

Breaking the *Habilitation* habit

Germany plans to reform its antiquated academic career structure. But has the new model been fully thought through and is it adequately resourced? Quirin Schiermeier considers the evidence.

Madelaine Böhme throws heart and soul into her work as a palaeontologist, but she has no illusions about the career opportunities in her field. At 34, she wants to secure a tenured position. But in all probability, no suitable professorship will become vacant throughout her native Germany until 2007.

Böhme decided to stay at her bench at the Ludwig-Maximilian University of Munich because she loves her work. But she condemns the peculiarities of an academic system that prevent her from applying for a post outside the narrow confines of a traditional geology department. "Our institutional structures are a nineteenth-century fossil," Böhme complains. "Take evolution: there is independent



University challenge: can Edelgard Bulmahn (above, left) inspire Germany's young minds?

work going on in the biology and geology departments, but there is no interdisciplinary unit for evolutionary research."

In November, Böhme and a round table of 11 other young scientists, plus a handful of senior researchers, funding-agency officials, and editorial staff from *Nature*, gathered in Munich to discuss the strengths and weaknesses of the German academic system, and the prospects for reform. Most agreed that changes are needed. But doubts emerged about the specific plans being put in place by science minister Edelgard Bulmahn. In particular, many attendees were worried that the envisaged reforms — although an improvement on the status quo — impose a rigid timetable on academic careers and fail to match the support offered under the US tenure-track system.

Qualified criticism

Complaints about Germany's current university career structure have been piling up on Bulmahn's desk for some time. Last year, she announced a reform package designed to overhaul the system and make it more accessible and attractive to the best young minds. At the heart of these changes is a plan to replace the *Habilitation* qualification. Unique to German-speaking countries, the *Habilitation* is based on a post-PhD second research thesis, and is usually required for a professorship in a given academic field.

Most young scientists see the *Habilitation* as an anachronism that can keep researchers dependent on their professors into their forties. In many cases, the restrictions it imposes last even longer. A *Habilitation* awarded in one department is usually only recognized by oth-



ers in the same discipline. Because Böhme will have the word 'geology' stamped on the *Habilitation* thesis she started last year, the doors to professorships in ecology or biology departments will remain closed to her.

Over the next 10 years, Bulmahn aims to replace the *Habilitation* with a system of six-year junior professorships. The aim is to give young scientists a chance to set up their own independent research groups at an earlier age, while removing the restrictions imposed by the traditional system. Some 180 million euros (US\$160 million) has been allocated to support the first 3,000 junior professorships, which will be awarded over the coming three or more years. More than 50 of Germany's 300 or so universities have already begun to advertise the new positions.

Bulmahn's plans are the latest in a series of initiatives that aim to give young researchers more independence. Building on a model operated by the Max Planck Society since 1969, the private Volkswagen Foundation and the DFG, Germany's main grant-giving agency, have since the mid-1990s supported junior research groups, in which

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Caught in a trap: Madelaine Böhme bemoans the fossilized academic system in Germany.

▶ young researchers are placed in charge of a group typically consisting of a postdoc, a PhD student and a technician. Dozens of these groups are now in existence.

This idea has been taken further at the European Neuroscience Institute (ENI) in Göttingen, a joint initiative between the University of Göttingen and the Max Planck Society that comprises six independent neurobiological research groups and which opened last June. The group leaders are full of enthusiasm. “A junior group position is the



Frauke Melchior believes postdocs need more time.

best you can get, and having several groups working together on several aspects of neuroscience with different equipment means that we really learn to collaborate,” says Stephan Sigrist, who leads the ENI’s neuroplasticity group. Young researchers are broadly supportive of Bulmahn’s new initiative, but many are concerned about the rigid time-frame imposed by the system. Researchers will be allowed to spend no more than 12 years on fixed-term contracts — including PhDs, postdoctoral positions and the new junior professorships, but excluding time spent abroad. Many of those who attended *Nature’s* round table argued that these rules could deny many scientists the extended period of postdoctoral training that can be vital in building the skills needed to become a successful lab head. It may also reinforce a trend that in the 1990s saw 15% of German PhD graduates cross the Atlantic.

“The transition from PhD research to full independence is very hard, especially in the life sciences,” Frauke Melchior, a biochemist who leads a junior research group at the Max Planck Institute for Biochemistry in Munich, told the round table. “Solid postdoctoral training is not only extremely important to become acquainted with scientific techniques; it is also essential for acquiring the leadership skills you need when heading a group involving several PhD students and technicians.” Before she returned to Germany, Melchior spent five years as a postdoc at the Scripps Research Institute in La Jolla, California.

The *Habilitation*, which typically takes five years to complete, at least provides an extended period of supervision and training, argue some senior scientists. At the round table, Thomas Bein, a professor of physical chemistry at the Ludwig-Maximilian University of Munich, called for a twin-track solution, preserving the *Habilitation*. “Helping young scientists get started in a well-established environment and under careful supervision by an experienced professor is not the worst idea,” he argued.

For the time being, the *Habilitation* will operate alongside the new junior professorships. Bulmahn’s plan calls for it to be phased



Teamwork: the newly opened European Neuroscience Institute offers an interdisciplinary approach.

out by January 2010. But that may be challenged in Germany’s constitutional court by opponents led by Hans Zehetmair, the science minister in the Bavarian state government.

Most attendees at *Nature’s* round table said they will not mourn the *Habilitation’s* demise. Indra Willms-Hoff, who oversees funding of the natural sciences by the Volkswagen Foundation, hopes that the end of the *Habilitation* will open top positions to people with alternative qualifications, such as industrial experience. Junior professorships are not the only route to the academic summit, she told the round table.

Disagreement over terms

Nevertheless, many young scientists are concerned about aspects of the new system. Some fear that it pays little attention to the needs of scientists who want to continue working at the bench, rather than aspiring to leadership roles. “If I could, I would prefer to get a good permanent job in the second rank,” Monika Kortenjann, a biologist at the Max Planck Institute for Immunobiology in Freiburg, told *Nature’s* round table.

Ralf Baumeister, a professor of genetics at the Ludwig-Maximilian University of Munich, added that the limit being imposed on the total time for which scientists can be employed on fixed-term contracts could be damaging for established research groups. “People who can reliably operate wickedly expensive equipment are basically the guarantors of continuity, and we should not risk losing them to industry,” he said.

But the biggest concern about Bulmahn’s reform plan is that it may represent an uncomfortable halfway house between the traditional German system and a US-style academic career structure.

Giovanni Galizia, a 38-year-old neurobiologist at the Free University of Berlin, is science policy spokesman for the ‘Young Academy’, a division of the Berlin-Brandenburg Academy of Sciences and Humanities that promotes the careers of young scientists. He spoke for all attendees at *Nature’s* round table when he argued that the junior professorships should be US-style tenure-track

positions — that is, each post should be a stepping-stone towards a full professorship at the same university.

This would mark a big departure from the traditional German system, where scientists who gain a *Habilitation* at one university must seek a full professorship elsewhere. Bulmahn has not stipulated such rules for the new junior professorships, although the new system does demand that researchers move institutions at least once in their career before becoming a full professor.

Some universities are now advertising the new posts as tenure-track positions. But most German states, which finance the universities, seem unlikely to follow this lead. “We are not going to copy the US system,” says Bavaria’s Zehetmair. “Junior professorships must not automatically lead to a permanent position.”

Other researchers are concerned that the new posts are not adequately resourced. “Junior professorships are a half-hearted attempt to create US-like career structures at a low price,” Bein told *Nature’s* round table. “Junior professors will get far less equipment money and, in the absence of tenure track, most likely considerably less support from their universities than US assistant professors.”

Those views are echoed by Helmut Strey, a 38-year-old German biophysicist now working in the United States. Junior professors will be given between 30,000 and 60,000 euros over six years to pay for equipment. That contrasts with the US\$400,000 that Strey received for equipment in 1999 when he started his assistant professorship in polymer research at the University of Massachusetts in Amherst. “From the first day, I was treated as an equal, and my department supports my work 100%,” says Strey. “In Germany, young scientists are often regarded as cheap labour.”

If Bulmahn’s reforms are to succeed, they will not only have to release researchers like Böhme from the straightjacket of the *Habilitation*, but also convince the majority of young German scientists that they truly are valued as independent members of the academic community. ■

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