

GRADUATE JOURNAL

Seeking sources of information

Many central European students underestimate their scientific value. We think we are not educated enough because our labs lack modern equipment or do not use the most recent techniques. That is why we search for additional sources of learning.

I found a way of measuring myself against international students when I applied for a traineeship at one of Poland's most renowned institutes: the Laboratory of Bioinformatics and Protein Engineering at the International Institute of Molecular and Cell Biology in Warsaw (IIMCB).

I chose bioinformatics because it is a relatively young science, not yet as popular in Poland as in other countries. It is a good fit for central European scientists because it does not limit you to experiments in the wet lab, where we lack equipment, and it lets you teach yourself, to some extent.

Studying at the IIMCB will help me improve skills I gained during my master's project, when I worked on protein homologue modelling. I had to learn how to do this on my own because nobody at my university worked on this kind of bioinformatics problem. I've always been ambitious, so I anticipate that learning from the best in Poland will help me be as good a scientist as those in cutting-edge Western labs. ■

Karolina Tkaczuk is a graduate student at the Technical University of Lodz, Poland.

Top 10 tips for success in graduate school

Ensure that the choices you make enhance both your work and your career prospects.

10 Starting out Don't take classes as an undergraduate that you will take as a post-grad. Go to college to get a broad education — go to graduate school to earn a union card (or PhD).

9 Choosing an adviser Your adviser is like your spouse. Choose one you respect as a scientist and as a person. The department is your family-in-law. Pick one that has high standards and will challenge you.

8 Know thyself Recognize your strengths, weaknesses, likes and dislikes. Successful people emphasize their strengths, minimize their weaknesses.

7 Write a thesis you can be proud of You will probably

only ever write one doctoral thesis — make it worth the effort.

6 Do good science One cannot over-emphasize the importance of hard-nosed, well-controlled science. When things go badly, it is the only thing that will get you out of trouble. When things go well, it will stop you doing something silly. Be as critical of your data as you are of other people's.

5 The best scientists are artists You will be judged by the quality of your questions as well as the technical excellence you use to address them. Crafting good hypotheses requires imagination, insight and the ability to see what others do not.

4 No guts, no glory You must be brave to be creative. Develop the self-confidence to risk failure, to ask big questions and to aim high. Also, understand when you have been lucky.

If you do not, there is no point in being lucky.

3 Data are royalty Only data are sacrosanct: not hypotheses or beliefs. Critically analyse your data. Don't just look for what you want. Some of the most interesting results are those we did not expect. You can't reject data because you don't like them or they confuse you.

2 Have fun Success takes a lot of work and dedication: you have to love and enjoy the process. Try to make your hobby your career.

1 Remember you are searching for truth Your objective is to join the community of scholars; the sole function of scholarship is to find the truth. Truth is elusive, but the scientific method gives us the most objective criteria available to judge 'truth'. ■

Primal de Lanerolle is a professor of physiology at the University of Illinois at Chicago.

MOVERS

Ingelise Saunders, chief executive, ACE BioSciences, Odense, Denmark



Postgraduate benchwork was "boring", says Ingelise Saunders — so she made a change that set her on the path to success. Starting as a medical sales representative, she went on to work her way up the drug-company ranks to chief executive. "I didn't enjoy the lab work at all," Saunders says. "It was quite clear to me that I needed to get out and work with people."

She found that one of the best ways to work with people — and learn the pharmaceuticals business — was as a product representative, first for Wyeth Ayerst, then Schering Plough and finally Glaxo. She found that experience

invaluable. "What you learn from being a rep — even if you are only repping for one or two years — is how to work with customers and understand people's needs," Saunders says.

Repping is a maligned and often-overlooked career path for scientists, she adds. But it can lead to other opportunities. She has seen colleagues who started as sales reps go on to management or marketing positions — or even back into academia (see *Nature* **430**, 486–487; 2004).

The sales background helped prepare her to make the switch into marketing management. She benefited from a combination of good mentoring and formal management training. "I was fortunate enough to have some very good managers who coached me and helped me," Saunders says.

But after years of working her way to the upper ranks of the large drug companies, she decided in 2001 to

downsize. "I got tired of the big organizations with all the politics and all the bureaucracy," she says.

At Celltech, she "thoroughly enjoyed" being more involved with every aspect of a company. She left after the London-based biotech company was bought by UCB. Her newest job, transforming ACE BioSciences from a research-based organization focused on infectious diseases into a product-based company, will be a big challenge — especially as the company has only a couple of dozen employees. She is rolling up her sleeves and pitching in with the sort of admin tasks she used to delegate.

Saunders sees the move to ACE as a return to her roots in several ways. First, it has allowed her to move back to her native Denmark to head the Odense-based company. And second, she will once again be driving to make sales — but this time to investors. Just like a rep, but with higher stakes. ■

CV **2001–04:** Director, European operations rising to chief executive, Celltech, London.
1986–2001: Area manager rising to chief executive, NovoNordisk, Denmark.
1983–86: Sales and marketing director, Glaxo, London.
1980–82: Sales manager, Schering Plough, London.