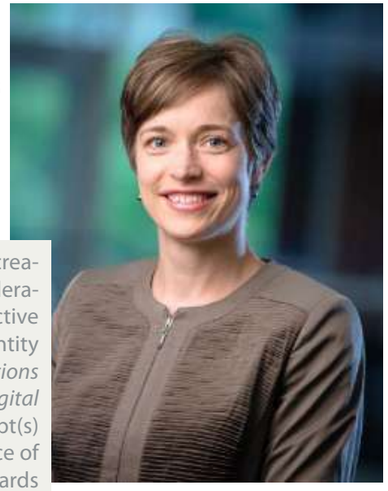
Short Term Grantees 2019

Professor Dr. Olga Bruyaka Collignon
West Virginia University, USA

Project: Organisational Digital Identity, Antecedents and Consequences

Disciplines: Strategic Management

Host: Professor Dr. Ricarda Bouncken, Strategic Management and Organisation



Digital technologies and digitisation of organisational processes constitute increasingly relevant changes in today's business environment calling for reconsideration of the bases for the normally accepted conception of identity. The objective of our research project is to develop the concept of organisational digital identity and answer the following questions: *How groups within and across organisations develop shared digital identity? What are potential benefits of such shared digital identity?* We define *organisational digital identity* as the collective self-concept(s) of an in-group towards the creation, application, development, and emergence of digital technology built on shared fondness, compassion, and proclivity towards digital technology.

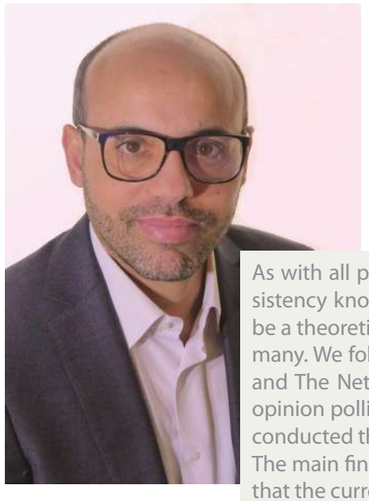
Professor Dr. Helge Dedek
McGill University, Montreal, Canada

Project: "Darker Legacies": Colonialism and "Comparative Law"

Disciplines: Comparative Legal Studies, Legal History

Host: Professor Dr. Martin Schmidt-Kessel, German and European Consumer Law and Private Law as well as Comparative Law

This project, which forms part of a larger undertaking I have been pursuing since 2017, seeks to explore the role of "comparative law" as intellectually legitimising colonialism and even actively partaking in the in the colonial project. The method of comparison that gained currency in the 19th century is intricately intertwined with contemporaneous discourses on "civilization" and "race" and instrumental in establishing the "colonial difference".



Professor Dr. Mostapha Diss
CRESE, Université de Franche-Comté, France

Project: Preference Rankings and Proportional Representation: Mismatches in Germany, 2005-2017

Disciplines: Economics, Political Science

Host: Professor Dr. Frank Steffen, Economics

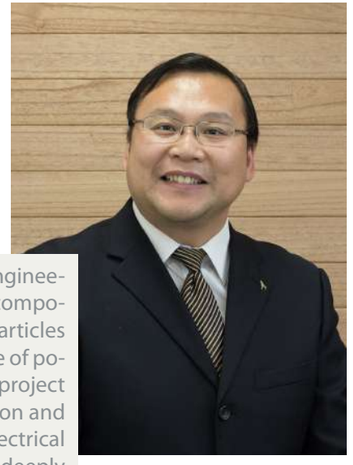
As with all proportional list systems, the German system is afflicted by a fundamental inconsistency known as the More-Preferred-Less-Seats-Paradox. Although this has been known to be a theoretical possibility for a long time, it has never been demonstrated empirically for Germany. We follow a method previously applied to studies of elections in Denmark (1973-2005) and The Netherlands (1982-1994) that reconstructs the individual preference rankings from opinion polling data. We use flash polls that contain "thermometer data" on party preferences conducted the week before polling day for the Federal Elections in 2005, 2009, 2013, and 2017. The main finding is that each of the elections has been afflicted by the paradox. This suggests that the current system has the potential to distort the representation of voter preferences. We discuss the source of the paradox and the normative implications of these results by placing them in the context of representative and epistemic conceptions of democracy.

Dr. Yu Dong
Curtin University, Australia

Project: Mechanical, Thermal and Electrical Properties of Polylactic Acid (PLA)/Bamboo Charcoal (BC) Multifunctional Bionanocomposites

Disciplines: Materials Science and Engineering, Mechanical Engineering

Host: Professor Dr. Volker Altstädt, Polymer Engineering



PLA is a popular biodegradable polymer used in material packaging, biomedical engineering and pharmaceutical devices. The incorporation of nanofillers in polymer nanocomposites has been widely investigated while the study on bamboo charcoal (BC) nanoparticles is still at its infant stage despite their abundant resources, high surface areas, degree of porosity and absorption ability used for pollutant removal and gas purification. This project aims to successfully fabricate PLA/BC bionanocomposites using twin screw extrusion and compression moulding and simultaneously enhanced mechanical, thermal and electrical properties of tailored PLA/BC bionanocomposites as multifunctional materials to deeply understand their good processing-structure-property relationship.

Short Term Grantees 2019

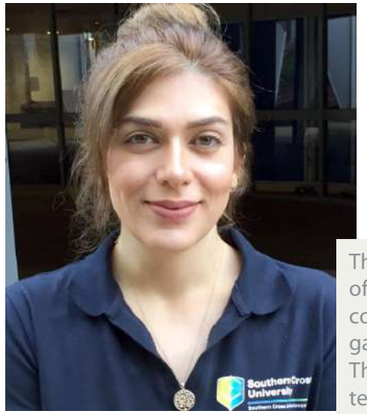
Dr. Remco W.A. Havenith
University of Groningen, The Netherlands

Project: Modelling Deposition of Organic Photovoltaic Materials in Electric Fields

Disciplines: Theoretical Chemistry, Organic Photovoltaics, Computational Modelling

Host: Jun.-Prof. Dr. Eva M. Herzig, Dynamics and Structure Formation

Photovoltaic materials are promising candidates for facilitating the transition from fossil fuels to renewable energy sources. Organic photovoltaics (OPV) have properties, such as being flexible and light weight that make them attractive for specialty applications. The efficiency of OPV depends on many factors, and one is the morphology of the material, which can be steered by electric fields. Here we will do computer simulations of the formation of the films under control of electric fields, with the aim to be able to control the morphology in the production process of OPV in order to improve their efficiency.



Dr. Niloofar Karimian
Southern Cross University, Australia

Project: Antimony Mobility and Speciation in Complex, Redox-Active Mineral System

Disciplines: Soil Science Engineering, Environmental Geochemistry

Host: Professor Dr. Britta Planer-Friedrich, Environmental Geochemistry

This project aims to advance our fundamental understanding on the geochemistry of antimony – a critical mineral resource and environmental pollutant of growing concern that plays a growing role in our daily lives. This will be achieved by investigating the interplay between antimony and metal oxides in multi-mineral systems. This project will bring together a combination of advanced analytical tools and techniques to examine antimony-iron and manganese interactions in experimental mixed mineral systems. The expected outcomes will provide novel insights into refined strategies to manipulate coupling between antimony mobility and iron and manganese cycling for improved rehabilitation of degraded landscapes.

Dr. Dmitry Kolomenskiy
Tokyo Institute of Technology, Japan

Project: Energetic Optimisation of Spatial Arrangement of Fish Swimming in Formation

Disciplines: Fluid Mechanics, Computational Mechanics

Host: Professor Dr. Jörn Sesterhenn, Technical Mechanics and Fluid Mechanics

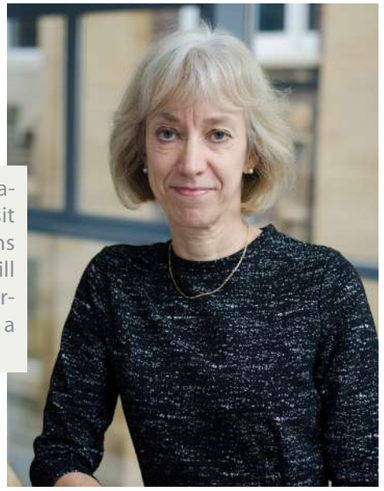
Fluid dynamics plays an important role in our understanding of animal locomotion. The topic of this collaboration concerns with fish schooling, which refers to a group of fish swimming in the same direction in a coordinated manner. We are developing an analytical model based on approximation of the far flow field induced by an individual swimmer represented as a circular vortex ring. It will help to assess hydrodynamic advantages of schooling and evaluate potential benefit that swimming in a group can offer to small robotic underwater swimmers.

Professor Dr. Heather Viles
University of Oxford, United Kingdom

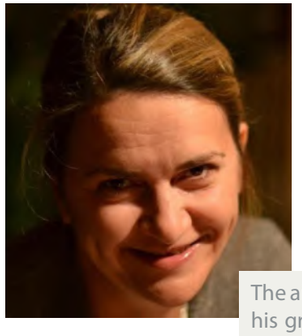
Disciplines: Geomorphology, Heritage Science

Host: Professor Dr. Oliver Sass, Geomorphology

Professor Heather Viles from the University of Oxford will visit Bayreuth to collaborate with Professor Dr Oliver Sass on 'Heritage Hydrology'. The aim of the visit is to lay the foundations of an innovative research project on the interactions between the hydrological cycle and the deterioration of built heritage. We will co-design an instrumental setup for a proposed pan-European network of heritage hydrological observatories, draft a proposal for funding, and co-author a review paper setting out the challenges for this research area.



Short Term Grantees 2019



Dr. Alexandra Drizo
Water and Soil Solutions International Ltd., Bedford, Canada

Project: Phosphorus Removal, Recycling and Reuse from Agricultural Runoff

Disciplines: Water Quality, Protection of Waters, Nutrient Management, Best Environmental Management Practices

Host: Professor Stefan Peiffer, Hydrology and Director of the Bayreuth Center of Ecology and Environmental Research

The aim of my research visit is to assist Professor Dr. Stefan Peiffer, the Director of BayCEER, and his graduate students in the research of their current Marie Curie Training Network Project titled "Diffuse phosphorus (P) input to surface waters – new concepts in removal, recycling, and management." This will be an excellent opportunity to expand on these collaborations in the future in development, testing, and comparing different P trap systems. The research visit also fits very well with the research and training of the Ph.D. students in BayNAT, currently enrolled in an Innovative Training Network (ITN) under Stefan Peiffer advisory or co-advisory. I will also provide a short course in P-removal topics to master students in geoecology and environmental chemistry, the topic of which being a central part of the curriculum.

Dr. Eranezhuth Wasan Awin
Indian Institute of Technology, Madras, India

Project: Design and processing of novel heterogeneous catalytic nanocomposite fibers based on polymer derived ceramics approach

Disciplines: Ceramics, Heterogeneous catalysts, Hydrogen production

Host: PD Dr. Günter Motz, Ceramic Materials Engineering, and Professor Dr. Rhett Kempe, Inorganic Chemistry II

Lignocellulosic biomass which is an abundant, non-expensive and feasible (due to the non-competitive nature in the food chain) material is an excellent choice of replacement for fossil fuel and has wide application in medicinal chemistry. The development of novel catalytic reaction scheme concepts that mediates the conversion of lignocellulose derived alcohols to aromatic N-heterocycles (hydrogen generation/storage) is a challenge. In order to catalyse the corresponding reaction steps more efficiently and to withstand the strong basic conditions during the synthesis, novel catalysts have to be explored. Hence, the aim of this project is to design a sustainable reusable heterogeneous catalyst based on transition metals, acknowledging the factors such as cost, selectivity, reusability and activity as well as the conservation of limited noble metal resources.

Dr. María Josefina Irurzun
Universidad Nacional del Centro de la Provincia de Buenos Aires, Argentina

Project: Excursions to Bayreuth: Travel Narrative, Identifications and Transcultural Experiences of Wagner Fans (Argentina/Germany, 1890-1940)

Disciplines: Cultural History, Cultural History of Music, Opera Studies, Transculturation Processes, Migration Studies, Global History

Host: Professor Dr. Kordula Knaus, Musicology

The purpose of this project is to study travel narratives of Wagner fans that had made the trip or "pilgrimage" to Bayreuth's Festival from Buenos Aires, Argentina. We will study their travel narratives with the aim of understanding transculturation processes from the constructive dimension of music in social and cultural terms. Following a diachronic point of view – from late nineteenth century to the first half of the twentieth –, this approach will allow the analysis of cultural encounters, also revealing the cultural distance perceptions of travelers and fans as well as the singularities of the male and female gaze.

Dr. Felipe Reinoso-Carvalho
Universidad de los Andes School of Management, Bogotá, Colombia

Project: Sonic Seasoning: Rethinking Tasting Experiences Through Music

Disciplines: Sound Engineering, Consumer Behavior, Experience Design

Host: Professor Dr. Claas Christian Germelmann, Marketing

Gastronomy and the food industry are more and more curious about the role of the human senses in the experience of foods and beverages. In fact, recent evidence suggests that what we hear can also significantly affect tasting experiences, whether we realise it or not. Felipe Reinoso-Carvalho, together with fellow colleagues from the University of Bayreuth, intends to further explore, from a scientific perspective, the particular role of sound in the behaviour of consumers while experiencing foods/drinks. Here, they would be looking for to discuss such role from three different perspectives: innovation and consumer protection, food & health sciences, and/or transcultural processes.

Conducting Materials, Travelling Seminars, and the Value of Friendship – A German-Russian Research Collaboration

January is a busy month, the start of a new year has the Bayreuth campus brimming with potential and ideas waiting to be realised. At the work group of Solid State Chemistry – Mesostructured Materials this is no different, all the more as Short Term Grantee Maxim Vlasov from the Institute of High Temperature Electrochemistry in Yekaterinburg has joined Professor Mirijam Zobel for their joint research project which is funded by the Bayreuth Humboldt Centre. Their scientific collaboration naturally proceeds from a summer school series on nanomaterials which, in September 2020, received a prestigious science cooperation prize by the German Academic Exchange Service (DAAD).

What is your joint research about?

Maxim Vlasov: My research is devoted to the studies of the structural features of acceptor- and donor-doped BaLaInO4 oxides. These layered perovskites of the Ruddlesden-Popper type structure can be used as oxygen-ion and proton conductors in high-temperature electrochemical devices such as fuel cells, electrolysers, gas sensors. In order to enhance their performance, we seek to reveal correlations between their intricate short-range order and electrochemical properties like ion conductivity.

Mirijam Zobel: For the characterisation of the short-range order of these ion conducting materials, we employ the pair distribution function (PDF) technique. My group has a dedicated laboratory instrument for this advanced scattering technique, which Maxim uses during his stay.

The journal of Prof. Zobel and Dr. Vlasov's award-winning Travelling Seminar 2018

How does Dr. Vlasov's visit relate to your collaboration so far?

Mirijam Zobel: Our collaboration started in 2017, when Maxim took over the Russian organisation of our common summer school series named Travelling Seminar. Since then, we have jointly organised three summer schools on the topical field of investigating nanomaterials with advanced X-ray and neutron scattering techniques at large-scale research facilities.

Maxim Vlasov: During these seminars we teach students how these scattering techniques can improve our understanding of functional materials. Our collaboration is thus exactly along this line that we merge material knowledge and design with scattering.

What does international research – and mobility – mean to you?

Maxim Vlasov: For me, international research is not only working within joint projects and performing experiments, but it is also a unique opportunity to experience how scientific and educational processes are organised in a foreign university. This insight allows us to re-think or introduce improvements into the way we do our research or teaching.

Professor Dr. Mirijam Zobel and Dr. Maxim Vlasov (for his profile see following page)

Mirijam Zobel: One important aspect of international mobility is to indulge into a different scientific culture. Only with mutual appreciation of work ethics and mentalities, long-lasting scientific collaboration becomes possible. This is what we also teach within our seminars. Most frequently in any successful collaboration, scientific and private aspects mix to not only yield common publications, but more importantly international "Дружба" ("druschba"), meaning 'friendships'. *mhs*

Professor Dr. Mirijam Zobel has been a Junior Professor of Inorganic Chemistry – Mesostructured Materials since 2017. Her main research interests include local structures of colloidal particles, solvents and their interfaces. She is a member of the Young Academy of the Bavarian Academy of Sciences and Humanities and the recipient of the Max-von-Laue prize of the German Crystallographic Society 2019.

Short Term Grantees 2020/1

Dr. Maxim Vlasov
Institute of High Temperature Electrochemistry of the Ural Branch of the Russian Academy of Sciences and Ural Federal University, Yekaterinburg, Russia

Project: Structural Features of Ion-Conducting BaLaInO4 for Electrochemical Applications: Effect of Acceptor and Donor Doping

Disciplines: Solid State Physics, Physical Chemistry

Host: Jun.-Prof. Mirijam Zobel, Inorganic Chemistry – Mesostructured Materials

High-temperature ion conductors based on complex oxides attract big attention due to the possibility of their application in various areas of electrochemistry. Their conductivity properties are highly dependent on the short-range order/disorder of the crystal structure, and thus can be modified by doping one or several sublattices. With this research project, on the example of BaLaInO4, the Ruddlesden-Popper type oxide, we want to perform a thorough structural study by X-ray pair distribution function (PDF) analysis to get the detailed insight into the local structural distortions caused by doping and reveal correlations between structural features and conductivity properties.

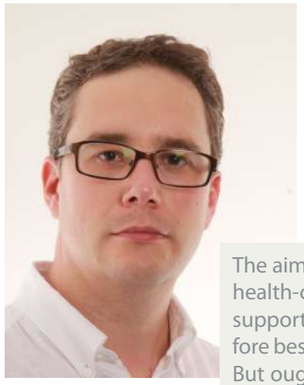
Dr. Danielle Arigo
Rowan University, USA

Project: Reducing Measurement Reactivity in Physical Activity Research

Disciplines: Physical Activity Promotion, Digital Health, Weight Control

Host: Jun.-Prof. Laura König, Public Health Nutrition

Measurement reactivity is a source if bias in digital assessment of physical activity (PA), though conditions that contribute to its effects are not well understood. This Short Term Grant will facilitate a collaboration between Dr. Danielle Arigo, a U.S.-based PA researcher, and Dr. Laura König, a Junior Professor at the University of Bayreuth, to achieve 2 research aims: (1) to produce a manuscript comparing PA measurement reactivity across contexts and identifying predictors of reactivity; (2) to generate the project description for a new grant proposal, focused on testing methods for reducing PA measurement reactivity in distinct contexts. During the proposed visit, Drs. Arigo and König will also hold a workshop on digital assessment of weight-related behaviors such as PA. Thus, the work proposed for this Short Term Grant will provide training opportunities to researchers at University of Bayreuth and promote a collaboration that will help to improve the accuracy of PA measurement.



Professor Dr. Attila Tanyi
University of Tromsø, Norway

Project: The Role of Reasons in the Ethics of Health Care Allocation

Disciplines: Medical Ethics (Public Health Ethics), Metaethics (Theory of Reasons), Normative Ethics (Consequentialism)

Host: Professor Dr. Julian Fink, Practical Philosophy

The aim of the project is to develop a new framework for the investigation of allocation issues in health-care. Any agent who makes a claim on health-care resources must provide reasons that support their claim. I propose that distributive justice in health-care resource allocation is therefore best seen as an attempt to maximize reason-based claims of agents on health-care resources. But ought we to make such priority-setting – often called 'rationing' – decisions? I propose that the answer to this query also depends on our account of the relevant reasons. In short, the most promising way to approach this area of applied ethics is to focus on the (normative practical) reasons that are relevant to our inquiry. This is a promising way also because in recent years there has been an upsurge in research on reasons. At the same time, this discussion has not made its way into medical ethics. This projects aims to fill this gap by fusing applied, normative and metaethics.

Dr. Daniel Teh
National University of Singapore

Project: Investigation of recombinant spider silk protein encapsulation to enhance upconversion implant biocompatibility and anti-microbial properties

Disciplines: Nanotechnology, Oncology, Material Science

Host: Professor Dr. Thomas Scheibel, Biomaterials

Upconversion nanoparticles (UCN) are nanotransducer for near-infrared (NIR) to visible light, an important feature to breach the tissue depth penetration limitation of visible light. However, the application of UCN solution directly into tissue, limits its clinical translation. We have fabricated UCN based implants with great flexibility demonstrated in wireless photodynamic therapy (PDT) in mice model brain tumour. In order to enhance further translatability of UCN implant (reduce scarring, anti-inflammatory and anti-microbial) recombinant spider silk technology is being explored to coat the UCN implantable. Recombinant spider silk has been demonstrated to be an ideal material that can reduce scarring, inflammation and has anti-bacterial property. We will examine the suitable surface modification for both UCN implant and spider silk for the coating to happen and the durability of the recombinant spider silk, towards the course of PDT.

PD Dr. Thomas Wallnig
University of Padova, Italy

Project: Distant Reading Modern Historiography: Three Case Studies

Disciplines: Early Modern History; Intellectual History; History of Historiography; Digital Humanities

Host: PD Dr. Stefan Benz, Didactics of History

Historiography mirrors the narratives of polities. It evokes imagined spaces, assembles groups of agents, defines codes of conduct, and merges them into historical outlines that are meaningful for the self-concept of political entities. Although the connection between historiography and state/nation building is obvious, it has never been tackled from the perspective of large-scale, algorithm-based corpus analysis similar to the way in which, for example, Franco Moretti has applied "distant reading" to literary studies. During the proposed three-week collaboration in 2021, we plan to work on three test cases: a German/Latin work from the 17th century, textbooks from the 19th century, and a comprehensive list of Catholic historiographers from the early modern Holy Roman Empire. We plan to perform a computer-based analysis of (a) the geographic, (b) the prosopographical, and (c) the conceptual and narrative scope of our three data samples. Interested colleagues will be invited to participate.

Dr. Corli Wigley-Coetsee
South African National Parks

Project: Determinants of Phenological Events in African Savanna Trees

Disciplines: Phenology, Herbivore Resource Dynamics, Climate Change Implications

Host: Professor Dr. Steven Higgins, Plant Ecology

In monsoonal, rain-limited climates the timing of phenological events such as fruit production, leaf deployment and leaf abscission determines not only the carbon exchange dynamics of ecosystems, but also the availability of food for animals. The intensity of seed production also varies greatly in intensity and frequency with uncertainty around controls of these dynamics. By using data that has been collected over seven seasons both inside and outside of a protected area, we intend to identify whether resource levels or environmental signals control synchronised reproduction through a state-space modelling approach that will allow us to model the resource status of plants, as well as interactions between climate and resource levels.

Strategic Scientific Workshops 2020

The Bayreuth Humboldt Centre supports Strategic Scientific Workshops by Bayreuth researchers in cooperation with colleagues working at universities or research institutions abroad. All Workshops are expected to deepen existing or establish new ties with a clear objective to create sustainable pioneering research networks for the University of Bayreuth.

The Executive Board of the Bayreuth Humboldt Centre selects the Strategic Scientific Workshops once a year as the result of a competitive selection process. The selection is strictly merit-based and the overall selection criteria are the academic excellence of the participants and of the proposed cooperative workshop as well as its strategic significance.

The Workshop needs to take place at the University of Bayreuth for a minimum of two days. Eligible applicants are senior faculty members of the University of Bayreuth who cooperate with at least one international partner institution. The Centre may grant support up to €20,000 for each workshop.

Collaborating Partners: Professor Dr. Wolf-Dieter Ernst, Theatre Studies and **Professor Dr. Paulina Aroch Fugellie, Universidad Autónoma Metropolitana, Mexico**

Project: Embodied Futurities

Our Workshop deepens knowledge and practical expertise in critical, body-oriented teaching methods developed over the last decade. In the theatre-lab, we will engage in practical reflection on the epistemological paradigm that prevailed in our pre-COVID pedagogical scenarios. We will explore futures for ways of teaching that ensue in the aftermath of social distancing, with keen interest in performance-as-research on cultural crises and Futurities. The workshop will be expanded into an online-toolbox and academic paper by both professors. Professor Aroch is former Society for the Humanities Fellow at Cornell University and an Amsterdam School for Cultural Analysis graduate, where Professor Ernst also studied – a common interdisciplinary background that feeds into the Workshop.

Editing and Contact
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