

RECRUITERS & INDUSTRY

GRADUATE JOURNAL

International aid to pay the rent

In a perfect world, everyone willing to study would have an equal opportunity to get an education. But we do not live in this paradise. Gaining the necessary skills and knowledge to become a successful scientist depends highly on the country you live in and the university you choose.

This is especially true in Central and Eastern Europe, where the success of your PhD project depends to a large extent on how you are able to finance yourself. Universities here seldom provide stipends or scholarships for PhD students, so we have to find additional work.

As a result of working to pay bills, we don't have as much time as we'd like to spend on our research. For this reason, I decided to search for some scholarships funded by international foundations that would allow me to focus on my project instead of doing several unrelated jobs. But the odds are not favourable. These institutions provide funding to only a few students selected from a huge pile of applications (for example, to 7 PhDs out of 200 applicants), so the competition is really intense.

Nevertheless, I had nothing to lose, so I tried. Now there is nothing to do but wait and hope. A success would mean I could stop worrying about paying my rent and focus instead on finishing my thesis. ■

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

Job creation and environmental protection

The US debate about environmental protection often assumes that saving natural resources means losing jobs. So we conducted a series of studies to see whether that was true.

Our survey of the environmental-protection employment climate led to the opposite conclusion. It also showed that the sector is larger than previously thought, and extends beyond even traditionally scientific jobs.

We found that the US environmental-protection workforce encompassed some 5.1 million jobs in 2004, employing more workers than the pharmaceutical and chemical industries. The majority of those are not in conventional environmental activities, but are standard jobs for accountants, engineers,

computer analysts and other workers.

That doesn't mean that environmental protection doesn't need scientists, just that the workforce is very varied. Our survey showed 55,000 jobs for electricians, 5,000 more than for environmental engineers with graduate degrees, and 31,000 for accountants and auditors, more than twice as many as for geoscientists with advanced degrees.

The breadth of non-scientific professional jobs indicates a need for more education. Subjects such as environmental science and engineering, ecology, chemistry and biology are obviously valuable for all professions in the area — not just scientists. But the industry is creating as many, or more, jobs for people with training at all levels in fields such as computer systems, finance, accounting, electrical engineering and management. Most jobs in this field do not require

specialized training in narrow environmental disciplines.

Finally, at US state level, the relationship between environmental policies and economic/job growth is positive. Environmental jobs are concentrated in a number of sectors including manufacturing and professional, scientific and technical services. All states are seeking to expand their high-tech industrial and manufacturing bases, and environmental protection offers a means of doing this. Investments in this area will create numerous jobs for skilled, well-paid, technical workers, many with advanced degrees, many of them in the manufacturing sector. These are the kinds of jobs that states seek to attract and that provide the foundation for entrepreneurship and economic growth. ■

Roger Bezdek and Robert Wendling are at Management Information Services, Washington DC.

MOVERS

Kenneth Chien, director, Cardiovascular Research Center, Massachusetts General Hospital



Kenneth Chien likens science to a game of chess — those who go far not only see 10–20 moves ahead, they visualize the entire next game. By that definition Chien, an MD-PhD, is biology's Bobby Fischer.

Although Chien's motivation came from his medical training in Texas, his career blossomed at San Diego. His early move to use the mouse as the model organism for physiology raised

some eyebrows. "A number of people thought that the mouse wouldn't be a good model," Chien says.

But the bold move turned out to be the correct one. Chien's work is already on to disease, he built double knock-out mice to identify a defect critical to heart-failure progression. But it's his most recent discovery, of stem cells (mouse, rat and human) specialized to grow heart muscle, that may provide a cell-therapy approach to paediatric cardiac disease.

Some of his early moves depended as much on serendipity as strategy. Receiving a phone call to collaborate on a "screwed-up mouse heart" started him on the path of mouse models and began a decade's collaboration with scientists such as Ron Evans at San Diego's Salk Institute. This collaboration led to a joint training scheme and award allowing students to study at both institutions.

Chien's collaborations stretch across

oceans and ideologies. In addition to maintaining partnerships with operations as varied as Sweden's Karolinska Institute and the San Francisco biotech company Genentech, Chien founded a sister institute to the Institute of Molecular Medicine at Peking University in China.

His new position, as director of the research centre and as Charles Sanders Endowed Chair in Medicine at Harvard Medical School, will begin the next chess game for Chien this September. He says that the new position is a wonderful chance to study mouse embryonic stem cells in the context of human disease.

Having received his first degree at Harvard College, the move brings Chien back to his roots in more ways than one. He will also capitalize on clinical training from his early days. Indeed, for Chien, advancing cutting-edge therapies for cardiovascular disease while continuing to blaze a trail in molecular cardiology is the ultimate check and mate. ■

CV **2004–present:** Founder and honorary director, Institute of Molecular Medicine China, Peking University, Beijing, China.
2000–05: Director, Institute of Molecular Medicine, University of California, San Diego.
1998–2005: Director, Molecular-medicine programme, University of California, San Diego/Salk Institute.
1996–2000: Co-director, Cardiovascular Center, University of California, San Diego.
1992–2005: Professor of medicine, University of California, San Diego.