The Early Career Section is a compilation of articles that provide information and suggestions for graduate students, job seekers, early career academics of all types, and those who mentor them. Angela Gibney serves as the editor of this section. Next month's theme will be planning ahead for the Joint Mathematics Meetings.

Work-Life Balance

The Two-Body Problem

Diane Maclagan

Finding one academic job can feel daunting enough, and finding two in the same location can feel impossible. However, many people have successfully solved this "two-body problem." This article summarizes some of our experience and advice.

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Perhaps the most important thing to remember here is that there are many different equally valid definitions of success, and you are the only person who gets to decide which definition applies to your life. You will definitely get conflicting advice on this topic if you ask enough people. There are trade-offs to the different approaches to this problem, and it's good to know what decision you are actually making.

Advice to Couples Looking for Jobs

- **Optimize for thirty years, not three years.** The years immediately following graduation have a large impact on your future trajectory. This is particularly true if you want a research career. Your opinions about what questions to work on and what mathematics is important will be highly influenced by the people you interact with during this time.

  Accepting the best postdoc offer you have will almost certainly increase your chances of a satisfactory permanent two-body solution.
- **Until you have a solution, you're a free agent.** One step on my own two-body solution was accepting a tenure-track job, while my about-to-be husband was offered a three-year postdoc. At the time we were optimistic: this was a good job, and there were a lot of other colleges and universities in a one-hour commuting radius. I was thus surprised when someone about five years ahead of me in this journey, when congratulating me on the new job, said, "So you'll be there three years, then." Having this at the back of my mind turned out to be helpful when it became clear later that he was correct and the best solution was to move. Have more loyalty to your career and your family than to your institution.
- **Accept that one of you might be hired as a "trailing spouse."** If the position is one you would have accepted if offered it first (e.g., if it's tenure-track, if that's what you are looking for), ignore how the offer is structured. In a few years almost all of your colleagues will have forgotten how you were hired (if they were even paying attention at the time). Any exceptions who bring it up are revealing more about themselves than about you.
- **Develop separate networks.** This is particularly important if you are in the same or adjacent fields. The easiest outcome for hiring is if two different groups in the department each want to hire a different one of you. If you are in the same field, still go to different conferences

and develop your own identity. If you are close enough mathematically to collaborate, by default prioritize separate projects; this makes it harder for people to artificially decide that one of you is stronger if you are at the same mathematical level. There are obvious exceptions to this rule; I know at least one couple who owe their career success to an early joint paper in the *Annals*. For most of us, though, relying on publishing in the *Annals* is a risky strategy!

- **Don't overdetermine the problem.** Decide what your true priorities are and leave everything else at least theoretically open. You may not know your true priorities at the start, so stay flexible. Apply to jobs you're not sure about; you can decide if you get an offer. Don't rule out locations (and countries) unless you're actually sure that they are leave-academia-level deal breakers. This also applies to living apart for short periods of time. This used to be almost compulsory to solve a two-body problem. While this is almost no one's first choice, there is a silver lining in focusing 100 percent on math midweek, and it being clear when you're in math mode and when you're in non-math mode.
- **Money buys options.** It's standard advice to continue to live like a graduate student after graduation for as long as you can bear. When you are trying to solve a two-body problem, those extra savings can buy extra time to solve the problem—by, for example, letting one of you take unpaid leave to spend a semester at the other person's institution if you have jobs at different places. Knowing that you have this option reduces some of the stress of the situation.
- **Your story is yours to tell.** We don't yet live in a perfect world. Don't reveal that you have a two-body problem before you feel comfortable, even if you get conflicting advice on this point. There are very few situations in which it makes sense to mention it before you have an interview arranged.

Advice to Departments Looking to Hire

- **Don't rule out hiring one member of a couple.** If you have only one position, don't rule out people who you've heard have a two-body problem on the assumption that they won't come, even if you're worried that you'll lose the position if that happens. You don't know their long-term career strategy. Next year the other body may look much more attractive, and you may have a new dean and unexpectedly more positions. The person you hire instead may leave for completely unrelated reasons. Two-body problems disproportionately affect women in mathematics, so letting two-body status influence your hiring means hiring fewer women.
- **Remember that you have all the power**. This can be hard to remember when you're worried about not hiring at all that year. It is unreasonable to expect someone to reveal all their cards before you've made them an offer. This is true even if you know that you are on a particular candidate's side; they have no way of knowing that they can trust you.

Advice for Mentors

- **Don't reveal information without consent.** See the comment above about not living in a perfect world. Do not mention two-body problems in your recommendation letters unless you've been explicitly asked to do so. This is true even if you think mentioning it makes the file stronger.

A Nonacademic Career Track and the Balance It Brings

Kelly B. Yancey

"Next to love, balance is the most important thing."
—John Wooden

Balance between career and the rest of life, a goal that is difficult to achieve, looks different for every person. My journey for balance started at the end of graduate school when my partner and I committed to "solving" our two-body problem.

In this article I outline the outcome of that commitment, specifically how I came to be a research staff member at the Center for Computing Sciences (CCS), working alongside my husband, and what my work-life balance looks like as I juggle two roles: an early-career mathematician working in industry and a new mom. I discuss strategies for solving the two-body problem outside academia and for returning to work after having a baby, and I'll discuss as well what I've learned in the process.

My Career Track and Two-Body Solution

Like many math couples, my husband and I met in graduate school; we married after our fourth year and went on the job market our fifth year. We made the decision that living apart was not for us and proceeded to apply to more than 120 postings each. I applied to academic positions exclusively, and he applied to a variety of mathematics research positions, mostly academic, but including the national labs, NSA, IDA, et cetera. In the end we were very fortunate in being able to solve our two-body problem, at least for the short term: he started as a (permanent) research staff member at the Center for Computing Sciences (CCS) in August 2013 at the same time that I became a postdoctoral researcher at the University of Maryland, College Park. As

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