Sir Paul Nurse

Joint winner of the Nobel Prize for Physiology or Medicine 2001

Q. First of all, on behalf of the Biochemical Society, may I offer my congratulations on the award of the Nobel Prize.

A. Thank you

Q. How did you first hear that you had been awarded the prize?

A. I was in a meeting in an architect’s office with Kim Naysmith and Jim Watson. We were discussing plans for the rebuilding of Gregor Mendel’s monastery. I got a message to call my secretary urgently. So I went outside and used my mobile to check messages. One of them, left by a person with a heavy Swedish accent, told me that I had won the prize. I couldn’t quite believe it.

Q. Did you think it was someone playing a practical joke on you?

A. I never thought it was a joke.

Q. Actually. I just wanted to make sure I hadn’t misunderstood it. So I then had to go back to hear it again. I am a bit of a techno-phobe and in the excitement I thought I might have deleted the message. I had to re-dial it again and it was somewhat distorted. By the third time I believed I had got it. I went back into the room actually and said to Jim Watson “I’ve got to leave now because I think I’ve won a Nobel prize!”, and walked off.

Q. What changes for the better has the prize made to you?

A. There is no doubt that it can give you a public profile that you didn’t have before. The media is certainly more interested in talking to you, which gives me a great opportunity to promote the cause of basic science and the work of Cancer Research UK.

Q. And for the worse?

A. Suddenly my whole diary collapsed. Within a few days of the award announcement I had received a over thousand letters and e-mails. My whole office has collapsed; I haven’t even answered them all yet. In the last 100 days I have received over 200 invitations to give talks. I am still trying to honour all of the commitments that I had made before the announcement, but I have to turn practically everything else down. It’s just simply overwhelming.

Q. Going back to when you started your research career was there a defining moment when you thought, “Yes, I want to be a scientist”?

A. From a very early age I had been interested in the world around me. At 9 or 10 I began to learn what the constellations were called and wondered what they were and how people could go there. At school, I suppose...
that I was more interested in Physics than in Biology — physics was a man’s subject then with Biology considered too ‘soft and fluffy’! But, as time went by, I became more interested in the biological side of things. You have to ask different questions, but it was just simply more interesting. So I think from quite an early age I wanted to be a scientist.

Q. Almost all of your published work has involved cell-cycle control and more recently cell morphology. What was your motivation for getting into the field of cell-cycle regulation?
A. My initial interest in the cell cycle came from the endless hours I spent watching over temperamental machinery while I was a PhD student. I filled in the time between experiments by reading papers. Lee Hartwell’s papers on the cell cycle in *Saccharomyces cerevisiae* really sparked my interest in a fascinating biological puzzle. I do believe that to do well, you have to be studying an important biological problem. How cells reproduce and divide seemed like the most important biological problem that I could imagine.

Q. Taking over as director of the ICRF (Imperial Cancer Research Fund) was a huge job. Why did you want to do it?
A. I had worked at the ICRF in the mid-1980s and then left to take up a chair at Oxford, which was, for me, a big move in itself. Actually, the ICRF have been really good to me because they protected and supported me when nobody else would. When I was in Sussex at the end of a soft-money contract it seemed that no one else wanted to know, but the ICRF offered me a job with all the help that I needed. When I was in trouble, the ICRF were there for me and I felt very strongly that I owed them for their earlier support. When I was given the chance to return, I had to pay a price and that was to become the Director of Research.

Q. At ICRF and now at Cancer Research UK, large amounts of your time must be taken up with administrative and other duties. Do you find that these take you away from the science?
A. I am the Director of Research, and it is the research that really excites me. Yes, I do spend more time away from the lab than I would like, but I am still producing good science year on year. It is the most important thing for me. In fact, I am very excited and supportive of all the research that now comes under the banner of Cancer Research UK. The work of Cancer Research UK, of course, provides a whole series of new challenges for me, but they are ones that I am really looking forward to. I would hope that we will be able to establish a number of Centres of Excellence for cancer research throughout the UK to provide a ‘joined-up’ approach to cancer care from the laboratory to the clinic.

Q. Where do you see the cancer care field going in the next 5–10 years?
A. We all can articulate the way in which we would like to go, which is the design of individualized treatments for individual cancers without all the side-effects we currently see. Treatment has improved radically over recent years through an iterative process of fractional improvements in both diagnosis and medication, but I think that the next big step will come from absolutely specific treatments for specific types of cancer. We are starting to see some of these emerge now in the treatment of some leukaemias, and I hope that more are on their way.

Q. In what is now described as the post-genome age, do you think that individualized or ‘tailor-made’ cancer care will become possible?
A. Perhaps in 20 or 30 years time. Genomics is the big topic of the day. Just as gene therapy was a few years ago, and monoclonal antibodies before that. People very often over-estimate the impact that technologies will have and certainly underestimate the time taken for new treatments to become available in the clinic.