

October 22, 2025

Submitted via Regulations.gov

US Department of Homeland Security
US Citizenship and Immigration Services
5900 Capital Gateway Drive
Camp Springs, MD 20746

Re: **Notice of Proposed Rule Making Establishing a Weighted Selection Process for Registrants and Petitioners Seeking to File Cap-Subject H-1B Petitions**

DHS Docket No. USCIS- 2025–0040

RIN 1615-AD01

90 Fed. Reg. 45986 (September 24, 2025)

Comment challenging cost estimate provided by the Department of Homeland Security

Request to Withdraw NPRM proposing a Wage Level Lottery for H-1B Selection

Dear Sir or Madam,

We are three immigration experts who have undertaken a detailed consideration over the last few months of over 20 years of administrative data from US Citizenship and Immigration Services (USCIS) and the Student and Exchange Visitor Information System (SEVIS), as well as Census data, to quantify and assess what we call the “front door” international STEM talent pipeline for the US STEM workforce and US economic growth.ⁱ Based on the best evidence available, we are confident the Department’s Notice of Proposed Rule Making (NPRM or proposed rule) to establish an H-1B selection lottery based on Wage Level fails to account for significant potential costs to the nation’s innovative capacity and long-term prosperity. Should the Department be interested in discussing our findings and analysis, we stand ready to meet and discuss.

[Michael Clemens](#), an immigration economist, is Professor of Economics at George Mason University and Nonresident Senior Fellow at the Peterson Institute for International Economics. [Jeremy Neufeld](#) recently published [The 'Wage Level' Mirage](#) and directs the high-skilled immigration policy work of the Institute for Progress, a nonpartisan think tank focused on innovation policy. [Amy Nice](#) is a leading thinker on STEM immigration who focuses on using evidence-based research to find practical solutions to immigration policy problems as a Counsel at the Institute for Progress and Fellow at Cornell Law.

PROPOSAL FAILS TO ACCOUNT FOR NATIONAL INTERESTS IN STEM WORKFORCE AND ECONOMIC PROSPERITY

The nation’s “front door” international STEM talent pipeline (described below) will be negatively impacted by the NPRM, but DHS fails to properly account for the costs involved in diluting this pipeline and, thus, to correctly weigh the risks and benefits of its proposal. Under the Department’s proposed focus on Wage Levels, this pipeline will produce a smaller output each year by reducing the share of H-1Bs approved for former F-1 students. This talent pipeline reduction might reach an annual loss as compared to today of as much as \$72-145 billion by ten years into the future. The large difference arises because we are focused on the role of international students, scholars, and researchers in the pool of H-1B beneficiaries, while the Department focuses primarily on the transfers of costs and benefits from one group of H-1B beneficiaries and employers to another. Moreover, because we expect that such international students, scholars, and researchers completing programs at US institutions will see their access to H-1B status reduced *as a result of this rule as proposed*, we expect they will ultimately will be deterred in coming to the United States in the first instance, and the DHS costs, transfers, and benefits analysis does not attempt to quantify this differential.

Our comment challenges the cost calculation by the Department of Homeland Security in the NPRM in a section on Costs, Transfers, and Benefits.ⁱⁱ While DHS did not publish a Regulatory Impact Analysis with the NPRM, this

section of the NPRM includes an explanation on how DHS “acknowledges costs incurred associated with loss of output from not being able to employ the labor of H-1B beneficiaries,”ⁱⁱⁱ a discussion on the opportunity costs associated with retaining an attorney to help qualifying employers register for the revised lottery weighted by wage level,^{iv} and an analysis of the two-digit taxonomy of SOC codes^v for H-1B filings to predict the impact of a reallocation by wage level. The explanation, discussion, and analysis by DHS does not attempt, by design, to quantify the effects of the rulemaking on any given employer because of the “number of complex variables that constantly are in flux,”^{vi} and presumably makes no effort to quantify national-level impacts for the same reason.

These impact estimates are inherently somewhat uncertain. For that reason, DHS proceeds as if such impacts cannot be quantified. This method is inadequate. It fails to meet minimal standards of quality demanded of economic analysis by qualified experts in cost-benefit analysis.

A. There is no consideration of the role of impacted F-1 students on the US STEM workforce.

In order to understand the role of individuals who first come to the United States as F-1 visa holders in degree-granting programs, we studied data from both USCIS and SEVIS. We then summarized the “front door” pipeline for international STEM talent coming to the United States.

The ‘Front Door’ Pipeline: Principal channels for transition from F-1 student visas to long term (>6 years) STEM workforce and PhD-level work in the United States

	All		STEM		PhD	
	Num.	%	Num.	%	Num.	%
Graduates (F-1), average per year 2018–2022	225,752		103,836		22,687	
<i>Short term (OPT)</i>						
F-1 to OPT	121,962	54.0	66,097	63.7	15,255	67.2
F-1 but no OPT	103,790	46.0	37,739	36.3	7,432	32.8
<i>Medium term (nonimmigrant work visas)</i>						
OPT to H-1B	35,479	15.4	23,919	33.4	5,987	27.8
OPT to ‘other’ (O-1, E-3, H-1B1, TN)	2,523	1.1	864	0.8	679	3
F-1 to H-1B without OPT	19,866	8.8	14,127	13.6	2,461	10.8
F-1 to ‘other’ without OPT	1,204	0.5	488	0.5	327	1.4
<i>Long term (permanent residency, extended H-1B)</i>						
H-1B to EB-1, EB-2, EB-3	22,709	10.1	15,611	15.0	3,466	15.3
‘Other’ visa to EB-1, EB-2, EB-3	181	0.1	66	0.1	49	0.2
Extended H-1B (>6 years)	19,372	8.6	13,316	12.8	2,957	13

‘All’ graduates are all completions of bachelor’s, master’s, or doctoral degrees in all fields of study by F-1 visa holders in a given year. ‘STEM’ graduates are all completions at all degree levels by F-1 visa holders in DHS-designated STEM fields only. ‘PhD’ means all completions of doctoral degrees by F-1 visa holders in all fields, not just STEM. In the table, “%” means percentage of the original F-1 graduation cohort in the first row that eventually makes each transition. Numbers are averages over the years 2018–2022. “Other” nonimmigrant work visas are O-1, E-3, H-1B1, and TN. The source is full-universe administrative data from SEVIS 2004–2023, obtained by request from DHS under the Freedom of Information Act.

As is evident from the administrative data, a notable portion of the nation's STEM workforce first enters the United States as international students at the nation's research universities and moves to H-1B status. According to USCIS data, from 2018-2023, more than 55,000 H-1Bs were awarded to F-1 students per year on average.^{vii} Indeed, administrative data show that 51% of all H-1B petitions by cap-subject employers from 2021-2024 were for F-1 students. Moreover, the NPRM tables show that because these newly minted graduates, such as most of those selected because they have a US Master's or higher, are early career professionals they almost always are offered jobs by cap-subject employers at wage level 1 or 2 – of H-1B beneficiaries selected because they have completed a US Master's or above, 50% are at wage level 2 and 36% are at wage level 1.^{viii}

B. DHS ignores that H-1B selection by seniority will deter top international students from enrolling in US degree programs and reduce retention US-trained graduates

The Department's Notice of Proposed Rulemaking to revise access to H-1B status fails to account for the vital national security interest of retaining the talent pipeline of international STEM experts,^{ix} almost all of whom use the "front door" pipeline and first come to the United States as international students, scholars, and researchers at the nation's research universities. Congress has been sensitive to this national security connection – for example, Congress included as part of the National Defense Authorization Act an instruction to the National Academies of Sciences, Engineering, and Medicine to study international talent programs employed by and in the United States.^x In response to this statement of work, a 2024 National Academies [report](#) concluded, in essence, that the primary if not sole global talent pipeline for the United States is the international students, scholars, and researchers attracted to U.S. university campuses. "The U.S. has a talent program," the National Academies committee chair [said](#), "It's called graduate school."

The DHS proposal to reorder H-1B selection by Department of Labor OEWS Wage Levels would substantially narrow the bridge from graduate school to US employment for international students by favoring older, later-career workers over early-career recent graduates. New graduates are disproportionately concentrated at early-career prevailing wage levels according to Department of Labor definitions, even if they are in high-paying occupations. In fact, even though F-1 students get H-1Bs filed on their behalf with higher compensation on average than other H-1B beneficiaries, they are classified at lower Department of Labor prevailing wage levels because they are early career in higher-paying occupations.^{xi}

Such a seniority-only result naturally follows from a reliance on wage level prioritization, as a joint multi-sector comment from 18 associations explained in a [2020 comment](#) to the prior NPRM on the subject:

The OES levels DHS relies upon for its new H-1B prioritization scheme are intended to be *skill* levels. DHS states it is trying to prioritize registered H-1B petitions by skill level, but then admits throughout its preamble explanation that it expects the result of the proposal would be to incentivize employers to offer *either* higher wage jobs or higher skilled positions to H-1B workers. In fact, though, neither is the case and we believe it is clear that the proposal merely awards tenure or seniority...Most fundamentally, though, it is simply incorrect that tenure or seniority, the only thing measured in DHS's H-1B Prioritization proposal, can reliably identify the most highly-skilled or most highly-paid as DHS purports is the purpose of its proposal.

The result of H-1B selection by seniority has been estimated as reducing the share of H-1Bs to F-1 students by 7% for cap-subject employers, and looking at both cap-subject and cap-exempt employers, that would translate into 5.9% fewer transitions from F-1 status (including F-1s with and without OPT) to H-1B each year.^{xii}

How would such a 5.9% decline in the transition rate affect the economy? Three key effects must be considered.

First, the lower transition rate will directly reduce the retention of foreign graduates.

Second, however, the proposed counterfactual would not eliminate those slots that students will lose, but redistribute them to other workers, while causing other changes in the composition of H-1B recipients, unrelated to students. Cap-subject H-1Bs are zero-sum, so—all else equal—H-1Bs will be awarded to others instead. For example, the recent I-129 H-1B filing data show that large American multinational firms file a large percentage of their initial cap-subject H-1Bs for L-1s who need H-1Bs in order to continue working in the US while awaiting green card status.^{xiii} This cohort and other H-1B beneficiaries will mitigate the effects on the workforce, but perhaps not as much as might be assumed. Initial cap-subject H-1Bs filed on behalf of F-1s are paid more on average than other workers and F-1 beneficiaries are younger on average than other beneficiaries. High-skill foreign-born workers who are graduates of US universities have much greater effects on the productivity of the US economy than those who arrive on work visas. For example, high-skill foreign-born workers who came as international students file patents at 2.8 times the rate of those who arrived on work visas,^{xiv} and are much more likely to found high-growth venture-capital-backed startup companies than high-skill immigrants who arrived on work visas.^{xv} Furthermore, the rule will have significant effects redistributing the distribution of H-1Bs to those entirely outside of the “front door” pipeline.

Third, the reduced likelihood of securing H-1B status for F-1 students will generate enrollment feedback whereby the reduced likelihood of getting an H-1B slot deters international students from enrolling in the first place. In anticipation of the Department’s publication of the proposed H-1B weighted lottery rule, NAFSA: Association of International Educators conducted surveys in August and September of current graduate students and postdoctoral fellows in the US and prospective students outside the country. The responses were reported from 1,039 current students mostly (80%) in STEM fields, primarily PhD students and postdoctoral fellows, and 611 prospective students, two-thirds of whom are seeking Masters-level or Bachelors-level degrees.^{xvi} 48% of current US Master’s students who said they are currently likely to try to stay and get another visa under current rules said that if H-1Bs were instead determined by Wage Levels, they would not try and stay. For PhDs currently likely to stay, 52% say they are unlikely to try to stay if their decision if H-1Bs were prioritized by Wage Level. 38% of postdocs would change their intention to try to stay. For prospective students, 6% fewer respondents said they were likely to enroll in U.S. programs if H-1Bs were instead determined by Wage Levels.

C. The cost calculation for the proposed H-1B Wage Level lottery is inaccurate.

The economic research literature contains very extensive evidence—leading to an overwhelming consensus among economists^{xvii}—that high-skill immigration *causes* large increases in productivity and economic growth in the United States. These effects are largest for immigrants with STEM training. The increase in US city-level productivity caused by inflows of foreign STEM workers from 1990 to 2010 is sufficient in magnitude to explain between 30 and 50% of *all* aggregate productivity growth in the United States during that period.^{xviii} The influx of highly skilled immigrant college graduates to the United States during the 1990s caused a 12–21% rise in the annual number of high-technology innovations reflected by annual patent applications, which in turn raised US GDP per capita by between 1.4 and 2.4 percent—the equivalent, in today’s dollars, of adding \$267–458 billion to the US economy each year.^{xix} A very large and essentially uncontested body of research finds that these positive effects on productivity and growth arise from high-skill STEM immigrants’ effects on new business formation, scientific discovery, and the patenting of new economically valuable ideas, including STEM immigrants’ positive effects on innovation *by natives*.^{xx}

The economic literature collectively suggests that a substantial reduction in the supply of foreign talent to the US workforce will have large, negative, and lasting effects on productivity and economic growth in the United States. We can approximate the magnitude of those effects based on a one-tenth reduction in the number of foreign

STEM graduates from US universities from deterred enrollment (which the survey results of current students summarized above indicates is a conservative estimate) and applying the productivity effects estimated by Peri et al.,^{xxi} who estimate the elasticity of annual growth in Total Factor Productivity (TFP) to the share of the workforce comprising high-skill foreign STEM workers. They estimate an increase of 0.27–0.54 percentage points in annual TFP growth caused by each percentage point increase in high-skill immigrant STEM workers as a fraction of the overall labor force.

We can use this estimate to consider the impact to the “front door” of transitions we have assembled from F-1 student status to the nation’s workforce, which we have described above based on administrative data. We suggest calculating the impact of a 10% reduction in new enrollments in degree-granting programs by F-1 students as a result of selecting cap-subject H-1B petitions based on the wage level of the beneficiary – H-1B access being a key part of our “front door” pipeline. Besides the fact that the recent student surveys identified a higher percentage of current students that would be deterred from coming to the US because of the Wage Level lottery policy shift, the published proposed terms of the H-1B access based solely on Wage Level would have a mechanistic effect of reducing retention of students by 7%. Together, these indicate a 10% reduction is a conservative estimate of the likely effect of the proposed rule on the “front door” pipeline. In our working paper,^{xxii} we detail our methodology and calculation of the impact of a 10% reduction to the future flow of F-1s as a result of the Department’s proposed H-1B Wage Level lottery approach.

An ongoing reduction of 10% for the impact of the H-1B Wage Level lottery in the number of foreign STEM graduates from US universities reduces the total supply of high-skill STEM workers in the United States by 1.9%. Because the 8 million high-skill STEM workers in the US economy represent 4.7% of the US labor force, the 1.9% reduction in high-skill foreign STEM workers equates to a 0.09 percentage-point change in high-skill STEM workers as a fraction of the labor force.

The Peri et al. elasticity thus implies a reduction of 0.024–0.048 percentage points in annual TFP growth, arising from ongoing reduction of one tenth of the number of high skill foreign graduates from US universities. This is comparable in magnitude to the independent estimates of Hunt and Gauthier-Loiselle,^{xxiii} which together with the effects jointly implied by Kerr and Lincoln^{xxiv} and Peri et al., represent the best available evidence on the macroeconomic effects of high-skill foreign STEM workers’ presence in the United States economy.

This is a very large impact, which cumulates over time. Over a ten-year period, lost productivity growth of 0.024–0.048 percentage points each year causes GDP at the end of that decade to be 0.239 to 0.478 percent smaller than it otherwise would have been. This is a percent decline in annual GDP, *not* a percentage-point decline in annual *growth* of GDP.

If such a loss occurred today, amid the United States’s \$30.4 trillion economy,^{xxv} it would be valued at \$72-145 billion. That is, this would be the loss to today’s US economy if the stock of high-skill foreign STEM workers had been 1.9% lower, in each of the past 10 years, than it actually was—the loss that would have arisen from a longtime reduction of one tenth in the number of foreign STEM students graduating from US universities. That reduction in GDP equates in size to the loss the US economy would suffer from the *disappearance* of the entire economy of the state of Delaware, New Hampshire, or the entire Research Triangle metropolitan area.

As described above, substitution of the new H-1B winners may mitigate the effects on the workforce, but H-1Bs going to F-1s are paid more than other initial H-1B beneficiaries, are younger on average, and are entering much higher-paying occupations than other initial H-1B beneficiaries. And there is a body of evidence that US-trained high-skilled immigrants are more productive than other high-skilled immigrants, including much higher patenting

rates^{xxvi} and rates of founding successful startups.^{xxvii} In any case, DHS has not attempted to quantify any of these effects that are of central importance.

The challenges facing America's high-skill workforce would extend far beyond elite coastal enclaves. The impacts ripple through innovation clusters nationwide, threatening not just individual institutions but entire *regional economies* built around science, technology, and higher education. While Silicon Valley and Boston capture imaginations, the dependence on international STEM talent spans the American map. The South's growing technology corridors—from North Carolina's Research Triangle to Texas's emerging tech centers—depend on international talent pipelines to compete globally. Even smaller metropolitan areas like Rochester, New York, or Madison, Wisconsin, have built innovation economies around universities that attract significant international student populations.

The [Global Innovation Index](#) identifies 23 US clusters among the world's top 100 science and technology clusters, demonstrating the geographic diversity of American innovation. These clusters include San Jose-San Francisco and Boston-Cambridge but also Austin, Cincinnati, Denver-Boulder, Pittsburgh, and Raleigh-Durham. Each relies heavily on the international student pipeline to maintain their competitive edge. But retention through the "front door" pipeline varies widely by geography. Between 2012 and 2020, the Mid-Atlantic lost more than 100,000 foreign-born bachelor's graduates, 180,000 foreign-born master's graduates, and 10,000 foreign-born PhDs, including migration to other regions. The Northeast does even worse at retention. Meanwhile, the West Coast does best of all, but the Midwest and South significantly outperform the Northeast and Mid-Atlantic.

While DHS failed to analyze these costs, the mere fact that an economic impact is somewhat uncertain does not imply that the best estimate of that impact is zero. The consensus of peer-reviewed economic research on the impacts in question is that they are very large.

We conclude that DHS has grossly underestimated the potential negative impact of its new system of a Wage Level Lottery for H-1B nonimmigrant petitions. As such, we ask the Department abandon this proposal.

CONCLUSION

When federal agency policies, like the lottery conducted to select H-1B petitions each fiscal year, are of the type and character that they can only be shifted through new public regulations promulgated in compliance with the Administrative Procedure Act, the Department of Homeland Security must not ignore significant, non-speculative costs to America and Americans.

We look forward to seeing a careful response from DHS and an abandonment of this Wage Level Lottery proposal. We welcome the opportunity, if you find it appropriate, to discuss the costs and concerns we have studied and summarize here.

We enclose with this comment a research paper published by the National Academies, which details the methods and data sources used in this comment's analysis, and both key results and tabulated results of recent surveys on international talent pipelines, which are referred to in our comment.

Thank you for the opportunity to participate in the rulemaking process.

Respectfully submitted,

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ENDNOTES

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- i “Brain Freeze: How International Student Exclusion Will Shape the STEM Workforce and Economic Growth in the United States,” Clemens, M, Neufeld, J, Nice, A, National Academies Press, October 2025, enclosed.
- ii NPRM p. 46001 to 46014.
- iii NPRM at p. 46009.
- iv See eg, NPRM at p. 46003.
- v NPRM at p. 46007. Presenting the wage level selection effect in the NPRM by two-digit SOC code (the “major group,” of which there are 23) is itself misleading because wage levels are provided for H-1B by DOL based on six-digit SOC codes (the “detailed occupations,” of which there are over 850). Thus, while wage level 2 jobs in Computer and Mathematical Occupations in two-digit “major group” 15 represent the highest number and percentage of H-1B petitions year after year, those wage level 2 jobs are divided among more than 20 different individual occupations. The wage level construct does not allow for effective comparison or ordering *between* detailed occupations.
- vi NPRM at p. 46009.
- vii USCIS, [Change of Status for Nonimmigrants: F-1, F-2, H-4, I-1, J-2 Fiscal Year 2018 – 2023](#).
- viii Table 12 at NPRM p. 46005.
- ix A bipartisan group of 70 national security experts and officials made these points in a [May 2023 letter](#) (reported in [Axios](#)) imploring congressional action on international scientific and engineering talent because when America attracts global STEM talent many “will be working in Pentagon-identified critical technology areas.”
- x Section 238, NDAA for FY2021, Pub.L. 116-283, enacted January 1, 2021 (Mac Thornberry National Defense Auth. Act).
- xi Jeremy Neufeld, [“The ‘Wage Level’ Mirage,”](#) Institute for Progress (2025).
- xii Id.
- xiii AC21 provides that individuals approved for green card classification by employer petitions may extend their H-1B status indefinitely while awaiting immigrant visa number availability, but this is not available for L-1 visa holders.
- xiv Jennifer Hunt, “Which immigrants are most innovative and entrepreneurial? Distinctions by entry visa.” *Journal of Labor Economics* 29, no. 3 (2011): 417-457.
- xv Natee Amornsiripanitch, Paul A. Gompers, George Hu, and Kaushik Vasudevan. “Getting schooled: Universities and VC-backed immigrant entrepreneurs.” *Research Policy* 52, no. 7 (2023): 104782.
- xvi [Surveys on International Student Talent Pipeline](#), summarizing Key Results and providing Tabulated Results. The Institute for Progress and NAFSA conducted three surveys to understand the international student talent pipeline and how employers use the H-1B program to hire international talent.
- xvii Chelsea Vail, “What Economists Think about Admitting Highly Skilled Immigrants,” Chicago Booth Review, 2016.
- xviii Peri, Giovanni, Kevin Shih, and Chad Sparber. “STEM workers, H-1B visas, and productivity in US cities.” *Journal of Labor Economics* 33, no. S1 (2015): S225-S255.
- xix Hunt, Jennifer, and Marjolaine Gauthier-Loiselle. “How much does immigration boost innovation?” *American Economic Journal: Macroeconomics* 2, no. 2 (2010): 31-56.

^{xx} Economists have found:

- Increases in foreign master's graduates driven by an unrelated force majeure cause more entrepreneurship in exposed regions, including by US natives (Beine, Michel, Giovanni Peri, and Morgan Raux. "The Contribution of Foreign Master's Students to US Start-Ups." No. w33314. National Bureau of Economic Research, 2024);
- High skill workers who entered the United States on student visas have much larger rates of patenting, publishing, earning, and entrepreneurship than otherwise comparable natives (Hunt, Jennifer. "Which immigrants are most innovative and entrepreneurial? Distinctions by entry visa." *Journal of Labor Economics* 29, no. 3 (2011): 417-457);
- Foreign STEM PhD students report greater preference for entrepreneurship than their US native colleagues (Roach, Michael, Henry Sauermann, and John Skrentny. "Are foreign STEM PhDs more entrepreneurial? Entrepreneurial characteristics, preferences, and employment outcomes of native and foreign science and engineering PhD students." In *The Roles of Immigrants and Foreign Students in US Science, Innovation, and Entrepreneurship*, pp. 207-228. University of Chicago Press, 2019);
- Historical increases in barriers against skilled immigration caused reduced scientific productivity in the US as a whole (Moser, Petra, Alessandra Voena, and Fabian Waldinger. "German Jewish émigrés and US invention." *American Economic Review* 104, no. 10 (2014): 3222-3255, and Moser, Petra, Sahar Parsa, and Shmuel San. "Immigration and Innovation: Lessons from the Quota Acts." (2025). Working paper, Dept. of Economics. New York University;
- Increases in foreign STEM PhD student inflows to the United States driven by unrelated shocks overseas cause increased innovation and discovery in US academic departments (Stuen, Eric T., Ahmed Mushfiq Mobarak, and Keith E. Maskus. "Skilled immigration and innovation: evidence from enrolment fluctuations in US doctoral programmes." *Economic Journal* 122, no. 565 (2012): 1143-1176, and Gaulé, Patrick, and Mario Piacentini. "Chinese graduate students and US scientific productivity." *Review of Economics and Statistics* 95, no. 2 (2013): 698-701.
- Roughly one third of the positive effect of foreign master's graduates on US entrepreneurship arises from business created by natives (Beine et al. (2024), *supra*);
- Immigrant inventors cause their native colleagues to patent more new ideas (Bernstein, Shai, Rebecca Diamond, Abhisit Jiranaphawiboon, Timothy McQuade, and Beatriz Pousada. The contribution of high-skilled immigrants to innovation in the United States. No. w30797. National Bureau of Economic Research, 2022); and
- Increases in foreign STEM worker prevalence cause: increased patenting in US cities (Winters, John. "Foreign and Native-Born STEM Graduates and Innovation Intensity in the United States." No. 8575. Institute of Labor Economics (IZA), 2014), increased entrepreneurship in US regions (Tareque, Inara S., Jorge Guzman, and Dan Wang. "High-skilled immigration enhances regional entrepreneurship." *Proceedings of the National Academy of Sciences* 121, no. 37 (2024): e2402001121), increased employment of high-skill native workers (Kerr, Sari Pekkala, William R. Kerr, and William F. Lincoln. "Skilled immigration and the employment structures of US firms." *Journal of Labor Economics* 33, no. S1 (2015): S147-S186), product innovation (Khanna, Gaurav, and Munseob Lee. "High-skill immigration, innovation, and creative destruction." In *The roles of immigrants and foreign students in US science, innovation, and entrepreneurship*, pp. 73-98. University of Chicago Press, 2019), and entrepreneurial success (Dimmock, Stephen G., Jiekun Huang, and Scott J. Weisbenner. "Give me your tired, your poor, your high-skilled labor: H-1B lottery outcomes and entrepreneurial success." *Management Science* 68, no. 9 (2022): 6950-6970).

^{xxi} Peri et al (2015), *supra* Note xviii.

^{xxii} "Brain Freeze: How International Student Exclusion Will Shape the STEM Workforce and Economic Growth in the United States," Clemens, M, Neufeld, J, Nice, A, National Academies Press, October 2025, enclosed. The Brain Freeze paper analyzes the *combined* effect of DHS instituting three policies that will deter international students at different points in the "front door" talent pipeline (eliminating D/S, rescinding OPT, and restricting H-1B), and as such identifies a larger loss valued at \$240-482 billion by ten years into the future, based on a sustained 33% reduction of the number of foreign STEM students graduating from US universities.

^{xxiii} Hunt and Gauthier-Loiselle *supra* Note xix.

^{xxiv} Kerr, William R., and William F. Lincoln. "The supply side of innovation: H-1B visa reforms and US ethnic invention." *Journal of Labor Economics* 28, no. 3 (2010): 473-508.

^{xxv} In the most recent data available at the time of writing, the GDP of the United States in fiscal 2025Q2 was \$30.35 trillion: US Bureau of Economic Analysis, Gross Domestic Product [GDP], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GDP>, September 18, 2025.

^{xxvi} Jennifer Hunt, "Which immigrants are most innovative and entrepreneurial? Distinctions by entry visa." *Journal of Labor Economics* 29, no. 3 (2011): 417-457.

^{xxvii} Natee Amornsiripanitch, Paul A. Gompers, George Hu, and Kaushik Vasudevan. "Getting schooled: Universities and VC-backed immigrant entrepreneurs." *Research Policy* 52, no. 7 (2023): 104782.