



Dear Labby,

I am a first-year graduate student and am just finishing my third lab rotation. I came to graduate school from a top undergraduate institution, with a 3.95 GPA. I ace'd the big, first-year grad course (known here as the "killer"). All three of my rotations were successful in that I got results. Yet, after all this, something doesn't feel right. I thought I was a scientist in the making because I am curious about the natural and physical world. Yet I am now scratching my head. Why am I still uncertain after these good rotation experiences?

—Rotating or Spinning?

Dear Rotating or Spinning?

Your query emphasizes the complexity of judging one's scientific aptitude once "in the chute." For some, winning their good share of high school science fair prizes and obtaining, at an early age, collections of butterflies or an (almost always explosive) array of chemicals seems to set them on a linear track. But for many other aspiring scientists there is something beyond academic talent (your impressive GPA) and passion (your stated curiosity about the world) that "just happens." This mysterious "other element" is not well understood. However, many successful scientists speak about a defining moment in the lab when something beyond the textbook, the classes, and even the experiment under way "took hold." That you feel uncertain after three positive lab rotations does need to be given due weight as you consider your career path.

The lab courses we take as undergraduates are no guide for the profession of science. Labby dropped a physical chemistry lab course the first day because our assignment was to calibrate a thermometer. This exercise could not have taught anything about fundamental laws; its only virtue was to demonstrate that the usual chemistry lab thermometers are inaccurate if one is trying to be Lord Kelvin.

Graduate school lab rotations are far better as professional guides, immersing a student into a real-world research experience. Although your rotations went well, they still may not have revealed what a scientist's life is like (being puzzled and frustrated most of the time). But your lab experience probably gave you a sound clue, one that is making you uneasy now.

Labby often asks students if they can "see" (in their mind's eye) the title of the paper they would write if their rotation project or Ph.D. research pans out; Labby poses this question before the first experiment is done. This is often met with astonishment, for it sounds like Carly Simon's great song "Anticipation" gone overboard. Make up the title before the first experiment is even done? But Labby believes that storytelling is at the heart of science. Some tell better stories than others, and some tell stories that should not be told, based on the data at hand. But the desire to get the necessary data to allow one to stand up and tell a story is a key element in the persona of many successful scientists.

Is this storytelling aptitude or passion uniquely enabling? Of course not. But your three rotations were successful by standard measures, and yet now you feel unease. Your experiments worked, and yet you feel unfulfilled. Did you envision this work as the substance of an in-house seminar? Labby asks this to emphasize that lab work itself is not the whole story. There needs to be a storyteller, and for scientific success, one needs to envision one's self as that storyteller.

Labby's initiation into science began with the realization one afternoon that making a sucrose gradient and setting up the tubes to collect it constituted more than a mechanical pleasure. Labby, then a lab technician, realized in some ill-defined endocrine, emotional, or intellectual way, that the very task was linked to the story that could be told *if* that gradient gave the hoped for results. The epiphany's details don't matter. However, one needs such an epiphany.

Listen to your heart. Know that your academic talent and passion provide you with more career options than ever before. If being a lab-based scientist doesn't feel right, perhaps communicating science to the public or defending its proper uses in a courtroom would. The world of K-12 science education reform is another exciting field that also has major potential for America. These are only some of several options available to a well-trained and passionate scientist.

You might want to plan on attending the Women in Cell Biology Committee's Career Discussion Lunch at the ASCB Annual Meeting in San Francisco this December. This lunch session will emphasize the full array of career options. But please stay in science, in whatever dimension you choose. ■

—Labby

Direct your questions to labby@ascb.org. Authors of questions chosen for publication may indicate whether or not they wish to be identified. Submissions may be edited for space and style.