EMBO reports

editorial

The foot soldiers of science

A good friend of mine, Richie, went for a walk in a beautiful part of Ireland. On his way, he stopped to admire the view, had a massive heart attack and died on the spot. Just 41 years old, Richie was a university lecturer and an active scientist with a small research group. He was successful in applying for grants, some of them from the EC, and had a constant output of papers in specialist journals. Of course, the loss of a good friend is always a reminder that death looms for every one of us and makes us think about the meaning of life. In the context of this editorial, I would thus like to focus on the thousands of scientists who, like Richie, have small research groups in universities around the world. They do not publish in the high-profile journals and their contribution to science is frequently overlooked, but they are nevertheless an important factor in the academic world.

The few journals that we have time to read are typically those that report cutting-edge research. Many of the authors represent the icons of science in their respective fields and most come from leading institutes with a high name-recognition value. These scientists were selected by various panels during the course of their academic career as the best and most valuable, not to say durable, researchers from amongst all the other aspirants. We are familiar with their names and tend to focus on them in a table of contents. They represent the role models we have heard about as students, we regularly see them at conferences and they are at the top of the scientific ecosystem. But as experience tells us, any balanced and functioning environment needs many types of organism. We respect and wish to emulate the lion kings but the academic ecosystem requires other animals beside these heroes.

If you take any university you will find many people like Richie. As lecturers, they assimilate the flood of information from the scientific literature and present it to the fledgling students in digestible one-hour bites. They need to cater for the very bright students—lion cubs perhaps—and for the less motivated. If they do their job well, they may hook some of them such that they want to taste more, and if they do not, they will anonymously feed the drift of young people away from science.

In addition to lecturing, these scientists at mainstream universities also maintain their own research programmes. Their choice of topic is often constrained by the realities of their location. They often do not have access to all the equipment that they need, they will have less funding opportunities and they are unlikely to be the first to publish a key result if they work in a highly competitive field. In other words, they experience a level of frustration that is difficult to comprehend by those working in leading, internationally renowned laboratories. It may even go further. Coming from an unfashionable location, when they have found something of special value, they may not be able to publish it in the leading journals and they are less inclined to pick up the phone and argue with an editor. They are rarely invited to give a keynote speech at international meetings and may even experience difficulties in being accepted as a participant. These scientists do not attract many postdocs and generally their level of output ultimately matches their environment, even if they had a prior life in an excellent laboratory. And yet they are the ones who nourish the new students. These scientists teach their Ph.D. students to be rigorous, critical and honest, how to do the right controls, to read the literature and to work at a level that matches their ambition. They are the ones who provide comfort when experiments fail, or when students experience difficulties outside the laboratory. And they are the ones who guide the fresh Ph.D. students in choosing the next step in their careers. In short, scientists such as Richie are the essential foot soldiers, who make sure that young aspiring researchers survive in the research environment and take their first steps up the career ladder.

So when we look at science as an ecosystem we should properly recognise the contributions of all members. While we have prizes and honours for the top researchers—which is totally appropriate—we tend to forget that their work would not be possible without the pre- and postdocs trained in smaller departments. The growing importance of scientists in our modern societies is also a compliment to their teachers and mentors. All are part of the scientific universe and should be recognised for their essential role. And those of us who find ourselves in relatively privileged surroundings are well-advised not to forget these foot soldiers on whom we ultimately rely to supply our laboratories with bright and well-trained postdocs. So what can we do to make them feel more appreciated? Should we reserve places in our meetings for them? Should we organise meetings to specifically support them? Should we accept more invitations to speak at universities that are not obvious centres of excellence? Should we establish contacts with the laboratories of our best new postdocs who often come from this feeder system? We should perhaps do all of these things, but most of all, we must not ignore the importance of the foot soldiers, particularly since they are as committed as the leading researchers but have a different task to perform.

The university where Richie worked has appointed a replacement. Such turnover is an essential component of a vibrant ecosystem, but it would be good if all the new appointees to junior lecturing positions felt that they were sufficiently appreciated for their work. We should ensure that they receive this message and are motivated to inspire the next class of future scientists. We need them to do so.

Frank Gannon

We would like to congratulate Robert Horvitz and EMBO members Sydney Brenner and John Sulston for receiving this year's Nobel Prize in medicine/physiology as well as John B. Fenn, Koichi Tanaka and EMBO member Kurt Wüthrich for receiving the Nobel prize in chemistry.

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