World view

By Svitlana Arbuzova

Work together to rebuild Ukrainian science

International support is needed both to help those who stayed in Ukraine, and to encourage those who have fled to return.

For my colleagues and me, the war in Ukraine did not begin on 24 February 2022. It started in 2014, when Russia installed a puppet government in the Donbas in the east of my country. The Eastern-Ukrainian Center for Medical Genetics and Prenatal Diagnosis, a state-of-the-art facility which I founded and have headed for many years, was originally located in Donetsk, the capital of the Donbas.

My colleagues and I publicly expressed our pro-Ukrainian stance and refused to become an institution of the so-called Donetsk People's Republic. We moved to Mariupol, 100 or so kilometres south in unoccupied Ukraine, and restarted work.

In March 2022, soon after the full Russian invasion, our new home was completely destroyed, as was the building in which my colleagues and I rented apartments. Some of us managed to escape the city within days. Others, in particular those unable to leave elderly parents who had moved with them, stayed back in their basements waiting for help. We faced weeks of uncertainty as to their fate.

Once again, we survived all the adversities. Our centre might have gone, but our knowledge and experience wasn't captured. Some colleagues with children moved abroad, and others settled in friendly institutions in western Ukraine and continue to collaborate remotely. Our centre now operates in Kyiv, conducting prenatal screening and other types of genetic testing.

When the full-scale war started, it was the first and only moment in my life when I regretted I was no longer young and could not be among those scientists who joined the army fighting for fundamental values most readers of this journal take for granted: freedom and independence. I donated my car to volunteers, among whom there are many scientists, in particular my close friend physicist Anton Senenko.

I felt relief every time I read his updates of people who could be rescued, from Bucha just outside Kyiv, site of a notorious massacre in the early stages of the war, and from other places. Some scientists we knew have paid the ultimate price: just two weeks ago, it was confirmed that Bizhan Sharopov, a brilliant young physiologist colleague who had been missing in action since April, had been killed.

The courage that Ukrainian people are demonstrating is beyond words, and not only those on the battlefields. Suffering the grief of losing family members, staying in basements without water and food, living now often without light and heat, the whole Ukrainian people is enduring severe deprivation with dignity and unbroken spirit.

> "The devastating effects of war are superimposed on pre-existing problems."

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Ukraine's scientists, too, continue our research and are integrated as far as possible into the global scientific community. Some of us have received foreign research grants. I was lucky to obtain the Researchers at Risk Fellowship established by the British Academy and the Royal Society with the Council for At-Risk Academics, allowing me to persevere in my work researching the causes of pre-eclampsia. I hope that the results will serve my country after victory.

The importance of science, technology and innovation to this future is paramount. Ukraine has many excellent researchers whose work is appreciated by the global scientific community. We must receive a clear signal from our politicians that we are needed, and that science will have a proper place in our national reconstruction.

The Scientific Committee of the National Council of Ukraine for Science and Technology Development, of which I am a member, advises the Ukrainian government, and has already developed proposals for the revival of science. The first priority should be a full assessment of the state of educational and scientific infrastructure, and collaboration with international partners to restore what has been destroyed.

The devastating consequences of the war are superimposed on pre-existing problems. The Ministry of Education and Science, which is responsible for assessing the quality and integrity of Ukrainian scientific research, is not fit to perform those tasks. The minister of education and science was himself accused of plagiarism in his earlier scientific work, an allegation upheld by the Ukrainian National Agency for Quality Assurance of Higher Education, although the matter has since been contested on a procedural technicality in the courts. There must be zero tolerance of any corruption that could hinder the development of the country, especially against the background of Ukraine's candidacy for European Union membership.

The international scientific community's support of Ukrainian scientists has been strong. But current programmes, aimed primarily at researchers who fled Ukraine, should be complemented by a greater focus on those who stayed. There are hopeful signs. In February, the European Commission announced that it would open an office in Kyiv for Horizon Europe, the EU's key research-funding programme. The National Research Foundation of Ukraine, launched in 2018, has administered seven calls for research and development proposals, two of them during wartime, and has partnerships with the Swiss National Science Foundation, the Dutch Research Council and the University of Cambridge, UK. Other institutions and universities should now support and add to these initiatives, not only to expand opportunities for scientists who stayed in Ukraine, but also to attract those who are abroad to return home.
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