

TURNING POINT

Christian Hackenberger

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Christian Hackenberger received Germany's prestigious Heinz Maier-Leibnitz prize in March for his efforts in finding a way to link proteins to synthetic molecules — an important step in adapting proteins for medical applications. Hackenberger, a bioorganic chemist at the Free University of Berlin, discusses how incremental successes gave him the confidence to pursue big projects.



When did you decide you wanted to be a research chemist?

When I was a child, my parents worked in the chemical industry. They didn't tell me to study chemistry, but their careers influenced me. At school, testing ideas in a laboratory fascinated me. I decided to study at the University of Freiburg in Germany.

You also studied in the United States. What did you gain from that experience?

It was a shortcut. I went to the United States for the first time in 1998, with a one-year scholarship to study organic chemistry at the University of Wisconsin–Madison. This was after the first part of my German undergraduate degree. I had my own project, crystallizing the proteins in membranes and using them to make new detergents. I earned a master's degree, although I had gone simply hoping to do some research. With that degree, I could skip the German diploma study — the second part of the degree system before Germany adopted bachelor's and master's degrees. And I could start on my PhD straight away. After my PhD, I did a postdoc at the Massachusetts Institute of Technology (MIT) in Cambridge.

How did you get involved in science communication?

I moved to Aachen University in Germany to do my PhD, using chemistry techniques to synthesize proteins with specific three-dimensional shapes. My supervisor, Carsten Bolm, gave me a lot of freedom. He let me spend three months as an intern at Westdeutscher Rundfunk, a television station in Cologne, where I wrote for science shows. Ultimately, I decided to focus on research, but my communications experience was not wasted. Especially in chemistry, you need people who can report their research in a way that other people can understand.

What was the most pivotal moment in the course of your research?

At MIT I had to find a way to change the structures of proteins using a mixture of

techniques. There was a big problem with making one particular protein — the technique just didn't work. I was under a lot of pressure because my scholarship was about to run out, and the group that we collaborated with was waiting for some samples. I had to dive into the literature to come up with new ways to manipulate the proteins, and I managed to devise a technique at the last minute. Because I had succeeded this time, I knew that I could succeed in the future.

What led to your getting the Heinz Maier-Leibnitz prize?

I received more recognition after my group discovered a chemical reaction that allows peptides and proteins to be manipulated and altered. During the past three years I've given more than 40 lectures and talks in Europe, the United States and Canada. I was also the first person to receive a grant for untenured academic researchers from the Boehringer Ingelheim Foundation in Heidesheim. That helped me to get the professorship at my university. Then I received the Heinz Maier-Leibnitz prize, which is really prestigious because it is not awarded solely for chemistry. Prizes are very important for advancement in the German system.

Do you plan to stay in Germany?

I have been well funded here, and received a lot from this community. I would be very happy to give something back by helping to support young scientists. I have organized a national collaborative network in chemical biology — young investigators are unlikely to be able to work both chemically and biologically at the beginning of their careers, so we hope to bring individuals from different backgrounds together to work on joint projects. ■

INTERVIEW BY KATHARINE SANDERSON

DEVELOPING WORLD

International funding

The US National Science Foundation (NSF) and the Agency for International Development have opened a funding stream for scientists in the developing world. The Partnerships for Enhanced Engagement in Research (PEER) will enable collaborations with scientists who are funded by the NSF; the US National Academies will help to administer the initiative. Applicants need a letter of support from their US-based partners. The first request for proposals will be released in August, and the first round of funding will be awarded later this year. Six PEER pilot projects — focused on areas such as hydrology, biodiversity and seismology — are already being financed in Tanzania, Bangladesh and elsewhere.

INNOVATION

Support breeds patents

A supportive atmosphere helps university-based innovators to produce more patents and inventions, says a survey (E. M. Hunter *et al. Res. Pol.* <http://dx.doi.org/10.1016/j.respol.2011.05.024>; 2011) of scientists at Engineering Research Centers (ERCs) — interdisciplinary centres funded by the US National Science Foundation (NSF) to bridge academia and industry. Support includes rewards for commercialization that are built into the tenure or promotion processes, institutional leadership that fosters cross-disciplinary opportunities and technology-transfer offices that streamline the patent process. Universities trying to move away from publications as the sole metric of promotion could use ERCs as a model, says study author Emily Hunter, an organizational psychologist at Baylor University in Waco, Texas.

UNITED STATES

University outlooks

US universities have mixed economic outlooks, according to a survey (see go.nature.com/2ttkoc) of 480 private and public colleges by *The Chronicle of Higher Education* and Moody's Investors Service, market analysts in New York. About 90% of public universities faced declines in financial support, compared with just 21% of private universities. But only 1% of private and 5% of four-year public institutions were very likely to enforce mandatory unpaid leave in 2011–12; and 6% of private and public four-year colleges were very likely to freeze faculty hiring.