News in focus

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Ukrainian soldiers stationed in the eastern region of Donetsk.

UKRAINIAN SCIENTISTS FEAR FOR THEIR LIVES AND FUTURE AMID RUSSIAN THREAT

Researchers say that conflict will hinder progress made since Ukraine's revolution in 2014.

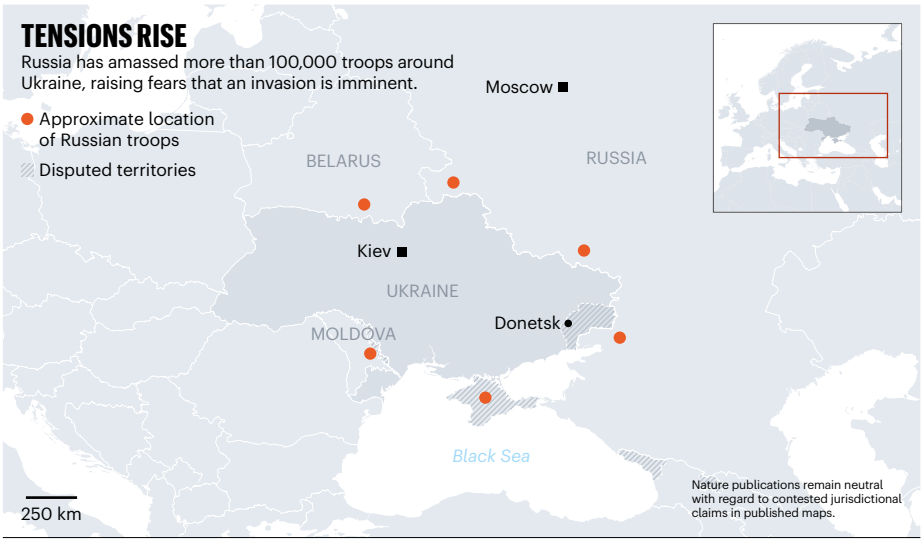
By Holly Else & Nisha Gaind

Tensions between Ukraine and Russia intensify, several Ukrainian scientists have told *Nature* that they and their colleagues are taking measures to protect themselves and their work, including gathering items for self-defence and preparing to flee. On 21 February, after weeks of escalating tensions, Russian President Vladimir Putin ordered troops into the eastern Donbas region of Ukraine. The military action, which has been strongly condemned by the international community, comes eight years after a revolution that pushed Ukraine to cut ties with Russia — including those related to research — and forge closer links with the European Union. Researchers fear that fresh conflict will plunge Ukraine into turmoil and halt the progress that it has since made in science.

"At the moment, I am sitting in a warm place and the Internet is available. I don't know if that will be the case tomorrow," says Irina Yegorchenko, a mathematician at the Institute of Mathematics in Kiev, which is near Ukraine's border with Belarus.

In the past few weeks, Russia's massive military build-up at its border with Ukraine and inside Belarus has marked a rapid intensification of tensions that have gripped the countries since 2013. A wave of protests and civil unrest ousted Ukraine's Russian-leaning leader in early 2014, and the country elected a pro-European government. That year, Russia invaded Ukraine and seized the Crimean peninsula.

Research institutions in Crimea, previously run by the National Academy of Sciences of Ukraine, were transferred to Russian control. Fighting in Donbas, which includes the regions of Luhansk and Donetsk, continued to the present day. The conflict led to 18 universities



relocating out of Luhansk and Donetsk to other parts of the country, with many researchers losing their homes and laboratories. Most of the academic staff at one displaced university — Vasyl' Stus Donetsk National University, now in Vinnytsia — are people who were forced to leave and who lost their property, livelihoods and family ties, says Roman Fedorovich Hryniuk, the institution's rector.

As a result of the conflict, many Ukrainian researchers cut links with Russia and formed ties with their peers in Europe, the United States and China. "It was painful to lose established relations and build up new ones, but it gave us a new point of view," says Illya Khadzhynov, vice-rector of scientific work at the university. In 2015, Ukraine joined the EU's flagship research-funding programme, giving its scientists the same rights to apply for grants as EU members.

Troop movements

Now, Russia has mobilized some of the tens of thousands of troops that were stationed at the border with Ukraine and inside Belarus; the West sees this as an act of aggression (see 'Tensions rise'). Some scientists are feeling the strain.

"There is a very certain threat of war. I feel like I could die tomorrow, or in two days, but I can't do anything about that," says Yegorchenko. She is keeping electronic devices such as phones and power banks charged, and is in constant contact with her family. "All scientists do that," she adds.

"This Russian tension is aiming to create chaos in Ukraine, and harm to the economic situation. We know that we will have less funding for research, less opportunities to travel and zero chances of internal conferences in Ukraine," she says. But overall, she is trying not to worry and is working more than usual. "Mathematics is a good therapy," she says.

At the Sumy National Agrarian University, which is 30 kilometres from the border with Russia, staff have been trained in how to behave in the event of hostility. The university has drawn up plans for employees to evacuate from the building to bomb shelters. There are also plans to move scientific equipment and biological specimens out of the region.

"In private conversations, scientists say that they have collected 'alarming suitcases' with documents and essentials," says Yurii Danko, an economist at the institution. The bags contain clothes, medicines, tools, self-defence items and food, he says. Danko says that if war breaks out, many scientists will be forced to move from their homes to areas controlled by Ukraine to continue working — or might have to go abroad. "In case of the occupation, scientists will not work for the enemy," he adds.

Trying to keep calm

Further west, in the city of Lviv, computer scientist Oleksandr Berezko says that many feel the tension but are trying to keep calm. "It might sound strange, but the war has started eight years ago," he says. Berezko, who works at Lviv Polytechnic National University, was planning a small meeting for around 20 early-career researchers to discuss open science at the end of March; he says it is now likely to be cancelled. If there is war, the government's priority will be the armed forces and helping people.

Vladimir Kuznetsov, a plant biologist at the K. A. Timiryazev Institute of Plant Physiology in Moscow, says that the situation between his country and Ukraine is highly undesirable. "Many researchers will leave Ukraine and that will be very bad," says Kuznetsov.

OMICRON SUB-VARIANT: WHAT SCIENTISTS KNOW SO FAR

Early studies suggest that the BA.2 lineage might prolong the Omicron wave.

By Ewen Callaway

COVID-19 researchers are rushing to understand why a relative of the main Omicron variant is displacing its sibling in countries around the world.

The variant, known as BA.2, has spread rapidly in countries including Denmark, the Philippines and South Africa in the past few weeks. It follows the initial spread of the BA.1 Omicron variant of the virus SARS-CoV-2, which was first identified in southern Africa in late November and quickly spread worldwide (see 'Omicron's many variants').

A laboratory study[1] of BA.2 suggests that its rapid ascent is probably the result of it being more transmissible than BA.1. And other preliminary studies suggest that BA.2 can readily overcome immunity from vaccination and previous infection with earlier variants, although it is not much better than BA.1 at doing so.

If real-world epidemiological studies support these conclusions, scientists think that BA.2 will be unlikely to spark a second major wave of infections, hospitalizations and deaths after Omicron's initial onslaught.

"It might prolong the Omicron surge. But our data would suggest that it would not lead to a brand-new additional surge," says Dan Barouch, an immunologist and virologist at Beth Israel Deaconess Medical Center in Boston, Massachusetts, who led the laboratory study[1], posted on the medRxiv preprint server on 7 February.

Growth advantage

BA.2's steady rise in prevalence in multiple countries suggests that it has a growth advantage over other circulating variants, says Mads Albertsen, a bioinformatician at Aalborg University in Denmark. That includes other forms of Omicron, such as a less-prevalent lineage called BA.3.

"From a scientific perspective, the question is why," says Barouch. Researchers think that a large part of the reason Omicron quickly