

# Where will the scientists come from next time there is a pandemic?

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We have become enamoured with science during this pandemic. Scientists have dominated the media, and everyone waits anxiously for the latest opinion on what is to be done. When Professor Abdool Karrim speaks, everybody listens. Rational scientific debate even takes place in the most ghastly of media outlets. What an advance on the media's usual appeal to emotion, fake history, and false narratives.

But where will the scientists of the future come from? Well, if this government has anything to do with it, we will struggle to find them. The science budget has been cut by R1.7 billion this time. But in real terms, it has been steadily cut over the past 20 years. What is thought of as the "science system" is being weakened from within?

What is the "science system"? it is a set of people and organisations which produce the scientists that are so influential today – the Abdool Karrims of this world. The various ingredients of that science system are being undercut steadily. You can see it in this budget.

- The first tier: postgraduate students – the second-class citizens amongst students. Unlike undergraduates, who have had billions spent on them after the Fees Must Fall protest threatened the ANC's grip on power, they are desperately underfunded. It is very difficult to get a postgraduate bursary and when you do get one it is too small for you to survive on – especially if you are doing a three-year-long Ph.D. And this budget adds to the steady decline in funding available to postgraduate students. Hundreds – perhaps even thousands - of new postgraduate students will be unable to pursue their studies as there will be no funding for them for the 2021 academic year.
- The second tier: academics, particularly research-active ones. These are the most crucial people in the entire system. Not only do they generate and perform innovative research, but they train and supervise the students. Here too we are seeing serious reductions. Hundreds of highly qualified researchers, many in flagship programmes, working in areas ranging from nuclear physics to diversity studies, and who do all the training of postgraduate students, will not receive sufficient funding for their research and teaching to continue as they should.
- The third tier: research groups. These are the places where collaborative and wide-ranging new, often interdisciplinary, research amongst academics and senior students takes place, and where international research networks are made easier. We have seen this grow and thrive through NRF grants for Chairs and Centres of Excellence – but they are now to be trimmed down as the budget shrinks.
- And the fourth tier: spin-off initiatives. This is where researchers and research groups move into the sphere of innovation. Here we find quite worrying cuts in areas concerned with the so-called "Fourth Industrial Revolution". Key projects and programmes in Biomanufacturing, Precision Health, Robotics, Laser Science, Nano-science, Titanium science and Aerospace, will be severely cut country-wide. So, the ANC's real, as opposed to ideological, commitment to the Fourth Industrial Revolution is clearly minimal.

All of these cuts are weakening the fundamentals of the science system. People who manage the system are genuinely worried that a progressive inner weakening will set in which will cause it to

crumble from within. Even worse, the projections show that in the outer years of the Medium-Term Expenditure Framework, there will be no relief for the system.

There is a genuine fear that these cuts will damage the system irrevocably and that one of the most precious parts of our society will deteriorate beyond repair.

When the next pandemic comes along, who will there be to advise and guide us?

We oppose this budget.