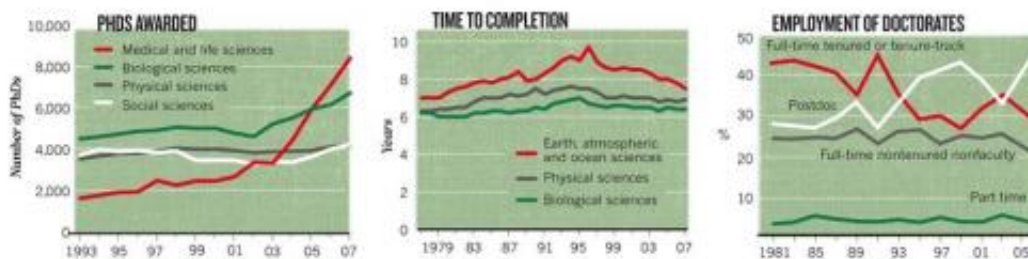


A time for a change in the PhD system

April 25 2011, by Deborah Braconnier

United States: What shall we do about all the PhDs?

The annual number of science and engineering doctorates graduating from US universities rose to almost 41,000 in 2007 (left), with the biggest growth in medical and life sciences. It took a median of 7.2 years to complete a science or engineering PhD (middle) — yet the proportion finding full time academic jobs within 1–3 years of graduating is dwindling (right).



SOURCE: SCIENCE AND ECONOMIC INDICATORS 2010 (via Nature, doi:10.1038/472276a)

(PhysOrg.com) -- According to a series of articles published in *Nature*, the world has too many PhDs and not enough academic jobs to sustain them. Researchers point out that it is either time to make changes in the system or eliminate it altogether.

While acquiring a PhD requires many years of study and tens of thousands of dollars, many are finding the opportunities of academia work or any type of employment in their field to be few and far between. Back in the 1980s, predictions of professor retirements and higher [college enrollment](#) led to a surge of new PhD students. However, this never happened and the need for more tenured professors was not able to keep up with the supply of PhD graduates, leaving many looking for employment in industrial, government, or not-for-profit sectors.

The United States and Japan are currently the worst for post-PhD employment. Of those receiving PhDs in biological sciences within the last five to six years, 13 percent have secured tenure-track positions, 10 percent are working part-time or unemployed, 33 percent are in other academic positions, 22 percent are working in industry and the remaining are working at [community colleges](#), government or non-profit positions. However, on the flipside, those obtaining PhDs in China are able to find jobs easily as their economy is booming and they have found the ability to provide jobs for those with PhDs.

According to Mark Taylor, the system for PhDs needs to be reformed or shut down. Universities are promoting their PhD programs in order to have the graduate students in the laboratories and as teaching assistants. This works as a benefit to the universities, but in the end provides no benefit to the graduate. The PhD programs have become too specialized in subfields and many find they are unable to talk to colleagues in the same general department because their knowledge is too specialized.

Taylor believes that in order for doctoral programs to keep up with the 21st century, they need to eliminate these specializations and move towards more cross-disciplinary knowledge. Curriculum should focus more on applying knowledge to practical problems providing real world solutions. Areas where programs are inadequate or redundant need to be eliminated. PhD students also need to be educated on the true job prospects acquiring a PhD will give them.

More information: Education: The PhD factory, Published online 20 April 2011 *Nature* 472, 276-279 (2011) [doi:10.1038/472276a](https://doi.org/10.1038/472276a)

Reform the PhD system or close it down, Published online 20 April 2011 *Nature* 472, 261 (2011) [doi:10.1038/472261a](https://doi.org/10.1038/472261a)

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