Research Focus: the Arc Institute

A new research institute promises to free scientists from the pressures of grant applications. Talha Burki reports.

The Arc Institute, Palo Alto, CA, USA, launched in December, 2021, with pledges totalling more than US$650 million. Several billionaires have made donations, including internet entrepreneur Patrick Collison, who cofounded the Institute along with medical scientists Patrick Hsu and Silvana Konermann. Investigators at the Arc Institute will focus on complex diseases, such as cancer, neurodegeneration, and immune dysfunction. But they will be able to pursue curiosity-driven research in whatever direction it takes them. The Institute will offer no-strings-attached funding.

"We are betting on our investigators' long-term vision", explained Hsu, assistant professor of bioengineering at the University of California, Berkeley, CA, USA, one of three universities partnered with the Arc Institute (the others are Stanford University, Stanford, CA, USA and the University of California, San Francisco, CA, USA). Arc's core investigators, who include Hsu and Konermann, will have their laboratories at the Palo Alto site fully financed for renewable 8-year terms. Affiliate investigators will be based at one of the partner institutions, where their laboratories will be partly funded by the Arc Institute. The Institute will also support several PhD students from the partner universities.

Hsu's background is in developing molecular tools with a view to applying them to human health through diagnostics or therapeutics. "A huge amount of energy goes into fundraising. You have to source the opportunity, craft the application, optimise the formatting, and figure out how to hone the feasibility of the project so that you can maximise the chances of getting funded", he told *The Lancet*. "The headspace that this occupies is immense; it becomes a question of 'what do you think about when you go to bed at night?'". The Institute is in its infancy, so whether its staff will feel unencumbered remains to be seen, but the founders say the Arc Institute is underpinned by a desire to create an environment free from the pressures of grantsmanship.

Konermann is assistant professor of biochemistry at Stanford University. Her laboratory at the Institute will examine the molecular pathways implicated in the development of Alzheimer's disease. Konermann will serve as the Institute's inaugural executive director, a role in which capacity she will have the final say on funding decisions. Collison, who is married to Konermann, will not have a role in the running of the new Institute.

"We see Arc as a helpful addition to the existing ecosystem of research institutions", said Konermann. She pointed out that, since it is privately funded, the Arc Institute need not stipulate an ultimate purpose to the work it invests in. Researchers applying for funding can simply suggest an area of basic science that they wish to better understand, or a question they wish to answer.

"We want to take away the short-term demand to produce output", said Konermann. By doing so, she hopes to encourage investigators to collaborate, safe in the knowledge that they need not maintain secrecy around their results before publication, or as part of the fierce competition for funding. After their 8-year terms expire, Arc's investigators will be asked to outline the most striking effect of their work. "It could be an important breakthrough or some kind of technology. But it certainly does not have to be a specific paper, or a publication in a prestigious journal", explained Konermann.

Five technology centres are also planned, including one focused on multiomics and another on advanced genome engineering. The centres will work with the core laboratories to identify targets for complex diseases. "Our centres will be much more directed than the core laboratories", said Konermann. "We hope that by putting curiosity-driven basic research and goal-oriented technology centres in the same building, we will generate fruitful collaboration."

The technology centres will offer competitive compensation packages, so as to provide attractive career paths in academic research. The final pillar of the Arc Institute is the translation programmes that link investigators to the infrastructure required to bring their discoveries to the clinic. According to Hsu, the aim is to reduce "the friction of advancing basic science beyond the academic lab into for-profit spin-outs that are better suited to make a direct impact on patients".

Konermann plans to add two core investigators each year, alongside a handful of affiliate investigators, until the Institute is supporting 20 laboratories. The faculty will then decide whether to continue expanding or to hold steady. Hsu stressed that all those involved in the new endeavour see it as a multidecade project.

"Whenever I talk about what we are trying to do at the Arc Institute with other scientists, they fundamentally get it", added Hsu. "No-one went into science to write grants, and yet it can be something that ends up consuming more than 50% of your time. At Arc, we want our investigators to be investigating." The Institute will open a call for core and affiliate investigators later this year.

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