

CHAPTER 8 – HIRING THE FOREIGN NATIONAL SCIENTIST: AN INDUSTRIAL WORKFORCE NEED AND AN IMMIGRATION ISSUE

Ron Webb, Manager, Doctoral Recruiting & University Relations, The Procter & Gamble Co.

Editor’s Note: At the last moment, Dr. Webb was unable to attend the workshop, but he provided his presentation and notes for inclusion in these proceedings.


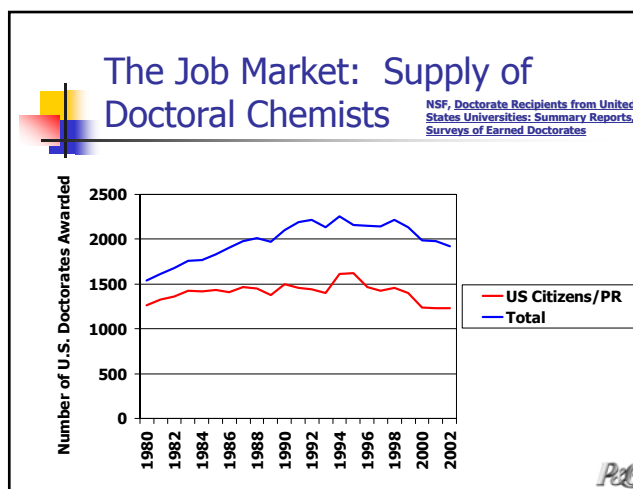
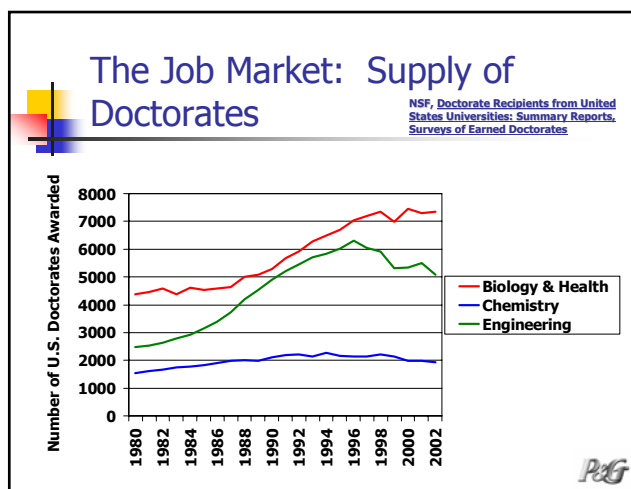
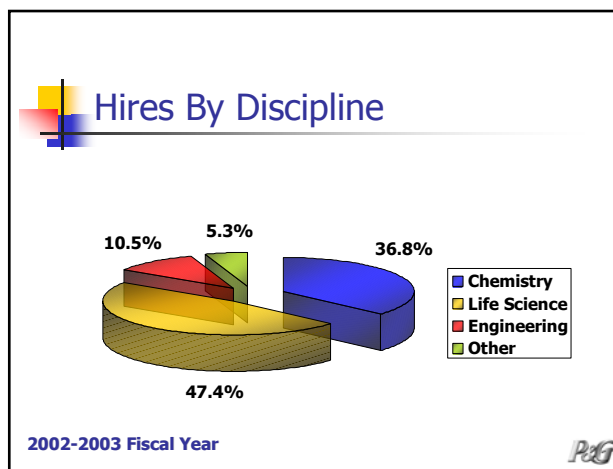
Procter & Gamble has a long-standing history of hiring a relatively large number of advanced-degree scientists. This has given us the opportunity to consider both U.S. citizens and permanent residents looking for work, as well as international students being degreed in the US who want to stay in the country for long-term employment.

P&G hires a wide variety of Ph.D. and other advanced-degree candidates, which thus provides a hiring perspective across a wide range of disciplines.

The NSF Survey of Earned Doctorates shows that the numbers of degrees awarded in the fields of biology and health (excluding agriculture) and in engineering have grown significantly over the last 20+ years. Engineering output has been declining since the mid 1990’s while the output in biology/health is slowing down. In contrast, the output of doctoral chemists over this time has been essentially flat.

Demand – A P&G Perspective

- P&G hires ~ 50 doctoral candidates each year in the US
 - Chemistry
 - Life Sciences
 - Engineering
 - Medical specialties (e.g., M.D., Pharm.D., D.V.M., D.D.S.)

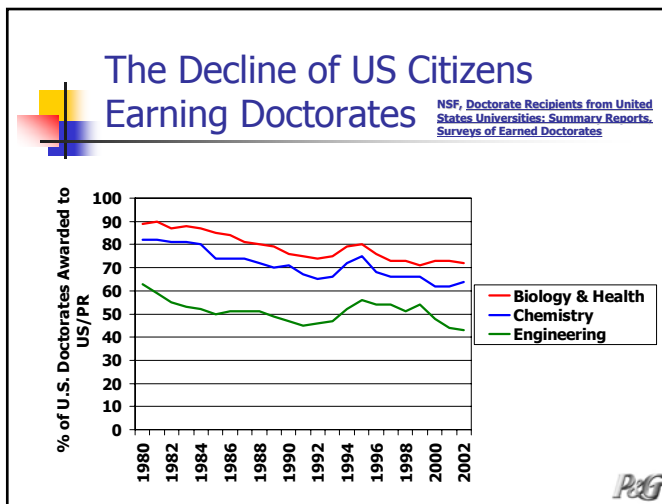
If we focus on doctoral chemist output since 1980 and compare the number of Ph.D.s awarded to U.S. citizens and permanent residents vs. those awarded in total, we see a growing gap over time. The gap reflects the number of advanced degrees in this field being awarded to international students. Said another way, the proportion of advanced degrees being awarded to U.S. citizens and permanent residents is shrinking over time. As an employer of Ph.D. chemists, this is a worrisome trend.

The slide to the right more clearly makes the point noted in the previous slide. It shows the percentage of PhD degrees awarded to the areas we have focused on over the same time range. Clearly there is a negative slope (decline in output), with a history of losing about 1% per year. Said another way, we now award 20 percent fewer doctorates in these fields to U.S. citizens and permanent residents than we did about 20 years ago.

Based upon such a perspective, I want to focus on the issues P&G faces in building/maintaining a competitive professional workforce.

We need to hire the best, including strong candidates who are not U.S.-born but in this country for their degree. Indeed, P&G does this and once hired we sponsor them for permanent residency status (i.e., obtain a green card). But, getting a green card these days is more difficult than it once was. The U.S. Citizenship and Immigration Service (USCIS) has changed their immigration policies, making it harder for foreign students to enter the country to begin with, and has rigorous standards by which green cards are awarded. In many cases, we must get a green card by convincing a state Department of Labor that we cannot find a U.S. citizen or permanent resident qualified to do the specific work. This requires six consecutive months of recruiting effort after a foreign national is hired. Not only is this rigorous in the absolute, but even more problematic in a slow economy, when unemployment rises.

The next slide shows immigration and labor issues.



What Are the Issues?


- Maintaining the ability to hire the best
 - This is not about anti-immigration
- Hiring and **retaining** the foreign national scientist can be problematic given immigration policies and practices
 - INS
 - State Labor Laws

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Immigration and Labor Issues

- Not all companies will hire the foreign national scientist
 - This further reduces the supply "pool" of US/PR for others to recruit
- Temporary work visas (H1B) are capped at a low number and do not last a fiscal year
 - Determines start date and this can exclude candidates
- Getting a Green Card (Permanent Residency) is not a trivial task
 - This impacts retention and can exclude candidates


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What Are the Issues?

- Understanding why fewer US students are pursuing an advanced degree in science & engineering
 - What is academe doing about it?
- Fewer international students are now applying for US graduate student positions
 - New visa hurdles in US vs. friendlier environments elsewhere
 - Changing landscape of international education and work opportunities
 - A quality and quantity issue

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The first bullet here points out that while the decline in U.S. students pursuing advanced degrees in science and engineering is a trend easily recognized within academia, I am unaware of what proactive steps academe is taking to turn this around. This needs attention.

The last bullet point highlights a compounding problem, namely that fewer international students are seeking advanced degrees in the U.S., relative to past interest. This, along with declining U.S. student interest, will lead to fewer advanced degrees overall being awarded in science and engineering unless we attract more U.S. students or lower the bar for admittance. Lowering the bar and thereby jeopardizing the quality of the output (the degreed individual) is not a viable solution.



The slide to the left embellishes the points made on the previous slide.

This presentation makes the case that the U.S. supply of future (“hireable”) doctoral scientists and engineers is problematic, based upon the details discussed. In a worst-case scenario, we could have a workforce supply outage and thus unable to find qualified candidates to do the work. If so, industry will be forced to find a solution.




What Are the Issues?

- Having a technically competent workforce by being able to hire the best available talent
 - Academic
 - Decreasing interest of US students to pursue science and math degrees
 - Past reliance on foreign-born students to fill this gap and go on to seek US jobs
 - Emerging strength of international academic institutions to attract top, in-country students
 - Lack of any (known) cohesive academic policy to deal with any of the above issues
 - Government
 - Worrisome trend of tighter, more restrictive US immigration policies vs. more open policies of other nations
 - Lack of strong government funding support for math and physical science

What Are the Issues?

- If we don't have an adequate number of US/PR scientists being degreed, and we also are losing the best international students, **where will the workforce come from?**
 - International sources?
 - Create the work overseas?



One option is to find a way to source talent from international institutions and employ them in the U.S. This will not be easy given the immigration issues we currently face, as previously discussed, but options such as employee transfer visas may be a solution. In this case the individual would begin work in an international site and transfer to the U.S. in due time.

A second option is to consider creating the work in our international research centers to begin with and having them source talent locally.