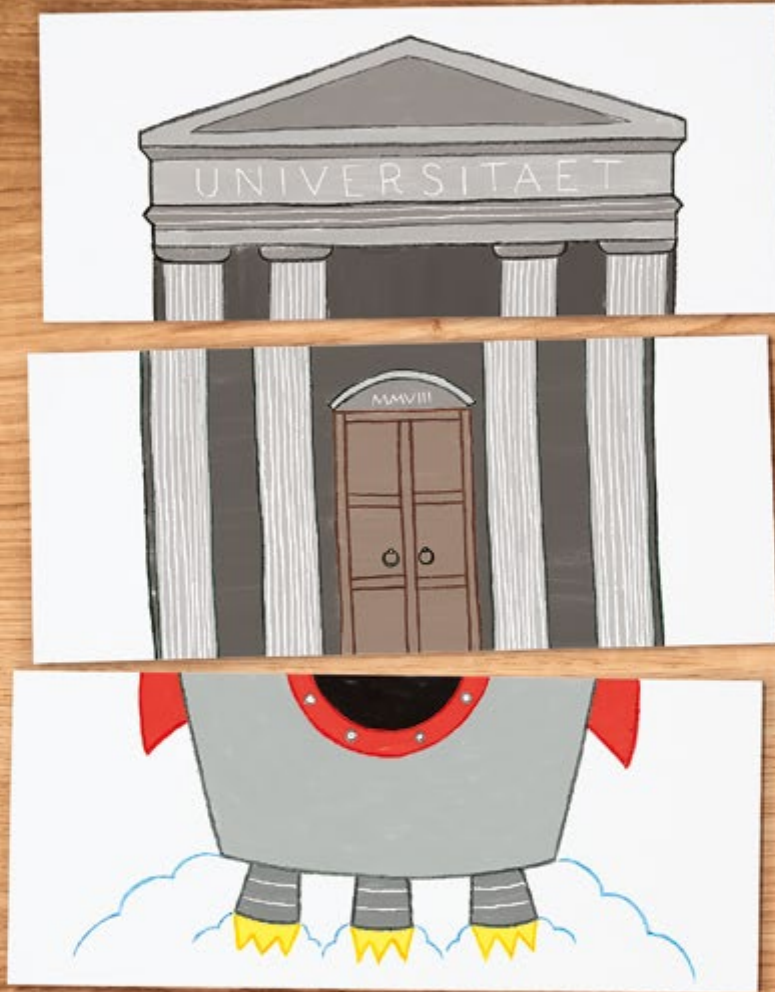


HUMBOLDT KOSMOS

Research – Diplomacy – Internationality

DEUTSCHE
VERSION:
BITTE
WENDEN



Coming to change

Ten years of Alexander von Humboldt Professorships

ALL LOVE EACH OTHER

The advantages of polygamy and why it so seldom works

THERE'S SOMETHING WRONG HERE

How social media can make science better



Alexander von Humboldt
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Federal Ministry
of Education
and Research



Alexander von Humboldt
Stiftung/Foundation

Ten years of Alexander von Humboldt Professorships

With a value of five million euros, the Alexander von Humboldt Professorship is the most highly-endowed research award in Germany and draws top international researchers to German universities. It is financed by the Federal Ministry of Education and Research.

www.humboldt-professur.de/en



MY (NON-)SELFIE WITH THE GERMAN PRESIDENT

Hello, can you see the guy at the back of the pic with the engaging smile? That's me. I'm surrounded by hundreds of Humboldtians at the Humboldt Foundation's Annual Meeting in the beautiful grounds of Schloss Bellevue, the main residence of the German head of state in Berlin. Federal President Frank-Walter Steinmeier just held a speech welcoming his guests. And now we are all waiting to meet him personally and – best case – get a photo taken together. Of course, not everyone will be so lucky. After all, the President doesn't have all day.

Well, in the end, I at least, was not successful – or that's what I originally thought. After shaking countless hands and posing for as many selfies, the President took his leave without having a photo taken with me. But, luckily, there was this extremely friendly Ghanaian, Fati Aziz. When she looked at the photo of herself with Mr Steinmeier, she was pretty astonished. Who had photobombed her picture? Later on, she recognised me and told me about it. We had a good laugh and then she sent me the photo. Luck was on my side. My quest for a selfie finally paid off: I got a great photo and a wonderful souvenir of Berlin and the Annual Meeting.

Incidentally, the same sort of thing often happens to me in the lab at the Max Planck Institute of Biochemistry in Munich where I'm still working after completing a Humboldt Research Fellowship. My team and I are using cryo-electron microscopy, or cryo-EM for short. It's a method of imaging cells which was recognised with the most recent Nobel Prize in Chemistry. We often search for a specific phenomenon like the cause of a particular neurodegenerative disease and then, after weeks of research, we're surprised when we discover something completely different. But this unexpected result often leads to other, extremely helpful insights.

To be open to the unexpected and new – new contacts, new influences, new ideas – this is really important to me, both in my research and in my private life. And you find all these things at the Humboldt Foundation's Annual Meeting. I made lots of new friends there who do research in the most diverse fields. In the future, I'm sure there will be opportunities for us to collaborate in one way or another. Then I will certainly do my best to shoot another selfie. ●

Recorded by **THOMAS DUNKEL**



Until July 2017, **QIANG GUO** from China was a Humboldt Research Fellow in Martinsried at the Max Planck Institute of Biochemistry where he continues to work. He shared the selfie with the Federal President on Twitter where his name is @QiangGuo_EM.

Photo: Humboldt Foundation / David Auserhofer



Dear readers,

Five million euros to get a researcher from abroad to relocate to a German university! When the Humboldt Foundation launched the Alexander von Humboldt Professorship ten years ago, the sponsorship amount caused furore. Those in the know commented that research was starting to get like football with its transfer market.

Football comparisons always seem to work somehow or other. But if this makes you think of the Ronaldos, Neymars and all the other European clubs' superstars with their hundreds of millions, that is not what this is all about. Only a fraction of the money associated with the Humboldt Professorship flows into a competitive salary for a brilliant, internationally-coveted academic. The lion's share is used for building new structures, labs, teams and for materials.

In the end, it is not so much the salary that governs the decision to relocate but the ideal research environment, the high degree of freedom and, last but not least, the trust implicit in being granted a Humboldt Professorship.

Apart from excellent research, what is expected of the recipients of a Humboldt Professorship is, first and foremost, that they create something new, inject new ideas and bring a fresh breeze. They come to change things.

To investigate whether, and to what extent, this concept works, the Humboldt Foundation commissioned a survey. In this magazine, you can read about the results of the evaluation as well as what the German science scene and Humboldt Professors themselves think about Germany's most valuable research award.

GEORG SCHOLL

Editor in Chief



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The Humboldt Professorship enables German universities to attract top international researchers with fantastic offers. A review of the first ten years.



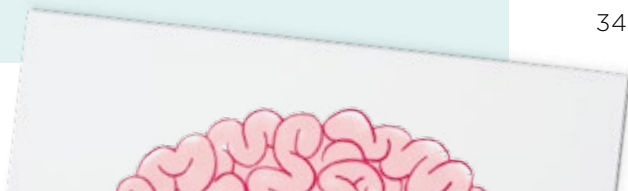
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BRIEF ENQUIRIES



Photo: Humboldt Foundation/Nikolaus Brade



HOW DO YOU MAKE ONLINE MAPS MORE SOCIAL, MS LEAL-TAIXÉ?


Online services like Google Maps mean that nowadays everyone can find their way to Munich's Oktoberfest without any difficulty. But these online services still have their weaknesses. "If I want to get to the *Wiesn*, the digital map shows me the way," says Laura Leal-Taixé, "but it doesn't say, only leave in 20 minutes if you want to get through better."

This is the kind of social information the computer scientist, who recently moved to Munich from Barcelona, wants to integrate into digital maps in her "Social Maps" project. So far, these services do not factor in how and when people interact in public spaces and the movement patterns that result – they neglect human traffic flows of pedestrians, cyclists or even schoolchildren. "What is usually a clear path can quite suddenly become completely blocked because a group of tourists crops up or lots of children all rush out of school onto the street at the same time where their parents are waiting in their cars to pick them up," says Leal-Taixé.

She wants to capture and evaluate dynamic scenes like this in video sequences using special mathematical tools. These algorithms are not only able to analyse human traffic flows, they can even predict them. This could also be useful for town planners. When building a railway station, for example, it would make it easier to plan where and how many exits are required to channel commuters. Even if it does take a while before digital maps tell you the best time to head for the Oktoberfest – the "new Municher" has already bought her dirndl. ●

Text KRISTIN HÜTTMANN

DR LAURA LEAL-TAIXÉ is a Sofja Kovalevskaja Award Winner who heads a research group at the Chair for Computer Vision and Artificial Intelligence at the Technical University of Munich (TUM).



IS THERE A CONNECTION BETWEEN PREJUDICE AGAINST BLACK PEOPLE AND POLICE VIOLENCE, MR CALANCHINI?

Photo: Humboldt Foundation / Jessica Alice Hath

“Black man shot by police during traffic control in US” – reports like this always cause dismay around the world. It seems likely that racism could be the reason for police violence but, so far, no-one has published any scientific studies on the issue. The most recent research findings of social psychologist Jimmy Calanchini are now delivering the first empirical indications.

He and his colleagues discovered that the risk of black people being killed by police in areas with high levels of racial prejudice is greater than elsewhere. Because there are no reliable official statistics on police violence in the United States, the researchers used data collected by the British daily *The Guardian*. The *Guardian*’s database chronicles how many people of each ethnicity are killed by police in each region. In 2015, for example, 1,146 people died because of police use of lethal force. Calanchini and his colleagues compared these figures with data

generated by two million US citizens in response to a worldwide online survey on implicit bias – and uncovered a clear statistical correlation. In areas where the white population had stronger biases against black people, a disproportionate number of black people died as a result of police violence, even after accounting for alternative explanations such as regional crime rates.

“Did the police use lethal force because they share the prejudice of the local population? Or are the local population’s prejudices against black people fuelled by local media reporting on such incidents? Both are possible, so further research is necessary,” Calanchini emphasises. ● *Text KRISTINA VAILLANT*

DR JIMMY CALANCHINI has been a Humboldt Research Fellow at the University of Freiburg since 2016.

CAN LITERATURE CONNECT WORLDS, MS FATHY?



Photo: Humboldt Foundation/Nikolaus Braide

With her students she first reads a novel about the fall of the Wall in Germany and then the history of a young woman who joins the Arab Spring in Cairo. “Both books are about suppression and the longing for freedom,” says the Egyptian Germanist Hebatallah Fathy, “and that appeals to people in all cultures.”

The professor for Modern German Literature at Cairo University aroused a great deal of interest in the East German citizens’ movement with her comparison of novels. Now, as a visiting professor at LMU Munich, Hebatallah Fathy would like to enrich German teaching here, too. In addition to Goethe, Schiller and Fontane, she suggests reading some authors with foreign roots living in Germany. “For example, the extremely eloquent writer of Turkish origin, Feridun Zaimoğlu, or Abbas Khider who so magnificently describes his flight from Iraq and arrival in Germany.”

Hebatallah Fathy has built bridges to Arab culture for as long as she can remember. The daughter of a diplomat brought up in Berlin, she studied German in Cairo, took her doctorate in Münster and has worked on research in Germany at various times ever since.

In Munich she is currently developing modern formats for teaching literature abroad. And by the by, she has started a German-language literary competition for refugees. “They are wonderful texts,” says Fathy, “they bring worlds together.” ● *Text LILO BERG*

DR HEBATALLAH FATHY is a visiting professor at LMU Munich. From 2009 to 2010, she was a Georg Forster Research Fellow at the University of Giessen.

WHAT IS IT ABOUT POLYGAMY, MR JUNKER?

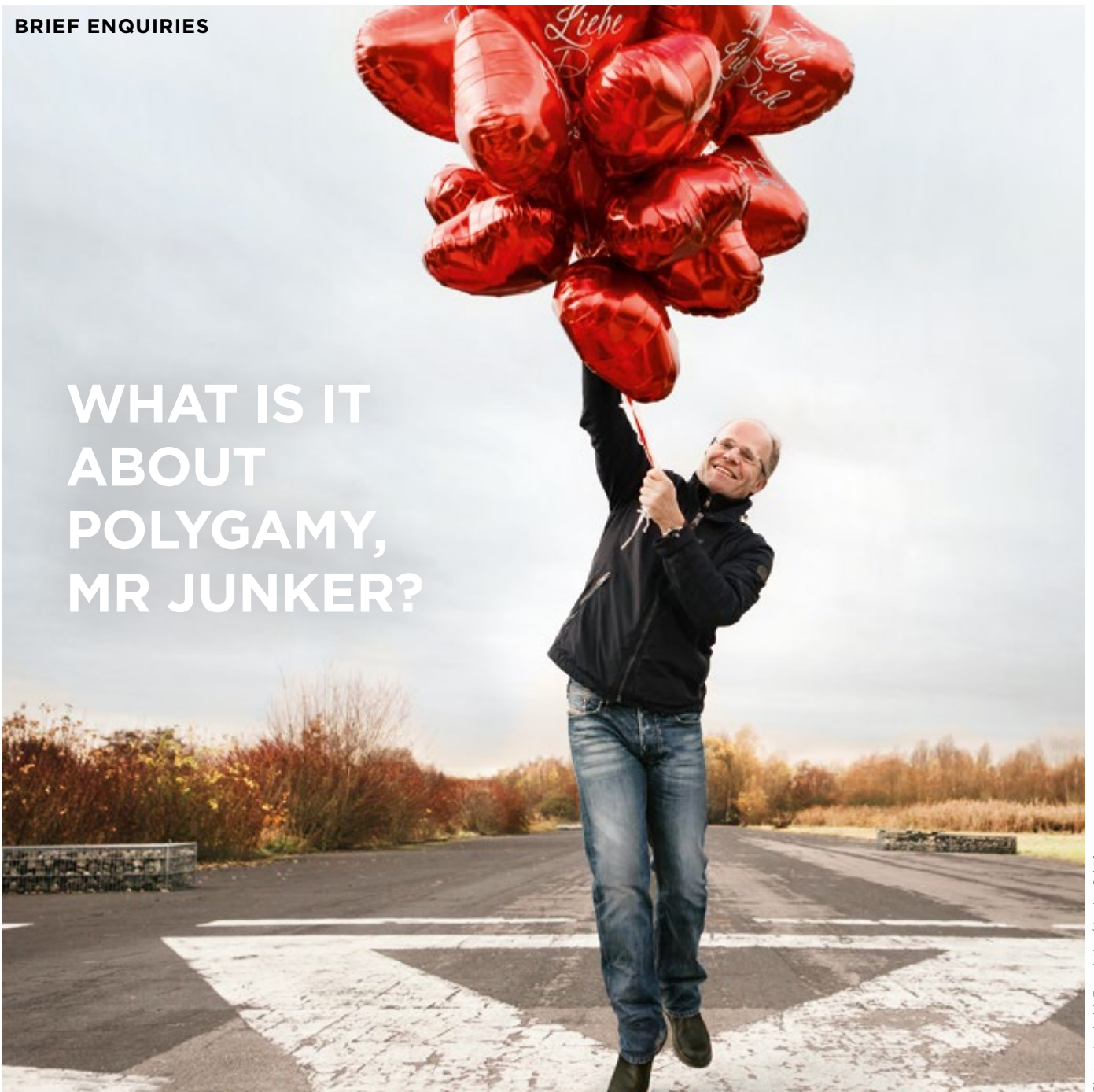


Photo: Humboldt Foundation / Jessica Schäfer

People living as a couple usually try to be monogamous, but it often doesn't work, says Thomas Junker. In his book "Die verborgene Natur der Liebe" (The Hidden Nature of Love), the historian of biology reveals that we are still creatures of nature, that sexual loyalty is a human notion and that polygamy could be the more promising model.

"Multiple relationships have advantages that shouldn't be underestimated," says Junker. "They reduce the emotional, sexual and even economic dependence on a single partner." Our relations in the animal kingdom practise this model very successfully. Amongst primates, he argues and refers to bonobos, groups of several males and females are the most common form of existence. "These pygmy chimpanzees are the hippies amongst the primates." They use their numerous sexual contacts to all members of the group to work off aggression and reinforce alliances – all without any fuss.

The weaknesses of human monogamy, on the other hand, are well known – therapists and lawyers make a good living from marital infidelity. By comparison, free love, communes and polygamy sound very attractive. But it has somehow never worked properly, Junker emphasises. And why? Because of something that is inherent to human nature: sexual jealousy. In biological terms, this emotion was indispensable. "Because," he says, "for men, paternity certainty and for women, reliable resources were even more important than diversity of opportunity." In the face of this evolutionary legacy, even the wildest theory is forced to capitulate. ●

Text KRISTIN HÜTTMANN

PROFESSOR DR THOMAS JUNKER teaches the history of biology at the University of Tübingen. In the 1990s, he was a Feodor Lynen Research Fellow at Harvard University, USA.

CAN SOCIAL MEDIA ENHANCE THE QUALITY OF RESEARCH, MS SHEMA?



Photo: Humboldt Foundation / Frank Siemers

The case of Fazlul Sarkar caused quite a stir. In 2014, the University of Mississippi in the United States withdrew a lucrative job offer it had made to the cancer researcher. The reason: anonymous accusations of fraud on the internet platform PubPeer, where researchers can comment on published studies. Since then, Sarkar has had to recall 18 specialist articles. “This is a spectacular example of the clout of social media,” says information scientist Hadas Shema.

Sarkar’s is not an isolated case. Nowadays, academic journals withdraw articles 15 times more frequently than they did ten years ago. People have long been discussing alternative ways of assuring quality in addition to traditional methods such as peer review. Hadas Shema is a specialist in the role of social media. She evaluates the commentaries on online scientific posts, from blogs to science community networks like ResearchGate and PubPeer. She has ascertained that

articles that are published and commented on on such social networks are corrected or even withdrawn particularly frequently. This does not surprise her. “There, thousands of colleagues can read the articles and they certainly discover more errors than the three or four peer reviewers who usually read them,” says Shema.

At present, however, she believes the potential social media offer is not being fully exploited. She argues for recognising online commentaries as a component of quality assurance: as the example of Fazlul Sarkar illustrates, flaws are often first noticed online. ●

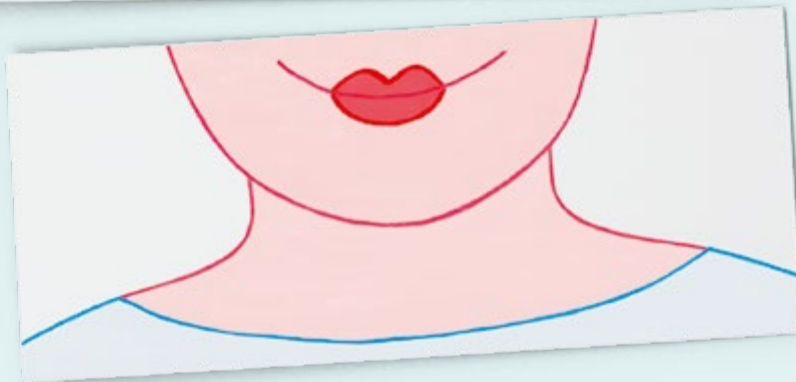
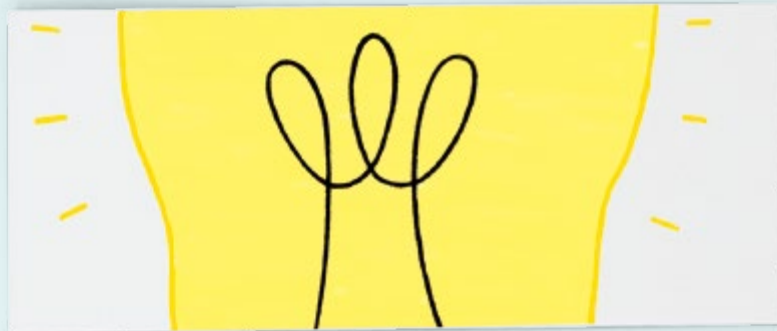
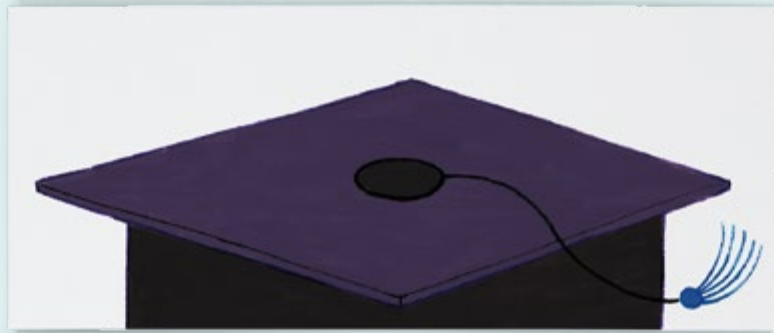
Text KRISTINA VAILLANT


DR HADAS SHEMA of Bar-Ilan University in Ramat Gan, Israel, is a Humboldt Research Fellow at ZBW – Leibniz Information Centre for Economics in Kiel.

COMING TO CHANGE

Great flexibility, exemplary freedom of research and, last but not least, a vast amount of money: since 2008, the Humboldt Professorship has been attracting top international researchers to Germany. But the stars from abroad do not only help German universities to score in science. They are also expected to be a breath of fresh air and change the system. Reviewers have now examined whether the Professorship is achieving its goals.

Texts and Interview **ARMIN HIMMELRATH** *Illustrations* **KARO RIGAUD**





At the start, says Oliver Brock, all the public attention took a bit of getting used to. “An enormous fuss was made of us, I was even on national news,” the computer scientist explains. That was ten years ago when Brock – thanks to his name starting with a B – was the first ever Alexander von Humboldt Professor to be appointed.

Up to then, there had certainly never been such an attractively endowed research award in Germany: up to five million euros award money for five years that can be used flexibly, whether to build a research team or for conferences, technical equipment or even for dual career measures for accompanying partners. And on top of all this: the prospect of a permanent association with the respective German university that does not stop at the end of the funding period, and an almost tailor-made working environment. The aim of this opportunity is to persuade researchers working abroad to continue their careers in Germany. In 2008, the first cohort of Humboldt Professors was selected, assuming their professorships in 2009. And the target group for the award, which is granted by the Alexander von Humboldt Foundation and financed by the Federal Ministry of Education and Research, are international luminaries in their respective research fields.

ROCK STARS OF RESEARCH

If you consider that a Nobel Prize is worth roughly a million euros, it is immediately obvious why the first Humboldt Professorships caused such a furore a decade ago. “For a while, we were treated like rock stars,” says Oliver Brock, laughing, and adds, “Luckily, things calmed down again quite soon.” Because Brock and the other award winners had not come to Germany to be celebrated, but to conduct research. To date, 62 professors have relocated to German universities. They have triggered changes in German science culture in many areas, according to an evaluation that has recently been completed. The

goal from the very beginning was, after all, not just to attract the stars of international research but also to utilise their engagement and experience to inject some movement into what is sometimes a rather sluggish system of higher education in Germany.

“What was new about this tool, and still is, was linking personnel aspects to universities’ structural aspects,” says Peter Strohschneider, President of the German Research Foundation (DFG). “In some cases, the results were downright spectacular.” As a member of the selection committee, Strohschneider has followed the fate of the Humboldt Professorship for many years and cites as examples Mathematical Philosophy in Munich, Mediaeval Jewish Art History in Münster and Experimental Physics in Halle. “The Humboldt Professorship combines a massive impact with an extremely economical use of resources,” says Peter Strohschneider. When he talks about the programme, the DFG President, who is also the ex officio Vice President >



THE HUMBOLDT PROFESSORSHIP IN BRIEF

Official name: Alexander von Humboldt Professorship – International Award for Research in Germany

Launched: 2008

Scope: up to 10 professorships per year, sponsorship for 5 years

Endowment: 3.5 million euros for researchers in theoretical disciplines, 5 million euros for experimental researchers

Funded by: Federal Ministry of Education and Research



www.humboldt-professur.de/en

“The Humboldt Professorship has established itself as a tool for attracting top-level researchers to Germany. This makes a significant contribution to strengthening Germany’s status as a research location when competing internationally.”

Horst Hippler, President of the German Rectors’ Conference

of the Alexander von Humboldt Foundation, waxes positively lyrical – about the “rigid quality standards”, the “uncompromising funding” and the “high efficiency” of the award.

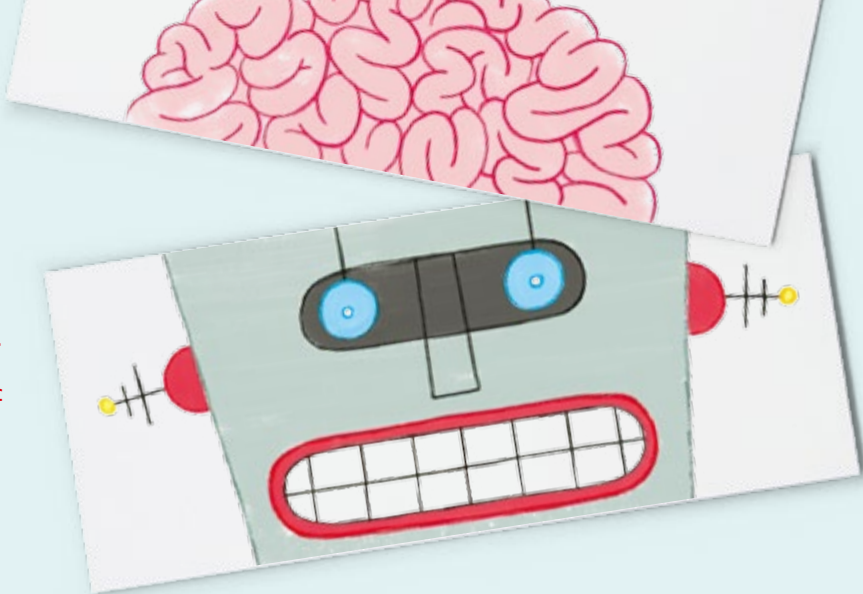
SHAKING UP THE INNER LIFE OF THE UNIS

Top international researchers, in the shape of the Humboldt Professors, who have experienced a different scientific socialisation are intentionally supposed to shake up the inner life of German universities, whilst at the same time having to tread new ground themselves. When different cultures meet, they break open ossified structures: that is one of the intended side effects of this research award. And, indeed, despite the internationality of academic life, there are certain hurdles that nearly all Humboldt Professors have encountered. “When you come from abroad, it’s pretty difficult to penetrate the rigid pay scale system in German science,” notes the Ancient Near Eastern History specialist Karen Radner. Since 2015, she has held a Humboldt Professorship at LMU in Munich. Although she was already familiar with the Bavarian cap-

ital and its universities, the various salary scales in Germany’s federal states’ collective agreement were a challenge when she relocated from London.

An experience shared by Elisabeth Décultot. The French literary scholar moved from Paris to Halle in 2015. She had already worked in Berlin for three years and is married to a German Germanist. “In spite of that, it was a big leap, because there is a gulf between the science culture in France and Germany,” she says, “and I had a lot to learn, particularly with regard to collective agreements and how to deal with German university administration.” Without the support of her staff, she would not have managed so well, says Décultot. In particular, Germany’s penchant for fixed-term contracts was new to her. In the meantime, she has learned how to handle the system and even appreciates some of its advantages. “The research group benefits from new faces and approaches.” The downside was a certain instability and, not least, her concern about what would happen to her staff when their contracts ran out. All in all, however, the Humboldt Professorship was an incredibly attractive offer in Elisabeth Décultot’s eyes.

Nearly all the previous award winners share this assessment. The Humboldt Foundation recently contracted external evaluators to examine the programme. They considered the period from 2008 to 2015. The results of the evaluation clearly show that due to the high degree of flexibility in the use of funds, the clear focus, efficient management and well-balanced scope of the budget and sponsorship period, the Alexander von Humboldt Professorship develops and strengthens internationality and top scientific research at research institutions in Germany. “The programme helps to recruit established stars on the international research firmament.” The award winners were often leading actors in developing structures across universities’ classic faculty-based organisation – an indication that the traditional boundaries between disciplines are being broken down whilst new, interdisciplinary networks





are emerging. The Humboldt Professorship had thus also become a symbol of renewal and interdisciplinarity, the study concludes.

WOMEN ARE IN DEMAND

In 2013, an interim evaluation was conducted after the first five years of the programme. It, too, was basically positive, but also revealed certain latent systemic problems: at the time, Enno Aufderheide, the Secretary General of the Alexander von Humboldt Foundation, expressed “genuine concern” about the low percentage of women nominated and

appointed. Amongst the seven award winners who were originally selected in 2008, the first year of the programme, and who assumed their Humboldt Professorships the following year there was, at least, one woman. After that, however, it took four long years before the next female Humboldt Professor could be recruited. Since then, the proportion of women has varied from year to year. One year it was 80 per cent, another 43 per cent. These big fluctuations also stem from the small number of professorships in total. Even so, the current evaluation report notes that the situation has improved significantly since 2013. Looking at the figures for appointments since then, the proportion of women has been 45 per cent; from 2008 to 2012, it was three per cent. This upturn was partly due to the Foundation’s intensive mobilisation efforts. Universities were informed, for example, that nominations on behalf of excellent female researchers would be expressly welcomed.

In this context, the bioinformatics researcher Burkhard Rost has observed that somewhat antiquated gender perceptions are still sometimes to be found in Germany, not least with regard to the Professors’ partners. Like Oliver Brock, Rost is a first-generation Humboldt Professor, having moved to TUM Munich from Columbia University in New York in 2009. Initially, his wife, who had been a professor at an American Ivy League university was only offered a postdoctoral position in Germany. “The Foundation then made sure she got a suitable appointment,” says Rost.

Despite the general positive trend, Sharon Macdonald also thinks it is “disturbing” that so few of the Humboldt Professors are women. An ethnologist, she herself came to Berlin’s Humboldt-Universität from the UK in 2015. “It was a pre-Brexit decision – although I’m now definitely pleased to be here,” says Macdonald. She had been intrigued by the opportunity of building a large research group. “It’s an enormous privilege and simply brilliant!” Berlin was >

“Both as a person and a scientist, the Humboldt Professorship has benefited me enormously: I have been able to spend time thinking about things and studying them without having to acquire third-party funding in advance.”

Oliver Brock, computer scientist and first-generation Humboldt Professor



an extremely good location for her because of the many museums and cultural institutions “and because of the other amazing researchers who work here”. But the eminent British researcher also experienced things that made her thoughtful – such as the question as to whether or not it was possible to pay for her research group’s desk lamps from the award money. “Humboldt-Universität has a lot of rules,” says Sharon Macdonald with slight understatement. “It’s such a waste of time if you have to enter into negotiations on things like your desk lamp.” After all, she had come here to do research, as quickly and as intensively as possible.

THE COMPETITION NEVER CEASES

It can, however, be precisely such trivialities that determine whether a funding measure is successful. It is not for nothing that the top researchers who are the target of the Humboldt Professorship can usually bet on excellent working conditions elsewhere as well. Their universities there-

fore face tough and permanent competition. And it is a contest that can be lost, as Hannover Medical School and the Helmholtz Centre for Infection Research in Braunschweig learned to their cost. In 2014, they had jointly appointed the French microbiologist and biochemist Emmanuelle Charpentier to a Humboldt Professorship. But just one year later, Charpentier moved on to become director of the Max Planck Institute for Infection Biology in Berlin. Even the good general conditions of the Humboldt Professorship could not hold her back. And in 2018, Charpentier, who is seen as a candidate for a Nobel Prize for her discovery of the much-discussed genetic scissors, will assume another position, becoming the head of the Max Planck Unit for the Science of Pathogens in Berlin. Only in very few cases, however, did the sponsorship find an early end: up to now, including Charpentier, just three of the 62 Humboldt Professors have broken off their awards.

Horst Hippler, President of the German Rectors’ Conference (HRK), believes the Humboldt Professorship is a highly attractive way for universities to recruit top-level personnel. “The award winners bring along international networks in a research area of strategic importance to the university,” says Hippler. “Moreover, professorships can be proposed jointly with another university or non-university research institution which further promotes networking with partners in the region.” Although it would be even better, according to the HRK President, if the sponsorship period could be extended beyond the current period of five years to make the tool yet more attractive.

The one aspect of the programme begging particular improvement was identified in the course of the evaluation as the transition phase immediately following sponsorship when the award winners continue their research at their universities as regular professors without additional funding. Many of those surveyed reported on tangible difficulties. Seven Humboldt Professors whose Humboldt sponsorship had come to an end took part in the

“Humboldt Professorships are a tool for overcoming boundaries – personally, professionally and nationally. It’s great to be able to benefit from it.”

Elisabeth Décultot, literary scholar and Humboldt Professor since 2015

“Without the Humboldt Professorship I wouldn’t be in Germany – and probably not even in Europe. I’ve never experienced funders who were so unproblematic and great to work with.”

Burkhard Rost, bioinformatics researcher and first-generation Humboldt Professor

survey for the evaluation. Two reported that their personnel and infrastructural resources were very significantly reduced when the funding from the Foundation stopped flowing. Four others reported that their resources had since become somewhat scarcer. Only in one case was the volume of funding the same before and after the five-year sponsorship period. “In the transition phase, some of the professors encountered difficulties getting hold of the funding that had been informally agreed when they first assumed their professorships,” the study summarises.

When it comes to agreements, reliability pays off, as the examples of Oliver Brock and Burkhard Rost demonstrate. Both are still doing their research in Berlin and Munich respectively although the funding associated with their Humboldt Professorships has come to an end. And despite the criticisms of the transition phase, overall it has largely been possible to retain the award winners after the sponsorship period. With three exceptions, in April 2018, all 27 Humboldt Professors who were no longer receiving sponsorship were still in Germany.

Another key message from the evaluation was that the professors’ experiences and successes should be communicated more strategically: the “potential for critical thinking” that was essentially shaped by their international experience should be used for feedback within the German research landscape. At the same time, the core fea-

tures of the Humboldt Professorship – freedom and flexibility – should be documented more robustly and communicated externally because in the form made possible by the Humboldt Professorship they are “extremely rare”. Burkhard Rost also feels that more of a voice should be given to “the colour the Humboldt Professors lend to the science landscape”. He suggests increasing the award winners’ networking amongst themselves “to live out interdisciplinarity and tell people about it”. And to show others that something really is happening in the German science system.

MONEY FOR QUALITY ONLY

A glance at the history of the Humboldt Professorships to date, however, also reveals that the selection committee does not always award all ten Professorships every year – a clear indication, according to DFG President Peter Strohschneider, that it “really is a tool for top-level research”. Even if there are sufficient resources to fund more awards, the Humboldt Professorship is only granted when the quality of the nominees is truly outstanding. Referring to his experience on the selection committee, Strohschneider comments, “The work is such fun.” This was partly because of the high quality of the proposals, partly because of the colleagues on the committee: “We have such free and open-minded discussions. And the fact that a disproportionately large number of small subjects is successful just makes it all the more interesting.”

Oliver Brock’s assessment is unequivocal: “This programme is simply wonderful.” The freedom of thought it had allowed him was something “like breaking the intellectual sound barrier”. In that respect, he thought the programme “was one of the best things that could have happened to the German science landscape”. ●



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kosmos108/focus](http://www.avh.de/kosmos108/focus)

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Robots, cuneiform, bioinformatics, museums and aesthetics research – the Humboldt Professorship knows no disciplinary boundaries, only intriguing ideas and questions. A selection.



BURKHARD ROST

BIOINFORMATICS RESEARCHER

Curiosity is what drives him – “and the fascination with all the things we still don’t know about biology”.

Burkhard Rost came to TUM in Munich from New York’s Columbia University nearly ten years ago to take up a Humboldt Professorship. His goal is to build a bridge between medicine and biosciences. He is fascinated by the structures, workings and interaction of proteins in human DNA. And they offer plenty of scope for his curiosity. There are thought to be around 25,000 proteins in the human body, nearly half of them are still unknown and have not been decoded. “The more we know about them and the way they function, the better equipped we’ll be to answer the big questions posed, for example, by medicine,” says Burkhard Rost who has decisively shaped the interdisciplinary approach inherent in bioinformatics. Well, that is no surprise, you might think, looking at his career: he studied physics, philosophy, history and psychology before taking a doctorate in physics. Although Humboldt Foundation sponsorship has come to an end, Rost is still doing research in Munich. His current work aims to detect disease at an earlier stage and treat it more effectively. To this end, Rost and his research group have chosen a very special path: they are seeking to establish the connection between artificial intelligence and machine learning and evolutionary development. ●

ELISABETH DÉCULTOT

LITERARY SCHOLAR

If you want to trace the history of knowledge transfer in the aesthetics of the 18th century, as Elisabeth Décultot does, you need old books – and they exert a particular fascination on the literary scholar. At the Interdisciplinary Centre for European Enlightenment Studies in Halle and in numerous other archives and libraries in the city and region, Décultot finds the material for her research on the spread of classicism in Europe. This is where she delves into the working habits of the researchers of bygone days. She investigates, for example, how 18th and 19th century scholars read and took extracts from the works of other scholars, what ideas they adopted, moulded and disseminated, and how they did it. “The amount of material available here is really impressive,” says the distinguished aesthetics researcher. In 2015, Décultot became a Humboldt Professor at Halle-Wittenberg, having moved from Paris. Since then, she has been working to make Halle into one of the leading locations for Enlightenment research in Germany, organising, amongst other things, a major exhibition on the founder of modern art history and archaeology, Johann Joachim Winckelmann, in cooperation with the Klassik Stiftung Weimar. ●





SHARON MACDONALD ETHNOLOGIST

“Museums are extremely important for our societies because that is where people decide which things will play a role in the future,” says Sharon Macdonald in response to a question about her scientific interests. The British ethnologist investigates the criteria and decision-making processes that go into selecting objects and artefacts for exhibitions. “In this respect, Berlin, for me, is a fantastic laboratory of exciting things,” says Macdonald, commenting on her new home. Since she took up her Humboldt Professorship, one of the things she has been involved in is developing a strategy for the future Berlin Humboldt Forum. And she demonstrates exactly what good academic networking is all about: with her as the motor, Humboldt-Universität zu Berlin, the Museum für Naturkunde and the Prussian Cultural Heritage Foundation are building a Centre for Heritage and Museum Research in Berlin. “Knowledge transfer has a lot to do with emotions and feelings, particularly in museums,” comments Sharon Macdonald. ●

KAREN RADNER ANCIENT NEAR EASTERN HISTORY SCHOLAR

“I love the feeling of discovering something nobody has ever discovered before,” says Karen Radner, describing what drives her as a researcher. She is one of the world’s leading experts on the history of Mesopotamia in the second and, especially, the first millennium before Christ. She is particularly interested in cuneiform records with which she can reconstruct the social conditions in the first major empire in human history. Ancient historians, according to the Austrian scholar, should also include the historical settlements “further to the East” in their research. This is part of her mission at LMU in Munich where she became a Humboldt Professor in 2015, moving from London. One of the problems has been that there are too few cuneiform scholars amongst her colleagues. “I would be delighted if I had more competition in the field” – both at LMU and beyond. ●



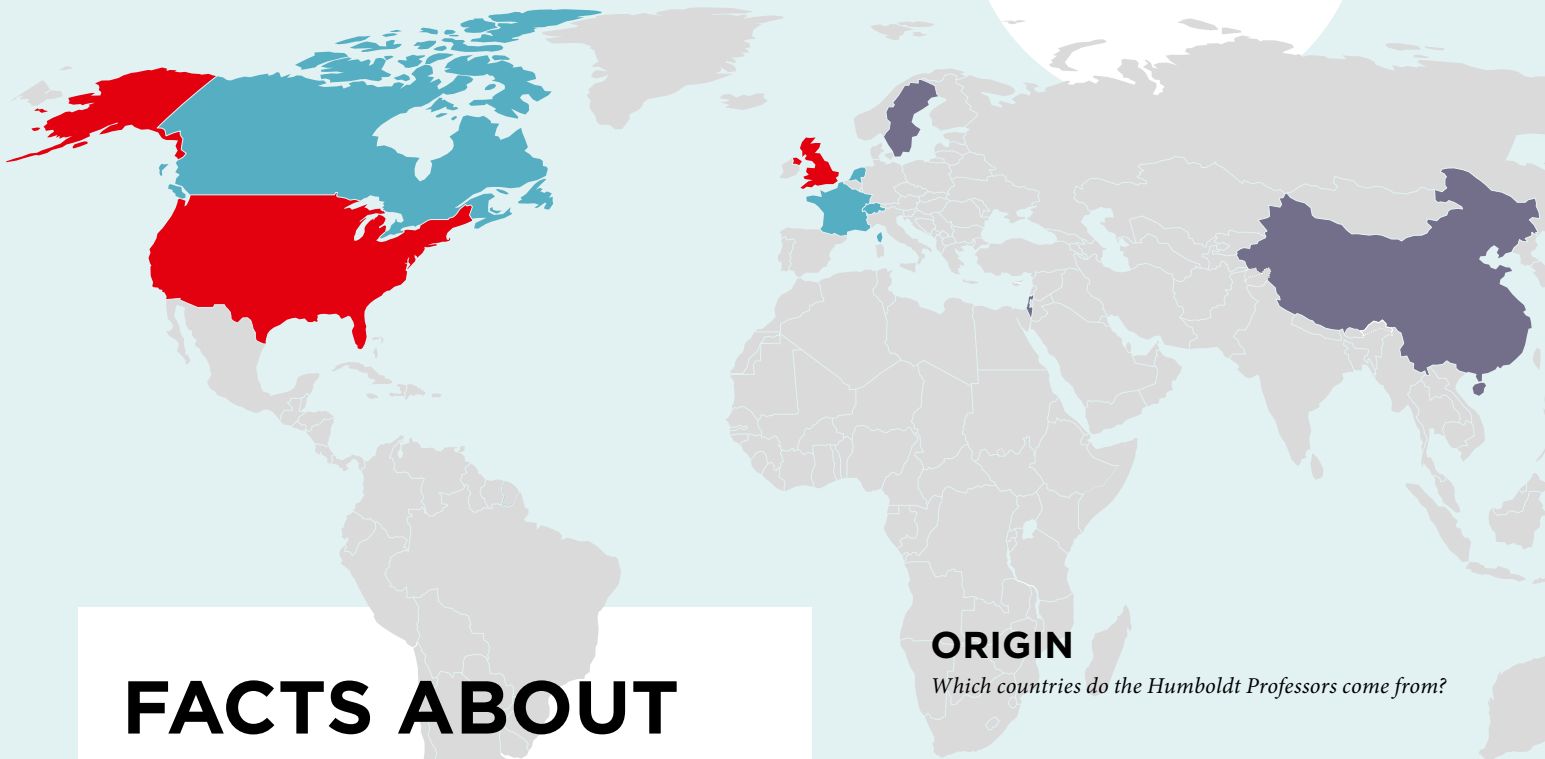
OLIVER BROCK COMPUTER SCIENTIST

To build robots that can deal with everyday tasks and situations just as well and as efficiently as people can – that is Oliver Brock’s mission. He is not so much interested in the routine of certain activities, but rather, in how robots manage in dynamic situations and unstructured environments. The crucial challenges that need to be met are perception, power of judgement, mobility and dexterity. The computer scientist who moved to TU Berlin from the United States as one of the first generation of Humboldt Professors sees himself as a bridge-builder between computer science and biology. He works on biological algorithms and uses his expertise to explain and predict the structure and behaviour of proteins in molecular biology. The development of autonomous robots could help to crack some of the unsolved problems of molecular biology. And Brock, who continues to head of the Robotics and Biology Laboratory at TU Berlin even after his Humboldt sponsorship came to an end, wants to transfer this knowledge about proteins and their behaviour to concrete applications. Contacts with industry are part of Oliver Brock’s normal working life. ●

VIDEOS ONLINE

KOSMOS spoke to some of the award winners about their experience of the Humboldt Professorship, surprises and sudden insights

[www.avh.de/
kosmos108/video](http://www.avh.de/kosmos108/video)

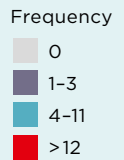


FACTS ABOUT THE HUMBOLDT PROFESSORSHIP

ORIGIN

Which countries do the Humboldt Professors come from?

USA	27
UNITED KINGDOM	12
NETHERLANDS	6
FRANCE	5
CANADA	4
SWITZERLAND	4
CHINA	1
ISRAEL	1
JAPAN	1
SWEDEN	1



As of April 2018

THE SIX PHASES OF A HUMBOLDT PROFESSORSHIP

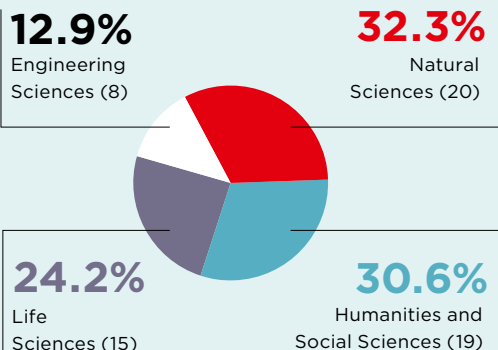
1 **Nomination phase**
 The search is underway to recruit top international researchers for appointments in Germany. Universities nominate (singly or together with non-university institutions) suitable candidates and submit a strategy paper describing how the nominee will be integrated in the institution on a long-term basis. The aim here is to offer candidates internationally competitive conditions – in general and for their research.

2 **Selection phase**
 The criteria are the excellent quality of the candidate, his or her international reputation and the university's strategy paper. Independent, international reviewers assess the nominations; the Humboldt Foundation's multi-disciplinary selection committee examines them and comes to a decision.

3 **Appointment phase**
 The award winners and universities negotiate the terms of the Humboldt Professorship, particularly the use of the award money and the period after the five-year sponsorship phase comes to an end. Another frequently-discussed aspect is how the career of the Humboldt Professor's partner can be accommodated at the university location. The negotiations are usually, but not always successful: so far, of the 88 individuals selected, 62 have ultimately taken up their Humboldt Professorship.

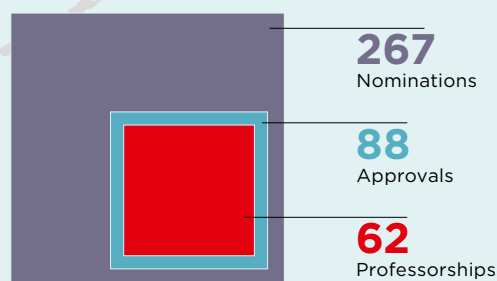
RESEARCH FIELDS

What are the Humboldt Professors' disciplines?
(absolute figures in brackets)



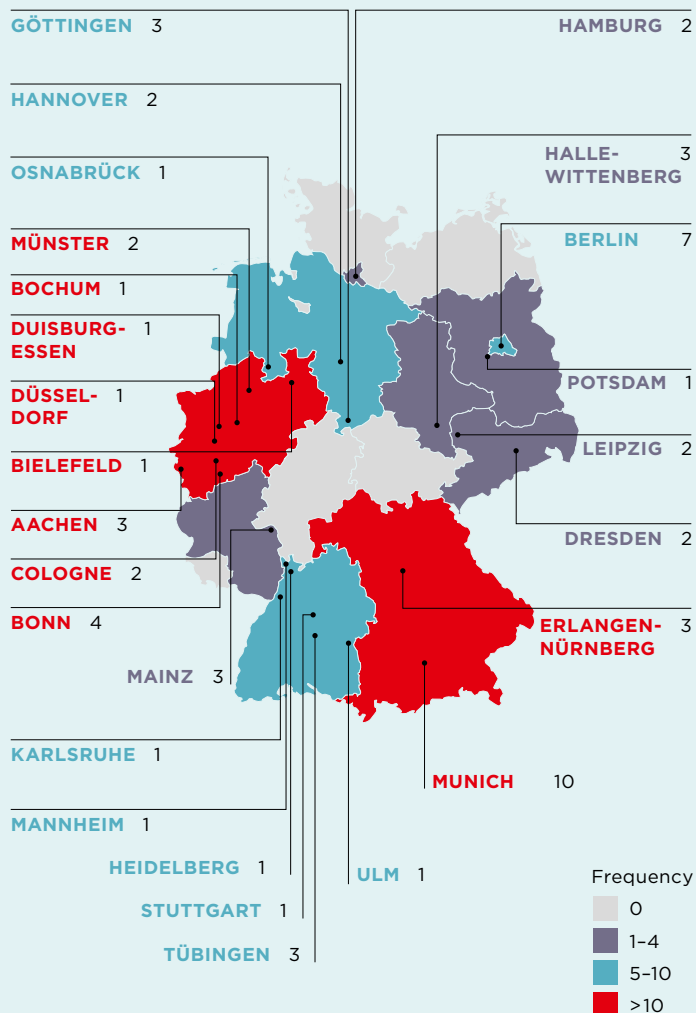
NOMINATIONS

How many candidates were nominated?
How many Humboldt Professorships were ultimately taken up?



DESTINATIONS

Where do the Humboldt Professors go?



4 Development phase

If the negotiations are successful, the award winners are appointed and take up their Humboldt Professorships. Now, qualified researchers have to be recruited for the research groups and any necessary equipment has to be purchased. And – not to be forgotten – local and global networks have to be established.

5 Establishment phase

Once the research groups have started work, cooperation within the university begins. This is when the structural effects start to emerge, benefitting the host institution in terms of profile building, internationalisation and competitiveness. Ideally, the Humboldt Professorship should trigger tangible changes both in scientific and administrative areas.

6 Consolidation phase

When Humboldt Foundation sponsorship comes to an end, award winners and host universities have to configure the transition from third-party funding to the university's regular budget. This is where the strength of the agreements on long-term integration made during appointment procedures reveal themselves. The goal was, after all, and still is, to encourage the award winners to remain in Germany on a permanent basis in a tenured scientific leadership position.



INTERVIEW

WE NEED FEARLESS UNIVERSITIES

If you manage to acquire a five-million-euro professorship for your university, you get upheaval and envy into the bargain. This was a concern that was raised ten years ago when the first Humboldt Professorships were awarded. Things have changed. A conversation with Enno Aufderheide, Secretary General of the Alexander von Humboldt Foundation, on recruiting research luminaries and the benefits they bring German universities.

KOSMOS: Mr Aufderheide, the Foundation launched the Alexander von Humboldt Professorship a good ten years ago with the aim of shaking up the German research landscape. How successful have you been?

ENNO AUFDERHEIDE: The core idea we developed together with the Federal Ministry of Education and Research was to encourage universities with the Humboldt Professorship. We wanted to encourage them to be self-confident and to aim high for the professors they wanted to recruit. Well, it took a while for them to develop enough confidence in themselves but, basically, it worked. As with anything new, there were early adopters who caught on rather faster than others. Right from the start, the big universities in Berlin and Munich, for example, were very active. But the other unis soon followed suit.

Can you think of any special moments in these ten years?

Yes, of course. For example, when you see that universities that you wouldn't automatically consider to be research beacons are really successful with their excellent research in this programme – to witness stories like that, for example, is just great. Because it shows that the

gap between Germany's famous and not so famous research locations is not all that big. And, in my opinion, this is an important point: that "normal" unis are capable of keeping up with the top-rank universities. We need it to be like this so that we can be truly attractive to promising students in all areas. The fact that Humboldt Professors are prepared to move to smaller locations is a clear indication that this capacity does exist.

Presumably you are not quite so satisfied with the percentage of women who have been granted the award ...

Of course, in some years, it's frustrating when the percentage of women appointed is practically zero. On the other hand, there was one year when only one man was selected for a Humboldt Professorship. Given the small numbers in our cohorts these variations are relatively normal. However, especially at the beginning, we had to do a lot of talking with university leaderships to change their way of thinking. Apparently, it's not always women who immediately spring to mind when people think of the *crème de la crème* of the research community. But we have certainly noticed that things are improving. I don't see any cause for alarmism – especially as every cohort brings new role models.

What you are describing is nothing short of a change in academic culture. Are the ten professorships you award each year enough to achieve this?

On the one hand, yes: it works despite the relatively small numbers. On the other hand, we do miss out on opportunities. German universities have a good deal to offer: a respectable overall level of third-party income, secure basic funding – although we could argue about the level – well-educated students and, last but not least, a research-friendly climate in Germany. I could envisage more than ten Humboldt Professorships. The potential is there. But then, of course, we would also have to receive a clear signal that the necessary funding would be made available. We certainly won't progress to, say, 20 awards per year in one fell swoop, but the quality of research in Germany would justify it. And if we consider how the climate of intolerance in the United States and the United Kingdom has made them less attractive for top researchers, I think 20 Humboldt Professorships would be perfectly realistic.

How courageous do universities need to be to aspire to such a professorship? Humboldt Professorships bring inequality to universities – that's the whole idea. At the

“Some candidates are offered unbelievably good incentives to stay at their universities.”

outset, there was a lot of discussion about whether this was acceptable. But now there are many universities which consciously practise it and draw strength from it. For example, when the Millennium Technology Prize winner Stuart Parkin goes to Halle to conduct his research at the Max Planck Institute and the uni there, the location immediately becomes much more attractive to other outstanding researchers in his field.

And yet, appointment negotiations between the universities and potential Humboldt Professors do break down from time to time in spite of all the freedoms and the money associated with a Humboldt Professorship. Why is that?

The candidates we are talking about are so eminent that they always have a number of options. Sometimes they are offered unbelievably good incentives to stay at their universities or get competitive offers from others. That's the way it is in academia. Perhaps we should give the university leaderships rather more support, adjust the share of administrative costs and make it somewhat easier for them to internally justify embarking on such an appointment procedure. But these freedoms do have to be used – and this is where the courage you were referring to comes in. It does not yet exist everywhere.

Do you have any concrete examples of issues that prove difficult during negotiations?

When negotiations break down it is often due to a lack of understanding for dual careers on the German side. There are unis like Munich where the Dual Career Service actively searches for options for the Humboldt Professor's partner. Some of the other unis are content just to pass on the name of the paper that publishes job advertisements –

that is not enough. Nor is it enough to simply provide the telephone number of the nearest international school. No, active support is required. Just making information available does not make a convincing relocation service.

Are we perhaps also a bit too bureaucratic in Germany?

In some cases, I can't completely exclude that possibility. On the other hand, we always tend to find unfamiliar processes and red tape more unpleasant than the ones we know from our own countries. So, it's a common problem, which is why I would recommend Humboldt Professors to earmark part of their funding for employing someone to handle the paperwork for them. That costs the equivalent of one assistantship, but it increases the group's overall productivity enormously.

Aren't you worried that the big research stars will cause too much upheaval in the university landscape?

No, because good people go to good environments – and then attract other extremely good people. The Humboldt Professorship doesn't generate an isolated star on the academic firmament but rather ensures that subsequent appointments at such unis reach a higher level.

And that continues after the funding period has come to an end?

The transition to regular financing is, of course, a crucial time. Agreements that have been made by the university in advance must be conscientiously fulfilled. That is why it is so important that the German Association of University Professors and Lecturers is involved in appointment negotiations in an advisory capacity from the word go. “The university will do its best” does not constitute a binding commitment and that has to be made clear to foreign researchers. There are not only cultural boundaries to be overcome but also legal ones. On the whole, however, it works quite well.

What aspects of the Humboldt Professorship do you think we'd be discussing in another ten years' time?

I hope, by then, we'll have gender parity. But, above all, we will see how proud each university is of its Humboldt Professorships and how this pride carries over into other appointments. When this happens, the cultural change towards actively recruiting top researchers has been accomplished. Moreover, by continuing to develop the programme we can keep offering attractive general conditions and possibly manage to hold our own against what could then be even greater competition from abroad. ●



DR ENNO AUFDERHEIDE

has been Secretary General of the Foundation since 2010.

ENERGISED

For people like him, scientific careers were not what the apartheid regime had in mind. But Wilfred Fritz managed to carve his path through racial barriers and restrictions and become one of the first non-whites to study at Stellenbosch University. Today, his research could help to revolutionise energy supplies in his country.

Text LILO BERG

SIMULATED POWER

GRID: in the Stuttgart high-voltage laboratory Fritz tests his models.



”

WHEN I ENTERED THE LECTURE THEATRE THERE WERE HOSTILE LOOKS AND NERVOUS WHISPERS.

Stellenbosch, summer 1981: hundreds of first years stream onto the campus of the prestigious white South African university, east of Cape Town. They have just sat down at the Faculty of Engineering when a young man enters the room. “Everyone stared at me, there were hostile looks and nervous whispers,” Wilfred Fritz recalls many years later. The 18-year-old had to sit alone – none of the other students wanted to get anywhere near him in class. Nothing much changed in the years that followed up to his final exams in 1987. Fritz is a Cape Coloured, an ethnic group whose forefathers were European immigrants, indigenous Africans and Asian slaves.

It was the apartheid years in South Africa and, by law, the white upper-class students were kept well apart from their darker-skinned fellow citizens – not just at university but also on the bus, at church and in the sports stadium. “As soon as it got dark, we were no longer allowed to show our faces in white areas,” Wilfred Fritz remembers.

In the apartheid hierarchy, being coloured was second after being white. Coloureds had more rights than Indians and vastly greater privileges than the black majority of the population. “This racial system was brainwashed into all South Africans from early childhood and is still in people’s heads to this day,” says Wilfred Fritz.

But he soon managed to overcome the restraints imposed by his descent. Born to a male nurse and a housekeeper in Cape Town in 1962, he grew up in a Coloured residential area. His mother was illiterate. Schooling was by no means obligatory and many neighbours took their children out of school early to work. But the Fritzes sent their three sons to school every day – until they had taken their final exams.

Wilfred was particularly gifted, hard-working and lucky. Just as he was leaving school with top marks, the government opened up a few places for Coloureds at white universities for the first time. The young man applied to Stellenbosch and was accepted. Difficult years ensued: getting up at five in the morning, a two-hour journey to the campus, likewise in the evening and then an enormous workload in his chosen field of electrical engineering.

“Unlike the white students, I had never heard of differential and integral calculus when I was at school,” Fritz recalls. But he fought his way through and, within a year, was one of the best in his mathematics course.

NO MONEY, NO UNI

Everything could have come to an abrupt end at this point: his parents did not have enough money to pay his academic fees in full – their son was in danger of being barred from university. Then the Dean of the Engineering Faculty, Christo Viljoen, asked to look at his academic marks. Impressed by his achievements, Viljoen immediately arranged a loan to last until he had passed his B.Eng. “If I could only meet up again with one single white person from my youth, it would be him – I have so much to thank him for,” says Wilfred Fritz thoughtfully, gazing out of the window of his office at the University of Stuttgart.

Here, in the Institute of Energy Transmission and High Voltage Engineering, the now 55-year-old electrical engineer sits in front of a gigantic plan of lines, symbols and figures. “That is the power grid of Beaufort West, a small town 400 kilometres north of Cape Town,” Fritz explains. He wants to use it as a model to demonstrate the effects of feeding renewable energies into the grid and show what measures are needed to ensure a stable energy supply. Thanks to a Humboldt Foundation’s Georg Forster Research Fellowship, he can now spend a good two years researching solutions and trying out his computer simulations on a small scale in the institute’s own high-voltage laboratory. >

CLOSE UP ON RESEARCH



IMPRESSIONS: Wilfred Fritz with his children (above left), during excursions with his white fellow students and with some children (below right) whose homes he and his students connected to mains electricity

The results of this research could have a major impact on South Africa's future energy supply. At present, the government still mainly favours the environmentally-harmful generation of electricity from indigenous coal reserves. And according to Wilfred Fritz, there is serious talk of building new atomic power stations, although the sun-soaked country is obviously pre-destined to produce solar energy and to use wind power along its coasts. By 2030, the engineer believes, the share of power from renewables could realistically be increased from its present four percent to approximately ten percent. But before this can happen, it is necessary to get a grip on the problems of supply quality that can occur when feeding solar and wind power into the grid.

At the University of Stuttgart, the suitable computer models are being developed by the research group headed by Krzysztof Rudion, Wilfred Fritz's mentor during his research stay in Stuttgart. "I can implement these models," Fritz says, "and I hope I'll soon be able to produce useful

applications that will assist my country." He is planning to continue his cooperation with the Stuttgart team after he has returned to South Africa. Relevant projects are already on the drawing board.

Wilfred Fritz has never been an ivory-tower researcher – for one thing, he could not have afforded it. After obtaining his degree at Stellenbosch, which four of the ten coloured pioneers managed, he immediately had to earn a living. He had just married, and the first of five children was on the way. So in 1989, the year Nelson Mandela was released from prison, Wilfred Fritz signed on with the South African branch of Siemens. "My supervisors sent me to a mine in Johannesburg," he reports. "A young white foreman immediately confronted me and threatened to beat me up if I touched any of his equipment." The bosses apologised for this behaviour, but Fritz soon resigned and moved to the public utilities company in Cape Town.

There he worked for a good ten years. Then in 2001, more than a decade after completing his first degree at

Stellenbosch, he took up his academic career once again. At the Cape Peninsula University of Technology, known as CPUT, he acquired an M.Sc., an M.Eng. and a doctorate. And during the same period, four of his five children attended university as well: two of them also at CPUT and two at Stellenbosch, the formerly white university that is now open to all sections of the population.

In order to support his four daughters and son, while doing his own postgraduate degrees, Wilfred Fritz taught courses at the university. During the practical phases of these courses, he and his students connected many homes in a township to mains electricity. He also taught young researchers how to develop energy-saving devices, leading to the creation, for example, of a solar cooker that automatically tracks the sun and does not have to be manually adjusted. This useful invention has received a number of awards, such as the first prize in the international explore New Automation Award competition in 2015 and a place in the final of the 2017 Africa Prize.

HE STILL HAS TO FIGHT, EVEN TODAY

Wilfred Fritz is now a professor at his university, CPUT. Along the way, he had to overcome enormous obstacles and suffer many humiliations. How did he manage where so many of his contemporaries failed? Where did he find the strength? Wilfred Fritz ascribes it to a very happy childhood, his years in the Scouts, his parents' enthusiasm for education and his helpful mentors, adding: "And I'm not a subservient Coloured and will never allow racist white people to oppress me."

But he still has to fight to this very day. Although CPUT, like most other South African universities, is now under the leadership of black top management, the powerful middle management is still firmly in white hands, Wilfred Fritz reports. It practices hidden apartheid and systematically victimises people of colour. "Research funding raised by non-whites is held back or their travel is not authorised." In cases like this, the self-confident researcher approaches the South African Engineering Council for support or

DR WILFRED LESLIE OWEN FRITZ

was born in Cape Town, South Africa, on 6 December 1962. At the height of the apartheid regime in 1981, he was one of the first non-whites to be admitted to the University of Stellenbosch, completing a Bachelor's degree in engineering in 1987.

After working outside academia for many years, Fritz returned to university in 2001. At the Cape Peninsula University of Technology (CPUT) in Cape Town he firstly took an M.Sc. and an M.Eng. in electrical engineering, following it up with a Ph.D. which was awarded in 2011. Today, he is an associate professor at CPUT.

In recognition of his scientific achievements, Wilfred Fritz received the Young Researcher Award from the African-German Network of Excellence in Science (AGNES) in 2012. The network had been launched with the support of the Alexander von Humboldt Foundation to promote research collaboration and academic exchange between Africa and Germany. As an AGNES award winner, Fritz was invited to the Humboldt Colloquium in Nairobi in 2014 and subsequently applied for a fellowship under the Georg Forster Programme. Since the beginning of 2017, Wilfred Fritz has been a Georg Forster Fellow, continuing his research at the Institute of Energy Transmission and High Voltage Engineering at the University of Stuttgart.

appeals directly to the university top management: it was only thanks to their intervention that his research stay in Stuttgart was approved.

In Germany Wilfred Fritz feels free. "Here I'm not judged by the colour of my skin but by my performance and behaviour." He lives in an apartment in the centre of Stuttgart, trains for half-marathons three times a week and plays tennis with colleagues. And he has gradually got used to some of the special traits of his host country. "People don't beat around the bush, they get straight to the point, and meetings don't start late, but very punctually." In Germany, the emphasis is on the rights of the individual; in his country, by contrast, the rights of one's own group determines your fate.

During apartheid, this was quite an advantage to some, but group egoism tended to prevent South African society from growing together: "We will need at least another two generations before we completely abandon the old ways of thinking," Wilfred Fritz predicts. In his own life he has already made a good start. ●

The title is written in a large, black, sans-serif font. The word 'Forget' is on the first line, 'the grammar' on the second, 'you learn' on the third, and 'at school' on the fourth. The text is surrounded by thick, yellow, hand-drawn brushstrokes. A large yellow oval encircles the word 'Forget'. Another yellow oval encircles the words 'the grammar'. A yellow arrow points from the word 'the' to the word 'learn'. The word 'at school' is underlined with a yellow brushstroke. The word 'Forget' is annotated with the word 'PREDICATE' in yellow, slanted capital letters above it. The words 'the grammar' are annotated with the words 'NOMINAL DIRECT OBJECT' in yellow, slanted capital letters above them.

Forget the grammar you learn at school

WhatsApp, Twitter or Facebook – social media are not the only arena where the kind of German used makes purists tear their hair out. Take it easy, says Vilmos Ágel: You shouldn't fight linguistic change but follow it meaningfully. To this end, the Hungarian linguist has developed a completely new grammar.

Interview **LILO BERG**

Today's broken rules
are often tomorrow's
norms.

KOSMOS: Professor Ágel, Hungarian is your native tongue and, in addition to German, you also speak English, French and Portuguese. What is particular about German grammar?

VILMOS ÁGEL: The fact that there are three grammatical genders, for example, as “der Tisch” (table, masculine), “die Lampe” (lamp, feminine), “das Buch” (book, neuter). From a German point of view, this is quite normal, but French people, who only have two genders in their own language, have their difficulties, and Hungarian manages without any grammatical genders at all. Positively exotic in the international context is the use of the reflexive passive in German. Parents, for instance, use it with their children in sentences like “Jetzt wird sich aber hingesetzt”, which roughly translates as “Now it's time for the sitting down of yourselves”. Only very few languages have this grammatical option.

You recently produced a new, 900-page German grammar that you've been working on for years. Why did you go to such lengths?

Because I wasn't happy with the existing grammar books and haven't been for a very long time. I've been making notes on the subject for more than 20 years.

What exactly would you like to change?

What I'm interested in is a different perspective. According to the rules of grammar you learn at school, you first consider individual words, then phrases and finally complete sentences. You usually don't look at the text in its entirety at all. By contrast, I suggest analysing language texts from top to bottom, taking the whole text, then the sentences and, last of all, the word groups and words.

What are the advantages of this approach?

It reflects our natural experience. We don't usually encounter language in isolated words and sentences but in texts and conversations. If you start with the entire text, certain linguistic structures have a completely different meaning than they do in classic grammar. And some-

thing that is otherwise seen as breaking the rules can turn into a creative tool in a grammatical text analysis.

Can you give me an example?

Let's look at a passage from the novel “Das ewige Leben” by the prize-winning Austrian author Wolf Haas: “Wer redet, bleibt. Wer schweigt, geht. Obwohl. Gegangen ist der Brenner ja schon. Nur. Wohin gegangen? Weil es gibt ein Gehen, das ist schlimmer als das schlimmste Bleiben.” (The speaker stays. The silent one goes. Although. Brenner has already gone. Only. Gone where? Because there's a going that's worse than the worst staying.) In terms of standard grammar, the use of the words “obwohl” (although) and “weil” (because) is quite simply wrong. The subordinate clauses, which have to follow these words in purist grammar, are missing. But in the Haas text, these subordinate clauses themselves would be wrong because “obwohl” and “weil” followed by a subordinate clause would have a completely different >

Classic grammar
sets laboratory
norms.

No one **would** say
“wegen dieses Mistes”.

meaning and totally distort the import of the text. “Wer redet, bleibt. Wer schweigt, geht, obwohl der Brenner ja schon gegangen ist. Nur. Wohin gegangen, weil es ein Gehen gibt, das schlimmer ist als das schlimmste Bleiben?” (The speaker stays. The silent one goes although Brenner has already gone. Only. Gone where, because there’s a going that’s worse than the worst staying?). Seen from the perspective of the textual meaning, “obwohl” and “weil” with a subordinate clause would be wrong because they don’t make sense. In this context, the apparent breaking of the rules turns out to be a powerful creative element.

**Classic grammar strictly adheres to the rules.
Is it fighting a losing battle?**

It doesn’t have much of a chance against natural changes in language. Classic grammar basically sets the laboratory norms which are constantly challenged by creative use of language. And if you look closely, today’s broken rules are often tomorrow’s norms.

So, will the dative really be the death of the genitive as the title of a well-known German book suggests?

Not the dative, because it doesn’t have much to do with the genitive. If that book title means that a structure like “das Haus meines Vaters” (my father’s house) could be supplanted by a structure like “das Haus von meinem Vater” (the house of my father), then it would be the preposition “von” (of) that was the death of the genitive and not the dative. If such a development were to occur, however, and I don’t believe it will, written grammar would have to adapt. Just as people today already adapt to certain situations. No one would use the genitive in a phrase like “wegen dieses Mistes” (instead of the more commonly used “wegen diesem Mist” nowadays). It is not the task of grammar to try and stop such changes. Instead, it should rather describe language transformation and try to understand it.

This sounds very laid-back. In that case, why should schoolchildren bother to learn the rules of grammar in the first place?

We should only deal with grammatical rules in foreign language teaching. German lessons are a way of acquiring the fundamental concepts of grammar which we need for reflecting on language and learning foreign languages. Ideally, this should be done on the basis of whole texts: then schoolchildren experience how using grammar helps them unravel the meaning of language texts.

Many of them still think learning grammar is a tedious, useless undertaking.

And all the while it’s a wonderful tool, a real key to finding your way around an ever more complex and complicated world. This is also true of acquiring literary text skills because a text-based analysis of grammatical structures creates a natural connection to the scientific analysis of literary texts.

Grammar is
a key to **finding**
your way
in the world.

It'll **take**
50 years
before we **know**
whether **Twitter**
will sustainably
change
our vocabulary.

Does your new grammar book just deal with present-day German?

You can use it to study historical texts and trace the evolution of language as well. Interesting parallels emerge between grammar and worldview. In early 18th century texts we still find a surprising number of verbs without a subject like “mir träumt” (to me it dreams) or “mich friert” (to me it freezes). In the same century, however, they were increasingly supplanted by verbs with a subject, i.e., “ich träume” (I am dreaming) and “ich friere” (I am freezing), to cite the same examples. This reflects the enhanced status of the responsible subject in modern times. It is a process that took many decades – grammatical change is extremely slow.

Even today? Aren't Twitter, WhatsApp and other new media fuelling change?

We don't have any evidence to suggest the language is changing more quickly. Admittedly, we adopt a lot of Anglicisms, but they usually disappear again fairly quickly. The word “job” is something of an exception – it has established a place for itself in German. As a rule, things that prove useful in German are integrated into the vocabulary and no longer thought of as foreign or strange. Just think of the wealth of old cultural words like “Ziegel” (brick), “Pflanze” (plant) or “Wein” (wine) which all come from Latin. It'll take 50 years before we know whether Twitter and Co. will sustainably change the vocabulary or even the grammar of the German language. ●



PROFESSOR DR VILMOS ÁGEL (59)

is Hungarian and comes from Budapest. He started learning German at the age of 14 and later read German, Geography and Portuguese at university there. In the 1990s, Vilmos Ágel was a Humboldt Research Fellow in Germany. He has held a professorship at the University of Kassel since 2004, heading the field of Linguistics/ System-Oriented Linguistics in the Department of German Studies. In 2005, Ágel received the Humboldt Foundation's Friedrich Wilhelm Bessel Research Award. His new book “Grammatische Textanalyse. Textglieder, Satzglieder, Wortgruppenglieder” was published by De Gruyter in March 2017. Vilmos Ágel lives with his family in Kassel – at home they speak Hungarian.



Hans-Christian Pape, Professor of Neurophysiology at the University of Münster, became President of the Alexander von Humboldt Foundation in January 2018.

HUMBOLDT FOUNDATION

The new President: Hans-Christian Pape

The Humboldt Foundation has a new President: in January, the neurophysiologist and brain researcher Hans-Christian Pape took over the helm of the Foundation from the chemist Helmut Schwarz, who has retired after two terms in office.

Hans-Christian Pape is a professor at the University of Münster and a leading expert in the neurophysiological foundations of emotional behaviour. He investigates anxiety and anxiety-related disorders, fear and fear memory as well as the processes regulating sleep and wakefulness. “I am looking forward to my new office and the challenges it’ll pose,” says Pape. “I’m particularly excited about what I hope will be the many meetings with Humboldtians from all over the world.” He is already well-acquainted with the Humboldt Network – so far, however, largely from the point of view of a Humboldtian. In recognition of his work, Pape has won many prestigious research awards such as the Gottfried Wilhelm Leibniz Prize and has also been honoured by the Humboldt Foundation: in 2007, he received the Max Planck Research Award which is granted jointly by the Foundation and the Max Planck Society.

In addition to his research, Pape is active both nationally and internationally in advisory and consultative bodies. From 2011 to 2017, for example, he was a member of the German Council of Science and Humanities which advises Germany’s federal and state governments on developing the country’s universities, science and research. In this capacity, he most recently headed the Scientific Commission and was a periodic member of the Executive Committee.

Hans-Christian Pape was appointed by the then Federal Foreign Minister Sigmar Gabriel to a five-year term starting January 2018. His appointment was proposed by an international selection committee and unanimously approved by the Humboldt Foundation’s Board of Trustees. ●

Foreign researchers' favourite German universities

The universities in the cities of Berlin and Munich are particularly popular amongst foreign researchers. In the new Humboldt Rankings, they head the field. But universities in smaller cities like Bonn and Göttingen are also popular and can be found amongst the top ten. The rankings reveal how many Foundation-sponsored researchers have come to Germany in the last five years – and the places they most frequently chose for their research stay.

The rankings document the intensity of international contacts as well as the reputation of the individual host institutions and are thus an important indicator for internationality. They evaluate the number of research stays undertaken by Humboldtians who conducted research in Germany as Foundation award winners or fellows in the last five years. In order to avoid statistical distortions resulting from differences in the size of the host institutions, the research stays are weighted according to the number of professors at the respective institution. ●

 MORE INFORMATION ON THE RANKINGS
www.humboldt-foundation.de/rankings

TOP 15 HOST UNIVERSITIES

Weighted rankings	Institution	Weighted (absolute) number of guest researchers*
1	Freie Universität Berlin (FU Berlin)	124.77 (272)
2	Humboldt-Universität zu Berlin (HU Berlin)	92.69 (241)
3	Universität München (LMU Munich)	70.88 (258)
4	Technical University of Munich (TUM)	59.60 (177)
5	University of Bonn	57.10 (173)
6	University of Göttingen	56.72 (152)
7	Technische Universität Berlin (TU Berlin)	55.04 (131)
8	Heidelberg University	50.00 (182)
9	University of Bayreuth	45.64 (68)
10	Technische Hochschule Aachen (RWTH Aachen University)	44.03 (118)
11	University of Potsdam	43.80 (60)
12	Bielefeld University	43.67 (69)
13	University of Cologne	41.89 (124)
14	Ruhr-Universität Bochum (RUB)	41.30 (102)
15	University of Münster	40.29 (141)

* Number of foreign guest researchers per 100 professors at the host university

NOBEL PRIZE IN CHEMISTRY

Humboldtian honoured



Joachim Frank is the 55th Humboldtian to receive a Nobel Prize.

Joachim Frank is the 55th researcher in the Humboldt Network to be awarded a Nobel Prize. Together with Jacques Dubochet and Richard Henderson, Frank received the most recent Nobel Prize in Chemistry. The three were honoured for their development of cryo-electron microscopy, which improves the imaging of biomolecules. The method had moved biochemistry into a new era, the Royal Swedish Academy of Sciences noted in its statement announcing the award.

Born in Germany in 1940, the biophysicist Joachim Frank is one of the founding fathers of cryo-electron microscopy. For decades, he has been conducting research in the United States, currently at Columbia University in New York. In 1994, he received the Humboldt Research Award and cooperated with the Max Planck Institute for Medical Research in Heidelberg. ●

THE SCIENCE BEHIND IT

Who actually does what at Humboldt headquarters? Who are the people behind the scenes making sure that everything runs smoothly? This page is devoted to the colleagues at the Humboldt Foundation, their lives at work and beyond.

TODAY: DR JOHANNES BELZ.

I'm the head of the Physics, Engineering and Mathematics Division in the Selection Department. We process the applications and nominations in these disciplines so that the selection committees can make their decisions. This involves getting independent reviews from researchers in closely-related fields, for instance, and maintaining contact with hosts, committee members and reviewers. It is really important to speak the same language and share a degree of specialist knowledge.

In my own case, this is not immediately apparent: by training I'm actually a chemist and was a Humboldtian myself in the 1990s when I had a Feodor Lynen Fellowship in the United States. But there are many intersections between mathematics, physics and engineering in my personal experience. For example, I've been flying gliders since I was 17. For me, it was a short step from flying to the science behind it – not least because I always enjoy getting my mind

around any new technical fields I encounter. When you're flying a glider, you only make progress when you glide. In the process you lose altitude, which means you have to find thermals to climb up again and glide down once more. Modern gliders that can cover 700 or 1,000 kilometres have extremely high glide performance. But you can only get that far if you ensure the air resistance is as low as possible – so you soon have to consider scientific issues like fluid dynamics, polymer physics or, quite simply, mechanics.

I observe this pattern in myself in other areas of my life, as well: as an amateur radio operator I have learnt a great deal about electrical engineering and communications technology. I also ride and restore vintage racing bikes and have consequently immersed myself in mechanics and materials research. So, I suppose you could say that my work at the Foundation and my leisure activities complement each other pretty ideally. ●

Recorded by **TERESA HAVLICEK**

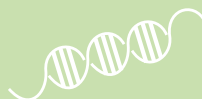
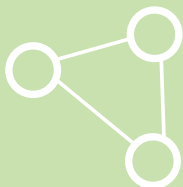
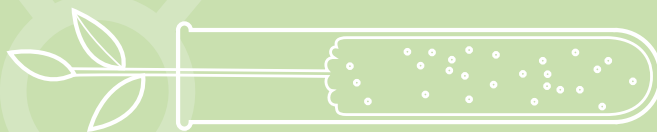
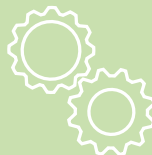




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