



Saul Griffith funds his independent research in areas such as robotics using grants and contract work.

Through a scheme called Breakout Labs, the Thiel Foundation in San Francisco funds early-stage companies working on radical, big-risk ideas that are unattractive to federal funding and venture capital. Grants of \$350,000 help recipients to reach technical milestones, at which point they can start to attract more conventional grants or investments. “I started a commercial enterprise because I wanted tools that didn’t exist, to conduct my research,” says Todd Huffman, who used a Breakout Labs grant to support 3Scan, an early-stage company that he co-founded to develop a knife-edge scanning microscope that simultaneously cuts and scans tissue slices to create three-dimensional models of samples. “I wanted to build these tools during my PhD and my adviser didn’t think it was a good use of time,” he says. Huffman dropped out of his PhD programme but maintains an interest in neuron morphology; after establishing 3Scan, he hopes eventually to return to his PhD with a new set of tools in hand.

Darren Zhu received a \$100,000 two-year grant from the Thiel Foundation to leave university and become an entrepreneur. He is exploring ways to engineer organisms to produce novel molecules, a project that could help him to find a niche as the pharmaceutical industry continues to outsource early-stage research and development. “At this stage of my life, I can afford to take risks, to swing for the fences and see where it takes me,” he says. In addition to his Thiel grant, he has money from the Bill & Melinda Gates Foundation in Seattle, Washington. He used it to buy lab equipment from liquidated firms, with which he has furnished an independent, industrial lab space in Mountain View, California.

OVERCOMING THE ODDS

Zhu says that one of the bigger hurdles of pursuing an independent path is that much of the biotechnology field still places a premium on “old-fashioned credentialing” — publishing work in prestigious journals or

having done a postdoc at a reputable institution. It is a challenge, he says, but one he has overcome by securing high-profile grants and fellowships.

The first challenge that Perlstein encountered was finding a space that met his needs. He was intrigued by the mix of hobbyists and professionals in biohacker spaces but, in the end, they just did not work for his specialized research. The space he eventually settled on is comparatively pricy at roughly \$2,000 per month — but it offers a fully stocked yeast lab that will allow him to hit the ground running, conducting the six weeks of experiments that he anticipates needing to develop a rapid yeast screen for rare-disease therapeutics.

Bethencourt is helping to plan the Counter Culture Labs hacker space in Oakland, California, which will provide lab space to at least 50 paying members from this autumn onwards. But, seeing the need for more specialized spaces, he has also co-founded a small therapeutics-focused hacking space, called Berkeley Biolabs, which is set to open this summer.

Perlstein notes further challenges such as finding insurance to cover mishaps at a rented lab bench. His biggest hurdle, however, may be determining whether his research will translate into a viable company — and whether he wants it to.

With funding and positions growing more difficult to find in academia, many more scientists may become willing to take on the risks. And biohackers looking to continue their work in the face of a dismal funding scene will ultimately form their own experimental units. “People are taking control,” says Perlstein. “I don’t want to give up doing science and I’m willing to go the distance to find a way to make it work.” ■

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EUROPE

Boost for mobility

The European Commission (EC) has proposed a strategy to boost movement into and out of the European Union (EU) for students and researchers. In an initiative outlined on 11 July, some visa restrictions would be eased to help non-European scientists to enter the EU and stay for more than 90 days. Member states will respond to the directive by August. The strategy also calls for a January relaunch of the Erasmus student-exchange scheme, with a budget of €14.5 billion (US\$19 billion) for 2014–20 — a 40% increase on 2007–13. The Marie Skłodowska-Curie Actions programme to fund international researchers will have €5.6 billion for 2014–20, but expects to recruit an extra 10,000 scientists with co-funding from participating countries, says EC policy officer Ragnhild Solvi Berg.

UNITED STATES

Second postdoc survey

In a follow-up to an influential study, the US National Postdoctoral Association (NPA) in Washington DC has launched a survey to gather data on postdoc pay and benefits, policies, services and demographics. Results will be out next year. In 2003, Sigma Xi in Research Triangle Park, North Carolina, along with the NPA and partners, ran the first US multi-campus survey on postdocs’ work, goals and perceptions of policies and practices at their institutions. The results informed institutional and federal policy. Lorraine Tracey, chair of the NPA board, says that the current survey will provide longitudinal data. “This will illustrate for federal legislators and funding agencies how policies can effect change across the postdoctorate,” she notes.

PUBLISHING

Retractions speed up

The number of retractions has risen in recent years in part because journals are acting more quickly, says a study in *PLOS ONE* (R. G. Steen *et al.* *PLOS ONE* 8, e68397; 2013). R. Grant Steen of MediCC! medical-communication consultants in Chapel Hill, North Carolina, and his colleagues analysed 2,047 papers published between 1973 and 2012, and later retracted. Those published in or before 2002 were retracted in 50 months on average; later, retractions took 24 months. Data that seemed “too good to be true” may now slip by less often, says Steen. “There might be a tendency to confront the author.”