Friday links: s**t students write, do big name scientists have too much money, and more

Posted on May 10, 2013 by Jeremy Fox

From Jeremy:

S**t my students write: a Tumblr compilation of hilariously-bad passages from student essays. My favorite line: "Scientists are well educated and don’t make mistakes because they have their degrees and what not." Yup, that’s me: Jeremy Fox, Ph.D., A.W.N. 😊 I have to say, I’m glad my student days were almost behind me before the internet took off, so that all the amusingly-awful poetry I wrote in high school could only be mocked by my classmates rather than being immortalized on Tumblr. 😊

Canadian government continues to slash and burn basic science: with no warning, world-famous Bamfield Marine Science Centre just had its research budget cut by 1/3. A bunch of other major research facilities in all fields of science are getting cut too, in favor of increased funding for “applied” research relevant to industry. Funny how a conservative government that professes to believe in the power of unfettered free markets also believes that the government ought to intervene in the market by subsidizing the sort of industrial R&D that you’d think private business would pay for itself if it was really so relevant to them. And how they don’t want to pay for the sort of basic research and other public goods that the free market has never provided. Although, as The Monkey Cage notes, they might change their tune if they could be convinced that basic research will save us from giant space rocks. Or if basic research could be pitched as creating jobs in the districts of key legislators. Wonder why so many basic researchers are hypocrites when it comes to justifying public funding for their work? This is why.

Pell Grants for low-income students are actually making private US colleges and universities less affordable for those students. That’s because of the way the majority of US colleges and universities structure their tuition and financial aid packages, with the linked goals of making money and attracting “elite” students. Effectively, many colleges and universities are using Pell Grant money to help subsidize merit scholarships that mostly go to students from high-income families, while pricing themselves so as to avoid admitting too many really needy students. There’s an amazing interactive chart if you want to check the numbers for your own private college or university. I was reassured that my own undergraduate college, Williams, is among the few that do it right. Williams offers
sufficiently-generous need-based aid that the neediest students pay a low effective price, and has a relatively high proportion of highly-needy students in the student body. Although I was embarrassed to see that our biggest rival, Amherst, does better than we do. And I do wonder if both schools, and others like them, could be doing better still (further up and to the left in that interactive chart), and without even sacrificing student “merit”, by doing a better job of seeking out needy applicants. Many financially-needy students never even apply to places like Williams and Amherst, assuming (incorrectly) that they couldn’t afford them.

2-3% of NSF grant applications have “actionable plagiarism”, and the rate for applications from young investigators is 10-15%?! Is this true? Anyone have more info on this? (HT Retraction Watch, via Twitter)

Further to my post earlier this week on pseudoscience, here’s the text of physicist Richard Feynman’s classic speech on “cargo cult science”. It’s most famous for Feynman’s line “The first principle is that you must not fool yourself–and you are the easiest person to fool.” But the whole thing is well worth your time (HT to a commenter on Andrew Gelman’s blog).

The Lab and Field crunches the numbers and questions the value of Canada’s Excellence Research Chairs Program (a program to help Canadian universities attract big-name scientists). There are two problems with throwing huge amounts of money at small numbers of scientists. First, it’s risky—it amounts to putting all of your eggs in very few baskets. Second, after a certain point it’s surely inefficient, because those big-name scientists stop being money-limited and become time-limited. You’d get more bang for your buck if you gave that money to people who don’t have as much. And indeed, my former Oikos Blog colleague Chris Lortie compiled evidence that the most elite ecologists really do have more money than they can spend effectively, so that funding agencies would get more bang for their buck by reallocating funding away from the “ ecological 1%”. For additional discussion of how funding agencies should allocate their funding, with a focus on the virtues of the Canadian Discovery Grant program, see here and here.

As reported in Nature this week, a Rutgers University report has backed famed evolutionary biologist Robert Trivers’ arguments that one of his co-authors falsified the data in a famous Nature paper of theirs. I’ve discussed this case before (see comment thread here). The guilty party, psychologist William Brown, continues to protest his innocence on grounds that manage to be convenient, vague, and implausible all at once (Despite the fact that you were corresponding author, you lost the original hard copies of the data and your electronic copy inexplicably got corrupted, you say? Uh huh. And how long did it take your dog to recover after eating your homework?) Personally, I find Trivers’ evidence (which he self-published as a free book after failing to convince Nature to issue a detailed retraction) and the Rutgers report overwhelming. Worth noting that this is another case in which a graduate student’s attempts to reproduce published analyses led to discovery of fatal (and in this case, clearly intentional) flaws in the published work. Finally, kudos to Robert Trivers for setting a model example of what to do when you suspect that there’s something wrong with your data (and wrong with your collaborators).

You should’ve gotten your PhD in economics instead of whatever it is you actually studied.

Of course you can use the Price equation to model the evolution and adaptation of the entire universe. Which brings to mind an old Weird Al Yankovic lyric, “You can even cut a tin can with it…but you wouldn’t want to!” And I say that fondly—I’m a fan of the Price equation, and of the lead author of this paper.
And finally, a large brood of 17 year cicadas is about to emerge on the US east coast, and The Onion is on it.

From Meg:

Terry McGlynn has a new post on teaching philosophies. He has written it with someone who will be on the job market in mind, but I think it’s also useful for those of us (myself included) working on the teaching statement portion of a tenure dossier. I am starting mine off with a section on my teaching philosophy. Right now, I sum up my teaching philosophy as “students learn best when they are actively engaged with the material”, followed by examples of how I encourage students to engage with the material in different types of classes.

Evolutionary biologist Jeremy Yoder is surveying LGBT folks working in STEM fields. He says the goal of the survey is “to answer the questions we have about queer folks in STEM: who we are, what we study, and how our identities have shaped our interest in science and our experiences of working in research.” You can find the link to the survey in his blog post.

Here’s a great resource on gendered words and letters of recommendation. Studies indicate that we (and, yes, “we” includes women!) are more likely to use words related to teaching or working hard when describing women, and words related to ability and research when describing men. This page gives examples of these different types of words, and includes this excellent advice: “When writing letters of recommendation for women, it is important to keep these associations in mind and purposefully use standout, ability and research words to describe qualified female candidates.”
8 THOUGHTS ON “FRIDAY LINKS: S**T STUDENTS WRITE, DO BIG NAME SCIENTISTS HAVE TOO MUCH MONEY, AND MORE”

Benjamin Martin on May 10, 2013 at 3:43 pm said:

Re: You should have got a PhD in Economics…
Opps. I defend my PhD in Ecology in a month. I wonder what would be the quicker/ more likely path to a permanent position in my field, keeping on in ecology, or starting a PhD in Economics tomorrow. I fear the latter.

Jeremy Fox on May 10, 2013 at 3:56 pm said:

Yeah, my links include kind of a high proportion of depressing stuff this week. Sorry about that. There’s some cheerier stuff in the posting queue if it’s any consolation…

Robin Snyder on May 10, 2013 at 4:49 pm said:

Jeremy, how did you find a specific school in that interactive graphic?

Jeremy Fox on May 10, 2013 at 4:54 pm said:

You have to hover over the points to identify them, unfortunately. No search feature as far as I can tell. I found Williams and Amherst because I knew roughly where to look. The size of the point is proportional to endowment per student, so I knew that Williams and Amherst would be among the largest points.
If you’re looking for Case Western, I just stumbled across it: medium-sized blue point at about $18,000 on the x-axis and 22% on the y-axis.

Erik Verbruggen on May 10, 2013 at 7:33 pm said:

Regarding the gender associated words: I entirely agree that these biases should conciously be taken into account when writing a recommendation letter. However, for soliciting award- candidates I would find it a bit funny: if the goal of the award is not necessarily to select someone “meticulous”or “industrious”, but rather “creative” or “exceptional”, soliciting based on this list would change the meaning of the award. Perhaps there are other ways to stimulate female scientists to compete?

Sarah Boon on May 13, 2013 at 8:31 pm said:

Note The Lab & Field Post mentioned above was co-written by Watershed Moments. Definitely serious concerns about research funding in Canada. We see our future in the current US troubles, as eloquently outlined by Kate Clancy (http://blogs.scientificamerican.com/context-and-variation/2013/01/27/short-grant-rant-on-broken-promises/)

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