

Commentary

Lessons learned from leaving academia

I've come to dislike the interview cliché, "Where do you see yourself in five years?" In 2014 I had just defended my dissertation in planetary geochemistry at the University of Colorado Boulder and was gearing up for a postdoc, the standard next step for a career in planetary science research. I certainly couldn't have guessed then that my next five years would include an asteroid mining company, unemployment, and an engineering consulting startup.

I've known since high school that I would become a scientist. I had long wanted to work on a NASA mission, and an internship at the Jet Propulsion Laboratory during graduate school confirmed that interest in spades. By the time I'd finished my PhD, however, I'd started to become disenchanted with academia. Early in graduate school, I realized a professorship wasn't for me, but the idea of relying heavily on grant money as a research scientist, the most probable alternative, for the rest of my career was not appealing either.

I brushed those feelings aside when I began a postdoc at the Carnegie Institution for Science, where I worked on NASA's *MESSENGER* mission to Mercury. Although I was living my dream as a NASA team member, I still wasn't enamored with the realities of being a re-



ELIZABETH FRANK, APPLIED PLANETARY SCIENTIST and author of this commentary, with a pallasite, her favorite meteorite type.

search scientist. I couldn't see spending my career pigeonholed into a narrow range of projects, having only papers to show as my primary deliverables, enduring the typically very slow rate of research progress, and writing proposals to pay my salary.

Unfortunately, I had had no exposure to career options beyond academia and no one to turn to on how to make that transition; my education had been tailored to students on an academic or research career trajectory. In preparation for a career transition, I spent much of my free time during my postdoc researching career options, studying the industry job search process, and networking. I hoped to be a good candidate when the right opportunity arose.

My hard work paid off. Immediately after my postdoc, I joined Planetary Resources Inc (PRI), the asteroid mining company, as a geospatial analyst. Initially I was supporting PRI's Earth observation campaign. When the company refocused on asteroids, I was promoted to director of data products. In that role I was the lead scientist on the development of an asteroid prospecting mission.

The pace of the work was dynamic,

the people became like family, and I was using my expertise and professional network in planetary science to address practical problems. I learned about spacecraft engineering and how companies operate, exposure few academic scientists get. The job wasn't perfect—none ever is—but I learned that, overall, industry offered a much better setting for what I want out of a job.

Given PRI's lofty goals and startup status, I knew going in that there was a risk the company would fail. That risk became reality when the entire staff was laid off in early 2018 due to a funding shortfall. The

time leading up to the layoffs had been incredibly stressful as well. Rather than searching for a job right away, I took a few months off to travel and decompress, a luxury I'd never had before.

In the meantime, 11 of my former coworkers founded an engineering consulting startup called First Mode. Six months later business was taking off, and I was invited to join the team. I had worked with these people at PRI, so there was no application or interview.

Now I'm an applied planetary scientist. I picked the title because it reflects that while I no longer do research, I still use my academic training. My work involves a mix of technical support, project management, and space business development. Working at any young company carries inherent risk, but the risk-to-reward ratio is worth it to me, whereas that of a soft money career was not.

The road to get here was hard won. To help make the journey easier for others, I offer three of the most important lessons I've learned.

► **Loving a subject is not the same as loving a job.** Those who pursue PhDs are typically driven by an innate curiosity about a particular topic. They tend to form their professional identity around

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that passion, self-identifying, for example, as a Mars expert or a dark-matter expert. Building a successful career in academia or research is so demanding that it can be difficult to disentangle your professional identity from your identity as a multifaceted human with a personal life.

I believe that the conflation of value and expertise is one reason for the stigma associated with leaving academia. Academics tend to internalize the message that if you are “good enough,” you’ll put up with any negative aspects of the career path. Deciding to take a different direction can lead to thoughts of inadequacy or incompetence, when really the issue is job fit.

Every job has its inanities: I left academia behind but the drudgery of unproductive teleconferences and a demanding email inbox remains. What I gained, however, is a fast pace, project diversity, and work products that feel more tangible and impactful than publications. The trick in finding the right job for you is to strike the balance between pros and cons, which are different for everyone. I still love planetary science, but I would not enjoy the day-to-day realities of being a professor or a research scientist—preparing lectures, grading papers, churning out proposals, writing papers. And that’s okay. Being passionate about a subject is not the same as being passionate about a job.

► **The framework for evaluation is different in nonacademic careers.** The fact that academics form their professional identities around their research is reflected in the curriculum vitae (CV), which is different in structure and intent from a résumé. A CV proves expertise by listing a person’s education, employment, grants awarded, publications, presentations, affiliations, and more. It is static in structure and simply grows in length with each new example of expertise. I’ve seen CVs from senior scientists and professors that were more than two dozen pages long.

With resumé, the intent is to demonstrate a person’s competence rather than expertise. A resumé should be no longer than two pages, detailing the person’s skills and—most importantly—the results they have obtained in each position. To show your potential value to a company or organization, a resumé’s content should be customized for the position you’re applying for. Most nonacademic job appli-

cations will require a resumé unless otherwise specified.

► **Leaving academia doesn’t make you a failure.** Innumerable career paths are open to those with a PhD besides being a professor or researcher, but the antiquated academic system continues to produce more trained academics than it can employ. Simultaneously, graduate students are not educated about nonacademic career options and opportunities.

Some people may leave academia willingly, like I did. Others may feel forced out because the job market is saturated: There simply are not enough academic jobs for the number of qualified applicants. Either case can leave a person with an internalized sense of failure even if they successfully chart a unique, non-traditional course.

For those considering alternate career paths, remember that you don’t have to justify your motivations to anyone but yourself. Any reason is sufficient as long as it’s yours. And you may not realize it, but to earn a PhD, you were trained in skills that can bring value to a future employer.

Although by all appearances I’ve done well for myself outside academia, unlearning a decade of messaging that my professional success is contingent on a traditional academic or research role has been difficult. I have never once regretted my decision to forge an alternative career path, and I continue to be grateful for the opportunities that have allowed me to stay involved in planetary science. I hope that by sharing my journey, I can inspire others to discover career paths that bring them joy and balance.

Now where do I see myself in five years? I have no idea, and I like it that way.

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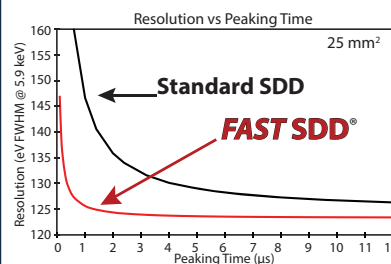
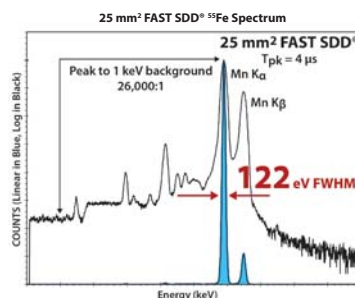
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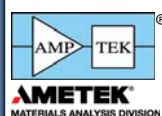


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