

GRADUATE JOURNAL

Changing directions

I recently made the tough decision to abandon the research project I started two years ago. The interdisciplinary nature of the biophysical problem I was investigating initially appealed to me. I knew that if I answered key questions, new avenues, both scientifically and professionally, would open. But I also understood from the beginning that working on the frontier meant a high risk of failure.

Until a couple of months ago, the problem remained elusive. Even after that, the data we were generating only showed a few hints of a phenomenon, not definite evidence something was happening.

So, finally, I was confronted with the decision to continue or to switch to another project. Even though I am quite tenacious, I made this decision fast. A new project means the opportunity to dive into a subject in which more knowledge and experience is available.

I have friends who were reluctant to change in a similar situation. Yet I am not unhappy. After all, I learned a lot, especially how to seek out and talk to researchers in other disciplines and assemble pieces of information into a whole. A new project offers new challenges and opportunities. I like a white piece of paper that waits to be filled with new concepts.

Philipp Angerer is a third-year PhD student in biotechnology at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland.

The intern experience

Cell biologist Jon Reynolds preferred reading and writing about science to doing research in the lab. Cancer biologist Nadia Cervoni chose to pursue an interest in science communication. Neuroscientist Stacie Grossman wanted to enter the publishing arena. And I sought a broader exposure to science and wanted to hone my writing skills before starting an independent research position.

Although our scientific backgrounds and our motives for applying for a *Nature* editorial internship were quite diverse, we had one thing in common. With due supervision, we did the same work as the full-time editors of these journals, shepherding manuscripts through the decision-making process, writing press releases and research highlights, commissioning and editing

review articles and corresponding directly with referees and authors.

Jon's six-month spell at *Nature Cell Biology* gave him insights into both the editorial and production aspects of a leading scientific journal, and he subsequently found his niche in production. Nadia worked at *Nature Biotechnology*, where she has now secured a full-time post as an assistant editor. Stacie covered neuroscience during her internship at *Nature Medicine* and, in her current role as associate editor, she has broadened her expertise to include cardiovascular biology, autoimmunity and metabolic disease.

The experiences of the other interns helped to prepare them for their current roles in publishing. My internship at *Nature Structural & Molecular Biology* will help me when I return to the lab.

The ability to write a paper clearly and logically,

to choose the most appropriate journal, and to respond effectively to the comments of referees are vital skills for a group leader — and skills that the internship showed me from the other side of the peer-review process.

As an intern, I was challenged to think analytically about a wider range of scientific topics and approaches than I was ever exposed to as a graduate student or postdoc. Feedback from expert referees and experienced editorial colleagues confirmed whether or not my manuscript assessments were valid.

I hope to turn my behind-the-scenes editorial experience into successful refereeing and publishing experiences in the future. ■

Rosemary Clyne was an editorial intern at *Nature Structural & Molecular Biology*. She is now a research fellow at the Conway Institute in Dublin, Ireland.

MOVERS Wolfgang Heckl, director-general, Deutsches Museum, Munich, Germany



Wolfgang Heckl's boyhood obsession with taking apart household items like radio sets drove his parents to despair. But this curiosity proved to be the seed of a successful scientific career.

Although he turned to dissecting the most powerful and advanced microscopic tools available, this 46-year-old nanoscientist has preserved his early love for screwdrivers and soldering irons. Over the years, he has become the proud owner of a collection

of antique radio sets and classic 1950s jukeboxes, all lovingly repaired, maintained and displayed in his Munich home.

Heckl's scientific tinkering was nurtured by his mentor Gerd Binnig, who in 1986 won a share of the Physics Nobel Prize for developing scanning tunnel microscopy. The instrumentation allows its users to see and manipulate individual atoms and molecules.

Heckl became an early adopter of Binnig's technique, and of his pioneering spirit, when he joined Binnig's group at IBM Research in Munich as a postdoc in 1989. "I owe Binnig a lot," Heckl says. "He really taught us to always make use of our creativity, and encouraged us to dare the unusual."

Binnig's ethos was evident when Heckl created the first visual image of molecules of a DNA base, guanine. Heckl's microscopy-based studies, conducted with New Zealand biochemist

Stephen Sowerby on the spontaneous self-assembly of molecules on a crystal lattice, have provided experimental insight into the possible origin of life. Some scientists believe that well-structured mineral layers, like nanoscale egg boxes, may have provided the 'template' for the first formation of DNA.

As director-general of Deutsches Museum, Germany's largest scientific museum, Heckl is returning to his roots: the museum displays a scanning tunnelling microscope like the one Binnig used in the early 1980s.

Heckl plans for modern science to be better represented. But the museum's invaluable historic exhibits will remain its main attraction. Heckl can continue to indulge his interest in what he now calls 'techniquities' — a mix of technology and antiquities such as the experimental equipment used to discover fission in 1938. But now he needn't worry about parental repercussions. ■

CV 1993--: Full professor of experimental physics, Ludwig Maximilian University of Munich, Crystallography and Applied Mineralogy section

1990-93: Assistant, Ludwig Maximilian University of Munich, Department of Physics

1989-90: Postdoctoral researcher, IBM Research, Munich

1988-89: Postdoctoral researcher, University of Toronto, Department of Chemistry