When the Going Gets Tough: Scientists' Personal Challenges

As part of *Cell*'s 40th anniversary celebration, we are spotlighting 40 principal investigators under the age of 40, and we asked each of them to describe their biggest personal challenges while working in science. See the full profiles of all our "40 under 40" scientists and their responses to this and other questions at http://www.cell.com/40/under40.

Putting All Eggs into One Basket

Claudia Lengerke
University of Basel

The high risk that we take during training, when several years of work are focused on one main project that may also not work but that is decisive for the further career, was a particular challenge to me. Due to my dual career in medicine and science and also personal life circumstances, the time I could allocate for my postdoctoral research was limited. I was very worried that my project would not work out under these circumstances. What are the solutions? The chances that the project fails can be reduced by discussions with colleagues who can help identify weaknesses and develop new ideas for dead-end thinking paths. Making your own contributions to other projects fosters collaboration and further improves interaction. However, the risk remains. I have great understanding for trainees finding themselves in similar positions and find living with this risk to be one of the major challenges in the early career of a scientist. As a lab head, I can be actively involved in several projects at a time—this is to me the greatest benefit!

The Chore of Writing

Oscar Fernandez-Capetillo
HHMI, Spanish National Cancer Research Centre

There are two things that I find particularly difficult. The first one is that I don't enjoy writing papers. I like to discover things, and in the lab we work until we are truly convinced that our discoveries are solid. However, once I understand how something works, I become bored about it and want to move to the next question. This implies that I do not enjoy writing a paper, and even less spending months of work just to satisfy the demands of a reviewer. It is frustrating and my perception is that we are wasting time and resources unnecessarily on the beautification of papers until they become "conventional." However, the core idea of a manuscript hardly changes from the first version. The message of a manuscript is either right or wrong, exciting or not, and novel or not. And if you think that something is right, exciting, and novel, then it should be published without unnecessary delays. This is also my attitude as a reviewer. I am not the kind of person that would ask for 30 things, just because I think they could be cool. Editors should pitch in much more and cut the demands into sensible ones if a story deserves to be told. The second challenge is learning to say no. I try to please everyone and help as much as I can. However, this has led me to live constantly overcommitted, with an impossible agenda and spending too much time away from my family.

The North and South

Iva Tolic-Norrelykke
Max Planck Institute of Molecular Cell Biology and Genetics

I come from the south of Europe, and I am used to the southern way of life, but at the same time I love to work in places of great science, which are somehow easier to find in northern countries. I have been working in five different countries, and each time it was a compromise between work conditions and private life. I started my graduate work at the Rudjer Boskovic Institute in Zagreb, Croatia. Lots of fun, modest work conditions. Most of my thesis work on cytoskeleton forces was done at the Harvard School of Public Health in Boston, where I had great work conditions, but not much of the Mediterranean lifestyle. The situation was similar during my first postdoc at the Niels Bohr Institute in Copenhagen, where I worked with optical tweezers. I continued with studies on microtubules in vivo by using optical tweezers and laser ablation during my second postdoc at the European Laboratory for Non-Linear Spectroscopy in Florence. Now this was a lot of fun, both in and outside the lab, but the opportunities to become a group leader were nonexistent. I got a job at the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden, where I spent 9 years in a science heaven. Now I have returned to my home institute in Zagreb, with a dream of making the best of both worlds.

Breaking the Mold

Maria Barna
Stanford University

I tend to be a bit shy; yet science is perhaps one of the most social jobs that you can have. This is a concept that is hard to fully appreciate early on, because you initially spend a relatively large amount of time working at the bench. However, to be successful, you need to be vocal about your science, but being assertive and having a highly "social persona" is also very advantageous. It can be difficult to fit this specific mold. For example, for some woman scientists, enhancing self-confidence and assertiveness can be a challenge. That is why I think it is so important to have much greater diversity in science overall. I believe that scientists are often "typecast" into a specific mold, and it can be a challenge to break from that convention.

Time and Money

Todd Coleman
UCSD

Time, time, time and money, money, money. I get passionate about many things and want to pursue them, but lack of time ends up slowing me down most. Committee meetings, tending to e-mail, or writing grants to keep the lights on take time away from doing the fun stuff. Being in science is great because you are your own boss and you get to control your own destiny, but on the flip side, the time to pursue the things that make you passionate slips away more and more. Universities are increasingly cash-strapped, and this together with the tough funding climate creates a double-whammy. Another issue is the changes in how people are assessed. We are all aware of two recent Nobel Laureates saying that they would not have been promoted in the current academic climate. I worry that too much emphasis is placed on quantity of papers and in what journals they are published, as compared to the substance of the projects. This should change. Rather than tying funding and promotion decisions to such criteria, a careful assessment of the quality and impact of the work should be developed. Otherwise we run the risk of going into a downward spiral of working more with less productivity, developing a bunch of incremental results that will not stand the test of time. If the way people are assessed doesn't change, I worry that the very best will continue to innovate extraordinarily, but the "middle class" of scientists that used to be great will evolve to only be good.

Going Home

Dario Zamboni
University of São Paulo

When I finished my postdoc in the US, I decided not to apply for academic jobs in the US and to return to Brazil in order to help the development of a better country here. As a Professor/PI in the University of São Paulo, I found some challenges for doing high-quality science. For example, it is still very time consuming to import reagents for research. The funding system in Brazil is also challenging because many funding agencies value the number of the papers published by a scientist instead of favoring the quality of the science produced. Also, the authorship positions in published papers are often not valued. Together with some colleagues, we have been fighting hard to fix these missteps in the Brazilian system. I am quite optimistic about the future, and I am sure when I finish my journey I will leave a much better system for the following generation of Brazilian scientists.