

# Science and War

This is the Moment of Truth.

Oleksiy Kolezhuk

Ukraine fights now an existential war, defending its very right to exist as a nation. The outcome of this war will not only decide Ukraine's fate, but is also seen as a moment of truth for the world, testing its ability to cope with a war of aggression. But as hard as this war has hit our country, it is at the same time perceived as the ultimate chance for Ukraine to break from its colonial past and to become a truly sovereign nation, with a place where it belongs – in Europe.

Science in Ukraine is experiencing its moment of truth as well. Even before the war, science in Ukraine was chronically underfunded, and its potential was not efficiently exploited technologically. Now, thousands of researchers and educators are displaced, their labs are damaged, many of them have lost their lives, and many of them have put their research aside and went to fight. On top of such a direct impact come other factors: shrinking war-time research budgets, leaving scientists and educators struggling, and the wartime travel limitations that make international collaboration rather difficult, especially for experimentalists. The very existence of science in Ukraine is under a direct threat. However, at the same time there is a widespread feeling among Ukrainian scientists that the postwar restoration efforts could provide the ultimate chance to rebuild our Research and Innovation system in a proper way, with modern research infrastructure, with a much higher level of global integration, and with a much tighter interaction with business and industry.

This is currently just a bold dream, but a strong will might make a dream true, and a combined will of Europe and Ukraine can do that. Ukraine simply cannot afford to remain weak, low-tech and agricultural, so it needs a strong and capable science. And while the end of the war is still not in sight, one has to start planning now. In a short-term perspective, the focus of support programs for Ukrainian researchers should be shifted to those who stay in Ukraine, integrating them into existing and new projects in a remote form, providing access to high-performance computers and scientific databases. Within the funds that will be ultimately directed to Ukraine for the post-war restoration, it is important to foresee rebuilding of the Ukrainian research and educational infrastructure as a specific separate target. In the long-term perspective, it is very important to establish new and reinforce existing programs supporting direct ties between Ukrainian and European universities and research institutions, in particular joint educational and research programs at Master

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and PhD levels, research networks, joint laboratories (modeled, for instance, on the „Cores of Excellence“ program launched in Ukraine by BMBF).

There is one more moment of truth that we scientists are now experiencing with painful clarity: There is no science beyond politics. A beautiful and tempting idea, but not yet. Not in the world where there are still regimes that manipulate their own populations, including scientists, to put them in a warmongering mindset, eagerly embracing the idea of a nuclear threat and ready to accept and justify any atrocity. Scientific and technological know-how are very valuable assets that form the basis of a military power. We may regret this, but in times of a global show of force, science becomes a weapon just as trade becomes a weapon, and a „scientific embargo“ is as important as an embargo on spare parts for aircraft.

So, ladies and gentlemen, it is time to take sides. In the current situation, appeals to science to be „above the fray“ should be recognized for what they really are: nothing more than poorly disguised attempts to ally with belligerent powers.

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