Senate Judiciary Hearing
Immigration Reforms Needed to Protect
Skilled American Workers

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(letter to committee for the hearing)

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I have been writing about foreign tech workers for more than 20 years. Combining my background both as a computer science (and formerly statistics) professor, and as a former Silicon Valley software developer,[1] I believe I bring a unique perspective to the issue of immigration of foreign tech workers. Indeed, my views may differ slightly from those who testify at the hearing.

I will focus on the title of the hearing, "...Reforms Need to Protect Skilled American Workers." I don't advocate protectionism, and strongly support bringing in "the best and the brightest" from around the world. But the vast majority of H-1Bs — *including* those hired as foreign students at U.S. universities — are ordinary people doing ordinary work. I find that **the foreign worker programs cause Americans (U.S. citizen and permanent residents) to lose job opportunities and earn lower wages.**

Here I will state my views of what should, and also should NOT, be done to protect American workers, both from the point of view of the H-1B work visa and also, just as important, employer-sponsored green cards.

Problems That Need to be Solved:

Currently, employers find hiring H-1Bs attractive for three main reasons:

- Many employers give hiring preference to H-1Bs over Americans because the foreign workers are cheaper, especially in the sense that young H-1Bs cost less than older (age 35+) Americans. A GAO report found that 78% of the H-1Bs are under 35.

- The foreign workers are immobile if they are sponsored for a green card, thus making foreign workers more attractive than Americans to employers.

- It is convenient for employers to recruit workers among foreign students at U.S. universities, rather than more extensive searches to find Americans no longer in school.

In all three cases above, **well-qualified American tech workers lose**.

What Should NOT Be Done:

Many recent proposals in Congress would create special work visa and green card categories for foreign students pursuing Master's and PhD degrees in STEM at U.S. universities. This would be unwarranted and harmful. **I urge Congress to NOT enact such legislation.**

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[1] See bio, http://heather.cs.ucdavis.edu/matloff.html

I'll use "the Intels" to refer to the firms whose H-1Bs are primarily hired from among foreign students at U.S. universities, and refer to the IT services companys that hire directly from India as the "Infosyses." They key point is that **the visa/green card programs are abused just as widely by the "Intels" as by the "Infosyses."** [2]

Consider:

- The "Intels" often give hiring preference to foreign students over Americans. A vivid example of this is the Web site `http://hiref-1students.com`, in which **immigration attorney David Swaim blatantly extols giving hiring preference to foreign students**, due to their immobility during the long years of the green card process. Swaim's other Web page notes that he was the original architect of Texas Instruments' immigration policy.[3] TI, as you know, is one of the most strident voices on the Hill in terms of promoting the H-1B work visa.

- The foreign students not only serve as immobile *de facto* indentured servants, but they are also attractive to employers because they are YOUNG. Employers thus save in wage costs even if the foreign workers are paid the same as their young American peers, because young workers are cheaper.

  In addition, as noted, hiring foreign students offers the employers CONVENIENCE, "one-stop shopping," as opposed having to do extensive searches for qualified Americans, especially older ones.

  Thus the "Intels" tend to focus their recruitment efforts on new graduates.[4] When they run out of domestic new graduates, they turn to foreign new graduates, in order to avoid the older Americans.

- In the infamous "TubeGate" incident, a prominent immigration law firm was caught saying, concerning the green card process, "Remember, our goal is to NOT find a qualified American for the job."[5] Another video in the same series shows how to legally underpay foreign workers. Since the "Infosyses" only rarely sponsor their foreign workers for green cards, one can see that **abuse such as above is an "Intels" kind of abuse, not practiced by the "Infosyses."**

- According to the National Association of Colleges and Employers, starting salaries for new graduates in computer science are falling, NACE projects a 9% decline this year at the Bachelor's degree level.

  Recall that many proposals in Congress include special provisions for the foreign graduate students. In that light, consider the NACE figures for the Master's level: Down slightly this year from 2013, which in turn was down 8.7% from 2012.[6] In other words, **Master's degree wages are declining, contradicting the industry claim that there is a shortage at that level.**

  (Data for PhDs is not available, but it should be noted that only a very small percentage of H-1Bs hired by the "Intels" have a PhD. That percentage was 1.6% in 1999,[7], and industry people indicate to me that it is similar today.)

- Back in 1989, an internal paper at the National Science Foundation advocated giving special green cards to foreign STEM students, just as being proposed now.[8] The paper conceded that the resulting foreign influx would cause PhD wages in STEM to stagnate, which in turn would drive American students away from pursuing doctoral study. The green card proposal was not adopted, but the following year

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[2]The "Intels" do tend to hire a higher class of foreign worker, say with a Master's degree from a U.S. university rather than a Bachelor's degree from a school in India. But both types of firms are paying below-market rates for their respective worker classes.

[3]`http://tsalaw.com/why-hire-us/`

[4]See for example, The Corporate Perspective: Intels Approach to H-1Bs, Dawn Kawamoto, Dice.com, May 17, 2013.

[5]YouTube Video On Avoiding U.S. Job Applicants Angers Programmers: IT Professionals Criticize a Law Firm's Video Play-by-Play Description on How to Circumvent the PERM [green card] Process in Favor of H-1B Visas, Mary Hayes Weier, *InformationWeek*, June 18, 2007.

[6]See for instance `http://seriousjobseeker.blogspot.com/2013/11/salary-report-2013-national-association.html` and `https://www.naceweb.org/uploadedFiles/Content/static-assets/downloads/executive-summary/2015-january-salary-survey-executive-summary.pdf`

[7]See On the Need for Reform of the H-1B Nonimmigrant Work Visa in Computer-Related Occupations, University of Michigan Journal of Law Reform, Fall 2003, Vol. 36, Issue 4, 815-914, N. Matloff.

[8]See Eric Weinstein, *How and Why Government, Universities, and Industry Create Domestic Labor Shortages of Scientists and High-Tech Workers*, NBER, Harvard University, 1998.

Congress did enact H-1B, and just as forecast by the NSF, foreign students have come to dominate STEM graduate programs, especially in computer science.

We really don't need so many PhDs in computer science, but clearly the special green card programs now being proposed for foreign graduate students would have the same effect at the Master's level — **causing wages to stagnate and thus driving Americans away from pursuing MS degrees**.

- It is now common for PhDs in computer science to take post-doc positions, clearly indicating a **surplus of PhDs**. Cisco Vice President for Research Douglas Comer has stated, **"...a Ph.D. in computer science is probably a financial loser in both the short and long terms."**[9] The 2003 National Research Council report, commissioned by Congress, came to the same conclusion.[10]

- Because of the wage dynamics described by the NSF due to the influx of foreign STEM workers, it is now much more lucrative for an American student with a Bachelor's degree in STEM to pursue a professional degree in law, business or medicine than to attend STEM graduate school. As noted by Georgetown University's Anthony Carnevale, an expert on college education and careers, **"If you're a high math student in America, from a purely economic point of view, it's crazy to go into STEM."**[11]

- For most jobs in the computer field, completion of a graduate degree is typically not particularly useful. As we all know, Bill Gates, Steve Jobs, Mark Zuckerberg, Larry Ellison and so on never even finished their Bachelor's degrees. Nathan Myhrvold, Microsoft's former chief of research, has no computer science degree at all (his background is physics). Thus **immigration legislation based on graduate degrees does not make sense.**

- The harmful impact on American engineers arising from the hiring of foreign students in the electronics industry was described by UC Berkeley researchers as far back as 1998, and noted again in a 2009 book.[12] The 1998 paper stated (emphasis added),

  > ...high-tech engineers and managers have experienced lower wage growth than their counter-parts nationally. *Why hasnt the growth of high-tech wages kept up? Foreign students are an important part of the story. Approximately one-half of engineering Ph.D.s and one-third of engineering MSs were granted to foreign-born students in the mid-1990s.*

  The authors also describe the industry's emphasis on hiring young new graduates.[13]

- Research conducted by myself and (independently) by various NBER members[14] has shown that the average talent level of the foreign graduate students is lower than that of the Americans: They have lower per-capita patenting rates; they are less likely to work in R&D; they attend less prestigious universities; and so on. Since the foreign students have displaced the Americans, as predicted by the NSF, that means that on average, we have been replacing more talented STEM workers by less-talented ones — **a net loss to the American economy and well-being**.

- As can be seen above, the foreign influx, especially among those who first come here as students, reduces wages and job opportunities for Americans, thus **discouraging our own best and brightest from pursuing STEM careers**. This might be justified if the foreign workers were more talented than the

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[9] *Science Careers*, April 11, 2008.

[10] National Research Council, Building a Workforce for the Information Economy, National Academies Press, 2001.

[11] Jordan Weissmann blog, How Good Are the Job Prospects for Science Ph.D.s?, *Slate*, August 5, 2014.

[12] Clair Brown, Ben Campbell, and Greg Pinsonneault, *The Perceived Shortage of High-Tech Workers*. Working paper. University of California, Berkeley, 1998; *Clair Brown, and Greg Linden. 2009. Chips and Change: How Crisis Reshapes the Semiconductor Industry*, Cambridge, Mass.: MIT Press, 2009 p.132.

[13] The industry lobbyists claim that only the young new graduates know the newest technologies. But that is contradicted by the fact that they learn those new technologies from old professors like me.

[14] *Are Foreign Students the Best and Brightest? Data and Implications for Immigration Policy*, Norman Matloff, February 28, 2013; Bound, John, Sarah Turner, and Patrick Walsh. Internationalization of U.S. Doctorate Education, in R. Freeman and D. Goroff, eds., *The Science and Engineering Workforce in the United States*. National Bureau of Economic Research/University of Chicago Press, 2009; Jennifer Hunt. 2009. *Which Immigrants Are Most Innovative and Entrepreneurial?*, Working Paper #14920. National Bureau of Economic Research, 2009.

Americans, but we saw that that is not the case. It should be clear, then, that **a policy of giving immigration breaks to foreign students would be counterproductive.** None of our competitor nations would adopt such a policy.

What SHOULD Be Done:

I advocate a "mend it, don't end it" approach. The problems can actually be solved quite easily.

- Current law requires employers to pay H-1Bs at least an amount known as the *prevailing wage.* In spite of the name, it is typically well below the true market value of the worker. For instance, it does not take into account "hot" skills; an employer can hire an Android programmer for the price of a generic one — and be in full compliance with the law.

  Taking skill sets into account might be difficult to implement on a skill-by-skill basis, but the wage floor could be defined to be, say, the 75th percentile for the given occupation. Employers say that they hire H-1Bs for rare skill sets or unusual talent levels, so they should pay more.

- In order to deal with the problem of employers hiring young, cheap H-1Bs instead of older, more expensive Americans, we need to disband the current four-tiered system for determining prevailing wage, broken down by four experience levels.

- Current policy is to hold a lottery to award H-1B visas to employers. Instead, one could prioritize according to worker wage: The applications would be ranked by wage, and awarded in that order. This would solve the problem of employers using the H-1B program for cheap labor.

- It is important to take green cards out of the hands of the employers, who as mentioned use this to render their foreign workers immobile. I have proposed a longevity-based approach: If the worker can stay employed by one more more employers — at or above that 75th percentile level — for a certain number of years, he/she would be granted a green card.

- I have always strongly supported bringing in "the best and the brightest" from around the globe. As mentioned above, rather few of the foreign workers are in that league, but for the truly talented we should facilitate their immigration. The current EB-1 and National Interest Waiver green card categories should be liberalized somewhat.

- As discussed above, giving special treatment to new foreign graduates of American universities is unwarranted. Some would argue, though, that this would at least address the immobility problem. However, since the vast majority of those new foreign graduates would be young, it would exacerbate the rampant age discrimination problem in the tech field, i.e. again harm American workers.

Microsoft:

A good way to quickly understand the H-1B/green card issue with respect to the "Intels" category of employers is to look at Microsoft, the largest user of H-1Bs among the "Intels." Consider:

- Microsoft Senior Vice-President and Chief Technical Officer David Vaskevitch admitted that Microsoft hires very few older workers, and doesn't have many jobs suitable for them.[15]

- Microsoft claims that it hires foreign workers because insufficiently many Americans have the necessary training. It opened a facility in Vancouver, Canada, ostensibly because the of the "shortage" of H-1B visas. Yet it turned out that Microsoft was TRAINING its foreign software engineers there, something it had somehow not been doing in the U.S.[16] Subsequently Microsoft got the Canadian government to exempt them from a requirement that a firm may hire foreign workers only if it demonstrates insufficient

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[15]*Businessweek*, January 15, 2008.

[16]Vancouver, the New Tech Hub, Karen Weise, *Bloomberg Businessweek*, May 22, 2014.

numbers of qualified Canadians are available for the jobs.[17] The American H-1B visa does not have this requirement for general employers, and the industry lobbyists got such a provision removed from the Senate's Comprehensive Reform Bill in the last Congress.

- Similarly, at the same time Microsoft was claiming it needed more H-1Bs, with the grand-sounding goal to "keep jobs in the U.S.," internally it was urging its employees to "Pick something to offshore today."[18]

- In fact, Microsoft has a long track record of incorrect claims regarding H-1B. For instance, the firm claimed that it pays its H-1Bs "over $100,000 to start," a figure the firm later admitted was incorrect.[19]

- An EPI study found that Microsoft has a 93% acceptance rate for the job offers it extends, again contradicting Microsoft's claims that it can't hire people.[20]

- Microsoft has funded academic studies of pro-H-1B researchers and research organizations, notably Professor Giovanni Peri and the Brookings Institution. The Obama White House relied almost exclusively on Prof. Peri for its 2014 executive actions regarding both H-1B and unauthorized immigration, so blatantly that even the pro-immigration *Financial Times* raised an eyebrow:[21] Brookings, a major advocate of H-1B, has been accused of a "research for sale" policy,[22] Microsoft and the Bill and Melinda Gates Foundation have been among the most generous donors to Brookings, according to the latter's annual reports.

- Microsoft announced a mega-layoff of 15,000 workers in 2014. Granted, not all of those workers are engineers, and some engineering jobs are very specialized, but it remains true that many of those who were laid off could have done the jobs filled with H-1Bs by the firm.

Some Final Points

- Beware of plausible-sounding but quite misleading arguments concerning H-1B.

- One such argument is that employers can't be using H-1B for cheap labor, due to the legal fees they must pay. Yet the amounts employers save in wages over the 6+ years of the visa are far larger than the legal fees.

- Another such argument is to cite low unemployment rates for tech workers. The fallacy here is that the figures don't count the Americans who were forced out. The former engineer now working as a sales clerk at Radio Shack counts in government data as employed, but he/she is UNDERemployed.

- As mentioned, the "Intels" are just as culpable as the "Infosyses." Beware of arguments focusing on the latter, which though true are irrelevant. Yes, such firms do offshoring (though so do the "Intels"); yes, they are among the biggest users of the H-1B program; no, they don't often sponsor their workers for green cards. But all that is not germane to the issue of jobs for Americans.

  For instance, one argument is that such firms do a lot of offshoring. True but irrelevant — whether a job is filled by an H-1B in the U.S. or shipped overseas, either way it is a job not available to Americans. The impact on American workers — the theme of this hearing — is all that really counts, and *both* the "Intels" *and* the "Infosyses" are abusing the system, with serious adverse impacts on Americans.

- As noted, many pro-H-1B academic researchers are funded by the industry and lobbying groups, such as Microsoft and PNAE.

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[17] Foreign workers: Microsoft Gets Green Light from Ottawa for Foreign Trainees; Tech giant exempted from new rules for finding Canadians to fill jobs, Louise Elliott, *CBCNews*, December 13, 2014.

[18] Roberta L. Wilson, Deep Throat Move Over: Disgruntled IT Employees Expose All *WashTech News*, July 28, 2005.

[19] Microsoft Push for Worker Visas Raises Concerns, Exposes Loopholes, Kyung M. Song, *Seattle Times*, November 24, 2012.

[20] *STEM Labor Shortages? Microsoft Report Distorts Reality about Computing Occupations*, Daniel Costa, November 19, 2012.

[21] The Economic Effects of the Obama Immigration Order, *FT Alphaville*, Cardiff Garcia, November 21, 2014.

[22] At Fast-Growing Brookings, Donors May Have an Impact on Research Agenda, Tom Hamburger and Alexander Becker, October 30, 2014.