

Deutsche  
Forschungsgemeinschaft

# Promoting Excellent Researchers Today for the Science of Tomorrow

The Emmy Noether Programme



**DFG**

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**Emmy Noether was an exceptional scientist. She carried out pioneering work in the field of mathematics, under less than favourable conditions. At that time it was still particularly hard for women to qualify for academic positions. It is therefore fitting that a programme of excellence that applies the highest standards to the young scientists and academics it supports should be named after a role model like Emmy Noether.**

Such young researchers are in high demand internationally. The DFG tries to encourage non-Germans to research in Germany, keep excellent German researchers in the country or win them back. First-rate young researchers from around the world who intend to work at German research institutions in the future are invited to apply for the programme. Once accepted, they can look forward

In the short period since its inception in 1999, the Emmy Noether Programme has already become a trademark. It is well known that “Emmys” are among the best. The great acceptance which this young programme has already won, and the high quality of its fellows, are attested to by the fact that more than 70 of them have been offered professorships – some more than one – even while they were still in the programme. A well-functioning network of former and current Emmy Noether junior research group leaders has formed. The DFG welcomes this development and supports it to the best of its ability, for example through annual meetings and an Internet forum.

## Emmy Noether

A trademark of excellence

Those accepted into the DFG’s Emmy Noether Programme have passed a rigorous selection process and, at a young age, can already point to impressive academic and scientific track records that promise outstanding careers in science or the humanities.



not only to five or six years in a well-paid position, but also to funding for an independent junior research group and adequate travel and project funds. Moreover, they are given the opportunity to conduct independent research – which is exactly what they need in order to realise their ideas and establish an independent position in science and academia early on.

Among the high-calibre guests who have given speeches at Emmy Noether meetings – which have become an annual tradition, taking place each summer in Potsdam – were former Federal Minister of Research Edelgard Bulmahn and former Minister of State for Culture Julian Nida-Rümelin. They engaged in discussions with participants late into the night. Brandenburg’s Minister of Science, Johanna Wanka, is a regular guest and has so far been able to attend each year’s “Political Evening”. This proves that politicians look at these leading young researchers as interesting dialogue partners whose opinions deserve to be heard. I, too, have found the open and stimulating exchange with young scientists and academics not only highly enjoyable, but also valuable as a source of feedback and inspiration for the further development of our programmes. These conversations always reinforce my belief that the future of Germany as a scientific and academic centre of excellence is in good hands.

A handwritten signature in black ink that reads "Ernst-Ludwig Winnacker".

Professor Ernst-Ludwig Winnacker  
President of the DFG

**With new confidence**

Dr. Wolf-Tilo Balke  
*Research Centre L3S  
 Hanover*



“Emmy Noether junior research group leaders have gone through a tough selection process and this, combined with the fact that they are funded through the programme, makes them very interesting to universities. In the US, however, this programme is not yet widely known. When I was in Berkeley I explained the terms of the programme, and the Americans were very interested and even willing to top up the funding with some extra money. For computer scientists, heading a research group is par for the course, even for those working on their doctorates, and this is especially true for projects with third-party funding. Our professors are more like research managers than pure researchers, so junior scientists have to get down to business early on. I was an Emmy Noether fellow during my two years abroad and although it was like being thrown in at the deep end, it certainly had positive consequences: I returned from the US with new confidence and was no longer the inexperienced postdoc. After all, I’d done independent research for two years and worked with renowned experts – and that definitely improved my standing in the job market.”

**Ideal Preparation for a Professorship**

**Emmy Noether fellows take stock**

“During my postdoctoral period in the US, I saw how my international female colleagues took it for granted that they could start a family while they were doing demanding scientific work. When I returned to Germany, I had to compensate for the well-developed childcare opportunities and social acceptance found in the US, using a lot of creativity on my part in Germany. For my research it’s essential that I attend international meetings and conferences, and it is not always possible to keep a regular schedule. Standard German childcare doesn’t allow for that, so I need good organisational skills and the help of my partner and relatives to make it work. The Emmy Noether Programme gives me an opportunity that is rare in Germany, to harmonise my career and family life. The great autonomy I have as the leader of an independent junior research group affords me the flexibility I need, for instance, when it comes to my teaching schedule. At the beginning of the fellowship, when my daughter was still very young, I was able to suspend my teaching obligations. Later on I gradually started to teach and conduct seminars again.”

**Pursuing a career in science while raising a child**

Dr. Andra Schromm  
*Leibniz Centre for Medicine and Biosciences  
 Borstel*



**More flexibility needed**

Dr. Bodo Grimbacher  
*Department of Rheumatology and Clinical Immunology  
 Medical University Clinic, Freiburg*



“Most professors appreciate Emmy Noether junior research groups. For my department, the existence of this group is a seal of quality. The success of my junior research group is based on our cooperation with scientists not only in Europe but all over the world. In addition to receiving DFG funding, we also raise third-party funds, and the group is constantly growing. More scientific recognition means additional administrative work: we need more staff and bigger labs. We get no support from the administration in this regard. Because space is limited, we have to fight for it, which puts a strain on our time and nerves. I’m not allowed to decide independently whom I invite for job interviews. People who are already employed by the university have to be invited, regardless of whether or not they’re right for the job. So I end up holding quite a few interviews for no good reason.”

**An underrated path to professorship**

Prof. Tanja Börzel  
 Centre for European Integration  
 Otto Suhr Institute  
 Free University, Berlin



“The Emmy Noether Programme is a very promising step on the academic career ladder because it allows for a strong research focus. I could dedicate a lot of time to publishing and was able to gain experience in third-party fundraising – two key criteria for success when it comes to negotiating chair appointments. Without the Emmy Noether junior research group I would not have been appointed professor so quickly, especially as I don’t have a habilitation. An alternative to assistantships and junior professorships, the position of independent junior research group leader is underrated as a third way to an academic career. Public perception is focused on junior professorships, while hardly anyone talks about the significance of independent junior research groups. At many universities, junior research group leaders aren’t visible enough, even though their appointment ratio is much higher than that of junior professors. Universities don’t realise yet that junior research groups can raise their profile and give them an edge in the competition for excellence. This has to change, and it will. We’re working on it.”

“Heading an Emmy Noether independent junior research group is an outstanding opportunity to grow into a leading role in science. I work independently in my chosen field of research and with my own budget, and I supervise my own doctoral students and write proposals to raise additional research funds. I don’t conduct research all by myself though – I’m responsible for a team. That’s an important element for my future career. It’s up to me to decide how much I get involved in teaching or administration. It all starts with recruiting suitable graduate and doctoral students. As a junior research group leader, it’s my job to motivate them, to leave room for their creativity, but also to establish the direction we’re heading in. After all, we’ll only be noticed and recognised if we take a joint position as scientists. That holds true both within and outside our university. It’s a big responsibility, but I’ve grown with the job – that’s one of the fundamental experiences I’ve had as a junior research group leader.”

**Responsibility for the team**

Dr. Christian Wegener  
 Philipps University, Marburg  
 Department of Biology, Animal Physiology/Neurobiology



**Shortened work week went a long way**

Dr. Laura Kallmeyer  
 Collaborative Research Centre “Linguistic Data Structures”  
 University of Tübingen



“I had just been accepted by the DFG when our first child was born. So the option given by the ENP, to reduce the working hours, was ideal for me. In the beginning I worked 60 percent of a full-time position, and later on 80 percent. I was doing research at the University of Paris VII at the time. The conditions for balancing an academic career and family life are ideal there. Childcare isn’t really an issue in France because of their well-developed infrastructure. I worked at the university for four full days a week and enjoyed great freedom as a researcher. The excellent conditions that the Emmy Noether Programme offers encouraged me to have two more children. Overall, my first funding phase lasted not two but almost four years. But that didn’t compromise my research – on the contrary. Now I head an independent junior research group in Tübingen and work full-time again – something I had been looking forward to after my time in France. I want to do research, lead my group, and be a role model for other women scientists who don’t wish to sacrifice their family life.”

**Y**oung researchers in the Emmy Noether Programme enjoy a privilege that many of their colleagues in Germany can only dream about, and which is unheard of among many university lecturers: Emmy Noether fellows are scientifically independent. They select and head their own independent junior research groups, supervise doctoral students, teach, perform management tasks, administer their own budgets – and they do so at a university of their choice. “Young scientists should be able to step out of their professors’ shadows early on and develop their own research profiles,” says Dr. Beate Scholz, Programme Director for the DFG’s Research Careers Section.



## Early Independence Puts Young Talent on Fast Track

Young researchers benefit from greater academic freedom and excellent resources

When the DFG instituted this programme in 1999, it broke new ground in terms of the promotion of young researchers, bringing on a paradigm shift. One of the inspirations for the programme was the kind of academic freedom enjoyed by assistant professors in the United States. The goal was to establish a qualification path which was an alternative to research assistantship. “We wanted to break away from the master-apprentice model,” explains Beate Scholz. Changes along these lines had previously been advocated by international experts who reviewed German academia as part of an international system evaluation. Their conclusion: long-term dependency-based relationships not only undermine young researchers, but also the competitiveness of universities and the country as a whole in the global competition for innovation and top-level scientists and academics.

### “Turbo programme for young researchers”

That’s exactly where the Emmy Noether Programme comes in. Emmy Noether fellows pass through the qualification

phase that leads to professorship significantly faster than their colleagues who work as research assistants. The ENP has even been called a “turbo programme for young researchers” by the media. In five years – six at the most – an “Emmy” should be able to make it: The high appointment ratio shows that this is sufficient time to gain professorship. More than 100 current and former Emmy Noether fellows have been offered professorships so far. Close to 300 Emmy Noether independent junior research groups have been funded since 1999, almost a quarter of them headed by women. Fifty new research groups are approved each year, on average.

The Emmy Noether Programme is open to all young scientists and academics who have a strong track record and wish to qualify in Germany as university lecturers. The overwhelming majority of fellows work in the natural and life sciences; humanities scholars and social scientists are rare. “So far,” adds Beate Scholz. She notices that the humanities are beginning to catch up as they are undergoing a general shift and considering new approaches to promoting



young researchers. The Emmy Noether Programme seeks to support this trend. Because team research has traditionally been less common in the humanities than in the natural sciences, researchers in the humanities may receive funding as project leaders even without a junior research group.

### Heating up the competition

Close to nine percent of the young researchers come from outside Germany. “We’re not pursuing a brain gain strategy, but the programme does try to recruit the best researchers, regardless of their current location,” explains Beate



Scholz. The ENP especially targets highly accomplished Germans who would like to return to Germany. For them, excellence funding might be just what they are looking for as it allows them to conduct research in Germany under conditions that match the attractive packages offered in their adopted country. The biggest incentives are greater academic freedom and excellent resources for their own research group. Word of such benefits gets around in the scientific community. “Young people go wherever conditions are most favourable. Our programme wants to support this dynamic, and so create competition among German research centres,” says the DFG expert.

### New mentality needed

“However, some universities are still insufficiently aware of their assets and how they can leverage them,” adds Beate Scholz. “Assets”, in this case, are researchers who have been selected against tough international competition. Their work helps raise the profile of the university they work in, and the financing they bring with them improves

the university’s third-party funding statistics. But instead of making a point of recruiting Emmy Noether candidates, some departments and administrations balk and point to issues such as lack of space. Another challenge is insufficient integration: in contrast to junior professors, Emmy Noether fellows are often not permitted to teach and to supervise doctoral students from beginning to end. “We still have a long way to go in terms of changing mentalities,” says Beate Scholz. However, the paradigm has already begun to shift – as evidenced by universities that make an effort to offer long-term prospects for their “Emmys” and succeed in doing so.

*uw*

### Handpicked

What does it take to be an “Emmy”? Applicants must demonstrate that they have conducted independent research after obtaining their doctorates and are able to build independent academic careers. “They need to have cut themselves loose from their professors, meaning they should be independent and mobile, both geographically and thematically,” says Beate Scholz, who is responsible for the DFG’s Research Careers Section.

Previously narrow age restrictions have been replaced by a new rule that allows candidates to be admitted into the programme up to four years after they have finished their doctorates. Each application must include a letter of commitment from a hiring institution that is willing to employ the candidate and provide the necessary working conditions.

Candidates should have worked abroad for at least one year. It is irrelevant whether this international research experience was part of their doctoral training or gained afterwards, for example through a DFG research fellowship. Applicants who have not done any research outside Germany, but who are well networked internationally, also have a good chance of being accepted. Scientific excellence and independence are the key criteria that all applicants must demonstrate in the tough competition for funding.

Junior research group leaders are generally handpicked by expert committees on the basis of written proposals and in-person presentations of their research projects. Successful applicants may be funded for five years, or six years in exceptional cases.

*uw*

## Passionate Pioneer

Emmy Noether lived for mathematics



One “cannot emphasise strongly enough that nature itself has determined for women the role of mother and housewife, and that the laws of nature can in no way be ignored without severe harm,” wrote Max Planck in 1897. He was one of over 100 professors who contributed their opinions about female university students to a report titled “The Academic Woman”. This was the response of academics to demands emanating from the middle-class women’s movement, which had challenged attitudes in Wilhelmine Germany by demanding the right to education and to free choice of profession.

This was the time in which Emmy Noether, who was born in 1882, grew up. For eight years she attended a secondary school for girls in Erlangen, where she learned cooking, sewing and foreign languages – a typical education for girls. In 1900 she passed the state examination for teachers of English and French. The daughter of a mathematics professor, she registered as a guest student of mathematics, physics and philosophy in Erlangen in 1903. At the same time, she prepared for her university entrance exam. In 1904 she enrolled as a student of mathematics and found herself the only woman among 46 male students. Three years later she was the second woman ever to earn a doctorate at the University of Erlangen, with her thesis on invariant theory.

### Obstacles to habilitation

However, her doctorate did not lead to academic employment. The young mathematician was limited to discussions with colleagues and to scientific publications, with which she made a name for herself. In 1909 the renowned German Mathematical Society accepted 27-year-old Emmy Noether as a member. It was not until 1932 that she became the first woman to deliver a major speech at a mathematical conference. In spite of this recognition she continued to work without pay at the mathematical institute in Erlangen.

Mathematicians Felix Klein and David Hilbert had established a “centre of excellence” for mathematics in Göttingen. They promoted female talent and in 1915 asked the gifted scientist to join their institute. Even there she gave lectures without a teaching licence: “Invari-

ant Theory: Prof. Hilbert assisted by Dr. Noether, Mondays 4 to 6, free”.

As early as 1915, these two mentors encouraged Emmy Noether to apply for habilitation (the German qualification for a university lecturer), even though women in Germany were not entitled to do so until 1920.



Even with the strong support she received, it took Emmy Noether three attempts before she was finally granted an exemption and allowed to habilitate in Göttingen in May of 1919.

Again she was a pioneer: she was the first woman in Göttingen to receive a teaching licence, albeit without salary. Emmy Noether depended on her father’s financial support; in later years she lived

off her small inheritance. During the 1920s she published a series of fundamental papers and proposed Noether’s Theorems, which describe the conservation laws of energy and linear and angular momentum.

### Learning from Emmy Noether

In addition to her lecturing and research activities, Emmy Noether spent a lot of time with her students. Hailing from France, China, the Soviet Union and the United States, they disseminated her method, called “conceptual mathematics”. She supervised 13 dissertations and numerous mathematical papers written by students who went on to become renowned mathematicians in their own right. In 1932 Emmy Noether, together with Emil Artin, obtained the important Ackermann-Teubner Memorial Prize for arithmetic and algebra – the only award she would ever receive.

Just one year later, the Nazis revoked her teaching licence. The Jewish woman was considered “left-wing”, and those in power deemed her politically and “racially” undesirable.

In 1933 the president of Bryn Mawr College for women in Pennsylvania invited Emmy Noether to teach as a visiting professor for one year. While in the US, she also lectured at Princeton. In 1935 Emmy Noether died unexpectedly during surgery at Bryn Mawr Hospital. Albert Einstein commented that same year in the New York Times: “In the judgement of the most competent living mathematicians, Fräulein Noether was the most significant creative mathematical genius thus far produced since the higher education of women began.” *lb*



## Searching for Jain Traces in India

Travelogues sparked a passion for India in ten-year-old Julia Hegewald that ended up driving her academic career. Together with her interdisciplinary Emmy Noether junior research group, she now explores the history, architecture and religion of Jainism in the South Indian state of Karnataka. Jains, along with Hindus and Buddhists, constitute one of India's oldest religious communities. Jainism reached its peak between the 5th and 12th centuries, and its followers held important government positions during that period. Today Jains make up only a small minority. Why did the Jains lose power, and what did the political changes mean for them? These are the questions the junior research group tries to answer, in context, for the first time.

### Julia A. B. Hegewald

is an art historian specialising in South Asian Studies at the University of Heidelberg's South Asia Institute



After she finished secondary school, Hegewald, who was born in Aachen, went to Nepal to participate in excavations. It was during this time that she reconsidered her plan of becoming an archaeologist in South Asia. "Not underground but right in front of my eyes

I saw buildings crumble that nobody had ever done research on. I wanted to work on these treasures," says the art historian. She searched for a university that offered everything she wanted to study: the art and architectural history of South Asia, along with Sanskrit, Nepali and Hindi. She chose the School of Oriental and African Studies at the University of London, where she studied and obtained her doctorate.

Afterwards she became a research fellow in Indian Architecture at University College, Oxford. For her doctorate she spent more than 14 months in India. That was when she discovered the numerous Jain temple complexes that had been largely ignored by scholarly literature. Julia Hegewald began a systematic search for structures that were either dilapidated or had been converted to Hindu temples. In four years she had located, recorded and documented Jain temples in about 500 locations across India, and this research formed the basis for her habilitation.

"The Emmy Noether Programme was very appealing to me. It allowed me to continue and conclude my field research. Now I have enough time in Heidelberg to approach the Jains through several disciplines and shed light on unexplored areas," says the 34-year-old. However, she often meets with scepticism at the University of Heidelberg, because although she is neither an assistant nor a professor, she does have her own research budget and her own independent junior research group, thanks to DFG funding.

The art historian recruited a doctoral student from Leipzig into her team to contribute religious expertise, as well as an Indian postdoc to work on historical aspects. The regional focus of the research is on Karnataka. There, in the town of Shravanabelgola, the researchers visited the Mahamastakabhisheka, one of the Jains' most important religious festivals, which takes place only once every twelve years. Afterwards they presented their impressions in a photo exhibit. An academic conference in Karnataka and an international symposium in Heidelberg round off the research project.

KS

**F**irst there were Emmy Noether researchers, then came junior professors. Not only did the Emmy Noether Programme serve as a model for this second new qualification path for future professors, it also inspired other research funders to develop their own programmes for junior research groups and young professors.

The idea of early independence in conjunction with leadership training – all of it at the highest academic level – has penetrated the sometimes ossified structures of research and academia in Germany, thanks to the Emmy Noether Programme. A slow but certain paradigm shift is underway. The introduction of junior professorships was a visible sign of this new orientation in the system.

### A better starting position

However: “Junior professors are not competitive in many cases, while Emmy Noether junior research group leaders are,” concludes a study entitled “Junior Professorships and the Emmy Noether Programme: A Comparative Evaluation Study” by the Young Academy. Composed of young researchers, the Young Academy is a project of the Berlin-Brandenburg Academy of Sciences and Humanities and the German Academy of Sciences Leopoldina. Its members are committed to interdisciplinary academic dialogue and involved at the interface of science and society.

Both groups were interviewed in the Young Academy study. It became clear why “Emmys” do better than junior professors just about everywhere: they have more staff, better equipment, and a lighter teaching and examination load, and they are on average one year younger when they are offered professorships – all of which translates into a better starting position, according to the study.

Another bonus for Emmy Noether junior research group leaders is the “DFG seal of approval” – because of the DFG’s highly respected review process.

In spite of excellent research funding, young scientists and academics lack long-term career prospects. The tenure

track, the clear career path to a permanent position, is an established institution in the United States. In Germany it will be “the big topic” in the next few years, according to education experts. As long as there are no permanent positions on the horizon, German academia will have an increasingly hard time in re-

interim evaluation by the DFG and the university, the position is converted into a tenured professorship, as in the US system. In December 2005 the German Federal-State Commission for Educational Planning and Research Promotion approved the introduction of Heisenberg Professorships.

The Lichtenberg Professorships, which were introduced in 2004 by the Volkswagen Foundation, include the tenure-track option. Their purpose is to motivate uni-

## Toward the Tenure Track

New impulses for German academia

taining top-notch researchers against the competition from universities in other countries. The systematic promotion of young researchers requires that long-term prospects be available – otherwise a lot of effort will be lost.

### Heisenberg Professorship as a shining example

That is why the DFG considers the Heisenberg Professorship as an exemplary model and a logical career step, especially for Emmy Noether fellows. In practice it works as follows: a young researcher finds a university that does not currently have a professor in his/her area of research, so that appointing this researcher would permanently establish a new discipline. The researcher applies for a five-year Heisenberg Professorship, undergoing the DFG’s rigorous peer review. Then the university where the Heisenberg Professorship is to be instituted reviews the DFG-approved candidate in an appointment procedure. If the researcher is chosen, he/she initially becomes a Heisenberg Professor. Finally, after a successful



universities to actively recruit outstanding young professors and engage in timely structural planning. The first young researchers have already been appointed. The foundation funds the positions for five years. Then, following successful

evaluation, these young researchers will be hired by their universities as regular professors. The universities, in turn, are called on to contribute funding from the beginning. The Donors' Association for the Promotion of Sciences and Humanities in Germany pursues a similar path: in conjunction with the Claussen Simon Foundation and the Fritz and Hildegard Berg Foundation, it offers funding for 14 tenure-track junior professorships.

### Strengthening the right to teach

The independent junior research groups sponsored by the Helmholtz Association of German Research Centres also have tenure-track positions at the association's own non-university centres. Since 2004 the organisation has advertised up to 20 junior research groups each year. The programme is initially scheduled to

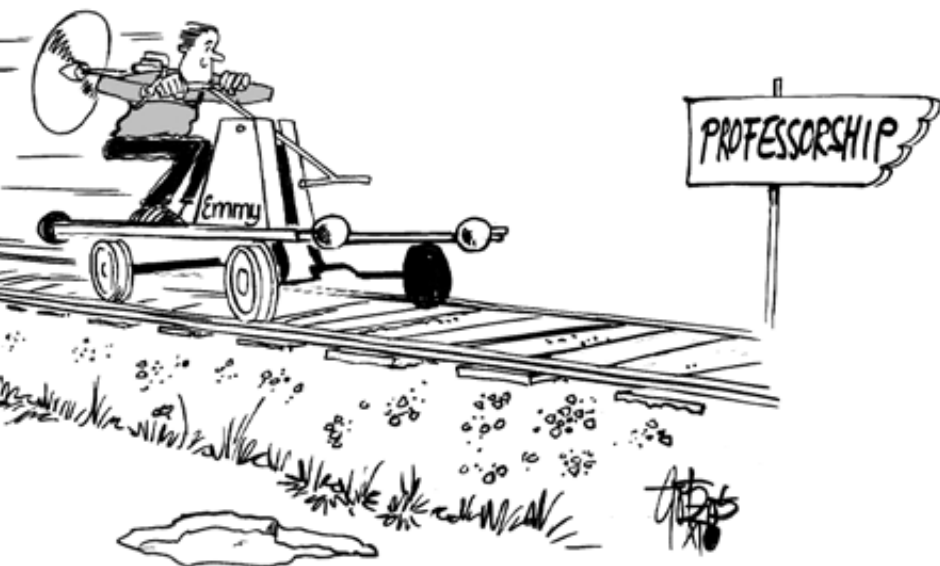
department's focus. Wherever possible, the junior research group leader is also appointed as a junior professor. "These groups in particular are supposed to build bridges between the Helmholtz research centres and universities and enable up-and-coming researchers to gain experience and have access to good partners," says Bärbel Köster, Head of Strategy and International Relations at the Helmholtz Association.

With a view to creating favourable conditions for independent junior research groups, the Helmholtz Association has been inspired and encouraged by the Emmy Noether Programme. Its approach to promoting young researchers is quite similar to the DFG's. "We're on the same page with the DFG, especially in terms of strengthening the independence of junior academics at universities and their

prospects, have existed since 1969. All researchers funded so far have been offered professorships or have achieved high-level positions in science. Twenty directors of Max Planck institutes are former junior research group leaders, according to Susanne Mellinghoff of the MPS's human resources department. Currently there are 57 independent junior research groups. Approximately half the positions for independent junior research group leaders are announced internationally, without specification of the research field or the institute.

"As an alternative to the tenure-track model, the MPS uses a balanced ratio. About half the positions are offered on a fixed-term basis and the other half are permanent. So after the fixed-term contracts expire, there are usually permanent positions available, which are awarded on the basis of scientific evaluations and scientific planning considerations," says Susanne Mellinghoff.

Universities are now pushing for amendments to state laws for higher education so that they can retain their best young researchers and academics – whether by giving junior professors a real tenure-track option or averting the appointment of Emmy Noether junior research group leaders to foreign professorships. Says the DFG's Beate Scholz: "Our goal for the medium term is to make the tenure track available to Emmy Noether fellows as well as to junior professors. We're currently working on models along those lines." *uwf*



run until 2009. The programme funds groups that are based at Helmholtz centres and at universities. The latter are established jointly with universities and address topics that fit both a Helmholtz programme and the university's or de-

partment's focus. Wherever possible, the junior research group leader is also appointed as a junior professor. "These groups in particular are supposed to build bridges between the Helmholtz research centres and universities and enable up-and-coming researchers to gain experience and have access to good partners," says Bärbel Köster. The Max Planck Society (MPS) has a different focus. MPS junior research groups, which offer early independence and subsequent career



## Young Researchers in Demand

Interviews with university experts



**Dr. Marina Frost**  
Vice-chancellor, University of Heidelberg

**How do you rate the Emmy Noether Programme compared to other qualification programmes for up-and-coming academics and scientists?**

Because of its very high entry requirements, the ENP guarantees excellent young researchers and is an outstanding funding instrument. Its special benefits, in my opinion, include independence, freedom to choose research topics, and support of all disciplines. At our university, for example, Emmy Noether independent junior research group leaders are also active in the humanities. That's very valuable, because for natural scientists and engineers there are often more funding opportunities. Another excellent feature are the resources, which provide some relief to universities and their tight budgets.

**How does the University of Heidelberg design the qualification process for its young researchers?**

At the University of Heidelberg we've adopted a programme for the promotion of young researchers. It doesn't primarily deal with funding, but rather it summarises the regulations for these researchers. It is important, first of all, to ensure transparency and to establish clear rules, so that young researchers know what they

are getting involved with. For instance, what are the planning requirements in terms of schedule, finances and concept? How will the researcher be supervised and supported? What internal funding programmes are available? How are teaching and management skills acquired? Laying down these rules is an important first step.

**Young researchers want more planning reliability. What are the prospects for tenure-track options in Germany?**

Within the "Deregulated University" programme, which was launched by the Donors' Association for the Promotion of Sciences and Humanities in Germany, our university is in charge of the project area "Flexible Personnel Structures." One of the things we want to do is try out different versions of the tenure track. For example, it would be possible to have the professorship pre-arranged from the beginning, or to have a tenure battle. We can't guarantee a job for everybody, but at least we can provide the opportunity to compete for long-term positions. Eventually we plan to summarise our experience in a statement, which we will then present as an appeal to all state legislatures to open the way for the tenure track.



**Professor Bernhard Kempen**  
President, German Association of Higher Education

**What is the significance of Emmy Noether independent junior research group leaders for universities and their distinctive profiles?**

Universities know that these are outstanding researchers, with a great future in science and the humanities. However, universities could leverage their strengths better and enhance their strategic positioning to attract these researchers. Universities are familiar with the programme, but it hasn't taken hold as much one might wish.

**What does a successful and attractive qualification path for young researchers look like?**

There can't be only one method of promoting young researchers, because the disciplines and the qualification paths are too different. We need both com-

petition and prospects. On the one hand, the competitive phase has to last long enough to make sure we get the best people. On the other hand, gifted young researchers need appealing prospects. It's not easy to create a healthy balance here. Politicians have tried to provide long-term prospects from an early stage, and without competition. The attempt to give the junior professorship a monopoly as the only path to a professorship, by a de facto prohibition of the habilitation, was doomed to fail from the beginning, because it didn't take into account the different needs of various academic and scientific disciplines. In the past, universities themselves have suffered, especially in international competition, as they couldn't offer long-term prospects until it was too late. Junior professorships do help to invigorate this process, but now we have to see how we can further improve this balance.

#### **How can we make career planning more predictable for young scientists and academics?**

The catchword we often hear in this context is "tenure track". It's an ambiguous term, especially when used in German. It could mean that the ban on internal appointments is lifted and that junior academics are free to apply to any university. Another possibility would be that a university could offer the tenure option to an extraordinary young researcher, pending evaluation at a later time. However, these should be exceptional cases, in our opinion. This type of tenure-track option makes sense, for example, when trying to retain an outstanding young scientist who has received a tempting offer from abroad.



**Dr. Jürgen Lüthje**  
President, University of Hamburg

#### **How well prepared are Emmy Noether junior research group leaders for the profession of university lecturer?**

It seems to me that preparation for future teaching assignments is currently lacking. It makes sense for young scientists and academics to teach on a limited scale, about two semester credit hours, in order to gain specific teaching experience. While the Emmy Noether Programme permits that, it doesn't require it. Important in this regard are teaching qualification programmes such as the one offered by the University of Hamburg. We have an accredited master's programme in higher education, which is also open to Emmy Noether fellows from other universities, and which allows them to train specifically for teaching. Participation should be voluntary, of course, but universities ought to offer such programmes.

#### **Global competition for the best young minds is fierce. What can a German university do to keep up?**

We have to focus a lot more on staff development and make it possible for young academics to apply for specific jobs, including jobs at their own university. I don't think an actual job promotion system would be useful. It is however a good

idea that each career step involves an application and appointment procedure. This is a tried and tested feature of the German university system. Emmy Noether fellows should also always be required to compete with other applicants, and they should be able to do so at their own university as well. The university should check in a timely manner whether there will be a vacancy in the fellow's field of research by the end of the funding period and advertise that position early on.

#### **What are the chances that these jobs for young researchers can actually be created?**

The problems that young researchers in Germany are facing right now stem from the fact that there aren't enough jobs available, relative to the number of highly qualified young academics that our higher education system produces each year. And this in turn has to do with our stagnating academic system, with its lack of staff and funding. The main reason why there are more opportunities in the United States is that American universities and research institutions have better funding. This is where we need to do some rethinking in Germany.

*Interviews: Uschi Heidel*

## Too Young to Be a Professor?

Dr. Johannes Dillinger heads an Emmy Noether independent junior research group at the Department of Modern History at the University of Trier. He enjoys the respect and solidarity of his colleagues. Usually Johannes Dillinger remembers past events very precisely, but when asked about the beginnings of his passion for history, he hesitates and finds it difficult to name a date. "My interest in the past has always been there, and it accompanied me throughout my childhood," The Saarland native recalls. While studying history, Catholic theology and education, he spent two semesters in the UK. "The year in Norwich was very stimulating and changed my view of history," he says. He began to see things also from an anthropological angle, which has informed his work as a historian ever since, including his dissertation on witch hunts in two German territories and his habilitation thesis on the possibilities of political representation for farmers in pre-revolutionary states.

When the Emmy Noether Programme was launched in 1999, Johannes Dillinger applied for it immediately. The DFG accepted him into the circle of fellows, and even today, the historian – one of few humanities scholars among "Emmys" – is enthusiastic about the programme. "Funding is extremely flexible. I was recently granted a one-year extension, which allows me to successfully finish my research."

In 2002 he established his own independent junior research group at the University of Trier – the first of its kind in Rhineland-Palatinate. "I'm largely on par with professors and allowed to examine master's and doctoral students," he explains. To make this possible, exam regulations had to be changed and approved by the state government. "From the very beginning I've experienced great solidarity from all colleagues," says the 37-year-old. His group consists of three doctoral students, two historians and a law graduate. "We meet regularly. I'm the contact person for each phase, but I also rely on the other researchers to take personal responsibility," he clarifies. One thing was especially important to him: "I made it clear from the beginning that this wasn't about competition and that all issues should be addressed openly" – a credo that was well received by his team members.

Johannes Dillinger believes that Emmy Noether junior research group leaders have a definite edge over junior professors. "We've all been selected by reviewers who were not known to us, in a rigorous procedure, so quality is ensured." However, many of his colleagues at universities still don't know enough about the ENP. "The programme and its benefits aren't widely known yet," he observes. "Those who ignore this funding instrument put their own university at a disadvantage." Young, excellent research achievements, managerial skills honed by leading a research group – who could refuse such an applicant? Johannes Dillinger recently learned about a "shortcoming" of "Emmys" when a fellow historian remarked, "You want to be a professor? You're too young!"

/b

### Johannes Dillinger

heads the Emmy Noether independent junior research group at the University of Trier's Department of Modern History



## A Researcher with All His Heart

One in every two Germans dies of heart disease. “Our research findings aren’t just important for the individual, they’re also of great socioeconomic significance,” Dr. Lars Maier states, summarising the implications of his Emmy Noether research project. Even as a medical student in Freiburg, he was intrigued by science and communication. He put his studies on hold and travelled to Sydney, Chicago and Baltimore for research stays. His commitment paid off: he completed his dissertation *summa cum laude*. Afterwards he did research in Chicago for two years as an Emmy Noether fellow and completed his habilitation in Germany, at the age of 32, as one of the youngest medical academics.

With his Emmy Noether junior research group of ten, currently including seven doctoral students, the lecturer at the University of Göttingen’s Heart Centre has been researching the exact causes of

cardiac insufficiency in relation to the heart’s calcium balance since 2003. In addition to calcium metabolism in cells, calcium-independent proteins also play a role here. The goal is to create the basis for the development of a new drug.

“I’m a practice-oriented researcher, so thinking about my patients is as important to me as thinking about research,” says the 33-year-old. After a nightshift or a day’s work at the clinic, he often doesn’t head straight home to his family but rather to the lab. He would like

to conduct experiments there, but time doesn’t permit that. His spectrum of tasks is rather broad as it is: on top of his activities as a physician and researcher, his position as junior research group leader requires him to manage the lab, train doctoral students, and raise additional funds from third parties. So far, the group has had €1.1 million at its disposal. In addition, Lars Maier is also active as a lecturer. “I don’t do research to have an impressive career. I do it because I enjoy it. That’s what drives me. Otherwise I wouldn’t be able to cope with these multiple responsibilities,” he says.

The cardiologist feels well integrated into the university. The university has made additional lab space available to the research group and paid for a confocal microscope. “Our university wants to rank in the top tier in research. Our accomplishments are rewarded here in Göttingen,” explains the scientist. The director of his department, Professor Gerd Hasenfuss, supports the research group through an additional lab technician and a medical assistant, who is the contact person at the lab when Lars Maier is busy at the clinic.

The young physician believes in flat hierarchies. He learned a lot about cooperation and teamwork during his residencies in the US. He is convinced that, “if you

pull together as a team and everybody’s willing to go the extra mile, you’re going to be successful.” He brought another insight with him from the US: “A hundred years ago German scientists were the world leaders in heart research. Now that centre of gravity has shifted to the US. We’re trying to reverse this development.”

KS

### Lars S. Maier

is a cardiologist at the University of Göttingen’s Heart Centre



**E**urope is on its way toward becoming a harmonised education and research area. Funding across borders for outstanding young researchers is the topic of the day. Germany's answer to this challenge is the Emmy Noether Programme. What are our neighbours doing?

"Our new 'Focus' programme, which began in 2006, was modelled after the Emmy Noether Programme. We learned from experiences gained in Germany," says Tomasz Perkowski. The deputy president of the Foundation for Polish Science (FNP) sees parallels between Germany and Poland. "The main obstacle for young Polish researchers is their dependency on a supervisor over many years, because habilitation is mandatory there," he explains. In Poland too a discussion about the second thesis has begun, though it is still in its early stages there, with no concrete alternatives in sight. The most secure option for Polish scientists and academics who have finished their doctorate is an assistant position at their university, because it usually leads to a permanent job after a few years. But many have no certainty in their academic career – not everybody is able to secure such a position, which is why brain drain to the US is an issue in Poland.

The FNP has taken action: "Funding begins after the master's degree in order to motivate young people to remain committed to science and not to leave the country," explains Tomasz Perkowski. In addition to domestic and international mobility programmes, the foundation launched two new programmes in 2006. "Homing" tries to lure Polish researchers who live and work abroad back to the universities of their home country. "Focus" funds excellent scientists in certain disciplines over a period of three years and gives them the opportunity to form their own research group. The FNP works hand in hand with Poland's universities: funding recipients are hired by universities, and the foundation pays for the rest. And Poland thinks across borders – for example by planning to cooperate with Germany's Max Planck Society (MPS). Polish postdocs who work at a Max Planck institute are to be given prior-

ity in the selection process for "Focus", and the institute in question can apply to the MPS for mobility funding. "We're aiming to establish such collaborations with other organisations in several countries as well," says the 36-year-old research manager.

### Funding in three steps

In the Netherlands a discussion about young researchers began in the late nineties. In 2000 the Innovational Re-

search Incentives Scheme was launched. Behind this bureaucratic-looking title is a confident motto: "Veni, vidi, vici". Anko Wiegel of the Netherlands Organisation for Scientific Research (NWO) explains: "When a glaring shortage of young researchers became evident in Dutch universities in the 1990s, the NWO wanted to create a structure that allowed for long-term planning and the training of outstanding young researchers." Julius Caesar's slogan, "I came, I saw, I conquered," accompanies scientists throughout their academic careers. Young researchers who have just finished their doctorates enter the "Veni" phase. If they can demonstrate excellence, they may receive funding of up to €200,000 over a period of three years. This grant is supposed to help them continue their research in the Netherlands or abroad. Postdocs who completed their dissertation three to eight years ago may apply for the "Vidi" phase. During this funding period postdocs gain crucial experience as leaders of their own research groups. The third step is reserved for senior researchers in their "Vici" phase. Eight to fifteen years after their doctorates, they may receive up to €1.25 million. The five-year duration of the grant is meant to ensure a researcher's integration into an institution.

As with the ENP, researcher independence is a key issue. The three-step programme is funded by Dutch universities and the NWO. It has a budget of €715 million from 2002 to 2007. "Since 2000 we've supported 850 scientists and academics from all disciplines. Feedback has been overwhelmingly positive," reports Anko Wiegel. Its effect is similar to that of the Emmy Noether Programme. Anko Wiegel: "To be selected by the NWO has become a seal of quality in the Netherlands, and

## Excellence European-Style

A complete researcher funding package

### Lifelong learning and research

it's often the determining factor for successful applications for permanent positions."

Programmes like these are good news to Georges Bingen. He heads the European Commission's Strategy and Policy Aspects Unit in Brussels and is very interested in national initiatives to support up-and-coming researchers in Europe. "The Emmy Noether Programme is one of the most attractive funding instruments for young researchers, and it clearly adds value to their professional development. At the European level, we consider the ENP to be a generously endowed and effective undertaking," comments the 48-year-old Luxembourger. He looks at promoting young researchers within the context of





the 7th EU Research Framework Programme, which – pending clarification of its finances and details by all member states – should come into effect at the beginning of 2007. With its specific programme “People”, the European Commission wants to promote scientists in research and technology and support the development of an open European job market for

researchers. “Within this framework, we’re planning two important changes that are of interest to young researchers. For example, when it comes to experienced researchers, i.e. postdocs, we want to support the aspect of lifelong learning and research



even more strongly. We avoid the term ‘postdoc’ because our funding may cover the whole period between the dissertation and retirement,” explains Bingen. This funding is equally available to a scientist who wants to go in a new direction after 15 years and applies for a sabbatical, or a researcher who returns from family leave or makes the transition from industry to academia. “The latter may have fewer publications to show than a competing applicant from a university. That ‘shortcoming’ needs to be compensated for,” emphasises Georges Bingen.

Another change: Marie Curie excellence teams will no longer exist in their old form. Up to now a researcher and his/her research group were awarded up to €1.5 million over four years. Georges Bingen would like to see this career-enhancing programme under the care of the European Research Council (ERC). Some have criticised the fact that Marie Curie excellence teams focus on individuals and promote their careers, whereas the ERC emphasises the quality of the project over people. But Bingen counters, “If a project is very good, it’s also going to advance the careers of the researchers who are involved.”

### European Junior Nobel Prize

The European Young Investigator Award (EURYI) has been given to 25 outstanding young scientists each year since 2003. The EURYI Award, which is based on the Emmy Noether Programme, was developed by the European Heads of Research Councils (EUROHORCs) to effectively support young researchers in European countries for five years with award sums of up to €1.25 million. Meanwhile, 18 research funding and science organisations in 16 European countries such as the DFG in Germany, are participating in this excellence programme; Six of the overall 50 award winners are currently working in German institutes, where they head junior research groups and establish their own research focuses.

### For more information see:

- [www.fnp.org.pl](http://www.fnp.org.pl)
- [www.nwo.nl](http://www.nwo.nl)
- [www.cordis.europa.eu/fp7/](http://www.cordis.europa.eu/fp7/)
- [www.dfg.de/euryi\\_award/en](http://www.dfg.de/euryi_award/en)

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**They see themselves as recognised members of a large circle of colleagues, integrated into a common research area, but at the same time working independently. It is this very combination that attracts young scientists to the DFG's Collaborative Research Centres (Sonderforschungsbereich, SFB) where they head their own independent junior research groups.**

"I appreciate the discussions with my colleagues and the exchange of new ideas," says astrophysicist Dr. Martina Wiedner. The young researcher, who completed part of her studies abroad and obtained her doctorate in the UK, feels very comfortable at the University of Cologne's Institute of Physics I.

my Noether Programme when she was doing research at the Harvard-Smithsonian Center for Astrophysics in Cambridge, USA. "I was absolutely thrilled by the idea of being able to freely choose a research topic and a university. Great equipment was another plus. And besides, I wanted to go back to Eu-

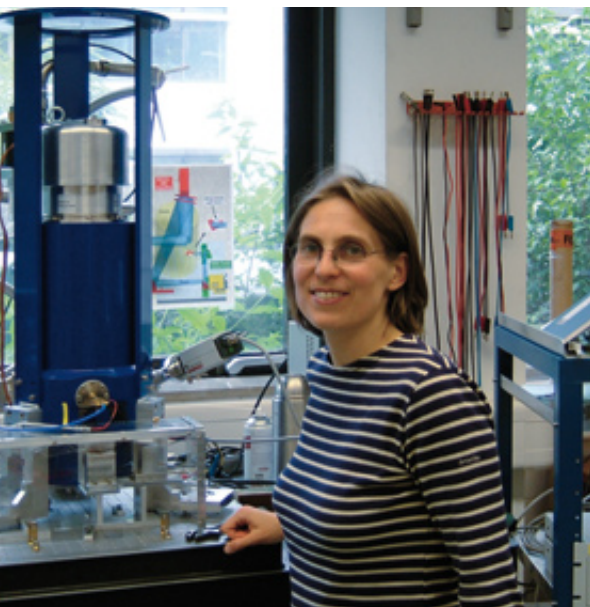
## Choosing Heidelberg over the United States

Dr. Kerry Lee Tucker, an American researcher at the Interdisciplinary Centre for Neurosciences in Heidelberg, would also like to see more planning reliability, commenting: "After all, I'm at an age where I'd like to start a family." Nonetheless, the research incentive has to be the right fit for this developmental bi-

## Labour pains in outer space

As independent junior research group leader in SFB 494, "The Development of Interstellar Matter: Terahertz Spectroscopy in Space and Laboratory," she deals with the birth of stars. Certain stages of star formation are visible only in very short radio waves. They penetrate the dense dust that surrounds celestial bodies. "For that we need special radio receivers, which pose major technical challenges," says Martina Wiedner. Together with her team she built the CONDOR receiver, which recently allowed her to look into space for the first time from the Chilean desert. She hopes that the device at the airborne observatory SOFIA will soon provide further insights.

Martina Wiedner heard about the Em-



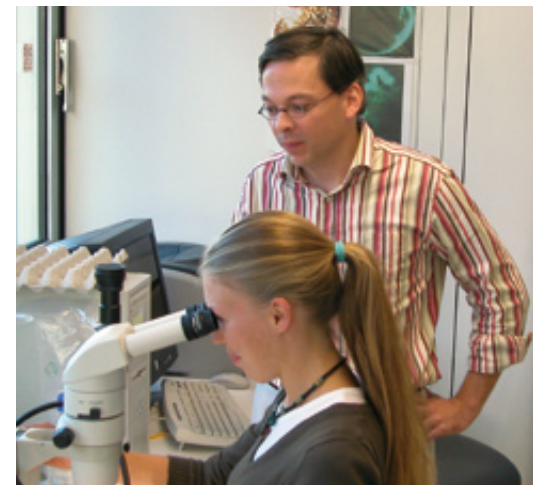
rope after four years in the US," says the physicist. She visited several German institutes. "Cologne seemed to offer the best opportunities."

At the request of the host institute she applied instead as a junior research group leader in the SFB, but she keeps in close contact with "Emmys" at annual meetings and at regular researcher get-togethers in town. Discussions mostly involve issues that researchers have to cope with in their daily practice: How do I handle students or rather dominant professors? How do I position my group within the institute or department?

Once her position expires, the university plans to continue to fund Martina Wiedner for another year or two. After that she will have to look for a job. "Promising a permanent position from the outset isn't necessary, and it's difficult for universities to do so when they hardly know a candidate. But as a reward for doing good work at the university, it would make sense to have the possibility," says the scientist.

## Concentrated Expertise

Collaborative Research Centres: young researchers exchange ideas



ologist, which is why he declined a well-funded tenure-track position in the US to stay in Heidelberg.

He finds ideal conditions here: "The research environment is rich in good people and ideas. There's a variety of choices available. I can collaborate with different institutes and exchange ideas with experts in various fields." Tucker's junior research group belongs to SFB 488, "Molecular and Cellular Bases of Neural Development," which is the centre's most substantial research funding instrument.

In 1997, right after earning his doctorate, Tucker came to the Max Planck Institute of Neurobiology in Martinsried. Later he followed his supervisor to the Friedrich Miescher Institute for Biomedical Research in Basel. "At some point I wanted to head my own group, so I responded to an ad in the journal *Nature* for an SFB position."

The scientist investigates very early development stages of nerve cells, especially the formation of axonal outgrowths. These must navigate long and complicated pathways before they reach their target. Understanding the genesis and development of nerves requires observing them "on location". To this end, Kerry Tucker uses transgenic mice which he engineered himself. They produce a luminous green protein in newborn nerve cells and thus allow for visual observation of the development process. The junior research group also examines this process in real time under the microscope. In addition, Kerry Tucker uses the gene locus in the transgenic mouse for other genes. "That way we can determine to what degree different genes influence nerve development."



### Keeping in touch with peers

Change of scenery: IFM-GEOMAR in Kiel. At the Leibniz Institute of Marine Sciences at the University of Kiel, Dr. Marion Jegen-Kulcsar works in SFB 574, "Volatiles and Fluids in Subduction Zones: Climate Feedback and Trigger Mechanisms for Natural Disasters." The geophysicist has expert knowledge that used to be virtually nonexistent in Germany. "I'm sure that was one of the main reasons why the SFB selected me as junior research group leader," she says. Marine electromagnetics is the name of her research field, which she helped advance in Canada, the UK and France. "Germany is great in terrestrial electromagnetics, which is why I'm happy to work here, but there's a lack of expertise and equipment in marine electromagnetics."

Electromagnetic technology measures underground electric conductivity, which is mainly determined by fluids. Specifically, the scientist conducts research in the Pacific, off Central and South America. In these subduction zones, an oceanic plate meets a continental plate and slips underneath it. This triggers fluid and volatile recycling processes, which have a significant influence on climate, the depth of earthquakes that may arise in these areas, as well as the development of volcano eruptions and the formation of tsunamis.

"In the SFB, I can take advantage of the benefits of interdisciplinary work in a larger research context," says Marion Jegen-Kulcsar. "For example, we can collaborate to analyse the rich data we collect in our major testing campaigns in the sea, using our diverse expertise, and thus arrive at better results."

Marion Jegen-Kulcsar specifically wanted to return to Germany and settle down here in the long term. "I have two small children, and I can't keep moving them around from place to place." She also wants to network with German experts in her field, which she wasn't able to do during her many years abroad. *uw*

With about 270 Collaborative Research Centres (SFB) across Germany, the DFG creates structures for excellent research. The programme supports scientists who collaborate within, as well as beyond, their disciplines. Its goal is to focus the expertise that exists at a university and to develop a research emphasis. In about one out of ten SFBs, young scientists head their own research groups, recruited through the DFG. Emmy Noether researchers and their groups can also be integrated into an SFB.

**M**ost chairs in computer science were established in the seventies. This generation of professors has mostly retired by now, and there is a dearth of qualified young computer scientists to fill the gap.

Computer science is the key to today's networked world, and knowledge of this subject is needed in all areas of society. Nonetheless, academic computer science is short of promising young experts. "At the turn of the millennium, many chairs became vacant due to a wave of professors retiring," explains Dr. Gerit Sonntag, Programme Director for computer science at the DFG. In 2002, in response to the shortage, the DFG launched the "Action Plan in Computer Science," which is a variant of the Emmy Noether Programme.

"Young computer scientists often end up going abroad and staying there, due to attractive job offers," says Gerit Sonntag. This is where the Action Plan came in – by encouraging more young scientists to embark on an academic career in Germany and by winning back young researchers currently working abroad.

### Foreign experience not mandatory

"We changed the prerequisites for admission. The foreign experience requirement didn't necessarily have to be demonstrated through a two-year research period abroad. We also recognised international publications as a form of international networking," says Gerit Sonntag. The response affirmed the intention of the programme designers: during the three-year programme duration, the DFG received a total of 162 proposals; 66 candidates were interviewed by reviewers, and 28 young researchers were awarded funding.

One of them is Dr. Mareike Schoop. She has been professor of business computing at the University of Hohenheim since 2004. She was offered the chair in Hohenheim – and another one at the University of Koblenz-Landau – while she was still in the programme.

Mareike Schoop was seriously considering remaining abroad. "I got my doctorate in Manchester and would've liked to stay in the UK for a bit longer. But then again I also wanted to pursue an academic career in Germany," she remembers. An assistant position at the Aachen University of Technology per-

sueded the computer scientist to return to Germany for her habilitation. When her supervisor brought the Action Plan to her attention, she wasn't immediately fired up about it. "The application didn't really fit with my schedule." But ultimately Mareike Schoop was persuaded by the programme's attractive terms. She points out the benefits of DFG funding for her further qualification: "As a junior research group leader, I was in charge of business computing in Professor Jarke's team in Aachen. That allowed me to further enhance my profile, which is definitely an asset for future applications."

### Making noise is part of the job

To help young computer scientists make a name for themselves among experts in their field, the DFG supports networking activities. Junior research group leaders funded through the Action Plan are invited to attend not only the multidisciplinary annual Emmy Noether meetings but also the yearly meetings of the

## Impulses for Young Science

Action Plan in computer science promotes new generation of professors



German Computer Science Society. "It's where the generations can exchange experiences and where young researchers can introduce themselves and raise their profiles," says Gerit Sonntag. The "DFG seal of approval" alone is not enough to convince veteran colleagues. "At these meetings, junior scientists are observed and evaluated in terms of who's a good fit for a certain university," says Gerit Sonntag.

This was a hurdle that Mareike Schoop took in stride. The computer scientist substituted for a professor in Münster, supervised her junior research group in Aachen, and received appointments to Hohenheim and Koblenz during this period – it doesn't get any more seamless than this. "The leadership experience I gained through the 'Action Plan in Computer Science' has been very beneficial for my work as a professor. I already knew what it was like to supervise and be responsible for my staff," says the 35-year-old, looking back on her start in Hohenheim. Thanks to these experiences she was able to fully concentrate on her new tasks as a chair holder.



The Action Plan brings additional solid benefits. "When offered a chair, a scientist can take along the funds that were granted for a five-year term," explains Gerit Sonntag. That is why Mareike Schoop was able to provide the University of Hohenheim with two employees for three and a half years – at no cost to the university.

This five-year guarantee, regardless of location, is also important for doctoral students in Emmy Noether junior research groups. "Promoting young researchers doesn't stop with the first professorship. I told my associates from the beginning that I expected them to be mobile, and in return I want to offer them prospects for the future," emphasises Mareike Schoop. Due to the attractive ENP funding, she just turned down a third offer, at the University of Vienna.

In the meantime the Action Plan in Computer Science has finished. "This special programme was a trial run for the modified admission criteria. Meanwhile, they've been adopted by the entire ENP," says Gerit Sonntag, pleased with the outcome after three years of funding. Five computer scientists have been offered professorships, and more are in negotiations.

## Electronic negotiations

By appointing Mareike Schoop as professor, the University of Hohenheim has positioned itself at the cutting edge in the field of business communication. The computer scientist and her team are developing programs that support business partners in negotiations. "As business is becoming increasingly global it's getting harder and harder to negotiate at the same place at the same time, and e-mail communication is too unstructured and therefore inefficient," explains the scientist.

The goal is to support decision-making processes, rather than to create standardised "answer machines." The "Negoisst" system, which was developed by Mareike Schoop, can analyse the type of a message and then project the effect of a certain decision on the entire project. As a service function, agreement drafts can be generated based on decisions made and amended with each new decision. The young computer science professor needs to consider more than just system-related issues. At least as important is the trust that potential users put in the program. "People act, and the system supports and accelerates communication," says Mareike Schoop.

The North German native is a pioneer in another sense as well: she is one of only a few women in a field where less than ten percent are female. "I learned early on to assert myself," she remembers. As a professor she tries to be a role model for other women: "Many female students attend my classes. I want to encourage them to keep pursuing their academic path, so that the professoriate will also change in the long run." lb

## Young Researchers Want Clear Commitments

Looking beyond the quick fix

**L**iterary scholar Dr. Sandra Pott studied political science, German, art history and philosophy at the University of Hamburg. She earned her doctorate at the age of 25, and five years later, following research stays in London and Paris, she finished her habilitation. The lecturer has headed the Emmy Noether junior research group "Poetological Reflection" in Hamburg since 2003. In 2005 she was awarded the Heinz Maier-Leibnitz Prize by the DFG. Sandra Pott is active in higher education politics and serves on the International Expert Commission of the Elite Network of Bavaria. Beginning in September 2006 she will teach and conduct research as a reader in German at King's College, University of London.

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**According to the agreement on the federalism reform, the individual states will be in charge of their universities' areas of expertise. What effect do you expect this to have on Germany's academic landscape?**

Competition between the individual states, between innovative and reproductive regions, will increase, which I believe is a good thing in and of itself. The academic landscape will become more differentiated because clusters of excellence will form. However, in the long run it will also mean that some universities aren't going to survive. The landscape is going to change significantly, and – this would be the worst-case scenario – sectionalist tendencies will emerge, a kind of academic provincialism. Also, the individual states will primarily focus on their own development, in order to hold their ground at a national level. This could hamper them in competing on a global level.

**What does this development mean for young researchers?**

Young academics and scientists want to participate in innovative developments and will therefore flock to these centres of excellence. A fundamental restructuring of higher education might also increase the brain drain to other countries. Young researchers may go abroad to gain experience and to wait

and see how things develop in Germany. To prevent that, we would need, first and foremost, to establish clarity about qualifications across the nation. Young academics and scientists need to know which qualifications will be required going forward. Junior professorship as an alternative to assistantship is certainly a promising model. However, it hasn't been able to establish itself as a standard qualification path, so young academics will continue to pursue a variety of career paths, at substantial individual risk.

**Federal Minister of Research Annette Schavan in her policy statement promised "dependable career paths" for young academics. What do you expect from the minister?**

The thrust of this statement is very encouraging, but it's too vague. Also, the minister focusses on junior professorships alone and pretty much ignores independent junior research group leaders who have already undergone multiple evaluations and gained leadership experience.

We need more than vague promises, and fewer fixed-term appointments. We need a clear commitment to goal and performance agreements, which ultimately translates into tenure tracks. That's the only way we can offer clear prospects to young researchers, who

in turn will ensure that Germany can compete internationally as a centre of science and research. In addition, a Europe-wide job market for researchers would constitute a key step toward more openness and flexibility.

**How will different university admission criteria and qualifications change higher education?**

That will certainly vary widely from subject to subject. Even today we have significant differences: a bachelor's degree from one university may not qualify you to enrol in a master's programme at another university. Although this may lead to desirable differentiations, it also causes limited mobility and flexibility for academic careers.

Therefore, comprehensive evaluation of study programmes is becoming more and more important. Criteria that vary widely from university to university need to be at least somewhat harmonised.

Other countries, such as the UK and the Netherlands, have a sophisticated evaluation culture that has implications for the allocation of funds, the image of any given institution, and the appointment of active young researchers. Germany should form an alliance with these countries to contribute to the development of a European Research Area.



### What do you think of the current reform proposals and initiatives?

Scientists and academics are currently being inundated with reform proposals. The question remains, however, whether they can undertake these efforts on top of their regular research and teaching commitments. The spirit of reform is laudable, but politicians need to give us more time to implement these changes. Converting to the BA/MA system takes time, and so does implementing the Excellence Initiative. Science needs a wide time horizon, beyond the quick fix.

I welcome the fact that universities are given more autonomy, but that's just lip service unless there's enough money to back it up. Structural planning with financial deficits ultimately leads to nothing but intra-university cannibalism. Without the appropriate investments, be it at the state or the federal level, you can't create centres of excellence.

### The Excellence Initiative, federalism reforms and tuition fees are all factors that will increase competition. What's in store for the individual scientist?

German scientists and academics are quickly adapting to these new conditions, as the applications for the Excellence Initiative have shown. The Excellence Initiative swept all universities into action – researchers teamed up with

in their disciplines to develop projects. They also started to communicate more across disciplines.

When universities get excellence projects approved, this will have a substantial impact on their faculties. Because then they'll have to develop graduate programmes, for example, fill them with content, and do so over a longer period.

But the implementation of these projects is jeopardised by the wave of professors retiring from university service. Sufficient staffing is an essential prerequisite for excellence projects to succeed.

### Which framework conditions need to be improved to entice German scientists to return from abroad?

First of all, the subject in question must be represented in an innovative fashion at the German university. Then there's

the introduction of tenure-track options. A third factor would be the relationship to colleagues. Somebody who has experienced and learned to appreciate flat hierarchies in the UK or the US is going to expect similar decision-making structures in a job in Germany.

Also, appointment procedures in this country are very slow and aren't particularly transparent. In the UK, for example, an applicant can consult an exact timetable that specifies the various dates and when certain decisions will be made, which is very helpful. Individual departments can make decisions relatively independently, which speeds up the process – just one example of the benefits of an autonomous university.

*Interview: Isabell Lisberg-Haag*

## Wanted: Long-Term Prospects

Sometimes the paths that lead to excellence grants are unspectacular. "I was walking down the hall at the University of Paderborn and saw a bulletin that said 'Doctorate – and now what?' It struck a chord," remembers Dr. Oliver Huck. He met with a research officer who showed him different avenues – one of which led to the Emmy Noether Programme. It wasn't the first time that this musicologist had to deal with "proposal culture" – frequently a daunting task for humanities scholars. But the 36-year-old acknowledges its positive aspects as well: "These applications also force us to find answers to questions we haven't asked ourselves before." Oliver Huck tries to pass this insight on to his doctoral students.

While he was still at school, Oliver Huck decided he wanted to study music. But he wasn't content with mastering several plucked instruments. He was interested in historical issues, which is why he ultimately ended up studying musicology at the University of Paderborn. In his dissertation he followed the tracks that led Carl Maria von Weber to write his best-known work, "Der Freischütz". His habilitation, which was awarded a prize by the University of Jena in 2005, also deals with a historical subject: early trecento music. A special challenge here were the sources: "We have written notation but no audible results. They did begin to notate tone duration in the 13th century, but not the tempo," explains Huck.

His search for explanatory models is aided by the composition of his independent junior research group. A Romance scholar analyses linguistic aspects such as Italian metrics. Her findings about metre and stress may in turn provide clues as to what a musical recital might have sounded like 600 years ago.

Oliver Huck is very pleased with his work in Jena. "An advantage of the ENP is that, unlike junior professors, we're free to choose our university," he points out. "I work in a highly dynamic environment. Performance isn't defined by one's job title here but by one's achievements as an academic."

He does find the ENP lacking in one regard: there is no tenure-track option. In some states, junior professors may be appointed to tenured professorships – an option that is not yet open to ENP junior research group leaders. "That's regrettable. Highly qualified ENP candidates should have this opportunity too," he says. As for himself, Huck managed to make the jump without tenure track. In the 2005/2006 winter semester, he took up a professorship in historical musicology at the Würzburg College of Music, where he received another offer of a professorship in historical musicology from the University of Hamburg.

### Oliver Huck

is a musicologist at the Würzburg College of Music





## Expert on Bee Colonies

As a small boy, Dr. Peter Neumann was intrigued by ants. He fed them chocolate and observed how quickly the six-legged creatures organised themselves and carried off their booty. "Social insects are my hobby. I want to understand how they function," says the biologist. It is a coincidence that he works with bees these days. "I studied with a bee researcher at the Free University of Berlin. His enthusiasm rubbed off on me," says Peter Neumann, now a worldwide bee expert in his own right.

After a three-year research stay at Rhodes University in South Africa, he assembled his Emmy Noether junior research group at the University of Halle-Wittenberg. From 2001 to 2005 he researched social parasitism in bee colonies, together with three doctoral students, two of whom were funded through the German Ministry of Food, Agriculture and Consumer Protection. The fundamental question was:

What mechanisms cause worker bees from one colony to invade another bee colony in order to take advantage of it for their colony's reproduction?

During the last three years, the subject was expanded by introducing another species: the small hive beetle. Native to Africa, this parasite has spread to North America and Australia, and last year it reached Europe as well: "I work wherever the beetle is currently causing trouble," says the evolutionary biologist. The beetle destroys honeycomb structures, spoils

honey, and sometimes causes significant damage to the beekeeping industry. It may also infest wild insects such as bumblebees and stingless bees. All of this spells danger to biodiversity and agriculture: without bees there is less pollination and therefore poorer crops.

As a bee expert who can present complex facts in an accessible way, Peter Neumann is popular with the media. He has also made a name for himself as a university lecturer. Over the past few years, he has supervised seven postgraduate and 22 undergraduate students, held 45 seminars and led 12 excursions. Peter Neumann commends the Emmy Noether Programme: "I was able to choose what to focus on and use the funds very flexibly, as needed for my research." For his fieldwork and as a visiting professor, the bee researcher frequently travels abroad. He has contacts in Australia, China, Austria, Finland and the UK, as well as in South Africa and North and South America. "In 2006 I'll be in Germany for three months, four at the most," he says. Peter Neumann habilitated in 2004. The lecturer – after wrapping up the Emmy Noether

junior research group – is now on the lookout for a full professorship. "I'd like to stay in Germany, but I've also received enquiries from South Africa, Australia and the United States," says the Berliner. He advises his doctoral students to think twice about an academic career, even though he himself did not give the issue much consideration after he finished his doctorate: "There was no alternative for me. I'm a researcher."

KS

### Peter Neumann

is a biologist at Martin Luther University's Institute of Zoology in Halle-Wittenberg



# Research in Germany

Annual meeting of Emmy Noether researchers in Potsdam

The hotel lies amidst woods and meadows, right on the shore of Lake Templin on the outskirts of Potsdam. This is where Emmy Noether researchers gather once a year at the invitation of the DFG. They discuss the latest political developments in higher education and formulate demands on behalf of young scientists and academics in Germany. Since 2002 this meeting has been a fixture of the Emmy Noether Programme.



Young researchers compare notes about their experiences as “Emmys”, talk about their research findings, and discuss professional options for researchers in Germany. From an internationally informed viewpoint, they discuss specific reform proposals, such as the introduction of dependable career paths based on a US-style tenure-track system, or the institutional integration of Emmy Noether junior research groups at universities. Feedback from funding recipients is crucial and enables the DFG to work closely with them to further develop the programme.



## High-profile guests

High-ranking discussion partners indicate how well-regarded the DFG programme is when it comes to promoting excellent young researchers. Guests have included former Federal Minister of Education and Research Edelgard



## Press Review

Newspapers like to report about successful young researchers.



Einbecker Morgenpost, 10.01.2005





Bulmahn, former Minister of State for Culture Julian Nida-Rümelin, then State Secretary Wolf-Michael Catenhusen, DFG President Ernst-Ludwig Winnacker, as well as university chancellors and vice-chancellors.

In 2003 the "Political Evening" revolved around the topic "Academic Elite in Germany: Continuity in Promoting Young Researchers." In 2004 the topic was picked up again by young researchers and guests, this time with an emphasis on comparing junior professors and Emmy Noether junior research group leaders. At the 2005 annual meeting, participants spoke about opportunities and obstacles for research as they result from Germany's federal structure. For years to come there will be no shortage of interesting topics to discuss. *KS*



Emmy Noether annual meeting, 15-17 July 2005 in Potsdam



Gießener Anzeiger, 26.02.2004

## Noether-Stipendium erstmals an Tierärztin

Dr. Sarah Lan Kocks von der JLU kann in Belgien arbeiten

GIESSEN (W). Ein Stipendium aus dem Emmy Noether-Programm der Deutschen Forschungsgemeinschaft (DFG) erhält die Tierärztin Sarah Lan Kocks am Institut für ...

... zur calciumabhängigen Sekretion von Chlorid im Dickdarm und deren Überregulation durch einen zytosolischen Calciumkanal, den Ryanodinrezeptor, promoviert, heißt es in der Pressemitteilung. Emmy Noether war eine bedeutende Mathematikerin, die als erste Frau im Jahr 1918 an der Universität Göttingen habilitiert wurde – zwei Jahre bevor Frauen dieses Recht offiziell zugestanden wurde.

... de Forscher

Die ZEIT, 13.05.2004

## CHANCEN

### Turbo für Jungforscher

Es gibt sie noch, die guten Nachrichten aus der deutschen Universität. Das Emmy Noether Stipendium ermöglicht Nachwuchswissenschaftlern den schnellen Weg zur Professur. VON ANNETTE LESSMÜLLMANN

... Problem: der bescheiden Name heißt Kinder sind Karriere zu verhindern. Denn ich will keine im Talente abwarten. Ich bin die zweite Frau in Barbara Kung die Offiziere der DFG, welche Barbara Kung die Offiziere der DFG, welche ...

... in Amerika gehen sie nicht" sagt Kung. "Die DFG will nur die Qualität, nicht die Idee." Die DFG, die für Gender noch und hat sein Beispiel im Fachbereich der Genderwissenschaft und 25 ...

... Das Institut der 500 Exzellenzen – ein ...

# Emmy Noether- Programm

Deutsche  
Forschungsgemeinschaft

**DFG**

