

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE (DD-MM-YYYY) 05-09-2023	2. REPORT TYPE FINAL	3. DATES COVERED (From - To) N/A
--	--------------------------------	--

4. TITLE AND SUBTITLE A Brighter Red Carpet for Indian Students? Visa Reform as a Driver of American Innovation and Guarantor of Security.	5a. CONTRACT NUMBER N/A
5b. GRANT NUMBER N/A	5c. PROGRAM ELEMENT NUMBER N/A
6. AUTHOR(S) James Hagenruber	

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Writing & Teaching Excellence Center Naval War College 686 Cushing Road Newport, RI 02841-1207	8. PERFORMING ORGANIZATION REPORT NUMBER N/A
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A	10. SPONSOR/MONITOR'S ACRONYM(S) N/A
	11. SPONSOR/MONITOR'S REPORT NUMBER(S) N/A

12. DISTRIBUTION / AVAILABILITY STATEMENT
Distribution Statement A: Approved for public release; Distribution is unlimited.

13. SUPPLEMENTARY NOTES A paper submitted to the faculty of the NWC in partial satisfaction of the requirements of the curriculum. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.

14. ABSTRACT

15. SUBJECT TERMS (Key words)

16. SECURITY CLASSIFICATION OF:

a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED	17. LIMITATION OF ABSTRACT N/A
19a. NAME OF RESPONSIBLE PERSON Director, Writing Center			18. NUMBER OF PAGES
19b. TELEPHONE NUMBER (include area code) 401-841-6499			

A Brighter Red Carpet for Indian Students?

Visa Reform as a Driver of American Innovation and Guarantor of Security

Thousands of students, tech workers, and other faithful arrive daily at the Chillkur Balaji Temple in the rocky scrubland about an hour's drive from the bustling tech hub of Hyderabad, India. Many come to pray for a chance to reach their dreams in the United States. By

completing 108 circumnavigations of the Lord Balaji idol in the inner sanctum of the so-called "visa temple," devotees hope to increase their odds of obtaining legal permission to enter the

United States for work or study.¹ Many are students of computer science, engineering, mathematics, medicine or other STEM fields and hope to obtain not just advanced degrees in the U.S., but also the opportunity to reach their dreams in America's relatively lucrative job market.

Meanwhile, 9,000 miles across the Pacific, the United States is increasingly desperate for both STEM talent and a strong strategic partner in Asia to counterbalance China. Smarter

immigration policy from Washington and some targeted incentives to attract the best students — rather than the hope of divine intervention — could help address these problems, while also answering the prayers of thousands of young people. By easing student visa restrictions for international students, the U.S. would spur innovation, financially secure its higher education sector, provide more workers for President Biden's domestic semiconductor initiative, and help build the ties needed for a stronger strategic partnership with India.

¹ Footnote redacted to anonymize paper for award competition.

This paper will consider the importance of a more accessible visa to study in the U.S., the role of immigrants in driving innovation, the need to attract more STEM talent, and the how expanding people-to-people ties could enhance America's historically complicated yet vital strategic relationship with India. Finally, the paper will suggest that the U.S. should launch a bold public diplomacy initiative to fund a massive STEM graduate study program for students from India and other growing strategic partners. While student visa reforms would benefit all international students seeking entry to the U.S., this paper will focus primarily on India. In 2022, one in every five of the nearly 1 million international students in the U.S. came from India, second only to China.²

Permission to Innovate: Student Visas in the U.S.

From Satya Narayana Nadella and Elon Musk to Albert Einstein and Nikola Tesla, immigrants have long been an engine of American innovation. According to the National Immigration Forum, about 37 percent of Silicon Valley residents are foreign born.³ About half of all "unicorns" since 2000 in the U.S. – start-ups valued at least \$1 billion – have been established or co-founded by immigrants.⁴ Nadella's story is illustrative: His journey to become CEO of Microsoft nearly a decade ago began many years earlier when he traveled from his native city of Hyderabad to study at the University of Wisconsin-Milwaukee under the F-1 student visa program. During their studies, foreign students are allowed to work on a part-time basis, which provides critical funds for expensive tuition payments and a small army of student workers.

² According to the annual U.S. State Department-funded Open Doors data report for 2022, India was the origin of 199,182 students in the U.S. <https://opendoorsdata.org/data/international-students/all-places-of-origin/>

³ National Immigration Forum white paper "Building the Skills of the Immigrant Workforce in the Silicon Valley," March 2017. <https://immigrationforum.org/wp-content/uploads/2017/05/SVCF-report-final.pdf>

⁴ Graham Allison and Eric Schmidt, "The U.S. Needs a Million Talents Program to Retain Technology Leadership," Foreign Policy, July 16, 2022.

Following graduation, F-1 visa holders are permitted to work an additional six months through the Optional Practical Training program (OPT); STEM graduates are granted an additional 24 months of OPT. While in OPT status, many fresh graduates hope to secure longer-term employment through the H1-B high-tech worker visa, which also allows them to apply for permanent residency through a Green Card. The number of F-1 visas are not capped by law, but only 65,000 new H1-B visas are issued each year in a lottery system.⁵ Because of the relatively low ceiling on the number of H1-B skilled worker visas, the F-1 student visa has become a key pathway for foreign talent seeking jobs in the U.S.⁶

The entry point for many of these workers, the F-1 student visa process, is relatively straightforward – the most important and challenging step for applicants is typically gaining admission to an accredited university. Yet, thousands of Indian students rely on costly expedited and middlemen out of concern of having their visa application rejected. Families of these students often invest their entire life savings and mortgage their homes to fund higher education in the U.S., hoping this will eventually be paid back in the form of a six-figure job in Silicon Valley, and even longer-term prospects of opportunities for other family members to eventually migrate should the student be granted permanent residency through a job and a green card. The State Department does not publicly release country-specific data on the number of student applicants rejected each year; worldwide, about 20 percent of the 446,422 people who

⁵ U.S. Customs and Immigration Service website: <https://www.uscis.gov/working-in-the-united-states/h-1b-specialty-occupations>

⁶ John Bound, Breno Braga, et al, "A Passage to America: University Funding and International Students," National Bureau of Economic Research working paper, P. 170, December 2016. <https://www.nber.org/papers/w22981>

applied for F-1 visas in 2021 were rejected.⁷ Merely applying for a student visa costs \$160, which is more than 10 percent of the median annual income for an Indian citizen.

A stroll through Hyderabad's old city reveals dozens of storefronts and billboards⁸ aimed at coaching student applicants on their F-1 visa interviews. Combined with a visit to the crowded visa temple, it's clear that the visa process and immigration laws are barriers for scholars who aspire to travel to the United States. Social media is also full of tales from international students who, despite holding valid F1 visas, are denied entry or re-entry by U.S. Customs and Immigration Service Officers. Visa roadblocks and excessive restrictions are "harming national security by hampering American science, technology, innovation, and economic competitiveness," according to the American Association for the Advancement of Science.⁹

Skimping on the 'Secret Sauce': Visa Restrictions Undercut American Innovation

Although universities have always been selective in their admissions process, policymakers in Washington must reform the visa system to encourage the arrival of more international scholars, as well as make it easier for graduates to stay and use their education in the U.S. job market. In fact, increasing the supply of STEM talent to boost innovation is critical for national security, according to many analysts and policymakers. There is widespread agreement on this. CIA Director William Burns views nurturing technology innovation in the U.S. as the "main arena for

⁷ U.S. Department of State website: <https://travel.state.gov/content/dam/visas/Statistics/Non-Immigrant-Statistics/NIVWorload/FY2021NIVWorloadbyVisaCategory.pdf>

⁸ U.S. Consulate General Hyderabad cable 14-Hyderabad-84, March 14, 2014.

⁹ Kimberly Montgomery and William Colglazier, "Emerging Technologies and Science Diplomacy," website of American Association for the Advancement of Science's online Journal Science & Diplomacy, February 16, 2022, <https://www.sciencediplomacy.org/editorial/2022/emerging-technologies-and-science-diplomacy>

competition and rivalry” with China; Chinese President Xi Jinping has described technological innovation as “the main battleground of the global playing field.”¹⁰

Despite the steep cost of higher education in the U.S., the country remains the top destination for foreign students. And many of those who graduate from the U.S. desire to stay and work.

Among foreign PhD candidates studying artificial intelligence – a field that touches on some of the most direct and critical national security needs – some 74 percent plan to apply for permanent residency or citizenship, according to a survey conducted in 2020 by the Center for Security and Emerging Technology.¹¹ Yet, this same survey revealed that immigration-related concerns were a key driver for those who decided to depart the U.S. upon earning a PhD. One of those who returned home was Erdal Arıkan, whose research provided “the breakthrough needed” to develop 5G technology, yet Dr. Arıkan could not obtain funding or an academic appointment to continue working on what was considered an “esoteric” problem in 2009. Back in his home country of Turkey, the young academic was able to find an eager audience in China,¹² where Huawei used his research to form the architecture of their 5G system.

America’s power in the international system, writes India scholar Ashley Tillis, “ultimately derives from America’s capacity to dominate the cycles of innovation. . . . It is the ability to perpetually foment technological revolutions faster than any other state that nourishes U.S.

¹⁰ Graham Allison and Eric Schmidt, “The U.S. Needs a Million Talents Program to Retain Technology Leadership,” Foreign Policy, July 16, 2022.

¹¹ Catherine Aiken, James Dunham, and Remco Zvetstloot, “Immigration Pathways and Plans of AI Talent.” Center for Security and Emerging Technology data brief, September 2020. <https://cset.georgetown.edu/wp-content/uploads/CSET-Immigration-Pathways-and-Plans-of-AI-Talent-1.pdf>

¹² Graham Allison and Eric Schmidt, “The U.S. Needs a Million Talents Program to Retain Technology Leadership,” Foreign Policy, July 16, 2022.

global hegemony.”¹³ International students are not the only workhorses pulling this train, but

their contributions are vital for longterm success, particularly as the U.S. has seen recent declines in key indicators of STEM talent health, such as math scores for young students.¹⁴ Foreign

students, in fact, comprise 80 percent of full-time graduate students in the U.S. in fields such as electrical engineering and computer science.¹⁵ In the words of noted scholar and former assistant

secretary of defense Graham Allison, “smart and ambitious immigrants have been the country’s secret sauce.”¹⁶

USAID Administrator Samantha Power has also called international students “America’s

advantage” and urged President Biden to place student visa reform among his top three policy priorities upon taking office in 2021. “One of the best ways to showcase the United States’

ingenuity and know-how is to again make its universities the most attractive in the world to foreign talent,” Power wrote, adding, “American universities have a special place in the global

imagination, and lowering the visa hurdles for study in the United States while creating better, more accessible pathways for international students to work in the United States after graduation

can pay both short- and long-term dividends in expanding U.S. influence.”¹⁷ Power specifically called on U.S. Customs and Border Protections officers to “stop harassing and intimidating

foreign students,” noting that some will go on to be future leaders, potentially “making many of

¹³ Ashley J. Tellis, “Renewing the American Regime: U.S. - China Competition Beyond Ukraine,” Center for Strategic and International Studies, September 2022.

¹⁴ Sarah Mervosh and Ashley Wu, “Math Scores Fell in Every State and Reading Dipped on National Exam.” The New York Times, October 24, 2022.

¹⁵ Amy Merrick, “It’s Getting Harder for International STEM Students to Find Work After Graduation.” The Atlantic, September 22, 2018.

¹⁶ Graham Allison and Eric Schmidt, “The U.S. Needs a Million Talents Program to Retain Technology Leadership,” Foreign Policy, July 16, 2022.

¹⁷ Samantha Power, “The Can-Do Power: America’s Advantage and Biden’s Chance,” Foreign Affairs, January/February 2021.

them lifelong ambassadors for democracy – and for strong ties between their home countries and the United States.”

Although Canada, Germany, the UK, China, and many other countries are now also eagerly courting foreign students, including by offering residency and employment rights upon graduation, the United States remains the top destination for foreign scholars, so why the concern by Power, Raimondo, and others? During the Trump Administration and also due to COVID-19,

student visa applications plummeted by nearly 20 percent – the first such decline on record.

These numbers have started to rebound, but not quickly enough to meet America's growing

strategic need for STEM talent. International students, who typically pay full tuition, are also a

vital source of funding for higher education: International students contributed \$44 billion to the

U.S. economy in 2019, which is more than the combined total export value of American-grown

soybeans, corn, and textiles.¹⁸ An increasing number of public universities are also facing

declining budgets, making international student tuition revenue even more critical for supporting

their teaching and research agendas.¹⁹

Along with helping to financially stabilize universities – a key incubator of the raw science,

engineering, and research that underpins innovation – the talent offered by the world's best and

brightest students could be critical to the success of President Biden's \$280 billion CHIPS and

Science Act, which aims to spur the rebirth of domestic semi-conductor manufacturing. The

U.S. now produces about 12 percent of the global share of microchips, as compared with 37

¹⁸ John Bound, Breno Braga, et al, "A Passage to America: University Funding and International Students," National Bureau of Economic Research working paper, P. 163, December 2016. <https://www.nber.org/papers/w22981>

¹⁹ Bound, P. 178.

percent in 1990. Amid growing concerns that a global leader in chip manufacturing, Taiwan, could be invaded by China, the issue has been framed by the Biden Administration and the Pentagon as an existential battle for the security and prosperity of the U.S. A "severe shortage" in skilled labor threatens to undercut this effort.²⁰ The Biden Administration's domestic chip project will need at least 277,000 more workers, according to The New York Times. Executives quoted by the newspaper stated that policy changes "are critical for attracting highly educated foreign workers and making it easier for foreign students to stay and work in the United States once they obtain their degrees." While the U.S. is facing a drought of STEM talent, in just Hyderabad and its surrounding state of Telangana, some 300,000 students graduate annually with STEM degrees, which is similar to the entire number of STEM graduates produced annually in the United States.²¹

"STEM-ing" the Labor Shortage While Boosting Relations with India

India is increasingly important to efforts to address what the White House describes as America's "most consequential geopolitical challenge:" The People's Republic of China.²² Providing the talent needed for innovation would be a primary benefit of more accessible student visas. Relations with one of America's key defense partners, India, would also likely improve with more Indian students in the U.S. Extended contact between foreigners, such as what happens in a university setting, helps to build stronger and more positive ties while reducing prejudices, according to research conducted more than 60 years ago by Gordon Allport. A more

²⁰ Don Clark and Ana Swanson. "U.S. Pours Money Into Chips, but Even Soaring Spending Has Limits." *New York Times*, January 1, 2023. <https://www.nytimes.com/2023/01/01/technology/us-chip-making-china-invest.html>

²¹ Author interviews with education advisors and international students in Hyderabad, from July – September 2014.

²² U.S. National Security Strategy, October 2022, p. 11

recent study of scholars from Pakistan showed those with experience studying in the U.S. had a more positive perception of the U.S. than peers who had not traveled to the U.S.²³ Although there is limited research on the application of contact theory of scholars to bilateral relations, Indians who study in the U.S., as well as their families, would undoubtedly contribute to a strengthening of bilateral relations. America's longstanding ties with Europe have been built by centuries of immigration and large diaspora communities. A similar pattern of anchoring could be expected with more Indian students in the U.S.

Achieving former National Security Advisor Condoleezza Rice's goal of "a balance of power that favors freedom" in Asia requires a stronger partnership between the U.S. and India, the world's most populous democracy. Relations between New Delhi and Washington have grown closer but remain uneasy and are not likely to involve a formal alliance anytime soon.²⁴ The best hope, according to India scholar Ashley Tellis, is for a "partnership oriented toward furthering common interests without expecting an alliance of any kind." India, with its longstanding animosity towards China, stands out "an obvious security partner for the United States,"²⁵ but New Delhi continues to take a cautious approach towards this partnership. Among Indian policymakers, questions of "trust, reliability, and motivations are deeply rooted, and perceptions that the United States eventually comes to dominate and even bully its strategic partners are real in New Delhi and beyond."²⁶

²³ Gulnaz Anjum, Mudassar Aziz, and Emanuele Castana, "The Role of the Fulbright Program in Building a Positive Perception and Ally Image of the U.S. Among Pakistani Scholars." *Pakistan Journal of Psychological Research*, Volume 34, issue 1, 2019.

²⁴ Robert D. Blackwell and Ashley J. Tellis, "The India Dividend: New Delhi Remains Washington's Best Hope in Asia." *Foreign Affairs*, September/October 2019.

²⁵ Samit Ganguly and M. Chris Mason, "An Unnatural Partnership? The Future of U.S.-India Strategic Cooperation." Carlisle Barracks, PA: US Army War College Press, 2019.

²⁶ Ganguly and Mason, p. 3.

Improving ties with Washington is New Delhi's top foreign policy priority, but more trust-building is needed to realize this objective as "a politically daunting percentage of Indians today are suspicious or distrustful of the United States, which makes it that much more difficult for India's leaders to advocate for closer ties."²⁷

Washington's security ambitions with India are deeply connected with America's immigration policy, according to Brookings' Joshua White. Building a broader bilateral relationship in an atmosphere of mistrust requires Washington to address "structural irritants," such as "anti-immigration rhetoric and restrictions on H1-B and higher education visas that have disproportionately impacted Indians."²⁸ A steady recalibration of the relationship, including more robust economic and people-to-people ties, would be a powerful counterweight to India's deep nonalignment tradition.

Sacred Cows Are Not Unique to India

Efforts to increase immigration – even if the immigrants are less "huddled masses" of poor people than scholars with PhDs in artificial intelligence – will be politically difficult, especially following the Trump Administration's decision to salt the domestic landscape with anti-immigration rhetoric. President Biden, however, could attempt to subvert this dangerous populism by emphasizing the national security needs that could be addressed through increased STEM talent. In the short-term, a rise in foreign students and high-tech workers would need to

²⁷ Ganguly and Mason, P. 32.

²⁸ Joshua T. White, "After the Foundational Agreements: An Agenda for U.S.-India Defense and Security Cooperation." (Washington, D.C.: Foreign Policy at Brookings, January 2021).

be accompanied with additional funding for higher education to ensure that American citizens are not blocked from university classrooms. Additional efforts would also be needed to develop stronger STEM training for displaced workers. But training hundreds of thousands of new STEM workers will take a generation and the needs to fill this talent shortage are immediate. Another major potential impediment to increasing more foreign talent is gun violence. According to Libing Bu, a professor of history at Alma College, "the first question that parents of prospective international students typically ask is, 'Is it safe?'" American gun violence, notes Dr. Bu, "has become the symbol of American society."²⁹

A Moon Shot for International Scholars?

A deeply divided Washington is not likely to take meaningful steps to address gun violence, but President Biden has the ability to take executive action to fix the clogged STEM talent immigration pipeline, which will also help improve bilateral relations with India. Commerce Secretary Gina Raimondo did not mince words in a speech at the Massachusetts Institute of Technology in November, 2022, when she stated that attracting the world's best scientific minds is "an advantage that is America's to lose. And we are not going to let that happen."³⁰

Offering an automatic Green Card (permanent residency) to foreign students who earn a graduate degree in the U.S. in a STEM field would be a clear and rapid remedy. At a minimum, those

²⁹ Karin Fischer, "Fading Beacon: The U.S. may never again regain its dominance as a destination for international students," American Public Media, August 3, 2021. <https://www.apmreports.org/episode/2021/08/03/fading-beacon-why-america-is-losing-international-students>

³⁰ Remarks by Commerce Secretary Gina Raimondo, November 30, 2022: <https://www.commerce.gov/news/speeches/2022/11/remarks-us-secretary-commerce-gina-raimondo-us-competitiveness-and-china>

earning PhDs in fields such as artificial intelligence, electrical engineering, semiconductor

engineering, and computer science, should also have a Green Card stapled to their diplomas. Additional short-term remedies must include addressing the massive backlog of Green Card

applications awaiting adjudication, lifting the 7 percent cap placed on issuing Green Cards from any single country, digitizing the immigration system to cut down on the lengthy Green Card

application process, and adding at least 100,000 new work visas to those with graduate degrees

in STEM fields.

Setting the stage for longterm future innovation, including in emerging fields such as

supercomputing and artificial intelligence, requires even more dramatic action. The Fulbright

Scholar program offers a model. Since the program's launch in 1946 in a bid to compete with

the Soviet Union, Fulbright alumni have gone on to win 89 Pulitzer Prizes, 78 MacArthur

“Genius” grants, and 62 Nobel Prizes; 40 alumni have served as head of state of government.

An expansion of Fulbright, or a more targeted program to offer scholarships to STEM scholars

from targeted strategic partner nations, must be considered. Currently, only foreign students

from relatively elite backgrounds are able to afford the steep tuition at America's universities.

By offering additional graduate level scholarships, as well as permission to stay and work

following graduation, the United States could continue to guarantee its position as the global hub

of innovation.

Many of the world's brightest minds continue to see the light of opportunity in the U.S.

Washington has the ability to match their hopes and prayers with the nation's immediate and

clear strategic needs.