

TURNING POINT

Morris Birnbaum



Morris Birnbaum, an academic cardiovascular researcher for more than 20 years, left the University of Pennsylvania (Penn) in Philadelphia in May this year to become chief scientific officer for cardiovascular and metabolic disease research at pharmaceutical company Pfizer in New York City. He explains how the move has been both daunting and invigorating.

What was your postgraduate training like?

I always knew that I liked research and wanted to do it. After medical school, where I trained in internal medicine, I thought I would have an active clinical and research life. The molecular-biology revolution was just starting and I decided to go to the University of California, San Francisco, as a postdoc to get skills in that discipline. It was a complete disaster.

What went wrong?

Due to my clinical training, I had not been in a lab for five years. I deliberately picked that discipline because it was completely different from what I did as a medical student — I knew it was going to be important to have a grounding in molecular biology and genomics. But as a result, I knew absolutely nothing about it, technically or intellectually. I also was not prepared for the level of independence that I was given in a large lab. I floundered there — I did not know what a good project was. I never got anything to work well and never got a publication.

How did you recover?

The smartest decision I ever made was realizing that I was not ready to run a lab. I turned

down job offers to be an assistant professor and took a second postdoc in molecular biology at Memorial Sloan Kettering Cancer Center in New York City. I realized that I had control over my life and scientific productivity. It's interesting. Two messages that I try to get across to trainees are: you do not have to have success quickly to have a great career, and the only person you can depend on is yourself.

Why did you never practise medicine?

After my second postdoc, I took a job as an assistant professor at Harvard Medical School in Boston, Massachusetts, thinking that the moment I had my lab up and running, I would start seeing patients. As the years went by, I realized that for me, basic research was a full-time job. Even though I trained as a physician, I never saw a patient again. I do not regret the medical training, though. It was a major time of personal development and it has informed my science ever since. I have always run my labs to focus on projects with a physiological relevance. I stayed at Harvard for roughly seven years and then moved to Penn. There I secured a Howard Hughes Medical Institute appointment (which provides full salary and benefits, and a research budget for five years) to study glucose transport.

How did your research focus shift?

When I cloned the gene *GLUT4*, which specifies the genetic code for an insulin-regulated protein that facilitates glucose transport into and out of tissues, it changed the field of insulin action. It allowed us to focus on the mechanism of action of insulin in muscle and fat. I had to retool completely. I basically became a cell biologist. By the time I moved to Penn, I was frustrated — it had been hard to do *in vivo* physiology at Harvard because of a lack of access to animal models. But after the move, I started using mouse models. For 20 years, my lab studied aspects of how insulin works and how the body deals with nutrients after a meal.

It sounds like you were having a good run. Why move to Pfizer?

I was arguably at my most productive, doing exciting stuff. But I had been on the advisory board at Pfizer for ten years. I had some knowledge of what was happening at the company. I agreed to talk to Pfizer because my wife was interested in moving closer to family in Boston, but I made it clear that the chances of my moving were vanishingly small. As I continued the interview process, however, I kept asking myself whether to stay or go. The decision was

down to which path would prove more challenging. I realized that staying in academia, even though it is harder now to secure funding and publications, was the easier route. Trying something that I knew nothing about — that could have a big impact — was much harder. It got me excited about the possibilities.

Did changes in academia affect your decision?

Somewhat. One that did is the increasing importance placed on publications. Twenty years ago, a scientist was judged on a body of work; people worked on the same thing for long periods of time. In many labs now, the goal of doing science is the publication.

What has been the biggest adjustment in working at Pfizer?

Two aspects have been difficult. First, the size and scope of the job are much larger now; for example, I have to stay up not just on the science of developing a drug, which includes chemistry, pharmacology and drug safety, but also on the business, marketing and competitive-landscape side. There is also a hierarchical part that is different from academia, where the boss concept does not really exist.

Any unexpected surprises?

Yes. One of my big fears about the move to Pfizer was that instead of focusing on science, I would be stuck in meetings all day. That is not the case. I do the same fundamental exercise each day — interpreting data and doing experiments.

Can you dispel any myths about the pharmaceutical sector for young researchers?

Yes. It's a myth that you cannot do interesting science in industry and that you have no independence. For example, our postdocs work on non-drug-related basic investigations so there are no restrictions on publishing their work. The other myth is that academia is collaborative and the pharmaceutical sector is not. Nothing could be further from the truth. Here, people are judged much more by how they contribute to a successful project.

Do you think you will look back on this as a good career move?

The philosophy here is, 'Give leaders autonomy and hold them accountable.' As the months roll by, it is becoming more and more clear that I am going to have to establish successful drug-development programmes. The goals in drug discovery are different from those in academia and impossible to fake: get something on the market to help somebody. But I am already feeling how much pressure that places on us to succeed at something that is really hard. ■

INTERVIEW BY VIRGINIA GEWIN