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Letter

U.S. Biomedical Research Needs More Immigrant Scientists, Not Fewer!

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<https://doi.org/10.1016/j.ccell.2020.08.010>

Every spring, NYU Grossman School of Medicine sponsors the presentation of the Vilcek Prizes in Biomedical Science. Funded by the Vilcek Foundation, established by NYU Emeritus Professor Jan Vilcek and his wife, Marica Vilcek, these eponymous awards recognize major scientific accomplishments by immigrants who have come to the U.S. from around the world. Their achievements—along with those many others—are a major reason that this country has been the leader in biomedical research for the past 50 years: not only have we capitalized on homegrown talent, we have welcomed other equally, sometimes more, talented individuals, providing the environment and resources for them to flourish. This policy has been neither charity nor largesse, but rather a sound, extremely remunerative investment whose dividends have included the U.S. pharmaceutical and biotechnology industries (with their attendant economic benefits) and, most importantly, new therapies for major human diseases.

Jan Vilcek himself exemplifies the benefits of this policy. Having defected from the former communist Czechoslovakia with his wife, Marica, an accomplished art historian, he made major contributions to our understanding of cytokines. His work—together with that of his colleague Junming Le, a Chinese immigrant—led to the development of infliximab (Remicade), a miracle drug that has profoundly improved the lives of thousands of patients with rheumatoid arthritis and other autoimmune disorders. People who might otherwise be severely impaired walk today because of Jan, Junming, and their colleagues.

The two of us have also benefited from U.S. immigration policy in multiple, although different, ways. One of us (Aifantis) emigrated here on a J-1 Visa 20 years

ago to train at Harvard Medical School with the late Harald von Boehmer, a German immigrant and key figure in modern immunology. The Aifantis lab has relied on the immense talent of a number of foreign-born trainees and generated more than 100 STEM jobs in the U.S. economy. The other (Neel) did his graduate work at Rockefeller University in the laboratory of the late Hidesaburo Hanafusa, a Japanese immigrant and giant in tumor virology, who also trained a remarkable cohort of investigators who now lead laboratories across the U.S. and the world. The Hanafusa lab of the 1970s and 1980s was a virtual scientific U.N., with students and postdocs from four continents, each with different cultures, varied political views, and—to our mutual benefit—distinct culinary specialties. Yet all were united in their passion to answer key questions in cancer biology.

Immigrants have been equally essential to our professional careers. Visitors to our laboratories would quickly find that most (>80%) of our trainees were born outside of the U.S. and by no means are we the exception—either at NYU Grossman, NYC, or other U.S. academic institutions. Immigrants also lead the oncology programs of several major biopharma companies. They bring new ideas, training, alternative ways of viewing problems, entrepreneurial spirit, and much-needed diversity to U.S. science.

It is inconceivable that anyone would seek to gore this goose that laid the golden egg for U.S. biomedical vitality and competitive advantage. Yet recent attempts to end, delay, or limit visa programs or entry of new immigrants are a dagger at the heart of U.S. biomedical research and economic development. Nativist calls for “America first” will not result in more U.S. students and postdocs populating biomedical research labora-

tories; before the COVID-19 pandemic, U.S. unemployment was at all-time lows, and many groups strained to find qualified trainees. Instead, the most probable outcome of visa restrictions will be better laboratories in other countries. Ironically, these “America first” efforts could dislodge the U.S. from our dominant position in biomedical research and biopharma, two arenas in which there is uniform agreement that we are the world leaders. Immigrants do not take jobs from U.S. colleagues, but they are essential for our intellectual and economic growth. As recent White House Chief of Staff Mick Mulvaney stated, “We are desperate, desperate for more people. We are running out of people to fuel economic growth.”

We could not agree more. Politics aside, U.S. science and, consequently, U.S. culture and society benefit immensely from our tradition of openness, inclusivity, and diversity. Our future success and security require that this tradition continues. We need more, not fewer, Jan Vilceks.

ACKNOWLEDGMENTS

We would like to thank Drs. Dafna Bar-Sagi and Jan Vilcek for key suggestions and edits. I.A. is supported by the National Institutes of Health, The Leukemia and Lymphoma Society, and the NY State Department of Health. B.G.N. is supported by the National Institutes of Health and the Mary Kay Foundation. The views expressed in this letter are our own.

DECLARATION OF INTERESTS

B.G.N. is a co-founder and holds equity in Northern Biologics, Ltd.; is co-founder, equity holder, member, and chair of the SAB; receives consulting fees for Navire Pharma; and receives consulting fees for and holds equity in Arvinas, Inc. He also has served as an expert witness for Johnson and Johnson. His spouse holds equity in Regeneron and Amgen. I.A. declares no competing interests.

