

Why I Like Working in Academia

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When Alex Labrinidis asked me to write this essay, I initially balked. I was loathe to speak for academics world-wide, or even just those in SIGMOD. But I then realized that I could speak from personal experience. So these random musings will be of necessity entirely subjective, highly individualistic, and unrepresentative—attributes that a scholar normally attempts to vigorously avoid in his writing. I'm definitely not a "typical" academic (I don't know such an animal), but I can speak with some authority as to what motivates *me*.

As another caveat, I make few comparisons with alternatives such as working in a research lab or as a developer. I won't even attempt to speak for them.

The final caveat (distrust all commentaries that start with caveats, but perhaps more so those that don't!) is that my assumed audience comprises students who are considering such a profession. Current academics will find some of my observations trite or may disagree loudly, as academics are oft to do (see below).

That said, I have been an academic for exactly twenty years, and I deeply love the academic life. While I have consulted for and written papers with those away from the ivory tower, my professional life has been entirely as a professor. I went forthwith from undergraduate school to graduate school, then directly to the University of North Carolina, then to the University of Arizona, where I am happily ensconced.

I open with some disadvantages to this seemingly ideal life, then turn to the advantages. With each I start with those that I expected when I was a doctoral student, and then consider those I (naïvely or otherwise) was not aware of from that early vantage point.

Disadvantages

There are admittedly several disadvantages that come with this career path.

Salary Academics make less than equivalently trained counterparts in industry. The Computing Research Association (CRA) has been running the Taulbee Survey (www.cra.org/statistics) annually since 1974. This survey lists, among many other items, salary statistics. The CRA has done a similar survey of industrial salaries since 1997; see www.cra.org/statistics/industrial. The 1999–2000 Taulbee Survey pegs the average salary for Assistant Professors at \$69K, Associate Professors at \$77K, and (full) Professors at \$100K. (These are nine-month salaries; please see the survey for the exact definitions.) The industrial salary survey states comparable base salaries of \$100K, \$110K, and \$135K (12-month, for 4 years, 8 years, and 15 years of experience, respectively) and total compensation of \$125K, \$150K, and \$170K, respectively. Say that our average Professor has two summer months of grants (NSF restricts you to two; some granting agencies allow three); that person, at \$122K a year, will still be out almost \$50K a year in total compensation, which is a lot of money. (This is one of the few comparisons I will make; I do so here only because there is reliable data available.)

Grant Applications I assumed in the above analysis two summer months of grant funding. Of course, that funding is not automatic. One of the activities I most dislike is writing grant proposals. I keep telling myself that it is good for me: it forces me to develop a research strategy, it provides a literature review section for future papers, it provides concrete milestones for research. Nevertheless, I would be a happier camper if the granting agencies just gave me the money outright.

Committee Work Academic departments have a very flat management structure, organizational behavior jargon that translates into lots of committees. And being in a small department, which is otherwise delightful, inexorably implies a heavier committee load, because most committees are independent of department size. Back when I first joined Arizona and there were but twelve of us, we each had to serve on several committees. Officially, my service load is 20%, or one day a week, but I guarantee that my internal and external service has always exceeded that estimate.

There are other disadvantages that I *didn't* anticipate when I was interviewing for academic jobs back in '81.

Time Management An academic has three basic job responsibilities: teach, serve on committees, and perform research. Each of these areas has associated with it a raft of short-term, medium-term, and long-term tasks. A faculty member has to be able to adroitly context switch, and to balance short-term tasks against long-term goals. The immediate needs are continually clamoring for attention: a colleague wants to discuss equipment allocation, the lecture is tomorrow morning, a research assistant has hit a snag, the editor just sent a reminder that a review was due last week. The long-term goals only surface at a deadline, often when it is too late. The difficulty is to attend to these urgencies, but not at the exclusion of more protracted efforts. This tradeoff is made more vexing by the immediate gratification one feels when attending to the short-term demands (the lecture goes better, the research assistant gets back on track, the editor sends a thank-you note) and the realization that even a solid day's work might at best advance a long-term goal only a few percent. But faced with all of these pressing obligations, what may actually be the most important thing to do right now is to spend some time thinking about that grant proposal that is not due for another two months.

Students I have found that the difference between weak institutions and top institutions is *not* the presence or absence of strong students. Everyone has an anecdote of someone who arose from quite uninspired origins to achieve greatness. One of the undergraduates from our program, a top-thirty but decidedly not top-three computer science department, is now a CS professor at Stanford. Another of our undergraduates is the youngest chess Grand Master in the world. What differentiates institutions is the *distribution* of quality students: the better the institution, the more the distribution is skewed toward motivated, intelligent, capable students.

No matter where you go, there will be some bright students and some not-so-bright students. And quite frankly the chances are that those in the latter category will be numerous. What I was surprised to find was how much time the poorer students require. It is a real challenge, and often a real frustration, to reach the unprepared, the unmotivated, the uninterested. It is not realistic to assume, as I did, that you will teach at a school where the students are all just like you.

Plagiarism With poor students comes copying. I don't spend that much time dealing with such cases (I've had less than one per year), but each case of plagiarism is extremely offensive to me and painful to adjudicate, as is our responsibility as faculty.

Faculty Meetings Whoever said that "the time and passion devoted to a topic is inversely proportional to its import" was talking about faculty meetings. Richard Posner, in a commentary in the February 2002 issue of *The Atlantic Monthly*, observed the propensity of academics to make "obtuse, inconsequential, and insensitive statement[s]." And I'm not singling out my respected colleagues in this observation; many have mentioned the same phenomenon at their institutions, and I am just as guilty. Academics like to pontificate, putting faculty meetings on par with writing grant proposals.

Envy from Other Disciplines It is common when faculty from disparate disciplines intermingle, such as at doctoral defenses (at Arizona someone from outside the department is required to make sure the proceedings are fair), for history or physics or fine arts faculty to grouse about the unseemly salaries that those in some other disciplines (especially computer science, business, and medicine) receive. I have yet to come up with a suitable response that is witty, not condescending, and does not imply agreement with the world economic order (with which I do have some complaints), and yet which signals an annoyance at these sotto-voiced, petty complaints.

Tenure Tenure is a double-edged sword. It regularly burns young faculty out, extracting all joy they had for research. It also enables some faculty to abuse the system by doing little work with no fear of retribution, making the public jealous of professors (see salary, above). (I'll mention the more obvious pluses of tenure shortly.)

Assistant Professors have a limited time, about five and a half years (at least in public institutions), to identify important problems, perform high-quality research, publish that research, and have their contributions recognized by the community and impact others. This is an unfair expectation to put on anyone, and the pressures that such a requirement induces are extraordinary and harmful. Couple this with the biological clock, which regrettably is synchronized with these requirements for tenure, and a clearly untenable situation results. This is especially difficult for female academics and the spouses of female academics. My wife is now a chaired Professor of Marketing; we had our first child while she was untenured and both children while I was untenured. The stress was incredible and I'm just grateful that we both made it through to the other side.

Advantages

Not surprisingly, I find more advantages than disadvantages in being an academic. I list first those I expected.

A Dynamic Environment, Focused on Ideas It still gives me a visceral thrill to lecture in class about great ideas in databases (and there are many), or to discuss with colleagues an interesting innovation someone had just come across, or to be present when a student really gets something deep for the first time and becomes radiant with the joy of their insight. After all, the fundamental, defining notion of a University is a place where ideas are discovered, nurtured, and passed on to others.

Freedom The freedom to decide what areas to engage in research, how to structure my time, how much and what consulting to do, what specific topics to emphasize in my courses, where to work (at school, at home, when), and how to allocate my effort across service, teaching, and research, cannot be overstated. For those with families or elderly parents, there is flexibility to attend class plays, parent meetings, driving kids and parents to medical and other appointments, and taking off sick days, sometimes relegating quality research time to the 10pm to 2am interval.

These choices enable many allowable career arcs. Most at least initially focus on research, sometimes to the detriment of their courses and students. Some faculty in later years move into management: committee chair, department head. (Note to Dean: don't even think about it.) Few careers are fixed; the allocations vary over time, again, generally under the individual's control.

Tenure I've already listed some of the downsides of tenure, which reside mainly in the process of achieving it. *Having* tenure, on the other hand, is wonderful, in that it enables many of the freedoms just discussed. Tenure allows senior faculty to embark on risky projects that might take years for the benefits to become apparent. I made the dubious decision to write a book while an Assistant Professor, and I was always aware that that choice might have long-term negative ramifications. I utilized the stability implied by tenure to write subsequent books without worrying about whether it would cost me my job, as my research productivity could then withstand the short-term hit.

Sabbaticals Sabbaticals are an example where the theory really works: one *does* emerge refreshed and redirected after a year profitably spent rethinking what one is doing and why. Unfortunately, some schools haven't yet realized the significant advantages of regular sabbaticals.

Students There is a constant influx of students into every academic institution, and with it a continual infusion of new ideas, youthful enthusiasm, and relevance. I truly believe the cliché that "students keep you young."

More particularly, smart students with lots of time and ideas invigorate research projects. There is a real difference between the experience of working with undergrads, graduate students and postdocs and working solely with colleagues.

There is also the (too infrequent) thrill of actually making a difference to a student at an inflection point in his or her life. It is humbling to realize that students are in a very real sense putting their future into your hands.

Taking Courses A University has a vast array of courses, and faculty are often permitted to audit these courses. However, despite expecting fully to do so, I have never actually sat in on more than a lecture or two of someone else's course. Partly it is out of a sense of intellectual superiority over the other students in the class, partly it is out of a fear that that intellectual superiority may be fleeting or nonexistent, but mainly it is due to lack of time (see above). This is an anticipated advantage that never materialized.

I end with two advantages that I didn't initially perceive.

The School Year Every fall the academic year begins, with all of that excitement. Every December one gets a brief respite. Spring is occupied with surviving the onslaught of faculty recruiting and graduate admissions and holding out for summer, which is glorious in its large blocks of free time but way too short (even in August!). The cycle repeats itself every year, except for even more glorious sabbatical years, with larger blocks of free time but a too-long list of goals. The school year exhibits a delightful combination of regularity and change that never gets old.

Providing a Career Fernando Flores and John Gray, in their thought-provoking monograph, *Entrepreneurship and the wired life*, Demos, 2000, baldly state, "The career, as an institution, is in unavoidable decline." John Gray reprises this thesis in a November 2001 *CACM* article entitled "The End of Career," in which he defines a career as "a single vocation or occupation; [e.g.,] a woman trains in law school and becomes a lawyer for the rest of her working life." Most information technologists will have a variety of jobs and projects, but often that experience cannot be characterized as a linearly progressing career, as just defined. Flores and Gray go on to note that "Some professionals, such as judges and academics, have remained insulated from the forces rendering careers obsolete." And indeed, there is a reassuring stability and linear advancement in an academic life.

This is my highly idiosyncratic take on the drawbacks and high points I have experienced in academia. I look forward to subsequent articles in this series, from academics and non-academics alike, as they reflect on what they like about their jobs. And I thank Alex for this opportunity to look back and reassess my particular choices.

Biography

Richard T. Snodgrass joined the University of Arizona in 1989. He holds a B.A. degree in Physics from Carleton College and M.S. and Ph.D. degrees in Computer Science from Carnegie Mellon University. He is an ACM Fellow.

Richard Snodgrass is Editor-in-Chief of the *ACM Transactions on Database Systems*. He serves on the ACM Publications Board and the editorial board of the *International Journal on Very Large Databases*. He most recently chaired the Americas program committee for the 2001 International Conference on Very Large Databases. He was ACM SIGMOD Chair from 1997 to 2001. He noticed a dramatic decrease in his service load when those last two ended a few months ago.