

You Need a Game Plan

S sciencemag.org/careers/2012/09/you-need-game-plan

9/7/2012

This is the first article in a series designed to help you create an Individual Development Plan (IDP) using myIDP, a new Web-based career-planning tool created to help graduate students and postdocs in the sciences define and pursue their career goals. To learn more about myIDP and begin the career-planning process, please visit: <http://myidp.sciencecareers.org>.



Scientific careers are not like the board game Monopoly. In Monopoly, the rules are clear and it's relatively easy to succeed; in fact you get \$200 just for hanging in there long enough to pass "Go" on your way to the next round. But in science, it often seems there are no definite rules and there's no guaranteed payoff for advancing to the next training round: Ph.D., postdoc, second postdoc—then what? To succeed in science, you need to have a game plan. This is especially true in the current research environment.

Supplemented by the articles in this series, myIDP will help you identify the career goals that are right for you and develop a step-by-step plan to reach those goals.

Challenges facing today's doctoral trainees

For scientists, finishing a Ph.D. or postdoc and automatically moving on to a research-faculty position is no longer the norm. In fact, the share of all U.S. science and engineering doctorate recipients working in academe dropped from 55% to 44% between 1973 and 2008;¹ that percentage includes postdocs, staff scientists, research and teaching faculty, and administrators. Within academe, the proportion of scientists employed in tenured or tenure-track positions has also declined (see Table 1), likely reflecting a growth in postdoctoral, staff scientist, and other non-tenure-track slots. And with a growing population of talented trainees poised to enter the job market, the competition for sought-after academic jobs is tough. The good news is that, just like in Monopoly, there are a multitude of options from which scientists can choose when deciding on a career, and it is not uncommon for Ph.D.-level trainees to pursue nontraditional paths.²

But identifying the job that is right for you—whether in academe or beyond—takes work, and competing successfully for that job warrants a new approach to career planning. The recent focus on innovative, interdisciplinary, translational, and collaborative science—coupled with an array of new scientific tools and techniques—means that graduate students and postdocs need to master new skill sets to compete successfully for research positions both within and outside academe.

The challenges are no less for individuals pursuing careers away from the bench, where employers may place a greater emphasis on an applicant's "transferable" skills—such as leadership, management, and communication—than on their scientific and technical expertise. Such skills are difficult to acquire, and to document, during academic training.

Planning for success

Navigating this new science careers game board can be difficult; a single strategy will not work for everyone. Although each Ph.D. scientist brings different characteristics to the career game, too rarely do we take time to analyze those individual characteristics to help formulate a plan for our careers.

We should do it more often. There is a body of literature that underscores the value of deliberate career planning. This research finds that people who develop and implement strategies to pursue career-specific goals achieve greater career success as measured by salary, promotions, and level of responsibility.³ They also report greater career satisfaction and rate themselves as more successful than their peers compared to those without career plans.⁴ A nationwide study of 7600 postdoctoral researchers found that postdocs who developed training plans with their advisers at the start of their appointments reported greater satisfaction, published more papers, and experienced fewer conflicts with those advisers.⁵

Introducing myIDP

To help you develop your plan, we have created myIDP, an interactive, Web-based career-planning tool based on the Federation of American Societies for Experimental Biology's (FASEB's) *Individual Development Plan for Postdoctoral Fellows*.^{6, 7} Supplemented by the articles in this series, myIDP will help you identify the career goals that are right for *you* and develop a step-by-step plan to reach those goals.

Anonymous unpublished polls conducted by FASEB in 2009 reveal that postdocs and mentors find IDPs beneficial. The majority of postdocs who developed an IDP reported that it helped them assess their skills and abilities and identify the skills they would need to advance their careers. One respondent noted that it helped “not just to decide on a goal, but to have that goal in mind all the time.”

Mentors reported similar benefits for their postdocs, and both groups found the IDP to be helpful for facilitating communication about postdocs' career goals. According to one investigator: “The IDP helped me guide my postdocs toward experiences that would benefit their own career objectives. It allowed them to better tailor their experiences toward their career paths.” Graduate students at the University of California, San Francisco, reported similar beneficial effects.

Getting started

Constructing an IDP is a four-step process with myIDP. The first step is to evaluate your own skills, values, and interests. The second step is to use this self-assessment as a guide for exploring and evaluating career opportunities in your field and, ultimately, identifying your preferred career, as well as an alternative option that you think you'd be happy with. Step three is to set some specific goals to prepare you for the career paths to which you aspire. After discussing these goals and outlining strategies with your primary mentor, it's time to put the plan into place. You do this in step four.

myIDP is designed to help you with each of these steps. It includes exercises to guide you through the self-assessment process, and it will help you determine which of 20 scientific career paths best fits your skills and interests. For each career path, there is an extensive list of resources in the form of articles, books, and professional organizations, which you can scrutinize to gain a better understanding about careers you are unfamiliar with. Finally, there is a tool to assist you in setting and achieving your goals. Throughout the process, you will be able to store your progress on the myIDP Web portal—your information will be kept private, viewable by only you and those you wish to share it with—and you can request automated reminders to help you keep on top of your deadlines. Our goal is to help you gain stronger self-awareness, identify resources and strategies, and create your own game plan for identifying, attaining, and succeeding in the career that is right for you.

*** Percent of doctorate recipients holding tenure and tenure-track appointments at academic institutions 3–5 years since degree**

	1993	1995	1997	1999	2001	2003	2006	2008
All SEH fields	27.0	24.6	24.2	21.0	18.5	23.8	25.9	22.9
Biological, agricultural, and environmental life sciences	17.3	17.0	18.1	16.4	14.3	15.5	13.7	14.3
Computer/information sciences	55.7	37.4	40.7	25.9	17.3	32.2	45.7	37.8
Mathematics and statistics	54.9	45.5	48.1	41.0	28.9	45.5	50.6	40.7
Physical sciences	18.8	15.5	14.5	11.9	15.8	18.3	19.7	16.5
Psychology	17.0	20.7	16.8	17.6	17.5	19.9	23.8	18.3
Social sciences	54.3	52.4	50.4	46.5	38.8	46.0	50.4	48.9
Engineering	22.7	19.3	19.4	12.6	10.8	15.9	16.3	15.5
Health	47.4	40.2	41.1	39.5	25.1	40.8	43.1	34.4

Adapted from *Science and Engineering Indicators 2012*, Table 3-20

References

- ¹ National Science Foundation, *Science and Engineering Indicators 2012*, Chapter 5.
- ² Furhmann C. N., Halme D. G., O'Sullivan P. S., and Lindstaedt B. (2011). "Improving graduate education to support a branching career pipeline: recommendations based on a survey of doctoral students in the basic biomedical sciences." *CBE Life Sciences Education*, **10** (3): 239-49.
- ³ Ng T. W. H, Eby L. T., Sorensen K. L., and Feldman D. C. (2005). "Predictors of objective and subjective career success: A meta-analysis." *Personnel Psychology*, **58**, 367–408.
- ⁴ Abele A. E. and Wiese B. S. (2008). "The nomological network of self-management strategies and career success." *Journal of Occupational and Organizational Psychology*, **81**, 733-749.
- ⁵ Davis G. (2005). "Doctors Without Orders." *American Scientist*, **93** (3), supplement 1-13.
- ⁶ "Individual Development Plan for Postdoctoral Fellows. Federation of American Societies for Experimental Biology." (2012). <http://www.faseb.org/portals/0/pdfs/opa/idp.pdf>.
- ⁷ Clifford P. S. (2002). "Quality time with your mentor." *The Scientist* **16** (19): 59.