

CAREERS

IDEAS FACTORY Come up with lots of ideas to produce good ones **p.491**

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BY JULIE GOULD

Lia Rae Edmunds was annoyed when her department asked for an individual development plan (IDP) after she started her postdoc in developmental biology. “I thought it was an unnecessary hoop to jump through,” she says.

But despite her misgivings, Edmunds’s IDP has helped her to establish, review and update her goals and achievements with her supervisor. “As postdocs we have very loose guidelines on what we’re supposed to do, day in and day out,” says Edmunds, who works at the University of Pittsburgh in Pennsylvania.

She used her IDP to set a weekly plan for activities in and outside the lab that would help her to complete her year’s goals, including writing a first-author paper (which she has now started) and mastering specific *in vivo* metabolic techniques. It has essentially become an informal contract between her and her supervisor. “We’re on the same page,” says Edmunds.

Not every university, study programme or lab head requires PhD students and postdocs to prepare or maintain an IDP, but many junior researchers say that it helps them to identify their skills and skill gaps, set professional goals and objectives with specific timelines and build a positive relationship with their supervisor, particularly around shared aims.

Those who have used IDPs say that to be most effective, the plan should be reviewed and updated at least once a year, with input and guidance from the principal investigator or mentor.

IDPs and similar tools, including career- and personal-development plans, have long been used in government and industry, particularly in Western nations, as a way to help employees to achieve short- and long-term career goals and to improve their performance on the job. Data are sparse on the number of researchers who use them, but science-career experts who advocate such tools say that it is crucial that the a plan has specific, detailed objectives.

Some junior researchers agree that IDPs are most useful when they are highly detailed and have multiple sections. Uschi Symmons, a molecular-biology postdoc at the University of Pennsylvania in Philadelphia, created a customized version by merging the university’s graduate-student IDP template with one for postdocs from Stanford University in California. She used her university’s section on self-reflection, skills analysis and goal setting, and Stanford’s progress-review section. The ►

CAREER DEVELOPMENT

A plan for action

When set up properly, individual development plans can be powerful tools for shaping a career.

► personalized plan helps her to consider and identify her skills and objectives in a clear way, she says. She knows that she wants to stay in academia and her plan has helped her to tick off important steps towards that goal, including publishing a paper and learning to do peer review. “It was useful to write down goals that I could measure, that I could influence,” she says. “If I hadn’t had that, achieving those goals would have been tougher.”

An IDP should include four components, says Philip Clifford, an associate dean for research at the University of Illinois at Chicago, who has been developing templates for and advocating IDPs since 2001. Those include sections for self-assessment and reflection; career choices and pathways; short- and long-term goals; and ways to achieve and implement those goals. All goals need to be specific, with timelines and action plans for each, says Cynthia Fuhrmann, an assistant dean of career and professional development at the University of Massachusetts Medical School in Worcester (see ‘Goal setting’).

Gary McDowell can attest to the power of self-assessment. Now in his main role as head of Future of Research, a scientist-advocacy group in San Francisco, California, McDowell had initially aimed for an academic research career. But candidly reflecting on his life’s goals as part of his IDP helped him to realize that advocacy was his true interest. “I was looking at what I actually valued,” he says. “And had I done it earlier, this would have been a more obvious route.”

KEY SKILLS

Reflection, together with considering career choices, also proved invaluable to Sarah Saminadin-Peter, who advises clients on food-contact regulations at Intertek, a quality-assurance company based in Brussels. While doing a postdoc at Harvard Medical School in Boston, Massachusetts, she found that her IDP helped her to determine that she has superior organizational and project-management skills, and led her to mull alternatives to academia. “From there, I started to explore career paths that could match my competencies,” she says. She also wrote in her plan that she wanted to meet people from industry through conferences organized by her postdoc association. Soon afterwards, she connected with the consulting company Dr Knoell Consult in Mannheim, Germany, where she worked as a project manager for two years before moving to her current position.

Some researchers use other techniques. Rachel Yoho, a research associate studying science education at Michigan State University in East Lansing, uses job advertisements to identify gaps in her competencies. “If an ad says that I need a specific skill, I can see I need to go out and get it,” she says. She learnt through scanning ads that employers in her speciality sought candidates with strong teaching and

GOAL SETTING

The basics of achieving targets

Research suggests that people who use professional-development plans such as the individual development plan (IDP) rank themselves higher on indices of success and achieve greater success within science and other fields according to some metrics (T. W. H. Ng *et al. Pers. Psychol.* **58**, 367–408; 2005).

Cynthia Fuhrmann, an assistant dean of career and professional development at the University of Massachusetts Medical School in Worcester, recommends that researchers apply the SMART principle — specific, measurable, action-oriented, realistic, time bound — to their goals. “It will transform planning from vague goals to specific ones, with timelines and action plans,” says Fuhrmann. Here are some of her tips for using the principle.

- Create specific, clear goals that are based around these questions: What do I want to accomplish? Why is this goal important? Who is involved? Where do I need to be? Which resources or limits are involved? If, for

example, you want to improve your writing skills, you might consider what you will do, who can help you, when you can do what’s required and what improved writing skills would look like.

- Establish concrete criteria for measuring your progress. Write down each step you will need to take and how you will know when you have reached that goal. When you can measure your progress, you are more likely to stay on track and reach your target dates.
- Make sure your goals are action-oriented. Ask for the resources you need and mark check-in dates for the goals in your diary. Each goal should have a series of smaller sub-goals that you can tick off as you complete them.
- Create realistic goals that fit into your research schedule (and study programme if you are a student). Your goals are realistic if you truly believe that you can accomplish them.
- Give each goal a time frame. Without a deadline, there is no sense of urgency. **J.G.**

leadership skills, so she bolstered hers through short courses. Yoho has since landed a faculty teaching position that she starts this month.

Some universities place little value on IDPs. Monash University in Melbourne, Australia, doesn’t advocate them for its graduate students and postdocs, says vice-provost for graduate education Zlatko Skrbis. Instead, Monash offers activities that are led by alumni and external trainers on career planning, project management, networking, negotiation, leadership and entrepreneurship, along with other topics relevant to professional development. The university encourages students to collaborate with their supervisors in coming up with a customized scheme. Research students can attend all activities for free and, depending on their doctoral programme, may be required to complete at least 120 hours of such training modules during their studies.

Those who are working on a written IDP, however, should ensure they discuss it with others to stay on track, says Fuhrmann, who recommends that researchers share it with their principal investigator. “Discussing elements of your plan with your supervisor or mentor means that he or she is aware of the goals,” Fuhrmann says. Some universities, including the University of Pittsburgh, are experimenting with formal mentoring

committees that connect a researcher with two or more academic staff members. These mentors can also help the junior researcher to stay accountable to their development plan and review their progress. “If you do have a disagreement over a project, technique or goal with one mentor,” says Edmunds, “there are two other people who signed off on the IDP”.

Occasionally a supervisor or principal investigator is not the best choice to confer with. Some graduate students and postdocs report that their principal investigator objected to non-academic career goals they had set out in the plan and tried to steer them into an academic-research trajectory. McGill University in Montreal, Canada, for example, will tell junior researchers not to automatically involve their supervisors when it launches a mandatory IDP initiative next year. “The idea is to not presume that the supervisor is the person with whom they should have that conversation,” says Lorna MacEachern, McGill’s graduate career-development counsellor. “A lot of students report anxiety around discussing their professional-development plans with their supervisors.”

Although Edmunds was initially sceptical about the value of an IDP, she is now a believer. In addition to helping her to articulate and achieve her goals, it has provided leverage. “You can use the IDP to advocate for yourself,” she says. “And that puts you in a stronger position in your current job — as well as for your future career development.” ■

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