GRADUATE JOURNAL

Learning to supervise

Andre is an undergraduate I currently supervise. He is working in my lab for six months before he graduates and begins his PhD thesis. Recently, he reassured me by saying that I do a good job as a supervisor — I think that learning how to supervise is a responsibility and skill one should learn early on in one's career.

Although some people feel that training young scientists is a nuisance or a waste of time and energy, I see a challenge in contributing to the development of a potentially excellent scientist. Also, one can benefit from taking on this role. Over the past few years a couple of our students have earned publications — which ultimately benefits the lab.

Supervision needs good communication and an open-minded and fair approach. My experience has taught me that science is basically knowledge management, so you must talk with your whole team regularly, to point out recent developments and identify threats and opportunities to the project.

Such communication isn't always the norm — perhaps because some academics prefer to work alone and others use a 'hands-off' approach. So I have learned the importance of compatibility — whether you will be supervising or being supervised. ■

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

RECRUITERS & INDUSTRY

Building biostatistics

As drug companies incorporate pharmacogenetics into their development mix, they are finding themselves short of key skills. The genome-wide analysis at the heart of pharmacogenetics needs scientists comfortable at the intersection of statistics, mathematics, informatics, genetics and biology. They also need to develop and apply large-scale analysis, and ensure that the results are meaningful and relevant.

Essential techniques in this field include text mining, systems biology, advanced multivariate statistics of gene–gene interaction, genetic epidemiology and statistical genetics, statistical data mining for microarray analysis, genome mining for gene discovery, and mathematical modelling of complex biological systems.

This set of skills is difficult to find in a single person, and interdisciplinary training programmes are only beginning to emerge. Also, in the past, statistics and applied mathematics have become separated; biology needs both.

Even this demanding set of technical skills is not enough. The ideal pharmacogenetics researcher needs excellent communication skills to talk to physicians about phenotypes, to discuss algorithms with mathematicians and explore data analysis and integration with biostatisticians and bioinformaticians.

As academia hasn't been producing these kinds of people, industry may have to make its own. That is the strategy the Serono Genetics Institute (SGI) in Evry, France, is taking — but with a twist.

The SGI needs to boost its 100-scientist staff by 10% this year, particularly in biostatistics for complex-trait genetics and in bioinformatics, to support its pharmacogenetics research.

How to accomplish this? First, the SGI will use as many recruiting tools as possible to find senior and experienced scientists. It is also looking for young scientists who excel in a skill the company needs and have set up their research or career paths early, or shown curiosity about interdisciplinary research. And to meet the target of ten more experts in biostatistics and bioinformatics this year — and probably more in the future — the SGI will train its own future scientists by offering PhDs and postdocs the possibility of tenure.

So, young scientists should have the courage to build up an unconventional and interdisciplinary career that could lead them into pharmacogenetics. ■

Anne Gimalac is communication manager at Serono Genetics Institute, Evry, France.

MOVERS

Simon Bright, director, Warwick HRI, University of Warwick, UK

Simon Bright's career in plant science mirrors the evolution of the field, as its intellectual vanguard shifted from botany to biochemistry, and from molecular biology to biotechnology, and its professional frontiers shifted from academia to industry and back again (see *Naturejobs* 4–5; 10 October 2002).

His career didn't start out in plant science. A childhood curiosity about chemistry led Bright to an undergraduate education at the University of Cambridge and a PhD under Don Northcote. His mentor's attitude of "go out and make it happen yourself" has served as a major source of inspiration, says Bright, as has keeping in touch with 150 or so other scientists who did PhDs with Northcote.

Bright went straight into a staff research job after his PhD. "I skipped the postdoc completely, which was very lucky," he says. Rothamsted Research, near London, had just created three new positions to bring new skills into its mix of agricultural research.

He realized that biochemistry could help him understand problems in plant metabolism, but that only molecular biology and biotechnology would enable him to do something with the knowledge, such as change the nutritional composition of plants. By the early 1980s "it was clear that the next thing I had to do was molecular biotech," he says.

He took a one-year sabbatical at Arco PCRI in the San Francisco Bay Area, where the "extraordinary hub of entrepreneurism and scientific creativity" was so beguiling that he almost didn't return to England. But he decided there were opportunities at home, at a time when the first genetically modified crop plants were being created. He found it "very exciting" to be doing more than just cloning genes, and considers his contributions to the first genetically modified product in the UK — a tomato paste — a highlight in his career.

In industry, Bright learned valuable skills in project management that he will bring back to the academic sector. He is making the switch in part because life-sciences companies are now more interested in development than in basic research. He is convinced that there are discoveries "below the radar" of product-oriented plant-science companies that he calls "the vegetable equivalent of orphan drugs". ■

CV

2002–04: Head of technology interaction, Syngenta, Jealotts Hill, UK
2000–02: Head of European genomics, Syngenta (cereal genomics/bioinformatics), Norwich, UK
1996–2000: Technology interaction manager, Novartis, Jealotts Hill, UK
1987–96: Plant biotechnology manager, ICI Seeds/Zeneca Seeds/Zeneca Plant Science, Jealotts Hill, UK
1974–86: Research scientist/principal scientist, Rothamsted Research, UK