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Proposed U.S. Immigration Changes to Student and Scholar Visa Categories

Impact and Solutions for Ph.D. Programs in Physics (and Astronomy); 'A New Way of Doing Things'

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Purpose

This white paper is intended to inform the physics community of the proposed changes to F and J visa regulations and concomitant Certificates of Eligibility; the potential impacts on students and graduate education, as well as faculty and departments, if they are enacted; the status of concern and response within physics graduate programs and institutions; recommendations for programs to consider in both the short-term and longer-term; and resources for students, faculty, and physics departments to learn and stay informed. This white paper will be followed by a more complete EP3 Toolkit in March, likely after the full rule change is codified, with more resources and actionable recommendations. The purpose of releasing this now is to inform the community on actions to take immediately and for the upcoming admissions cycle.

Major finding and key recommendations

Across the academic, industrial, national lab, legal, and international expert landscape there is a deep concern over the proposed four-year visa limits that conflict drastically with timelines for Ph.D. completion. There is a consensus that such changes will create large-scale systemic disruption of research productivity, the current graduate education model, undergraduate teaching mission, attractiveness of U.S. study, and hence participation of international students and scholars, and a loss of economic and intellectual contributions to the U.S. innovation economy. The key, immediate recommendations for the physics community are (1) Institutions should consider advising current international students against voluntary travel; (2) programs should work with on-campus international student services offices to align on and share transparent messaging to all current and prospective students, international and domestic, anchored to finalized rules; (3) programs should engage in proactive planning for conducting research and supporting undergraduate education with

fewer international students; and (4) programs should develop clear departmental narratives based on the department's priorities that include context specific approaches to responding to the potential disruption.

Current international education landscape and context in the U.S.

International mobility has been a cornerstone of U.S. higher education's dynamism and innovation and crucial for scientific progress. Challenges to the current model of higher education are broadly being imposed with long-term negative implications for both the academic enterprise and the employment pipeline that follows physics graduate education. The total economic impact could reach $72b-$145b in loss over the next 10 years (Clemmens et al. 2025), and 40% of U.S. Nobel prizes in STEM (45% in Physics) have been awarded to immigrants since 2000, and 36% since 1901. In addition to shifting federal immigration policies detailed below, the complex higher education research landscape has experienced severe federal funding cuts, internal budget reductions, and other financial pressures, including the unionization of graduate assistants and a reduction in enrollment.

Overview of proposed immigration changes

The U.S. Department of Homeland Security (DHS) and Immigration and Customs Enforcement (ICE) published a proposed rule change to the student and scholar visa categories in the Federal Register on August 28, 2025, titled, "Establishing a Fixed Time Period of Admission and an Extension of Stay Procedure for Nonimmigrant Academic Students, Exchange Visitors, and Representatives of Foreign Information Media (DHS Docket No. ICEB-2025-0001)." Currently, the "Duration of Status" (D/S) policy allows F students and J exchange visitors to remain in the country as long as they are making normal progress towards completing their academic degree or exchange objectives or are engaging in optional practical training (OPT), provided they are properly tracked in the Student and Exchange Visitor Information System (SEVIS).

What proposed changes would mean if enacted

The proposed DHS rule now under consideration (at this time, no final rules have been published, though many experts predict these changes will be codified) would eliminate D/S and replace it with a system that admits F students and J exchange visitors for a fixed period of time: only until the program end date on their SEVIS document, and not to exceed four years. If approved, this change would require students and exchange visitors who need more time to accomplish their degree or work to apply for a formal extension of stay from the United States Customs and Immigration Service

(USCIS), an agency already mired in processing backlogs. To note, the proposed regulations would also require students on existing visas to have their Certificates of Eligibility modified to a maximum of four years, potentially impacting current first and second-year Ph.D.s. Furthermore, the proposed regulations prohibit F-1 students in a graduate-level program from changing educational objectives or transferring from either programs or institutions within the United States. It is anticipated that these changes would significantly deter international STEM talent, undermine U.S. economic growth and innovation, disproportionately harm Ph.D. students and postdocs, and impose costs far exceeding DHS's preliminary estimates.

American Physical Society responses

The APS has recently published a new webpage that (1) details APS's response to the proposed changes, including impact and burden to current and prospective students, and risks to U.S. advancement and competitiveness in our technology-based, innovation economy; (2) releases a webinar recording with information and resources for international scholars; and (3) presents statements of APS support for international scholars. This white paper and following EP3 Toolkit are intended to address the uncertainty of these likely changes and their impact on physics graduate programs. To achieve this, APS has engaged and tasked consultants with interviewing a broad spectrum of stakeholders, guided by an Advisory Board, to develop a white paper and ultimately an online EP3 Toolkit to inform the physics community, make recommendations, and assist department stakeholders as they plan and navigate these anticipated changes. The consultants are Bennett Goldberg, Ph.D., a condensed matter physicist and former department chair who currently studies graduate education in physics, and Jenny Samaan, Ph.D., who brings expertise in international higher education and professional member associations.

International student data

According to the November 2025 Institute of International Education Open Doors report, the total number of first-time international students enrolling at a U.S. college or university in fall 2024 decreased by 7% (to 277,118), with new undergraduates up by 5%, while new graduate students fell by 15%. The number of international students on Optional Practical Training (OPT) increased 21% from the prior year. More than half (57%) of international students across academic levels pursued STEM fields of study.

Physics and astronomy international student data

Analysis of 2025 AIP Statistical Resource Center data suggests that over the past two decades, first-year enrollments in physics and astronomy graduate programs (master's and Ph.D.) have increased by 21% to a current total of 3,600 in 2024. During this period, international students have

consistently represented about 42% of this enrollment cohort, except in fall 2020 when the COVID-19 pandemic restricted international travel to the U.S. In 2023-2024 there were 259 departments offering graduate programs in physics, 81% (211) of which were Ph.D.-degree granting. In the 2024-2025 academic year, 16,991 students were enrolled in U.S. doctoral graduate programs, 44% of whom were non-U.S. citizens.

The most recent AIP estimate based on fall 2025 national survey data predicts a 7-9% enrollment decrease in physics and astronomy Ph.D. programs. Virtually all first-year international physics and astronomy graduate students held F-1 or J-1 student visas, and have a similar Ph.D. time to degree of 6.4 years as U.S. graduate students (overall STEM Ph.D. time to degree is 5.7 years). Of the total 2,146 Ph.D.s awarded in physics and astronomy in 2024, slightly less than half are non-U.S. citizens, and of those, about half were from China (29%) and India (22%) combined. Over three-quarters of international students who earned physics and astronomy Ph.D.s in the 2022–23 and 2023–2024 academic years remained in the United States for employment in the year after receiving their degrees. Most accepted postdoctoral fellowships or other temporary positions (48%), while nearly all remaining graduates obtained potentially permanent employment (25%).

Study design

The study employed a qualitative research design using semi-structured interviews to gather insights from participants. We identified key participants for initial interviews and adopted the snowball interviewing technique. Twenty interviews were conducted with physics department leadership (7), international educators and immigration experts (5), university-level administrators (5), national lab representatives (1), and industries that hire physics Ph.D.s (2). Twelve interviews were with university personnel, seven of which were private and five public. Limitations include a small, non-representative sample; a narrow scope that touched on but did not delve into H1-B or financial pressures of research funding and unionization; or current visa-holding student perspectives.

Key themes and findings

Common concerns across all participant perspectives:

- Deep concern over the proposed four-year visa limit that conflicts with typical Ph.D. timelines, with the potential to create large-scale systemic disruption of research productivity, the current graduate education model, and undergraduate teaching missions. Concerns include bifurcation of academic pathways between domestic and international students, lowering of academic standards, and faculty reluctance to mentor international students. Regarding undergraduate teaching, nearly all Ph.D. students are supported on teaching

assistantships that serve many undergraduate students for between one and three semesters of their degree.

- Broad consensus that the proposed rule change would lead to a decline in international applicants, threatening diversity and U.S. competitiveness, and erosion of the U.S. reputation as a premier destination for physics graduate education. Anticipated downstream harm to U.S. industry, including startups and national labs that rely heavily on international Ph.D. talent for R&D.
- Significant stress and distraction for current and anticipated visa holders with ripple effects on domestic students, especially with unclear program extension mechanisms and risk of changes to Optional Practical Training (OPT).
- General agreement that new models of physics graduate education would be required, which would entail significant and unwelcome disruption. This might include various approaches to accelerating degree progression, accepting students with greater prior academic progress, changing research project design, international partnerships, remote study and research, shifting to a greater domestic pool, and changing who supports and participates in the physics research mission.
- Shared recognition that international student offices alone cannot manage this crisis; graduate school and institutional leadership, department chairs, and Principal Investigators need specific training to advise students on uncertainties.

Expressed generally by physics department chairs, directors of graduate study, and admissions:

- Lack of open communication and transparency between physics department leadership, faculty, and students. Visa holders are largely directed to international student and scholar offices without departmental involvement or awareness of recommendations. Physics department admissions committee members are uncertain what to communicate to prospective students.
- Department chairs and directors of graduate study have not taken action, and few proactive steps have been taken, including broader departmental discussions. Deep reluctance to engage in the issue prior to the release of regulations and guidance from institutional leadership.
- While a small sample, we heard differences between departments. Larger departments feel a greater risk than smaller departments. Teaching-intensive departments feel they may be able to fill their ranks better than research-intensive departments. Lower ranking departments

express the concern that they are less able to recruit high-quality U.S. students and depend more heavily on international students, for both research and academic quality.

Expressed generally by graduate school leadership and institutional graduate administrators:

- Persistent financial pressures of unionization-driven stipend increases, grant volatility, and hiring freezes are driving Ph.D. cohort right-sizing, with stricter milestone tracking, mapping teaching assistant (TA) coverage vs. research slots to consider teaching fellow/lecturer roles, and decouple undergraduate instruction from Ph.D. admissions.
- Generally, higher-level administrators are grappling with scenario planning and options, whereas physics departments have adopted a "wait and see" approach.

Expressed generally by international educators and experts on immigration:

- There are early indications that rule changes may go into effect within weeks or a few months. Stakeholders anticipate immediate legal challenges (lawsuits and injunctions) upon the release of final rules and emphasize the need for a united front among universities to lobby DHS and Congress to revise the proposed new rules.
- Concerning governance and leadership, university presidents and vice presidents tend to frame issues purely as operational or budgetary, often neglecting to include Senior International Officers (SIOs) in strategic planning.

Recommendations

Immediate and short-term:

Potential current actions, prior to final rule release.

- Institutions might caution current international students against voluntary travel, even for academic/research opportunities. The situation could worsen, and specific guidance will be forthcoming if the current proposed regulations are codified as recommended.
- Encourage programs to provide transparent applicant messaging anchored to finalized rules and to avoid overreaction to non-official signaling. Support faculty with specific talking points, for example, sit down with their advisees with the latest update from their local international scholar office to check for understanding and address academic concerns. Programs should produce applicant FAQs aligned to finalized DHS rules and advance clear student messaging in visit/open-house activities.

- Programs should track both domestic and international student morale. Given the current climate, uncertainty, and increasing anxiety, programs should make available safety and wellness resources, and faculty should encourage their use.
- Continual interaction with the International Student and Scholar (ISS) Office will be crucial to ensure accurate messaging and advising.
- Departments should be prepared to provide immediate support to first and second year visa-holders whose I-20 or DS-2019 may be revised to a four-year limit, impacting their academic pathways. Departments should connect with ISS for guidance on submitting compelling applications for a potentially large number of extensions of stay.
- Many experts recommend proactive planning, even within physics departments, to develop strategies to address the disruption, with clear departmental narratives based on the department's priorities and goals. Departments should engage in conversations throughout the department and school leadership.
- While immediate legal action is likely if the proposed changes become rules, there is considerable uncertainty over its outcomes, including whether or not there may be a period of sustained policy changes where rules may be rewritten repeatedly to survive litigation or national judicial stays.

2026 admissions cycle:

  - Encourage institution-level early-admit/early-visa appointment pilots to reduce consular wait-time risks without disadvantaging April 15 decision norms.
  - Admit international students with a stronger academic background (possibly with Master's of Arts) who are more likely to complete within four years.
  - Accept students as normally would, with the expectation that the department will submit strong letters requesting program extensions beyond four years to DHS.
  - Increase domestic recruitment and shift to more domestic admissions.

Medium-term:

Potential responses should the proposed limitations be codified in the near term.

- Consider informed, discipline-specific mitigation pathways, including remote writing in physics theory; contingency placements for lab-based fields; compressed Ph.D. timelines; Master's of Science safety nets; split-site or co-mentored arrangements; and engagement with national laboratories or international bodies as safety valves.
- Explore accelerating degree progression by (1) revising milestone timelines (earlier qualifying exams, faster research integration), (2) recruiting students with prior graduate

coursework or master's degrees, (3) shorter research project designs, and (4) reducing TA loads.

- Potentially pivot recruitment toward domestic pipelines, maintaining and building relationships with institutions whose graduates you have enrolled in your Ph.D. programs in the past to increase the pool of domestic applicants.
- Increase reliance for research on domestic students, postdocs, and staff, and for teaching on instructional faculty.
- Some experts recommend that programs should consider alternatives to the current degree pathway, but to not prematurely shorten programs, maintaining academic integrity and timelines. Do not self-impose shorter degree timelines (e.g., shortening a six-year Ph.D. to four years) in anticipation of the rule. Doing so contradicts the values of graduate education and may embolden further policy encroachment.

Longer-term:

- Consider offering online courses to students PRIOR to arrival in the U.S. to reduce time and cost. Another safety valve is to allow students to continue research and writing offshore, after four years in the U.S., if visa extensions are denied.
- Explore establishing joint/dual degrees with international partners. Nations that are strong in science and research, such as India, South Korea, and Germany, are actively seeking U.S. partnerships.

References and resources

U.S. Department of Homeland Security. (2025, August 27). Trump administration proposes new rule to end foreign student visa abuse.

Immigration and Customs Enforcement Bureau. (2025, August 28) - Establishing a Fixed Time Period of Admission and an Extension of Stay Procedure for Nonimmigrant Academic Students, Exchange Visitors, and Representatives of Foreign Information Media.

American Institute of Physics (AIP) Report of International Students in Physics and Astronomy Graduate Programs - An analysis of longitudinal international enrollment trends, visa risks based on the 2025 proposed rules changes to Duration of Status and degree outcome.

Article on **APS response to proposed four-year limit on doctoral programs**

APS webinar to address student and scholar immigration concerns regarding the proposed changes to Duration of Status and related matters - APS predicts that if the proposed rules go into effect, the impact will bring upheaval in U.S. academic programs.

DHS Proposed Changes to Duration of Status in U.S. Federal Register - The proposed rules for establishing a fixed time period of admission and an extension of stay procedure for Nonimmigrant Academic Students and Exchange Visitors.

Institute for Progress (IFP) - The Institute for Progress (IFP) is a non-partisan think tank focused on innovation policy. Our organization works to accelerate and shape the direction of scientific, technological, and industrial progress.

> **Clemens, M., J. Neufeld, J., Nice, A. Comments on the Proposed Department of Homeland Security Rule to Eliminate Duration of Status September 29, 2025**
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> These comments submitted to DHS cite that international students are the primary STEM talent pipeline in the U.S. and that the removal of D/S would be a severe deterrent for future international student enrollment. Additionally, a strong critique is provided of the government's flawed methodology and massive underestimation by DHS of the economic costs to the nation and to productivity growth.
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> **How to Support STEM International Students and Scholars in U.S. Immigration** (April 22, 2024) - Clarifying guidance provided for STEM-related visa petitions and the standards immigration officers use to adjudicate cases can help international STEM talent prepare strong, focused applications.
>
> **The Role of Scientific Societies in Obtaining Immigration Benefits** (Nov. 6, 2023) - Examines the legal framework for STEM immigration, and provides three practical steps societies can take that make concrete improvements in documenting recognition and accomplishments for early career scientists.

International Student Resource Center (ISRC) (Launched November 2025) - Provides immigration information and support for international students in the United States. Through comprehensive resources, timely information and updates, and access to immigration experts, the ISRC supports international students through their academic program and beyond.

> **Brain Freeze: How International Student Exclusion Will Shape the STEM Workforce and Economic Growth in the United States**
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> The United States has long attracted international students as a central source of talent in science and engineering, especially at the post-graduate level. International students now make up roughly half of all STEM graduate enrollments, and foreign-born workers account for nearly a third of the high-skill STEM workforce. Recently proposed federal policies would sharply reduce the ability of the United States to attract and retain international students.

Institute for International Education 2025 Open Doors Report *Open Doors®* is a comprehensive information resource on international students and scholars studying or teaching at higher education institutions in the United States, and U.S. students studying abroad for academic credit at their home colleges or universities. This survey of international exchange activity in the United States is collected annually.

IIE Press Release – U.S. Hosts 1.2 Million International Students - The Institute for International Education, the leading annual benchmark for international educational exchange in the United States, announces that U.S. colleges and universities hosted 1.2 million (1,177,766) international students in the 2024/2025 academic year, a 5% overall increase from the previous year.

Majumdar, S. (2025). **America's Brain Drain: International Scientists and the Shifting Global Landscape**. *International Higher Education*. https://ihe.bc.edu/pub/d6snhiz8

International doctoral students and early-career scientists are essential to U.S. research leadership, but restrictive immigration policies, declining science funding, and an increasingly unwelcoming climate are driving many to consider careers abroad. As competing nations actively recruit scientific talent with generous funding and favorable visas, the United States risks losing its long-standing advantage in science and technology unless it reforms immigration policy and reinvests in research.

NAFSA: Association of International Educators - The world's largest nonprofit association dedicated to international education and exchange. NAFSA serves more than 11,000 members and international educators worldwide at more than 4,300 institutions, in 170+ countries.

Updated List of Policy Changes - Keep track of policy changes impacting international students, scholars, H1-Bs, as well as Executive Orders impacting international education.

NAFSA's Comments to DHS Replacement of Duration of Status - Track NAFSA's initial and ongoing responses and detailed rule analysis to the proposed DHS replacement of Duration of Status.

NAFSA Resources - Obtain the latest trends, data, reports, analyses, and policy recommendations for Congressional action.

National Academies of Sciences, Engineering, and Medicine. 2024. Washington, DC: The National Academies Press. https://doi.org/10.17226/27787

The report finds that the United States will not be able to sustain its innovation, economic competitiveness, and national security goals in STEM without both strong domestic talent development and continued large inflows of international talent. It concludes that U.S. recruitment and retention efforts lag those of key allies and competitors, and recommends a coordinated national STEM talent strategy that both modernizes immigration pathways and strengthens research security without undermining international collaboration.

Presidents' Alliance on Higher Education and Immigration - Guidance to institutions on pressing immigration issues, briefings, webinar recordings, and updates on educational and legislative advocacy and coordination of amicus briefs.

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