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Viewpoint: Focus funding on individual scientists to get the best results

Daniel Zajfman, head of the Weizmann Institute, one of Israel's leading research universities, explains his formula for promoting excellence. Fund researchers and give them full independence and control over the direction of their work, he says

By Éanna Kelly

For Daniel Zajfman, physicist and president of the Weizmann Institute of Science in Rehovot, Israel, the formula for a successful university is quite simple.

"You focus all your funding on individuals; the ones who can move the needle on an issue," Zajfman told Science|Business. "We give our researchers full labs and full funding from day one, and total independence to work. They don't have to report to anyone; they don't have a boss." The pressure is all on them.

"This pressure is very valuable," Zajfman said. "You have to deliver, you can't blame it on anyone else. Of course, there will be failures, but more often than not the approach delivers."

Zajfman points to the fruits of this approach. Weizmann scientists are serial winners of hugely-competitive grants from the European Research Council. The university's researchers have been credited with inventing amniocentesis, a prenatal test for genetic defects, as well as blockbuster drugs for multiple sclerosis, nanomaterials, and advanced computer and data storage technologies.

Six Nobel laureates and three Turing Award winners are associated with the university. Weizmann expertise was highlighted recently, when one of its scientists, Oded Aharonson, helped the Israeli spaceship SpaceIL plot a path to landing on the moon (the attempt ultimately failed).

Zajfman is stepping down in December after serving as president of Weizmann since 2006. During his time as president, the budget of the institute, the training ground of a quarter of Israel's PhDs in science and maths, doubled in size to €400 million a year.

This money goes into 250 research groups across five faculties, namely biology, biochemistry, chemistry, mathematics and computer science, and physics. "How much do we put into the different fields? I don't even know to be honest," Zajfman says. "We don't decide; we leave that in the hands of our scientists."

"People have said to me, 'So you prefer looking for new exo-planets rather than finding a solution for Alzheimer's [disease]?' But it doesn't work that way. The most important factor is the quality of the person who comes through the door. After that, you have to trust them," he says.

Zajfman's successor will be Alon Chen, a neuroscientist who has made strides in decoding brain activity during times of stress and anxiety.

After retiring, Zaijman is returning to his lab to pick up research on molecular dynamics and structure.

He's rusty. "It's been 12 years, but luckily science for me is more like a hobby," he says. Zajfman also wants to teach and inspire students in Israel to take an interest in science and engineering.

Understanding basic science

Despite the thriving technology sector in Israel, it is hard to make the case for continuous investment in fundamental science.

"It's tricky, like it is in many other places of the world," Zajfman says. "You encounter a lack of understanding of basic research in some parts - and that concerns me. But just because things are good now though doesn't mean you won't need new things ten years down the line."

People have to recognise that there's no quick, direct path to new discoveries. And if something is easy to do, it might not be worth doing. "If we shorten the timeframe of our research, what we often end up doing is developing trivial things," he said. "Research however is not about knowing what you're looking for."

Zajfman recognises a trend in science, which he characterises as the "growing challenge to justify your research; a pressure for researchers to define the impact of their grants."

The university's diverse revenue sources, which includes funding from the EU and private philanthropists, mean the Weizmann is, "More or less shielded from government strategy," Zajfman says. Almost all government funding is in the form of a block grant and as a result, "We can choose our own way."

Taking risks

If Zajfman could change one thing about Israeli science, it would be to create more diverse faculties, with more international staff. Israel imposes entry barriers and permit requirements in the name of security.

"I wish we had more international people," he said. "Ninety nine per cent is Israeli. Living here is a profession in itself, when the neighbourhood is so incredibly noisy. Living in Paris or Oxford, you don't have the Gaza strip. It's not for everyone."

But the thought of living in Israel drew Zajfman – who was born in Brussels – in from a young age. "I lost family in the Holocaust," he explains. "So the thought was that Israel would be the best place to be, in case a situation like that ever happened again."

"But also, after visiting Israel a few times, I got the sense that young people were given a lot of freedom here; they are more trusted here than in other places. I don't like societies where age is a function of what you can aspire to achieve."

It's this sense of freedom that has helped Israel's tech sector become an envy of the world, he says.

Zajfman credits military service for giving young people responsibility earlier. "I would be happy to get rid of all armies, but the situation being what it is, we can extract some advantages from it," he said.

"Here we put young people in situations of very high responsibility. My daughter was running a full airport at age 19. You learn that the young can take this and other challenges on their shoulders," he said.

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