

DAY ONE PROJECT

Building an Evergreen \$1 Billion Fund for Science and Technology Career Advancement

*How to Expand H-1B Fees for Innovative Workforce
Training and Inclusive Graduate STEM Education*

**Lindsay Milliken
Doug Rand**

June 2021

Summary

The H-1B visa for “specialty occupation” workers has become a significant element of the U.S. employment-based immigration system. Less well-known is that employers of H-1B workers annually pay hundreds of millions of dollars for domestic education and training programs in science, technology, engineering, and mathematics (STEM), administered by the Department of Labor (DOL) and the National Science Foundation (NSF). This [fee-based funding stream](#) was created in the late 1990s and has not been meaningfully updated by Congress in the succeeding decades. It is mandatory funding, tied to a continuous flow of H-1B filing fees rather than the annual congressional appropriations process. Both the Obama and Trump administrations seized on this unique pot of money for advancing education and training priorities for Americans without new legislation or appropriations.

The Biden administration can take even greater advantage of this funding to launch innovative programs that advance U.S. economic competitiveness and diversify the STEM talent pipeline—two mutually reinforcing goals. Specifically, in this paper we recommend:

- Reestablishing the TechHire Initiative to rapidly train U.S. workers for in-demand technology jobs
- Establishing a new Advanced Research Projects Agency—Labor (ARPA-L) to conduct high-impact R&D programs that create breakthroughs to meet America’s workforce challenges
- Significantly increasing the number of graduate research fellowships dedicated to students in STEM fields who completed their undergraduate education at non-R1 universities
- Significantly increasing the number of faculty training grants in STEM fields where a dearth of professors has created a bottleneck for graduate education (e.g. artificial intelligence)

In addition, Congress should increase the fees paid by H-1B employers to reflect (a) the increase in inflation over the past two decades, as well as (b) the ability of major corporations, which are often the most prolific sponsors of H-1B workers, to pay more than small businesses.

Background

A Brief History of the ACWIA Fee Account for STEM training

In the 1990s, the technology sector was growing rapidly and the demand for high-skill workers was quickly outpacing supply. The H-1B visa, first enacted at the beginning of the decade, was becoming a popular option to bring in such skilled workers. In 1997, the [number of applications](#) for H-1Bs exceeded the established cap of 65,000 visas for the first time. The next year, [demand](#) was so high that the cap was reached within days of the opening date for new filings—and this has been the case nearly every year since.

Congress [considered](#) legislation to increase the H-1B cap, but faced strong bipartisan opposition, as well as pushback from labor unions and professional associations. As a compromise, along with raising the caps for three years, Congress established a special fee for sponsors (“petitioners”) of H-1B workers which would be deposited into a new fund called the “[H-1B Nonimmigrant Petitioner Account](#).” Because these provisions were included in the American Competitiveness and Workforce Improvement Act of 1998, immigration practitioners often refer to “ACWIA fees” and the “ACWIA fund.”

Originally, the [ACWIA fee](#) amounted to \$500 per qualifying petition. The fee was increased twice since its creation: once in 2000 (to \$1,000) and once in 2004 (to its current level of \$1,500). The [2004 adjustment](#) also specified for the first time that employers with 25 employees or fewer would pay a lower rate of \$750 per qualifying petition. Congress [mandated](#) that the funds be distributed primarily to DOL and NSF to support domestic STEM education and technical skills training programs. The current distribution of funds is as follows (see the Appendix for full statutory details):

- 50 percent to the Secretary of Labor for job training programs;
- 30 percent to the Director of NSF for scholarships for low-income students enrolled in STEM programs;
- 10 percent to the Director of NSF for a direct matching grant program that funds public-private partnerships in K-12 education;
- 5 percent to the Secretary of Homeland Security to improve processing employment-based temporary visa and green card petitions; and
- 5 percent to the Secretary of Labor to decrease the [processing time](#) for labor certification applications.

With this money, DOL has relatively wide latitude to make competitive grants to businesses, business-related nonprofit organizations, education and training providers (such as community colleges), “entities involved in administering the workforce development system,” and economic development [agencies](#). These grants are intended to support job training programs that help both unemployed and employed workers learn new skills to obtain a job or promotion, especially in industries experiencing significant growth. To determine these in-demand industries, the Secretary of Labor must [consult](#) with state workforce investment boards and take into account sectors that are “projected to add substantial numbers of new jobs”; “are being transformed by technology and innovation requiring new skill sets for workers”; “are new and emerging businesses that are projected to grow”; or “have a significant impact on the economy overall or on the growth of other industries and economic sectors.”

NSF, on the other hand, has more statutory restrictions on how it can use its allocated ACWIA fees. Scholarships for low-income individuals pursuing associate, undergraduate, or graduate STEM degrees cannot exceed \$10,000 per year for up to four years, although up to 50% of this funding stream (15% of the total ACWIA fund) may be used for “undergraduate programs for curriculum development, professional and workforce development, and to advance technological education.”

NSF’s K-12 STEM education grants (10% of the total H-1B fund) must be awarded to public-private partnerships that serve one or more of the following purposes specified by Congress:

- Support the development and implementation of standards-based instructional materials, models, and related student assessments that enable K–12 students to acquire an understanding of STEM, and to develop critical thinking skills;
- Provide systemic improvement in training K–12 teachers and education for students in STEM;
- Support the professional development of K–12 STEM teachers in the use of technology in the classroom;
- Stimulate system-wide K–12 reform of STEM in rural, economically disadvantaged regions;
- Provide externships and other opportunities for students to increase their appreciation and understanding of STEM, including summer institutes sponsored by an institution of higher education for students in grades 7–12;
- Foster partnerships of industry, educational institutions, and community organizations to address the educational needs of disadvantaged communities;
- Provide college preparatory support to expose and prepare students for careers in STEM; and
- Provide for carrying out certain NSF systemic reform activities.

Programs currently funded by ACWIA fees

Both NSF and DOL provide publicly-available data on the ACWIA fees that are spent on the agencies’ programs. Table 1 includes the total amount of funding received by NSF and DOL from fiscal years (FY) 2010 to 2021 as noted in the agencies’ annual budget requests

Table 1: Total ACWIA fee receipts received by NSF and DOL, FY 2010-2021

Fiscal Year	Department of Labor Receipts	National Science Foundation Receipts	Total Funding
2010	\$114,026,000	\$91,220,000	\$205,246,000
2011	\$130,975,000	\$106,110,000	\$237,085,000
2012	\$161,232,000	\$128,990,000	\$290,222,000
2013	\$143,466,000	\$120,940,000	\$264,406,000
2014	\$161,401,000	\$132,490,000	\$293,891,000
2015	\$175,029,000	\$143,000,000	\$318,029,000
2016	\$139,644,000	\$138,800,000	\$278,444,000
2017	\$160,200,000	\$141,070,000	\$301,270,000
2018	\$150,000,000	\$155,990,000	\$305,990,000
2019	\$195,899,000	\$156,720,000	\$352,619,000
2020, estimated	\$194,000,000	\$157,000,000	\$351,000,000
2021, request	\$194,000,000	\$157,000,000	\$351,000,000

Source: These figures came from the annual budget requests for [DOL](#) and [NSF](#).

NSF currently uses its money from ACWIA fees to fund two programs: [Scholarships in Science, Technology, Engineering, and Mathematics](#) (S-STEM) and [Innovative Technology Experiences for Students and Teachers](#) (ITEST). By the end of FY 2018, the agency had received almost \$2 billion in [cumulative ACWIA fees](#) to support scholarships, as well as K-12 students and teachers.

NSF must allocate three-quarters of its ACWIA receipts (30 percent of the total account) to scholarships for lower-income students pursuing associate’s, bachelor’s, and advanced STEM degrees. Through the S-STEM program, NSF makes grants to higher education institutions (about 90 in FY 2019) which then award scholarships of \$10,000 per year for up to 4 years. Between FY 1999 and 2018, the S-STEM program [resulted](#) in 87,890 scholarships for U.S. students (including both citizens and permanent residents).

ITEST is the program through which NSF allocates the quarter of its ACWIA fee receipts (10 percent of the total account) for K-12 STEM education. From FY 2009 to FY 2018, ITEST [served](#) over 1 million students and over 55,000 teachers.

More information about these funding levels of these programs can be found in Table 2.

Table 2: Funding of NSF’s S-STEM and ITEST programs, FY 2010-2019

Year	S-STEM funding	ITEST funding
2010	\$75,960,000	\$20,850,000
2011	\$77,670,000	\$18,620,000
2012	\$72,570,000	\$21,590,000
2013	\$83,980,000	\$31,510,000
2014	\$92,180,000	\$37,230,000
2015	\$109,340,000	\$29,830,000
2016	\$140,540,000	\$44,350,000
2017	\$84,380,000	\$35,110,000
2018	\$156,400,000	\$35,860,000
2019	\$114,760,000	\$34,240,000

Source: Funding levels from the [FY 2021 NSF budget request](#).

Although the nature and amount of these scholarships are fixed in statute, Congress does [provide](#) the NSF Director wide discretion to spend up to 50 percent of the current S-STEM funds “for undergraduate programs for curriculum development, professional and workforce development, and to advance technological education,” all of which “may be used for purposes other than scholarships.” This means that an annual amount of around \$50 million is available for such supporting programs.

Department of Labor

Over the past decade, DOL has used its ACWIA fee receipts to fund a series of job training initiatives, usually tied to a presidential priority. DOL has [cumulatively received](#) about \$2.5 billion in ACWIA fees to train professionals in the United States. The Secretary of Labor has wide discretion to designate “high growth industries and economic sectors” as targets for this funding, based on the following factors:

- The sectors are projected to add substantial numbers of new jobs to the economy;

DAY ONE PROJECT

- The sectors are being transformed by technology and innovation requiring new skill sets for workers;
- The sectors include new and emerging businesses that are projected to grow; or
- The sectors in question have a significant impact on the economy overall or on the growth of other industries and economic sectors.

Using ACWIA fees, the Obama administration issued [funding opportunity announcements](#) for programs to support job training for the long-term unemployed (“Ready to Work”), coding bootcamps (“TechHire”), and apprenticeship programs, among other priorities. The Trump administration also used these funds to [support its efforts](#) to expand apprenticeship programs (“Closing the Skills Gap”).

The Ready to Work program (RTW) was [launched in 2014](#) as a response to those who lost their jobs during the Great Recession and remained under- or unemployed as the economy recovered. DOL is in the middle of evaluating the success of this [program](#) and is expected to complete its study by May 2022. In 2017, the agency released an [interim report](#) that examined the first year of grantees’ operations in Maryland, California, New York, and Washington. The [programs](#) provided specialized, one-on-one counseling to the participants and coordinated with local occupational training programs and employers in relevant sectors.

[TechHire](#) was established in 2015 and has aimed to build talent pipelines in technology sectors throughout the country. Initial funding for the program amounted to \$100 million in grants to support partnerships that train young adults and other disadvantaged groups, such as people with disabilities, individuals with limited proficiency in English, and those with criminal records. A [full evaluation](#) on the benefits of the program is expected from DOL in September 2021.

Closing the Skills Gap [awarded grants](#) to 28 public-private partnerships in early 2020 that amounted to almost \$100 million. The program aims to [achieve](#) “large-scale expansions of apprenticeships in industries including advanced manufacturing, healthcare, and information technology.” Likely because the Closing the Skills Gap program is still so new, there are no studies announced to evaluate its impact yet.

For more information about the DOL programs funded by ACWIA fees, see Table 3 on the next page.

Table 3: Funding levels of ACWIA programs at DOL, 2011-2020

Year	Program	Purpose	Amount
2011	H-1B Technical Skills Training Grants	“To provide education, training, and job placement assistance in the occupations and industries for which employers are using H-1B visas to hire foreign workers, and the related activities necessary to support such training”	\$240,000,000
	Jobs and Innovation Accelerator Challenge	“To support the development of approximately 20 high-growth industry clusters” and help them achieve “outcomes such as commercialization, business formation, expansion of existing businesses, job creation, and exports”	\$20,000,000
2012	N/A	N/A	N/A
2013	Make it in America Challenge	“To support the development and implementation of a regionally driven economic development strategy that accelerates job creation by encouraging re-shoring of productive activity by U.S. firms, fostering increased Foreign Direct Investment, encouraging U.S. companies to keep or expand their businesses- and jobs - in the United States, and training local workers to meet the needs of those businesses”	\$20,000,000
	Youth CareerConnect Program	“To provide high school students with education and training that combines rigorous academic and technical curricula focused on specific in-demand occupations and industries for which employers are using H-1B visas to hire foreign workers as well as the related activities necessary to support such training to increase participants' employability in H-1B in-demand industries and occupations”	\$100,000,000
2014	H-1B Ready to Work Partnership Grants	“To provide long-term unemployed workers with individualized counseling, training and supportive and specialized services leading to rapid employment in occupations and industries for which employers use H-1B visas to hire foreign workers”	\$150,000,000
2015	American Apprenticeship Initiative	“To provide a catalyst in supporting a uniquely American Apprenticeship system that meets our country's particular economic, industry and workforce needs”	\$100,000,000
2016	America’s Promise Job Driven Grant Program	“To develop and expand regional partnerships and training opportunities particularly for middle- to high-skilled H-1B industries and occupations, ensuring that communities fully maximize their Federal, state and local funds to build a competitive workforce”	\$100,000,000
	Strengthening Working Families Initiative	“To support evidence-based strategies or innovations based on these models that remove a range of barriers to training, including child care and other needs that working families face, by investing in education and skills training in combination with customized participant supportive services”	\$25,000,000

DAY ONE PROJECT

	TechHire Partnership Grants	“To equip individuals with the skills they need through innovative approaches that can rapidly train workers for and connect them to well-paying, middle- and high-skilled, and high-growth jobs across a diversity of H-1B industries such as Information Technology (IT), healthcare, advanced manufacturing, financial services, and broadband”	\$100,000,000
2017	N/A	N/A	N/A
2018	Scaling Apprenticeship Through Sector-Based Strategies	“To accelerate the expansion of apprenticeships to new industry sectors reliant on H-1B visas, to promote the large-scale expansion of apprenticeships across the nation, and to increase apprenticeship opportunities for all Americans”	\$150,000,000
2019	Apprenticeships: Closing the Skills Gap	“To promote apprenticeships as a significant workforce solution in filling current middle- and high-skilled job vacancies and closing the skills gap between employer workforce needs and the skills of the current workforce”	\$100,000,000
2020	H-1B One Workforce Grant Program	To fill critical shortages in economic regions by encouraging “states and economic regions to work with industry stakeholders to develop dynamic workforce strategies that train workers and jobseekers for middle- to high-skilled H-1B occupations in key industry sectors,” such as “Information Technology (IT), advanced manufacturing, and transportation that are being transformed by technological advancements and automation,” as well as “other industries of the future that include artificial intelligence (AI), quantum information sciences (QIS), 5G/advanced communications, and biotechnology”	\$150,000,000
	H-1B Rural Healthcare Grant Program	“To alleviate healthcare workforce shortages by creating sustainable employment and training programs in healthcare occupations (including behavioral and mental healthcare) serving rural populations”	\$40,000,000

Source: The DOL Employment and Training Administration [funding opportunities](#) page.

Plan of Action

Recommendations for High-impact STEM Education and Training Programs

As currently authorized by Congress, the ACWIA fees yield an approximately \$350 million annual fund for STEM education and training that is essentially on autopilot, funded by employers rather than taxpayers. The Biden administration has an opportunity to focus DOL and NSF on using these funds to advance its top priorities of economic recovery and racial equity.

Specifically, DOL can ramp up the TechHire initiative for in-demand technology jobs and establish a new Advanced Research Projects Agency—Labor (ARPA-L) to conduct high-impact R&D programs that create breakthroughs to meet America’s workforce challenges. NSF can significantly increase both the number of graduate STEM research fellowships dedicated to underserved students as well as the number of faculty training grants in fields where a dearth of professors has created a bottleneck for graduate education (e.g., artificial intelligence).

Reestablish the TechHire Initiative

The TechHire initiative, described in more detail above, has already demonstrated the value of involving technology companies in rapid STEM training programs. One of the first TechHire [grants](#) was awarded to LaGuardia Community College and helped them form a partnership with state and federal agencies, along with software development and training companies. The goal was to provide intensive training in tech skills to low-income young adults and as of 2019, over 80 percent of students in the bootcamp graduated. Retention was over [90 percent](#). This is just one of the 39 partnerships established by the program, which serves communities in 25 states.

No further DOL funds have been awarded to the TechHire initiative since its inception in 2015, however. Especially as our country embraces an increasingly tech-focused work environment, further tech skills training will be essential. We recommend allocating \$50 million per year to the TechHire initiative to sustain it and establish new public-private partnerships across the country. To encourage high-impact outcomes, the revitalized TechHire initiative could make grants above a certain award amount (e.g., \$2 million) contingent on demonstration of wage gains following training, and could allow non-profits (not only workforce boards) to serve as the lead applicant.

Establish a new Advanced Research Projects Agency—Labor (ARPA-L)

With the nature of work changing rapidly, one federal initiative that could significantly boost the United States’ long-term competitiveness in high-impact industries would be the development of an [Advanced Research Projects Agency for the Department of Labor](#) (ARPA-L). According to a Day One proposal developed by former Defense Advanced Research Projects Agency (DARPA) Director Arati Prabhakar and Coursera executive Jeff Kaplan, ARPA-L would drive innovation in workforce training and labor market outcomes, where major research efforts are currently lacking. By weaving research advances together with lessons from the real world, ARPA-L aims to catalyze high-impact R&D focused on creating powerful, scalable approaches to pressing workforce issues including unemployment and market disruption. With

the support of Congress and the White House, this new organization should be housed within the Department of Labor in order to best deliver bold advances that ultimately change what's possible for America's workers.

The ARPA model is known for its success in creating radically better approaches to hard problems by conducting solutions-oriented R&D. DOD's DARPA, now in its seventh decade, conducted the pivotal R&D for new military capabilities such as stealth and precision strike and, more broadly, for new information technologies from the internet to artificial intelligence. DARPA's track record inspired the establishment of the Department of Energy's ARPA-E and the Office of the Director of National Intelligence's [JARPA](#). Both of these ARPAs are well underway, with robust [portfolios](#) of [R&D programs](#) and [encouraging results](#). They demonstrate that it is possible to adapt the DARPA model for different public purposes.

Though this ARPA model has been highly successful for national security and energy research, it has not yet been implemented for the improvement of workforce training and education programs. ARPA-L would be an innovative addition to DOL, particularly because the agency's current budget does not include *any* funding for workforce training research and development. Some potential research and development areas to close the skills gap include:

- Develop and validate diagnostic systems to improve skills assessment and enable workers to better understand how their skill set matches the needs of employers.
- Demonstrate accelerated skill development that uses information about an individual (e.g., age, initial skill level, and prior experience) to devise an individualized training regimen for interest and expertise.
- Explore and evaluate new ways to personalize and accelerate the training process by building on advances in learning science and neuroscience.
- Advance and test the effectiveness of emerging innovations like human-computer interaction and mixed reality for training for complex tasks.
- Experiment with and assess alternative certifications and micro-credentialing programs to train and upskill youth and displaced adult workers around the country while connecting participants directly to employers.

In addition, ARPA-L would support timely labor market data collection and analysis to evaluate the research and training programs. Conducting labor market analysis with ARPA-L would help with the development of innovative training programs, as well as allowing employers, employees, and the federal government to respond to economic changes. Some examples of useful analyses include:

- Experimenting with and testing data tools for each worker, combining information on local job postings, wages, and training requirements with information about credentialing and training services to offer workers the most meaningful and actionable information for their career goals in real time.
- Assembling data from public and private sources on regional labor trends and testing their effectiveness in enabling employers to make more impactful, targeted, and timely investments in local workforce development opportunities.

- [Collecting and analyzing diverse datasets](#) to identify targeted, effective leverage points for innovative labor policy interventions.

Allocating \$100 million per year from the ACWIA fund to kickstart ARPA-L would put the United States on a much better path to supporting U.S. workers and sustained wage growth in our changing national and global economy. This can be accomplished administratively in the immediate term, with Congress authorizing and appropriating a larger program after a strong track record has been established.

Optimize STEM graduate fellowships for students from emerging research universities

Higher education R&D funding is scarce, and is not distributed equitably. The American Physical Society [found](#) that in 2018, out of more than 600 colleges and universities that received federal science funding, 22 percent received over 90 percent of the funds. These institutions serve only 43 percent of all students and only 34 percent of underrepresented minority students in the United States. This distribution of funds means that two thirds of underrepresented minority students and almost 70 percent of students who receive Pell grant funding have significantly fewer opportunities to engage in cutting-edge scientific research.

Without undergraduate research experiences afforded by federal R&D funding, students at emerging research universities are then less competitive for future NSF-funded opportunities at *any* university, such as graduate fellowships. “Emerging research institution” (i.e., non-R1) is a category that includes geographically diverse state schools and nearly all minority-serving institutions.

NSF already uses the ACWIA fund to address this problem in part, through the S-STEM program described above. Colleges and universities apply for competitive grants to “increase the number of low-income students who graduate and contribute to the American innovation economy with their STEM knowledge,” for example through innovative curricula. While these institution-level awards have merit, they create a patchwork of programs for which the lion’s share of low-income STEM students are ineligible at any given point in time.

In contrast, consider the prestigious NSF Graduate Research Fellowship program, where individual students directly apply for three years of financial support, with an annual stipend of \$34,000 plus \$12,000 to the university where they pursue their graduate-level STEM education. Based on an increase in appropriations, Congress doubled the total number of such [fellowships](#) over the past decade (from around 1,000 to 2,000).

To lower barriers to graduate STEM education for outstanding students of all backgrounds, NSF should consider allocating \$50 million of its ACWIA funds to an individual-level scholarship program—like the NSF Graduate Research Fellowships—open to students who obtained their undergraduate degree from an emerging research institution. To be clear, these fellows could pursue their graduate degree at any research university, whether R1 or emerging.

For its part, Congress should lift the statutory cap of \$10,000 for such scholarships, which gets smaller in real terms with each passing year.

Increase the number of faculty training grants in critical STEM fields

The demand for faculty in cutting-edge fields, such as AI, is rising rapidly. According to a [report](#) by the Center for Security and Emerging Technology (CSET), the number of bachelor's degrees in computer science and engineering almost tripled between 2009 and 2017. In addition, the enrollment for introductory courses in AI in 2017 was three to five times higher than in 2012. The flow of faculty moving from institutions of higher education to industry has also increased dramatically, so it has become quite difficult to properly support the rising number of U.S. students interested in an education in AI.

This dearth of qualified professors represents a major long-term constraint on AI education in the United States, and will no doubt constrain U.S. competitiveness in other advanced fields as they develop in unexpected directions in the future.

Therefore, NSF should consider allocating another \$25 million from its ACWIA funding stream to incentivize universities to create new faculty positions in STEM fields where there is a teaching bottleneck. To that end, NSF could expand and adapt its [Faculty Early Career Development \(CAREER\) Program](#), which provides awards of up to \$400,000 over five years to promising faculty members.

Recommendations for Congress: Growing the Pie

As described above, the ACWIA fund can significantly advance STEM education and training priorities in the United States, without any further action by Congress, through optimal use of the existing \$350 million annual funding flow.

But the size of that flow is somewhat arbitrary, and ought to grow. This is especially important now that [experts](#) are warning that China has the resources to surpass the United States in AI and other STEM fields over the next few years. Congress should therefore increase the size of the pie by raising H-1B fees in an equitable way.

Currently, the ACWIA fee structure has two tiers based on the size of the employer filing the petition. Congress [set the fees](#) at \$750 for employers with at most 25 U.S. employees and \$1,500 for employers with more than 25 U.S. employees. However, this fee structure has not changed since 2004—during which time inflation has increased by over [30 percent](#)—and it also does not take into account the [financial resources](#) of major corporations that hire the great majority of H-1B workers.

Congress should update the fee structure so that (a) the two current fee tiers are increased 30% to account for past inflation; (b) a new fee tier is added for companies larger than the Small Business Administration's 500-employee threshold for a "small business"; and c) all fees are automatically indexed to inflation in the future.

Table 4: Recommendations for modernized ACWIA fee structure

Employer size	Current fee	Proposed fee
Up to 25 employees	\$750	\$1,000
Between 26 and 500 employees	\$1,500	\$2,000
Above 500 employees	\$1,500	\$5,000

Higher fees for large companies were recommended by [Microsoft](#) in 2012, when it published a [proposal](#) for Congress to allocate additional 20,000 H-1B visas for professionals in STEM fields and to require large companies to pay a fee of \$10,000 for each petition. Microsoft also proposed recapturing unused green cards and allocating 20,000 of them annually for STEM professionals. Sponsors for these green cards would pay \$15,000. These new funds, which would amount to about \$500 million per year, would then be dedicated to domestic STEM education programs.

It is important to note that H-1B petitions in certain circumstances are exempt from ACWIA fees. These exemptions include petitions from:

- Institutions of higher education;
- Nonprofit entities related to or affiliated with institutions of higher education;
- Nonprofit research organizations or governmental research organizations;
- Primary or secondary educational institutions; or
- Nonprofit entities that [engage](#) in “an established curriculum-related clinical training program for students.”

Fees are also not required [for most H-1B extensions](#) under any kind of employer.

With these details in mind, we calculated the estimated revenue that would be generated by the modernized fee structure proposed above. We referred to USCIS data on current H-1B employers, annual rates of the submission of petitions, as well as USCIS’s analysis of petitions from small entities (at most 500 employees) and “non-small” entities (above 500 employees).

We estimate that a modernized ACWIA fee structure could bring in around \$1 billion per year, or about triple the current revenue level. The data and our estimates can be found in Table 5 and Table 6 below.

Table 5: Calculation of current ACWIA fee revenue and estimated increases from recommended policy changes (FY 2020 data)¹

Petitions filed	Estimated number of petitions submitted	Average fee paid	Total fees
Petitions without fee exemptions (63.5%)	271,141	\$1,475.25	~\$400,000,000
Petitions with a fee exemption (36.5%)	156,104		
Total number of petitions filed	427,245		

Table 6: Estimated increases in ACWIA fee revenue from recommended policy changes²

Petitions by employer size	Estimated number of petitions submitted	Proposed fee	Estimated total revenue
25 or fewer employees	19,912	\$1,000	\$19,912,041
26-500 employees	85,948	\$2,000	\$171,895,782
More than 500 employees	161,681	\$5,000	\$808,406,892
Total	267,541³	N/A	\$1,000,214,715

Conclusion

As China and other countries ramp up spending to boost their own domestic research and development capabilities, the United States must act to maintain its [global scientific and technological leadership](#).

¹ Our data examines the number of petitions filed by employers of different sizes. The number of petitions submitted is higher than the number of employers submitting petitions as many employers file several petitions per year. Our method takes the percentage of petitions filed without any fee exemptions and applies it to the number of petitions filed by employers of varying sizes. Because USCIS data includes petitions filed by employers of an unknown size, our model extrapolates the ratio of employers with at most 25 employees to employers with more than 25 employees to estimate how many of those petitions filed by employers of unknown size fit into these two categories. We also used the [Small Entity Analysis for the USCIS Fee Schedule](#) to estimate how many petitions were submitted by employers with more than 500 employees and extrapolated from this number to estimate the number of petitions filed by employers with more than 25 employees but at most 500.

² This model uses data sourced from USCIS [reports on H-1B petitions](#), [approved H-1B petitions by employer](#), and [USCIS' small entity analysis for the agency's fee schedule](#).

³ This estimated total number of petitions without fee exemptions (267,541) is slightly different than the total number of petitions without exemptions (271,141) provided by USCIS for FY 2020 because we had to estimate the number of petitions submitted by employers with 26-500 employees and by employers with greater than 500 employees based on the imperfect data available to us. There is currently no published data source on the number of petitions submitted by employers with more than 500 employees, but because our estimate is close to the total number of non-exempt petitions submitted, we posit that our model is within an acceptable range of accuracy in determining the number of petitions submitted by employers of the sizes we specified.

DAY ONE PROJECT

Since its creation two decades ago, the ACWIA fund has been a valuable and reliable resource to support STEM workforce training and education programs at DOL and NSF. Congress should grow this annual funding stream to \$1 billion—at no cost to taxpayers—by modernizing the ACWIA fee structure to keep up with inflation and reflect the size of the large corporations petitioning for most H-1B professionals.

Even before Congress takes these overdue actions, the administration should allocate the existing annual flow of ACWIA funds to expand the TechHire initiative, institutionalize a new ARPA-L, support a new generation of underserved STEM graduate students, and eliminate faculty bottlenecks in critical STEM fields.

The time is ripe to seize this opportunity to harness America’s home-grown STEM talent to accelerate innovation and power the nation’s inclusive economic growth.

Appendix: Current and Proposed Statutory Authorities for the H-1B Nonimmigrant Petitioner Account (ACWIA fund)

(Aligned statutory revisions appear as redlines.)

8 USC §1184. Admission of nonimmigrants

(c) [...]

(9) (A) The Attorney General⁴ shall impose a fee on an employer (excluding any employer that is a primary or secondary education institution, an institution of higher education, as defined in section 1001(a) of title 20, a nonprofit entity related to or affiliated with any such institution, a nonprofit entity which engages in established curriculum-related clinical training of students registered at any such institution, a nonprofit research organization, or a governmental research organization) filing before a petition under paragraph (1)-

- (i) initially to grant an alien nonimmigrant status described in section 1101(a)(15)(H)(i)(b) of this title;
- (ii) to extend the stay of an alien having such status (unless the employer previously has obtained an extension for such alien); or
- (iii) to obtain authorization for an alien having such status to change employers.

(B) For each such petition, ~~t~~he amount of the fee shall be:

- (i) \$1,000 for any employer with not more than 25 full-time equivalent employees who are employed in the United States (determined by including any affiliate or subsidiary of such employer);
- (ii) \$2,000 for any employer with more than 25 and not more than 500 full-time equivalent employees who are employed in the United States (determined by including any affiliate or subsidiary of such employer); or
- (iii) \$5,000 for any employer with more than 500 full-time equivalent employees who are employed in the United States (determined by including any affiliate or subsidiary of such employer).

~~\$1,500 for each such petition except that the fee shall be half the amount for each such petition by any employer with not more than 25 full-time equivalent employees who are employed in the United States (determined by including any affiliate or subsidiary of such employer).~~

(C) The Secretary may adjust a premium fee under this subparagraph (B) on a biennial basis by the percentage (if any) by which the Consumer Price Index for All Urban Consumers for the month of June preceding the date on which such adjustment takes effect exceeds the Consumer Price Index for All Urban Consumers for the same month of the second preceding calendar year. The provisions of section 553 of title 5 shall not apply to an adjustment authorized under this subparagraph.

⁴ Following the creation of the Department of Homeland Security (DHS), instances of "Attorney General" now refer to the DHS Secretary.

(DE) Fees collected under this paragraph shall be deposited in the Treasury in accordance with section 1356(s) of this title.

(10) An amended H–1B petition shall not be required where the petitioning employer is involved in a corporate restructuring, including but not limited to a merger, acquisition, or consolidation, where a new corporate entity succeeds to the interests and obligations of the original petitioning employer and where the terms and conditions of employment remain the same but for the identity of the petitioner.

(11) (A) Subject to subparagraph (B), the Secretary of Homeland Security or the Secretary of State, as appropriate, shall impose a fee on an employer who has filed an attestation described in section 1182(t) of this title-

(i) in order that an alien may be initially granted nonimmigrant status described in section 1101(a)(15)(H)(i)(b1) of this title; or

(ii) in order to satisfy the requirement of the second sentence of subsection (g)(8)(C) for an alien having such status to obtain certain extensions of stay.

(B) The amount of the fee shall be the same as the amount imposed by the Secretary of Homeland Security under paragraph (9), except that if such paragraph does not authorize such Secretary to impose any fee, no fee shall be imposed under this paragraph.

(C) Fees collected under this paragraph shall be deposited in the Treasury in accordance with section 1356(s) of this title.

8 USC §1356. Disposition of moneys collected under the provisions of this subchapter

(s) H–1B Nonimmigrant Petitioner Account

(1) In general

There is established in the general fund of the Treasury a separate account, which shall be known as the "H–1B Nonimmigrant Petitioner Account". Notwithstanding any other section of this subchapter, there shall be deposited as offsetting receipts into the account all fees collected under paragraphs (9) and (11) of [section 1184\(c\) of this title](#).

(2) Use of fees for job training

~~4050~~ percent of amounts deposited into the H–1B Nonimmigrant Petitioner Account shall remain available to the Secretary of Labor until expended for demonstration programs and projects described in [section 3224a of title 29](#).

(3) Use of fees for low-income scholarship program and national security priorities

~~4530~~ percent of the amounts deposited into the H–1B Nonimmigrant Petitioner Account shall remain available to the Director of the National Science Foundation until expended for (a) scholarships described in [section 1869c of title 42](#) for low-income students enrolled in a program of study leading to a degree in mathematics, engineering, or computer science and (b) ~~graduate scholarships, faculty development awards, and other programs at the Director's discretion, that promote national predominance in fields that are essential to the national security of the United States.~~

(4) National Science Foundation competitive grant program for K–12 math, science and technology education**(A) In general**

10 percent of the amounts deposited into the H–1B Nonimmigrant Petitioner Account shall remain available to the Director of the National Science Foundation until expended to carry out a direct or matching grant program to support private-public partnerships in K–12 education.

(B) Types of programs covered

The Director shall award grants to such programs, including those which support the development and implementation of standards-based instructional materials models and related student assessments that enable K–12 students to acquire an understanding of science, mathematics, and technology, as well as to develop critical thinking skills; provide systemic improvement in training K–12 teachers and education for students in science, mathematics, and technology; support the professional development of K–12 math and science teachers in the use of technology in the classroom; stimulate system-wide K–12 reform of science, mathematics, and technology in rural, economically disadvantaged regions of the United States; provide externships and other opportunities for students to increase their appreciation and understanding of science, mathematics, engineering, and technology (including summer institutes sponsored by an institution of higher education for students in grades 7–12 that provide instruction in such fields); involve partnerships of industry, educational institutions, and community organizations to address the educational needs of disadvantaged communities; provide college preparatory support to expose and prepare students for careers in science, mathematics, engineering, and technology; and provide for carrying out systemic reform activities under section 1862(a)(1) of title 42.

(5) Use of fees for duties relating to petitions

~~2.55~~ percent of the amounts deposited into the H–1B Nonimmigrant Petitioner Account shall remain available to the Secretary of Homeland Security until expended to carry out duties under paragraphs (1) and (9) of section 1184(c) of this title related to petitions made for nonimmigrants described in section 1101(a)(15)(H)(i)(b) of this title, under paragraph (1)(C) or (D) of section 1154⁵ of this title related to petitions for immigrants described in section 1153(b) of this title.

(6) Use of fees for application processing and enforcement

For fiscal year 1999, 4 percent of the amounts deposited into the H–1B Nonimmigrant Petitioner Account shall remain available to the Secretary of Labor until expended for decreasing the processing time for applications under section 1182(n)(1) of this title and for carrying out section 1182(n)(2) of this title. Beginning with fiscal year 2000, 2.55 percent of the amounts deposited into the H–1B Nonimmigrant Petitioner Account shall remain available to the Secretary of Labor until expended for decreasing the processing time for applications under section 1182(n)(1) of this title and section 1182(a)(5)(A) of this title.

[29 USC §3224a](#). Job training grants

(1) In general

The Secretary of Labor shall use funds available under section 1356(s)(2) of title 8 to award grants to eligible entities to provide job training and related activities for workers to assist them in obtaining or upgrading employment in industries and economic sectors identified pursuant to paragraph (4) that are projected to experience significant growth and ensure that job training and related activities funded by such grants are coordinated with the public workforce investment system.

(2) Use of funds

(A) Training provided

Funds under this section may be used to provide job training services and related activities that are designed to assist workers (including unemployed and employed workers) in gaining the skills and competencies needed to obtain or upgrade career ladder employment positions in the industries and economic sectors identified pursuant to paragraph (4).

(B) Enhanced training programs and information

In order to facilitate the provision of job training services described in subparagraph (A), funds under this section may be used to assist in the development and implementation of model activities such as developing appropriate curricula to build core competencies and train workers, identifying and disseminating career and skill information, and increasing the integration of community and technical college activities with activities of businesses and the public workforce investment system to meet the training needs for the industries and economic sectors identified pursuant to paragraph (4).

(3) Eligible entities

Grants under this section may be awarded to partnerships of private and public sector entities, which may include-

- (A) businesses or business-related nonprofit organizations, such as trade associations;
- (B) education and training providers, including community colleges and other community-based organizations; and
- (C) entities involved in administering the workforce development system, as defined in section 3102 of this title, and economic development agencies.

(4) High growth industries and economic sectors

For purposes of this section, the Secretary of Labor, in consultation with State workforce investment boards, shall identify industries and economic sectors that are projected to experience significant growth, taking into account appropriate factors, such as the industries and sectors that-

- (A) are projected to add substantial numbers of new jobs to the economy;
- (B) are being transformed by technology and innovation requiring new skill sets for workers;
- (C) are new and emerging businesses that are projected to grow; or
- (D) have a significant impact on the economy overall or on the growth of other industries and economic sectors.

(5) Equitable distribution

In awarding grants under this section, the Secretary of Labor shall ensure an equitable distribution of such grants across geographically diverse areas.

(6) Leveraging of resources and authority to require match

(A) Leveraging of resources

In awarding grants under this section, the Secretary of Labor shall take into account, in addition to other factors the Secretary determines are appropriate-

(i) the extent to which resources other than the funds provided under this section will be made available by the eligible entities applying for grants to support the activities carried out under this section; and

(ii) the ability of such entities to continue to carry out and expand such activities after the expiration of the grants.

(B) Authority to require match

The Secretary of Labor may require the provision of specified levels of a matching share of cash or noncash resources from resources other than the funds provided under this section for projects funded under this section.

(7) Performance accountability

The Secretary of Labor shall require grantees to report on the employment outcomes obtained by workers receiving training under this section using indicators of performance that are consistent with other indicators used for employment and training programs administered by the Secretary, such as entry into employment, retention in employment, and increases in earnings. The Secretary of Labor may also require grantees to participate in evaluations of projects carried out under this section.

42 USC §1869c. Low-income scholarship program

(1) Establishment

The Director of the National Science Foundation (referred to in this section as the "Director") shall award scholarships to low-income individuals to enable such individuals to pursue associate, undergraduate, or graduate level degrees in mathematics, engineering, or computer science.

(2) Eligibility

(A) In general

To be eligible to receive a scholarship under this section, an individual-

(i) must be a citizen of the United States, a national of the United States (as defined in section 1101(a) of title 8), an alien admitted as a refugee under section 1157 of title 8, or an alien lawfully admitted to the United States for permanent residence;

(ii) shall prepare and submit to the Director an application at such time, in such manner, and containing such information as the Director may require; and

(iii) shall certify to the Director that the individual intends to use amounts received under the scholarship to enroll or continue enrollment at an institution of higher

education (as defined in section 1001(a) of title 20) in order to pursue an associate, undergraduate, or graduate level degree in mathematics, engineering, computer science, or other technology and science programs designated by the Director.

(B) Ability

Awards of scholarships under this section shall be made by the Director solely on the basis of the ability of the applicant, except that in any case in which 2 or more applicants for scholarships are deemed by the Director to be possessed of substantially equal ability, and there are not sufficient scholarships available to grant one to each of such applicants, the available scholarship or scholarships shall be awarded to the applicants in a manner that will tend to result in a geographically wide distribution throughout the United States of recipients' places of permanent residence.

(3) Limitation

The amount of a scholarship awarded under this section shall be determined by the Director, ~~except that the Director shall not award a scholarship in an amount exceeding \$10,000 per year.~~ The Director may renew scholarships for up to 4 years.

(4) Funding

The Director shall carry out this section only with funds made available under section 1356(s)(3) of title 8. The Director may use no more than 50 percent of such funds for undergraduate programs for curriculum development, professional and workforce development, and to advance technological education. Funds for these other programs may be used for purposes other than scholarships.

(5) Federal Register

Not later than 60 days after December 8, 2004, the Director shall publish in the Federal Register a list of eligible programs of study.

42 USC §1862. [NSF] Functions

(a) Initiation and support of studies and programs; scholarships; current register of scientific and engineering personnel

The Foundation is authorized and directed-

(1) to initiate and support basic scientific research and programs to strengthen scientific research potential and science education programs at all levels in the mathematical, physical, medical, biological, social, and other sciences, and to initiate and support research fundamental to the engineering process and programs to strengthen engineering research potential and engineering education programs at all levels in the various fields of engineering, by making contracts or other arrangements (including grants, loans, and other forms of assistance) to support such scientific, engineering, and educational activities and to appraise the impact of research upon industrial development and upon the general welfare;

About the Authors



Lindsay Milliken is a Policy Analyst for Science, Technology, and Innovation at the Federation of American Scientists. She supports the [Congressional Science Policy Initiative](#) and the [Technology and Innovation Initiative](#). Previously, she worked as a Legislative Research Assistant at Lewis-Burke Associates, a government relations firm specializing in science policy and higher education. Lindsay received her BA in Political Science with a minor in Physics from American University in Washington, DC. During her time at AU, she worked at the National Association of Biomedical Research, which supports the humane use of animal models in medical research. Her research interests include artificial intelligence, high skill immigration policy, and finding creative ways to support evidence-based policymaking on Capitol Hill.



Doug Rand is a Senior Fellow and Director of the [Technology and Innovation Initiative](#) at the Federation of American Scientists, focusing on the intersection of immigration policy and artificial intelligence (AI) in advancing the nation's national security and economic growth. Doug is the co-founder of [Boundless](#), a technology company that empowers families to navigate the immigration system more confidently, rapidly, and affordably. Doug served in the Obama White House for over six years as Assistant Director for Entrepreneurship in the Office of Science and Technology Policy, with a portfolio spanning inclusive high-growth entrepreneurship, access to capital, clean energy innovation, commercialization of federally funded research, and high-skill immigration. Doug was co-founder and CEO of the innovative publishing company Playscripts, Inc., as well as a co-founder of the theater review aggregator StageGrade. He is a graduate of Yale Law School and the Yale School of Management, and received Master's and undergraduate degrees from Harvard, where he studied evolutionary biology. As a writer, Doug's plays have been performed thousands of times worldwide.

The authors would like to thank Amy Nice, Ryan Burke, Remco Zwetsloot, Diana Gehlhaus, and Mark Elsesser for their insightful recommendations during the drafting of this report.



About the Day One Project

The Day One Project is dedicated to democratizing the policymaking process by working with new and expert voices across the science and technology community, helping to develop actionable policies that can improve the lives of all Americans, and readying them for Day One of the next presidential term. For more about the Day One Project, visit dayoneproject.org.

The views and opinions expressed in this proposal are those of the author(s) and do not reflect the views and opinions of the Day One Project or its S&T Leadership Council.