

Professor Mark Walport

Director, The Wellcome Trust

Q. You first trained as a medic before entering research.

What mediated the move from the clinic to the laboratory?

A. I have always been interested in science, ever since I was a young boy. I became interested really interested in genetics at school. We did some experiments on the genetics of fruit flies and I was fascinated by the notion of setting up specific experiments to test Mendelian hypotheses and performing statistical analysis on the outcome. At the same time, I was drawn to medicine, and the opportunity to combine my interests in clinical medicine with that of science seemed to be perfect.

Q. What got you interested in rheumatology and immune diseases?

A. My interests in rheumatology and experimental pathology really came from my undergraduate time in Cambridge when I took the Part II course in pathology. Rheumatology is a very good speciality to combine with an interest in immunology because a significant number of important rheumatoid diseases are disorders of the immune system. Rheumatology also appealed to me as an area of clinical medicine because you got to know your patients very well. The diseases tend to be chronic, so it is possible to build up a good relationship with the patients.

Q. Do you miss research?

A. I don't miss anything! I am so busy that there is no time to miss things. I very much enjoyed doing research and my medicine, but being at The Wellcome Trust is also very stimulating and exciting.

Q. How did your involvement with the Trust first begin?

A. I first started by referring the odd grant for the Trust. Then I joined the Molecular and Cell Panel — first as a member and then as the Chair of the Panel. After that, I was the Governor of The Trust for a couple of years before becoming Director in 2003. I think of the process as an unplanned gradual evolution.

Q. You have had the job as Director of the Wellcome Trust for 18 months now. Is there anything that surprised you about the position?

A. Not really. I did know The Trust very well at the time I joined it. The Trust itself is, however, going through a rapid evolution. We are now in our new building (215 Euston Road), which is helping us do our work. For the first time, we are all in one building that is largely open-plan and has tremendous meeting rooms. Over the next couple of years, we have the excitement of refurbishing 183 Euston Road into a public building with exhibition galleries, conference facilities,



and expanded library and a bookshop.

**Interviewed by
Richard Reece**
(General Editor)

Q. In the UK, there are comparatively few MD–PhDs, like yourself, who are at the forefront of both science and medicine. Should a greater effort be made to encourage medics into science?

A. I think that it is very important to encourage clinicians to do research. The timing of the PhD does, however, need careful consideration. For doctors who are interested in doing research on clinical problems, there is a lot to be said for doing a PhD after you have had a few years of clinical practice, so that they can understand what the clinical questions are. If a PhD is undertaken early in the career, then I think that it is much more likely to be in basic science and potentially less clinically relevant. Through the UK Clinical Research Collaboration, I am involved in a committee to look at academic clinical career structures. I think that, to produce good medical scientists, a deal of flexibility is required in both clinical and research training. From a personal point of view, I think that

it is tremendously exciting to combine clinical and research training. This should always be an option for curious doctors.

Q. The Wellcome Trust is considered by many to be the saviour of British science. Is having £400 million a year to spend qualitatively different from a budget of £400 000, or does it just become a matter of noughts?

A. It is quite different. There is a huge responsibility to ensure that the money is well spent. £400 million pounds brings pretty substantial responsibilities with it. One of the main challenges for the Trust is to ensure that it funds the best possible people and the best possible science. Of course, the way we do this is to get the best possible advice. No matter how much money one has, there never seems to be enough. Choices have to be made. If your funds are growing and growing then you don't have to make hard choices. When the funds are reasonably stable, as they are at the moment, then difficult choices must be made. I hope that the Trust will continue to spend about £400 million per year for the foreseeable future.

Q. The relationship between the Trust and the Government has not always been an easy one. What can the Trust teach the Government about how to spend on science?

A. Funding excellence is the key to almost everything. There is always a tension between directed research aimed at solving a specific problem and simply encouraging people to do the best science. The Trust has traditionally taken the role of identifying

the smartest people that have the best questions to ask. We then just let them get on with it. In the context of making funding choices, I think that there is a place of having priority funding areas, but it should be the quality of the science that wins through. The Trust has been very successful in tackling international medical research. Diseases such as malaria, tuberculosis and some of the less fashionable tropical infections, where the pharmaceutical companies do not fulfil a market need, can provide tremendous scientific opportunities. In addition to our contribution to sequencing the human genome, for which we were responsible for 33% of the total, the Trust has also been very active in the sequencing of a variety of parasites and other infectious agents. Work in this area provides a scientific opportunity coupled to an unmet need, and is consequently an area in which we like to fund.

Q. How is the introduction of full economic costing (FEC) for research going to affect the functioning of the Trust?

A. This is one area in which we have had a lot of talks with the Government over the last couple of years. I think that the principle is fairly straightforward. The Trust is able to fund very effectively in British universities through a financial partnership with the Government in the form of the Research Councils. The charity QR (quality-related research) funding stream in the last spending review specifically acknowledged this, and should enable us to very effectively continue to fund. Additionally, in the context of FEC, the totality

of charity funding should be taken into consideration, and not just on a grant-by-grant basis. One of the things that strikes me is that the quality of the infrastructure in British universities is transforming very rapidly. The Trust played a catalytic role in this process by supporting the JIF (Joint Infrastructure Fund) and SRIF (Science Research Investment Fund) schemes that have now been turned into regular funding streams. The Wellcome Trust and other charities have therefore contributed enormously to UK universities by providing excellent laboratory space. The charities also do other things. The Trust's role in the human genome project provided crucial scientific 'infrastructural information'. We are also putting over £100 million into the Diamond synchrotron — a very important national facility for structural biology — and other big pieces of equipment in universities. So, across the whole spectrum of our support, the Trust already does its fair share of supporting the university system to provide a sustainable environment. It is, however, a partnership between charities and the Government.

Q. Do you see the formation of the European Research Council (ERC) as a threat or a benefit to UK science?

A. I think that it is an opportunity. However, so much depends on the funding model. The UK position is that an ERC that is based on identifying scientific excellence is an opportunity for both Europe and for the UK. If, however, it gives out its money in a much more politically determined way, then that could be very bad news.

Q. The Trust has been vocal in the support of open-access publishing. Do you think that the days of traditional scientific publishing are numbered?

A. I don't think so. The fundamental issue that concerns the Trust is that the dissemination of the results of the work it supports is an intrinsic part of the research process. This was illustrated *par excellence* by the Human Genome Project, where the sequencing data was put directly on to the Web for everyone to access. This set an extremely important principle that has now been extended beyond the genome project into, for example, the SNP (Single Nucleotide Polymorphism) Consortium, the data for which are now also freely available. There is a great deal of information that is in the public domain due to the insist-

ence of the Trust, other funding agencies and scientists themselves that the information generated was disseminated as widely as possible. The Structural Genomics Consortium is a new partnership to determine the three-dimensional structures of large numbers of medically and biologically important proteins, but the data generated will be put into the public domain. It is only a small extension from this to say that the results of all the research that we fund should be made publicly available. The research is not really complete until the results are made available. What has changed from 20 or 30 years ago is the Web, and anyone with a computer and Web access can get hold of the results. The costs of publishing research is marginal in comparison with the cost of actually doing the

research itself. There are, however, elements of the traditional publishing model that are crucial no matter which publishing route is taken, e.g. the peer-review process as a quality-control procedure is vital, and its rigour must be maintained. I do, however, think that there will be a gradual change from the subscription-publishing model to a funder-pays model. It may take a few years for some of the open-access journals to gain the same status as some of our 'best' traditional scientific journals, but I think that it will happen.

Q. Your Directorship of the Trust lasts for 5 years. What do you want to do next?

A. I am not thinking that far ahead. I have got plenty to do at the moment and it will certainly keep me busy.