

that young people could be put off a career in science entirely, due to the perception that money to do such exploratory research is drying up globally

The warnings from the GYA, an international group of young researchers, are based on a large-scale survey comparing the global research landscape between 2006-10 and 2011-15. More than half of those surveyed—57 per cent—said they believed that recent changes in funding will lead to fewer young citizens choosing to pursue research careers in the future.

The perception that support for fundamental research is withering is already having an impact, said GYA associate Binyam Mendisu.

"We can see that researchers are increasingly shying away from fundamental research in low-, middle- and high-income countries, citing changes to research funding. There is a perceived shift in government priorities towards applied research and away from fundamental or basic science," he warned.

"There is increased emphasis on practical applications and external partnerships in grant applications, and many researchers believe that suggesting practical applications in research is now much more important than it was in the past.

Fundamental failings

The report authors say that the importance of fundamental research must be recognised by those in charge of research and its funding. It should also be stressed to the public, they say.

Better science communication, equitable access to funding schemes, and open access publishing practices were all crucial if fundamental research is to be protected, GYA members concluded.

"The capacity or possibility of any country to compete on the world stage as a scientific powerhouse will be greatly diminished if it cannot attract that country's brightest young minds to research careers," the report's authors stated.

A total of 2,918 researchers from 33 low- or middle-income and 31 high-income countries took part in the GYA survey.

"When asked for their predictions on the funding landscape in five years' time, the majority of participants expected a decrease in funding for fundamental basic research, Mendisu said.

Submarine science

To deal with the problem, some researchers say they are using funding gained through grants for applied research projects to support exploratory projects on the side, something GYA co-founder Gregory Weiss referred to as "submarine science".

"I don't recommend it as a funding model for anybody—it's very stressful," he said.

Eshchar Mizrachi, an associate professor at the University of Pretoria, said: "The attitude that we all have is to hide the basic research—apply for the applied stuff, then come up with something else and do it on the side. My concern is how that selects for specific personalities, and who ends up becoming research leaders and gets rewarded by the system."

Weiss agreed, saying, "It's a number one problem if we start to select for a subset of scientists [who can do this]."

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