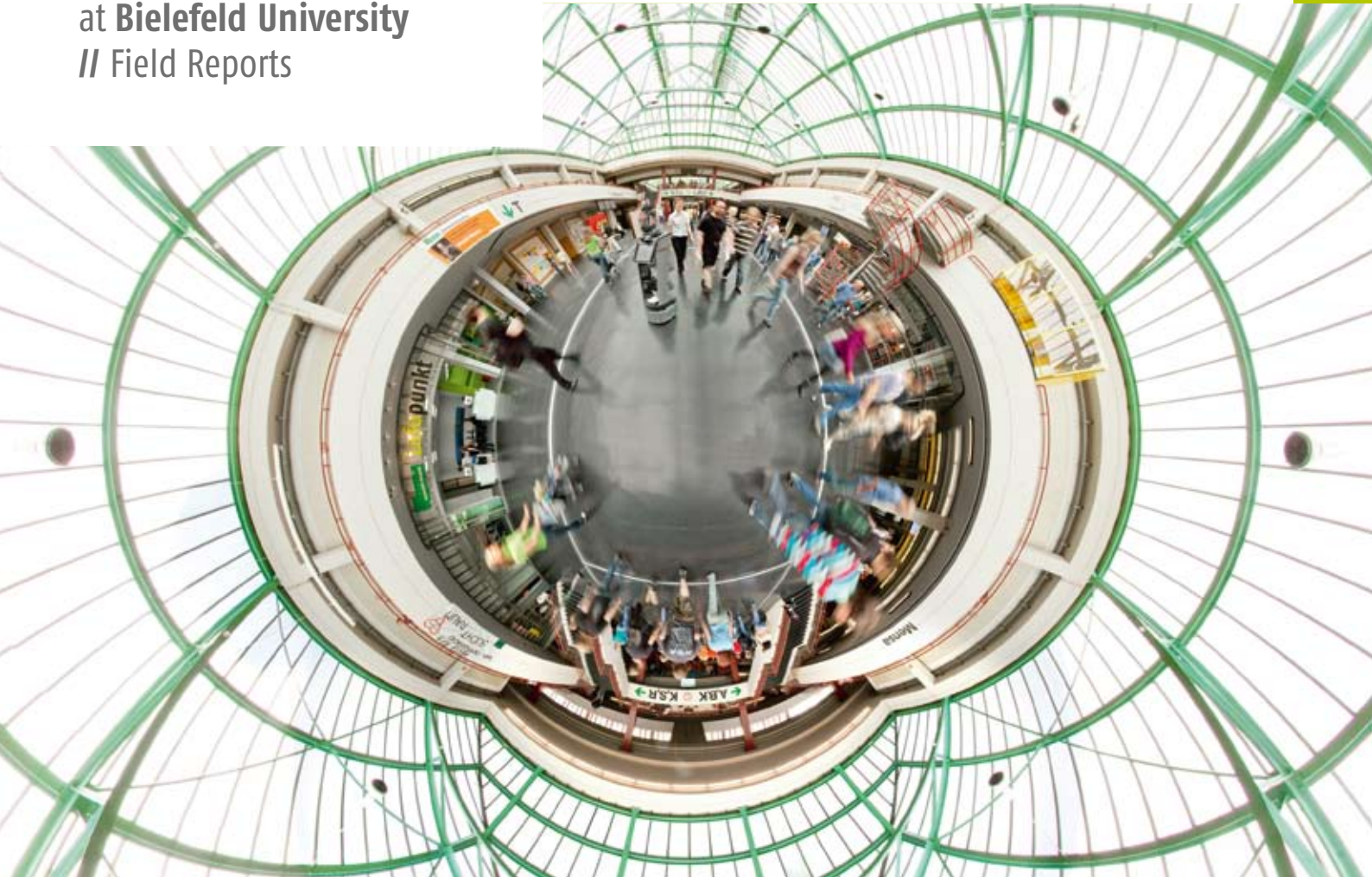


Universität Bielefeld

PHD projects

at Bielefeld University
// Field Reports





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PHD.projects at Bielefeld University

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Promoting Graduates for Tomorrow's World at Bielefeld University

Prof. Dr. Martin Egelhaaf – Prorector for Research, Young Scientists, and Transfer

// Since its foundation 40 years ago, Bielefeld University has awarded a total of approximately 5,000 doctorates marking the starting point for a great number of scientific careers. For a young university such as Bielefeld, its doctoral graduates are a clear expression of its scientific profile and culture. The contributions of former and current doctoral students in this publication give us not only a feeling for what makes Bielefeld University special but also offer insights into the topics and motives of PhD students and the overall conditions in which PhD projects are pursued.

Qualifying the Next Generation of Young Scientists – A Strategic Task for the University

By forming the backbone and, in many cases, also the motor of seminal research ideas and innovative research, young scientists make a major contribution to the prestige and future success of Bielefeld University. This is what makes the sustained promotion of excellent young scientists such an important strategic goal. A doctorate is an essential precondition for most science-oriented careers as well as many leading posts in business and society. To ensure their competitive advantage, young scientists increasingly need to demonstrate not only outstanding scientific performance and excellent professional qualifications but also a broad spectrum of further so-called core qualifications in, for example, knowledge transfer and teaching, media and computers, science-related language competencies, or management and leadership skills.

Women continue to be dramatically underrepresented in both top academic research and top positions in society, and the university has embarked on an ambitious equal opportunity program. The targeted promotion of young female scientists is a major task – not just for the university, but also for society as a whole.

Promoting Graduates: A Success Story for Bielefeld University

With approximately 250 PhDs each year, Bielefeld University is already one of the most important training and research institutions for doctoral students in Germany. Highlighted by the Excellence Initiative of the federal and state governments, the situation of young scientists in German higher education has been subject to intensive discussion in recent years. At Bielefeld University, the faculties and disciplines had already started to introduce measures to improve the PhD phase at the beginning of the 1990s, particularly – but not only – by making graduate training more structured.

All the faculties in Bielefeld have been participating in externally funded DFG Research Training Groups and graduate programs for many years, and they have gathered a great deal of experience in this field. The university has also built up a whole range of organizational structures for promoting young scientists in the long term, particularly in the form of graduate schools and graduate study courses >>

designed to fundamentally restructure the entire PhD phase in each faculty or research specialization. All these graduate programs serve to promote the young generation of scientists and provide an opportunity for qualified graduates to carry out their doctorates in an outstanding research and training context. In this sense, graduate schools are not only locations of outstanding research but also of outstanding teaching. Nonetheless – and this is an important aspect – this teaching focuses closely on current research in the specific field. The graduate programs strive not only to introduce doctoral students gradually and systematically to research, but also to foster career-related core qualifications, to promote international contacts between young scientists, and to build a bridge between their PhD plans and goals and the research interests of each particular institution. The first structured graduate courses appeared in 2001

with the establishment of “International Graduate Schools” in chemistry and biochemistry, sociology, and in business administration and economics. In 2005, these were joined by a further graduate school in history. Whereas these institutions tended to focus on one discipline or faculty, there has also been an increasing trend toward interdisciplinary graduate schools that further strengthen the broad range of interdisciplinary profiles and research specializations at Bielefeld University. The first was the Graduate School in Bioinformatics and Genome Research set up in 2001. This was followed in 2008 by the Graduate School Cognitive Interaction Technology, an important institution at the Cluster of Excellence Cognitive Interaction Technology (CITEC) funded by the German Excellence Initiative, and then by the CoR-Lab Graduate School for Cognition and Robotics. These schools offer disciplinary and interdisciplinary PhD courses

Doctorates at Bielefeld University in 2008



Total: 242, including 98 women (40%)
and 35 foreign graduate students (14%)
Source: Bielefeld University

es in major research areas at Bielefeld University in which scientists from several faculties are involved. This is also the case of the Bielefeld Graduate School in History and Sociology (BGHS), set up in 2008 within the Excellence Initiative framework to succeed the previously mentioned graduate schools in history and sociology, and the International NRW Research School Education and Capabilities set up in 2009. The latter is a joint initiative of two universities, Bielefeld University and the University of Technology Dortmund. The CLIB Graduate Cluster Industrial Biotechnology which has been established at the Center for Biotechnology at Bielefeld University is a joint program organized by three universities in North Rhine-Westphalia (Bielefeld, Dortmund, and Düsseldorf). Part of the graduate schools host externally funded DFG Research Training Groups and other externally funded graduate programs.

The differences in both the organization and size of the various graduate schools currently located at Bielefeld University reflect the firm conviction that graduate schools need to be flexible structures that can adapt themselves easily to changing scientific needs.


Although when the variety of Research Training Groups, structured graduate schools, and graduate courses attests to the importance assigned to structured PhDs at Bielefeld University, independent PhDs following the traditional model continue to play a key role. It is interesting to note that all the structured graduate programs also have such flexible designs that, as several former graduates report here, young scientists still feel that they are working independently – but backed up by all the advantages that a graduate school or Research Training Group naturally has to offer. ■

Outlook

In line with its ongoing measures to promote quality assurance on all levels, Bielefeld University is currently examining graduate training in both its structured and independent forms. The goal is to commit itself to a “Code of Good Practice” requiring minimum standards throughout the university – while continuing to maintain broad freedoms for the otherwise subject-specific design of graduate courses. Plans are currently under way to introduce further measures to optimize the training of doctoral students such as the formulation of university-wide general PhD regulations and a central graduate service center.

Bielefeld’s current successes not only in the Excellence Initiative of the federal and state governments but also within other funding frameworks confirm the outstanding quality of support the university gives to its doctoral students. In the future, Bielefeld University will continue to optimize its provisions for young scientists, and we invite all researchers and particularly the young generation of scientists to

actively support this endeavor. It is only by mobilizing all the talents located in our university that we shall be able to ensure its future viability as a research institute both at home and abroad.

This introduction has shown how important young scientists are for the university, and it briefly outlines what we have done so far and what we are still intending to do. To find out how Bielefeld is perceived as the starting point for an academic career, how the climate at our university influences work in the PhD phase, and in which domains Bielefeld may be something special, it is necessary to read what Bielefeld’s doctoral graduates have to say. The following contributions come from both former and current graduates, from those who experienced the founding years of the university like Dr. Michael Vesper up to Rumin Luo, who only came from China a few months ago to do her doctorate at the BGHS. 

Key Points of Graduate Training in Bielefeld

// Recruiting the best minds – both nationally and internationally – for a doctoral course in Bielefeld by making the location more attractive and extending national and international research cooperation.

// Overcoming the drastic underrepresentation of women in top academic research. The research-oriented equal opportunity standards passed by the Rectorate of Bielefeld University should lead to a permanent increase in the proportion of young female scientists.

// Shortening the time it takes to do a doctorate by improving research and supervision conditions. Absolute priority for qualification-related tasks compared with other service tasks.

// Strengthening the scientific profile of the university based not only on outstanding work in the disciplines but also and above all on major interdisciplinary research specializations by making it easier to carry out interdisciplinary PhDs.

// Promoting general core qualifications to prepare graduates for careers in science, industry, and society. With its career service, mentoring programs, special provisions in the foreign language center, and so forth, Bielefeld University offers top career-related services for young scientists.



Dr. Michael Vesper

received his doctorate degree in 1982 from the Faculty of Sociology. In 1979, he was one of the founding members of Germany's Green Party. From 1983 to 1990, he was the Managing Director of the Green Party Group in the German Federal Parliament; from 1990 to 1995, a member of the Parliament of the Federal State of North Rhine–Westphalia and Managing Director of the Bündnis 90/Green Party Group. In 1995, Michael Vesper became Minister for Building and Housing and Deputy Prime Minister of the Federal State of North Rhine–Westphalia. In 2000, he was confirmed in this position and was then Minister for Urban Development, Housing, Culture, and Sport. After the federal elections in 2002, he held the post of Acting Prime Minister of North Rhine–Westphalia from October 22 to November 6, 2002. Since October 2006, Dr. Michael Vesper is the General Director of the German Olympic Sports Confederation.

// Dr. Vesper, from 1977 to 1983, you worked as a research assistant at the Faculty of Sociology where you took your doctorate in 1982. What was the topic of your dissertation? And who was your supervisor?

My time in Bielefeld already began back in 1973. I first started studying at the University of Cologne – in the 1970–71 winter semester. And after passing my prediploma in mathematics and social sciences, I thought it was time for me to get out in the world a bit. I was still living with my parents in Düsseldorf. I took a map and a compass and traced two circles: I was looking for a university too far away to travel daily, but close enough for me to bring my laundry back to my mother at the weekends. My choice fell on Bielefeld. It was a newly founded university with an excellent reputation in mathematics. At that time, there was a mathematics program on television, and it was produced in Bielefeld. That made Bielefeld interesting, and naturally the sociology department with Luhmann and all those famous names as well. In the summer semester of 1973, I continued my studies here, and in October 1976, I gained my diploma in sociology and no longer in mathematics. Afterwards, I was lucky enough to already get my first job in January – as assistant to the Dean of the Faculty of Sociology. And then I got my doctorate in 1982. I wrote my dissertation on the Integration of the Namibian Homelands into the Capitalist World System at the Faculty of Sociology – specializing in the sociology of development under Professor Hans-Dieter Evers, who is now professor emeritus.

At the time, Bielefeld University was set up as a “reform” university. How far were you aware of this, and was it relevant for your choice of Bielefeld?

Both; I was aware of it and it was relevant. I had come from the University of Cologne – a very traditional university, both then and today. That was already an enormous difference. Whereas Cologne had been large-scale lectures, Bielefeld University was a seminar in a room on the Dornbergerstraße. Everybody used the familiar Du form in those days – and not just among students but also between students and teachers. And everything fitted together so well in the university. A small university of manageable size. That certainly played a role in my choice.

The Green Party was also founded during the time you were a research assistant at Bielefeld.

You were involved in that as well.

I was only 16 years old in 1968, but when I started studying in October 1970, you could still find traces of the student movement. So that makes me a young member of the 1968 protest movement. My politicization certainly has something to do with 1968, but it also has something to do with my background in Catholic and Protestant youth work where I became involved in third world politics. And that led me through the Action Committee on Africa (AKAFRIK) in Bielefeld to the political party known as the Bunte Liste, which was elected to Bielefeld city council for the first time in 1979. Thanks to the new university culture in Bielefeld >>

– being a reform university, it had no traditions – the city had an amazingly lively political scene with fewer barriers between different groups than I had known in Cologne or Düsseldorf. In other words, we still talked to each other. We met in bars like Ferdis Pizza Pinte or Cafe Oktober. Those were the first student bars where discussions went on well into the night. That all certainly had a lot to do with the fact that students came together here from all over Germany. They didn't bring a fixed background with them, but had to redefine themselves in a new environment. And this led to a new university culture.

You talk about the university giving new impulses to the city, and you are saying that those who came to Bielefeld established a new political culture?

For them Bielefeld was like a blank sheet of paper – they could color it in themselves. At that time, the university was outside the city – that's hard to imagine now. It was far less well integrated than it is today when the subway will take you straight there from the main railroad station. The university has certainly had a very strong impact on the city of Bielefeld and changed it greatly.

And this experience had an impact on you? In other words, your experiences back then in Bielefeld influenced your political career?

Yes, of course. First through my affinity with the Bunte Liste, and then with the Green Party that I also co-founded. It all had a strong influence on my career. In addition, I was assistant to the dean – alongside my work in teaching and

Thanks to the new university culture in Bielefeld – being a reform university, it had no traditions – the city had an amazingly lively political scene.

research. The training I enjoyed there not only in seminars and lectures but also in the cultural life of the university had a strong impact on me – in later years as well. At the university, you learn to recognize positions and you also learn to occupy them. You learn skills like how to get involved in a topic and how to pursue it. You also pick up a certain philosophy. However, it all has to be applied. And I was lucky because I had the opportunity to gather a lot of experience in politics. After I stopped working at the Faculty of Sociology, I spent seven years as Managing Director for the first and second Green Party groups in the German Federal Parliament, and then for many years I was a member of the state parliament, a minister, and Deputy Prime Minister.

What are your ties with Bielefeld today?

Because my office is now in Frankfurt and my principal residence is in Cologne, I unfortunately don't get to Bielefeld very often at present. But until I was appointed General Director of the German Olympic Sports Confederation, Bielefeld was always my second home, and I would go there several times a month. I still have a house there – my oldest son is living in it. I continue to have strong ties to Bielefeld. And every time I get a free weekend, I take a trip there.

Nowadays, Bielefeld University also provides structured doctoral training – in particular, the Bielefeld Graduate School in History and Sociology – and young scientists receive more supervision.

What do you think of this development?

I'm more of a special case, because I was a full-time research assistant. I wouldn't have had the time for graduate studies. However, I think it's a good idea to organize things like this. It was inconceivable then. I would have liked to imagine doing my doctorate in that way. But, at the time, I set my own goals and I defined my own steps on the way to them. But I am sure it is a positive development – particularly for doctoral students coming from elsewhere.

What advice would you give to today's young doctoral students?

First, don't drive yourself crazy with exaggerated aspirations. Find a topic you will enjoy – one that interests you personally. Draw up realistic time schedules, set very clear deadlines, and stick to them as far as you can. Nonetheless, I know from my own experience that people tend to perform best and make the most of their skills when they are under pressure.



Rumin Luo – The Joy of Being in the BGHS

Bielefeld Graduate School in History and Sociology

// After getting my master's degree in sociology from China Agricultural University (CAU), Beijing in 2006, I spent 2 years working with the Deutsche Gesellschaft für technische Zusammenarbeit (GTZ) as a full time officer in the Sino-German cooperation Poverty M&E project. Approaching the end of my mission, I started to consider the continuation of my future education in foreign countries. Based on my good impression of German colleagues, a personal interest in gaining more insights into German culture, and a strong recommendation for the well-known Faculty of Sociology in Bielefeld by German colleagues, the BGHS (Bielefeld Graduate School in History and Sociology) was my first application choice and where I finally successfully gained admission with a scholarship.

During my bachelor's and master's studies, I had already been involved in field projects and research covering a wide range of issues such as poverty, gender, natural resource management, and sustainable development. Over the past 6 years, these were sponsored by the Asian Development Bank (ADB), the World Bank (WB), the UK Department for International Development (DFID), the Japan Bank For International Cooperation (JBIC), and the International Development Research Centre (IDRC). Therefore, it's really not difficult for me to adjust to a new life in Bielefeld; no matter whether it is the local German culture or the professional field. Nevertheless, the German language is still my big headache in real life. Luckily, the BGHS

offers good support for all international students with a one-year German language course. Each of us now has a kind and helpful mentor, and mine helped me a lot at the beginning of the first year.

The more important thing is of course that BGHS also offers full support in academic terms. My continuously intelligent and diligent professors and PhD colleagues have inspired me with lots of new ideas. Also, all PhD candidates receive annual grants for different workshops and courses as soon as they begin to develop a reasonable and meaningful research topic. My most recent experience in England was especially amazing, because afterwards one professor even invited me to give lectures at a Dutch university. I also just finished an excellent summer school course on quantitative methods in England, which will be essential for helping me finish my final results with the support of the BGHS and the recommendation of my supervisor Prof. Martin Diewald.

After I was elected to be the international representative for all doctoral students, I was interviewed by a Berlin journalist who ended up writing interesting stories on international students that have been published on academics.de.* In this context, I talked a lot about my progress in Germany. In my research, I am trying to find out about the key factors affecting the integration of migrants in urban China and whether migrants have different life chances >>

than urban residents. While doing this, I am not only getting lots of useful feedback from the colloquiums held by my professor and others, but I am also getting major psychological support from my professor who is smart and kind enough to lead me in the right direction. Even though I have only been here for less than one year, I have already made huge progress, not only in terms of methodology and theory, but also in the actual writing process, which makes me feel confident about being able to complete my final paper within 3 years.

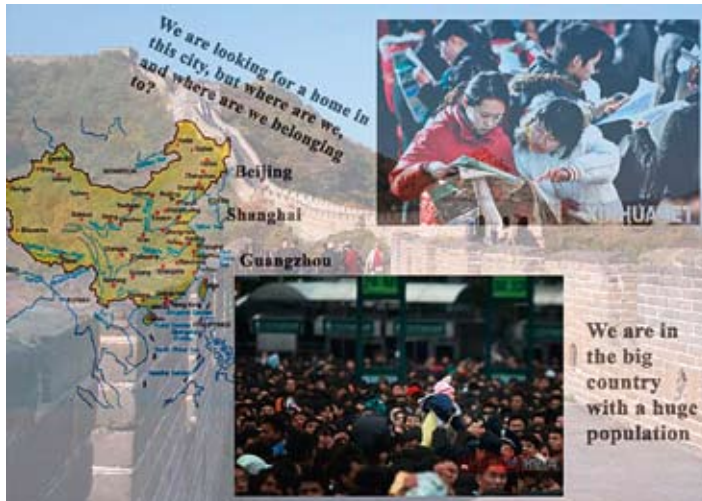
Yet, the reason why I particularly love the BGHS is that the people here are not only professional in academia, but also in real life. Seeing the BGHS band led by its Director, Prof. Jörg Bergmann, playing its fine music and hearing how well the PhD candidate Michael Wittig sang at the summer festival 2009 made all of us proud to be part of a

great team. And the summer festival was especially memorable for me because I got to sing the famous Chinese folk song Jasmine Flower and share my happiness with my German colleagues.

My experiences over the last 10 months here have proved that I made the right decision. The BGHS not only lives up to its high reputation in the field, but it has also opened up another world for me. Bielefeld University also impressed me with its hospitable and well-organized system that has enabled me to live and work here very comfortably. I am very confident that once I have got my degree in Bielefeld, I shall be able to handle more responsibility for my country and the world. If in the future, I shall be in a position to act as a bridge between Europe and China, I shall feel very proud to say that I was educated by the BGHS at Bielefeld University. 

Bielefeld University also impressed me with its hospitable and well-organized system that has enabled me to live and work here very comfortably.

* Ute Zauft, Zur Promotion nach Deutschland, www.academics.de



The poster for the PhD project describing the difficult life conditions of migrants and their problems with integrating in Chinese cities.

Rumin Luo singing the Chinese folk song Jasmin Flower with the BGHS band at the 2009 Summer Festival.





Till Bovermann – Research Based on “Lateral Thinking”

Graduate School Cognitive Interaction Technology


// If I had to use one single phrase to sum up my research activities over the last few years, I would call it “research based on lateral thinking.” Lateral thinking, because the particular strength of the research teams I have been working in up to now has been to single out the most unusual links between otherwise only loosely related fields, and then go on to explore these further. This requires not only freedom but also the goodwill of those in charge if one is to generate research in highly differing fields such as informatics, biology, sociology, psychology, philosophy, or even the arts – research that some would incorrectly view as unnecessary gimmickry – and then transform this into new knowledge. Bielefeld provides a particularly supportive environment for this way of working in which the core feature is “thinking in unusual directions,” that is, lateral thinking. Its research and administrative structures are characterized by a great deal of freedom – in the positive sense. An open and receptive attitude toward the unusual in science, technology, and the arts is essential for creating a climate in which new links can be forged between these fields. Such open-mindedness is not something that can be taken for granted: It is difficult to say in advance where findings will be produced, what these will be, whether they can be applied in practice, or how they will fit into future research.

Nonetheless, the success of this strategy is confirmed by the very existence of the Cluster of Excellence Cognitive In-

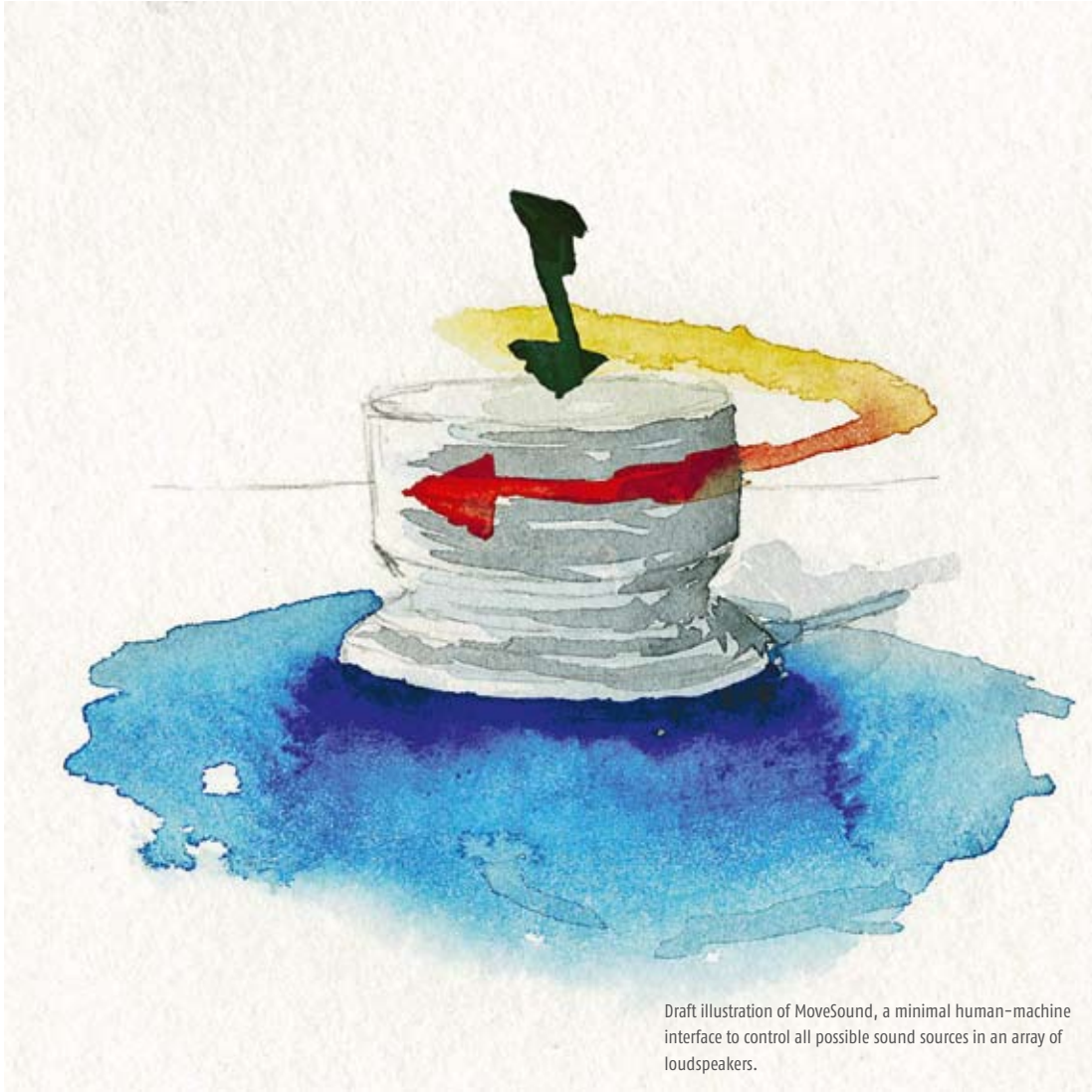
teraction Technology (CITEC) whose structures are designed to link together interdisciplinary activities in engineering and human sciences, that is, to actively support exactly this type of research based on lateral thinking. To give an example of this kind of research, I shall present a few anecdotes from my daily research work.

I became a member of the neuroinformatics research group more by chance. Like all informatics students in Bielefeld, I had to complete a software project. My choice had been the Extraction and Exploration of Cellular Protein Structures, a project aiming to extract structural information from pictorial material in biology and transform it into audiovisual representations. During the course of this project, I came to realize that it was the exploration part that I found most exciting. Exploration, that had something to do with research, with expeditions, with freedom. One of my academic advisors at that time, Dr. Hermann, introduced me to an approach he had developed for “Making data tangible through model-based sonification”; a procedure that can be used to convey structural relations in digital data through hearing instead of the usual approach based on visual impressions. Implementing such a model than became a part of my Diploma thesis. Although I was a student in the neuroinformatics research group, my interests at this time were already miles away from its core topic. Algorithmic models of neural structures have little in common with my topic of alternative data representation. >>

Nonetheless, after successfully completing my diploma, I received a warm welcome as a new member of the research group, not least because its director, Professor Ritter, and my academic advisor, Dr. Hermann, were both friendly enough to actively support my research. Sonification continued to play a role in my PhD, although the overriding algorithmic generation of sounds has since become a passion of mine. And because sounds generally occur in conjunction with interaction, it seemed to be a natural step for me to explore the aspect of human-machine interaction known as tangible interaction. Hence, in recent times, I have been working predominantly on the link between algorithmic sounds and tangible interaction. What both fields have in common is that their classification within a scientific context is still very vague. Hence, it seemed appropriate to take both a scientific and an aesthetic perspective (some areas of new media art

feel very drawn to these fields). In sum, numerous fields of research have come together in my work, even though whether and how far they would be important is something that I could never have said in advance. Nonetheless, they all exert a major influence, and I think that my advisors were justified in trusting me to find my own way to adequately build up my knowledge base. In my opinion, this trust develops particularly well in small teams like the Ambient Intelligence Group in which I am currently working. Hence, the strength of research based on lateral thinking lies in taking wide open research topics and developing something that is really new and well thought out. I hope that freedom of thought and action – even if there is sometimes no clear goal in sight – will continue to have its place in research, and that this will enable the development of lateral ideas forging links between each and every discipline. 

Bielefeld provides a particularly supportive environment for this way of working in which the core feature is “thinking in unusual directions,” that is, lateral thinking. Its research and administrative structures are characterized by a great deal of freedom – in the positive sense.



Draft illustration of MoveSound, a minimal human-machine interface to control all possible sound sources in an array of loudspeakers.



Juana Salas Poblete – Devious Paths Leading Directly to a Doctorate

CoR-Lab Graduate School for Cognition and Robotics

// When I came back to Bielefeld after a 11-year break in August 2001, I had no intention of doing my doctorate here. I had gone to school in Bielefeld, and then immediately after my Abitur in 1990, I moved to Heidelberg to study interpreting at the university there. After gaining my diploma in Spanish and Portuguese in 1997, I started my career. Initially freelance, I then moved to Essen and worked as a translator for a major marketing company. In December 2000, I started my maternity and childrearing leave. In the winter semester 2001/02, I decided to do a second course of study and enrolled for a Master's degree course in linguistics, text-technology, and German as a foreign language at Bielefeld University. At the time, I was less interested in a possible career in science and research than in the possibility of making new friends and building up a new social network.

However, right in the very first lecture, I met the teacher who would offer me my first research post after completing my studies. When my childrearing leave came to an end, I resigned from my translator job in Essen and took a post as a scientific assistant in the Collaborative Research Center 673 in Bielefeld. At the end of 2007, I heard about the establishment of the CoR-Lab (Research Institute for Cognition and Robotics) and came across an announcement for doctoral grants. When I applied, being fully aware of my age and my long and rather convoluted biography, I wasn't very hopeful. As it's always better to try than just to look, I wrote

in anyway, and I was accepted! Since then, I have been a member of the Graduate School at the CoR-Lab.

In the CoR-Lab Graduate School, we are 17 scholarship holders coming from a variety of disciplines: computer science, engineering, sport science, media studies, mathematics, and linguistics. In addition, we are all integrated into different research teams at the Faculty of Psychology and Sport, the Faculty of Technology, and the CITEC, giving us a wide-ranging network within the university. For example, I belong to the Graduate School of the CoR-Lab, the applied informatics group in the Faculty of Technology, and the Emergentist Semantics research group in CITEC. In addition, I still maintain my contacts with linguistics. For all of us, working in such large interdisciplinary groups was a new and exciting experience: Whereas when you write your thesis, you are concentrating on a project and frequently work in isolation, we now have to be capable of multi-tasking. We work with different groups, exchange information on different topics, and repeatedly get involved in new procedures and methods. In concrete terms, this means that we have had to (a) learn to explain our projects in a way that listeners from other disciplines can understand, and (b) be prepared to interest ourselves for projects from other disciplines and seek common ground. This means that new interest groups are forming continuously, bringing together all those who are working on similar projects and therefore reading similar literature. The >>

groups offer an opportunity to exchange opinions and to encourage each other. Roughly speaking, our interests split up into two paths: either basic research on cognition or robotics. Whereas the former involves human behavior, the other focuses on creating robots to be as user-friendly as possible in order to facilitate human-machine interaction. Personally, I am working on learning behavior in children. I am studying whether infants of the age of 2 years really need the direct attention of an adult to learn, or whether they are not just as capable of learning by observing others. Although the literature hardly ever pays any attention to this possibility, real-life situations reveal that children in different cultures also learn by observing interactions between other persons. We are addressing this issue by inviting mothers and children to our laboratory, presenting them with different tasks, and observing how they handle them. This type of empirical work gives me the good feeling that I am managing to avoid becoming over-theoretical and maintaining a direct relationship with people.

To summarize, in the CoR-Lab Graduate School, I am part of a very heterogeneous group of people who are all doing their doctorates with great vigor and enthusiasm at one and the same time. This allows us to give each other a lot of support. In addition, we have a highly interdisciplinary work style here in Bielefeld, and this grants us the best preconditions for looking beyond our own noses and acquiring very broad knowledge going much further than our own specializations.

And, finally, the finishing touch: Despite having a child, I have the chance to participate actively in research and teaching. Nobody perceives my daughter as a handicap; she is simply a part of me. For example, I can work flexibly from home if my daughter is ill, or also take her along to international conferences if they offer childcare services. I'm not forced to choose between my child or my studies – and that's something very few single mothers can say!

Bielefeld University also impressed me with its hospitable and well-organized system that has enabled me to live and work here very comfortably.



A mixed bunch! The CoR-Lab scholarship holders come from a host of different disciplines.



Prof. Dr. Fabian Kessl

obtained his doctorate in 2005 from the DFG Research Training Group Youth Welfare and Transition. Since 2008, he has been a professor at the Center for Social Work and Social Policy at the University of Duisburg-Essen.

// **What was the topic of your dissertation?**

Who supervised it?

The Change of Political Rationalities in Social Work: Activation as the Dominant Governmental Pattern in German Youth Welfare. Main supervisor: Prof. Dr. Dres. h.c. Hans-Uwe Otto

What were your reasons for studying and gaining your doctorate in Bielefeld?

The chance to do my doctorate in the Research Training Group Youth Welfare and Transition (Bielefeld and Dortmund Universities).

So you had already completed your studies before coming to Bielefeld for your doctorate? What did you expect to find there? Were there any surprises?

That's right. As for what I'd expected, a collegial atmosphere so that I wouldn't just have to complete my dissertation project in what Schelsky, one of the founders of Bielefeld University, called "seclusion and freedom." The surprise was not just how well that can function – within the framework of a structured doctorate phase – but the strength of the resulting pressures to compete and achieve.

There is a lot of talk about the interdisciplinary "tradition" in Bielefeld. Do you think you benefited from this and acquired knowledge or ideas going beyond your own discipline? Is there a typical Bielefeld way of addressing topics and problems?

In daily life at the university, I think this "tradition" is more of a myth. My experience has been that Bielefeld, like nearly all universities, draws relatively strong boundaries – at least symbolically – between the individual faculties. Nonetheless, in the DFG Research Training Group, I benefited greatly from the interdisciplinary background of the principal investigators. And perhaps, it is the decisive influence of this phase of my studies that has led my research to continue to focus on a transdisciplinary field, that of social work.

What are you working at now, and how is this influenced by your time in Bielefeld?

Since the winter semester of 2009, I have been working as a professor at the University of Duisburg-Essen (Chair for the Theory and Practice of Social Work). My time at Bielefeld was an enormously influential phase as a young scientist. It was here that I was able to develop my research profile. >>

Nowadays, Bielefeld University hosts a number of Graduate Schools and Programs that support young scientists doing their doctorates. What do you think are the advantages and disadvantages of a structured dissertation program?

In my opinion, dissertation phases should be phases in which scientists develop their own research profile. Therefore, I believe that setting up doctoral study courses is the wrong path for higher education policy. Nonetheless, I do think it is a good idea to organize different semistructured dissertation guidance programs providing an appropriate infrastructure (e.g., like the doctoral programs supported by

the Hans Böckler Foundation), and also to grant institutional access for doctoral students (e.g., teaching opportunities) along with a phase of university socialization (e.g., through integration in the nonprofessorial teaching staff). Last not least, I think such semistructured programs are a marked advance on the old-fashioned master-apprentice model, because they place other obligations on the supervisor.

What is special about Bielefeld University? And from an international point of view as well?


The architecture of the building; it permits a unique form of communication.

My time at Bielefeld was an enormously influential phase as a young scientist. It was here that I was able to develop my research profile.

What is the role of Bielefeld University in the development of the city and the region?

Like any institute of higher education, Bielefeld University is a formative factor in the urban economy, local culture, and the political and cultural life of the city. In this context, it would be good to see a revival of the critical social science tradition at Bielefeld University – but its location on the periphery does not always promote the integration of its scientists in the cultural and political life of the city. That is rather unfortunate.

Do you have any particular memories that you associate with Bielefeld?

A session of the senate in the main auditorium during the vote on tuition fees. It was a shockingly negative example of the political desensitization of an interested (student) public. This experience stands in deep contrast with a politically committed and knowledgeable group of students from the education faculty with whom I was working during my last 2 years in Bielefeld. I was repeatedly astounded and impressed by their serious but simultaneously creative and committed interruptions. 



Almut Mentz – “Mama Working – Lab”

International Graduate School in Bioinformatics and Genome Research

// Actually, it all began on my 17th birthday; I was using the last minutes before guests arrived to revise the principles of genetics for a biology exam the next day. Of course, that was a bit late, which generally tends to be a rather ineffective way of learning. . . . but suddenly, I was just so impressed by the complexity of the procedures and the internal order of life on the microscale. From this day on, I also followed up all the biochemical mechanisms we were told about at school with great interest. However, after finishing my Abitur, I did not want to completely discard the wish to study music that I had harbored since childhood days. I started by testing my interest in biology and training to become a laboratory assistant. After 2 years of training and a placement at the biochemistry institute of the City University of New York (Lehman College), it was clear what I wanted to study: "molecular biotechnology."

Why did I come to Bielefeld? At that time, it was still a diploma course linking together the two words "molecular" and "biotechnology." It was this constellation along with the Center for Biotechnology (CeBiTec) founded by Professor A. Pühler that attracted my attention. It all seemed more exciting than the process-engineering-oriented biotechnology courses at other German universities. As my parents are computer scientists, working on a computer developed into a hobby for me as well, and I was also very impressed by the close ties to the degree program of natural scientific computer sciences in Bielefeld.

Both a project carried out at the German Cancer Research Center (DKFZ) in Heidelberg and my diploma thesis at the Chair of Genetics already revealed a focus that runs through all my research up to my doctorate today. This work involved the simultaneous study of the activity of several thousand genes with the help of microarray analyses. This takes place on the RNA level representing the step from the pure information content of the DNA to protein synthesis and thereby characterizes the specific state of a cell. In technical jargon, it is called transcriptome analysis. Because microarray analyses generate enormous datasets, it is crucial not only to experiment successfully in the laboratory but also to stay on top of things when processing all this data with computers. Such statistical-mathematical data analyses naturally require close cooperation with experts in bioinformatics.

After my studies, I wanted to retain this interdisciplinary focus and decided to apply for a scholarship to study at the Graduate School for Bioinformatics. Through admission to the graduate school, I became an associate member of the "International Graduate School for Bioinformatics and Genome Research." The scholarship holders at the graduate school come from all over the world, and that is something that makes the half-yearly meetings reporting progress in the individual projects particularly interesting. For ease of communication and to practice presenting papers at international congresses, all lectures are held in English. What >>

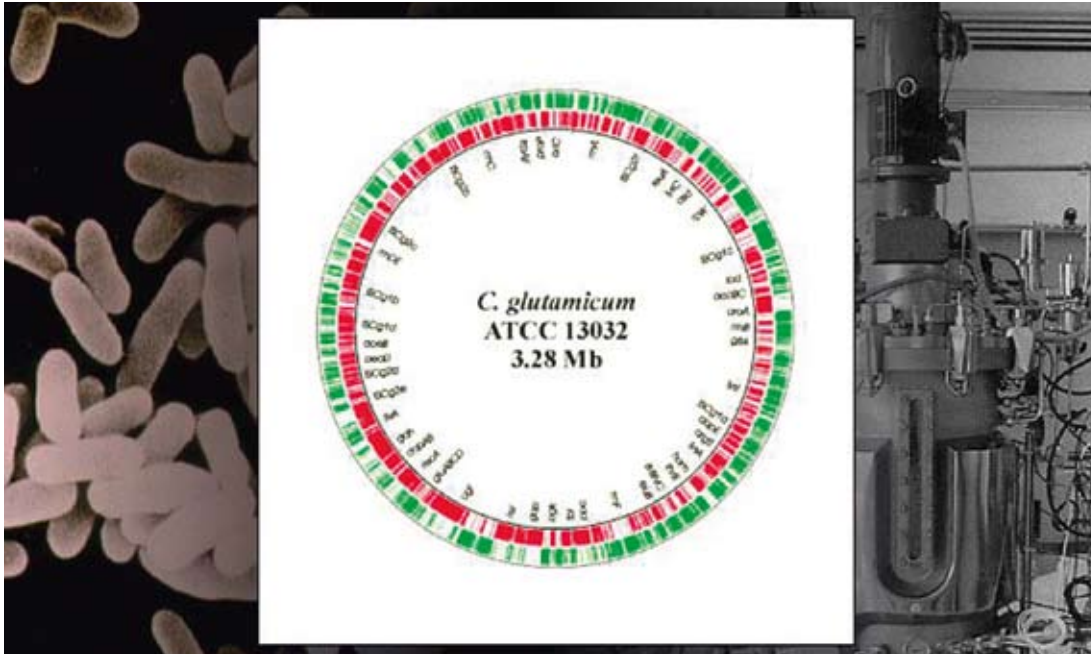
I particularly like is the supervision given to scholarship holders. Professors are available from different faculties for each research project. As a result, there is a specific expert to answer just about every question that can arise during the course of a doctorate.

Now just a few words on the topic of my PhD thesis, the search for small RNAs in the bacterium *Corynebacterium glutamicum* that is so important to industry (glutamate production). Small RNAs, which have an exclusively regulative function in the cell and do not serve protein synthesis, were only discovered in recent years. For a long time, it had been assumed that it is predominantly proteins that act as regulators of processes in cells. Therefore, the discovery of small RNAs paves the way to a better understanding of what happens in the cells of all organisms, thereby opening up com-

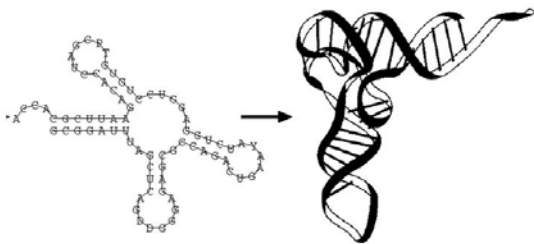
pletely new possibilities in biotechnology and medicine. This research project also requires interdisciplinary work together with computer scientists. Computer programs developed specially to search for small RNAs make predictions on where small RNAs might be found in a genome, thus decisively assisting the experimental work in the laboratory.

Regardless of all this science, I have kept my passion for music. Right at the beginning of my studies, I joined the university orchestra, which is where I also met my husband. Since August 2007, we have a little daughter. Simultaneously coordinating both childcare and doctorate can be very stressful, but thanks to my scholarship I am able to organize my working days very flexibly. With the support of my husband, little Janne is quite content, even when "mama working – lab."

Professors are available from different faculties for each research project.
As a result, there is a specific expert to answer just about every question
that can arise during the course of a doctorate.



Corynebacterium glutamicum (left side) is important for the industrial production of amino acids, and the fermentation process has to be controlled very carefully (left side). The genome of *C. glutamicum* is shown in the middle .



Secondary structure of a small RNA and three-dimensional folding. Small RNAs with regulatory functions have been conserved between closely related species during evolution.



Transcriptome analysis with a microarray chip. Each feature represents the expression (activity) of one single gene compared to a reference sample. Several bioinformatic steps follow the detection of signals



Florian Knäble – Basic Research in Mathematics

International German–Chinese Research Training Group

Stochastics and Real World Models

// After thinking about the best way to describe my research topic, I realized that it is simply too abstract to put into words. That is probably the way things are for any mathematical question: Everything concrete is stripped away; one tries to grasp the essential core of a problem. Nonetheless, one can generally point to an application that first became possible through the abstract model.

My diploma thesis dealt with stochastic partial differential equations. These are to be found when, for example, people try to model yield curves on capital markets. My present research, in contrast, has more to do with taking an already abstract problem and then skillfully reformulating it so that it first becomes in any way accessible to (tried and tested) methods of analysis. Whether these (otherwise highly effective) methods will then lead to any new knowledge will be a further part of the research question. Hence I am engaged in basic research in the best tradition of the research university in Bielefeld.

Nonetheless, in some ways, I am doing mathematics for the sake of mathematics, and, whenever I do something like this, I become aware of how important it is for me to always be strongly motivated. The more abstractly I work, then the more emphatically I have to believe in the applications that will eventually, in whatever roundabout ways, profit from my research. And it is precisely the idea of linking together pure research in mathematics with applica-

tions that guides the International DFG Research Training Group on Stochastics and Real World Models.

Having to start my doctoral course with more specialized lectures in mathematics and introductory lectures on applications in physics and economics is an extremely valuable experience. Through the mathematics lectures, I learn to evaluate my research project and its potentials better, and the physics lectures supply me with additional motivation. Due to my previous training in business mathematics, the lectures in economics are more of a revision. However, this situation is completely reversed for other scholarship holders with a background in physics or computer science, and this leads to an animated and profitable exchange – also and particularly over the different methods and theoretical approaches in the two disciplines.

Things become particularly interesting in discussions on the (recently founded and still emerging) interfaces between economics and physics: Is a quantum game theory really a meaningful approach or merely the expression of a compulsive generalization? Having to do our exams together in one part of this course naturally encourages solidarity, and I can only emphasize the very good working climate. My own admission to the DFG Research Training Group was very friendly. My supervisor Professor Röckner is also the speaker of the DFG Research Training Group, and he had already supervised my diploma thesis. >>

Another interesting aspect is the cooperation with the Chinese Academy of Sciences. This Research Training Group is an international one with a second speaker on the Chinese side whom I hope to meet at the annual conference in May. Whereas Chinese students have already participated in some of the above-mentioned lectures with us, it will proba-

bly be the year after next before I can fly over for a several month exchange visit. The preparatory language course next year will certainly become a further element binding us scholarship holders together. Whatever happens, I am really looking forward to the remaining two and a half years as a member of this Research Training Group. ■

Hence I am engaged in basic research in the best tradition of the research university in Bielefeld.

美慕士研究中心惠存

有朋自遠方來不亦悅乎
 學而時習之不亦樂乎
 人不知而不愠不亦君子乎

一九八八年秋

郭輝雄敬書

The Chinese ideographs form the DFG Research Training Group motto and are attributed to K'ung Ch'iu (Confucius). The translation is:

Is it not a pleasure to learn and to repeat or practice from time to time what has been learned? Is it not delightful to have friends coming from afar? Is one not a superior person if one does not feel hurt even though one has not been recognized?



Zoe Clark – A 10-Year Educational Career in Bielefeld: From Advanced Secondary School to Doctoral Studies

International NRW Research School Education and Capabilities

// At the young age of 16, I left the village in which I had grown up in order to shape my educational career in Bielefeld, the largest city in Eastern Westphalia. Everything began with a school trip to the labor exchange designed to help the girls in our 9th-grade class to learn a decent trade. With great expectations, I sat down and worked on what was, at the time, still an innovative computer program that processed my interests in order to work out what sort of job I should train for. The not particularly unorthodox combination of a secondary school leaving certificate, female gender, and the attribute likes working with people revealed that I was particularly suitable for work as a gas station employee. Being a sort of eco-freak hippie girl at the time, I had been alarmingly unaware of this affinity, and I searched through the files for the profession of social worker. The kind lady in the labor exchange explained to me that a secondary school leaving certificate only gave access to the files on apprenticeships and not on further education. However, in light of my very specific career aspirations, she was kind enough to hand me an information leaflet on the Oberstufenkolleg (OS), an education and research project located next to Bielefeld University offering advanced secondary education and introductory undergraduate university courses.

Much encouraged by this pink-colored information leaflet with its photographs of college drummer groups, I applied to the OS and was admitted. There I received four years of advanced secondary school and undergraduate training

from teachers reflecting a good cross-section of the left-wing 1968 movement – this was in a period before major elements of its concepts were robbed through so-called reforms. This very university-like (or diploma-course-like) education provided a remarkable alternative to the traditional German Abitur course. After experiencing such a free choice of seminars and a relatively nonhierarchical discussion culture, I simply had no second thoughts about applying to enter higher education. On my way to being an educational scientist specializing in social work, there was little difficulty in choosing a university. Not only was there a low threshold between the small factory-like orange OS building and the great big gray think tank next to it; but it also almost goes without saying that the Faculty of Educational Science in Bielefeld is indisputably one of the best in Germany. After I had got over my initial sadness at leaving the familial learning climate of the OS, I soon learned to appreciate the variety of opportunities this great big university had to offer me. Alongside seminars with lecturers who led us to engage in critical discussions, I could always find good partners among my fellow students with whom to practice consensus and disagreement in study groups, reading groups, and political meetings.

A further element when studying educational science in Bielefeld should also be mentioned (and has now become a fixed element of the Master's course): the study project (Projektstudium). This is an equivalent to a traditional >>

practical placement, but one that does not view practice as necessarily being apart from science. Over a period of two semesters, I carried out a student research project as part of a group of eight students supervised by our lecturer. This gave me the opportunity to gather my first experiences in research practice.

Thanks to my job as a student assistant in a German Research Foundation (DFG) project run by the Social Work Research Group, the university lost its anonymity, and surprising perspectives opened up. For example, one day, our professor, Hans-Uwe Otto came into the office and asked, "Do you want to go to America?" A few months later, I found myself together with a colleague at the University of

ing on my PhD in the International NRW Research School Education and Capabilities. This institution offers me a superb infrastructure for work as a critical scientist. There is an English-language study program offering a choice of workshops including access to the main methods and methodological approaches in the social sciences.

The interdisciplinary exchange with international scholarship holders obliges me time and time again to look beyond the narrow confines of my own dissertation project and reflect on a variety of topics. Alongside the numerous informal discussions in corridors and offices, there is a two-week colloquium for discussing dissertation projects and work processes.

It almost goes without saying that the Faculty of Educational Science in Bielefeld is indisputably one of the best in Germany.

Pennsylvania (PENN) where we were allowed to enroll for one semester in the Master's program at the School of Social Policy & Practice – not having to pay study fees at that time, such things were still affordable.

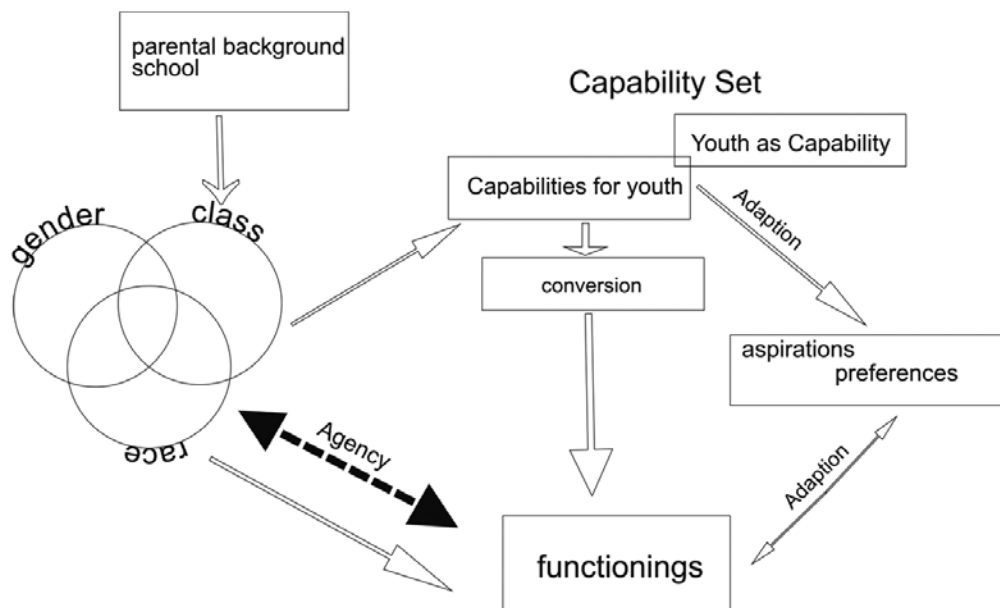
Similar to my transfer from the OS to my diploma course, the excellent conditions in Bielefeld meant that there was no reason to do my PhD elsewhere. Currently, I am work-

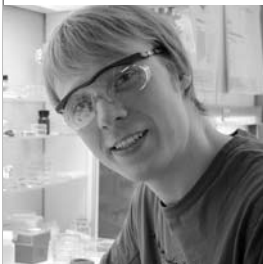
However, even though I benefit greatly from these excellent conditions, I can never forget that this striving toward excellence in the universities is part of the formation of an elite within the context of location policies that runs counter to the goal of free and equal access to education.

Put briefly, my own dissertation is addressing the reproduction of social inequality during the youth phase. I am

applying the Capabilities Approach derived from justice theory to develop a metric for the social inequality of youth that is not reduced exclusively to intergenerational variables. I am also reformulating the construction of the youth phase within the context of intersectional inequalities. In my view, the function of my scientific work is to practice

resistance to social conditions that smooth the pathways leading secondary school students to become gas station employees while simultaneously greatly hindering their educational careers, making things almost impossible for them in any other disciplines than the traditional study courses for social climbers.





Tobias Schröder – Tug of War in the Teutoburg Forest – Single-Molecule Force Spectroscopy

International Graduate School of Chemistry and Biochemistry

// "Can you actually measure the interaction forces between individual molecules?" Yes, you can! However, these forces are extremely small, and they require measuring methods with a precision ranging from a few tens to several hundred piconewtons ($1\text{pN} = 10^{12}\text{ N}$). I am working on such measurements in a doctorate carried out in a cooperation between the research groups of Prof. Dr. Anselmetti (Faculty of Physics) and Prof. Dr. Mattay (Faculty of Chemistry). My decision to do a doctorate in the natural sciences was motivated by two major arguments: first, the direct relationship to the natural and artificial materials used in daily life, and second, the innovative energy proceeding from such research. Alongside the desire to understand structures and functional principles, an important goal of research is to apply the knowledge gained to the development of functional substances and materials. This links up inseparably with economic benefits that can sometimes follow relatively quickly but otherwise only after extensive basic research.

Forces in Functional Complexes

What is so important about the linkage forces between molecules that converge to form a complex? Complexes composed of several molecules play an important role in nature. They make it possible for creatures to execute mechanical movements, are responsible for the distribution of important substances in the organism, and produce biomolecules – the building blocks of life. Hence, the

production of such functional complexes is a major branch of research in chemistry. One basic construction principle involves the specificity of the interaction between molecules. According to the "induced fit" model (or the older key-lock principle), only molecules that specifically fit each other can form a complex. However, alongside such basic principles, it is also necessary to know the interactions and linkage forces between the building blocks composing these systems. That is why I am studying linkage forces in a supramolecular capsule. (Fig. 1 Page 47)

Before I can study linkage forces in the capsule, I have to manufacture the individual modules. Hence, an important part of my work is the chemical synthesis in Prof. Dr. Mattay's research group. New ideas for synthesis strategies, on how to carry out experiments, and how to characterize their products come from discussions with other doctoral students, seminars, and lectures within the Graduate School for Chemistry and Biochemistry.

I am measuring linkage forces in Prof. Dr. Anselmetti's Biophysics and Applied Nanosciences Group in the Faculty of Physics. This is where you can find the experts on atomic force microscopy and force spectroscopy who can image and manipulate structures on the nanometer level. The linkage forces between the modules of the capsule are measured with an atomic force microscope. The image (Fig. 2 Page 47) shows a photograph (taken with a microscope) of two small >>

and extremely sensitive cantilevers (force sensors, in this case, with a triangular form) that can be used to detect interactions. When the modules of the capsule are attached, the rupture forces of the unbinding process can be computed from the deflection of the cantilevers. (Fig. 3 Page 47)

Interdisciplinary Work – Versatile and Productive

Bielefeld University is outstandingly suitable for such work on the interface between physics and chemistry. The spatial proximity of the faculties is not just practical because it makes for short paths (including decision paths); it is also reflected in the outstanding personal atmosphere. Intensive cooperation thrives on going to the dining hall or the cafeteria together or meeting for an evening grill party outside the university as well. It leads not only to effective cooperation but also to a shared identity, personal ties, and networks extending beyond the time spent at the univer-

sity. The interdisciplinary networking is additionally reinforced by the joint lectures held at the Collaborative Research Center SFB 613 (Physics of single-molecule processes and of molecular recognition in organic systems) in which

ly structured and professional way by the excellent courses given at the SL_K5 advisory service that I am attending within the framework of the International Graduate School for Chemistry and Biochemistry.

this project is embedded, and contacts with doctoral students from other research groups are promoted intensively by joint lectures, seminars, and the Collaborative Research Center's Graduate School.

I have gained much from the time spent on my doctoral studies. I shall take with me not only personal networks but also important qualifications that can be learned particularly well in an interdisciplinary environment. Communicating with colleagues from other disciplines (physics, chemistry, and biology) requires an ability to switch perspectives. Being able to describe contents in a clear and focused way without using specialist terms that others cannot understand is a particularly important skill if you want to work in industry after completing your doctorate. Alongside such everyday "soft-skill training," these and other abilities are supported and promoted in a high-

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ly structured and professional way by the excellent courses given at the SL_K5 advisory service that I am attending within the framework of the International Graduate School for Chemistry and Biochemistry.

The many sides of research and the cooperation with doctoral students from different disciplines are particularly important to me today. After spending about 3 years working on my doctorate, I have obtained many inter-

esting research findings, and we are well on the way to measuring and understanding the underlying construction principles and the forces involved in supramolecular systems.

Fig. 1: Scheme of the formation of the supramolecular capsule.

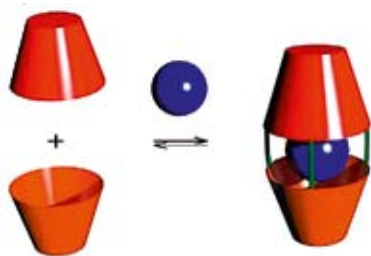
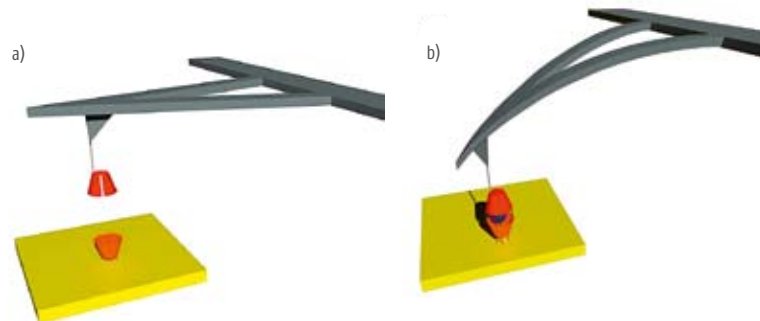


Fig. 2: Photograph of two force sensors used for force spectroscopy experiments.



Fig. 3: Experimental setup for the study of interaction forces: Approach of the modified cantilever towards the the surface (a) and pulling back after capsule formation has taken place (b). The force sensor is bent due to the interaction forces between the capsules halves.





Prof. Dr. Anke Gerber

received her doctorate in 1998 at the Institute of Mathematical Economics.

Since 2007, she is Professor of Economics at Hamburg University.

// Prof. Gerber, What was the topic of your dissertation? Who supervised it?

I wrote my dissertation on bargaining and coalition formation, a topic in cooperative game theory. My supervisor was Prof. Dr. Walter Trockel.

Why did you choose to study and do your doctorate in Bielefeld?

I decided to study at Bielefeld because, at the time (in 1989), it was one of the few universities in Germany offering an interdisciplinary diploma course in mathematical economics. The curriculum at Bielefeld University was more attractive than that at other universities with their stronger focus on actuarial theory. Looking back, it was clearly the right decision, because studying in Bielefeld was a lot of fun. The setup was perfect: small groups instead of overcrowded lectures, providing close personal contact with professors; an outstanding infrastructure at the university, particularly the library with so many books and such long opening times – making it one of the best in Germany – and, not least, very committed professors who brought home to me their passion for science and research. I didn't even think about doing my doctorate anywhere else. Bielefeld gave me the freedom to work on what I was interested in; and at the Institute of Mathematical Economics, there were many people I could discuss my research with – both professors and doctoral students. In addition, doctoral students received grants to at-

tend conferences and workshops. In sum, I couldn't imagine receiving more support than I did.

To what extent were the combinations of subjects in your studies unusual or interdisciplinary?

Mathematical economics is an interdisciplinary study course linking together mathematics and economics. However, I never found this combination of subjects to be unusual; I tended to see it as being completely natural, because economic theory applies mathematical methods that are either not taught in a pure economics course or not taught in sufficient depth.

People often mention the interdisciplinary “tradition” in Bielefeld. Do you think you benefited from this and acquired knowledge or ideas going beyond your own discipline? Is there a typical Bielefeld way of addressing topics and problems?

I have to say no to the first question, and I can only answer the second for my own subject mathematical economics. What I would call “typical” for Bielefeld is the precision and depth applied to research questions. This begins by modeling an economic problem and ends by analyzing the model. Whereas other universities often tend to ask whether a research question is relevant, Bielefeld places great value on a rigorous analysis that is as general as possible. Perhaps Bielefeld simply carries out more basic research than other locations.

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Where do you work now and how does this relate to your time in Bielefeld?

Currently, I am a professor of economics at Hamburg University, and as for my time in Bielefeld, it was the major foundation of my academic career.

Nowadays, Bielefeld University hosts a number of Graduate Schools and Programs to support young scientists doing their doctorates. Would you have been interested in such a structured dissertation program?

I organized my own doctorate. The advantage of a structured dissertation program is that it gives you renewed high-level training in all the major fields of a discipline. You can participate in the discussion in all of them. When organizing your own doctorate, in contrast, there's a tendency, and also a temptation, to focus solely on your own research field. Moreover, if a doctoral student is still unsure

about choosing a dissertation topic, the courses at the beginning of the doctoral phase are of great help. They give a comprehensive overview of all the branches of a discipline and even point out current research questions. I do see some disadvantages however: not only the time you have to spend attending doctoral courses but also the way it's like going back to school. The stage at which a doctoral student in a structured program starts to engage in independent scientific research is far later than in a self-organized dissertation, and some doctoral students may well find it difficult to develop their own ideas for a dissertation project after spending an entire year doing intensive course work on set topics. Nonetheless, structured dissertation programs are clearly an international success, so the advantages obviously outweigh the disadvantages. I think that the shift to structured dissertation programs currently taking place at many universities in Germany has been the right decision.

Bielefeld gave me the freedom to work on what I was interested in; and at the Institute of Mathematical Economics, there were many people I could discuss my research with – both professors and doctoral students.

What advice would you give to today's young doctoral students?

The most important advice I can give to young doctoral students is to build up a network of relationships with fellow researchers as quickly as possible and make sure this network goes beyond the borders of your own university. You can achieve this by working abroad or by attending conferences and workshops. This networking is crucial not only for scientific exchange and hence for your own research but also for your career. I can still recall a doctoral student workshop in a castle overlooking the Rhine. That was the first time I met many of the colleagues I now see again and again. Some of them are still close friends, and many of them now hold chairs both in Germany and abroad. You can draw on a network like this throughout your life.

**What's special about Bielefeld University?
Also from an international point of view?**

What's special about Bielefeld is that although it has now grown into a really big university, it is not a big anonymous mass teaching unit. In many courses, you can still study

in really small groups and have close contacts with your teachers. That is something special – at least in Germany.

How important is Bielefeld University for the development of the city and the region?

I think that the university plays an important role in what is a structurally rather weak region. The university advertises Bielefeld far beyond the city limits, and as a “think tank” the university can generate projects and business ideas with a major impact on development in the city and the region. You only have to think of the way Silicon Valley in California grew up around Stanford University.

Do you have any particular memories associated with Bielefeld?

When I think back to my studies in Bielefeld, I particularly recall long sessions with my colleagues in the cafeteria trying to solve the weekly tutorials in linear algebra and analysis. I can remember how frustrated we were when we didn't find an easy solution, but also how elated we were when we managed to complete a tutorial without any mistakes.



Karsten Wilke – The Hilfspolizei auf Gegenseitigkeit der Angehörigen der ehemaligen Waffen-SS (HIAG) 1950–1990

Bielefeld Graduate School in History and Sociology

// I started my PhD project in the middle of 2004 at Bielefeld University on the *Hilfsgemeinschaft auf Gegenseitigkeit der Angehörigen der ehemaligen Waffen-SS (HIAG)*, which translates literally as the “Mutual Help Association of Former Members of the Waffen-SS.” The idea had emerged a long time before when I was browsing the stalls at a flea market. Purely by chance, I came across several bound volumes from the 1950s of a journal bearing the title *Wiking-Ruf*. A closer look revealed that this was a journal published by veterans of the Waffen-SS. There were approximately a quarter of a million of these veterans in the newly founded Federal Republic of Germany, and in 1949, some of them began to organize themselves into the HIAG. By 1959, this had led to the foundation of the HIAG-Bundesverband (Federal Association) with up to 20,000 members. Although I decided initially to address the topic in my Master’s thesis, it soon became apparent that I had stumbled across a gap in research, and I only gradually began to grasp its extent. After completing my Master’s thesis, Prof. Martina Kessel, one of my supervisors, asked whether I would be interested in pursuing the topic further under her supervision. From then on, I have been a graduate student in Bielefeld.

The history of the HIAG ran parallel to the history of the old Federal Republic of Germany right from its foundation. I became more and more aware that, particularly during the 1950s, the association maintained regular and in-

tensive contacts with politicians from all political parties; worked together successfully with the *Soldatenbünden* (army veterans’ associations), the German Red Cross, and the *Volksbund Deutsche Kriegsgräberfürsorge* (German War Graves Commission); and received a lot of public attention – particularly through its *Suchdiensttreffen* (meetings of missed persons services). In 1959, an estimated 20,000 people attended such a meeting in the North-German town of Hamlyn (German Hameln). All this explains my surprise that overviews of postwar German history had generally paid no attention to this organization.

In recent years, the historian Paul Nolte has rightly demanded that the “post history of the Third Reich” should be recognized as a leitmotif for historical work on the Federal Republic of Germany. That gave me my starting point: the premise that the history of the HIAG would correlate with processes of coming to terms with the past. Phenomena like the “us-as-victims” culture and the popular support for imprisoned war criminals during the 1950s seem to have made a major contribution to the organization’s integration into the democratic state. During this phase, all political parties courted the HIAG. Although part of this was vote-catching, they were also interested in winning over former members of the SS for the new democracy. However, over the course of the following decades, the central political and cultural interpretation and the cultural activities in the Federal Republic of Germany fo- >>


cused increasingly on the crimes of National Socialism. This is why, according to my premise, the HIAG became disreputable, increasingly lost support, and finally had to withdraw from public life.

I quickly realized that I had two issues to deal with. As far as people to be studied were concerned, my project might not only cast light on a neglected chapter in the history of the Federal Republic of Germany, but also permit first systematic findings on the postwar history of members of the SS. I decided therefore to gather additional information on two research questions:

1. What effects did the debate on National Socialism have on the status of the HIAG in German society?
2. Against the background of the specific socialization as a member of the SS, which internal discussions and decision-making processes within the HIAG were linked to the debate on National Socialism?

I want to analyze the ways in which social integration or disintegration on the one side as well as internal integration and dissociation phenomena on the other occurred

against the background of the history of coming to terms with the past. I am interested both in how far the HIAG succeeded in transferring National Socialist ideologies to the democratic state and in what form it could not only draw on this interpretation for internal policy discussions but also instrumentalize it in the way it presented itself to the outside world. Thus, my work investigates the ability of the Federal Republic to integrate these veterans of the Waffen-SS as well as their continuing cohesion beyond the fall of the "Third Reich."

Bielefeld University has made my work easier in a number of ways. As well as having Prof. Martina Kessel and Prof. Hans-Walter Schmuhl as my supervisors, I was able to benefit for almost 5 years from discussions within the DFG Research Training Group 1049 "Archives, Power and Knowledge – Organising, Controlling and Destroying Stored Knowledge from Antiquity to the Present." I have also benefited from papers and discussions during research colloquia and the wide-ranging support provided by the Bielefeld Graduate School in History and Sociology (BGHS) since its foundation in 2007. 



Invitation card for a HIAG
Suchdiensttreffen in Hameln (1959).
Source: private collection of K. Wilke.



Yvonne Steggemann – Neurocognition Encounters Human-Machine Interaction

Graduate School Cognitive Interaction Technology

In 2008, Yvonne Steggemann was granted the Reinhard Daugs advancement award (3rd place) for her research on the selective effects of motor expertise on perception performance in mental rotation experiments.

// While studying sport, I repeatedly toyed with the idea of pursuing an academic career, and as the end of my course drew closer, I became increasingly aware that I was far from reaching the end of my professional qualifications and development. Nonetheless, the final decision to take a PhD came very late in my studies. Having specialized in prevention and intervention, I was initially looking for a job in the field of management consulting and company health management. However, parallel to this, I had already greatly enjoyed doing experimental and statistical work and carrying out research on questions in (sport) psychology during my Bachelor's course.

As far as doing a doctorate in Bielefeld, the penny finally dropped during my Master's course while attending various seminars from the Neurocognition and Action – Biomechanics research group such as Mental Representations and Action or Empirical Methods and Data Analysis. It was particularly the research seminar on Action – Perception – Representation held by Dr. Weigelt, who is now one of my two supervisors, that awakened my interest in scientific work. I found it very exciting to take approaches from cognitive psychology and use experimental methods to assess perception and memory performance in sports among persons with different expertise levels. To the great consternation of some of my colleagues, I really enjoyed planning and carrying out experiments, testing participants, juggling with datasets, and analyzing

the outcomes. So the study project turned into a term paper, and the term paper turned into a Master's thesis. The challenge of acquiring new knowledge for myself and generating new knowledge for science was so inspiring that I simply wanted to carry on working in this field.

My Master's project had already brought me into contact with the Neurocognition and Action – Biomechanics research group headed by Prof. Dr. Schack. In this project, I was examining the effect of motor expertise on the perception of human figures in mental rotation experiments. Because of the numerous projects linking this research group with the Cluster of Excellence Cognitive Interaction Technology (CITEC), the decision to apply for a CITEC Graduate School scholarship was no major step. Certainly, I could have considered other universities for my doctorate, but Bielefeld and CITEC offered perfect framing conditions for my interdisciplinary interest in combining human-machine interaction with approaches from cognitive science and sport psychology. Improving communication between people and machines has been a major research topic at Bielefeld University for many years. The close spatial proximity of the greatest variety of disciplines on the university campus, and what is now a 40-year-old tradition of interdisciplinary research at the university, encourage continuous advances in the networking of different research fields and activities. This applies particularly strongly to research in the Cluster of Excellence: The hu- >>

manities meet the natural sciences, computer science and engineering meet linguistics and psychology, and, in my case, neurocognition meets human-machine interaction. My PhD thesis is addressing just one small detail of this large field of research: the design of more intuitive and adaptive ways of handling and communicating with the virtual partner “Max.” Using the Structural Dimensional Analysis – Motoric (SDA-M), a new kind of procedure for measuring the mental structures of actions in long-term memory, the agent “Max” should receive feedback on his human partner’s level of comprehension within a teacher-student scenario, thereby equipping him with a “cognitive” ability.

Both working in the Cluster of Excellence and the structured doctoral program at the CITEC Graduate School particularly encourage exchange between young scientists and ex-

perienced scientific experts from a great variety of fields. I understand interdisciplinary research as close teamwork in which both graduate students and experienced scientists grasp the opportunity to learn from each other, help each other, and thereby create something new. Even though an interdisciplinary approach is not always a magic formula for trouble-free teamwork and daily interdisciplinary work also generates its own misunderstandings, I still believe that this type of cooperation will increasingly characterize academic research. After spending more than one year working on my doctorate here in Bielefeld University, I can certainly state that I could not receive a better preparation for my future scientific career than the structured support of the CITEC Graduate School – and not just the lecture series, workshops, and research colloquiums but also the close cooperation with my supervisors Dr. Matthias Weigelt and Dr. Stefan Kopp. ■

The humanities meet the natural sciences, computer science and engineering meet linguistics and psychology, and, in my case, neurocognition meets human-machine interaction.



In this interaction scenario, the virtual agent MAX is adopting the role of a teacher and showing his human partner how to knot a tie. MAX works with the Structural Dimensional Analysis - Motoric (SDA-M) to draw conclusions on the learner's level of comprehension from his long-term memory structures.



Dr. Thomas Töller

obtained his doctorate in 2003 from the DFG Research Training Group in Bioinformatics.

He is now working as a patent attorney for the QIAGEN biotechnology company.

// **Dr. Töller, what was the topic of your dissertation? Who supervised it?**

My dissertation was on the following topic: "Bioinformatic Strategies for Analyzing Regulatory RNA Motives and Their Experimental Validation." It was an interdisciplinary thesis carried out in both the Information Technology Research Group and the developmental biology department. My supervisor in informatics was Prof. Robert Giegerich; and in biology, PD Dr. Thomas Schmitt-John.

What were your reasons for doing your doctorate in Bielefeld?

I first studied in Düsseldorf and then went on to do my doctorate in Bielefeld. Bielefeld gave me the unique opportunity to combine my interests in bioinformatics and biology, because the DFG Research Training Group in Bioinformatics was set up in summer 2000 just when I was looking for an appropriate dissertation post.

There is a lot of talk about the interdisciplinary "tradition" in Bielefeld. Do you think you benefited from this and acquired knowledge or ideas going beyond your own discipline? Is there a typical Bielefeld way of addressing topics and problems?

Working at the DFG Research Training Group gave me the opportunity to gain insights into the greatest variety of fields in which informatics is applied in the biosciences. This was thanks to the regular seminars in which different doctor-

al students presented their work. In addition, as doctoral students in the graduate school, we were also integrated into the specific research groups, and we got to know about much of the research they were carrying out.

What are you working at now, and how is this influenced by your time in Bielefeld?

Immediately after completing my dissertation, I moved to a patent attorney's office in Hamburg and trained to become a German and European patent attorney. I successfully completed this at the end of 2006. This opportunity came about purely through my doctorate in bioinformatics. The attorney's office was looking for a scientist with a biological and bioinformatics background at the time (the end of 2003). Currently, I am working in Hilden as a patent attorney for the QIAGEN biotechnology company – a world leader in this field.

Nowadays, Bielefeld University hosts a number of Graduate Schools and Programs that support young scientists doing their doctorates. Would you have been interested in a structured dissertation program?

One advantage of a structured graduate training scheme is certainly that dissertations can be completed more quickly. However, I didn't see any personal disadvantages in doing my doctoral training independently, and if I had to choose a second time, I'd do it the same way again. The >>

DFG Research Training Group already structured our training to some extent, and this enabled us to complete our dissertations quickly.

What advice would you give to today's young doctoral students?

During the first 6 months, I think it is very decisive to develop a clear idea on whether you can successfully complete the topic you have chosen in the way you have planned it. In my case, it took a few months to realize that if I wanted to embed my thesis in a meaningful framework, I would have to supplement it with experiments. But I had not planned this from the start. Hence, it is im-

portant to examine one's plans critically and, if necessary, adjust them as soon as possible. On the whole, what I found particularly positive was the opportunity to gain numerous insights into the greatest variety of dissertation theses. These repeatedly gave me new impulses for my own work. Therefore, even today, I still think a graduate program or graduate school provides a particularly suitable structure for a dissertation, and I can only encourage young scientists to do their doctorates in such a framework.

What is special about Bielefeld University? And from an international point of view as well?

I first studied in Düsseldorf and then went on to do my doctorate in Bielefeld. Bielefeld gave me the unique opportunity to combine my interests in bioinformatics and biology.

From a scientific perspective, the close cooperation between the different disciplines is certainly very special. This is also reflected in the manageable size of the university and the way it is centralized in one single building. This also means that as a doctoral student, you still have close contacts with normal student life.

Do you have any particular memories that you associate with Bielefeld?

The 3 years I spent at Bielefeld University produced several close friendships that are still going strong today. In summary, these years were a time I remember fondly because of the many positive experiences and encounters. ■■■



Marina Seikel – Measuring the Universe

International German–French Research Training Group

Quantum Fields and Strongly Interacting Matter

// During the course of my studies, I soon realized that I was far more interested in cosmology than in any other field of physics. To help you understand my enthusiasm for this topic, I think I first need to present a problem in cosmology and explain one strategy for solving it. Naturally, I shall concentrate on aspects relating directly to my PhD, namely, the study of the expansion of the universe and analyses of supernovae data.

Imagine you are given the task of measuring the earth, but you are not allowed to leave your home to do so. Impossible? Well, let's say it's not exactly easy, and only possible to a very limited extent. All you can see is a very small section of the entire surface of the earth, you cannot measure distances directly, and you cannot examine objects at first hand.

Cosmology confronts us with a similar problem. For example, how can we determine the distance to another galaxy? And then also ascertain whether the galaxies are moving relative to each other? One possibility is to observe what are called standard candles. These are astronomical objects that would all be equally bright if they could be observed from the same distance. The brightness that you actually observe can be used to calculate the distance: the less brightly the object shines, the further away it is. Because the universe is expanding, wavelengths are also stretched, making the light redder in appearance. The size

of this redshift can be used to measure how strongly the universe has expanded between the time when the light was emitted and the time when it is observed. By relating the redshift of several standard candles to their known distances, one can draw conclusions on the expansion of the universe. Type Ia supernovae are the best standard candles currently known. They also have the advantage of being extremely bright, making it possible to also observe them over distances of several billions of light years. The accompanying photograph shows a supernova at the edge of a galaxy. With its high luminosity, it stands out impressively in comparison with the galaxy.

By analyzing hundreds of supernovae, scientists have discovered that the universe is expanding more and more rapidly. This is something that is impossible to explain as long as we continue to assume that only "normal" matter exists. The standard cosmological model is based on the assumption that dark matter and dark energy also exist, although it has not yet been possible to explain their nature. This model is consistent with our observations when we assume that normal matter makes up only 5% of the content of the universe – we know precious little about the remaining 95%.

It is precisely this lack of knowledge that makes cosmology so exciting for me. There is hardly any other field of physics that still lacks a generally recognized model. Alongside >>

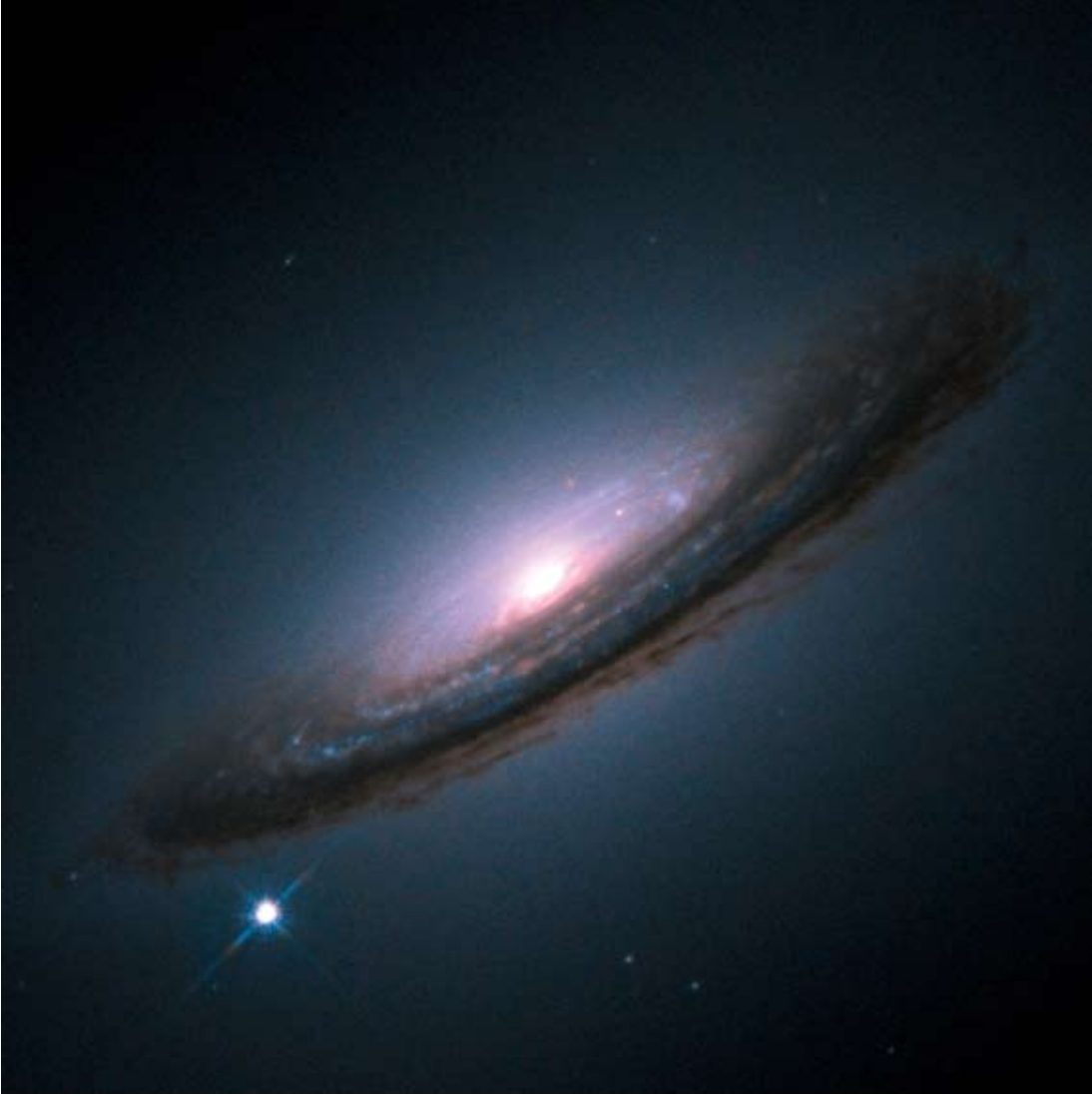
the standard model mentioned above (which also raises a number of problems that I cannot explain here), there is a host of further theories. The chance of contributing to such a great advance in our knowledge is a strong motivation for me. This is joined by the challenge to keep on seeking new methods with which to extract as much knowledge as possible from the given observations. This is absolutely necessary, because cosmologists are unable to carry out experiments and they can observe the universe from only one point, and this greatly restricts the data available to them.

Nonetheless, I don't want to just emphasize the positive aspects here. Finding a job at a university after getting one's PhD requires several publications in professional journals. This exerts a pressure to spend most of one's time working on topics that promise a quick result. The choice of topics is also restricted by the strong controversy

surrounding some theories, making it difficult to publish on them. My supervisor Dominik Schwarz correspondingly advised me not to work on what is called the backreaction at the beginning of my PhD phase, and I have come to realize that this was good advice. However, this reveals why I don't consider research to be as free as it is frequently made out to be.

Finally, I would also like to say that Bielefeld University offers a fine environment for my research. This is augmented by the close contacts to universities in Paris within the framework of the International Research Training Group. This gives graduate students in Bielefeld the chance to spend some of their time doing research at a Parisian institute, which encourages exchange between different research groups and thereby the exchange of ideas. I am looking forward to this opportunity during the course of my doctoral studies. 

The chance of contributing to such a great advance in our knowledge is a strong motivation for me. This is joined by the challenge to keep on seeking new methods with which to extract as much knowledge as possible from the given observations.





Dr. Heiko Wersing

received his doctorate in 2000 from the DFG Research Training Group Strukturbildungsprozesse and is now doing research at the Honda Research Institute Europe in Offenbach. He still has close ties to Bielefeld University: He runs the CoR-Lab Graduate School together with Prof. Dr. Franz Kummert.

// Dr. Wersing, you took your doctorate in the DFG Research Training Group Strukturbildungsprozesse at the Faculty of Technology. What was the topic of your dissertation and who was your supervisor?

My supervisor was Prof. Helge Ritter and the topic was “Neurodynamic Models for Gestalt Perception.” The idea was to formulate a mathematical model of how we perceive psychological Gestalt concepts and how we form a coherent whole when interpreting the single elements that compose a visual scene. The work was not only theoretical – the models – but also had applications in image-processing research.

Did you study in Bielefeld before?

Yes, I studied physics there.

Did you choose Bielefeld because you came from the region?

Yes, the region was more important – it was quite close to home. I also lived at home for the first years while desperately searching for somewhere to live in Bielefeld. That was difficult at the time. Then I stayed in Bielefeld simply because the study conditions were so good.

When you were planning your doctorate and your scientific career, was Bielefeld the natural starting point?

Yes, I also spent one semester in Dublin. But when I came back, my main studies really took off, and I quickly realized just how much exciting research was being done at Bielefeld. For example, the work of Prof. Ritter, whose lectures I could attend even though I was studying physics. He even supervised one of my physics examinations. This is what introduced me to my research field, and triggered the move from the Faculty of Physics to the Faculty of Technology where I was able to apply many of the methods and procedures I had learned while studying physics.

How far did you find Bielefeld to be interdisciplinary in your studies?

At that time, the Faculty of Physics was still very free and open. For example, you could attend lectures at the Faculty of Technology and even take exams there. It was also still possible to organize your own study plan. As I was specializing in theoretical physics and neural information processing, that was a great help. I think that one of the great advantages at that time was being able to seek your own research profile in an open and free climate. >>

Bielefeld University claims that one of its unique features is its interdisciplinary climate. Did you experience this?

I can only second that completely. Few universities practice this as actively as Bielefeld. Of course, I experienced it most profoundly in the graduate program. We had intensive contacts with a great number of scientists from many disciplines and attended a great number of exciting lectures. Spatial proximity as well – the university architecture works well for exchanging information with other subject areas and disciplines. I believe that Bielefeld is pretty unique in that sense. That is also what makes Bielefeld an interesting partner.

Part of your job at Honda Research Institute Europe is to organize cooperation with CoR-Lab and CITEC. When you look at these two institutes at Bielefeld University from the perspective of a researcher in industry, what is your impression?

I think that being open to other disciplines is simply taken for granted. Information science, for example, has interfaces with the humanities and biology that are very decisive for us. You can also see that in the way people discuss things. There is simply a willingness to be open to other areas and less of the extremely detail-loving narrow research carried out in other universities.

Few universities practice this as actively as Bielefeld. . . . There is simply a willingness to be open to other areas and less of the extremely detail-loving narrow research carried out in other universities.

What advice would you give to today's young doctoral students?

I think that the idea of bringing people together, particularly from an interdisciplinary perspective, is a good thing. I believe that every doctoral student benefits enormously from insight into other disciplines. Otherwise, they are always so involved in their own special topic and very immersed in it. And being able to meet up with other fields of research is very stimulating. It is also particularly relevant for your later career. Apart from a very few exceptional cases, hardly anybody generally carries on working on one single topic. It gives you a broader perspective.

Nonetheless, I have to say that I do not equate a structured doctoral course with rigid school-like structures. Doctoral students need suggestions, and not to be told what to do. I think that's very important. That's also the way things were in the DFG Research Training Group. They advised us to attend lectures as well, but after completing my diploma, I decided that I didn't want to sit in any more lectures. The important thing for me was to structure my further training and set my own priorities, to read up on the current state of research and not, so to speak, to carry on my studies as before.

How important is Bielefeld University for the city? Did you feel that you were living in a university city?

Certainly not. Bielefeld is not a classic university city for me because of its size. Students do not dominate the city landscape like they do in Münster for example. However, I can see that things have changed a bit in recent years. The city – and local industry as well – has become more aware of the potential that such a university brings, and that they should definitely get involved in its research. The university has much to offer – for both the city and local industry.

A final question: Do you have any particular memories associated with Bielefeld or doing your doctorate in Bielefeld?

While I was doing my doctorate in the DFG Research Training Group, I got to know my future wife. Every year, we went skiing with the graduate program and we attended the Winter Seminar in Klosters. Several Nobel prizewinners were always present, and we could also present our own papers. That was very special. But simply the sense of community in the graduate program was also great. We still have very good contacts with most of the people from that time, and it is really interesting to see where they have all landed today.



Dr. Jacob Oduor – My Experience at BiGSEM

received his doctorate in 2008 from the Bielefeld Graduate School of Economics and Management (BiGSEM). He is now teaching and doing research as a lecturer at the Econometrics and Statistics Department of Kenyatta University, Kenya.

// After finishing my master's degree course in Kenya, the next logical thing was to pursue my doctorate. Having had my previous academic training in Kenya, I needed an international setup with new intellectual challenges for my doctorate. The information I had when starting to search for an international PhD place was that you could only get the best PhD education in the USA, Canada, Australia, or the UK – but not in Germany. So I did not try much to search for a PhD place in Germany. One day, when I was browsing the web, I typed something like "structured PhD, Economics, Germany, English." And that is how I got to the BiGSEM website (www.bigsem.de). You can see from my search what would interest me in a German University: a program structured with coursework and held in English. From the website, I realized that BiGSEM was not only structured like I desired, but that the entire program was in English, and the school had a network of universities as its academic partners. This was really attractive. So I made my application, and after I had been admitted to BiGSEM as a doctoral student, I did not bother to follow up my applications to Warwick in the UK and other top-notch universities elsewhere because BiGSEM already gave me everything I needed.

When I arrived in Bielefeld to start my first semester, I was not disappointed. I had been in Marburg from August 1, 2005 for a 2-month language course to prepare me for the next 3 years of studies. The 2-month course was definite-

ly not sufficient, but the consolation was that my studies would be in English. So with my little German language, I strolled into the eighth floor of the marvelous University building to meet the BiGSEM staff and faculty. You will not be surprised to find secretaries in other departments and organizations who will not communicate well with you in English. This however, was not the case for BiGSEM. At BiGSEM, the language of interaction is English from the secretaries to the most senior professors, creating a homely environment for international students who may not be very good at German. In my group of eight new PhD students admitted in 2005, six came from outside Germany and represented all the continents of the world except the Americas. If you are looking for something international, you will definitely get it in BiGSEM. To improve our language skills, we were enrolled for a free German language course organized by the International Office.

My main research interests were econometrics and macroeconomics, so I expected to be exempt from the rigorous mathematics and microeconomics for which the Faculty of Economics and Business Administration is so well known internationally (when I last checked, the department was ranked at number 34 globally in mathematical economics – very high when you consider the thousands of economics departments in the world). But given the all-round, interdisciplinary training stressed by BiGSEM, I had to go through Prof. Trockel's microeconomics course. Due >>

to the rigor of the course, I did not make the pass mark set at 2.3 at the end the first semester. That was a very big blow to my ego because I thought I was very good. This was really the first exam I ever failed in my academic life. It was difficult to absorb, and I almost felt my dreams tumbling down. But with the assistance and encouragement of Prof. Böhm, the chairman of BiGSEM, I was able to pick up the pieces and move on, taking another course to cover for that. I had argued that I did not need microeconomics since I would be concentrating on econometrics and macroeconomics in my PhD research. But how more wrong could I be? In my dissertation, I needed microeconomics to develop the macroeconomic principles from a microeconomic foundation. In addition, the level of rigor you get from BiGSEM enables you to participate comfortably in any intellectual discussion in seminars and reviews of other researchers' work. Most recently, I had to review a highly mathematical submission to an international jour-

nal, Economic Modeling. I would not have been able to review the paper competently had I not gone through the rigors of microeconomics and mathematical economics at BiGSEM, areas in which I thought I was not interested.

When I got to BiGSEM, I had a dream to be an international professional in economic theory and policy. As they say, dreams do not make professionals; only professionals make professionals. And if you are looking for international professionals, you get them at BiGSEM. The faculty is strongly research-oriented, internationally acknowledged, and experienced with very helpful networks in top universities in the US, Australia, and Europe. The networks have helped place students in the partner universities with the advantage of learning new things and interacting with other helpful brains outside Bielefeld. When writing my thesis, I had the privilege to be supervised by two of these international professors, Prof. Dr. Alfred Greiner and Prof.

Dreams do not make professionals; only professionals make professionals.

Dr. em. Joachim Frohn. I could not have gotten better advisors: strict in details and content, reviewing work quickly, while at the same time maintaining a very friendly relationship with the student. I could knock on Prof. Greiner's door without an appointment, and he would give me audience – something that is rare among such very busy professors and probably unique to the faculty at BiGSEM. This enabled me to move much faster and finish writing my thesis in a record two and a half years. The regular PhD seminars held between BiGSEM and EBIM also enabled me to get helpful comments from professors and fellow students as well as sharpening my presentation skills. One good thing with the seminars is that the audience will always “tell it like it is,” never excusing shoddy work. In this way, the quality of research at BiGSEM is very high.

Talking about BiGSEM, one cannot forget the closeness of the BiGSEM family. BiGSEM has weekly coffee sessions that help the members bond and talk about everything from weather to experiences in the members' respective countries. Coupled with the assistance of BiGSEM staff, there is never any tension within the school between members.

This, of course, is very crucial for both peace of mind at the workplace and academic progress. The facilities at BiGSEM are also very handy. With a printer for everybody at no cost, office space, a desk and computer, free Internet access in the office, free unlimited access to online scientific journals, and the well-stocked university library open until late into the night, research has never been more interesting.

From Germany, I came back to Kenya to take up my post at Kenyatta University, teaching and doing research. At the moment I plan to stick to the university for a while, but I may try my hand in other international organizations like the IMF and the World Bank later on. You can tell good training when you see the output. Since leaving Bielefeld, I have had the opportunity to be considered for a position as an economist with the IMF, a position stationed in Washington, USA. Passing a series of interviews both in Kenya and in Paris against big challengers from renowned international universities like Warwick and Harvard is a testimony for the quality of students from BiGSEM: nothing but top-notch international stuff. ■

Overview of the structured graduate programs at Bielefeld University

Name	Speaker	Participating Faculties/Cooperation Partners	Website
DFG Research Training Groups			
Bioinformatics	Prof. Dr. Robert Giegerich, Faculty of Technology	Faculties of Biology, Mathematics, Technology	www.techfak.uni-bielefeld.de/GK635/
Entering the Knowledge Society: Science in Applied and Advisory Contexts	Prof. Dr. Peter Weingart, Faculty of Sociology/Institute for Science and Technology Studies	Institute for Science and Technology Studies together with the Faculty of Sociology and Faculty of History, Philosophy and Theology	www.uni-bielefeld.de/iwt/gk
World Society – Making and Representing the Global	Prof. Dr. Bettina Heintz, Faculty of Sociology	Faculty of Sociology	www.uni-bielefeld.de/soz/iw/graduierntenkolleg
Group Focused Enmity	Prof. Dr. Wilhelm Heitmeyer, Bielefeld University and Prof. Dr. Ulrich Wagner, Marburg University	Institute for Interdisciplinary Research on Conflict and Violence, Bielefeld University/ Marburg University	www.uni-bielefeld.de/ikg
Archives, Power, and Knowledge	Prof. Dr. Martina Kessel, Faculty of History, Philosophy, and Theology	Faculty of History, Philosophy, and Theology	www.uni-bielefeld.de/geschichte/forschung/gk1049
DFG International Research Training Groups			
Quantum Fields and Strongly Interacting Matter	Prof. Dr. Edwin Laermann, Faculty of Physics	Faculty of Physics, Bielefeld University/ Université Paris-Sud XI	www.physik.uni-bielefeld.de/igs
Stochastics and Real World Models	Prof. Dr. Michael Röckner, Faculty of Mathematics	Faculty of Mathematics, Bielefeld University/ Chinese Academy of Science, Beijing	www.igk.math.uni-bielefeld.de
Economic Behaviour and Interaction Models	Prof. Dr. Herbert Dawid, Faculty of Business Adminis- tration and Economics	Institute of Mathematical Economics, Bielefeld University/Université Paris I (Panthéon Sorbonne)	www.ebim.de
Graduate Schools, Research Schools			
International Graduate School in Bioinformatics and Genome Research	Prof. Dr. Robert Giegerich, Faculty of Technology and Prof. Dr. Alfred Pühler, Faculty of Biology	Center for Biotechnology (CeBiTec) with the participation of the Faculties of Biology, Chemistry, Physics, and Technology	www.cebitec.uni-bielefeld.de/gradschool
Bielefeld Graduate School of Economics and Management (BiGSEM)	Prof. Dr. Herbert Dawid, Faculty of Business Adminis- tration and Economics	Faculty of Business Administration and Economics, Institute of Mathematical Economics	www.bigsem.de

Reference: Bielefeld University

International Graduate School in Sociology (IGSS)	Prof. Dr. Reinhold Hedtke, Faculty of Sociology	Faculty of Sociology	www.uni-bielefeld.de/soz/igss
International Graduate School of Chemistry and Biochemistry	Prof. Dr. Thomas Koop, Faculty of Chemistry	Faculty of Chemistry	www.uni-bielefeld.de/chemie/studlehr/gradschool
CoR-Lab Graduate School for Cognition and Robotics	Prof. Dr. Franz Kummert, Faculty of Technology and Dr. Heiko Wersing, Honda Research Institute Europe	Research Institute for Cognition and Robotics (CoR-Lab) with the participation of the Faculties of Technology, Psychology and Sports Science and Linguistics and Literature in cooperation with Honda Research Institute Europe	www.cor-lab.de/corlab/cms/gradschool
Bielefeld Graduate School in History and Sociology (BGHS)	Prof. Dr. Jörg Bergmann, Faculty of Sociology and Prof. Dr. Thomas Welskopp, Faculty of History, Philosophy, and Theology	Faculty of History, Philosophy and Theology and Faculty of Sociology	www.uni-bielefeld.de/bghs
CITEC Graduate School Cognitive Interaction Technology	Prof. Dr. Thomas Schack, Faculty of Psychology and Sports Science	Cluster of Excellence Cognitive Interaction Technology (CITEC) with the participation of the Faculties of Biology, Linguistics and Literature, Physics, Psychology and Sports Science and Faculty of Technology	www.cit-ec.uni-bielefeld.de
International NRW Research School Education and Capabilities	Prof. Dr. Hans-Uwe Otto, Faculty of Educational Science	Bielefeld University and University of Technology Dortmund	www.education-and-capabilities.de

Graduate Cluster

CLIB Graduate Cluster Industrial Biotechnology	Prof. Dr. Alfred Pühler, Faculty of Biology/CeBiTec	Center for Biotechnology (CeBiTec) at Bielefeld University in cooperation with University of Technology Dortmund and University of Düsseldorf	www.graduatecluster.net
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7th EU-Framework Programme: Initial Training Networks (ITN)

EduWel: Education as Welfare – Enhancing opportunities for socially vulnerable youth in Europe	Prof. Dr. Hans-Uwe Otto, Faculty of Educational Science	in association with a number of European partners	
STRONGnet: Strong Interaction Supercomputing Training Network	Prof. Dr. Edwin Laermann, Faculty of Physics	in association with a number of European partners	
Robotdoc: Robotics for Development of Cognition	Prof. Dr. Franz Kummert, Faculty of Technology/ CoR-Lab	in association with a number of European partners	

