

MOVERS

Elena Shevchenko, scientist, & Elena Rozhkova, assistant scientist, Center for Nanoscale Materials, Argonne National Laboratory, Illinois



Elena Shevchenko (far left)

2005-07: Staff scientist, the Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, California

Elena Rozhkova

2005-07: Research professional associate, University of Chicago, Illinois

Despite divergent scientific training, Elena Shevchenko and Elena Rozhkova have much in common besides their given name. Both grew up in Russia, did postdocs in the United States and moved to Chicago to find new opportunities. Each is now eager to tap into the other's expertise as they join Argonne National Laboratory's new NanoBio Interfaces group at the Center for Nanoscale Materials (CNM) to jointly develop novel materials.

Shevchenko is the nanotech expert. She studied synthesis of magnetic nanoparticles for her PhD at the University of Hamburg in Germany before turning to self-assembly of nanoparticles at both the IBM Thomas J. Watson Research Center and Columbia University in New York. She pioneered the use of nanometre-scale forces and charges to create structures with novel optical and electrical properties from dissimilar inorganic materials such as semiconductors and gold. Her success with superlattice structures prompted a move to the Molecular Foundry at Lawrence Berkeley National Laboratory in California. Now she wants to integrate biological components into her inorganic research.

"We'd like to do design multicomponent materials using both inorganic substrates as well as viruses or proteins to see what properties can be extracted from such materials," says Shevchenko.

Rozhkova brings the biological perspective to the group. A bioorganic chemist, she left Russia after receiving a fellowship from the Japan Society for the Promotion of Science to study biological electron-transfer systems. She then moved to Princeton University in New Jersey to continue her studies of biological reactions. Then, at the University of Chicago, she began work on nanocomposites based on biologically inspired processes. "It has been a challenge throughout my career to decide whether I wanted to work in bioorganic synthesis or chemical biology," says Rozhkova. "But I feel those combined skills will serve us well as we develop new materials."

Although Argonne will focus their research efforts on energy-related problems, these nanobio materials are likely to find multiple uses. Eric Isaacs, director of the CNM, is eager to explore the potential of these materials not only in solar energy conversion, but as 'smart' composites that can deliver an inorganic particle to destroy a specific cancer cell. Given the wide-ranging, multidisciplinary goals of this new programme, Isaacs says Argonne is fortunate to recruit two scientists with such complementary talents. ■
Virginia Gewin

MENTORS & PROTÉGÉS

Awards for South Africa's best

Ubuntu is an African concept of mutual support under a communal umbrella. It's a principle embodied by the winners of *Nature's* 2007 South Africa Mentoring Awards.

Barry Fabian, who won the lifetime achievement award, and mid-career recipient Charles de Koning are professors at the University of the Witwatersrand, Johannesburg. Both returned to South Africa after training abroad. Nominators praised them not only for their scientific acumen but also for their ability to pass it on without condescension, and for their equitable treatment of all, regardless of race, sex or background.

Fabian was inspired by his own mentor, Margaret Kalk, who graded his essay from jail after being arrested on an anti-apartheid protest. Now an emeritus professor of developmental biology, he says that academics in South Africa have a responsibility not just to train young scientists, but to create an informed scientific culture within government, the civil services, the media and the public. Jane den Hollander, pro-vice-chancellor of Curtin University of Technology in Western Australia, remembers struggling to adapt as an undergraduate from a small mining town. With Fabian's encouragement, she went on to do her MSc with him. Later she was offered a position outside

academia. "Everyone but Barry thought I was making a great error," Hollander says. Fabian asked her about her skills, strengths and what she wanted in life: indirect guidance that helped her make a satisfactory decision.

De Koning has had 32 MSc and PhD students, who have helped him produce 61 of his 75 published papers. Perhaps the greatest testament to his efforts is the number of his students who stay in science. Many undergraduates are pressured to leave with a BSc, then work in industry to support their extended families. He's sympathetic, but emphasizes the rewards of postgraduate education.

One student had tended cattle and worked in the mines before coming to Witwatersrand. With constant encouragement from de Koning, he eventually did a PhD in Germany and a postdoc in Atlanta, Georgia, before returning to South Africa.

De Koning's commitment is summed up by Edwin Mmutlane, a research chemist at the Council for Scientific and Industrial Research in Pretoria. "On a continent characterized by a dearth of skills and scientific role models, he is doing a phenomenal job as a relatively young person who could have otherwise opted for the alluring prospects of the developed world," says Mmutlane. ■

Paul Smaglik

POSTDOC JOURNAL

Perseverance pays off

I've just heard that the final bit of research from my PhD has been accepted for publication. I'm obviously pleased, but I feel more like sighing in relief than punching the air. It's taken me two-and-a-half years, and two major rewrites, to get to this point — and there's only so many times I can read and recraft the same sentences before I start to get jaded.

From a professional perspective, however, I still have to hold my breath, because publication of my work is just the beginning. My data and ideas are now out in the public domain for other scientists to see and scrutinize. For my paper to be considered successful, that's exactly what I need them to do: read, consider and use what I've written to inform their own research. (Ideally, they'll also agree with my conclusions, but I'm certainly not averse to a good argument.)

Unfortunately, if past experience is anything to go by, I'll have to wait at least a couple of years before I know if I've made an impact or not. It seems funny that, six years since starting my PhD research, I'm still waiting to see how it will turn out. Perhaps the true key to academic survival is not enthusiasm or intellectual brilliance — although both help — but patience and stubborn perseverance. ■

Chris Rowan is a postdoctoral student in the geology department at the University of Johannesburg, South Africa.