



20 Years of Research Training Groups

Matrix for New Doctoral Cultures:
Innovative, Interactive, International

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Title: Strict selection criteria, top international early career researchers and inter-disciplinarity comprise the ideal matrix for new doctoral cultures at the "Jena School for Microbial Communication". (Image: JSMC, University of Jena)

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Introduction

20 Years of Research Training Groups	5
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From Model to Success Story

Research Training Groups: Doctoral researchers quickly recognised the merits	6
--	---

An Important Model, Right for Our Time

Interview with Professor Dr. Reinhard Jahn	10
--	----

A Good Idea Has Caught On

Prof. Dr. Peter Strohschneider, German Council of Science and Humanities	11
--	----

Part of a Big Researcher Family

In 1990, the Ruhr-University established one of the first Research Training Groups .	12
--	----

Making Walls Talk

A winning team of architects, architectural scholars and art historians	14
---	----

The Spirit of Research Training Groups Is as Alive as Ever

Friedrich Eisenbrand's rapid research career	16
--	----

Building Bridges Between Disciplines

Ulrike Dufner still draws on her RTG experience	17
---	----

Broader Perspectives and Stepping Stones to Careers

Former doctoral researchers speak about their experience	18
--	----

Diversity Instead of "One Size Fits All"

The strengths of Research Training Groups have made a far-reaching impact	20
---	----

When the Chemistry Is Right

PhD students from Japan and Germany collaborate on molecular research	24
---	----

Cooperation Without Borders

International Research Training Groups focus expertise	26
--	----

Doctoral Training, Industrial-Style

Research Training Groups work within commercial businesses	27
--	----

From Research Training Groups to Graduate Schools

The path of the Giessen model is organic	28
--	----

Facts and Figures

Research Training Groups are backed by a powerful organisation	29
--	----

Introduction

20 Years of Research Training Groups

Twenty years ago the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) began to fund Research Training Groups (RTGs). Their introduction rang in profound changes. For example, doctoral trainees would now be supported not only by their thesis advisors, whose responsibility was strengthened, but also by other senior researchers as well as the host university. Since then, Research Training Groups have developed new forms of qualification for young scientists and scholars. The DFG has always emphasised research performance in the doctorate, and Research Training Groups have been able to establish research-oriented standards for doctoral training while allowing flexibility to accommodate the specific needs of the various disciplines.

This brochure, whose contributors I would like to thank, looks back on the success story of Research Training Groups. Reading the statements from both RTG coordinators and alumni, I find it very gratifying that, independently of each other, they confirm this track record. RTGs help young researchers to pursue targeted doctoral training, become independent early on, network internationally, and broaden their horizons. They don't just focus on the topic of their thesis projects but also gain a deeper understanding of their own subjects and other disciplines by taking part in the training group's discourse, often across disciplines. These skills contribute significantly to future success, be it in science and academia or elsewhere.

I am especially pleased that Research Training Groups have done such a great job of involving doctoral researchers in the universities' ongoing research, and that the training they offer is very much practice-oriented – not least because RTGs have increasingly been co-operating with partners in industry, business and culture.



I would like to thank everybody who has helped make Research Training Groups a success. My thanks also go to Germany's federal and state governments, which not only fund the programme but have also played an ongoing part in shaping and supporting it through the DFG's statutory bodies.

Enjoy reading!

Best regards,

A handwritten signature in black ink, which appears to read 'Matthias Kleiner'.

Prof. Dr.-Ing. Matthias Kleiner,
President of the DFG

From Model to Success Story

Research Training Groups: Doctoral researchers quickly recognised the merits

The Beginning: 20 Years Ago

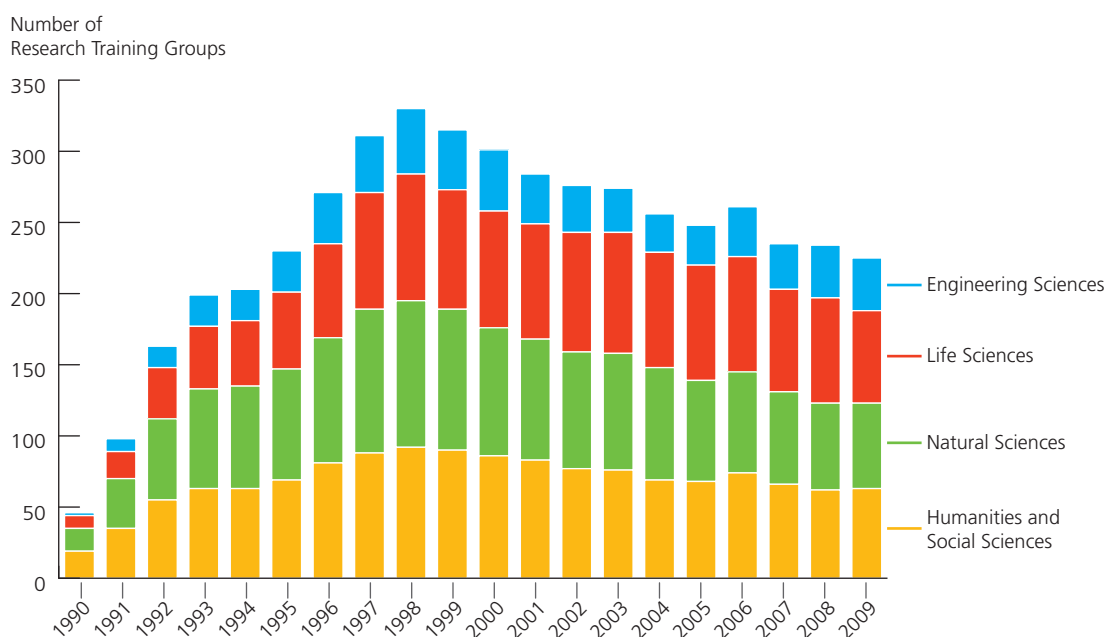
“Molecular Life Sciences” was the title of Germany’s first Research Training Group, established in 1985 by the University of Cologne and funded by the Fritz Thyssen Foundation. It was the beginning of a success story: Just one year later the German Council of Science and Humanities proposed using Research Training Groups to foster young researchers. The idea was to move away from traditional individual doctoral training, encourage early independence, and make doctoral programmes more structured as well as shorter. Based on this idea, 15 additional model RTGs were launched in the late 1980s – seven of them initially funded by the Federal / State Commission for Educational Planning and Research Promotion, eight by the Volkswagen Foundation, and one by the Robert Bosch Foundation.

After another recommendation by the German Council of Science and Humanities in

1988, things started happening quickly: The DFG would provide all future funding for RTGs. The general policy decisions by the DFG Senate followed one year later; in early 1990 the agreement between the federal and state governments on RTG funding went into effect, laying the legal foundation for the programme.

In May 1990 the DFG Senate Committee on Research Training Groups met for the first time. It was decided that each RTG should include about 20 graduates who would conduct research together with their advisors and be offered additional qualification opportunities. A network of researchers would ensure a transparent selection process.

The German Council of Science and Humanities was hoping that RTGs would trigger a reorganisation of academic teaching. “Reforming higher education from the bottom up turned out to be difficult; that’s why the German



Council of Science and Humanities wanted to start at the top,” says Bruno Zimmermann, who was in charge of Research Training Groups at the DFG until 2004, first as head of division and then as head of department. But the DFG Senate Committee rejected this strategy: “RTGs just weren’t in a position to tackle this on top of everything else,” says Zimmermann.

Just one month after the first Senate Committee meeting, the Grants Committee, also in its inaugural session, approved the first Research Training Groups. Demand exceeded all expectations: The DFG received over 100 proposals, 51 of which were accepted. The following year, the committee granted funding to another 47 RTGs, and in 1993 as many as 194 RTGs were approved. Total funding increased from 23 million DM in 1991 to about 65 million euros in 2001.

Doctoral researchers quickly recognised the merits of Research Training Groups and, contrary to what critics had predicted, were not in danger of losing their freedom to overly regimented doctoral programmes. Some scholars in the humanities were concerned

about the quality of doctoral training because RTGs seemed to sacrifice close collaboration between advisors and their doctoral students. The DFG compromised by allowing smaller RTGs. Subject areas like computer science, still in its infancy at the time, used Research Training Groups to raise their profiles. “Especially in Aachen, the RTG helped computer science become a similarly respected discipline as engineering,” says Otto Spaniol, professor of computer science at RWTH Aachen University and formerly the speaker of one of the first Research Training Groups.

The programme continues to evolve

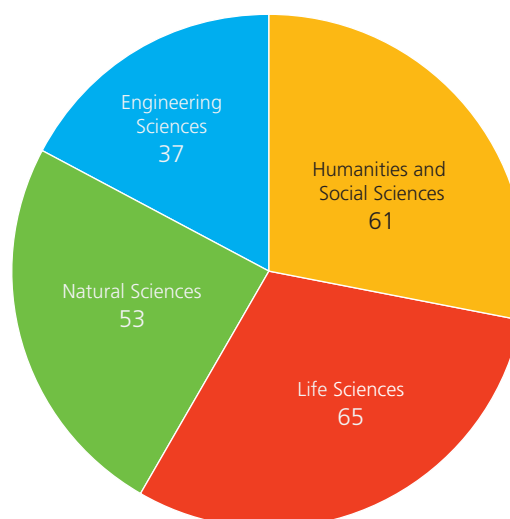
Since 1999 the DFG has also funded International Research Training Groups. They are usually based at two universities, one in Germany and one abroad, and pursue a common research programme. Each partner is responsible for its own funding. Doctoral researchers on both sides have co-advisors at the respective partner university, where they can also conduct part of their research. In addition, they benefit from binational events and in some cases are awarded dual degrees by both universities. Today, RTGs involve universities in over 20 countries. Differences in academic

Number of Research Training Groups by scientific discipline

◀ Development since 1990

The total number of Research Training Groups peaked in the late 1990ies based on rapid growth in the initial phase of the programme. Subsequently, it decreased when the first-generation RTGs ended upon completion of the maximum funding period of nine years. While the demand for the programme in the Humanities, Social sciences and Natural Sciences was strong from the beginning onwards, its appeal to the Life Sciences and Engineering Sciences has increased steadily over the years.

As of 2009 ▶



culture always pose great challenges to International Research Training Groups. Yet it is for this very reason that they are so successful in fostering research networks across borders.

The first Research Training Groups had broad topics like “Applied Mathematics” or “Computer Science”, but as time went on, RTGs tended to focus more narrowly. In response the DFG passed a new policy in 2001: “Topics shouldn’t be defined so narrowly that everybody ends up working on the same project, yet they should be specific enough to allow doctoral researchers to communicate with each other at a scientific level,” says DFG programme director Anselm Fremmer.

Positions instead of fellowships

Initially, doctoral researchers in RTGs received monthly fellowship stipends of 1,400 DM. As early as 1990, the DFG Senate Committee

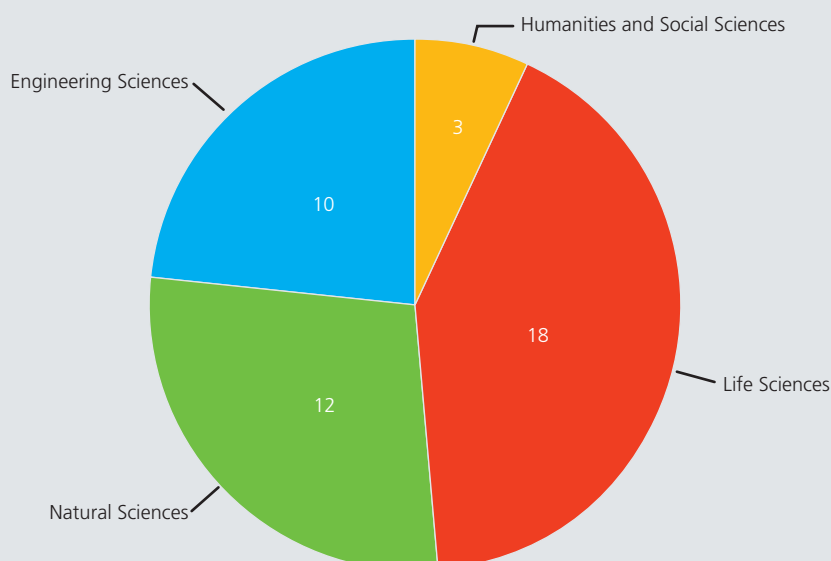
wanted to increase this amount to 1,900 DM to make it competitive with compensatory pay. However, this goal was not achieved until 2002, when the basic fellowship stipend was set at 1,000 euros per month. “In disciplines with a shortage of doctoral researchers, such as computer science, it was possible even before that time to use three fellowships to fund two trainees,” says Gerit Sonntag, DFG programme director for computer science, who has been in charge of numerous RTGs for many years. In 2002 it also became possible to offer postgraduate positions in shortage subjects. This was done to make RTGs more attractive, especially to engineering scientists who usually held well-paid university positions and industrial cooperation partners – which meant that RTG fellowships were not particularly enticing to them. In 2009 the DFG expanded position funding to all subject areas.

Well Integrated

In 1990 the DFG decided to fund Research Training Groups as independent programmes rather than as a part of Collaborative Research Centres, as some DFG senators had suggested. This strengthened the visibility and importance of RTGs. Meanwhile over the following years, RTGs have often become interlinked with topically

related Collaborative Research Centres. In 2006 the DFG therefore brought RTG elements into the Collaborative Research Centre programme, thus creating Integrated Research Training Groups. Hence, structured training programmes are now also available to doctoral students in Collaborative Research Centres.

Distribution of “Collaborative Research Centre-integrated Research Training Groups” by scientific disciplines



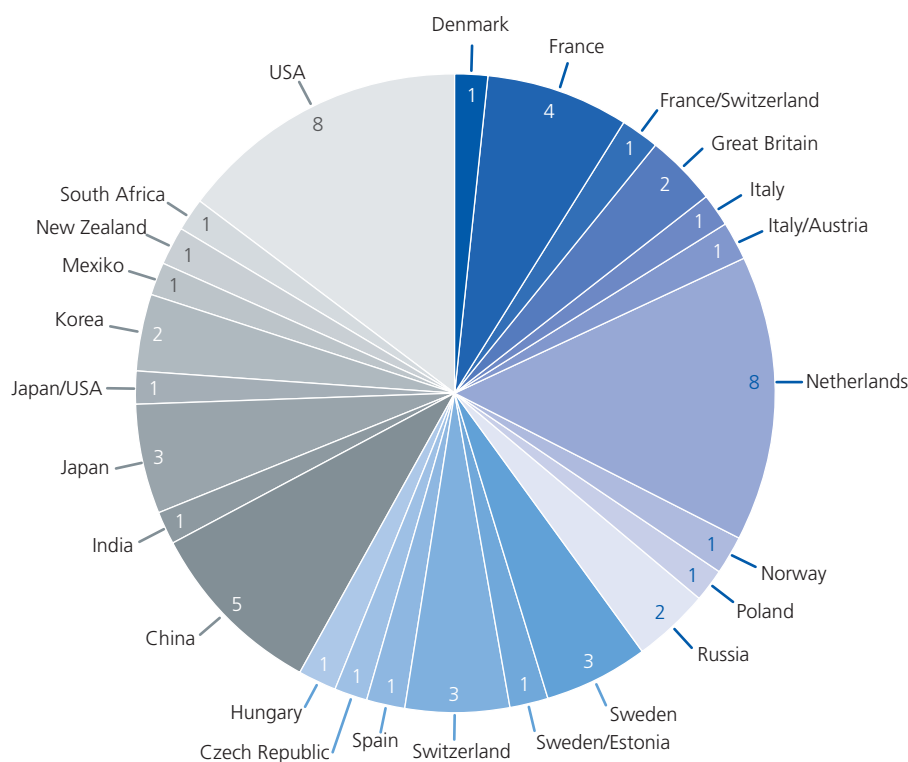
“Not least because of the Excellence Initiative, universities have been using their experiences with Research Training Groups to sharpen their profiles and restructure their doctoral programmes,” notes Annette Schmidtman, who currently heads the DFG Research Careers Division. New impulses also come from interdisciplinary, international or non-university collaborations, which have been increasingly pursued by RTGs since 2006 in response to a suggestion by the DFG Senate Committee. The committee decided to continue using Research Training Groups as a pilot programme.

Today almost all of the 216 Research Training Groups maintain international contacts, collaborate with partners in industry, business or culture, integrate researchers and graduates from universities of applied sciences, involve students in research, or lead

certain bachelor-degree holders directly to their doctorates, as envisioned under the Bologna Process. Some RTGs are now even tackling higher education reform. A case in point: Medical and engineering scientists at the universities of Heidelberg and Karlsruhe are currently working to improve their doctoral programmes and create a new master’s programme in medical technology.

Boris Hänßler

*International Research Training Groups: world-wide networks
(number of cooperation partners by countries)*





An Important Model, Right for Our Time

Interview with Professor Dr. Reinhard Jahn, director at the Max Planck Institute for Biophysical Chemistry, Göttingen, and speaker of the Göttingen Graduate School for Neurosciences and Molecular Biosciences (GGNB)

How do you assess the impact of Research Training Groups on German universities?

Research Training Groups have contributed significantly to the popularisation of structured doctoral programmes. They have also helped build the structure for graduate schools that have now become reality under the Excellence Initiative.

Research Training Groups, research schools, graduate schools – how does this diversity affect structured doctoral training?

Crucial progress has been made particularly with the relationship between professor and doctoral researcher: the strong dependency characterising it has been loosened, and instead, a whole group of researchers is now responsible for the doctoral researcher. I can't say whether this is a good strategy for all subject areas. But my impression is, however, that Research Training Groups have been very well received in the humanities and social sciences as well.

What is the effect of Research Training Groups on academic research and higher education?

As far as higher education is concerned, I don't see a lot of influence on universities. But I do see an impact on research. Research Training Groups foster a culture of intensive scientific exchange, also at the international level. This stimulates research enormously.

What is the role of Research Training Groups within the Bologna Process?

Especially in view of the changes brought about by graduate schools as larger units, the concept of Research Training Groups should be reassessed. At universities with little structured training, RTGs in their current form are still an important model. Universities whose doctoral programmes are more advanced may take the concept to the next level. I could imagine RTGs becoming less focused on individual research projects and more integrated into broader doctoral programmes.

Why are there such differences in the degree to which structured doctoral programmes are evolved?

By no means do all of my colleagues agree that this form of doctoral training is superior to traditional doctoral qualification. We still have a lot of persuading to do. Structured training will certainly have to be tailored more closely to the culture and needs of a given subject area. I do consider doctoral training a part of higher education that should involve the university or a group of professors. This basic concept, I believe, is appropriate and right for our time.

Interview: Uschi Heidel

A Good Idea Has Caught On

Research Training Groups complement other forms of doctoral qualification



It is well known that failure is an orphan while success has many fathers. No surprise therefore that many “parents” offer their congratulations on the 20th birthday of the DFG funding programme for Research Training Groups. And the German Council of Science and Humanities, which had recommended this funding format in 1986, is among those lining up to congratulate.

Research Training Groups are a true success story. Two decades ago they introduced a completely new type of doctoral qualification to Germany by bringing together established and early-stage researchers in topic-based research teams, embedding doctoral thesis work in a comprehensive research context, and supplementing this training with systematic study programmes. The intensification of research training is then combined with individual supervision.

An influential programme

In other words, a good idea has caught on. Several foundations tested it initially in pilot trials. Since 1990 it has been one of the most important DFG programmes and has shaped the training structures for young researchers at German universities. Research Training Groups have made this impact even though only about ten percent of all doctoral researchers are members of RTGs, and even though this instrument of doctoral training is used with varying intensity by the different academic disciplines. Initially there were concerns that RTGs would bureaucratis

doctoral training, meddle inappropriately with higher education, and be entirely unsuited as a format in certain subject areas. But these worries proved unfounded, as RTGs are an instrument that can be used very flexibly. They don't replace other forms of doctoral qualification but rather complement them in a sensible way.

Research Training Groups have certainly helped raise the level of scientific and personal support available to young researchers. This observation can be made even though the benefits of structured doctoral programmes versus individual doctoral training are difficult to measure statistically. Statistics only tell us how many doctoral researchers finish their theses, not how many graduates set out to do so. But this much is clear: The availability of doctoral positions and fellowships encourages young researchers to switch universities when they begin their doctoral training. Many excellent graduates, also from other countries, now have the opportunity to find just the right research context for their thesis project. A number of individual elements introduced by RTGs have long since been adopted by other organisational forms of academic qualification and research.

So the child has grown up. Its parents and providers have good reason to be proud of it.

Prof. Dr. Peter Strohschneider
Chair of the German Council
of Science and Humanities

Part of a Big Researcher Family

In 1990, the Ruhr-University Bochum established one of the first DFG Research Training Groups

Twenty years ago, the Ruhr-University in Bochum opened the door to a completely new form of doctoral supervision: One of the first Research Training Groups was set up to improve research outcomes and speed up the time to degree. “It was the end of one-on-one togetherness between a doctoral researcher and his or her advisor, doing research in private,” remembers Professor Elmar Weiler, the former speaker of the first RTG in Bochum and today rector of the Ruhr-University. “Suddenly doctoral students were part of a big family of researchers.”

This had far-reaching consequences. Graduates had to deal with professors and doctoral researchers from different departments and take an interdisciplinary approach to their work. They were now being supervised by two teachers, one from their own department and one from another. Regular exchange with doctoral researchers from other subject areas was now a given. “Doctoral students had to learn to appreciate other disciplines rather

than see themselves as the centre of the universe,” says Elmar Weiler. Their reward was that the structures of all departments were now open to them. They also took part in the RTG’s decision-making process. “This is the kind of collaborative research I wanted to help shape as a speaker and coordinator,” says the rector.

In 1988 Elmar Weiler took the chair of plant physiology in Bochum. Two years later his Research Training Group was launched and ran until the year 2000. It was the first time that biologists were joined by medical scientists and physicists to investigate the “Biogenesis and Mechanisms of Complex Cell Functions”. Departmental boundaries became a thing of the past. “The topic was experimentally driven. There was no way for one department alone to provide the technical diversity that was needed, but several departments in conjunction were able to pull it off,” remembers Elmar Weiler, who supervised many RTG students. “Everybody had access to everything. The Research Training Group functioned like one big lab.”

Elmar Weiler, rector of the Ruhr-University of Bochum



Open structures

In the Research Training Group, a dozen professors took care of as many doctoral students each year. In order to foster a community based on team spirit and exchange, the trailblazers had to create the necessary structures first. “It wasn’t easy because our workload as advisors doubled,” says Elmar Weiler. “As coordinator I had to convince my colleagues that greater effort would yield better results.” In addition to regular teacher meetings, doctoral students presented their findings every other week in colloquiums. Supervisory issues were discussed openly. “Everybody quickly realised that this new type of training produced outstanding theses that also benefited the professors’ own research.”

From the beginning, students welcomed the concept. “The colloquiums would help them move along when they got stuck in their topic,” says Elmar Weiler. Doctoral researchers

would also present their work at conferences and invite national and international researchers to Bochum. "It helped students get a sense of how they compared internationally," says the rector. Moreover, such events offered great opportunities to make valuable contacts with visiting researchers. "We professors would intentionally abstain to lower the threshold for conversations." But the professors involved also benefit to this day from the networks with foreign researchers that developed back then. Elmar Weiler: "I supervised a student jointly with a colleague from the US. We're still in touch today."

The RTG also taught doctoral researchers important soft skills like leadership, teamwork and accountability. "The young scientists learned how to present their work so that doctoral researchers from other disciplines could understand it, too," says Elmar Weiler. "By setting up conferences they gained important experience in collaboration and project management."

Nucleus of a culture of support

As a rector, Elmar Weiler enjoys the fruit of the pioneering labour that was done at that time. The first RTG was the nucleus of a flourishing culture of support. Today, Ruhr-University offers a variety of similar, in some cases international programmes, with financial support from the Max Planck Society, the state of North Rhine-Westphalia, or the European Union, to name a few. The university has also set up its own research school. Like the RTG, it is reserved for select doctoral researchers, but this does not mean that it is an exclusive circle. "Courses are open to all students to allow as many as possible to benefit," emphasises the rector. To expand this effect, the university plans to make the research school as a funding instrument available to all doctoral students in 2010.

"Thanks to the Research Training Group, doctoral training has become one semester shorter on average, and the quality of doctoral theses has increased enormously," says Elmar Weiler. "One of my doctoral researchers now works in Göttingen as one of Germany's most popular cell biologists." The first RTG even spawned a Collaborative Research Centre in Bochum. "There's one area where



we would probably do a better job today: alumni work. That's where we fell short," says Elmar Weiler self-critically. "Other than that I'm very pleased. The Research Training Group has generated an irreplaceable added value for our university and the doctoral trainees. That's true to this day."

Sabine Wygas

Making Walls Talk

A winning team of architects, architectural scholars and art historians

On the steep, vine-covered slopes of the river Saale near Naumburg, Cistercian monks founded the monastery of Schulpforta in 1137. It was one of the wealthiest monasteries in Central Germany when 400 years later the elector of Saxony dissolved and transformed it into an academy. Friedrich Nietzsche and Leopold von Ranke would later go to school here. In spite of structural modifications over the course of its history, the huge monastery complex has been preserved in its entirety. In the year 2000, this historic building became accordingly the focus of a ten-day interdisciplinary workshop held by the Research Training Group “Aesthetics – Architectural Research – Preservation of Historical Monuments”.

“The architects in the group benefited immensely from the fact that our history colleagues could easily decipher the various inscriptions on the walls and place them historically,” recounts architect Dirk Dorsemagen, who participated as a doctoral researcher. “This provided us with references to benefactors and thus to different construction phases, which we identified in the structure using our own methods.”

As the idea matured of setting up a Research Training Group combining disciplines as diverse as art history, architecture and architectural history, the initiators from the University of Bamberg and the Berlin Institute of Technology (TU Berlin) were confronted with critical questions: What is your common agenda? Which problem are you trying to solve? “We weren’t investigating one single issue,” says Johannes Cramer, Professor for the history of architecture and urban development at TU Berlin’s department of architecture, who served as the RTG speaker. “We were about interdisciplinary methodology – that is, the ability to solve problems of historic preservation as a team. That was the idea.”

Orientalists, archaeologists, art historians and architects – the graduates who joined the RTG between 1996 and 2005, all worked on different topics for their doctoral theses. The common link between ancient edifices, mediaeval churches and 20th century film theatres was that everything revolved around buildings.

Historic architecture is of great significance in European society, whose culture is based on tradition. The preservation and conservation

“Excursion in Syria”: expert talks during an excursion to Syria



of authentic structures is valued highly. But there had previously been no systematic training opportunities for preservation specialists. It used to be personal interest that led architects and art historians to work at historic-preservation agencies – where decisions would often be based on individual criteria. “We wanted to change that and enable our doctoral researchers to make systematic decisions, no matter which historic structure they would be dealing with,” says former speaker Johannes Cramer.

The method sounds simple enough. It begins with taking inventory and documenting the change process. Already here, the interdisciplinary approach becomes crucial. Each researcher learned the methods that the others brought with them from their respective subject areas – and benefited from them. “We were no longer lone fighters,” says Dirk Dorsemagen. “Researching sources in an archive, reading old documents – I wasn’t used to doing these things in my traditional training as an architect.” In return, he was able to teach art historians how to make drawings of the walls, precise to the brick. An architectural researcher’s trained eye can detect tiny traces of modification in the joints or mortar, and draw conclusions about different construction phases. Once these findings have been compared to text or image sources, the result of the search for clues becomes ever more precise and colourful. Finally, says the architect, a complete picture emerges: “The walls begin to tell their story.”

Snatched from the hands of the RTG

“Our alumni’s expertise is pretty much unique to Germany,” says Johannes Cramer, not without pride. Indeed, young researchers have been snatched from the hands of the RTG. “We were asked impatiently, ‘Who do you have doing this or that?’” Interest in interdisciplinary qualifications was especially strong in other European countries. Of just under 100 graduates who participated in the Research Training Group during its nine-year run, a consistent 20 percent came from abroad. They wanted to learn specifically these preservation methods and strategies not standard in their home countries. But Germans, too, work in France and Italy today – “and they have a lot to do there,” says

Johannes Cramer. About 20 jobs in preservation agencies have been filled with RTG alumni, who still work closely together. They can also be found teaching at German universities in five or six recently launched historic-preservation programmes.



Dirk Dorsemagen has been working as an architect for the historic conservation division of the Prussian Palaces and Gardens Foundation Berlin-Brandenburg since 2003. This large foundation has numerous specialised divisions, and minor skirmishes between them are inevitable. When they happen, Dirk Dorsemagen is also in demand as a mediator, moderator and networker, thanks to his enthusiastic appreciation for diverse approaches and for interdisciplinary collaboration that sheds multi-coloured light on old architecture.

Bettina Mittelstraß

The Spirit of Research Training Groups Is as Alive as Ever

Friedrich Eisenbrand's rapid research career

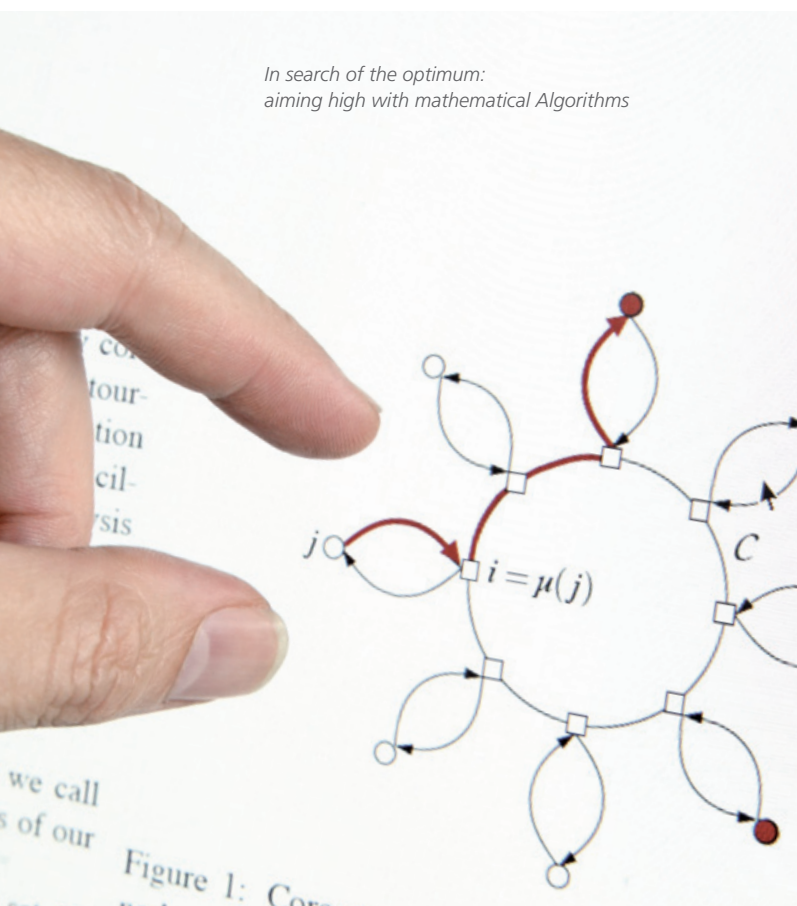
Friedrich Eisenbrand does research at the interface of mathematics and computer science. He develops software that can calculate the optimum decision from many alternatives. Such a program plays an important role in hospital management, to name one example. How can a shift schedule be designed so that there are always enough workers on duty but never more than necessary? To arrive at the best result, countless factors must be taken into consideration – for instance, a nurse scheduled for a nightshift should get the next day off before she works another dayshift. “The software has to play through all the options without taking half a year to do so,” says Friedrich Eisenbrand. The scientist's programmes are much in demand. A large aeroplane manufacturer employs Eisenbrand's methods to make sure human and material resources are used effectively and economically.

Friedrich Eisenbrand started to investigate this topic early on. He studied mathematics and computer science at the University of Saarland. Initially, he began his doctoral thesis on optimisation algorithms at the Max Planck Institute (MPI) for Computer Science in Saarbrücken. Then, in 1997, he got a fellowship in the Research Training Group “Efficiency and Complexity of Algorithms and Computer Systems” – a perfect fit for the young researcher's topic. “I discovered many connections to other branches of computer science,” he says. “The RTG is one of the reasons why I continue to work across disciplines to this day.”

The Research Training Group was a major stepping stone for his career. “We were able to focus completely on our research and didn't have to cope with a teaching load. That was a privilege we enjoyed.” Friedrich Eisenbrand completed his doctorate quickly and subsequently, climbed the career ladder rapidly. After research visits in Rome and Berlin, he headed an independent junior research group at the MPI in Saarbrücken. In 2003 he habilitated at the University of Saarland. One year later the DFG awarded him the Heinz Maier Leibnitz Prize for his work. Further engagements took him to Delhi, Dortmund und Paderborn, before he accepted an appointment to the École Polytechnique Fédérale de Lausanne. Its computer science department is number one in Europe according to the Academic Ranking of World Universities by Shanghai Jiao Tong University.

Friedrich Eisenbrand passes on his RTG experiences to his students. “I want to enable my doctoral researchers to do what I was enabled to do, which is to concentrate on research. They are involved in teaching, but I try to spare them administrative chores and to impart the spirit of Research Training Groups to them.”

Boris Hänßler



Building Bridges Between Disciplines

Ulrike Dufner still draws on her RTG experience

When she studied political science in the 1990s, she was already a human rights activist for Turkey. For six years she served as an advisor to the German Parliament; for two years she worked at the Turkey department of Germany's Ministry of Foreign Affairs. Today Ulrike Dufner heads the branch office of the Heinrich Böll Foundation in Istanbul. "I've always been a border crosser who wanted to build bridges," she says. "It was especially my fellowship in the Research Training Group that brought me closer to this goal."



She also built a bridge with her doctoral thesis, in which she compared the political ideas of Egypt's Muslim Brotherhood with those of Turkey's Welfare Party. "Back then, all Islamic political movements were lumped together in Germany. But I wanted to take a closer look. The Research Training Group in Erlangen provided me with the ideal environment to do so," says Ulrike Dufner.

The RTG in Erlangen was one of the first. Its topic: "Interdisciplinary Research of Transformation Processes in Middle Eastern Societies between Tradition and Renewal". The RTG spanned two universities. In Erlangen as well as in Bamberg, political scientists worked hand in hand with turkologists, ethnologists, economists and islamologists – a portfolio of experts from various disciplines, which Ulrike Dufner drew on from 1990 to 1995 while working on her doctorate.

"We had many, sometimes fierce discussions and an ongoing in-depth exchange across disciplines that opened new perspectives," says Dufner. One of the doctoral researchers investigated the significance of urban space for the Islamic movement. "Without the group it would never have occurred to me to include a geographer's perspective in my research," she says. "Especially at the present time, I am really benefiting from this border-crossing experience, because we're working on a similar project at the Heinrich Böll Foundation. It deals with social change and religion."

The political scientist would have welcomed a bit more internationality in the Research Training Group. "We had to write our dissertations in German.

It wasn't possible to do your doctorate in English, which made it harder to get into international research institutions," remembers the 47-year-old. But this was a minor blemish, clearly outweighed by the advantages of the research training period. "During research visits in Egypt and Turkey I learned how I as a woman need to approach people who initially reject me," says Ulrike Dufner. "To do so, I have to really understand my own socio-cultural background, and this helps me tremendously in my work today."

Sabine Wygas

Broader Perspectives and Stepping Stones to Careers

Former doctoral researchers speak about their experience



Dr. Meltem Avci-Werning

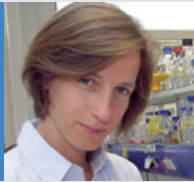
Expert on issues such as the prevention of ethnic conflict in schools; currently head of the Department of School Psychology on the Lower Saxony State Board of Education, RTG "Cognitive and Social Representation of Problems and Conflicts, Their Genesis, Predication and Control", University of Münster

In the Research Training Group, fellows and instructors experience intense scientific work – with all its highs and lows. For me it was very special to collaborate with researchers from different countries. My DFG-funded research visit in Israel influenced me strongly on top of this.

Prof. Dr. Ruth Schmitz-Streit

Department of General Microbiology, University of Kiel, RTG "Enzyme Chemistry", University of Marburg

Key impulses for my experimental doctoral thesis came from the group. Both my outstanding experience with interdisciplinary work and the collaboration with international experts have substantially influenced my scientific career.



Dr. Steffen Egner

Founder and managing director of MediaAnalyzer Software & Research GmbH

Being part of the Research Training Group was a very positive experience for me. Working across disciplines ignited my great passion for research, which extended far beyond the RTG and led to a DFG research fellowship and ultimately the establishment of my own business.

Prof. Dr. Karl Schmid

Institute of Plant Breeding, Seed Science and Population Genetics, University of Hohenheim, RTG "Cellular and Molecular Aspects of Development", Ludwig Maximilian University of Munich

The Research Training Group influenced my career deeply and positively. Interacting with doctoral researchers and professors from other working groups helped me build a network and expand my scientific horizon. During meetings the trainees cheered each other on, and we received guidance from excellent scientists.



Prof. Dr. Stefan Siegmund

Mathematics, Dresden University of Technology RTG "Nonlinear Problems in Analysis, Geometry and Physics", University of Augsburg

The Research Training Group was my first encounter with the liberties that come with third-party-funded research. Our weekly interdisciplinary collaboration with physicists was very stimulating. As a postdoc I became the group coordinator and gained interesting insights into the organisation of major projects. These experiences helped me when it came to proposing and leading my own Emmy Noether Independent Junior Research Group.

Prof. Dr. Anne Röthel

Bucerius Law School, Hamburg, RTG "Environmental and Technical Law", University of Trier

As a doctoral student in the Research Training Group I met many people for whom living and working as a researcher was self-evident. For me, this opened the door to an academic career. Without this experience I wouldn't have obtained my habilitation. I found interdisciplinary thinking so captivating that I try to maintain it even today.





Dr. Jens Romstedt

Scientist at ESA/ESTEC, RTG "Origin and Evolution of the Solar System", University of Münster

It was the interdisciplinary character of the group that appealed to me especially. The conferences and meetings as well as the numerous national and international involvements of the Institute for Planetology made it easy for me to establish contacts within the scientific community. Thanks to my wonderful fellowship I was able to work quickly and purposefully toward my PhD.

Dr. Martin Daumer

Director of SLCMSR and managing director of Trium GmbH, Munich, RTG "The Interaction of Mathematics with Physics", Ludwig Maximilian University of Munich and Rutgers University, United States

In the Research Training Group I was able to put my interdisciplinary investigations into quantum-mechanical scattering theory from the perspective of Bohmian mechanics into effect. Through the early scientific independence and flexibility the group offered, I was able to make a lateral move into medicine, form the company Trium, and set up the multiple-sclerosis research institute SLCMSR.



Dr. Gero Poetsch

Head of the Department of Vehicle Dynamics and Energy Consumption, Deutsche Bahn AG, Frankfurt am Main, RTG "Parallel Processor Networks in Production", University of Paderborn

I was excited about the interdisciplinarity of the Research Training Group. Ongoing interaction with computer science, engineering and economics as well as the natural and social sciences prevented one-sided specialisation. Looking beyond my area of expertise was a very rewarding experience in terms of my scientific as well as my personal development.

Dr. Steffen R. Giessner

Associate professor of organisational behaviour, Rotterdam School of Management, IRTG "Conflict and Cooperation between Social Groups", University of Jena, University of Kent at Canterbury, Catholic University of Louvain, Belgium, and University of Sussex

The fascinating thing about the Research Training Group was working on an innovative topic with international researchers. We also had a valuable option of inviting experts to our summer schools. This definitely opened new perspectives on my research. The networks I formed during that time are still active today.



Dr. Joanna Warchol

Legal advisor to the European Parliament in Brussels, RTG "Transformation of Regulatory Systems and Integration of European Economies in Joining Europe", University of Heidelberg

I was fascinated to be doing research with the best professors and having a lot of international encounters. The Research Training Group taught me that we lawyers have a special responsibility for the quality of the European legal framework. Extensive practical experience helped me make a smooth transition into professional life – as the first Polish office manager for a member of the European Parliament, and then in the legal service of the European Parliament.

Prof. Dr. Carmen Cardelle de Hartmann

Mediaeval and modern Latin philology, University of Zurich, RTG "Textual Criticism", Ludwig Maximilian University of Munich

Within the Research Training Group the dialogue with other subject areas in the group had a profound effect on me. It sensitised me to their peculiarities and problems. I learned how to ask my questions in a way that can be understood across disciplines. Since then I've always been looking for those vanishing points where different subjects meet. In addition, the Research Training Group made it possible for me to return to academia after my family leave.



Diversity Instead of “One Size Fits All”

The strengths of Research Training Groups have made a far-reaching impact

They were the speakers of some of the first Research Training Groups and have led other RTGs off and on over the course of 20 years. A conversation about success, impact and opportunities with professors Amélie Mummendey, Otto Spaniol and Helmut Willems:

How have Research Training Groups evolved?

Spaniol: Through the new DFG guidelines, Research Training Groups have become more focused, which has narrowed down the topics and the pool of supervising professors. I think I would have preferred things to have stayed the way they were in 1991 when I had my first group. The second RTG was also defined quite broadly, but today we have some with a much narrower research focus.

Willems: Research Training Groups have proven themselves as a place for structured doctoral training. In our case, the trend goes especially towards more internationality. In our second Research Training Group we are now working with researchers from different European countries as well as the United States, from the Massachusetts Institute of

Technology. Naturally, our range of topics is diverse, not least because of our close affiliation to collaborative research centres and other centres of research.

Mummendey: It's all about enabling synergies by having doctoral researchers work together on one comprehensive topic. This means that other people's research has to be not only interesting but also beneficial for one's own doctorate. Looking back at the last 20 years, it's clear that Research Training Groups are a successful model and have inspired other forms of structured doctoral training, albeit not as quickly as originally intended. In the current discussion about improving conditions for doctoral training it's precisely the features typical of Research Training Groups that are held up as examples.

Each subject area has its own culture, including doctoral training. What does this mean for Research Training Groups?

Spaniol: These cultures vary enormously. In some subjects, three years aren't enough for a doctorate because the necessary

Lively discussion: Otto Spaniol (left) and Helmut Willems.



experimentation can't be done in that time-frame. In yet other subjects, individual doctoral training is so dominant that it's hard to integrate Research Training Groups.

Mummenday: The range of attributes that characterise doctoral training in Research Training Groups is just as productive for researchers in the humanities as it is for natural scientists. The various cultures are reflected in the different designs and emphases of the study programmes. It's not "one size fits all".

Willems: Research Training Groups have to respond to changes in the scientific community. In the earth sciences, for example, cumulative doctorates increasingly take the place of monographic theses. For our RTG students, structured doctoral training means that they publish early on in internationally high-ranking journals, sometimes already after one year.

A study suggests that researchers in the humanities benefit more from Research Training Groups than natural scientists when it comes to the length of doctoral training and the age at which they get their doctorates. What has been your experience?

Mummenday: It's difficult to compare, because humanities researchers have been the exception in Research Training Groups so far. In this respect, these few could gain particular value. Of course, it is also possible that their advisors are especially dedicated. In the natural sciences, on the contrary, this type of doctorate is the prevailing standard.

Willems: In the earth sciences, Research Training Groups have helped a lot to speed up the process due to their stringent approach. Most of our PhD candidates successfully complete their work after three years.

Spaniol: As a scientist I consider it impossible for every student in a training group to finish their doctorate within three years. You can't guarantee that your research will be finished within a certain time span. We're happy when people get it done within four years.

Willems: Research and study programmes, but also soft skills like science writing, presentation skills or time management help organise

the work process and keep people from getting off on the wrong track. At regular Coffee & Science meetings, problems can be addressed early on and informally. More than in the past, the reality of the academic job market comes into view as well. Researchers learn how to write proposals and handle project management and career planning. This may well encourage them to do their doctorates quickly, too. And it all pays off, as evidenced by low dropout rates. But of course it is an enormous challenge to get it done within three years.



How helpful is it for a Research Training Group to have its own identity?

Mummenday: I think it's very important. It takes time for this identity to form, but by designing and organising things like workshops together, students do develop a sense of belonging. The fact that our International Research Training Group is housed in its own building has significantly strengthened its identity. People meet there, talk shop, have discussions with international guests – this creates something like a concretely located reputation. On top of that, traditions develop that help new doctoral researchers feel safe and at the same time call on supervisors to show commitment.

Spaniol: A major advantage of RTGs is indeed the possibility of inviting external experts.

Our students often organise this on their own, a very valuable experience. They work together and know each other well, but there is no particular RTG identity. At our weekly seminars where doctoral researchers discuss their work, people occasionally have to be talked into sharing. RTG students are sometimes less motivated, yet more adjusted than in the past. In my first Research Training Group, students would often quarrel intensively, but in a constructive way. Controversial discussion of extraneous topics was very productive for all participants.

Willems: Identity begins with a common research topic. Our big annual workshop is a crystallisation point for that. Findings, postulates and ideas are discussed at a two-day retreat with all international partners, and contacts are made at all levels.



Research Training Groups are supposed to further upgrade structured doctoral training. What has actually changed?

Spaniol: Well, for example, we emphasised dual supervision from the very beginning, with two supervisors from different departments. This has fostered interdisciplinary collaboration between professors significantly. These days, supervisors also look for second reviewers from other countries. Dual supervision or at least dual review is all but standard in Germany today.

Willems: At the University of Bremen we had structured doctoral training even before DFG Research Training Groups, so that the launch of the DFG group went smoothly. In particular, the courses on soft skills and the option of inviting researchers of international standing to workshops and appointing them for dual supervision was new for us. All of this has helped RTGs to make a lot of headway and has made an impact on other forms of doctoral training as well. Thus, the DFG has done a great job of promoting structured doctoral training generously.

What advantages does a doctoral student have in an International Research Training Group?

Willems: International mobility and international exchange. Doctoral students usually spend half a year at the partner institution and get to know other work cultures, not to mention other contacts.

Mummendey: Exactly: International networking is guaranteed, also at the doctoral level. Essentially this is a Research Training Group that extends beyond national borders. And these contacts are enormously successful. Today many of our alumni work for our partners, on familiar territory.

Spaniol: We don't have an International Research Training Group, but we get a similar effect by encouraging our trainees to actively attend international conferences. The DFG funds these trips. This allows doctoral researchers to practice scientific discourse at an early stage and to meet potential collaborators.

Have Research Training Groups spawned concepts for graduate schools?

Willems: Research Training Groups require flexibility and thinking outside the box. Old ways of teaching, old ways of thinking are being discarded. This has smoothed some transitions, for example from diploma programmes to the new bachelor's and master's programmes. Experience from Research Training Groups does also provide a good foundation for designing graduate schools.



Mummendey: The key characteristics of good doctoral training, such as excellent supervision in an excellent environment with a critical mass, can also be found in graduate schools. Research Training Groups have provided a role model here.

Spaniol: Research Training Groups can spawn concepts, but it's pretty rare. The good thing though, is that the researchers who try to make graduate schools happen know each

other from Research Training Groups. In Aachen we have a speaker's council, which I currently represent externally. Those who want to can present their proposals and initiatives to the council. Thereby we exchange know-how, experiences and tips, which have proven very helpful for proposals, for example on graduate schools and clusters of excellence. Research Training Groups have also taught us to place a greater emphasis on interdisciplinarity.

What do you think about uniting all forms of doctoral training under one umbrella?

Spaniol: I'm afraid that centrifugal forces would eventually become too strong in such a structure. But from a purely organisational point of view, there might be a basic critical mass that could justify an umbrella.

Mummendey: An umbrella organisation can have a positive effect if it promotes adherence to quality standards. The Jena Graduate Academy makes a point of supporting different forms of doctoral training, but in combination with a commitment to a range of core features based on experience in Research Training Groups. But this doesn't mean simplification – it's still all about diversity.

Moderator: Uschi Heidel

Discussion group

Professor Amélie Mummendey teaches and researches social psychology at the University of Jena. She led one of the first Research Training Groups and was the speaker of the International Research Training Group "Conflict and Cooperation between Social Groups". Today she is the vice-rector in charge of the university-wide Jena Graduate Academy. For six years Amélie Mummendey was a member of the DFG Senate and Grants Committee on Research Training Groups representing psychology.

Professor Otto Spaniol is a computer scientist at RWTH Aachen University. He was the speaker of one of the first Research Training Groups and until 2010 headed the Research Training Group "Software for Mobile Communication Systems". For six years Otto Spaniol represented computer science in the DFG Senate and Grants Committee on Research Training Groups.

Professor Helmut Willems teaches and researches historical geology and palaeontology at the University of Bremen. He has been guiding Research Training Groups since 1990, including "Proxies in Earth History", one of the first International RTGs.

When the Chemistry Is Right

PhD students from Japan and Germany collaborate on molecular research

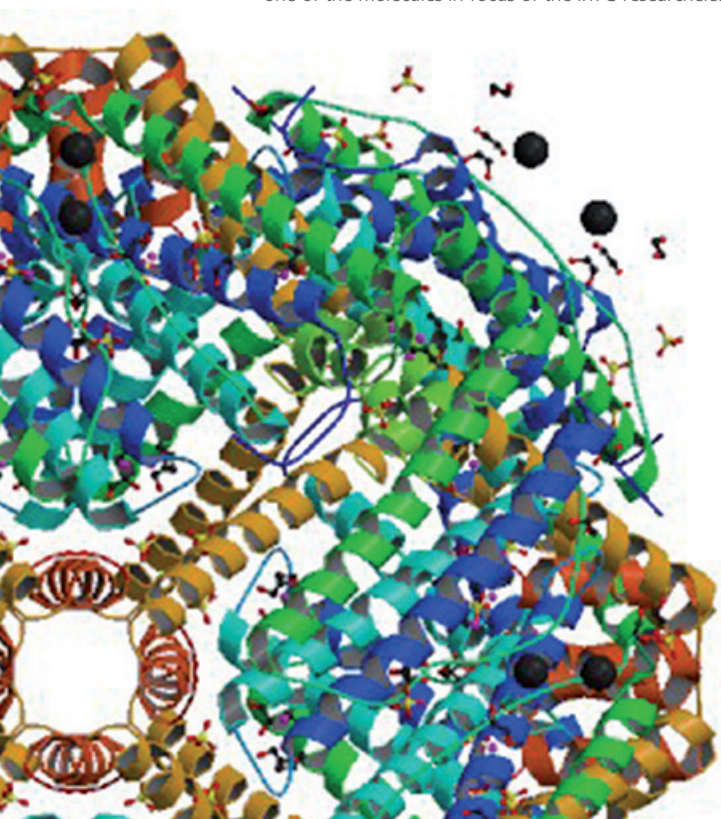
Chemistry is complex in two ways: For one thing, researchers investigate complicated molecules and the different ways in which they interact. For another, outstanding research can no longer be performed by just one university, let alone one department. Research is increasingly cooperative, even across borders. The International Research Training Group “Complex Functional Systems in Chemistry” at Westphalian Wilhelm University in Münster, Germany, stays abreast of this trend. Nine teams in Münster and another nine in Nagoya, Japan, are working together to understand and control interactions between molecules in order to create new materials with special properties. The International Research Training Group in Münster is funded as Research Training Group 1143 by the DFG.

The leader of the IRTG, Professor Gerhard Erker, dates its birth to the year 2005. Back then, he and researchers in Nagoya had the idea that even during doctoral training, students should get something akin to a postdoctoral experience – which sounds like a contradiction,

strictly speaking. But the researchers agreed that it can't hurt to get international experience early on. Yet they were also aware that setting up a joint Research Training Group would not be easy. “The funding systems of the DFG and its Japanese counterpart, the JSPS, were not very compatible at the time,” says Gerhard Erker. The proposal still got through, not least because the DFG president at the time, Ernst-Ludwig Winnacker, and JSPS president Motoyuki Ono had negotiated a memorandum of understanding.

The IRTG in Münster was launched on 1 January 2006; the Nagoya group had already started a few weeks earlier. Every year since then, six to eight doctoral researchers from Münster have worked in Nagoya for six months; an average of six come to Münster, where they usually stay for a slightly shorter period. In addition, IRTG participants can invite professors of their choice to hold guest lectures and selected courses. They also organise high-level international symposia. “The programme worked excellently from the very beginning,” says Gerhard Erker, surprised that the different systems turned out to harmonise so well.

Complex structures: The metal-binding protein apo-ferritin is one of the molecules in focus of the IRTG researchers.



Unhindered flow of knowledge

In Münster, nine working groups on chemistry, food chemistry and pharmacology benefit from the Research Training Group. The programme is very interdisciplinary and designed to allow an unhindered flow of knowledge between the working groups in Münster and Nagoya. Doctoral researchers in these groups can apply for one of the coveted slots in the IRTG. “We’re swamped with applications,” says Gerhard Erker. A total of 25 doctoral researchers are currently in the programme. They have passed the demanding admission process, which requires them to give a presentation, among other things. Gerhard Erker wants to make sure only the best doctoral researchers are accepted: “For them it’s a great opportunity.” When they return from Japan, they have mastered many challenges and become more mature.



*Young scientists at work.
International cooperation in Research Training Groups continues to grow.*

To avoid wasting six months on orientation in the foreign country instead of using them for intense research, the German researchers attend the Institute of Intensive Language Training in Bochum before they take off. Not only does it teach them basic Japanese; it also helps them keep the culture shock to a minimum and avoid social blunders. "It's wonderful they get this preparation. I can't say enough good things about the institute," says Gerhard Erker.

Kirsten Spannhoff agrees. She is in Erker's working group dealing with metal complexes as catalysts. She was in Nagoya in the spring of 2009. "It was a unique experience." She was fascinated by the way research is done in a different cultural sphere, by how problems are approached and decisions are made. In Japan, Kirsten Spannhoff was able to connect the topic of her thesis to other aspects of chemistry, thus giving new impulses to her doctorate.

Despite all the focused work, cultural exchange was not neglected. Via internet, Spannhoff found Japanese friends with whom she went camping and attended festivals, and even planted rice. Her stay in Japan won't have been the last. "Once I finish my PhD, I plan to target job offers that allow me to go back to Japan."

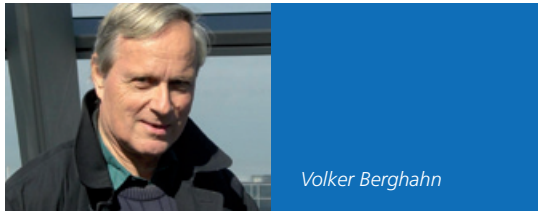
The Research Training Group is currently set to expire in June of 2010. Over its first funding period, the DFG has contributed about 1.5 million euros. A renewal proposal has been submitted because, as Gerhard Erker points out, such an expensive programme cannot be supported by university funds alone at this point. "Still, universities will have to offer more such programmes in future, because top-level research is getting more and more international."

Bernd Müller

Cooperation Without Borders

International Research Training Groups focus expertise

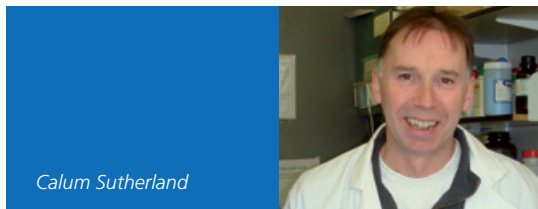
Research is global – this is the challenge the DFG takes on with its International Research Training Groups. It is important to put the participating universities on equal footing,



Volker Berghahn

says Volker Berghahn, professor at Columbia University in New York, and keep logistics simple, in spite of the big distance, by limiting the group to two locations. This is certainly the case in the transatlantic Research Training Group “History and Culture of the Metropolises in the 20th Century”. What’s more, the objects under investigation can be found right on the doorstep, because the participating institutions are three universities in New York and three in Berlin. The idea for the collaboration came from New York; the Berliners were eager to be a part of it; and in 2004 the bilaterally developed concept was approved by the DFG. Twenty-four doctoral researchers and four postdocs have since been awarded fellowships for three years each – “with ideal working conditions,” says Berghahn.

The Research Training Group New York / Berlin arose virtually out of nothing – the partners had not collaborated much in the past. This makes it somewhat of an exception, as most International Research Training Groups tend

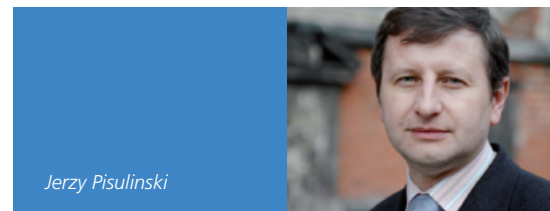


Calum Sutherland

to have longer histories. A case in point: the RTG “The PI3K Pathway in Tumour Growth and Diabetes”. Biomedical researchers from the universities of Tübingen, Germany, and Dundee, Scotland, have worked together since 2006 to examine cells for the key processes causing cancer and diabetes. Both universities

are world leaders in this area, pursuing different strategies that complement each other very well, says Dr. Calum Sutherland, one of the cooperation partners at Ninewells Hospital in Dundee. Seven students from Tübingen have meanwhile done research at the Scottish laboratories. “We worked on our topic and learned new techniques and approaches,” says Antje Grotemeier, speaker of the RTG researchers from Tübingen.

The collaboration in the RTG “Transformation of Regulatory Systems and Integration of European Economies in Joining Europe” goes back even further, to the mid-1990s. Twelve years ago, Jagiellonian University in Krakow established a school for German law, and four years later it launched a school for Polish commercial law – the foundation for the Research Training Group, including the universities of Heidelberg and Mainz. In Krakow, German and Polish



Jerzy Pisulinski

law students get to know the legal system of the other country. Between 12 and 18 German students and doctoral researchers go to Krakow every year for six months, while Polish students come to Germany to research German and European law. The doctoral theses written in the Research Training Group are usually legal comparisons. So far, 21 Polish students have been awarded doctorates in the RTG. This Research Training Group expires in 2010. It is set to be continued with the Universities of Heidelberg and Mainz, but with a different focus. Jerzy Pisulinski, professor at Jagiellonian University and RTG coordinator: “Poland is now a member of the European Union, which results in new challenges. Thus, differentiated legal integration in an expanded Europe, for example in consumer law, will be the main topic of the new Research Training Group.”

Bernd Müller

Doctoral Training, Industrial-Style

Research Training Groups work within commercial businesses

Innovative enterprises often pose questions that can be interesting to young researchers. A case in point is the collaboration between Evonik Industries (formerly Degussa) and two Research Training Groups at the universities of Erlangen and Duisburg-Essen. It's a win-win situation: Doctoral researchers work at the company, which in turn gains insights into current academic research. Positive experience with this type of cooperation has spawned two Science2business centres in Marl: for nanomaterials in electronic components and for biotechnology.

In 2004, Evonik erected a building specifically for this purpose, in which 120 scientists and developers, including 30 doctoral and postdoctoral researchers, collaborate today. The young scientists receive support from the DFG and the German Ministry of Education and Research, and stay with the company for two to three years. Within the framework of cooperation agreements, the DFG has funded things like scientific instruments, which belong to the university but are temporarily housed by Evonik. The company pays for the infrastructure and the research done by its own employees. All public funds are earmarked for the university. Both partners benefit from the jointly generated research results.

The idea of linking up Research Training Groups with Evonik / Degussa is the brain child of Andreas Gutsch, DFG Senate member and former innovation manager at Evonik. "In industry, decisions happen more quickly, but there's little time to do basic research," says Andreas Gutsch. Degussa at the time was facing many open questions concerning nanotechnology. That is why the company approached universities and Collaborative Research Centres, offering a complete research infrastructure in which young scientists investigate issues important both to the university and the enterprise. Under this agreement, researchers are allowed to publish their findings freely as usual.



How productive this kind of collaboration can be is demonstrated by Li-Tec Battery, a joint venture between Evonik and Daimler. It develops batteries for electric cars using a type of ceramics technology invented with the help of doctoral researchers. Cooperation between universities and businesses in Research Training Groups is a definite success story and worth imitating, says Andreas Gutsch, who served until recently as Li-Tec's executive director: "We have created 250 jobs with it." The DFG knows from surveys that many RTG alumni pursue industry careers following completion of their doctorates.

From Research Training Groups to Graduate Schools

The path of the Giessen model is organic

Ansgar Nünning is convinced that the success of structured doctoral training depends on three qualities: diversity, continuity and networking. “In Germany we’re testing different models right now. Ten years ago there was virtually nothing outside of DFG Research Training Groups.” The Giessen-based professor is an expert in doctoral training. He has worked with three Research Training Groups, established the Giessen Graduate Centre for the Humanities (GGK), and on this foundation he and his colleagues developed a proposal for a graduate school under the Excellence Initiative – successfully. The International Graduate Centre for the Study of Culture (GCSC) has been up and running since 2006. “The path there was organic,” reports Ansgar Nünning, who also serves as the speaker of the GCSC. In the process, the experience gained with RTG research and training programmes provided valuable essentials for the GCSC.

“Early on we were pondering the question of how we could continue to have the kind of success we were having with Research Training Groups,” says the scholar of English and cultural studies. All doctoral researchers in

the humanities should be able to benefit from structured doctoral training – this was the premise of the GKK. In 2001, when it began, it was considered a novelty. In the meantime, it serves as a prototype for doctoral training reform in Germany. At the University of Giessen, it was the force behind the International Graduate School for the Life Sciences. Another graduate school – for the social sciences – is currently in planning.

Whereas the GGK has a regional focus, the GCSC operates at the international level. Out of several hundred applicants from all over the world, a selection committee chooses the 30 to 40 best candidates each year.

Within a circle of like-minded researchers

Compared to Research Training Groups, graduate schools under the Excellence Initiative are much broader and more interdisciplinary in their thematic scope. “Today’s key issues in the humanities and social sciences can only be tackled across disciplines,” says the GCSC speaker. Still, he believes that RTGs are equally valuable for successful doctoral training. It all comes down to collaboration with like-minded researchers and the availability of diverse opportunities within a structured doctoral training programme. Common obstacles like writer’s block can thus be more easily overcome. And attending target-group-specific courses is far superior to working on a dissertation all alone in one’s room. At the GCSC Teaching Centre, for example, students learn professional teaching methods – great preparation for a career in science and the humanities.

Ansgar Nünning’s thoughts have already extended far beyond individual graduate schools. The future, he believes, lies in networking. A first step has already been taken. Together with graduate schools in Finland, Sweden, Portugal and Italy, the GCSC has created the European PhDnet “Literary and Cultural Studies”.

*A systematic approach to the doctorate:
The GCSC is breaking new ground.*



Facts and Figures

Research Training Groups are backed by a powerful organisation

The Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) is the self-governing organisation for science and research in Germany. It serves all branches of science and the humanities. In organisational terms, the DFG is an association under private law. Its membership consists of German research universities, non-university research institutions, scientific associations and the Academies of Science and the Humanities.

The DFG receives the large majority of its funds from the states (Länder) and the federal government, which are represented in all Grants Committees. At the same time, the voting system and procedural regulations guarantee science-driven decisions.

From an annual budget of over 2 billion euros, about 5 percent are currently going to the support of Research Training Groups.

Research Training Groups can be funded for a total of nine years, in two funding periods of 4½ years each. Funding is contingent on the approval of proposals submitted by universities. A review panel composed of researchers from other universities and research institutions evaluates the research and training plan.

During an on-site colloquium, reviewers also engage in discussions with participating professors, university administrators and, if the proposal concerns the renewal of a previously established group, with participating doctoral researchers. Based on the outcome of the review, the DFG Senate and Grants Committee on Research Training Groups then make the funding decision.



DFG On-Site Review:
The universities do their task to ensure a quiet working environment.

("Quiet please – review board meeting in progress" / "Please turn off all cell phones and buzzers")

At the DFG Head Office, the Research Careers Division is in charge of programme development, the proposal and decision process, and the DFG-funded Research Training Groups. It works closely with the relevant scientific divisions and the Budget and Accounting Division.



Meike Andermann, Petra Berger, Jürgen Bretkopf, Nora Brüggemann, Anjana Buckow, Katja Fettelschoß, Anselm Fremmer, Gernot Gad, Dietmar Gehrmann (Budget and Accounting Division), Sebastian Granderath, Inge Grätzig, Irene Khder, Sascha Klein, Gisela Kolbe, Sylvia Krupp (Budget and Accounting Division), Christoph Limbach (trainee), Saskia Miele, Sabine Mönkemöller, Myriam Poll (trainee), Manfred Nagel (Budget and Accounting Division), Barbara Riesche, Annette Schmidtmann (head of division), Dagmar Scholz, Rolf Stengert (Budget and Accounting Division), Britta Stinton, Gerlinde Wawrok.

Not in the picture: Karl-Heinz Becker, Michaela Dreike, Susann Gierz, Achim Haag (contacts for humanities and social sciences), Sabrina Houbor, Frank Kiefer (contacts for physics, mathematics and geosciences), Astrid Lippstreu, Ursula Michel, Daniel Pursche (contacts for chemistry and process engineering), Evelin Salzbrunn, Gerit Sonntag (contacts for engineering sciences), Nana Ueffing (contact for life sciences)

Further information:

http://www.dfg.de/en/research_funding/programmes/coordinated_programmes/research_training_groups/index.html

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