

**UNITED STATES DISTRICT COURT FOR THE
DISTRICT OF MASSACHUSETTS**

PRESIDENTS' ALLIANCE ON HIGHER
EDUCATION AND IMMIGRATION; and
ASSOCIATION OF INDEPENDENT COLLEGES
AND UNIVERSITIES IN MASSACHUSETTS,

Plaintiffs,

v.

KRISTI NOEM, *in her official capacity as
Secretary of Homeland Security*, et al.,

Defendants.

No. 1:25-cv-11109-PBS

**MEMORANDUM OF LAW OF AMERICAN PHYSICAL
SOCIETY AND OTHER PROFESSIONAL SOCIETIES AS
AMICI CURIAE SUPPORTING PLAINTIFFS' OPPOSITION
TO DEFENDANTS' MOTION TO DISMISS**

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STATEMENT OF INTEREST OF *AMICI CURIAE*

The American Physical Society (“APS”), American Association for Dental, Oral, and Craniofacial Research, American Geophysical Union, American Political Science Association, American Society of Tropical Medicine and Hygiene, American Statistical Association, American Thoracic Society, Association for Psychological Science, Biophysical Society, Computing Research Association, Ecological Society of America, Federation of American Societies for Experimental Biology, and Society of Environmental Toxicology and Chemistry of North America (collectively, “*amici*”) are nonprofit science, engineering, math, medical, and other professional membership societies and federations working to advance scientific fields and foster a community dedicated to science and society. The members of these organizations include professional scientists, early-career scientists, science faculty, and science students, including international students pursuing science degrees in the United States. Many of these international students hold F-1 visas and have been directly affected by Defendants’ actions in revoking the visas of several students, terminating students’ records in the Student and Exchange Visitor Information System (“SEVIS”), and creating a challenging visa process. Accordingly, *amici* file this brief on behalf of their members who have been directly affected by Defendants’ actions.

INTRODUCTION

Earlier this year, the U.S. Department of State revoked the visas of several international students, either because those students had engaged in certain activism the Administration disagreed with or because of their prior encounters with law enforcement, even when those encounters did not result in convictions.¹ The U.S. Immigration and Customs Enforcement (“ICE”) then terminated the SEVIS records of thousands of international students, which had the effect of terminating the students’ F-1 status.² Although ICE eventually recognized that it improperly terminated the SEVIS records and accordingly reversed course as to some of those students, it indicated that its reversal may only be temporary.³ Later, on April 26, 2025, ICE issued guidance titled “SEVIS Notice - Policy Regarding Termination of

¹ See Kimmy Yam, *Student Visa Terminations Have Quickly Hit Over Half of All States. What’s Behind It.*, NBC News (Apr. 10, 2025), <https://www.nbcnews.com/news/asian-america/international-students-revoked-visas-reasons-why-rcna200313>; see also Ali Bianco, *Rubio Says State Department Has Revoked More Than 300 Student Visas*, Politico (Mar. 27, 2025), <https://www.politico.com/news/2025/03/27/marco-rubio-student-visas-palestine-00005141>.

² Deena Zaru, *International Students Sue After Trump Administration Terminates Their Legal Status*, ABC News (Apr. 15, 2025), <https://abcnews.go.com/US/international-students-sue-after-trump-administration-terminates-legal/story?id=120822860>.

³ See Nate Raymond, *Trump Administration to Restore Foreign Students’ Legal Status, For Now*, Reuters (Apr. 25, 2025), <https://www.reuters.com/world/us/trump-administration-restore-foreign-students-legal-status-now-2025-04-25/>.

Records,” describing its views on the federal government’s discretionary authority to terminate SEVIS records “for a variety of reasons.”⁴

Amici maintain that that the ability of the United States to remain competitive in scientific and technological fields relies heavily on foreign-born individuals who come to the United States as students.⁵ When deciding whether to come to the United States for their studies, international students base their decision in significant part on their confidence in the visa process and on their perception of the United States as welcoming to foreigners.⁶ An unreliable, inconsistent, or capricious U.S. visa process undermines international students’ confidence in the system and contributes to a perception that the United States is unwelcoming to foreign students, thereby significantly and measurably harming the ability of educational institutions in the United States to attract the best and brightest international scholars. Because

⁴ *Arizona Student Doe #2 v. Trump et al.*, No. 4:25-cv-00175-TUC-AMM, Dkt. 13-1 at 1 (D. Ariz., Apr. 28, 2025).

⁵ See Ass’n Am. Univ., *International Students and American Competitiveness* (Nov. 17, 2022), <https://www.aau.edu/key-issues/international-students-and-american-competitiveness>; Jeremy Neufeld, *STEM Immigration is Critical to American National Security*, Inst. For Progress (Mar. 30, 2022), <https://ifp.org/stem-immigration-is-critical-to-american-national-security/>; U.S. for Success Coal., *International Students Have an Overwhelmingly Positive Impact on Making Our Nation Safer, Stronger, and More Prosperous*. (Apr. 9, 2025), <https://www.usforsuccess.org/press/international-students-have-an-overwhelmingly-positive-impact-on-making-our-nation-safer-stronger-and-more-prosperous>.

⁶ See Am. Physical Soc’y, *Building America’s STEM Workforce: Eliminating Barriers and Unlocking Advantages* at 12-14 (Jan. 22, 2021), <https://www.aps.org/publications/reports/building-americas-stem-workforce>.

the United States, with only 4% of the world population, does not have sufficient domestic science, technology, engineering, and math (“STEM”) capacity to meet its needs, the loss of talented international scientists will reduce the quality and quantity of the trained technical workforce and harm the nation’s economy and security.⁷

The current U.S. visa system, although complex, ordinarily offers a stable process and settled requirements that allow the top global talent to pursue their careers in and contribute to the United States. Defendants’ recent actions have changed that, creating a challenging and uncertain visa process that harms not only the students whose visas are canceled and the schools who lose those talented and promising students, but also the reputation of the United States as the most desirable destination for the brightest budding science scholars. *Amici* support Plaintiffs’ opposition to Defendants’ motion to dismiss the First Amended Complaint because sustaining international students’ confidence in the U.S. visa process depends on the stability of the system governing foreign students’ visas.

⁷ FWD.us, *Strengthening America’s Competitiveness and Security by Welcoming More Immigrants with STEM Skills* (Nov. 8, 2024), <https://www.fwd.us/news/stem-immigrants/>.

ARGUMENT

I. U.S. Dominance in Science and Technology Relies Heavily on Talented Scientists Who First Come to the United States as International Students.

Much of the preeminence of U.S. science is due to the nation's outstanding colleges and research universities, which have attracted the best students worldwide to the United States for their undergraduate degrees and advanced studies. After graduation, many international students remain in the United States on other types of visas to contribute to scientific and technological innovation in the U.S. economy. More than half of the doctorate students in STEM fields in the United States are international students, most here on F-1 visas.⁸ In the physical sciences, most students are hired by U.S. industry after graduation,⁹ and about 70% of the international students in science fields who earn a Ph.D. in the United States continue to work and conduct research in the United States in science or technology positions in their specialized areas.¹⁰ Indeed, many of the nation's brightest scientists and engineers started their pathways as international students at

⁸ See Beethika Khan et al., *The State of U.S. Science and Engineering*, Nat'l Sci. Bd. & Nat'l Sci. Found. 2 (Jan. 15, 2020).

⁹ See Am. Physical Soc'y, *The Impact of Industrial Physics on the U.S. Economy* at 35 (Jan. 2, 2019), <https://www.aps.org/programs/industrial/upload/APS-Report-Economic-Impact-of-Industrial-Physics.pdf>.

¹⁰ See Nat'l Sci. Bd., *The STEM Labor Force: Scientists, Engineers, and Skilled Technical Workers* (May 30, 2024), <https://nces.nsf.gov/pubs/nsb20245/foreign-born-stem-workers#:~:text=Stay%20rates%20varied%20by%20both,life%20sciences%20and%20in%20engineering.>

universities here in the United States and have brought “fresh perspectives, diverse experiences, expertise, and ingenuity to our universities, laboratories, and companies.”¹¹

Accordingly, research labs, educational institutions, and industry rely on talented international students to work in the United States for their careers, and many highly talented international students choose to do so. That is why “[i]nternational STEM students and scientists are vital to the U.S. research and development ecosystem, as well as our economy and society more broadly.”¹² These students enrich the U.S. economy, become part of the diverse American society, and contribute greatly to the country’s preeminence in science and technology.

Immigrants are integral to American innovation. In 2022, immigrants founded more than half (319 of 582) of the privately-held billion-dollar startup companies in the United States, and 143 of these 582 companies, or nearly one-quarter, have a founder who first came to the United States as an international student.¹³ The total value of these companies in 2022 was \$1.2 trillion, and they

¹¹ Am. Physical Soc’y, *Take Action to Support International Students and Scholars*, <https://www.aps.org/initiatives/advocate-amplify/policy/international-students-scholars-visas> (last visited Sept. 11, 2025).

¹² *Id.*

¹³ Stuart Anderson, *Immigrant Entrepreneurs and U.S. Billion-Dollar Companies* at 1, 3 (July 2022), <https://nfap.com/wp-content/uploads/2022/07/2022-BILLION-DOLLAR-STARTUPS.NFAP-Policy-Brief.2022.pdf>.

created an average of 859 jobs per company.¹⁴ As those statistics demonstrate, international students “wind their way to building innovative, market-leading companies, creating tens of thousands of jobs and meaningful economic advantage for their adopted country.”¹⁵ International STEM students are therefore central to maintaining U.S. competitiveness because “America’s extended global leadership has been a direct product of its ability to attract global talent.”¹⁶

Defendants’ actions would prevent or substantially discourage such international students from pursuing an education in the United States. Defendants’ actions make the United States a less attractive destination for such students and disrupt the pipeline of such talented and innovative scientists at the earliest stage, risking disruption of the scientific community in the United States for generations to come. Because the United States is not able to fulfill its scientific and technological employment needs by relying exclusively on the domestic workforce, it is critical that the United States do its utmost both to cultivate domestic talent and to maintain policies that attract the best and brightest international talent.¹⁷

¹⁴ *Id.* at 1, 6.

¹⁵ Ryan Craig, *International Students are Key to Continued American Economic Leadership* (June 28, 2018), <https://www.forbes.com/sites/ryancraig/2018/06/28/international-students-are-key-to-continued-american-economic-leadership/>.

¹⁶ *Id.*

¹⁷ See Jon Beamer, *Solving the STEM Talent Shortage Once and For All* (Apr. 18, 2023), <https://www.cognizant.com/us/en/insights/insights-blog/solving-the-stem-talent-shortage-once-and-for-all-wf1591100>.

II. An Unreliable, Inconsistent, or Capricious U.S. Visa Process Hampers the U.S.’s Ability to Attract the Best and Brightest International Scholars and Harms the Nation’s Scientific Dominance, Innovation, and Economic Competitiveness.

Recognizing the effects that visa policies have on the U.S. scientific community, as well as broader economic and national security interests, *amici* have long “call[ed] on the United States Administration and Congress to maintain and implement appropriate and effective visa rules and government procedures that sustain science and technology[,] promote continuing international scientific and technological cooperation[,] and ensure the flow of people and knowledge needed to guarantee economic strength and national security.”¹⁸

APS conducted surveys in 2019 to evaluate the applications of international students to more than sixty U.S. physics departments graduating ten or more Ph.D. students per year.¹⁹ That study also surveyed more than 700 international students, including those who enrolled in U.S. institutions for graduate school, and those who chose not to come to the United States.²⁰ Those surveys found significant reductions in graduate applications from international students from 2017 to 2019.²¹ In the span

¹⁸ Am. Physical Soc’y Council, *Visa Rules and Government Procedures Hampering U.S. Science and Technology* (June 6, 2003), https://www.aps.org/policy/statements/03_1.cfm.

¹⁹ Am. Physical Soc’y, *Attracting the Best Students in the World to U.S. Universities: Challenges and Opportunities* at 2 (Oct. 25, 2019), <https://www.aps.org/publications/reports/attracting-best-students-us-universities>.

²⁰ *Id.*

²¹ *See id.*

of those two years, applications from international students to join physics departments in schools outside of the top-tier dropped by 22%.²² The reductions were particularly severe in schools such as large state universities, which collectively train more than 70% of the physics Ph.D. students in the United States.²³ When international students were asked about the reasons for this dramatic decline, 85% of the students stated that they experienced delays in processing their visas and 32% of the international students who chose not to come to the United States for their education stated that the United States is “unwelcoming to foreigners.”²⁴ Department chairs from some of those schools informed the survey takers that they were lowering their standards of admission to reach their desired class size, identifying the “uncertainty with US visas as a top challenge to their ability to make offers and secure talent.”²⁵

Surveys conducted in 2020 by APS continued to reveal a decline in enrollment of international students due to visa uncertainty engendered by federal government policy changes. For example, physics departments across a variety of universities saw their international enrollments drop in 2020 compared to 2019, with large

²² *See id.*

²³ *See id.*

²⁴ *Id.* at 3 (internal quotation marks omitted).

²⁵ Am. Physical Soc’y, *Visa Uncertainty and Inaction Drive Declines in International Enrollment* at 4 (June 8, 2021), <https://www.aps.org/publications/reports/visa-uncertainty-declines-international-enrollment>.

departments experiencing a 40% decline in enrollment and smaller departments experiencing a 53% decline in enrollment.²⁶ Additionally, nearly 50% of the international students surveyed who chose not to attend a U.S. institution cited their perception of the U.S. as unwelcoming to foreigners and the challenges with the U.S. immigration system as their reasons.²⁷ The survey results indicate that the reasons for that dramatic decline in international student enrollment were linked to restrictive immigration policies—and in particular to challenges with visas. APS’s report emphasized that “the United States needs a 21st century visa and immigration policy to attract . . . top global talent,” and that an uncertain visa policy presents a major barrier to achieving that goal.²⁸

These data show the negative effects that an unreliable, inconsistent or capricious visa policy is nearly certain to inflict. Defendants’ actions broaden the chilling effect on the ability of U.S. universities to attract top scholars from around the world. That difficulty will in turn create a deficit in top talent graduating from U.S. schools, just at a time when more international and domestic talent is needed in critical emerging technical areas such as artificial intelligence and Quantum Information Science and Technology (“QIST”). Indeed, a 2021 report by the federal

²⁶ Am. Physical Soc’y, *Building America’s STEM Workforce*, supra note 6, at 12.

²⁷ *Id.* at 13.

²⁸ *Id.* at 15.

National Science and Technology Council “highlights the critical role that international talent plays in ensuring a vibrant and successful U.S. research enterprise in QIST.”²⁹

Because Defendants’ actions create the perception of hostility toward international students and increase uncertainty about the stability and security of international students’ status in the United States, increasing numbers of international students may choose in the future to study in countries other than the United States, to the detriment of the United States’ scientific reputation. Without international talent helping to fuel the high-tech startups of the future, as they have done in the past, innovation in the United States will suffer, alongside damage to the economy and national security. Those losses to the United States will be to the advantage of other countries, including our main economic and geopolitical competitors. Other countries throughout the world that place a high value on science and education will benefit from contributions of the most talented international students who no longer come to the United States. As the United States becomes increasingly unwelcoming to foreign students, other countries gain the advantages that international students historically have contributed to the United States’ innovation and economic spheres.

²⁹ Nat’l Sci. Tech. Council, *The Role of International Talent in Quantum Information Science* at 7 (Oct. 2021), https://www.quantum.gov/wp-content/uploads/2021/10/2021_NSTC_ESIX_INTL_TALENT_QIS.pdf.

Defendants’ recent and ongoing actions to restrict otherwise lawful immigration and to exclude international students and scholars exacerbates this growing imbalance and damages American excellence in science and technology. As APS has long emphasized, this kind of “isolation threatens irreparable damage to U.S. economic competitiveness and, ultimately, national security.”³⁰

CONCLUSION

The current U.S. visa system, while complex and imperfect, nevertheless provides a stable process and established requirements that allow top global talent to pursue careers in the United States and to contribute to U.S. economy and security. To ensure that the established process is followed and to help sustain international students’ confidence in the U.S. visa process, *amici* support Plaintiffs’ request to deny Defendants’ motion to dismiss.

³⁰ Am. Physical Soc’y Council, *Visa Rules*, *supra* note 18.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document was electronically filed on September 30, 2025, with the Clerk of Court using the CM/ECF system, which will automatically send email notification of such filing to all attorneys of record.

/s/ Yevgeniy Pilipovskiy
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