

## H-1B VISAS BY THE NUMBERS

### EXECUTIVE SUMMARY

The top 7 Indian-based companies received only 9,356 new H-1B petitions for initial employment in FY 2016, a surprising drop of 37 percent between FY 2015 and FY 2016, based on an analysis of government data obtained by the National Foundation for American Policy. The H-1B cases approved for initial employment in FY 2016 come from the FY 2017 H-1B “lottery” held in April 2016, which means these numbers reflect individuals who started working on a new H-1B petition in FY 2017. (FY 2017 began October 1, 2016.) The drop in new H-1B visas for Indian-based companies, which is expected to continue when data are released on cases filed in April 2017 for FY 2018 start dates, is due to industry trends toward digital services such as cloud computing and artificial intelligence, which require fewer workers, and a choice by companies to rely less on visas and to build up their domestic workforces in the U.S. H-1B petitions approved for initial employment in FY 2016 were filed by employers in April 2016, which means the drop in H-1B visa use by these companies is not due to Donald Trump’s election. The data are significant, since in the past U.S. policymakers have used the number of visas going to Indian-based companies as a political or policy reason to propose new immigration restrictions and to not raise the low annual supply of H-1B visas, which has been exhausted every year for the past 15 fiscal years.

Among the key findings in the report:

- The 9,356 new H-1B petitions for the top 7 Indian-based companies approved in FY 2016 represent only 0.006 percent of the U.S. labor force. That is a drop of 5,436 approved petitions (37 percent) for initial employment for the 7 companies from FY 2015. While the threat of job loss has long been exaggerated by critics, it reaches illogical proportions when discussing fewer than 10,000 workers in an economy that employs 160 million workers nationwide.
- The April 2017 unemployment rate in the U.S. for “computer and mathematical science” occupations was 2.5 percent – a very low rate, even lower than the 4.4 percent for “all occupations,” according to Bureau of Labor Statistics data. The unemployment rate for “architecture and engineering” occupations is even lower at 2.1 percent. This illustrates a disconnect between reality and claims that high-skilled foreign nationals are preventing U.S. workers from pursuing careers in tech fields. According to Code.org, Bureau of Labor Statistics data indicate there will be “1.4 million more software development jobs than applicants who can fill them by 2020...and there are more than 500,000 open computing jobs nationwide.” An analysis by Glassdoor shows 9 of the 10 highest paying majors for U.S. students 5 years out of college are in STEM (science, technology, engineering and math) fields.
- The number of approved new H-1B petitions for Tata Consultancy Services (TCS) declined by 56 percent from FY 2015 to FY 2016, from 4,674 to 2,040, a drop of 2,634. Wipro declined by 52 percent between FY 2015 and FY 2016, a drop of 1,605, going from 3,079 to 1,474 approved petitions for initial employment

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during those years. Infosys declined by 16 percent (or 454 petitions), with 2,376 approved H-1B petitions for initial employment in FY 2016, compared to 2,830 in FY 2015.

- In the past, implementing a software platform throughout a company required many information technology (IT) professionals, which was reflected in the higher use of visas. However, today, the global trend is for the corporate clients of IT services companies to demand digital engineering and more sophisticated services, including better data analysis, that require fewer workers and more advanced technology. These trends, along with increased hiring of U.S. workers by IT services companies, have escaped the notice of Congress and other policymakers, which have aimed more immigration restrictions at IT companies.
- Economists note that if policymakers want less “outsourcing,” then they should increase immigration. The more Congress and executive branch agencies restrict immigration, particularly the use of H-1B and L-1 visas, the more likely companies are to increase their investments outside the United States, both in their own offices and affiliates, and through contracting out to other companies. New restrictions on the ability of IT services companies to hire people on H-1B visa holders or transfer in employees with specialized knowledge will increase the amount of work that is performed outside the United States.
- An analysis of U.S. Citizenship and Immigration Services (USCIS) data on FY 2016 H-1B petitions shows, similar to FY 2015, approximately 25,000 different U.S. employers hired at least one high-skilled foreign national on a new H-1B petition in 2016. Employers in manufacturing include Tesla Motors with 108 approved new H-1B petitions and Cummins with 197. Uber had 121 approved H-1B petitions in FY 2016, eBay 115, and the Mayo Clinic 111.
- Among the top companies with new H-1B petitions approved in 2016 were Cognizant (3,949), Infosys (2,376), TCS (2,040), Accenture (1,889), IBM (1,608), Wipro (1,474), Amazon (1,416), Tech Mahindra (1,228), CapGemini (1,164), Microsoft (1,145), HCL America (1,041), Intel (1,030), Deloitte (985), Google (924), Larsen & Toubro (870), PricewaterhouseCoopers (713), Ernst & Young (649), Apple (631), Syntel (583), Facebook (472), Oracle (427), Cisco (380), Mindtree (327), Goldman Sachs (287), UST Global (283), JPMorganChase (271), IGATE (255), Stanford (221), Yahoo! (206) and KPMG (198).
- Given the anti-immigration and anti-H-1B visa background of the people awarded key positions on immigration policy in the Trump administration, one should expect restrictive policies towards employers attempting to hire high-skilled foreign nationals.

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- The major proposal in the “Buy American, Hire American” executive order was a tacit endorsement of changing the system of awarding H-1B petitions based on the “the most-skilled or highest-paid.” Currently when more H-1B applications are received than the number of petitions available – something that happens every year because of the demand for high-skilled labor – U.S. Citizenship and Immigration Services distributes H-1B petitions by lottery. New entrants to the labor market, such as international students who recently graduated from U.S. universities, cannot demand the highest salaries. That means an effort to change the system to one where only those with the highest salaries receive H-1B petitions could prevent international students from being able to stay and work in the United States after graduation. The best solution to ensure U.S. employers can retain “the most-skilled or highest-paid” foreign nationals is to raise the H-1B cap or to exempt more H-1B visa holders from the annual limit.
- During the background briefing on the “Buy American, Hire American” executive order, a Trump administration official told reporters that “about 80 percent of H-1B workers are paid less than the median wage in their fields.” This statistic is misleading as it relies on a Department of Labor database that includes multiple applications for the same individuals, since a new filing is generally required when an H-1B professional moves to a new area. That means it “double or triple counts anyone who works in more than one geographic location (primarily younger workers sent to multiple offices).” Moreover, it may not reflect what employers actually pay individual workers, only the minimum required to be listed for government filing purposes. The median salary in 2015 for H-1B computer-related recipients who have worked about three years (listed as “continuing employment” in DHS data) was about \$7,000 higher than the median salary in the industry.

H-1B temporary visas are important as they are typically the only practical way a high-skilled foreign national working abroad or an international student educated in the United States can work long-term in America. At U.S. universities, 77 percent of the full-time graduate students in electrical engineering and 71 percent in computer science are international students. Reforms to increase the labor mobility of H-1B visas, raise the employment-based green card quota and eliminate the per country limit would be welcome but are not currently on the agenda. New restrictions on high-skilled immigration are more likely. In today’s global economy, companies and high-skilled professionals possess many options. The United States should maintain an openness toward high-skilled immigration or those options likely will not be in America.

## WHAT ARE H-1B VISAS AND WHY DO THEY MATTER?

One reason U.S. employers petition for high-skilled foreign nationals is the reality of the labor market – 77 percent of the full-time graduate students at U.S. universities in electrical engineering and 71 percent in computer science are international students.<sup>1</sup> H-1B temporary visas are important because they generally represent the only practical way a high-skilled foreign national, whether an international student or individuals educated abroad, can work long-term in the United States.<sup>2</sup> One aspect of the immigration debate not well understood is that without H-1B visas there would be almost no way for high-skilled foreigners to be employed in the U.S. The process and wait times for employment-based immigrants (“green cards” for permanent residence) can take 18 months even if a category is not oversubscribed and for Indians, the primary source of high-skilled immigrants to the United States, the wait times can be from 6 to 10 years or even decades. That is because of the per country limit and the low annual quota of 140,000, which includes dependents, for employment-based green cards.<sup>3</sup> Approximately 25,000 employers in the U.S. hire at least one H-1B visa holder each year.<sup>4</sup>

**Table 1**  
**New H-1B Petitions in Context of the U.S. Labor Force**

<b>New H-1B Petitions as a Percentage of U.S. Labor Force (2016)</b>	<b>New H-1B Petitions for Top 7 Indian-based Company and as a Percentage of U.S. Labor Force (2016)</b>
0.07 percent	0.006 percent (9,356 new H-1B petitions approved)

Source: U.S. Citizenship and Immigration Services. Data for “initial” petitions approved in FY 2016. Additional calculations performed based on BLS data.

Employers of H-1B visa holders must observe complex rules to remain in compliance, including paying the higher of the prevailing wage or actual wage paid to “all other individuals with similar experience and qualifications for the specific employment in question.”<sup>5</sup> Foreign nationals generally must possess at least a B.A. or its equivalent and can work in the United States on short-term projects, for longer-term work or prior to receiving a green card (permanent residence). H-1B status can last for up to 6 years (with a renewal after three years) and can be extended

<sup>1</sup> National Science Foundation, Survey of Graduate Students and Postdoctorates in Science and Engineering, <https://ncesdata.nsf.gov/webcaspar/>. U.S. students include lawful permanent residents. If one includes part-time students, 67 percent of graduate students in electrical engineering and 57 percent in computer science are international students.

<sup>2</sup> Other visa categories have restrictions that limit their applicability to most high-skilled foreign nationals, such as an L-1 visa, which requires working abroad for a company for at least a year and then qualifying as a manager, executive or an employee with “specialized knowledge.”

<sup>3</sup> *Reforming America’s Legal Immigration System*, NFAP Policy Brief, National Foundation for American Policy, September 2015.

<sup>4</sup> Analysis of USCIS data.

<sup>5</sup> Section 212(n)(1) of the Immigration and Nationality Act.

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in one-year increments beyond that for those waiting for employment-based green cards.<sup>6</sup> New restrictions on H-1B visas could violate U.S. commitments under the General Agreement on Trade in Services (GATS).<sup>7</sup>

## H-1Bs FOR INDIAN-BASED COMPANIES HAVE DECLINED

The top 7 Indian-based companies received only 9,356 new H-1B petitions for initial employment in FY 2016, a drop of 37 percent between FY 2015 and FY 2016, based on an analysis by the National Foundation for American Policy.<sup>8</sup> These are petitions filed during the April 2016 H-1B filing period and approved in FY 2016 for individuals to start work October 1, 2016 (the start of Fiscal Year 2017). That represents a drop of 5,436 approved petitions for initial employment for the 7 companies from FY 2015. It also represents a drop of 7,217 new petitions (or 44 percent) for these 7 companies from FY 2014 to FY 2016, based on H-1B numbers reported for FY 2014.<sup>9</sup> The 9,356 new petitions approved for the top 7 Indian-based companies in FY 2016 represent only 0.006 percent of the U.S. labor force.

**Table 2**  
**New H-1B Petitions for Top 7 Indian-Based Companies: FY 2015 to 2016**

COMPANY	FY 2015	FY 2016	DECLINE FROM FY 2015
TCS	4,674	2,040	-2,634 (-56%)
Wipro	3,079	1,474	-1,605 (-52%)
Infosys	2,830	2,376	-454 (-16%)
Tech Mahindra	1,576	1,228	-348 (-22%)
HCL America	1,339	1,041	-298 (-22%)
Larsen & Toubro	830	870	+40 (+5%)
Mindtree	464	327	-137 (-30%)
<b>TOTAL</b>	<b>14,792</b>	<b>9,356</b>	<b>-5,436 (-37%)</b>

Source: U.S. Citizenship and Immigration Services; National Foundation for American Policy. Petitions approved for initial employment in FY 2015 and FY 2016.

The number of approved new H-1B petitions for Tata Consultancy Services (TCS) declined by 56 percent from FY 2015 to FY 2016, from 4,674 to 2,040, a drop of 2,634. Wipro declined by 52 percent between FY 2015 and FY 2016, a drop of 1,605, going from 3,079 to 1,474 approved petitions for initial employment during those years. Infosys declined by 16 percent (or 454 petitions), with 2,376 approved petitions for initial employment in FY 2016, compared to 2,830 in FY 2015. HCL America had 298 fewer new H-1B petitions approved in FY 2016 vs. FY 2015,

<sup>6</sup> Some background information on H-B visas in this analysis was adapted from Stuart Anderson, *Setting the Record Straight on High-Skilled Immigration*, NFAP Policy Brief, National Foundation for American Policy, August 2016. Individuals can in certain cases be extended in a three-year increment.

<sup>7</sup> Jochum Shore & Trossevin, *Legal Analysis: Proposed Changes to Skilled Worker Visa Laws Likely to Violate Major U.S. Trade Commitments*, National Foundation for American Policy, June 2010.

<sup>8</sup> All discussion of FY 2016 H-1B numbers in the report is based on NFAP analysis of data received from U.S. Citizenship and Immigration Services.

<sup>9</sup> USCIS data for selected companies for FY 2014 was reported in Haeyoun Park, "How Outsourcing Companies Are Gaming the Visa System," *New York Times*, November 10, 2015.

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while Larsen & Toubro had about 40 more new H-1B petitions approved in FY 2016.<sup>10</sup> Tech Mahindra had 348 fewer H-1B petitions approved for initial employment in FY 2016 than in FY 2015, a 22 percent decline. Mindtree had a 30 percent decline in FY 2016 from FY 2015, with 137 fewer approved initial petitions.

H-1B petitions approved for initial employment in FY 2016 were filed by employers in April 2016, which shows the drop in H-B visa use by these companies is not due to Donald Trump's election. Instead, the decline reflects, in part, industry trends, particularly digital services such as cloud computing and artificial intelligence, that require fewer people to service U.S. company clients. In the past, implementing an Oracle platform throughout a company, for example, required many information technology (IT) professionals, which was reflected in the higher use of visas. However, today, the global trend is for the corporate clients of both U.S. and Indian-based IT services companies to demand digital engineering and more sophisticated services, including better data analysis, that require fewer workers and more advanced technology. These trends have escaped the notice of Congress and many policymakers, which have aimed more visa restrictions at IT services companies.

A number of the companies have indicated they chose to become less reliant on visas and to focus more on building up their workforces with domestic workers inside the U.S., where they have had more success recruiting locally.<sup>11</sup> Such companies face the same competition for a limited pool of tech talent within the U.S. as other companies.

Anecdotal information gained from companies and public statements by executives indicate that a continued trend downward in new H-1B petitions for the largest Indian-based IT services company will be seen when data are released on cases filed in April 2017 for FY 2018 start dates. (The FY 2018 H-1B lottery was held in April 2017.) While the threat of job loss has long been exaggerated by critics, it reaches illogical proportions when discussing fewer than 10,000 workers in an economy that employs 160 million workers nationwide.

Senator Richard Durbin's statement in 2016 at a Congressional hearing that two Indian-based companies (TCS and Infosys) use "more than half" of the annual H-1B quota is shown to be untrue.<sup>12</sup> Those two companies combined in FY 2016 for 4,416 petitions approved for initial employment, or 5 percent of the 85,000 quota (65,000 plus 20,000 exemption). The top 7 Indian-based companies received 9,356 new H-1B petitions, 11 percent of the 85,000 quota in FY 2016. That would represent 9 percent of the 104,470 approved for initial employment in FY 2016 if one includes H-1Bs for universities and non-profit and governmental research institutes.

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<sup>10</sup> FY 2015 and FY 2016 numbers for Larsen & Toubro in this report include approved petitions for L&T Technology Services, its engineering services arm.

<sup>11</sup> Ananya Bhattacharya and Itika Sharma Punit, "Indian IT Firms Have Been Preparing for Changes in H-1B Visa Laws for Nearly a Decade," *Quartz India*, February 3, 2017.

<sup>12</sup> Statement by Senator Richard Durbin at "The Impact of High-Skilled Immigration on U.S. Workers," Subcommittee on Immigration and the National Interest, Senate Judiciary Committee, February 25, 2016.

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**Table 3**  
**H-1B VISAS ISSUED AGAINST THE CAP BY FISCAL YEAR**

<u>Year</u>	<u>CAP*</u>	<u>#Issued</u>	<u>#Unused</u>
1992	65,000	48,600	16,400
1993	65,000	61,600	3,400
1994	65,000	60,300	4,700
1995	65,000	54,200	10,800
1996	65,000	55,100	9,900
1997	65,000	65,000	0
1998	65,000	65,000	0
1999	115,000	115,000	0
2000	115,000	115,000	0
2001	195,000	163,600	31,400
2002	195,000	79,100	115,900
2003	195,000	78,000	117,000
2004	65,000	65,000	0
2005	65,000	65,000	0
2006	65,000	65,000	0
2007	65,000	65,000	0
2008	65,000	65,000	0
2009	65,000	65,000	0
2010	65,000	65,000	0
2011	65,000	65,000	0
2012	65,000	65,000	0
2013	65,000	65,000	0
2014	65,000	65,000	0
2015	65,000	65,000	0
2016	65,000	65,000	0
2017	65,000	65,000	0
2018	65,000	65,000	0

Source: Department of Homeland Security; National Foundation for American Policy.

\*Does not include exemptions from the cap. Exemptions from the cap include those hired by universities and non-profit research institutes and 20,000 individuals who received a master's degree or higher from a U.S. university.

## **H-1Bs EXHAUSTED 15 CONSECUTIVE FISCAL YEARS DUE TO LOW QUOTA, HIGH DEMAND FOR SKILLED TECHNICAL LABOR**

The low annual quota combined with the demand for high-skilled technical labor fueled by the World Wide Web, smartphones, mobile applications and social media has caused the supply of H-1B visas to be exhausted for the past 15 fiscal years (from FY 2004 through FY 2018). In April 2017, U.S. Citizenship and Immigration Services announced it received 199,000 applications for the FY 2018 H-1B limit, or 114,000 more applications than the 85,000 quota would permit. For FY 2017, 2016 and 2015, employers sent in, respectively, 236,000, 233,000 and 172,000 applications to USCIS.<sup>13</sup>

These application numbers underestimate the actual demand, since many employers have been discouraged from applying for H-1Bs due to the time, cost and low chance of success to gain an H-1B petition. As pointed out in previous NFAP research, the market has determined the use of H-1B visas.<sup>14</sup> When Congress raised the limit to 195,000 a year in FY 2002 and 2003, fewer than 80,000 petitions were approved against the cap in those years, leaving 230,000 H-1B visas unused in those two years. Companies did not hire more H-1Bs simply because the cap was higher in those years. (See Table 3.)

**Table 4**  
**Number of H-1B Applications Submitted in Recent Fiscal Years**

<b>Fiscal Year</b>	<b>Applications Received</b>	<b>Number of Applications in Excess of 85,000</b>
<b>2015</b>	172,000	87,000
<b>2016</b>	233,000	148,000
<b>2017</b>	236,000	151,000
<b>2018</b>	199,000	114,000

Source: USCIS, National Foundation for American Policy.

## **H-1B VISAS REMAIN IMPORTANT TO EMPLOYERS ACROSS THE U.S. ECONOMY**

An analysis of U.S. Citizenship and Immigration Services data on H-1B petitions for initial employment approved in FY 2016 shows, similar to FY 2015, approximately 25,000 different U.S. employers hired at least one high-skilled foreign national on a new H-1B petition in 2016. Employers in manufacturing include Tesla Motors with 108 approved new H-1B petitions and Cummins with 197. Uber had 121 approved H-1B petitions in FY 2016, eBay 115, and the Mayo Clinic 111.

<sup>13</sup> Information from USCIS press releases on the H-1B filing period for FY 2015, 2016, 2017 and 2018.

<sup>14</sup> Stuart Anderson, *H-1B Visas Essential to Attracting and Retaining Talent in America*, NFAP Policy Brief, National Foundation for American Policy, May 2013.



**Table 5**  
**Top 30 Employers of New H-1B Approved Petitions (FY 2016)**

<b>EMPLOYER</b>	<b>New Approved H-1B Initial Petitions (FY 2016)</b>
<b>Cognizant</b>	3,949
<b>Infosys</b>	2,376
<b>TCS</b>	2,040
<b>Accenture</b>	1,889
<b>IBM</b>	1,608
<b>Wipro</b>	1,474
<b>Amazon</b>	1,416
<b>Tech Mahindra</b>	1,228
<b>CapGemini</b>	1,164
<b>Microsoft</b>	1,145
<b>HCL America</b>	1,041
<b>Intel</b>	1,030
<b>Deloitte</b>	985
<b>Google</b>	924
<b>Larsen &amp; Toubro</b>	870
<b>PricewaterhouseCoopers</b>	713
<b>Ernst &amp; Young</b>	649
<b>Apple</b>	631
<b>Syntel</b>	583
<b>Facebook</b>	472
<b>Oracle</b>	427
<b>Cisco</b>	380
<b>Mindtree</b>	327
<b>Goldman Sachs</b>	287
<b>UST Global</b>	283
<b>JPMorganChase</b>	271
<b>IGATE</b>	255
<b>Stanford</b>	221
<b>Yahoo!</b>	206
<b>KPMG</b>	198

Source: U.S. Citizenship and Immigration Services; National Foundation for American Policy. Petitions approved for initial employment in FY 2016. With the exception of Stanford, these numbers reflect employer filings in April 2016 that were approved during FY 2016 for H-1B beneficiaries starting work in FY 2017.

In addition, the same trend in servicing U.S. corporate clients with fewer people and with more advanced technology and technical solutions seems to be appearing, in general, across the IT services industry, although it may not show itself uniformly at this point in H-1B numbers due to differences among firms and clients, and could become more obvious in future years. Accenture saw a decline of 44 percent in new H-1B petitions approved between FY 2016

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and FY 2015, though the decline was not as large if measured against its reported numbers for FY 2014.<sup>15</sup> Syntel also saw a decline of 44 percent in new H-1Bs between FY 2016 and FY 2015. IGATE, an IT services company headquartered in Bridgewater, New Jersey, had a drop of 52 percent in new H-1Bs for FY 2016 vs. FY 2015. IGATE was acquired by CapGemini, a French multinational company, in 2015. CapGemini increased its new H-1B approvals from 548 in FY 2015 to 1,164 in FY 2016. IBM had a drop of new approved H-1B petitions from FY 2015 to FY 2016 (from 1,919 to 1,608), but its FY 2016 number was higher than its reported FY 2014 number by 146 petitions. Cognizant, an IT services company headquartered in Teaneck, New Jersey, had the most H-1B petitions approved for new employment in FY 2016 with 3,949. That represented a decline of 9 percent from reported numbers for Cognizant in FY 2014 (declining from 4,239 to 3,949), although it was higher than the FY 2015 number of 3,812.

Among the top companies with new H-1B petitions approved in 2016, after Cognizant (3,949), were Infosys (2,376), TCS (2,040), Accenture (1,889), IBM (1,608), Wipro (1,474), Amazon (1,416), Tech Mahindra (1,228), CapGemini (1,164), Microsoft (1,145), HCL America (1,041), Intel (1,030), Deloitte (985), Google (924), Larsen & Toubro (870), PricewaterhouseCoopers (713), Ernst & Young (649), Apple (631), Syntel (583), Facebook (472), Oracle (427), Cisco (380), Mindtree (327), Goldman Sachs (287), UST Global (283), JPMorganChase (271), IGATE (255), Stanford (221), Yahoo! (206) and KPMG (198).<sup>16</sup> The top companies largely reflect the strong demand for technology-related skills in the labor market and also the demand for information technology (IT) services, as U.S. companies continue to focus on core competencies and contract with firms to deliver specialized IT services, although, as noted, this is increasingly being accomplished with fewer personnel.

## **IF YOU WANT LESS OUTSOURCING, THEN INCREASE IMMIGRATION**

The more Congress and executive branch agencies restrict immigration, particularly the use of H-1B and L-1 visas, the more likely companies are to increase their investments outside the United States, both in their own offices and affiliates, and through contracting out to other companies. Nearly every major company in America, and many mid-sized companies, already has increased its presence outside the United States in response to immigration restrictions and other U.S. government policies, as well as to be closer to customers. Further increasing these investments may be a second best option but it seems unwise to believe it will not happen. New restrictions on the ability of IT services companies to hire people on H-1B visa holders or transfer in employees with specialized knowledge will increase the amount of work that is performed outside the United States.

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<sup>15</sup> Park, "How Outsourcing Companies Are Gaming the Visa System." This is the source for subsequent references to FY 2014 numbers.

<sup>16</sup> NFAP attempted to include listed subsidiaries of companies in the USCIS data and to avoid counting companies with similar names but that were not part of the same company. Cases filed in FY 2016 that were not approved until after October 1, 2016, would be accounted for in FY 2017 data, according to USCIS.

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Economists understand the dynamic between outsourcing and immigration. “If you’re worried about outsourcing, you should probably have a more liberal rather than a less liberal attitude toward immigration,” writes George Mason University economist Tyler Cowen. “If the United States takes in more immigrants, the areas in which those immigrants work are less likely to see jobs outsourced abroad. Immigration makes it possible to keep those jobs at home. In fact, the bigger a threat outsourcing becomes, the more important immigration is for keeping us competitive and for keeping other complementary jobs in place.”<sup>17</sup>

Some may argue that H-1B visa holders assist in the outsourcing process and thereby encourage it. However, this ignores that the on-site presence of any personnel, whether an American or an H-1B visa holder, is becoming increasingly less important during the transition phase to a new contract and service provider. In 2015, Citizens Bank of Rhode Island announced it would lay off 150 IT professionals as part of a restructuring that would include work to be performed outside the United States by a contractor. Unlike in cases that received media attention, since no foreign nationals were spotted at the bank during the transition to the new contract, nobody attempted to blame H-1B visa holders for the layoffs. “IT employees who were contacted say this ‘knowledge transfer’ is being accomplished remotely, over the Web and in teleconferences,” according to *Computerworld*.<sup>18</sup>

**INDICATORS ARE POSITIVE IN THE TECH JOB MARKET**

Individuals with degrees in high tech fields are highly sought in the U.S. job market. The Conference Board reports that technology and health care remain the two strongest sectors in the U.S. economy. Online ads in “computer and mathematical science” occupations increased by 16,900 in March, up to 524,800, according to The Conference Board. “The supply/demand rate is 0.26, almost four advertised openings per unemployed job-seeker,” according to its latest April report.<sup>19</sup>

**Table 6  
Unemployment Rate by Occupation Group (April 2017)**

OCCUPATION GROUP	UNEMPLOYMENT RATE (April 2017)
<b>Architecture and Engineering Occupations</b>	2.1 percent
<b>Computer and Mathematical Science Occupations</b>	2.5 percent
<b>All Occupations</b>	4.4 percent

Source: Tabulations from the Bureau of Labor Statistics April 2017 Current Population Survey Public Use file. All education levels.

Table 6 shows that the April 2017 unemployment rate for “computer and mathematical science” occupations was 2.5 percent – a very low rate, even lower than the 4.4 percent for “all occupations,” according to tabulations from

<sup>17</sup> Tyler Cowen, *Average is Over*, (New York: Dutton, 2013), p. 169.

<sup>18</sup> Patrick Thibodeau, “As it Sets IT layoffs, Citizens Bank Shifts Work to India Via Web,” *Computerworld*, August 13, 2015.

<sup>19</sup> “Online Job Ads Increased 102,000 in March,” News Release, The Conference Board, April 5, 2017. See also Stuart Anderson, “Three Things To Know About Today’s Job Market,” *Forbes*, April 22, 2017.

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the Bureau of Labor Statistics April 2017 Current Population Survey Public Use file.<sup>20</sup> The unemployment rate for “Architecture and engineering” occupations is even lower at 2.1 percent. While current unemployment rates should not be decisive factors in making long-term immigration policy, they point to a disconnect between reality and claims that high-skilled foreign nationals are preventing U.S. workers from pursuing careers in tech fields.

The U.S. Department of Labor is projecting a promising long-term outlook for high-tech careers. According to an analysis by Code.org, “The U.S. Bureau of Labor Statistics predicts there will be 1.4 million more software development jobs than applicants who can fill them by 2020,” notes *USA Today*. “There are more than 500,000 open computing jobs nationwide.”<sup>21</sup> Moreover, the newspaper reports, “Jobs that require a range of STEM skills (science, technology, engineering and math) claimed 14 spots in Glassdoor’s new ‘50 Best Jobs in America’ survey,” reported *USA Today*.<sup>22</sup>

**Table 7**  
**10 Highest Paying Majors (5 Years Out of College)**

<b>MAJOR</b>	<b>MEDIAN BASE SALARY</b>
<b>Computer Science</b>	\$70,000
<b>Electrical Engineering</b>	\$68,438
<b>Mechanical Engineering</b>	\$68,000
<b>Chemical Engineering</b>	\$65,000
<b>Industrial Engineering</b>	\$64,381
<b>Information Technology</b>	\$64,008
<b>Civil Engineering</b>	\$61,500
<b>Statistics</b>	\$60,000
<b>Nursing</b>	\$58,928
<b>Management Info. Sys.</b>	\$58,000

Source: Glassdoor.

High-skilled technical labor is needed at all companies today, not just “high-tech” companies. “The proliferation of technology-related jobs is due to those skills now being needed at businesses that don’t consider themselves traditional tech companies,” notes Andrew Chamberlain, chief economist at Glassdoor.<sup>23</sup>

In an indication of the demand for STEM (science, technology, engineering and math) degrees relative to other college majors, an analysis by Glassdoor showed 9 of the 10 highest paying majors 5 years out of college are in

<sup>20</sup> Tabulations from the Bureau of Labor Statistics April 2017 Current Population Survey Public Use file.

<sup>21</sup> Jon Swartz, “Businesses Say They Just Can’t Find the Right Tech Workers,” *USA Today*, March 28, 2017.

<sup>22</sup> Marco della Cava, “The Best of the Best U.S. Jobs are Tech, Tech and Tech, Again,” *USA Today*, January 24, 2017.

<sup>23</sup> Ibid.

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STEM. Nursing was the only exception, although it could be argued that it is a STEM field as well. Computer science and electrical engineering top the list.<sup>24</sup>

## **ARGUMENT ABOUT STEM GRADUATES OVERLOOKS TWELVE MILLION PEOPLE**

Given the significant overlap between personnel in the office of former Senator Jeff Sessions and the Trump administration it is not surprising the argument that implies millions of STEM graduates cannot find jobs in their field has not died. The former senator frequently used this argument. At a press briefing for the “Buy American, Hire American” executive order, a Trump administration official stated, “We graduate about twice as many STEM students each year as find jobs in STEM fields.”<sup>25</sup> This assertion has been refuted several times, including in prominent *Wall Street Journal* editorials.<sup>26</sup>

The implication that many millions of people in America with STEM degrees cannot find jobs that utilize their science or technology-related degrees and that, therefore, we should restrict immigration, is incorrect. As noted in earlier NFAP policy reports, the federal government’s definition of a STEM “occupation” is narrow and misses millions of people working in jobs where they use their science and engineering (S&E) degrees. For example, a professor of chemistry, even if he or she won the Nobel Prize, would *not* count as working in a STEM occupation. That individual would be categorized in Census data as a postsecondary teacher. A software designer who receives a promotion to management would no longer be listed as working in a STEM occupation. Tim Cook, the CEO of Apple, would not be included as working in a STEM occupation.<sup>27</sup>

“According to the 2013 National Survey of College Graduates (NSCG), nearly 17.7 million college graduates reported that their jobs required at least this level of technical expertise in one or more S&E fields; this figure is almost three times as large as the nearly 6 million college graduates employed in S&E occupations,” notes the National Science Foundation’s *Science and Engineering Indicators 2016*.<sup>28</sup>

That means *nearly 12 million people* with a STEM degree are not classified by the federal government as working in a STEM occupation even though these individuals report “their jobs required at least this level of technical expertise in one or more S&E fields.” Earlier in this report, NFAP listed unemployment rates by occupational category for illustrative purposes in response to arguments about immigrants preventing U.S. workers from gaining

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<sup>24</sup> Allison Berry, “50 Highest Paying College Majors,” Glassdoor, October 17, 2016.

<sup>25</sup> “Background Briefing on Buy American, Hire American Executive Order,” The White House, Office of the Press Secretary, April 17, 2017.

<sup>26</sup> “Scott Walker’s Labor Economics,” Review & Outlook, *The Wall Street Journal*, April 25, 2015; “The Sessions Complaint,” Review & Outlook, *The Wall Street Journal*, April 27, 2015.

<sup>27</sup> This section summarizes the discussion in Stuart Anderson, *Setting the Record Straight on High-Skilled Immigration*, NFAP Policy Brief, National Foundation for American Policy, August 2016.

<sup>28</sup> National Science Foundation’s *Science and Engineering Indicators 2016*, Chapter 3, p. 18.

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jobs. It was not used to indicate all tech jobs in America fall into such occupational categories. Arguing the STEM job market includes only those working in a STEM “occupation,” as some critics of H-1B visas have done, is misleading. It ignores almost 12 million people who use their degrees in the U.S. labor market.

**QUESTIONABLE ASSERTION ON H-1B WAGES**

During the background briefing on the “Buy American, Hire American” executive order a Trump administration official told reporters that “about 80 percent of H-1B workers are paid less than the median wage in their fields.”<sup>29</sup> As noted elsewhere, the “80 percent” statistic is also misleading.<sup>30</sup> It relies on a Department of Labor database that includes multiple applications for the same individuals, since a new filing is generally required when an H-1B professional moves to a new area. That means it “double or triple counts anyone who works in more than one geographic location (primarily younger workers sent to multiple offices).”<sup>31</sup>

In sum, an employer will likely file only one labor condition application (LCA) with the Department of Labor (DOL) for a senior engineer who will work in the company’s main office. But the employer would be required to file multiple applications for a younger worker who will be moved around to different offices throughout the year. In that way, the database would be skewed toward listing fewer higher-salaried senior workers as compared to younger workers – those most likely to be moved around and who make less money because they have less experience. That is why any statistic that relies on the DOL database, such as the 80 percent figure cited in the background briefing, can be misleading.

**Table 8**  
**Median Reported Salaries of H-1B and U.S. Workers: Systems Analysis, Programming, and Other Computer-Related Occupations**

Age Group	H-1B	U.S. Workers
20-29	\$60,000	\$58,000
30-39	\$70,000	\$70,000

Source: *H-1B Visa Program: Reforms Are Needed to Minimize the Risks and Costs of Current Program*, Government Accountability Office, GAO-11-26, January 2011, Table 1. Salaries are 2008.

<sup>29</sup> “Background Briefing on Buy American, Hire American Executive Order.”

<sup>30</sup> Stuart Anderson, “How Trump is Undermining High-Skilled Immigration,” *Washington Monthly*, May 2, 2017.

<sup>31</sup> *Ibid.*

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Here are a few points of comparison. The Government Accountability Office found H-1B professionals generally earn the *same* or *more* than their U.S. counterparts after comparing the median reported salaries of U.S. workers and H-1B professionals in the same fields and age groups.<sup>32</sup> In addition, the median salary in 2015 for H-1B computer-related recipients who have worked about three years (listed as “continuing employment” in DHS data) was about \$7,000 higher than the median salary in the industry.<sup>33</sup>

Another issue is that the wages listed in the DOL database are generally only the minimum that a company is required to pay under the law. Employers are required to pay the higher of the prevailing wage or actual wage paid to “all other individuals with similar experience and qualifications for the specific employment in question.”<sup>34</sup> That means wages listed in the DOL database typically understate an individual H-1B visa holder’s actual salary. Note also that 57 percent of H-1B visa holders approved for initial employment possess a master’s degree or higher.<sup>35</sup>

## **TRUMP ADMINISTRATION PERSONNEL AND POLICIES PORTEND TROUBLE FOR HIGH-TECH EMPLOYERS**

Although the Trump administration has pledged to reduce the regulatory burden on employers in general, its actions on immigration have been aimed at promising more regulation and increased administrative oversight of employers that hire high-skilled foreign nationals. The April 18, 2017, “Buy American and Hire American” presidential executive order required the Department of Labor and Department of Homeland Security to propose new regulations as needed to “protect” U.S. workers from H-1B visa holders.<sup>36</sup> Earlier that month, the Department of Justice, Department of Labor and U.S. Citizenship and Immigration and Services pledged to increase their scrutiny of U.S. companies that employ H-1B visa holders.<sup>37</sup>

Given the anti-immigration and anti-H-1B visa background of the people awarded key positions on immigration policy in the Trump administration, one should expect restrictive policies towards employers attempting to hire high-skilled foreign nationals. Key positions in charge of the administration’s immigration policy are filled by former staff people of Senators Jeff Sessions (R-AL) and Charles Grassley (R-IA), the Senate’s leading opponents of high-skilled immigration. Senator Sessions is the Attorney General and could direct legal actions against employers who

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<sup>32</sup> *H-1B Visa Program: Reforms Are Needed to Minimize the Risks and Costs of Current Program*, Government Accountability Office, GAO-11-26, January 2011. To conduct the research, the GAO analyzed Current Population Survey (CPS) data on U.S. workers and information on H-1B salaries from the U.S. Citizenship and Immigration Services (USCIS) CLAIMS database.

<sup>33</sup> *Characteristics of H-1B Specialty Occupation Workers*, Fiscal Year Annual Report to Congress, U.S. Citizenship and Immigration Services, Department of Homeland Security, March 17, 2016, Table 12; Bureau of Labor Statistics.

<sup>34</sup> Section 212(n)(1) of the Immigration and Nationality Act.

<sup>35</sup> *Ibid.*, Table 7.

<sup>36</sup> <https://www.whitehouse.gov/the-press-office/2017/04/18/presidential-executive-order-buy-american-and-hire-american>.

<sup>37</sup> <https://www.justice.gov/opa/pr/justice-department-cautions-employers-seeking-h-1b-visas-not-discriminate-against-us-workers>.

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hire foreign nationals. His former chief aide, Stephen Miller, is recognized as a driving force in the White House against immigration, assisted by White House chief strategist Steve Bannon, who criticized Asian and South Asian CEOs for running too many companies in Silicon Valley.<sup>38</sup> Former Grassley staffers are set to be director and chief of the Office of Policy and Strategy at U.S. Citizenship and Immigration Services.<sup>39</sup> The former executive director of the anti-immigration organization Federation for American Immigration Reform (FAIR) has been named the Ombudsman for USCIS, a position that was designed to serve as a watchdog for employers and applicants.<sup>40</sup>

None of these appointments or the policies that will be pursued should be surprising. A Donald Trump campaign document advocated ending all high-skilled immigration, at least for a period of time: “Before any new green cards are issued to foreign workers abroad, there will be a pause where employers will have to hire from the domestic pool of unemployed immigrant and native workers,” read the document.<sup>41</sup>

To justify new legislative or administration restrictions, critics will continue to cite the cases of Disney and Southern California Edison, where news stories alleged that companies laid off U.S. workers and replaced them with H-1B visa holders. A recent article in *Reason* sought to explain the background of these cases:

In these stories – and the same ones involving Disney or Southern California Edison have received repeated media attention, including recently on 60 Minutes – what is actually happening is that companies are focusing on their primary business line and contracting out functions considered either non-essential, underperforming or technologically out of date.

Everyone sympathizes with the U.S. workers at Disney and Southern California Edison who lost their jobs. The question is whether these personal misfortunes require changes in the law. After all, the U.S. Department of Labor reports that every year in America approximately *20 million people* are laid off or discharged from their jobs for all kinds of reasons.

I interviewed nearly a dozen advisers who evaluate bids and help companies figure out whether to contract out work and they confirmed the following:

*First*, companies decide whether to outsource and, therefore, on the need to make layoffs, before a contract is put out for bids, meaning they would be unlikely to know details like whether or to what extent visa holders will service the new contract.

*Second*, experts in outsourcing say companies are replacing the employees with new systems and technology, often with an offshore element, not making one-for-one replacements. H-1B visa holders generally play a limited, specialized role, primarily in gathering information from existing employees to help the transition from the old to the new contract, according to Alex Kozlov of the management

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<sup>38</sup> Frances Stead Sellers and David A. Fahrenthold, “Why let ‘em in?’ Understanding Bannon’s Worldview and the Policies That Follow,” *Washington Post*, January 31, 2017.

<sup>39</sup> Marcelo Rochabrun, “Trump’s Immigration Pick Attacked Obama Programs in Ghost-Written Senate Letters,” *ProPublica*, May 23, 2017.

<sup>40</sup> Marcelo Rochabrun, “Former Director of Anti-Immigration Group Set to Be Named Ombudsman at U.S. Immigration Agency,” *ProPublica*, April 28, 2017.

<sup>41</sup> “Immigration Reform That Will Make America Great Again,” Trump campaign document, 2016.



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consulting firm Alsbridge. So, experts say, whatever the appearance, the laid off employees are not actually training their foreign replacements, as is often alleged.

*Third*, new technologies, such as cloud computing and automation, affect far more jobs than anything related to foreign nationals on skilled visas.

There is no evidence to support the central claim of H-1B critics that Disney, Southern California Edison or other companies decided to lay off workers because they found a "loophole" in U.S. immigration law.

Consider what happened at Southern California Edison: Its decision to outsource, as *Computerworld* pointed out, was preceded by a highly critical outside management report that the company commissioned following a tragic shooting of two managers in its IT department in 2011. The report revealed "dysfunction" in the department, prompting the company to outsource its IT functions. Likewise, a source at Disney told me the 2014 decision simply continued Disney's long history of contracting out IT services, including a \$1.3 billion deal with IBM and Affiliated Computer Services back in 2005, nine years earlier, that resulted in a reported 1,000 layoffs.<sup>42</sup>

**AWARDING H-1B PETITIONS BASED ON SALARY COULD THREATEN AMERICA’S ABILITY TO RETAIN INTERNATIONAL STUDENTS POST-GRADUATION**

The major proposal in the “Buy American, Hire American” executive order was a tacit endorsement of changing the system of awarding H-1B petitions based on the “the most-skilled or highest-paid.” Currently when more H-1B applications are received than the number of petitions available – something that happens every year because of the demand for high-skilled labor – U.S. Citizenship and Immigration Services distributes H-1B petitions by lottery. It is unclear whether the Trump administration can change the system without legislation. The best solution to ensure U.S. employers can retain “the most-skilled or highest-paid” foreign nationals is to raise the H-1B cap or to exempt more H-1B visa holders from the cap.

**Table 9**  
**Full-time Graduate Students and the Percent of International Students by Field (2013)**

Field	Percent of International Students	Number of Full-time International Graduate Students	Number of Full-time U.S. Graduate Students
<b>Electrical Engineering</b>	77%	26,530	8,130
<b>Computer Science</b>	71%	27,787	11,481

Source: National Science Foundation, Survey of Graduate Students and Postdoctorates in Science and Engineering, <https://ncesdata.nsf.gov/webcaspar/>. U.S. students include lawful permanent residents.

<sup>42</sup> Stuart Anderson, “President Trump’s Executive Order Targeting Foreign Techies Will Hurt American Companies and Workers,” *Reason*, April 20, 2017.

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New entrants to the labor market, such as international students who recently graduated from U.S. universities, cannot demand the highest salaries. That means an effort to change the system to one where only those with the highest salaries receive H-1B petitions could prevent international students from staying in the United States after graduation, which may be what at least some Trump administration officials hope to accomplish. This would achieve through administrative action what former Senator (and now Attorney General) Jeff Sessions, whose staff, as noted, fills key Trump administration positions, sought to accomplish through legislation. The Sessions bill (S. 2394) would have required any international student with a master's or bachelor's degree to work 10 years outside the country before being able to work in the U.S. on an H-1B, which means they could not return to America until their mid-30s, after their careers were already firmly established in another country.<sup>43</sup> If international students cannot work in the United States after graduation, then it is likely they will be lost to America forever.

## CONCLUSION

The U.S. economy is not performing at its peak, though it is doing better than many other national economies. America's openness to immigration is a major reason. Labor force growth, productivity and entrepreneurship are crucial to economic growth and immigrants play an important role in all three.<sup>44</sup>

First, immigrant entrepreneurs contribute to America through innovation and job creation. "Immigrants play a key role in creating new, fast-growing companies, as evidenced by the prevalence of foreign-born founders and key personnel in the nation's leading privately-held companies," according to a National Foundation for American Policy study. "Immigrants have started more than half (44 of 87) of America's startup companies valued at \$1 billion or more and are key members of management or product development teams in over 70 percent (62 of 87) of these companies. The research finds that among the billion dollar startup companies, immigrant founders have created an average of approximately 760 jobs per company in the United States."<sup>45</sup>

Second, H-1B visa holders contribute to productivity growth. "When we aggregate at the national level, inflows of foreign STEM workers explain between 30% and 50% of the aggregate productivity growth that took place in the United States between 1990 and 2010," according to economists Giovanni Peri (UC, Davis), Kevin Shih (UC, Davis)

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<sup>43</sup> S. 2394, introduced in 2015.

<sup>44</sup> Paul Davidson, "Dallas Fed Chief: Immigration Crackdown Hurting Economy," *USA Today*, June 1, 2017.

<sup>45</sup> Stuart Anderson, *Immigrants and Billion Dollar Startups*, NFAP Policy Brief, National Foundation for American Policy, March 2016. "The research involved conducting interviews and gathering information on the 87 U.S. startup companies valued at over \$1 billion (as of January 1, 2016) that have yet to become publicly traded on the U.S. stock market and are tracked by *The Wall Street Journal* and Dow Jones VentureSource. The companies, all privately-held and with the potential to become publicly traded on the stock market, are today each valued at \$1 billion or more and have received venture capital (equity) financing."

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and Chad Sparber (Colgate University).<sup>46</sup> They concluded, “A 1 percentage point increase in the foreign STEM share of a city’s total employment increased the wage growth of native college-educated labor by about 7–8 percentage points.”<sup>47</sup>

Third, economist Madeline Zavodny, a professor of economics at Agnes Scott College analyzed the impact of H-1B visa holders on natives: “The findings here suggest that expanding the H-1B program for skilled temporary foreign workers would increase employment for U.S. natives.”<sup>48</sup> Examining the years 2001 to 2010, she concluded, “Each additional 100 approved H-1B workers being associated with an additional 183 jobs among U.S. natives” and wrote that the “results give clear evidence” that H-1B visas “correspond to greater job opportunities for U.S.-born workers.”<sup>49</sup>

Fourth, one of the surprising benefits of H-1B visa holders is their children. “75 percent – 30 out of 40 – of the finalists of the 2016 Intel Science Talent Search, the leading science competition for U.S. high school students, had parents who worked in America on H-1B visas,” reported an NFAP study. “That compares to 7 children who had both parents born in the United States. These outstanding children of immigrants would never have been in America if their parents had not been allowed into the U.S.”<sup>50</sup>

Other research has shown immigrants increase the number of patents awarded and that H-1B visa fees have funded 70,000 scholarships for U.S. students.<sup>51</sup> In today’s global economy, companies and high-skilled professionals possess many options. The United States should maintain an openness toward high-skilled immigration or those options likely will not be in America.

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<sup>46</sup> Giovanni Peri, Kevin Shih and Chad Sparber, “STEM workers, H-1B Visas and Productivity in U.S. Cities,” *Journal of Labor Economics*, vol. 33 No. S1. U.S. High-Skilled Immigration in the Global Economy (Part 2, July 2-2015), pp. S225-S255.

<sup>47</sup> *Ibid.* Emphasis added.

<sup>48</sup> Madeline Zavodny, *Immigration and American Jobs*, American Enterprise Institute and Partnership for a New American Economy, 2011, p. 5.

<sup>49</sup> *Ibid.*, p. 11.

<sup>50</sup> Stuart Anderson, *The Contributions of the Children of Immigrants to Science in America*, NFAP Policy Brief, National Foundation for American Policy, March 2017.

<sup>51</sup> William R. Kerr and William F. Lincoln, “The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention,” Harvard Business School, Working Paper, 09-005, 2009, p. 29-30; National Science Foundation.

## **ABOUT THE NATIONAL FOUNDATION FOR AMERICAN POLICY**

Established in 2003, the National Foundation for American Policy (NFAP) is a 501(c)(3) non-profit, non-partisan public policy research organization based in Arlington, Virginia, focusing on trade, immigration and related issues. The Advisory Board members include Columbia University economist Jagdish Bhagwati, former U.S. Senator and Energy Secretary Spencer Abraham, Ohio University economist Richard Vedder, former INS Commissioner James Ziglar and other prominent individuals. Over the past 24 months, NFAP's research has been written about in the *Wall Street Journal*, the *New York Times*, the *Washington Post*, and other major media outlets. The organization's reports can be found at [www.nfap.com](http://www.nfap.com).