go into liquidation, which would have led to catastrophic losses for SVB's customers. But a frantic weekend of lobbying and discussions by the country's tech leaders meant that, by 13 March, SVB's operations there had been rescued by HSBC bank — which bought SVB UK for £1 (US$1.20), allowing all banking operations to carry on as before.

Sebastian Weidt, chief executive of Universal Quantum, a quantum-computing start-up in Brighton, UK, which had millions of pounds deposited with SVB UK, says he had a very stressful weekend. "We had to work under the assumption that our money would be gone, which means we had to find ways to recapitalize Universal Quantum," he says. The company was fortunate in having revenue streams after securing a €67-million ($72-million) deal with the German Aerospace Center based in Cologne (although these funds were no longer needed once HSBC had stepped in).

Samira Ann Qassim, co-founder of Pink Salt Ventures in London, which invests in early-stage female-led tech enterprises, advises companies to hold accounts with different banks to avoid this situation arising in future. "That's the only risk protection that you can take," she says. Early-stage start-ups would have been hit the hardest had the UK government and HSBC not brokered the deal, she adds. "It could have been a few years of absolute chaos."

Aileen Ryan, chief executive of Preoptima, a UK-based start-up that develops design tools to reduce the carbon footprints of new buildings, says that she still plans to bank with SVB UK under its new ownership. But she intends to spread funds across a number of banks in future.

Broader issue

The SVB collapse is symptomatic of the troubles facing the wider financial environment, says Matt Lilley, president of Hult International Business School in London. "The environment was getting much tougher for venture-capital funding," he says. "I think [the collapse] is an effect rather than a cause, and the broader cause is rising interest rates." He predicts that even without SVB, decarbonization start-ups will continue to attract investment in the United States, because of the US government's Inflation Reduction Act, which incentivizes investment in clean technology.

Nevertheless, climate-tech entrepreneurs remain nervous, says Cohen-Cole. "While the lending capacity of SVB can be replaced by other institutions, the potential retrenchment in lending broadly could be damaging. The pity is that SVB was a unique case, not a reflection of the climate-tech space, nor of the economy in general. As a result, I'm confident that other capital providers will ultimately learn of this uniqueness and seek to replace any SVB lending quickly."

NOEL CELIS/AFP VIA GETTY

President Xi Jinping's re-election was formalized during the National People's Congress.

CHINA IS MOBILIZING SCIENCE TO SPUR SELF-RELIANCE

Two Chinese political conferences have boosted science and technology in the national agenda.

By Smriti Mallapaty

Science has been elevated in the Chinese national agenda following two high-level policy meetings of the Chinese Communist Party.

During the concurrent Chinese People's Political Consultative Conference and National People's Congress, which ended on 13 March, government officials sent a strong message that science and technology are the driving forces in China's efforts to achieve self-reliance and high-quality development, say researchers who are watching events closely. The announced changes include the creation of a high-level body to oversee the country's science and technology efforts.

Jing Qian, who heads the Asia Society Policy Institute's Center for China Analysis in New York City, says that focus will emphasize key technologies such as artificial intelligence (AI) and semiconductors, many of which have dual civilian and military uses, he says.

Also at the two sessions, Li Qiang was appointed China's new premier. Li is widely regarded as a pro-business and pragmatic official, who has left a positive impression on foreign investors, says Jing. At a press briefing on 13 March, Li noted the importance of science and technological innovation, and transitioning to a green economy.

The move towards more centralized control over research that requires significant investment and coordination is driven by geopolitical tensions between the United States and China, says Marina Zhang, who studies innovation with a focus on China at the University of Technology Sydney in Australia. Last October, the US government imposed rules restricting China from purchasing advanced computing chips and equipment to manufacture semiconductors.

At the latest meetings, officials announced that Wang Zhigang, the current minister for science and technology, who has reached retirement age for government ministers, will retain his position for now. But researchers say it could be temporary.

Meanwhile, state councillor Xiao Jie said the party would establish a new permanent body called the Central Science and Technology Commission, which will delegate tasks to the existing Ministry of Science and Technology (MOST). It is not yet clear who will sit on this committee, but researchers say that it will probably be led by high-level officials, possibly even President Xi Jinping himself. Such commissions have been established in the past for several crucial areas, such as in 3G technology, says Zhang.

© 2023 Springer Nature Limited. All rights reserved.

This creation of the body will "elevate the status of the MOST in the national science and technology enterprise", says Cong Cao, a science-policy researcher at the University of Nottingham in Ningbo, China.

To streamline the ministry's policymaking, some of its current administrative tasks – such as allocating budgets in agriculture, ecology and environmental protection, and public health – will be handed to other ministries. This could result in some cost savings and prevent duplication of research efforts, says Cao. The work of attracting talent from abroad will also move to be under the Ministry of Human Resources and Social Security.

Funding boost

Science and technology funding is also expected to continue to rise. The government's expenditure on research and development is projected to reach 328 billion yuan (US$48 billion) in 2023 – an increase of 2% on 2022 levels, according to a draft budget report. Overall, China's spending on R&D has increased from 2.1% to more than 2.5% of gross domestic product (GDP) over the past five years. At a press briefing, Wang emphasized that investment in basic research will need to expand.

Researchers expect this funding will flow principally to areas in which China faces increasing pressure from the United States and other Western countries. These include AI, big data, energy storage, semiconductors, biotechnology and the clean-energy transition.

The choice of delegates to the two sessions demonstrates the importance of these technologies, say researchers. The heads of e-commerce firm Alibaba and tech platform Tencent have attended previous meetings. This year saw leaders of the AI software company SenseTime, the semiconductor manufacturer Hua Hong Semiconductor and representatives of chip design, automobile and battery firms. This reflects a "clear change of the focus of the country's innovation policy", says Zhang.

China's emphasis on home-grown technology raises questions about its openness to collaboration, says researchers. Some are concerned that no country can achieve self-reliance in the current global economy. "It's pretty unrealistic to expect different countries to be able to develop totally sovereign technological bases," says Scott Moore, a political scientist at the University of Pennsylvania in Philadelphia.

Jing says the increased emphasis on self-reliance will restrict international research collaborations in certain areas. Moore notes that, despite China's focus on security and competition in recent years, the Chinese research community has so far continued to welcome international collaboration. But, he adds, he is not sure that the non-Chinese academics who engage in these collaborations will be given the same access as they have in the past, especially on technologies deemed sensitive.

GIGANTIC MAP OF FLY BRAIN IS A FIRST FOR A COMPLEX ANIMAL

Fruit fly 'connectome' could lead to a deeper understanding of neurological diseases.

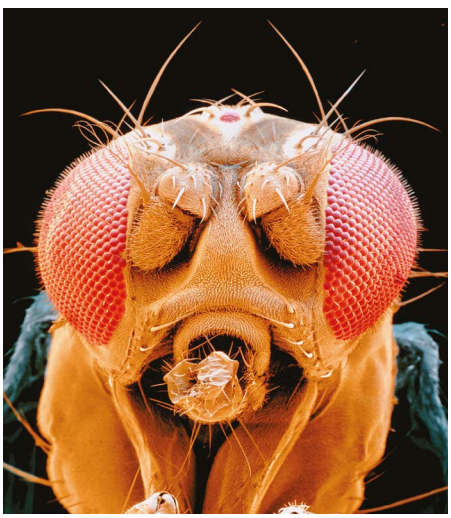
By Miryam Naddaf

Scientists have generated the first complete map of the brain of a small insect, including all of its neurons and connecting synapses.

The research, published on 9 March in *Science*, provides a brain-wiring diagram known as the connectome of a complex animal for the first time – the fruit fly *Drosophila melanogaster* (M. Winding *et al. Science* **379**, eadd9330; 2023). The map shows all of the 3,016 neurons and 548,000 synapses that were tightly packed in a young *Drosophila*'s brain, which is smaller than a poppy seed.

The map is a milestone in understanding how the brain processes the flow of sensory information and translates it into action. "Now we have a reference brain," says Marta Zlatic, a neuroscientist at the University of Cambridge, UK, and co-author of the paper. "We can look at what happens to connectivity in models of Alzheimer's and Parkinson's diseases and of any degenerative disease."

Until now, the only connectomes to have been mapped were those of the worms *Caenorhabditis elegans* and *Platynereis dumerilii*, and the larva of the sea squirt *Ciona intestinalis*. *Drosophila* was an ideal model for connectome studies, because scientists have already sequenced its genome, and the larvae have transparent bodies. Fruit flies also exhibit sophisticated behaviours – including learning, navigating landscapes, processing smells and weighing the risks and benefits of an action. "Its size is manageable for current technology," says Chung-Chuan Lo, a computational neuroscientist at the National Tsing Hua University in Hsinchu, Taiwan.



EYE OF SCIENCE/SPL

The fruit fly *Drosophila melanogaster* is an important model organism.

"If you had asked me in the Eighties, when the *C. elegans* work was being done, about this project in the fruit fly, it would have been impossible," says Albert Cardona, a neuroscientist at the University of Cambridge and co-author of the paper.

The authors spent a year and a half capturing images of the brain of a single six-hour-old *Drosophila* larva with a nanometre-resolution electron microscope. Using a computer-assisted programme, they then pinpointed the neurons and synapses and spent months manually checking them.

The team identified 3,016 neurons, 93% of which were paired with a partner neuron in the opposite brain hemisphere. Most of the unpaired neurons were Kenyon cells, key neurons in the learning and memory centre.

The researchers then traced the twisting connections of each neuron and annotated 548,000 synapses, which could be grouped into four types. "This is really time-consuming and labour-intensive," says Kei Ito, a neuroscientist at the University of Cologne, Germany.

The wiring diagram showed that the insect's brain was multilayered, with pathways of varying lengths connecting brain inputs and brain outputs.

It is "a nice, nested structure", says Michael Winding, a neuroscientist at the University of Cambridge and co-author of the paper. But some of the brain networks have shortcuts, skipping layers. The authors suggest that such shortcuts increase the brain's computational capacity and compensate for the limited number of neurons.

The team also found that 41% of the brain neurons form 'recurrent loops', providing feedback to their upstream partners. These shortcuts and loops resemble state-of-the-art artificial neural networks that are being used in artificial-intelligence research. "It's interesting that the computer-science field is converging onto what evolution has discovered," says Cardona.

© 2023 Springer Nature Limited. All rights reserved.