

JCS welcomes correspondence provoked by Sticky Wickets and other articles in the journal. Messages for Mole and other contributors to the Sticky Wicket column can be left at mole@biologists.com. Correspondence relating to other articles should be addressed to jcs@biologists.com.



Exploited students?

Dear Mole,

I regularly check your articles for an amusing dose of how cruel science can be. "To the Pain" (*J. Cell Sci.* **116**, 429-430) came close but then a pro-science piece, "What science is for" (*J. Cell Sci.* **116**, 1859-1860), negated this honest gesture, rehashing the propaganda we grad students always hear. How about a column from our point of view? A suitable title: "The well oiled propaganda machine", because science is ultimately a deceptive effort to get smart, naive and idealistic youth to join the ranks of a powerless, poor and exploited labor force.

You say: "We do science because of our deep desire to fundamentally change the world". Maybe you should have qualified 'we' as 'faculty', because students realize it's a one-sided deal that applies only to faculty, who don't have to roll up their sleeves and put their lives on hold every time a far-fetched idea has to be put to the test. Why not tell the truth? We are cheap labor at the mercy of the PI, will continue to be indentured

in that ever-expanding horde of postdocs and have an alarmingly small chance of landing a faculty position.

And why brainwash students with the idea that if we do anything other than academia we're losers not cut out for science? We *are* cut out for science: we're the ones actually doing it. PIs spend their time dreaming up grandiose models and see us as simply doing as we're told. Little do they know we filter out their ideas and come up with our own. Needless to say, when we're right, ownership of the idea somehow changes hands. We give up the prime of our lives to make *them* famous, secure *them* tenure, and all we get in return is spin and lip-service. I don't want to hear the excuse that PIs survived this back in the day and so can treat today's students similarly. Times are changing. Students now shore up in greater numbers to fill a shrinking number of faculty jobs. At my school, 5-10 grad students are admitted from a pool of >300 applicants, a representative fellowship awards one of 30 applications, and I hear 300-800 postdocs vie for every faculty job. And forget about spending evenings with the spouse and kids. Getting in with the boss is all about face

time: our idle physical presence past 8 pm glorifies the lab.

Grad students and postdocs are also the political pawns of professorial politics. When PIs scoop each other, shoot down or suppress papers, who pays the price? The first author. Our bosses are tenured and so spared. Here's the heart of the problem: PIs have everything to gain and nothing to lose by deceiving grad students about how science operates; grad students have little to gain but a significant portion of their lives to give. I won't deny that science is good for the world of PIs and laymen who don't actually do it. But what do you think about the chance to 'fundamentally change the world as we know it' now young rotation student?

[Name withheld]

Dear Reader,

Let me get right to the point, something I've said before: "Don't do science! Get a good job at a real business. You'll make much more money, and you won't have to worry about publishing papers or the perceived fame accruing to a PI at your expense. Why are you worried if tired old raggedy professors tell you that isn't what you should do? They're tired old raggedy professors, not captains of industry! Of course they think being an academic is great – it's what they do! Do

you think they gave up their careers as basketball stars to do this?

Science doesn't pay well, nor is there a compelling reason it should. People who provide a service that people want to pay a lot of money for make a lot of money doing it – like investment bankers. But science? We spend a lot of money. Our jobs are to turn highly valuable grant money into scientific publications read by a few other people who are trying to do the same thing. These don't generate money, not really. So who is supposed to provide the money to make your life better?

Apparently, you want to do science despite all this, but you don't like somebody else calling the shots. If your mentor's ideas are useless, but you feel you have to bow and scrape in order to get your degree, that's really just awful. But I have an idea: quit. Go do science at a company, where at least they pay you to do the things you're good at, and you have weekends off. Who says that's a bad thing? Not me.

As you say, times are changing: an awful lot of people now compete for relatively few positions. If more people took my advice and quit, then these terrible old useless professors would have to find a way to attract people to do the hard work for them. But, you say, PIs brainwash students into believing that the only thing they should do with their

time is slave to bring them (the PIs) glory and fame (such as it is) and that this is all to the students' benefit. Maybe you were brainwashed this way. But you know what? I don't want brainwashed robots working in my lab!

Some people treat students badly, and that's terrible. And the harsh reality is that the vast majority will not succeed as independent scientists. Some will quit; among these, some will nevertheless be happy that they spent some time doing science. Some will do science in other ways, editing journals, selling equipment and reagents, writing about science for the public. Others will do science in large companies, or small companies, or teeny companies. A few will go into academic science and settle down to teach or administrate. Even fewer will run labs that do research in an academic setting and, of these, a very small number will be successful. But don't for a moment think that these represent what everyone aspires to – most people prefer to get a life.

Nobody is twisting your arm. You think being a grad student in science is tough? Try being a grad student in literature or art history.

Mole

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Cell Science at a Glance

Cell Science at a Glance is included as a poster in the paper copy of the journal and available in several downloadable formats in the online version, which we encourage readers to download and use as slides. Contributions to this section include signalling pathways, phylogenetic trees, multiprotein complexes, useful reagents... and much more.

The JAK/STAT signaling pathway (March 2004)

Cell adhesion receptors in *C. elegans* (April 2004)

Polarity establishment in yeast (May 2004)

nNOS signalling (June 2004)

The Rb network (July 2004)

The matrix metalloproteinase family (August 2004)

We would like to encourage readers to submit ideas for future contributions to this section.

Potential Cell Science at a Glance articles should be addressed to the Executive Editor and sent to
Journal of Cell Science, 140 Cowley Rd, Cambridge, CB4 0DL, UK.