Learning more about academic life doesn't necessarily make one want to live it -- at least for junior scientists.

That's the conclusion of a study based on a national survey of science doctoral students at American research universities. As they progressed through their Ph.D. programs, the attractiveness of academic careers decreased significantly, according to the study, to be published today in the journal *PLoS ONE*.

The survey was conducted of more than 4,100 doctoral students in the life sciences, chemistry or physics.

The responses were analyzed in part based on what stage the graduate students were in their doctoral programs. And they were asked about the relative attractiveness of various kinds of academic and non-academic careers. For all three science disciplines, the share of doctoral students who view a faculty research career (in other words the kind of career their advisers have) as the most attractive option drops as they move from the early to later stages of their programs:

- From 57 percent to 50 percent in the life sciences.
- From 45 percent to 32 percent in chemistry.
- From 60 percent to 53 percent in physics.

The shifts appear to be related to an increased interest in industry work, not in teaching careers. In chemistry, for example, the percentage of grad students who consider college teaching careers attractive drops from 21 percent to 16 percent, while the attractiveness of industry careers increases from 23 percent to 37 percent.

The paper on the survey results notes an irony of these shifts: the grad students, across disciplines and stages of their careers, report that their advisers most strongly encourage the kinds of academic
careers that the students appear to be less likely to want.

The authors of the paper -- Henry Sauermann, assistant professor of management at the Georgia Institute of Technology, and Michael Roach, assistant professor of strategy and entrepreneurship at the University of North Carolina at Chapel Hill -- write that more research is needed on the mismatch between the advisers' encouragement and the evolving interests of grad students.

"The observed changes in career preferences may be beneficial if they reflect that students acquire more information about career options, potentially leading to better career decisions. However, a declining interest in a faculty research career may also imply a greater divergence between students' interests on the one hand, and the academic orientation of traditional Ph.D. curricula as well as advisor expectations on the other," they write.

Sauermann and Roach add that there are potential dangers to the divergence. "Such strong encouragement of academic careers may be dysfunctional if it exacerbates labor market imbalances or creates stress for students who feel that their career aspirations do not live up to the expectations of their advisers," they write. "In the context of prior findings that students feel well-informed about the characteristics of academic careers but less so about careers outside of academia, our results suggest that Ph.D. programs should more actively provide information and training experiences that allow students to learn about a broader range of career options, including those that are currently less encouraged."

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