PRESIDENT'S Column

European vs. U.S. Careers: Your PhD as Your Passport

ASCB President Tim Mitchison invited Tony Hyman to write this column exploring the contrasts between European and U.S. scientific careers.

Many cell biologists training in America wonder about a career in Europe. There seems to be ample funding and a more relaxed attitude to science there. Most will think about the American system, which is transparent and open. In the U.S. assistant professor jobs are advertised in the fall, and prospective professors can identify these jobs through a simple look through the key journals. Because the U.S. is so large, and bioscience research largely funded through one organization, the National Institutes of Health (NIH), there are many jobs with the same character. The hiring decision generally comes down to the following question: Will the candidate be able to get an R01 grant? Any potential candidate from Europe must bear this in mind. It doesn't matter how brilliant your ideas are, or how strong your technology, you are unlikely to get past a search committee if your research proposal won't "cut it" in an NIH study section. The successful candidate is given a university-based lab plus a generous start-up package. He or she is left to "get on with it."

Tony Hyman

No Transparency but Direct Funding

As cell biologists turn their attention to Europe, they are not able to identify a clear and transparent job market: Despite the harmonization of many aspects of European Union (EU) life and work, the science job structures remain unique to the individual countries. Furthermore, even the individual countries themselves often have multiple major funding sources. A cell biologist in the UK might be funded through the Medical Research Council (MRC), Wellcome Trust, Cancer Research UK (CRUK), Biotechnology and Biological Sciences Research Council, or even the Royal Society, each with its own requirements and review process. This thicket is a historical consequence of the fact that the European job situation was a terrible mess 10 to 15 years ago. Junior scientists were poorly supported and embedded in a hierarchical system. This led to a massive effort to develop programs throughout Europe to help starting scientists. Although these have been successful in the individual countries, they are not harmonized across Europe. Therefore the career structure in each individual country must be studied separately. This is the main problem with the European system, and where it needs to learn from the U.S.

At the heart of the modern European system, especially for labs that recruit internationally, is a junior PI system that often comes with direct funding. These jobs tend to be at research institutes, separate from the university systems. The university systems are harder to enter because of the requirement to teach in the native language. Good examples of research labs with fully funded group leaders are the European Molecular Biology Laboratory (EMBL) in Heidelberg, the Max Planck in Germany, the MRC and CRUK labs in the UK, and the National Center for Scientific Research in France.

In many ways these are ideal jobs. They give the starting PI or group leader an easy transition into science management. These institutions tend to have central facilities, which give access to multiple expensive technologies. However, they also centrally provide things that are sometimes overlooked by postdocs when choosing an assistant professorship in the U.S., such as secretarial support and dishwashing. I remember when I was a postdoc in Tim Mitchison's lab, interviewing and firing one poor dishwasher after another (I think Tim was too shy to do this). While the poor assistant professor in the U.S. is selecting a dishwasher, his or her European cousin is getting on with starting the science.

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This is something that the U.S. system can learn from the Europeans. Why make young scientists into managers right away? The starting group should be at its most creative period, when the PI can look around for an understudied problem and get on with it in peace for a few years. It's hard to carve out a niche when competing with senior established labs. From across the pond, it seems that the pressure of the R01 system, with its overdeveloped requirement for preliminary data, hinders this process. U.S. assistant professors are forced to develop what they did as postdocs.

Although these European jobs seem to be halcyon environments in which to start a science career, several aspects reduce the number of applicants for these jobs. The first problem for the young cell biologist is that entering the European system requires more investigation than the U.S. system. I can give a few general tips.

First, you can always find out details of these jobs by writing to senior and junior scientists in the different systems. Ask your PI; she/he probably has contacts all over the world. If not, there are certainly other professors at your institution who have such contacts. Many have trained in Europe and remember their time there with fondness, although no doubt you will hear about the cold houses in the UK, or periods of starvation in Germany because the shops close early.

Second, don't wait for the fall. Unlike the U.S., jobs in Europe are advertised throughout the year. This is often because the jobs come with funding and, therefore, the decision on whether to announce the job depends on availability of funds. If you want to find out when jobs are likely to be advertised, a simple email to the administrator will tell you. In my own adopted system, the Max Planck, we have an innovative system called free floating; postdocs are selected through interviews, and given a job and full funding for up to nine years. Importantly, successful candidates can choose the Max Planck institute where they would like to work.

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No Tenure Track, but Nine Years of Funding

A second problem that worries potential applicants to European institutes is the lack of a tenure track. Because of the stronger labor laws in Europe, there is a greater reluctance to give out permanent jobs. Although some jobs do have tenure tracks, in most European research institutes, the system works by junior scientists applying for senior tenured jobs in other locations. This transition from junior to tenured senior professor is one that has not been sorted out in Europe; there is no obvious transparent career path. This is something that must be addressed if Europe wishes to capitalize on its successful junior programs, and if it wishes to bring in the best international scientists from around the world.

Anecdotally, I can say that this transition does actually work in practice. My alma mater, EMBL, which has a hard cut-off at nine years, has been remarkably successful at placing its junior group leaders in tenured jobs throughout Europe. It's hard to think of someone who has not successfully made this transition. After all, if you are given nine years' funding with no grants to write and no teaching, and access to central facilities, you are likely to produce a lot of good science.

Reaping Rewards, Handling Change

The senior jobs in Europe often come with big rewards. A Max Planck director is a tenured position with full research funding (depending on review). Similar jobs are available in other European countries. Finally, although the prospect of a move after nine years seems hard, there is the old phrase "a move is as good as a rest." Many of us had parents who were executives in companies that moved them around the world; children often came out of this with a cosmopolitan worldview. And

such moves are now supported by an extensive network of international schools. Nevertheless, many European institutions are moving toward a tenure-track system, inspired by the American model.

It would be an excellent step forward for the worldwide endeavor of science, and would emphasize its global nature, if there were a unified career structure for promising scientists, which incorporated the best of all worlds: a transparent career structure, with clear steps for promotion. Starting group leaders would be given full funding for a small group for five years, with no administrative responsibilities. This would allow them to develop new lines of research. After the initial funding period, group leaders would use these results to compete for grants. Importantly, institutes and universities receiving NIH money would have to commit to a basic level of support, such as dishwashing. Promotion would come with increasing administrative responsibilities.

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In conclusion, the U.S. system continues to be driven by its clear and transparent career structure, the lack of which hinders the European system. However, the current funding problems in the U.S. mean that this system is not as attractive as it used to be. Getting the first grant is often a major struggle and a source of disillusionment for young scientists who have worked so hard to get to their positions. Support of many young researchers in Europe makes a starting PI job in Europe very attractive. But the lack of career structure means you have to have an optimistic personality to pursue this.

In general, I would say for anyone contemplating a move between the U.S. or Europe, in either direction, that a PhD in science is the only true international passport. You can pick any country to work in, confident of a work permit. Other professions such as lawyers or doctors must jump through considerable hurdles to work abroad. Why not use this advantage to see the world? ■

—Tony Hyman, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

Comments are welcome and should be sent to president@ascb.org.

Gache, Reymann Honored as Young French Cell Biologists

Vincent Gache

Anne-Cécile Reymann

The French Society for Cell Biology recently chose two young scientists to receive student travel awards. Vincent Gache and Anne-Cécile Reymann will receive expense-paid trips (compliments of the French Society for Cell Biology) and meeting registration (compliments of ASCB) to attend the ASCB 2010 Annual Meeting in Philadelphia, PA. They both will present their posters, and will report on their meeting experiences for the *ASCB Newsletter*.

Gache is a postdoctoral fellow in the lab of Edgar Gomes at INSERM, University of Paris, France. His abstract title is "MAP7 and Kinesin-1/Kif5b Are Involved in Nuclear Positioning in Skeletal Muscle Myotubes." Reymann is a PhD student at UMR CNRS/CEA/INRA/Université Joseph Fourier de Grenoble, France. Her poster is entitled "Nucleation Geometry Governs Ordered Actin Network Structures." ■

—Thea Clarke