Policy Brief

Modernizing the US Exchange Visitor Skills List

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July 2024

Abstract: This policy brief proposes a comprehensive reform of the US Exchange Visitor Skills List. This Skills List is used to determine fields of expertise that require a two-year home residency for exchange visitors from specific countries. The current list, written to conform with foreign government requests for the last 52 years, is outdated and arbitrary. We propose a specific method by which the US State Department can modernize the Skills List by applying transparent, conservative, balanced, and humble criteria to publicly-available data. This method categorizes country-field pairs into lists subject to *Broad*, *Narrow*, and *Minimal* restrictions, in accordance with individual countries' overall development level and special circumstances. The reform enhances the alignment of the Skills List with its statutory purpose and with modern economic research, which highlights the positive role of skilled migrants in fostering trade, investment, technology transfer, and human capital development—alongside the challenges that high-skill migration can bring. The new, proposed Skills List would better serve the US national interest while supporting sustainable development in migrants' home countries.

JEL No. F22, J24, O15, O33. We thank Heidi Williams, Amy Nice, and Jeremy Neufeld, but the views expressed here are those of the authors alone and do not represent any organization. Clemens acknowledges support from the Peterson Institute for International Economics and from Open Philanthropy.

Background on the Skills List

The Exchange Visitor (J-1) visa allows skilled professionals, students, and specialized workers to come temporarily to the United States to gain practical experience and training in their field of expertise. It is often used by researchers, educators, health professionals, and other specialized workers to stay for roughly 1–5 years. When that visa expires, under a 1970 law, some exchange visitors must return to their home country for two years before they can apply for US permanent residency. These include visitors with government funding, and visitors who work in certain fields and come from certain countries. The countries are those that the State Department has "*designated as clearly requiring the services of persons engaged in the field of specialized knowledge or skill in which the alien was engaged.*"[1]

In practice, the State Department has made this designation principally by adopting the requests of government officials from migrants' home countries. Those countries' choices of the fields they "clearly require" are compiled into the US *Exchange Visitor Skills List.* That Skills List, sourced from outside the US, is then enforced as US policy in all but highly exceptional circumstances. The first Skills List was published in 1972. There have been only three major revisions since then (1984, 1997, and 2009).[2]

The admirable goal of creating the Skills List was to avoid harm to development. But the List that has resulted from this process is arbitrary and haphazard. The restrictions it places on skilled migrants have little relation to systematic differences in development across countries, and little basis in the development importance of various fields. The List enshrines the idea, dominant in the 1970s but now outdated, that the departure of most skilled workers inherently diminishes the development prospects of the home country. Modern economic research has reached a different conclusion. It documents that skilled-worker migrants from developing countries are *also* integral to creating opportunities for trade, investment, technology transfer, and human capital creation back home.[3]

The US Administration now seeks to build a new Skills List and to take control of its content—rather than primarily sourcing it from foreign governments. In October 2023, the US Administration issued an Executive Order that would fundamentally change this system.[4] That Order instructs the Secretary of State to consider establishing "*new criteria to designate countries and skills on the Department of State's Exchange Visitor Skills List*" and to "*consider publishing updates*" to the current Skills List.

But the Order does not specify *how* the State Department should create the new Skills List. A new method would allow the US government, for the first time, to systematically select fields and countries for the Skills List by US criteria. That method must start from the presumption of no home-residency requirement in the absence of compelling evidence for such a requirement, as mandated by law.[5] Here we propose a straightforward method to construct a new Skills List. It would place control of the List in US hands and broadly protect the benefits of skilled migration for overseas development while safeguarding against its most tangible potential harms. This method would sharply improve on the prior List as a tool to serve the US national interest and the interests of migrants and their origin countries, while mitigating the clearest potential risks.

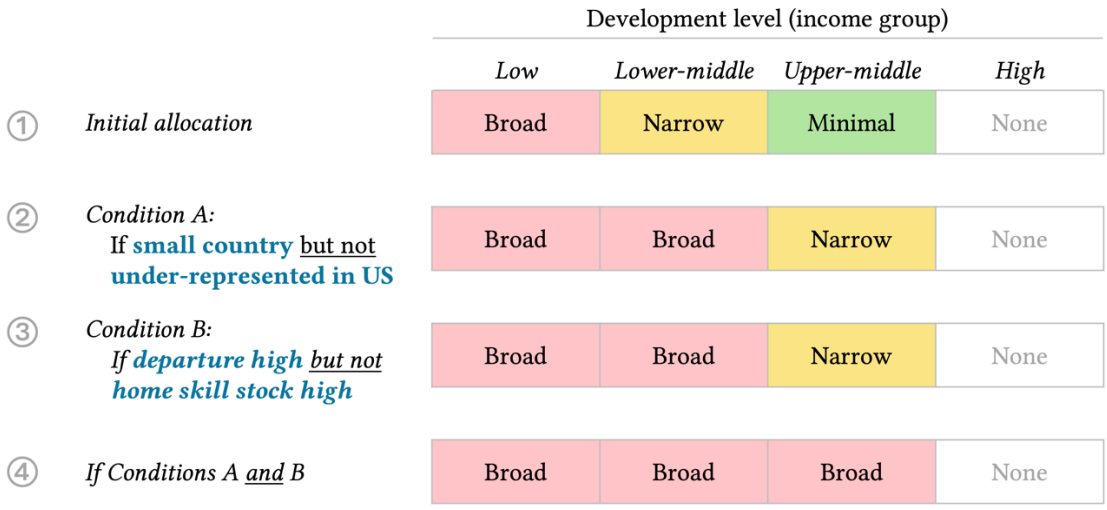
Elements of a new method to build the Skills List

A revised Exchange Visitor Skills List must designate pairs of countries (*e.g. Burkina Faso*) and fields-of-specialization (*e.g. Engineering*) where enforcing a two-year return by visitors is "clearly required" for development of the home country. A new method for this designation must be:

- *Simple and transparent.* Administrative and political feasibility rules out academic complexity.
- *Conservative.* Restriction requires compelling likelihood of harm, not vague possibility of harm.
- *Balanced.* Designation on the List requires trading off development benefits and costs.
- *Humble.* No one can exactly, certainly quantify the ripple effects of migration by narrow fields.

These principles preclude any method that claims certainty about the precise, net contribution to development by migration within narrow subfields at exact points in a fine-grained, multidimensional characterization of development. Instead, the straightforward method that we propose follows the four steps in Figure 1.

Figure 1: *A new method to build the Skills List*



The four steps are:

1. *Initial allocation*: The method starts by assigning a category to each field-of-specialization and each country. It assigns fields into three categories: A *Broad* list (covering the most fields), a *Narrow* list, and a *Minimal* list (covering only the most sensitive fields). It divides countries into four categories, using the income classification created by the World Bank: *Low Income*, *Lower Middle Income*, *Upper Middle Income*, and *High Income*.[6]
2. *Small countries:* If a country is relatively small *but* its diaspora size is not so low that its skilled migrants are underrepresented in the United States (Condition A), it is subject to the fields category that is one step more stringent than in Step 1. For example, a lower-middle-income country initially assigned the *Narrow* fields category would be shifted to the *Broad* category.
3. *High departure rate:* If a country has a high fraction of its skilled workers already in the United States *but* it lacks a large stock of skilled workers at home (Condition B), it is subject to the fields category that is one step more stringent than in Step 1.
4. *Small countries with a high departure rate:* If a country meets both Conditions A and B, it is subject to the fields category that is two steps more stringent than in Step 1. High-income countries are unrestricted regardless.

These steps reflect several choices that follow our principles:

- **Income categories**: Whether certain workers are considered "required" must change by level of development. Simplicity requires a univariate and well-established measure of development, such as GDP per capita at PPP. (We consider alternatives below.) But the rule cannot be a function of a fine-grained, *continuous* measure of development. Inclusion on the list is a zero-one decision, so using any continuous measure would require analysts to establish their own, ultimately arbitrary quantitative thresholds. ('*Metallurgical engineers are clearly needed for development at $5,729 per capita, but not at $5,730 per capita.*') For a List that is transparent, politically defensible, and administratively feasible, the criterion should be discrete and independently, objectively set. The World Bank has classified every country in this way in each year since 1989. The classification is well-established, independent, and informative on experts' assessment of overall development conditions and prospects.

- **Small countries**: Small/island nations might experience disproportionate impact from the loss of a few specialists, since the limited size of their home market ensures higher proximate impact from each departure. At the same time, countries with low diaspora size—a low absolute number of skilled migrants in the US—should not be shut off from planting the seed for overseas networks. Prior migrants are crucial to facilitating interchange via future migrants and non-migrants, through networks of trade, investment, technology transfer, and training. This creates an inherent tradeoff, because small countries typically have small diasporas. We address this tradeoff by shifting the field category for migrant-origin countries in Step 2 if the country is relatively small, *but* the country's US diaspora is above a minimum threshold.

- **High departure rate**: Even in countries where skilled migration has long-term, indirect benefits, countries with very high rates of emigration by skilled workers can experience short-term stresses of training costs and staffing shortages. At the same time, many countries with large-scale skilled emigration also exhibit strong systems of public and private tertiary education, and thus relatively high skill stocks at home. Those countries not only are better positioned to train new workers in response to emigration; they are also more likely to exhibit unemployment/underemployment for workers with tertiary education. Furthermore, upcoming workers in countries with strong tertiary training institutions are more likely to invest in skills in response to skilled emigration. For all these reasons, the marginal net benefit to the home country of increased skilled migration can be higher if skill stocks at home are high, and lower if they are low. We address this tradeoff by shifting the field category for migrant-origin countries in Step 3 if the country already has a relatively high fraction of its skilled workers in the United States, *but* does not have relatively high stocks of skilled workers at home.

Implementing the new method: Definitions

To implement the above qualitative framework, we must set quantitative criteria for "small" countries, "low" diaspora size, "high" departure rates, and "high" skill stocks at home.[7] And we must set necessary and sufficient criteria for fields to be assigned to the *Broad*, *Narrow*, and *Minimal* lists.

Defining small and underrepresented countries: We classify countries as "small" when their population lies below 1.5 million. This definition, set officially by the World Bank, covers 21.5 percent of all countries that are candidates for the Skills List.[8] We classify countries as having "underrepresented" skilled-worker diasporas in the United States when the US Census Bureau's American Community Survey, pooled over the last five years, reports fewer than 7,500 people with postsecondary education and born in that country.[9] This is just above the minimum threshold for such migrants, from each

country, to be counted at all—a reasonable minimum standard for 'representation'. We do not differentiate between diaspora members who get their tertiary education in the United States versus abroad; both of these are known to contribute to diaspora networks. For the same reason we do not differentiate by naturalization status.

Defining high departure rates and skill stocks: We classify departure rates as "high" when more than 15 percent of that country's tertiary-educated workers—who live either in the home country or the United States—live in the United States. We choose this threshold because it matches suggestive evidence from the research literature that departure rates over 15 percent have the greatest potential for direct harm to offset indirect benefit.[10] We classify home-country skill stocks as "high" when more than 15 percent of the home-country population over age 25 have postsecondary education. This is roughly the level of Tunisia; such a threshold reasonably ensures that countries like the Philippines and Egypt are considered to have robust systems of public and private tertiary education while countries like Tanzania and Cambodia are not.

Creating the field categories: We classify fields-of-specialization into *Broad*, *Narrow*, and *Minimal* categories by the following criteria. We identify fields using the Classification of Instructional Programs (CIP) by the National Center for Education Statistics of the US Department of Education, 2020 revision—reflecting the use of earlier versions of the CIP in earlier iterations of the Skills List. The full CIP classifies fields-of-specialization into over 2,800 minor subfields at the six-digit level. The 2009 Skills List considered fields at the still-narrow four digit level. We, in contrast, use somewhat broader categories at the two-digit level. For example, while the full CIP contains the six-digit code 14.0903 for 'Computer Software Engineering', the 2009 Skills List allowed countries to place this field on the Skills List within the broader, four-digit code 14.09 for 'Computer engineering'. We identify such a worker with the two-digit code 14 for 'Engineering'.

We consider two-digit codes because the past practice of using detailed, four-digit codes can have little basis in research and faces important challenges of administrative feasibility. First, it is unclear how any feasible research evidence could establish that, in Nepal, specialists in *Data Processing* (four-digit code 11.03) are "clearly required" for development, but specialists in *Information Science* (11.04) are not. And even if such a determination could have somehow been made in the late 2000s, when the 2009 Skills List was being compiled, there is little reason to believe that it would remain valid for even a few years, much less across 15 years. Moreover, fixing the list at the four-digit level ignores the possible emergence of new, narrow subfields as technology evolves. Our principles, that the new rule be conservative and humble, preclude such extremely fine and necessarily haphazard distinctions.

Second, distinguishing between granular subfields make the Skills List easy to 'game' by migrants or the programs sponsoring them, undermining the intent of the law and the administration of the rule. On the 2009 list, Mauritius chose to include *Biomedical Engineering* (14.05) but not *Bioengineering* (14.03). If a US program in 'Biomedical Engineering' that did not want migrants to be returned to Mauritius represented the program as training in 'Bioengineering' instead, would the State Department have the resources and expertise to investigate and make its own, independent determination? Also on the 2009 Skills List, El Salvador included *Biomathematics* (26.11), but not *Mathematical Biology* (under 27.03). If a migrant or their training program were to claim that their field was 'Mathematical Biology' instead of 'Biomathematics', it is unclear by what process or expertise any US agency would make an independent determination.

Defining the field categories: Having chosen to classify fields at the two-digit level, we sort these into the three field categories. This sorting centers on a fundamental tradeoff between the roles of knowledge workers in global networks and in domestic service provision. We recognize that skilled emigrants even from fields with prima facie development importance have been crucial to building

overseas networks that advance development. Mo Ibrahim had a Bachelor's degree in electrical engineering when he left Sudan, a near-term and tangible cost for a country that need talented engineers, but in the long term brought billions in investment and technology transfer to Sudan and the rest of Africa from his positions as an entrepreneur overseas. More systematically, economists now have clear evidence that skilled migrants and knowledge workers both provide important services at home *and* play an essential role in integrating poor countries with the opportunities of the global economy.[11] Nevertheless we must trade off these long-term benefits against the reality that many knowledge workers in developing countries provide direct, in-person, nontradable services to low-income households, and the effects of skilled emigrants' absence in these fields can be tangible and acutely felt in the short term.

Table 1: *Categories for fields of specialization*

Broad	*Narrow*	*Minimal*
61 Physician Residency/ Fellowship	61 Physician Residency/ Fellowship	61 Physician Residency/ Fellowship
60 Non-Physician Residency/Fellowship	60 Non-Physician Residency/Fellowship	
13 Education	13 Education	
51 Health Professions	51 Health Professions	
01 Agricultural Science		
14 Engineering		
15 Engineering technicians		
46 Construction		
49 Transportation & Shipping		

We make these tradeoffs in the following way. Fields should appear on the List when the short-term costs of a worker's absence, at a given stage of development (or unique country circumstances) have obvious potential to be exceptionally tangible and severe in the short term, regardless of possible long-term benefits. For low-income countries (Afghanistan, Mali), that suggests a *Broad* list of skilled workers who provide nontradable, in-person services directly to the poor, in sectors most important at that stage of development: agriculture, basic infrastructure, health, and education.[12] For lower-middle-income countries (Egypt, India, Nigeria), the *Narrow* list reduces to teachers and to physicians, nurses, and other health workers, because countries in this class shift their economies sharply away from dominant reliance on agriculture and have increasing access to finance and expertise for infrastructure provision. For upper-middle-income countries (Brazil, China, Turkey), the *Minimal* list reduces to physicians only, a field considered so sensitive that it already receives special treatment under J-1 visa regulations. Table 1 presents our recommendations for mapping fields into these field categories.

Results: A new Skills List

The method in the previous section designates as 'listed' or 'not listed' each of 9,168 country-field pairs (191 countries by 48 two-digit fields). Before listing these designations, because our goal is to sharply improve on the prior Skills List, we note the striking differences between the current Skills List built in 2009 (Figure 2a) and our proposed Skills List (Figure 2b).

Figure 2a: *The 2009 Skills List, fraction of all fields listed by country's level of development*

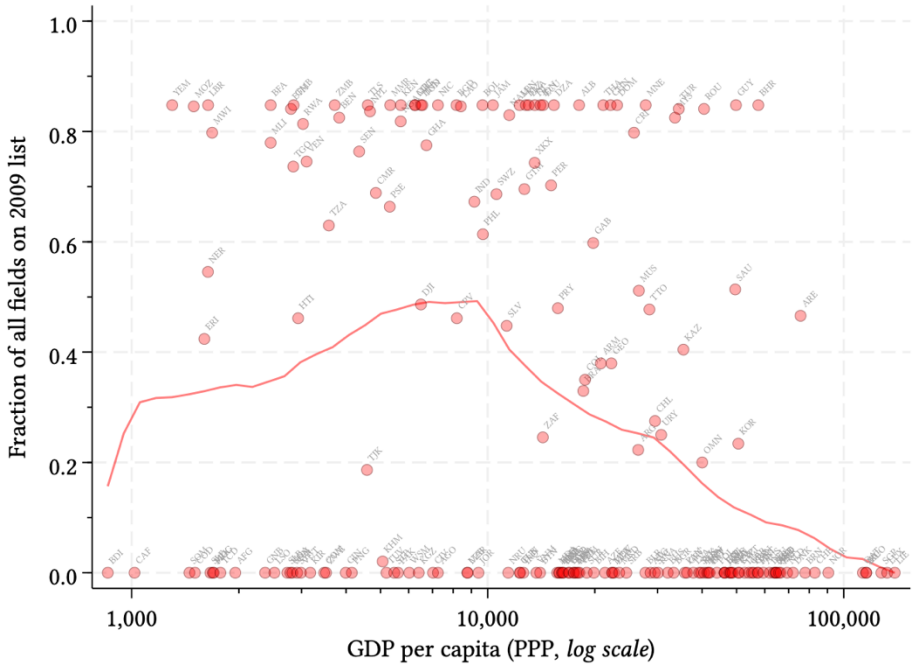
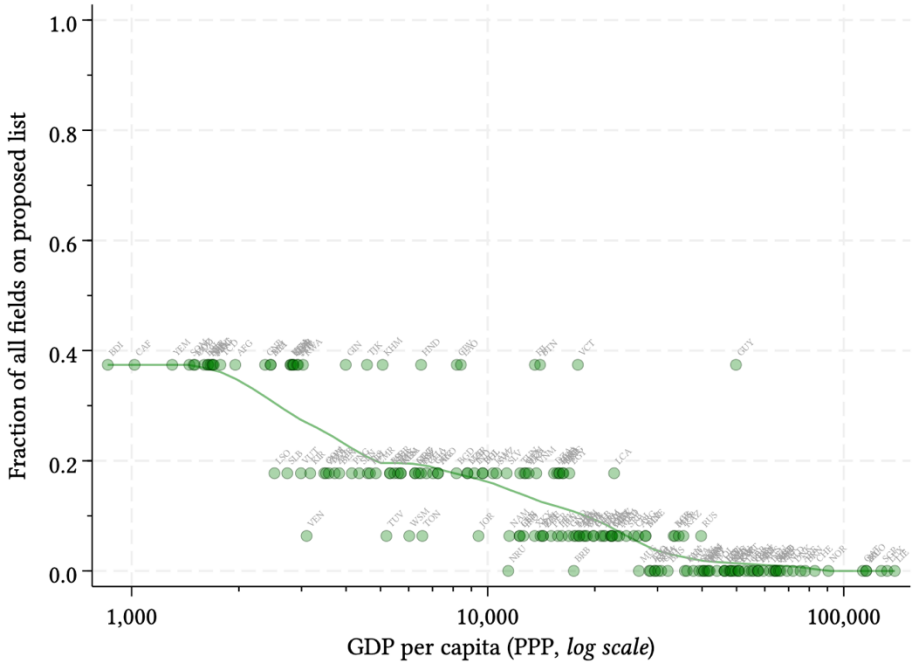


Figure 2b: *Proposed new Skills List, fraction of all fields listed by country's level of development*



Both graphs show each country's real average income per person on the horizontal axis. Both show the fraction of all possible four-digit fields that appear on the List, for each country, on the vertical axis; the colored line shows a moving average by income.

We note several undesirable features of the old, 2009 Skills List in Figure 2a. First, in the old List, the average fraction of fields listed is not systematically greater for poorer countries. In fact, the restrictiveness of the List *rises* until countries reach the relatively advanced level of PPP$10,000 per capita (roughly India or Morocco). Second, the large majority of countries did not use the List to make fine distinctions between subfields: 140 out of 191 countries either chose essentially *all fields* or *no fields*.[13] This does not suggest that the highly granular nature of the four-digit fields was supporting evidence-based policy. Third, the restrictiveness of the list is highly erratic even at similar levels of development. Chad never placed a field on the list, but Niger did; Côte d'Ivoire placed no fields on the list but Ghana did; Uganda placed no fields on the list but Kenya did; alongside countless other examples. Across a vast range of the development process, from $1,500 through $60,000 per capita, the 2009 Skills List designates some countries as "clearly requiring" essentially *all* possible skills and other, similarly situated countries as "clearly requiring" none of them. Fourth, even among the countries that did choose to make fine distinctions among four-digit fields when requesting them to appear on the 2009 Skills List (the spread-out red dots in the middle of Figure 2a), there is no clear relationship between the typical restrictiveness of the List and the level of development (Peru was more restrictive than Tanzania, Mauritius more restrictive than Haiti).

In contrast, Figure 2b shows the result of building a new Skills List by the method we propose. This method is inherently imperfect, but makes major improvements on all four of the above shortcomings of the prior List. The restrictiveness of the new List systematically declines with development. The new List makes carefully considered distinctions between fields, rather than arbitrary all-or-nothing designations. Migrants from countries at similar levels of development are treated similarly—after adjusting for the special circumstances as detailed above—regardless of the overall restrictiveness faced by their country.

Table 2 lists all countries, showing how the proposed method maps them to field categories. Each column is a field category from Table 1. The first row shows countries whose initial income category designation was not considered for modification to adjust for special circumstances using the process in Figure 1. This can happen for three reasons: Either 1) the country is not *small*, 2) the country does not exhibit a *high departure rate* for skilled migrants, or 3) it is already assigned to the 'Broad' category in the initial classification, thus its size or departure rate cannot alter its assignment to a field category. The second row shows countries that are defined as small, *but* their skilled migrants are also defined as underrepresented in the US, so their field assignment is not changed by being small—e.g. Eswatini. The third row shows countries that exhibit a high departure rate that would otherwise alter their designation, *but* also have high skill stocks at home (Dominican Republic). The fourth row is for countries that are both small but underrepresented, *and* exhibit high departure rates but relatively high skill stocks at home (Tonga), thus their initial classification is not altered.

The remaining rows of Table 2 show countries whose initial assignment was altered due to their special circumstances: countries that are small but *not* underrepresented in the US; countries with high departure rates but *not* high skill stocks at home; and countries meeting both of these conditions.

Table 2: Mapping countries to field categories in the proposed new Skills List

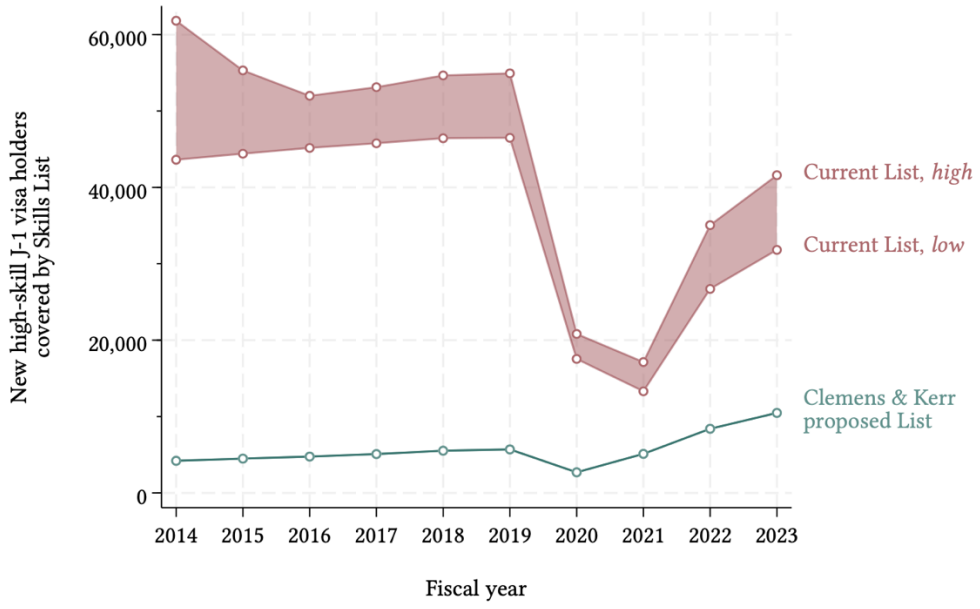
Country traits:	*Field category* **Broad**	**Narrow**	**Minimal**
Neither small nor high departure rate, *or* already Broad	Afghanistan Burkina Faso Burundi Central African Republic Chad Congo, Dem. Rep. Eritrea Ethiopia Gambia Guinea Guinea-Bissau Haiti Korea, DPR Liberia Madagascar Malawi Mali Mozambique Niger Rwanda Sierra Leone Somalia South Sudan Sudan Syria Tajikistan Togo Uganda Yemen	Algeria Angola Bangladesh Benin Bolivia Cambodia Cameroon Congo, Rep. Côte d'Ivoire Egypt Ghana India Kenya Kyrgyzstan Laos Lesotho Mauritania Moldova Mongolia Morocco Myanmar Nepal Nicaragua Nigeria Pakistan Papua New Guinea Philippines Senegal Sri Lanka Palestinian Territories Tanzania Tunisia Ukraine Uzbekistan Vietnam Zambia Zimbabwe	Albania Argentina Armenia Azerbaijan Belarus Bosnia & Herzegovina Botswana Brazil Bulgaria China Colombia Costa Rica Cuba Ecuador Equatorial Guinea Gabon Georgia Indonesia Iran Iraq Jordan Kazakhstan Kosovo Lebanon Libya Malaysia Mexico Namibia North Macedonia Paraguay Peru Russia Serbia South Africa Thailand Turkmenistan Turkey Venezuela
Small country *and* underrepresented (*a*)		Comoros Djibouti Eswatini Kiribati São Tomé & Príncipe Solomon Islands Timor-Leste Vanuatu	Maldives Montenegro Samoa Suriname Tuvalu
High departure rate *and* home stock not low (*b*)			Dominican Republic
Both (*a*) and (*b*)			Tonga
Small country, *but* not underrepresented (*c*)	Bhutan	Belize Dominica Grenada Saint Lucia	
High departure rate *but* home stock low (*d*)	El Salvador Haiti Honduras Liberia	Guatemala Jamaica	
Both (*c*) and (*d*)	Cabo Verde Fiji Guyana St. Vincent & Grenadines		

For example, Guatemala is an upper-middle-income country, but is nevertheless assigned to the *Narrow* field category instead of the *Minimal* one, because it has a high departure rate (21 percent of those born in Guatemala who have postsecondary education, who live either in Guatemala or the US, live in the US) but does not have high skill stocks at home (only 4.5 percent of the population over age 25 has postsecondary education). Bhutan is a small country (population 787,424) but its skilled migrants are not underrepresented in the US (11,076 Bhutan-born US immigrants have postsecondary education) due in part to large refugee inflows. Thus although Bhutan is a lower-middle-income country rather than low-income, it receives the *Broad* field category. Guyana receives the *Broad* category despite being upper-middle-income, because it is small but not underrepresented, *and* exhibits a high departure rate without high skill stocks at home.

Our proposed method would substantially impact the total number of high-skill visitors covered by the Skills List. This impact is estimated in a separate analysis.[14] It defines "high skill" visitors in order to *omit* J-1 visa recipients who are camp counselors, au pairs, high school students, or students on summer work/travel. The remaining, "high skill" workers include only those who 1) have an advanced degree from a US or foreign university, 2) are studying for an undergraduate or advanced degree at a US university, 3) are in the US fulfilling academic requirements for an undergraduate or advanced degree from a foreign university, or 4) are regarded as "eminent" or specialized "experts" in a field of knowledge.[15]

Data from the US Dept. of Homeland Security then allow estimation of the number of high-skill visitors each year who are covered by the Skills List, in Figure 3. The red band shows the coverage of the current (2009) Skills List, with a range of uncertainty imposed by the raw data. The green line shows the number that would be covered under our proposed new Skills List, by the designations in Tables 1–2.

Figure 3: *The number of high-skill workers covered by the Skills List in its current form (red) and a proposed revision of the Skills List (green)*



Source: Clemens, Neufeld, and Nice (2024).

In the broadest sense, the proposed new Skills List is less stringent as it is more selective in designating country-field pairs for the List. In FY2023, our proposed List would have covered a little less than a third of the number of high-skill visitors that faced the requirement under the current List. For five key countries that together comprise about half of the high-skill visitors restricted by the current list—China, India, Korea, Brazil, and Colombia—in FY2023 the Skills List covered between 18,525 and 22,741 high-skill category workers collectively. Under our proposed new List, this would have been 1,482, many of them physicians, nurse practitioners, and pharmacists from India who are in the United States from nonclinical training or teaching.

The above cannot be interpreted as quantitative estimates of changes in the number of exchange visitors subject to the home residency requirement. The US government does not publish two key pieces of information that would be necessary to precisely establish the overall impact of the Skills List on actual departures from the US. The first piece of unavailable information is the fraction of Exchange Visitors who receive government funding specifically for the purpose of exchange (from a foreign government, or from the US government, including but not limited to a Fulbright fellowship). Such visitors face the home-residency requirement regardless of country or field. A revised Skills List would not affect the US visa options of those visitors. That said, we note the yearslong Skills List reform campaign by the Federation of American Scientists, which states that reform in the Skills List by itself would impact thousands of visitors per year and that "the urgency of modernizing the Exchange Visitor Skills List cannot be overstated." This position—by US researchers who work directly with exchange visitors—would be difficult to explain if the Skills List *per se* were not a major determinant of visitors' decisions.[16]

The second piece of unavailable information is the fraction of visitors who would not have returned home but for the home residency requirement—that is, the number of people whose migration decisions are constrained by the Skills List. But we note clear reasons to believe that this effect is substantial. Surveys of recent foreign recipients of PhD degrees at US universities indicate that very high fractions of them do hope to remain in the United States, including 87% for mainland China and 91% for India.[17] And there is direct evidence from a different stream of J-1 visa workers, overseas clinical physicians, that marginal changes in the home residency requirement have large effects on visitors' migration behavior.[18]

Discussion of key methodological choices

The method proposed here inherently involves difficult choices. We hope to make as many of those choices explicit as possible. Here we offer our reasoning for some of the most fundamental.

Given the importance of human capital to development, why not list *all* skilled fields?

On the old 2009 Skills List, 34 percent of all countries asked the United States to enforce the two-year home residency requirement for specialists in 'Library Science' (CIP code 25). An argument can be made that libraries are important institutions that complement human capital formation and thus the broader development process across the world.[19] But similar arguments could be made for *every* other field of study: Mathematicians matter to education, accountants matter to business performance, and so on. Reasoning of this kind, which requires compelling reasons to *rule out* a field as mattering to developing, leads inexorably to the restriction of most or all fields.

We do not adopt that approach, for two reasons. The first is US law. The law creating the Skills List is written to define the default condition as non-restriction, so that the burden of proof rests on restriction. The legislative history of the underlying law clarifies that lawmakers explicitly intended

non-restriction as the default condition.[20] The statute creating the Skills List directs the US government to designate fields "*as clearly requiring the services of persons engaged in the field of specialized knowledge or skill in which the alien was engaged*" (emphasis added). For physicians, perhaps the least controversial discipline where individual skills can be needed at home, the statute enforces return within two years only when "*the country to which the alien will return…has an exceptional need for an individual trained in such specialty*" (emphasis added).[21] This plain language indicates that establishing 'need' for an area of specialization requires 'clear' or 'exceptional' evidence that a *specific* skill is required.[22] A Skills List that defaults to restriction, and requires clear proof of the absence of harm before it relaxes restrictions, would not implement the underlying statue.

Moreover, defaulting to bar skilled migrants would ignore modern economic evidence that skilled migrants foster trade ties, investment ties, technology transfer, entrepreneurship, and brain-gain investment in human capital. Partly for this reason, in the 52 years of existence of the Skills List, we are not aware of any evidence put forward to suggest that enforced return *in general* caused net-positive development outcomes, in any dimension, in any country. Nor has there been evidence of net *harm* to development in the roughly half of developing countries that chose never to enforce returns for any field under the Skills List. We set the default condition as non-restriction, and carefully choose the fields in Table 1 due to compelling evidence of the potential for tangible short-term harm.

Given that all skills are scarce in the poorest countries, should the default condition be restriction at least in low-income countries?

We place the burden of proof on restriction even in the very poorest countries, for two reasons. First, the poorest countries both have the lowest supplies of skilled workers *and* the lowest expressed demand—real jobs—for skilled workers. Migration restrictions act only on supply. The poorest countries have the highest unemployment rates for tertiary-educated workers, and the highest rates of skill mismatch (tertiary-educated workers in jobs that do not require tertiary education).[23] While skills in every field are needed in low-income countries in an abstract sense, the realized demand—actual employment prospects—is also systematically low for skilled workers of many fields in the poorest countries.[24] This tension exists for all classes of skilled workers, including health workers.[25]

The second reason is that this rule governing the Skills List is not intended to determine whether skilled workers *can* or *should* return to their home countries, but whether they *must* return *against their will*. The home residency requirement is irrelevant for a migrant who already desires to reside in their home country. The rule is exclusively relevant for people who 1) are highly informed about current demand for their skills at home and 2) have determined that the demand at home is too low at current levels of development. The question we address here is: In what circumstances should a skilled migrant's extensive private information about actual, realized demand for their services at home be overridden by the US government's claim to superior information about realized demand for those services at home? Extensive skill mismatch in the poorest countries suggest adherence to our earlier principles: the rule should be conservative and humble.

Why should the Skills List now be set in Washington, altering the tradition of to relying on foreign governments designate countries and fields for the List?

For the last 52 years, the Skills List has been constituted by asking foreign countries' Ministries of Foreign Affairs which disciplines, if any, should go on the list. It could be reasonably argued that home countries have greater knowledge about specific fields that are in shortage, at specific moments in time, than is possible for analysts in Washington DC.

But this possibility is not compatible with the pattern of *de facto* answers that foreign governments have given when consulted over the past half century. About 40 percent of countries have placed nearly all fields on the list, without discriminating between nurses and librarians, or between engineers and creative writers. This propensity, as shown in Figure 2a, is similar across a very wide range of development levels—the proportion of fields restricted changes little between the poorest countries and relatively rich emerging markets. Likewise, about half of countries did not use the Skills List at all—did not ask for any field of study to be restricted—a proportion that is also similar between the poorest countries and relatively rich developing countries.

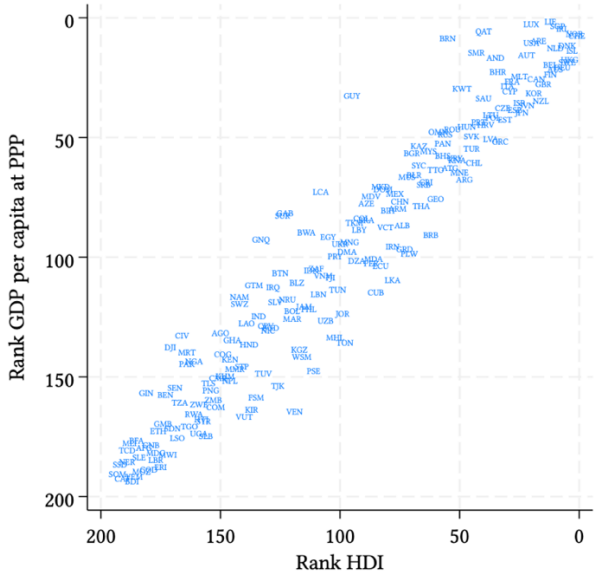
These patterns are not consistent with a model in which the choices of foreign governments regarding the Skills List respond to objective evidence about the development impact of migrants in specific fields, at specific levels of development. They are more consistent with those choices being shaped in large measure by politics, ideology, arbitrary bureaucratic deliverables, and the idiosyncrasy of individual functionaries than by evidence-based analysis of development conditions as they vary across countries. And they cannot be shaped by superior knowledge about changing labor market conditions over time: The Skills List has only been updated four times in 52 years. Even if governments had superior information at one moment, the policy could be badly out of step with conditions just a few years later.

Why use GDP per capita as the overarching measure of 'development'?

We recognize the limitations of GDP per capita as an omnibus indicator of opportunity or skill needs in developing countries. For example, in states with high petroleum revenue such as Angola or Guyana, rising GDP may have a tenuous link to rising material well-being of the median or modal citizen.

These legitimate concerns are the *raison d'être* of the Human Development Index (HDI) calculated annually by the United Nations Development Program. The Human Development Index is a composite of indicators of health (life expectancy, heavily shaped by child health), education (average years of schooling completed), and average incomes (real Gross National Income per capita). In practice, however, the income per capita is heavily shaped by health and education—and also causes advances in health and education—to such a great extent that the correlation of countries' ranking by HDI and their ranking by GDP per capita is 0.96. Figure 3 shows this striking relationship across all countries.

Figure 3: Tight correlation between Human Development Index rank and GDP/capita rank



In other words, the HDI contains very little information about countries' relative development levels that is not captured by income per capita alone. Similar exercises have shown that GDP per capita alone is highly informative about a wide range of non-monetary development indicators, from governance to environmental quality.[26]

We do not dismiss concerns about how to measure development. We rather conclude that the complexity and opacity introduced by the many possible alternative measures of development have little payoff for the present purpose. Note also that perhaps the most exceptional country in Figure 3—Guyana, with its uncommonly large divergence between income per capita and human development due to recent oil revenue—is already subject to the *Broad* field classification by our method due to its other special circumstances.

That said, it would be easy and still relatively transparent to alter our proposed method by replacing the four World Bank income categories with the analogous HDI categories assigned by the United Nations each year: *Low, Middle, High,* and *Very High* human development. After setting the initial country classification by those categories, as in Figure 1, the method could proceed identically.

Conclusion

The Exchange Visitor Skills List, despite its 52-year history of being built principally by the choices of foreign governments, can be rebuilt as an instrument of United States policy written by the United States. We have proposed a detailed method to construct that list, resting on the principles that designation for the List must be simple, conservative, balanced, and humble. The new, proposed list that emerges from our method is sharply superior to the prior list in its capacity to implement the spirit and letter of the underlying statute.

Our proposal is highly flexible to policy design considerations. The quantitative criteria for 'underrepresentation' and 'high skill stocks', for example, can be easily fine-tuned. The measure of 'development', as discussed above, can be easily adjusted. The precise field categories on the *Broad*, *Narrow*, and *Minimal* list can be debated and adjusted. The list could be set for many years to come, as has been State Department practice over the last several decades, or it could be very easily updated with publicly-available data sources every few years, or even every year. ■

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[1] 8 USC 1182(e). Some types of visitors generally face the two-year home residency requirement regardless of their country of origin. These include visitors who are sponsored by the US government or by their home government, or clinical physicians (medical doctors whose visit involves patient care, rather than being exclusively devoted to nonclinical teaching, research, or observation). The J-1 Exchange Visitor Visa is a non-immigrant visa category in the United States, designed for individuals approved to participate in preapproved work- and study-based exchange visitor programs that promote international cooperation and mutual understanding. A 1977 law added foreign doctors completing residencies in the U.S. to the group of J-1 visa holders subject to the 2-year home residency requirement.

[2] The current list, created in 2009, is available at https://www.federalregister.gov/d/E9-9657.

[3] Non-technical summaries of the evolution of research in this area include Michael Clemens, "Skill Flow: A Fundamental Reconsideration of Skilled-Worker Mobility and Development," Washington, DC: Center for Global Development (2009), a background paper for the United Nations Development Program *Human Development Report 2009*; and Michael Clemens, "Losing our minds? New research directions on skilled emigration and development." *International Journal of Manpower* 37, no. 7 (2016): 1227-1248. See also Gibson, John and David McKenzie, "Eight Questions about Brain Drain." *Journal of Economic Perspectives* 25, no. 3 (2011): 107-128.

[4] White House, "Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence," October 30, 2023, at Section 5.1(b).

[5] Originally, the home residency requirement was the default condition under law. A 1961 statute made *all* migrants with a J-1 visa subject to the requirement for two years of home country physical presence (Pub. L. No. 87-256 [September 21, 1961] at Section 109(c), creating new sections 1101(a)(15)(J) and 1182(e) of 8 U.S.C.). This was pointedly reversed by a 1970 legal reform that removed the two-year home residency requirement for all J-1 visa recipients *unless* they met the exceptional conditions of government sponsorship or were developing skills "clearly required" by the home country (Pub. L. No. 91-225 [April 7, 1970] at Section 2, revising Section 1182(e) of 8 U.S.C.). This evolution clarifies that the 1970 does, and was intended to, make the default condition that of eligibility to apply for a visa to remain in the United States. There is no burden to prove that migrants' skills are *not* required.

[6] "*For the current 2025 fiscal year, low-income economies are defined as those with a GNI per capita, calculated using the World Bank Atlas method* [not PPP]*, of $1,145 or less in 2023; lower middle-income economies are those with a GNI per capita between $1,146 and $4,515; upper middle-income economies are those with a GNI per capita between $4,516 and $14,005; high-income economies are those with more than a GNI per capita of $14,005.*" (Source)

[7] To fit the administrative requirements of the Skills List, "countries" are defined as nationalities—a migrant from Curação is assigned the "country" of the Netherlands. The United States does not currently accept documents issued by Taiwan as establishing a separate nationality for visa purposes; it does recognize documents issued by the Palestinian Authority. We reflect that policy in our assignment of these migrants, respectively, to the "country" China and the "country" Palestinian Territories. Alternative designations would complicate the administrative feasibility of the List.

[8] The World Bank also allows selected countries that do not fit this definition but face related challenges, such as Guinea-Bissau, to join its Small States Forum.

[9] This includes countries for which the tertiary-educated diaspora is too small for any people of that education level and country of birth to appear in the ACS samples. The sample we use here is the pooled sample for 2018–2022, the most recent available at the time of writing through IPUMS USA.

[10] An expert review of macro research offers suggestive evidence that net benefits diminish when skilled departure rates are well over 10 percent (Docquier, Frédéric, "The Brain Drain from Developing Countries," *IZA World of Labor* 31 (2014). One particularly influential study presents suggestive evidence that net skills accumulation occurs when the skilled departure rate remains below 20 to 30 percent (Beine, Michel, Fréderic Docquier, and Cecily Oden-Defoort, "A Panel Data Analysis of the Brain Gain," *World Development* 39, no. 4 (2011), 523-532). We consider the departure rate to the US only, exclusive of other destination countries, because our purpose is to establish a policy rule for the US only. If most skilled emigrants from a given origin country go to non-US destination countries, by definition US policy cannot be a first-order determinant of the overall departure rate and its development effects.

[11] Evidence on the effect of skilled migration on technology diffusion to home countries includes: Kerr, William R. "Ethnic scientific communities and international technology diffusion." *Review of Economics and Statistics* 90, no. 3 (2008): 518-537; Bahar, Dany, and Hillel Rapoport. "Migration, knowledge diffusion and the comparative advantage of nations." *Economic Journal* 128, no. 612 (2018): F273-F305; Marta Prato (2024), "The Global Race for Talent: Brain Drain, Knowledge Transfer, and Economic Growth", *Quarterly Journal of Economics*, forthcoming; Valette, Jérôme. "Do migrants transfer productive knowledge back to their origin countries?" *Journal of Development Studies* 54, no. 9 (2018): 1637-1656.; Di Iasio, Valentina, and Ernest Miguelez. "The ties that bind and transform: knowledge remittances, relatedness and the direction of technical change." *Journal of Economic Geography* 22, no. 2 (2022): 423-448; Fackler, Thomas A., Yvonne Giesing, and Nadzeya Laurentsyeva. "Knowledge remittances: Does emigration foster innovation?" *Research Policy* 49, no. 9 (2020): 103863; AnnaLee Saxanian, *The New Argonauts: Regional Advantage in a Global Economy*, Harvard University Press (2007); Hillel Rapoport (2019) "Diaspora Externalities." *IZA Journal of Development and Migration*, Vol.10 (Issue 2); Fang, Tony, and Alex Wells. "Diaspora Economics." In *Handbook of Labor, Human Resources and Population Economics*, pp. 1-23. Springer International Publishing, 2023; Maria Elo, "Diaspora networks in international business: a review on an emerging stream of research", in Jorma Larimo, Niina Nummela, and Tuija Mainela eds., *Handbook on International Alliance and Network Research*, 13–41 (2015). Evidence on the effect of skilled migration on human capital formation includes: Batista, Catia, Aitor Lacuesta, and Pedro C. Vicente, "Testing the 'Brain Gain' Hypothesis: Micro Evidence from Cape Verde." *Journal of Development Economics* 97, no. 1 (2012): 32-45; Chand, Satish and Michael Clemens, "Human Capital Investment Under Exit Options: Evidence from a Natural Quasi-Experiment." *Journal of Development Economics* 163 (2023): 103-112; Abarcar, Paolo and Caroline Theoharides, "Medical Worker Migration and Origin-Country Human Capital: Evidence from U.S. Visa Policy," *Review of Economics and Statistics* 106, no.1

(2024):20-35. Evidence on the role of skilled migration in fostering foreign direct investment includes: Javorcik, Beata S., Çağlar Özden, Mariana Spatareanu, and Cristina Neagu. "Migrant networks and foreign direct investment." *Journal of Development Economics* 94, no. 2 (2011): 231-241; Giovannetti, G., Santi, F. & Velucchi, M. "'Migrants know better': migrants' networks and FDI." *Econ. Polit.* 41, 85–121 (2024); Hernandez, Exequiel. "Finding a home away from home: Effects of immigrants on firms' foreign location choice and performance." *Administrative Science Quarterly* 59, no. 1 (2014): 73-108. Evidence of the effect of skilled migration on trade includes: Aleksynska, Mariya, and Giovanni Peri. "Isolating the network effect of immigrants on trade." *The World Economy* 37, no. 3 (2014): 434-455.

[12] Foster, Vivien, Nisan Gorgulu, Stéphane Straub, and Maria Vagliasindi. *The Impact of Infrastructure on Development Outcomes*. Washington, DC: World Bank, 2023; Food and Agriculture Organization of the United Nations. *Transforming food and agriculture to achieve the SDGs: 20 interconnected actions to guide decision-makers*, Rome: FAO (2018); UNESCO (2017), *Education for Sustainable Development Goals: Learning Objectives*; World Health Organization (2020), *Global strategy on human resources for health: Workforce 2030*.

[13] No country rises to fraction 1.0 on the vertical axis because even among countries that listed a large number of fields, certain fields were chosen by no countries at all, such as all the four-digit subfields under the two-digit classification of "Military Technologies" (29).

[14] Michael Clemens, Jeremy Neufeld, and Amy Nice (2024), "Expelling Excellence: Exchange Visitor restrictions on high-skill migrants in the United States", Policy Paper, Washington, DC: Institute for Progress.

[15] Clemens, Neufeld, and Nice (2024) write, "This criterion for 'high skill' worker categories comprises the following. *Professors*, *Research Scholars*, and *Short-Term Scholars* typically hold advanced degrees and are carrying out basic research or university-level teaching in the United States. *Specialists* are defined by the State Department as 'experts in a field of specialized knowledge or skill'. *Physicians* are medical doctors in non-clinical roles of observation, teaching, or research.[15] *Teachers* hold a university degree in their field. *Trainees* have either a university degree or several years of experience in a specialized field of knowledge. *College and university students* are studying in the US for an undergraduate or advanced degree, or are in the US fulfilling academic requirements for an overseas university degree. *Interns* are engaged in or have recently completed a foreign university degree. *International Visitors* are defined by the State Department as 'recognized or potential leaders in a field of specialized knowledge or skill'. *Government Visitors* are 'influential or distinguished' workers in foreign governments."

[16] Divyansh Kaushik, "Unlocking American Competitiveness: Understanding The Reshaped Visa Policies Under The AI Executive Order", Federation of American Scientists, 2023; Divyansh Kaushik and Mark Sykes, "State Department Must Urgently Update The Exchange Visitor Skills List To Safeguard American Interests", FAS 2023.

[17] Zwetsloot, Remco, Jacob Feldgoise, and James Dunham. "Trends in US intention-to-stay rates of international Ph. D. graduates across nationality and STEM fields." Center for Security and Emerging Technology (2020).

[18] Braga, Breno, Gaurav Khanna, and Sarah Turner. "Migration Policy and the Supply of Foreign Physicians: Evidence from the Conrad 30 Waiver Program." No. w32005. National Bureau of Economic Research, 2024.

[19] Sey, Araba, Chris Coward, Chris Rothschild, Melody Clark, and Lucas Koepke. "Public libraries connecting people for development: Findings from the Global Impact Study." (2013), Technology and Social Change Group, Information School, University of Washington.

[20] See endnote 5, above.

[21] 8 USC 1182.

[22] The Universal Declaration of Human Rights (Article 13.2) guarantees a right to leave one's country, unconditional on level of skill, field of study, or duration of sojourn. This principle is not considered binding international law, but has been accepted by the United States since 1948 and likewise suggests a default that allows mobility in the absence of exceptional circumstances.

[23] Comyn, Paul, and Olga Strietska-Ilina, eds. *Skills and jobs mismatches in low-and middle-income countries*. Geneva: International Labor Organization, 2019.

[24] Bello, Salvatore Lo, Maria Laura Sanchez Puerta, and Hernan Winkler. "From Ghana to America: The Skill Content of Jobs and Economic Development." (2019). Discussion Paper 12259, Bonn: IZA Institute of Labor Economics., Figures 4–5. See also: Bandiera, Oriana, Ahmed Elsayed, Anton Heil, and Andrea Smurra. "Economic Development and the Economic Development and the Organisation of Labour: Evidence from the Jobs of the World Project." *Journal of the European Economic Association* 20, no. 6 (2022): 2226-2270.

[25] McPake, Barbara, Akiko Maeda, Edson Correia Araújo, Christophe Lemiere, Atef El Maghraby, and Giorgio Cometto. "Why do health labour market forces matter?" *Bulletin of the World Health Org.* 91 (2013): 841-846.

[26] Lant Pritchett and Addison Lewis, "Economic growth is enough and only economic growth is enough", Working Paper, Blavatnik School of Government, Oxford University.

Appendix

For reference, below is the full set of possible two-digit field codes in CIP 2020.[27]

CIP Code	*Title*
01	Agricultural/animal/plant/veterinary Science and Related Fields
03	Natural Resources and Conservation
04	Architecture and Related Services
05	Area, Ethnic, Cultural, Gender, and Group Studies
09	Communication, Journalism, and Related Programs
10	Communications Technologies/technicians and Support Services
11	Computer and Information Sciences and Support Services
12	Culinary, Entertainment, and Personal Services
13	Education
14	Engineering
15	Engineering/engineering-related Technologies/technicians
16	Foreign Languages, Literatures, and Linguistics
19	Family and Consumer Sciences/human Sciences
22	Legal Professions and Studies
23	English Language and Literature/letters
24	Liberal Arts and Sciences, General Studies and Humanities
25	Library Science
26	Biological and Biomedical Sciences
27	Mathematics and Statistics
28	Military Science, Leadership and Operational Art
29	Military Technologies and Applied Sciences
30	Multi/interdisciplinary Studies
31	Parks, Recreation, Leisure, Fitness, and Kinesiology
32	Basic Skills and Developmental/remedial Education
33	Citizenship Activities
34	Health-related Knowledge and Skills
35	Interpersonal and Social Skills
36	Leisure and Recreational Activities
37	Personal Awareness and Self-improvement
38	Philosophy and Religious Studies
39	Theology and Religious Vocations
40	Physical Sciences
41	Science Technologies/technicians
42	Psychology
43	Homeland Security, Law Enforcement, Firefighting
44	Public Administration and Social Service Professions
45	Social Sciences
46	Construction Trades
47	Mechanic and Repair Technologies/technicians
48	Precision Production
49	Transportation and Materials Moving
50	Visual and Performing Arts
51	Health Professions and Related Programs
52	Business, Management, Marketing

53 High School/secondary Diplomas and Certificates
54 History
60 Non-Physician Residency/fellowship Programs (Nurse Practitioner, Pharmacy, Veterinary)
61 Physician Residency/fellowship Programs

[27] Note that the 2009 Skills List is defined by the earlier, 2010 revision of CIP, which is similar but not identical. Any new rule should be defined by the 2020 revision.