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Politics of Ambivalent Hospitality: Shifting Positions Toward International STEM Students in U.S. Federal Policy

Judy Kim

*Marsal Family School of Education,
University of Michigan–Ann Arbor, USA*
<https://orcid.org/0000-0002-7116-9511>

ABSTRACT: *In the United States, federal policies have long shaped the conditions under which international students in science, technology, engineering, and mathematics (STEM) are recruited and retained. Prior scholarship, however, has often portrayed these policies primarily as hostile to these students. In this critical integrative literature review, I examine how federal policies have positioned international STEM students from the post–World War II era to the 2020s. Drawing on a post/decolonial lens, I synthesize scholarship alongside policy documents and enrollment data. The analysis reveals an evolving politics of ambivalent hospitality: federal policies welcome international STEM students for their scientific contributions while simultaneously casting them as potential threats. These findings call for historically informed support systems at both institutional and policy levels that recognize the conditional and uneven nature of federal openness.*

Keywords: Ambivalent hospitality, critical integrative literature review, federal policy, international STEM students, post/decolonial lens

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INTRODUCTION

In the United States, calls to recruit and retain international students in science, technology, engineering, and mathematics (STEM) have highlighted their economic and intellectual value (National Center for Science and Engineering Statistics, 2024; National Science Board, 2020). In response, the federal government has designed policies and initiatives to strengthen the global science talent pipeline, including the extension of Optional Practical Training (Amuedo-Dorantes et al., 2019; U.S. Citizenship and Immigration Services, 2025). By some indicators, these efforts have succeeded: the number of international STEM students, particularly from outside Europe and North America, and their postgraduation commitments in the U.S. have increased (National Center for Science and Engineering Statistics, 2024; Zwetsloot et al., 2020).

However, scholars have raised critiques about the unintended consequences of these efforts (e.g., George Mwangi & Yao, 2021; Raby & Kamyab, 2023; Rodriguez et al., 2025). For instance, international STEM students navigate ever-changing visa policies (Bevis & Lucas, 2007), which adversely affect their emotional well-being and academic success (Crumley-Effinger, 2024; de Wit & Altbach, 2021; Rose-Redwood & Rose-Redwood, 2017). For those students from the Global South, these impacts become particularly jarring amid geopolitical disruption, such as global pandemics and wars (e.g., Blake, 2025; Brown, 2025).¹ Others underscored that national policy frameworks toward international STEM students have perpetuated the dominance of Western/U.S. institutions as gatekeepers of superior intellectual innovation (Lee, 2021; Suspitsyna, 2021).

Despite these policy dynamics, little is known about how federal policies have positioned international STEM students. Accordingly, my critical integrative literature review explores the following questions:

1. How have key U.S. federal policies impacting international STEM students evolved?
2. What themes emerge in the framing of international STEM students in U.S. federal policy as policies shift over time?

¹ I adopt *Global South/North* while acknowledging critiques of this binary approach and presence of asset-oriented alternatives like *Majority/Minority World* (Alam, 2008; George Mwangi & Yao, 2021). In this article, Global South refers to a collection of countries in Latin America, Asia, Africa, and Oceania that hold the majority of the world's population yet are often politically, culturally, and economically marginalized relative to Europe and North America (Campbell & Neff, 2020; Dados & Connell, 2012).

To address these questions, I first synthesize scholarly accounts of how federal policies position international students and identify key gaps in the literature. I then introduce a post/decolonial framework as an analytical lens and detail methodological approaches. The findings trace the evolution of U.S. federal policies affecting international STEM students and their broader implications. Throughout, I argue that the federal government has intensified the politics of *ambivalent hospitality*—welcoming international STEM students for their contributions to U.S. scientific advancement while simultaneously enforcing scrutiny and nativist sentiment toward international STEM students.

LITERATURE REVIEW

Federal policies, in areas such as immigration and visas, employment, admissions, financial aid, public health, and national security, can significantly shape international students' lives. To date, however, the literature has focused primarily on immigration and visa policy. According to Crumley-Effinger (2024, p. 91), immigration and visa policy changes permeate multiple domains of international students' experiences, including academic performance, professional trajectories, and peer relationships, captured by the concept "policy pervasion." Other researchers have similarly reported that delayed visa processing contributes to students' emotional burdens and uncertain career pathways (Mervis, 2018; Rose-Redwood & Rose-Redwood, 2017). These challenges can be further intensified when nativist political rhetorics tighten visa adjudication and expand security reviews (Johnson, 2018; Lee & Rice, 2007; Roth & Ritter, 2021).

Consistent with this argument, scholars have suggested that such policies frame international students as objects of immigration suspicion and mistrust (Lee & Rice, 2007; Warwick, 2005), emphasizing a hostile climate for students. This trend is often traced to the Immigration and Nationality Act of 1924 (Allen & Bista, 2021). Favoring immigration from Northern and Western Europe while restricting immigration from Southern and Eastern Europe, the Act virtually prohibited immigration from Asia and laid the groundwork for the exclusionary immigration system in place today (Allen & Bista, 2021). While later reforms in 1965 moved away from explicit racial quotas, scholars argued that exclusionary logic persists and continues to intensify hostility, as evidenced by the growth of tracking and surveillance directed at international students (Allen & Bista, 2021; Johnson, 2018; Urias & Yeakey, 2009).

Although immigration and visa policies have received scholarly attention given their profound impact on international students, a more holistic policy analysis that traces the full range of state interventions students must navigate is needed (Allen & Bista, 2021; Crumley-Effinger, 2024; Rodriguez et al., 2025). This gap is particularly salient for international STEM students, who contend not only with visa regulations but also with the expanding influence of other federal domains, including economic policy, national security, and controls over sensitive information and technology (Krige, 2014; NAFSA, 2022). These realities underscore the need to understand how international STEM students' trajectories

have been and continue to be shaped by political interventions beyond immigration and visa policy.

THEORETICAL FRAMEWORK

To critically engage with my research questions, I adopted a post/decolonial lens as the primary analytical framework.² Responding to the need for critical approaches resistant to colonialism, scholars and practitioners have contested dominant narratives that determine who is considered desirable, legitimate, or threatening in knowledge spaces (Said, 1979; Spivak, 2013; Young, 2020). Thus, rather than merely contrasting “the West” and “the rest,” post/decolonial perspectives allow researchers to interrogate how colonial legacies continue to shape mobility regimes, global knowledge hierarchies, and belonging (Meghji, 2022; Young, 2020). In higher education, this lens invites us to question which students are welcomed, excluded, or rendered “other” across layered educational contexts (Bardhan & Zhang, 2017; Liu & Qian, 2024).

Scholarship on international student mobility has been a key site for post/decolonial critique. International student mobility is “a two-way street” (Altbach & Knight, 2007, p. 291) in which students primarily move from the Global South to the Global North, while institutions in the Global North largely control the process. As a result, U.S. universities hold a disproportionate share of knowledge, products, and technological infrastructure (Suspitsyna & Shalka, 2019), positioning themselves as “providers by creating a market for what the rest of the world needs” (Lee, 2021, p. 4). In this line of critique, international STEM students reflect broader contradictions in federal policy, as the government tolerates precarious, “immediately deportable” bodies that must meet shifting standards under changing socioeconomic conditions (Allen & Bista, 2021; Grimm, 2019, p. 244).

Given the strengths of post/decolonial perspectives, I traced continuities across policy shifts to examine how federal policies position international STEM students within broader structures of epistemic dominance maintained by the federal government (Meghji, 2022; Young, 2020). Federal policies not only govern mobility but also reinforce asymmetrical power relations through a “regulatory miasma” (Urias & Yeakey, 2009, p. 100), often locating students from certain backgrounds within unequal structures of power. As such, a post/decolonial lens enabled a critical examination of how these students are shaped by, and navigate, intersecting global forces of power, knowledge, and mobility (Bardhan & Zhang, 2017; Liu & Qian, 2024).

² While the term *postcolonial* is widely used, some have criticized the prefix *post-* for implying a temporal rupture that relegates classical colonialism to the past (Bignall, 2010; Colpani et al., 2022). To contest this implication and interrupt the ongoing production of colonial ideologies in U.S. federal policies, I adopt the term *post/decolonial* (Bardhan & Zhang, 2017; Grosfoguel, 2008).

METHOD

I adopted a critical integrative literature review approach to synthesize insights from a limited body of work and develop a more nuanced and comprehensive understanding of an emerging topic (Grant & Booth, 2009; Torraco, 2005). This approach also opens space to incorporate diverse sources beyond the academic literature (Lubbe et al., 2020; Torraco, 2016). Furthermore, I grounded my research in a critical epistemology that underpins post/decolonial perspectives (Giroux, 2003) to reconstruct dominant policy narratives and center questions of power (George Mwangi & Yao, 2021; Torraco, 2005).

Search Procedures and Sample

I followed systematic procedures for data collection (Hopia et al., 2016; Snyder, 2019). My data sources primarily consisted of academic literature, complemented by original policy texts, news articles, policy briefs, opinion pieces, and statistical data. Although I reviewed original policy documents, my analysis relied mainly on secondary sources (i.e., scholarly articles) given the limited availability of in-depth analyses of primary policy texts on my topic.

Specifically, I first conducted database searches for scholarly literature (peer-reviewed journal articles, academic books, and dissertations) using platforms such as ProQuest (mainly ERIC), EBSCOhost, Web of Science, and Google Scholar. Journals across education, law, public policy, and sociology were included to ensure disciplinary breadth. I used key search terms including [*international student** OR *foreign student** OR *foreign-born student**] AND [*immigration policy* OR *public policy* OR *federal policy*] AND [*higher education* OR *universit** OR *college**] AND [*United States*]. To broaden the scope, I excluded STEM-specific terms at this stage.

For my initial search, the inclusion criteria covered peer-reviewed journal articles, books, and dissertations published in English. After removing duplicates, the search yielded 354 sources spanning from 1956 to 2025. Title/abstract screening then excluded works misaligned with the research questions (e.g., mobility program evaluations), unrelated populations (e.g., refugees, undocumented students, English-language learners), and subnational state-specific analyses not generalizable to federal policy debates (e.g., Tennessee), narrowing the pool to 159 sources. For the final assessment, I reviewed full manuscripts, excluding inaccessible items and bringing a final set of 20 sources.

Next, I conducted supplementary searches for original policy texts, news articles, policy briefs, and opinion pieces. To identify additional materials, I used citation tracking in the scholarly literature and keyword searches (e.g., “international STEM students” and “federal policies”). I drew on news articles and opinion pieces from *Nature*, *Nature Medicine*, and *Science*, as well as policy briefs from NAFSA: Association of International Educators, and National Foundation for American Policy (NFAP). I accessed original policy texts via official federal websites, such as the U.S. Department of State Archive, to enhance

analytic trustworthiness and to critically triangulate the positionalities embedded in secondary sources.

Finally, I used quantitative data from the Institute of International Education (IIE) to support the reconstruction of historical narratives about federal policies affecting international STEM students, particularly shifts in students' places of origin. I drew on field-of-study and place-of-origin data from 1954 to 2024 across degree levels. The purpose of using the data was contextual and descriptive rather than causal, enriching historical accounts and clarifying scholarly and practical implications.

Data Analysis

As integrative literature reviews do not follow a single analytical standard (Whittemore & Knafl, 2005), my goal of generating new insights from the literature synthesis guided my choice of an iterative thematic analysis for this study (Braun & Clarke, 2006; Torraco, 2005). In the first round, I extracted descriptive information from sources and wrote open-coding memos to capture key takeaways. Then, using supplementary materials, I enriched policy descriptions and contextualized my understanding.

Building on insights from this phase, I developed a coding scheme by categorizing documents by text type, methods, research questions, policy focus, and specific policies. I then organized federal policies chronologically across the texts and cross-referenced the findings to identify convergences and divergences. To define the policy inclusion criteria, I examined policy instruments (e.g., executive orders, presidential directives, programs, and regulations). Statutory laws were retained as enabling authorities, while unpassed bills were captured for context only and excluded from primary analysis.

Lastly, informed by a post/decolonial lens, I identified patterns (Miles et al., 2020) to examine how federal policies framed international STEM students, experimenting with periodization schemes to capture shifts over time (1950s–2020s). To extend implications, I linked themes to descriptive quantitative trends from the IIE data. These data were not a primary analytical tool; rather, they illustrated demographic dimensions of policy change and enriched the historical narrative. Accordingly, I focused on enrollment patterns from the 1950s to 2020 that corresponded to major policy shifts, particularly those affecting international STEM students from the Global South.

Trustworthiness and Positionality

To enhance the trustworthiness of my study, I employed data triangulation by incorporating multiple source types, which enabled a more contextualized interpretation across materials (Snyder, 2019). I also engaged in peer debriefing (Janesick, 2007; Spall, 1998) with four individuals whose expertise and lived experiences were relevant to the topic. Throughout the research process, I held ongoing critical reflection (Torraco, 2005) with a collaborator specializing in the history of education. The other peers included an international education expert

with over 20 years of experience in student affairs, a colleague working in immigration who is a second-generation immigrant of Southeast Asian descent, and an international STEM doctoral student from Southeast Asia. They reviewed drafts and identified areas that required more nuanced explanation.

Additionally, I engaged in continuous reflexivity by recognizing that who I am shapes how I reconstruct historical narratives (Amankwaa, 2016) approaching this topic from an insider-outsider perspective. During the research process, I reflected on my positionality as an East Asian doctoral student in social science at a U.S. research-intensive, predominantly White institution. Specifically, I considered how being classified as “international” due to my nonimmigrant visa status informed my interpretations. My professional experiences in international education, including work as a program assistant in international organizations and as a program coordinator for short-term study abroad at an elite university in South Korea, also led me to question whom international higher education serves amid profit-driven institutional agendas. This awareness motivated my effort to foster more critical and supportive practices for international students.

Limitations

This study has several limitations. First, most data sources, particularly peer-reviewed journal articles, were written in English. This reflects broader post/decolonial critiques of English as the dominant medium in knowledge production, reinforcing coloniality and related epistemic hierarchies (Lee, 2021; Spivak, 2013; Young, 2020). To address this limitation, I engaged English-language sources critically by interrogating how linguistic dominance structures epistemological assumptions and sought diverse perspectives through feedback from reviewers with varied cultural, linguistic, and disciplinary backgrounds.

Moreover, my research treats STEM as a unified category, although policy impacts may apply to each subfield differently, especially when research sensitivity is involved. Moreover, policy effects may vary by country of origin. While I remained attentive to disciplinary and regional nuance and noted specific subfields in the findings, this limitation also reflects ambiguity in how federal policies define STEM areas and student groups without fully accounting for such differences (Starr-Glass, 2017; Warwick, 2005).

FINDINGS

My analysis demonstrates that while immigration and visa policies have played a central role, concerns over national economic priorities, security, and sensitive technology have worked in tandem with these policies (Allen & Bista, 2021; Urias & Yeakey, 2009). Viewed through a post/decolonial lens, federal policies toward international STEM students have been conditional rather than consistently hostile, shifting with policymakers’ changing views of whom they deem desirable or threatening at any given political moment (Spivak, 2013; Young, 2020)—a dynamic I refer to as the politics of ambivalent hospitality. The following sections trace this evolution across three periods: early expansion under rising suspicion

(1950s–1970s), intensified scrutiny alongside rising reliance on foreign talent (1980s–1990s), and deeper othering amid resurgent nativism (2000s–2020s). Key policies are summarized in the Online Appendix.

1950s–1970s: Welcomed as STEM Talent, Treated with Suspicion

After World War II, the U.S. federal government formally began to engage in international education as a form of soft power (Freeman, 2015; Trilokekar, 2021), laying the groundwork to strengthen U.S. science and engineering education (García & Villarreal, 2014; Urias & Yeakey, 2009). With this shift, federal interest in international STEM students was marked by a dual logic of opportunity and suspicion embedded in federal policy frameworks.

On the one hand, several acts together laid the groundwork for the expansion of international student exchanges, including those in STEM disciplines. The Immigration and Nationality Act of 1952 established the basis for the F visa, while the Fulbright-Hays Act of 1961 supported the J visa (Allen & Bista, 2021; Rodriguez et al., 2025). Building on the 1952 Act, the Justice Department in 1964 formally introduced practical training, allowing international students to work in the U.S. when their institutions required or recommended employment related to their field of study (Amuedo-Dorantes et al., 2019; Grimm, 2019; Miano, 2017). These developments coincided with steady growth in international STEM enrollment, including strong participation from regions outside Europe and North America (Institute of International Education, 1964).

On the other hand, Cold War anxieties intensified federal suspicion. Concerns about espionage and job competition produced visa refusals and delays. Writing in the *Bulletin of the Atomic Scientists*, Shils (1952) sharply criticized the two McCarran Acts—the Internal Security Act of 1950 and the Immigration and Nationality Act of 1952—for enabling restrictive entry practices toward foreign scientists and scholars. Economic pressures pushed a more restrictive turn in 1977 when the Justice Department reduced the maximum practical training period from 18 months to one year (42 Fed. Reg. 26,411). The ruling justified the change by citing labor concerns, including unfair competition and alleged misuse of practical training. This adjustment narrowed the student-visa scope to academic pursuits, unsettling graduates seeking U.S. work experience, including those in STEM fields (Miano, 2017).

Despite these tensions, international STEM enrollment continued to rise through the 1970s. By the end of the 1970s, STEM students comprised over half of all international enrollments (Institute of International Education, 1979). At the regional level, flows shifted toward the Middle East, parts of Asia, and Africa, with notable growth from Iran, Taiwan, and Nigeria (Institute of International Education, 1991). This trend underscores a core dynamic of the era: the U.S. did not fully close its doors to scientific talent. Rather, the logic of ambivalent hospitality took root, extending conditional welcome while intensifying scrutiny.

1980s–1990s: Recruited as Foreign Talent, Governed Through Scrutiny

By the 1980s, the U.S. solidified its position as “the colossus in producing new science and technology” (Freeman, 2015, p. 155) in part due to the contributions of international students in the STEM workforce (Lowell, 2005). However, with the continuation of the Cold War and growing concerns over terrorism, the federal government institutionalized a governance approach that welcomed international STEM students for their expertise, even as it increasingly subjected them to regulatory suspicion and control.

Opening its door, the Immigration Act of 1990 created the H-1B visa program, a temporary immigration category with preference for professionals in specialized fields such as engineering and medicine (Amuedo-Dorantes et al., 2019; Chellaraj et al., 2008).³ Two years later, the Justice Department first formalized the Optional Practical Training (OPT) program (57 Fed. Reg. 31,954), following the Practical Training program in 1964 (Grimm, 2019). Similarly, the American Competitiveness and Workforce Improvement Act (ACWIA) of 1998 temporarily expanded access to skilled foreign workers under the H-1B program (Gavrilović, 2015; NAFSA, 1998). Together, these policies expanded institutional pathways from study to work for skilled international graduates.

Yet, as the Cold War persisted and concerns about terrorism later grew, the government introduced various policies to enhance scrutiny over foreign participation in scientific research.⁴ This pattern of suspicion emerged in the 1985 National Security Decision Directive 189 (NSDD-189) (The White House, 1985). Stating the need to control federally funded research in science, technology, and engineering at colleges and universities, NSDD-189 noted that U.S. universities and federal laboratories were “small but significant targets” of Soviet-aligned Eastern European countries’ intelligence gathering (Krige, 2014; The White House, 1985, p. 1), raising concerns about research participation boundaries for international STEM students. The directive also reaffirmed the Fundamental Research Exclusion (FRE), a nonbinding policy guideline within U.S. export control. In practice, however, restrictions could be selectively applied to foreign nationals in sensitive research areas (Krige, 2014).

Similarly, the Visa Mantis Program initiated in 1998 illustrated heightened surveillance of international STEM students. Central to this was the creation of the Technology Alert List (TAL), which enabled consular officers to request a Security Advisory Opinion for applicants who intended to study or work in over 200 scientific and technical fields, such as materials technology, robotics, or

³ Although the H-1B program does not require applicants to hold a graduate degree from a U.S. institution, many international students view the H-1B as a key channel to remain in the U.S. and advance their career pathways, and potentially pursue permanent residency through its dual intent provision (U.S. Department of State, 2024).

⁴ This period was known for developments of various tracking systems toward international students. For example, the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) in 1996 (H. Rept. 104-828) expanded the federal role in monitoring international students as potential illegal immigrants by implementing new advanced tracking systems (Allen & Bista, 2021; Miyokawa, 2009).

nuclear engineering, resulting in frequent visa delays, particularly for students from China, India, and Russia (Lutjens, 2006; U.S. Department of State, 2003; Warwick, 2005).

Despite a restrictive political framework targeting international STEM students, cross-border flows continued to shift. By the early 1980s, Taiwan became the top sending country overall, followed by Iran. This pattern held until the late 1980s, when China became the leading source; flows increasingly originated beyond Europe and North America, including Nigeria, Malaysia, South Korea, and India (Institute of International Education, 1990). The prevalence of students from non-Western regions in STEM enrollment reveals the U.S.'s selective strategy: stricter regulation combined with sustained institutional pathways into the scientific enterprise.⁵

2000s–2020s: Courted as Talent, Othered as Outsiders Amid Rising Nativism

Over the past two decades, rising nativist sentiment—first under the post-9/11 national security regime and later amid renewed U.S.–China strategic competition—has made it increasingly difficult to disentangle science from security concerns (Lee & Haupt, 2021; Mervis, 2018).⁶ At the same time, the U.S. sustained a strong demand for global STEM talent to remain competitive in science and technology, as reflected in the continued growth of international enrollments in STEM fields (Institute of International Education, 2024b). Together, these dynamics signal an intensification of ambivalent hospitality.

The policy expansion was paralleled by heightened scrutiny and vetting screening systems to track international STEM students and scrutinize their academic activities. A 2003 National Science Board report described the Visa Mantis Program, expanded after 2001 as “an effective tool for screening out individuals and entities that seek to gain controlled goods, technology, and sensitive information in violation of U.S. export laws” (Ramotowski, 2003, para. 12). They disproportionately affected applicants from Islamic countries where visa refusal rates spiked during the post-9/11 period (Chen et al., 2023).

Other initiatives sought to strengthen the oversight of international STEM students in sensitive fields. For instance, under Section 3 (“Abuse of International Student Status”) of Homeland Security Presidential Directive 2 (HSPD-2), the

⁵ In the 1980s, with rising anxiety about the U.S. economy, the Senate in 1982 passed the Immigration Reform and Control Act (S.2222) (U.S. Congress, 1982), which signaled employer sanctions toward noncitizen workers with key exceptions for high-tech graduates (Chellaraj et al., 2008). While not becoming a law, the congressional record reflects the selective political openness toward international STEM graduates around this period (U.S. Congress, 1982, p. 21091). These moves foreshadowed the Immigration Reform and Control Act (IRCA) enacted in 1986, including the Employment Eligibility Verification form (Form I-9) (U.S. Immigration and Customs Enforcement, 2025).

⁶ Several acts marked significant tightening and controlling of visa policies concerning access to sensitive technologies by international students in the early 2000s: the Patriot Act of 2001, the Enhanced Border Security and Visa Entry Reform Act of 2002, the implementation of the National Security Entry-Exit Registration System (NSEERS) in 2002, and the Student and Exchange Visitor Information System (SEVIS) in 2003 (Johnson, 2018; Krige, 2014; Urias & Yeakey, 2009).

government directed agencies to end abuse of student visas and to prohibit certain international students from receiving “education and training in sensitive areas” (The White House, 2001, para. 15). In the policy context shaped by HSPD-2, the administration proposed the Interagency Panel on Advanced Science and Security (IPASS) in 2002, which aimed to add an additional interagency layer to the visa-screening process for international students in sensitive science and engineering areas (Jacobs, 2003; Urias & Yeakey, 2009). While acknowledging these students’ contributions to U.S. science innovation, the legislation did not clearly define what counted as “sensitive” (Warwick, 2005).

In a similar vein, in response to growing fears of bioterrorism, the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 imposed severe restrictions on the access of international STEM students to specific biological agents and research activities (Bonetta, 2001; The White House, 2002; Warwick, 2005). These measures often generated uneven constraints tied to national origin (Grimm, 2019; Wadman & Stone, 2017). The COVID-19 pandemic and other geopolitical events coupled with rising nativist sentiment further intensified these dynamics by reinforcing suspicion toward international STEM students (Lee & Haupt, 2021; Mervis, 2018). Security-driven orders, culminating in Executive Order 13959 in relation to Proclamation 10043, suspending entry for Chinese students and researchers by citing broad risks of “civil-military fusion” and illicit technology transfer (Lee & Haupt, 2021; The White House, 2020, para. 4).

Although these measures raised concerns about racial profiling (Buckner et al., 2022), political discourse continued to emphasize the economic value of international STEM students, highlighting their role in driving innovation and sustaining the high-skilled tech workforce (Zavodny, 2025). In this regard, the federal government did not completely curtail the presence of international STEM students; rather, it expanded pathways of access. Notably, the OPT for STEM graduates was extended twice: first in 2008, from 12 to 17 months, and again in 2016, to 24 months (Grimm, 2019; U.S. Citizenship and Immigration Services, 2019). Supported by the science and technology industry, including Microsoft founder Bill Gates, STEM OPT extensions were introduced to address shortages in skilled workers in fields such as computer science and engineering (Amuedo-Dorantes et al., 2019; Chakravarty, 2006; Grimm, 2019).

Following the H-1B cap-gap extension in 2008 (U.S. Citizenship and Immigration Services, 2008) and the second OPT extension, international STEM students represented 50% of all international students by 2024 (Institute of International Education, 2024a). Although OPT and H-1B expansions ostensibly increased opportunities for skilled foreign STEM talent, policies often undercut these gains, for example, security-driven restrictions tied to national origin and field of study (Mervis, 2018; Wadman & Stone, 2017). As a result, benefits were unevenly distributed and, in some cases, offset by security-driven restrictions tied to national origin. Taken together, these developments point to an entrenched ambivalent hospitality: international STEM students, especially from specific regions, are recruited for their skills even as their otherness is deepened.

DISCUSSION

While much of the prior scholarship has centered on a hostility-oriented framework for understanding federal policies affecting international students (Allen & Bista, 2021; Johnson, 2018; Urias & Yeakey, 2009), my research offers a more nuanced perspective through the case of international STEM students. Specifically, I examine an enduring dual tension that I call the politics of ambivalent hospitality: the federal government welcomes international STEM students for their economic, political, and academic value yet withholds full trust from them.

The notion of ambivalent hospitality has circulated in immigration studies, framed as a tension between humanistic and control-oriented approaches toward immigrants (Fassin, 2011; Friese, 2009). Nonetheless, it remains underexplored in scholarship on international higher education. Using ambivalent hospitality as a lens to examine international STEM students' positioning foregrounds how conditional openness can simultaneously welcome and instrumentalize them, functioning as a mechanism of commodification (Yao, 2021). This perspective compels a critical interrogation of the unequal hierarchies (George Mwangi et al., 2019; Liu & Qian, 2024) that sustain the conditional inclusion of international STEM students across both the federal government and universities.

Moreover, consistent with prior studies, my review of the evolution of federal policies suggests that international STEM students from non-Western regions increasingly occupy a liminal space in the U.S. (Al-Krenawi, 2025; Rose-Redwood & Rose-Redwood, 2017). These policy and enrollment realignments highlight the need to theorize international STEM mobility not simply as academic migration but as a site where global hierarchies, security discourses, and colonial legacies intersect (Bardhan & Zhang, 2017; Liu & Qian, 2024). Viewed through the lens of racial-colonial capitalism, a deeper contradiction emerges: international STEM students from the Global South are valued less as persons than as human capital, scientific output, and economic surplus (George Mwangi & Yao, 2021; Stein, 2022). Their inclusion is thus conditional, structured by racialized securitization practices and market logics, thereby perpetuating otherness and commodifying their labor (Liu & Qian, 2024; Said, 1979).

Finally, capturing this ambivalent stance—which will likely persist, rather than focusing on hostility only—is important for analyzing future policy actions. In the 2020s, the shift toward an “openly antagonistic” (Buckner et al., 2022, p. 329) approach to international STEM students received renewed attention, as a series of policies and executive actions increasingly emphasized national security screening in immigration governance (e.g., Executive Order 14161, “Protecting the United States From Foreign Terrorists and Other National Security and Public Safety Threats”). However, as my findings suggest, understanding these dynamics requires moving beyond the assumption that measures are merely restrictive, temporary responses to geopolitical tensions (Urias & Yeakey, 2009; Warwick, 2005) that apply to all students. These developments instead reveal a stratified regime in which international STEM students' inclusion is conditional, and its

costs are distributed unevenly by national origin, even as students' labor and expertise remain actively sought.

Implications

My work presents implications for both scholarship and practice. First, future research should consider how the impacts of these policies differ by degree level, discipline, and institutional context. For instance, doctoral students in research institutions in fields involving sensitive technologies (e.g., nuclear engineering, material engineering, and information security) may experience greater disruption to their research activities. In addition, researchers could employ critical text and discourse analysis (Saarinen, 2008) to examine how original policy texts embed specific assumptions, framings, and priorities toward international STEM students. For instance, scholars could explore the effects of the 2008 and 2016 STEM OPT extensions on international students by tracing the language used to describe them.

In practice, institutional leaders need to confront how universities themselves reproduce conditional forms of inclusion. For example, universities may actively recruit international STEM students for their research productivity while offering limited visa-sensitive career support. These intertwined pressures are even likely to affect students' well-being, sense of belonging, career planning, and academic freedom (Aggarwal et al., 2025; Al-Krenawi, 2025; Rose-Redwood & Rose-Redwood, 2017). Accordingly, institutional leaders must critically reflect on how their institutional practices (e.g., admissions, funding structures, and hiring policies) contribute to maintaining U.S. dominance in knowledge and labor production and, in doing so, sustain a conditional form of welcoming.

Student affairs should also continuously examine how their practices reflect conditional forms of inclusion toward international STEM students. Proactive support might include legal literacy workshops to help students navigate multiple regulations. For students engaged in sensitive research areas, special attention must be paid to confidentiality and ethics to ensure that compliance with legal requirements does not inadvertently increase risk. Likewise, the documented political targeting of students from certain countries (Chen et al., 2023; Johnson, 2018; Roth & Ritter, 2021) underscores the importance of training faculty, advisors, and lab supervisors on recognizing and countering xenophobia (e.g., Islamophobia and Sinophobia) within STEM education and research contexts. Such training should also address the power asymmetries that position faculty advisors as gatekeepers of immigration and visa processes.

Lastly, my study has implications for federal policies governing international STEM students. As the number of international STEM students from regions outside Europe and North America continues to grow, these policies should be reexamined through the lens of racial-colonial hierarchies. In particular, policymakers should move away from narratives that frame international STEM students as potential security threats and toward approaches that recognize them as knowledge partners. Because federal and institutional policies are mutually reinforcing, such changes must be accompanied by greater alignment between the

two. Ultimately, addressing the structural pattern of ambivalent hospitality requires trust-based governance between the federal government and higher education institutions, grounded in transparency and collaboration rather than scrutiny and control.

CONCLUSION

The interplay of federal policies toward international STEM students has positioned them in an ambivalent space as both welcomed global assets and potential security threats subject to scrutiny. Although such ambivalent hospitality may be inherent to nation-state logics, my study illustrates how this policy shift entrenches unequal power relations and relegates international STEM students to precarious, surveilled forms of inclusion. Recognizing these historical roots will help institutions design historically informed, context-sensitive, and sustainable support systems that respond to both current challenges and long-term structural inequities. By moving beyond reactive positions, we can affirm international STEM students' commitment as integral members of the academic community who deserve not only protection but also opportunity and recognition as agents shaping the spaces in which they study, work, and live.

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Author bio

JUDY KIM, M.A., is a Ph.D. candidate in the Center for the Study of Higher and Postsecondary Education (CSHPE) at the University of Michigan–Ann Arbor. Her scholarship focuses on students’ learning, development, and success across diverse backgrounds, with the goal of fostering equitable campus environments. Email: juheek@umich.edu
