



Q&A Harold Varmus

NIH cancer chief wants more with less

Harold Varmus, the high-profile director of the US National Institutes of Health (NIH) from 1993 to 1999, returned to the biomedical agency last July as director of the National Cancer Institute (NCI). In 1989, Varmus shared the Nobel Prize in Physiology or Medicine for his studies on the genetic basis of cancer. More recently, he headed up the Memorial Sloan-Kettering Cancer Center in New York. A year after taking the reins at the NCI, Varmus spoke to Nature about his latest role and about the disease that has defined his career.

You had already headed the entire NIH. Why did you take the job as NCI chief?

When I was the NIH director, I often expressed envy of institute directors: they had the money and ran the scientific programmes. I was right — this job is more interesting.

What have been particular satisfactions or successes during your first year at the NCI?

Refurbishing the leadership team at the NCI, pursuing some important initiatives in cancer genomics and global health, identifying ‘provocative questions’ — important but neglected questions about many aspects of cancer — and working with some extraordinary colleagues. It is also a pleasure to be in place when important projects come to fruition: the National Lung Screening Trial, the pilot phase of the Cancer Genome Atlas, therapeutic trials for metastatic melanoma, and many smaller-scale studies of cancer biology. And I am happy to return to the best urban bike commute in the US: 12 miles through Rock Creek Park.

The NIH is facing its toughest budget in decades. How has that affected your first year at the NCI?

Some effects of this year’s budget are self-evident. An actual decline in real dollars — unprecedented in my time in government — has slowed the progress that is so important to the public, caused a lot of distress in our scientific community, and required extra attention from many NCI staff, including me. I have tried to make fair decisions without losing sight of the fact that we do have a US\$5-billion budget and should be able to do many things, including some new things, with those funds to take advantage of unparalleled scientific opportunities.

The public has high hopes that investment in the NCI will lead to cures for cancer. Can you deliver?

Hope is essential for public support, but it has to be framed around the reality of cancer, not founded on simplistic concepts of ‘the war on

cancer’ or ‘a cure for cancer’. Cancer is a collection of many diseases with common principles, and each disease will have to be understood and more effectively controlled on its own terms.

What should basic scientists know about your intentions and priorities for the institute?

All basic scientists who look to the NCI for funding should know that I will tolerate no retreat on the study of model systems and the pursuit of fundamental biological principles. We have just begun to catalogue genetic and epigenetic changes in cancer cells and to probe the significance of those changes. To make optimal use of that information, we need a more profound understanding of cell and developmental biology.

At a time of historically low grant-application success rates, what are you doing to protect investigator-initiated research?

We are attempting to fund about 1,100 new grants this year by making small reductions in most components of our budget; because the number of applications remains high, the success rates will be relatively low. Under these circumstances, we do not have a traditional, sharp payroll. The NCI scientific programme leaders meet regularly to ensure that we are not ignoring highly original proposals and that we are not creating an unbalanced grant portfolio.

What would you say to those who fear that the NIH is moving away from investigator-initiated research and towards large-scale projects?

I don’t see much evidence for the claim that the NIH is ‘moving away’ from investigator-initiated research. It is the largest component of the NCI’s portfolio and the one that I am working hardest to protect. But there are programmes that need to be undertaken as community efforts because they are expensive and difficult, yet promise advances: the renovated clinical-trials system, genomic studies and certain translational activities. This does not mean taking away responsibilities from our investigators; it means working closely with the relevant investigators to ensure that we develop large-scale projects in a sensible way.

What is your sense of the public’s understanding of cancer science and medicine?

I think it is becoming more sophisticated, especially as new genetic findings and the first targeted therapies are more widely recognized. We are also helped by Siddhartha Mukherjee’s prize-winning book, *The Emperor of All Maladies: A Biography of Cancer*. The book explains cancer research sensibly and forcefully, and it portrays cancer in ways that show both how far we have come in treating some cancers and how much more can be done.

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