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MOVERS

Anne Glover, chief scientific adviser for Scotland

2001–present: Personal chair, molecular and cell biology, University of Aberdeen, Scotland
1999–2003: Technical director, Remedios, Aberdeen, Scotland
1998–2001: Reader, molecular and cell biology, University of Aberdeen, Scotland

Anne Glover already has plans for when she assumes the role of Scotland's chief scientific adviser next month. She wants science to become part of popular culture. "I'd like citizens to see that everything from probiotic foods to mobile phones is supplied by science," she says.

Her varied background, including a spell in business, should help her in that quest. As a youngster, Glover's interests ranged from chemistry and astronomy through to biology. As an undergraduate, she spent a year studying chemistry at the University of Edinburgh, but switched her degree to the emerging field of biochemistry at the suggestion of her mentor. The move paid off and, after a PhD at the University of Cambridge, Glover found herself doing a postdoc in Aberdeen studying the genome of slime mould.

Her work with slime mould gave her valuable experience in molecular genetics and, after a year spent developing DNA sequencing techniques, Glover was granted a lectureship under the 'new blood' scheme. This UK-wide initiative sought to attract and keep young scientists in academia, largely by reducing their teaching load to allow them to focus on their research.

Glover's move into the world of commerce came about thanks to what she describes as her greatest achievement: genetically engineering microorganisms to make them environmental biosensors. Initially, this work was aimed at tracking the survival of genetically modified organisms released into the environment. "Once you release organisms in to the soil, it's hard to get them back," she says. It was also used to assess whether genes were being exchanged between the modified organisms and the natural community.

To get this information, Glover needed a way of spotting when a modified gene was expressed. She hit upon the idea of modifying it so that it would glow in the dark when active. She later modified the technique so that this 'bioluminescence' occurred in response to changes in the environment, such as the presence of certain toxic compounds.

These biosensors brought out the entrepreneur in Glover and she set up Remedios as a spin-off from the University of Aberdeen to market the technology. In 2000, the industry and government group Biotech Scotland named Remedios as the nation's best new biotech company. Glover has since left the business, but true to her new role and vision, she encourages every scientist to think about the real-world, practical implications of their research. ■

Virginia Gewin

RECRUITERS & INDUSTRY

From student to entrepreneur

When I joined a chemical-engineering graduate programme after working in the pharmaceutical industry, I wasn't sure whether I would ultimately return to the commercial sector or enter academia. The independence enjoyed by professors was appealing, but I wanted my work to have a direct impact on clinical practice. I've discovered that becoming an entrepreneur has the advantages of both career choices. Entrepreneurs have the freedom to direct technological development and the ability to bring a product to the clinic.

The biotechnology sector intrigued me. I liked the idea of building a small, innovative company. By my third year of research, I had the basis for a new product: an antimicrobial coating for medical devices. I was fortunate to find seasoned advisers with proven track records of translating academic research into commercial applications. This was a crucial step.

To evaluate what resources I'd need to turn my science into a commercial success, I entered the Massachusetts Institute of Technology's $100K Entrepreneurship Competition last autumn along with my business partner David Lucchino, an MBA student. This spring, the competition's panel awarded our company, SteriCoat, the contest's top prize. We went on to win Harvard's Graduate School of Arts and Sciences Biotechnology Competition and, in early July, Britain's Oxford Business Plan Competition.

I knew that creating a biotech start-up was inherently risky given that the long development times and clinical hurdles make it difficult to attract investors. I've learned that the keys to success are finding a clear problem with an elegant and compelling solution, and pulling together an experienced team.

Indeed, identifying a clear problem is my top recommendation for young researchers interested in breaking into biotech. Our product, SteriCoat, prevents infections from forming on medical devices such as catheters and heart implants.

Prospective entrepreneurs should be willing to take advice and criticism from potential users and business experts. And they should seek advisers and co-workers whom they trust and enjoy working with. This not only increases the chances of success, but makes the long hours and high-pressure environment much more bearable. ■

Christopher Loose is a fourth-year chemical-engineering graduate student at the Massachusetts Institute of Technology and future chief technology officer of SteriCoat.

GRADUATE JOURNAL

Lost and found

Moving usually involves making surprising discoveries in cupboards and drawers. While packing last month, I unearthed an ABC book my older sister made for me, several high-school essays, as well as all the notes from my first year at university. Apart from the alphabet, which fortunately I still remember, I was astonished at how much information has vanished from my brain. Apparently, not so long ago, I could compare the philosophers of the Enlightenment, summarize the reasons for the Great Depression, and distinguish between the many types of Finnish bogs — all this is now utterly lost.

But with a second look, my feeling of depression faded. The main messages still seemed familiar. True, I didn't remember all the details, but the essentials from my years of schooling were there, ready to be awakened by a little prompting.

The bundles of paper reminded me about the importance of major ideas and scientific themes. Writing up my thesis means I must delve into the smallest details of social life in an ant colony. But thinking outside the box is often useful and inspiring. To find new approaches to old problems, I like to explore other fields through teaching or attending seminars. Simply associating with students in other disciplines and departments can help. So, for those lacking inspiration, don't just stare at the computer screen. Try a game of beach football with your peers. ■

Katja Bargum is a graduate student in the Department of Biological and Environmental Sciences at the University of Helsinki, Finland.