Court ruling upsets hopes for career reforms

Alison Abbott, Munich

Germany's young scientists suffered a blow this week when one of their most favoured career paths was declared unconstitutional.

In 2002, Germany introduced the title of 'junior professor' in a bid to reform the higher-education system and give young scientists more independence. But on 27 July the country's highest court found that the federal government had no right to force the system on Germany's 16 individual *Länder*, or states.

The 600 young scientists who have already won these junior positions are expected to keep their jobs, but the creation of future posts is uncertain. The ruling has been met with horror by critics, who say it throws the country's education system back into the dark ages. They say that Germany's outdated academic system is harming its international competitiveness.

"We are very unhappy — this is a real throwback into provincialism," says Julia Fischer, speaker for the Young Academy, which promotes young German scientists, and a group leader at the Max Planck Institute for Evolutionary Anthropology in Leipzig.

Researchers in Germany have long been frustrated by the traditional system for advancement. After achieving a PhD, scien-

Fighting on: Edelgard Bulmahn will work to save the endangered 'junior professor' post.

tists work with an established professor to complete a second thesis and prove their teaching abilities — a process known as *Habilitation*. Many German academics do not gain tenure until their early forties.

The scientific community, including the influential Wissenschaftsrat, or science council, and the DFG, the country's main funding agency, have long called for *Habilitation* to be replaced by a US-style tenure-track system. In 2002, the position of junior professor was created in response.

Although not linked to tenure track, the

position at least allowed German thirty-somethings to prove their academic merit independently. The junior professors received some €60,000 (US\$70,000) to set up their research over a period of up to six years. Federal education minister Edelgard Bulmahn set aside €180 million for the programme, and stated that *Habilitation* would be phased out.

By 2004, nine German states had adopted the federal law into their own rule books. But three conservative states — Bavaria, Saxony and Thuringia — took the issue to court over the principle that the federal government should not interfere with their affairs in education. The court agreed.

It is now unclear what will happen to both the money and the jobs. Some states, including Berlin, have vowed to keep the new career path open. Bulmahn says that she will work to modify the law to try and maintain the junior professorship.

But many, including Fischer, argue that the academic system will not be acceptable until *Habilitation* disappears completely from all 16 states. Even when other career paths exist, most young German scientists, including herself, feel obliged to do a *Habilitation* to keep their options open. "You never know whether you will be judged badly if you don't," she says.

Size matters when it comes to safety, report warns

Jim Giles, London

Manufactured nanoparticles should be treated as dangerous until proven harmless, according to Britain's Royal Society and Royal Academy of Engineering. And that requires an overhaul of safety regulations both in and outside the laboratory, they say.

The two organizations were asked to examine the safety of nanotechnology by the UK government. Their report, published on 29 July, calls for the law to recognize something scientists already acknowledge: substances that are safe in large quantities can be dangerous when reduced to particles on the scale of a billionth of a metre.

"Where particles are concerned, size really does matter," says Ann Dowling, a mechanical engineer at the University of Cambridge and chair of the group that produced the report.

No one yet knows whether any particular nanoparticles can harm human or environmental health. But there are hints that large doses of some particles can be dangerous to animals, and a study soon to be published shows that inhaled carbon nanoparticles can make their way to the

brain (G. Oberdörster *Inhalation Toxicol.* in the press).

Nanoparticles are already present in a range of materials, from engine exhaust fumes to sunscreens. Analysts predict that the use of nano-sized tubes and wires will have a big impact on many future products, from drug delivery systems to next-generation computer chips.

The report says that any use of manufactured nanoparticles should be assessed by dedicated scientific panels, operating alongside the regulatory bodies that currently assess the safety of chemicals. All the data should be made public, the authors add.

They also call for researchers to use fume hoods and other protection when handling the particles. Dowling says that many scientists already take such measures, but adds that some labs are currently unaware of the potential dangers.

Dowling's panel also wants Britain's research councils — the main source of UK grants for basic research — to create a research centre dedicated to the study of environmental and human-health aspects

Nano-danger? The environmental and health effects of nanoparticles are unknown.

of nanoparticles. The centre and associated research projects, which would cost £6 million (US\$11 million) a year to run, would look at the behaviour of nanoparticles in air, water and soil, as well as in cells.

The authors did not go as far as some environmental groups wanted. The ETC Group, based in Ottawa, Canada, for example, has called for a moratorium on nanotechnology research until more is known. But the group welcomed the report's precautionary tone, describing it as the "clearest recognition yet" of the need for new regulations.

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