

NUTS & BOLTS

GRADUATE JOURNAL

Finding the balance

Scientific work has two opposing demands: the first is the development of sound hypotheses, the second is testing them by hands-on work in the lab. Sometimes I find it hard to keep the balance right.

A prerequisite for a good theory that can subsequently be tested in the lab is a broad knowledge of the field. So I wade through piles of articles and books, follow up contradictory aspects and take a stance. New models must be imagined, including their implications. All this is so intriguing but so time-consuming that I'm regularly getting lost in it. And this is only half the job.

Going back to the bench to investigate the theory takes even more time and energy. Things are often not quite as straightforward as imagined. Nature always seems to work counter to human imagination. So testing a hypothesis usually results in adapting it, which requires more testing — and so on.

At some point I must draw a conclusion and I have never felt really confident in doing so. This is not because my presumptions or results are weak. But there are always more papers to read and more experiments to do. And no one has tried any of this before. Still, that's the thrill of science. It's always new. ■

Tobias Langenhan is a first-year graduate student in neuroscience at the University of Oxford, UK.

Soft skills

You're a skilled researcher, steeped in the rigours of scientific enquiry and successful at your work. Your career, one might assume, will be smooth sailing? Not necessarily.

Even for a career anchored in scientific excellence, mastery of a discipline only accounts for a third of what is needed for success. You will also need organizational savvy and personal effectiveness.

Organizational savvy covers general business skills as well as the ability to navigate the politics of a particular work culture. Personal effectiveness covers the myriad 'soft' skills that, left unpractised, can derail the career of even the most accomplished professional.

If you have ever lamented your lack of budgeting experience, felt inept when negotiating a pay rise or found yourself



With Deb Koen
Careers consultant

in the political cross-fire of lab heads, then organizational savvy is the place to focus your energy. If, on the other hand, you are perceived as being aloof, or you have doubts about the strength of your communication skills, then personal effectiveness is where you should focus.

Start by getting feedback from people who work closely with you and are familiar with your style and contributions because they can serve as honest critics. If someone suggests that you work on your interpersonal skills, ask for specific examples to help

frame a 'before' and 'after' picture. A final question to ask is: "What should I start doing, stop doing and keep on doing?" When you have collected feedback from a number of people, use your scientific know-how to look for patterns in the responses.

Next, devise a strategy for adopting new behaviour. Role models are everywhere; start by observing a few. Incorporate some of their good practice into your own repertoire. Supplement these efforts with relevant coursework such as classes in active listening or budgeting for non-financial professionals. As you study and adopt new skills, be sure to close the loop by getting back to your original feedback providers. Continue to monitor your progress, and celebrate your successes. ■

Deb Koen is vice-president of Career Development Services and a columnist for The Wall Street Journal's CareerJournal.com.

MOVERS

Marye Anne Fox, chancellor, University of California, San Diego



Marye Anne Fox, who was inaugurated as chancellor of the University of California, San Diego (UCSD) in March, knows flexibility and relationship-building can have unexpected pay-offs.

Fox originally wanted to teach chemistry and physics to high-school students. But when her first husband opted to do his medical residency in a small town in her home state of Ohio, Fox found no teaching jobs. So she began graduate work.

And when her husband got drafted and assigned to Andrews Airforce Base near Washington DC, she landed a

postdoc position at the University of Maryland in College Park. When his military stint ended, her husband could set up in medical practice anywhere, and was willing to follow Fox wherever her next job took her.

This turned out to be the University of Texas, Austin, where she became the first female assistant professor. She found she relished administrative tasks as much as research. So a chance meeting with former professor Norman Hackerman, who maintained an office in Fox's building, opened new doors. "He really served as a mentor to me, and suggested my name for a number of committees," Fox says.

Fox says she never experienced any tangible discrimination in the early stages of her career. But she was often the only woman on local and national committees, which sensitized her to issues of discrimination and the under-representation of women and minorities

in science. Fox thinks one answer to under-representation is to make people who bring in new faculty members and staff accountable. As part of staff members' yearly appraisal at UCSD, she will ask what efforts they've made to recruit women and minorities. She stresses that this is not an affirmative action approach, but an attempt to ensure that women and minorities are at least in the pool of candidates.

Although discouraged that the number of women receiving tenure-track posts is far fewer than the number receiving PhDs, she still tells women that "there's never been a more exciting time in science" and encourages them to try, despite the obstacles.

These may include raising a family while advancing one's career. But Fox says she is proof it can be done, while maintaining a balanced life. "I'm no superwoman, by any means," she says. ■

CV **1998–2004:** Chancellor and distinguished university professor of chemistry, North Carolina State University, Raleigh.
1976–98: University of Texas, Austin (advancing from assistant professor of organic chemistry to vice-president for research).