

Science Careers

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Career Advice

IT PAYS TO PLAN:

WHY YOU NEED A CAREER MAP

By Carol Milano
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The traditional path—graduate school to postdoc to academic tenure-track—is no longer a sure thing. How can you gain an edge in the increasingly competitive science profession? Start building your career plan. **By Carol Milano**

“A body of research shows that people who take the more deliberative approach of setting goals have a better likelihood of meeting them,” observes **Jennifer Hobin**, Ph.D., Director of Science Policy at the Federation of American Societies for Experimental Biology (FASEB). That deliberative approach is a career plan: a roadmap guiding you from where you are now to where you’d like to be in one, five, or even ten years. This personal map, or “individual development plan” (IDP), evolves through thoughtful self-discovery. Take time to reflect. Explore your talents, wishes, and realistic opportunities. Creating your IDP will gradually identify professional development needs and career objectives, and pinpoint milestones along the way to each goal.

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TAKING THE FIRST STEPS

A year before completing your Ph.D. or fellowship, start building your plan, advises **Susan Morris**, a career coach with Morris Consulting Group in Doylestown, Pennsylvania. Self-assessment is the crucial first step. Ask yourself some key questions. Take time to think carefully—and be honest.

1. What are your greatest successes? What do you love about what you do? What inspires you to keep working in this area? Have you had a stimulating internship, job, or project outside your current focus? It’s vital to identify the work elements you care most about.
2. What kinds of settings do you like picturing yourself in? Is it an office at a company, in a government agency, or at an academic institution; indoors, outdoors, or in a lab?
3. Which options do you already think about? Do you know anyone with that sort of job? For an IDP, it’s valuable to get a realistic picture of it on a day-to-day level.

4. Consider work style and personality. Would you rather be part of a team, or work mostly on your own, meeting occasionally with colleagues? Are you comfortable with grant-seeking and publication needs? Would you enjoy mentoring or management as everyday responsibilities? How much autonomy or structure do you need?
5. Look at external factors. Is family time, or an easy commute, significant? Is high salary a priority?

Career planning is interactive. Thoroughly assessing your strengths requires checking with mentors, colleagues, or friends who've seen you in various roles. We barely notice things we do effortlessly—like organizing or informally leading people—but they're touchstones in career assessment.

Use established services, such as your university's career planning office. Your specialty's professional association, or cross-discipline national groups like Association for Women in Science, may have volunteer career advisors. FASEB's online tools can ease the IDP process.

IDENTIFYING YOUR "IDEAL JOB"

Each step builds on what you've already discovered. Identify directions surfacing from the personal information you've gathered. Thinking about work settings helps clarify what someone doesn't want, Morris finds. They might realize, "I don't want the private sector—I was born to teach," or, "I'm a botanist. I don't want to be inside an office." Another scientist may say, "As a molecular biologist, I need to be in an institution's research department," or, "I want to be an entrepreneur. I know I need some business experience first."

Explore every interest. Late in her University of Michigan Biological Psychology program, Hobin realized an academic setting did not attract her. She started analyzing her work habits for clues about other possibilities. "I always read news and policy articles before science articles, but I had no idea what 'science policy' was," she remembers. "I Googled it, read papers, and stumbled onto fellowship programs designed to help Ph.D. scientists transition into science policy." During her 10-week National Academies fellowship, she learned about the FASEB position, and was hired in 2005.

"Don't have the tunnel vision that academia is the only track," urges **Ignacio Munoz-Sanjuan**, Ph.D., vice president of biology for a private nonprofit research foundation since 2007. During his doctoral work in genetics and molecular biology at Johns Hopkins Medical School, Munoz-Sanjuan grew "disillusioned about the dependency on peer review to make a living [in academic science], and universities' lack of appreciation for teaching excellence when evaluating for a tenure position. Everything depends on the publication record."

A narrow view of "academia" is tunnel vision, too. Talented, enthusiastic scientists have richly varied academic opportunities. If you love teaching, consider educating high school students or liberal arts undergraduates about science. Are your organizational skills strong? You might like admissions or administrative work at a science program. Do you write well? Universities need grantwriters and public information specialists. Look beyond the lab at your own institution to spot jobs matching your abilities and preferences.

Beth Schachter, Ph.D., headed a molecular biology lab at Mount Sinai's medical school for 16 years. Then her NIH funding ended. The institution didn't renew her contract. Reaching out for fresh ideas, "I started telling people, 'here I am, ready to explore new options. I'm looking for something interesting,'" Schachter recalls.

A colleague introduced her to the editor of a start up online biomedical magazine. Her science editing job there revealed an eagerness to write. "I'd trained for years to be a scientist, and then



Photo by Alice Braga

Beth Schachter



Adrian Ferré-D'Amaré

From Left: T. Liu, R. Sunyer, A. Roll-Mecak, A. Szyk, V. Kizub

a one-day workshop in non-fiction writing became a transformative act. I got so much out of it." Schachter used her science credentials to sell a story to the New York Times' Technology section. Her science communications career was launched.

As you develop your IDP, mentors can motivate and mobilize you, helping you recognize and overcome barriers. Periodically ask your mentor for feedback and assistance. You'll probably gain new perspectives on your assets and potential.

Less traditional mentors can offer valuable insights, too. **Antonina Roll-Mecak**, Ph.D., chief of the National Institutes of Health Cell Biology and Biophysics Unit in Bethesda, values 'passive mentoring.' "If you're in a lab with a lot of successful people, see how the science is done at a more advanced level. Watch how they manage their research, how they create a rewarding, fun atmosphere," she recommends. A peer mentor, Morris suggests, might be someone a year ahead, perhaps in a first job, who could keep you focused and

on-track, while sharing any pitfalls they've encountered.

"Mentors are typically in your own environment," says Hobin. Because opportunities for Ph.D. scientists range from patent law to science education to drug development, "connect with people in different areas. Identify potential mentors in industry, government, or any field you may be interested in." You may want to talk to a pharmacy or business professor at your university. "Always keep your adviser in the loop," Hobin advises. "Many faculty understand that they can't provide insights into all possible career directions." Her own adviser said he knew little about careers in industry, but added, "I have an ex-student..."

ASSESSING OPPORTUNITIES

The next step is exploring your options. Scientists have a huge asset: knowing how to investigate. "Research jobs that are actually out there," says Morris. Talk to people working in them to discover what they're really like. "Name specific companies in which you might be interested. The human resources department is not where decisions are made. Target a particular department. Who heads it? Use social networking to meet them. Sharpen your focus so it's easier to zero-in and reach that key individual. Go to places where decision-makers gather, especially their conferences. Read their journal articles."

As you research, seek student organizations, including postdoc clubs or committees at your own institution. Meet other young scientists through national groups like Women in Cell Biology or the National Postdoctoral Association. "You can reach out without being a member," Morris notes. When you identify a contact, say, "I understand you recently got this job. I'm looking for someone to advise me." An editor told Schachter about the National Association of Science Writers. After chatting with editors and more experienced writers at the local chapter meeting, Schachter soon joined its steering committee; valuable contacts led to choice assignments.

Are you considering industry? "Educate yourself about research going on in the private sector. If you have a chance to focus now on questions of more interest to the private sector, make that choice," Munoz-Sanjuan advises. Learn which specialties or expertise become more desirable beyond academia. "Be proactive about doing work that puts you in the best position to get a research job."

What size employer appeals to you? "Sometimes working in a lean organization, with greater responsibility, makes you more marketable to lead research in a bigger company. A big company is different, fraught with political issues. Consider which of your options are the most science-driven," Munoz-Sanjuan suggests.

Informational interviews are a vital exploration tool. “Talk to as many people as possible,” Hobin encourages. “It never hurts to contact someone in a position or field that you might be interested in. Invite them for a cup of coffee. Ask for 20 minutes—the worst they can do is say no. People often enjoy talking about what they do.” Use the opportunity to ask about the person’s or company’s research, the time required for non-science tasks, and personality-related factors, including teamwork or management requirements.

“Most scientists in business are surprisingly open to talking about their work,” Munoz-Sanjuan echoes. “Don’t be afraid to ask, investigate, meet people, and learn how companies work.”

SETTING AND PURSUING GOALS

You’ve identified your skills and interests, and researched some possibilities. Now, “Start honing in on a path that might be right for you. Then, plan steps towards that goal,” says Hobin. Career goals should be specific and measurable, with a time line and target dates.

“Take time during graduate and postdoc training to develop transferable skills,” she counsels. “Communication, project management, writing, and leadership [ability] are important for careers both in and beyond academia.” How can you add that to an overcrowded workday? “Find opportunities in the context of lab time and the scientific work you already do. Branch out. You could give non-technical science talks to a Sierra Club chapter, write for your university’s alumni magazine, or mentor some undergrads.”

Schachter branched out with small editorial assignments, helping scientists improve their writing. She enjoyed this new direction so much, she decided to try giving workshops about written communications, but realized she needed stronger verbal skills. She joined Toastmasters—“a great opportunity for me to explore all kinds of speaking and presentation styles.” Now, Beth Schachter Consulting provides seminars and coaching at major medical schools and research institutions. “I’m a scientist at heart,” Schachter emphasizes. “It’s so much fun for me to read the science, and think about how it can be presented more clearly.”

Pinpoint specific tasks to help you pursue your goal. Roll-Mecak knew what she wanted: “I’m passionate about what I do, and couldn’t imagine doing anything else with my life,” she avers. As a University of California San Francisco postdoc, she turned to her mentor, Henry Bourne, and postdoc adviser, Ron Vale. Roll-Mecak identified “research institutions and universities with strong programs in my interests: biochemistry, structural biology, and cell biology. I discussed the pros and cons of each institution, and the differences in scientific cultures.”

She applied to twenty-four places, using just three criteria: the qualifications of the colleagues she’d have there, the institution’s research programs, and the location. “I knew I didn’t want to live in certain areas of the U.S.,” Roll-Mecak explains. “Before and during the interview process, I bounced ideas and problems off [Bourne and Vale] when trying to make a decision.”

BUILDING A NETWORK

Networking, the cornerstone of any career plan, is a chain. Reach out. Leave the lab! Attend science cafés and professional organizations’ meetings. Join a committee, or write for the members’ newsletter, to strengthen both contacts and transferable skills. Try informal gatherings, too—like DC’s science policy happy hours, or Science Writers in New York’s quarterly socials.

As you talk to people, keep an open mind, and keep in touch. At a Helen Hay Whitney Foundation annual meeting for fellows, Munoz-Sanjuan chatted about research with a former professor who had moved to Merck. “A year later, he told me about an opening there.” After his fellowship, Munoz-Sanjuan joined Merck’s Neuroscience Center outside London.



Dr. Ignacio Munoz-Sanjuan, VP
Biology, CHDI Foundation, Inc.

Ignacio Munez-Sanjuan

His second job came through an executive recruiter. “I never knew there were headhunters when I finished my postdoc! Some specialize in one area, like neuroscience. They go to meetings to make themselves known.”

“Things are changing in science,” Morris stresses. Once, “you could stay at a particular job for three or five years; now that may be down to two. No one has control over downsizing. The first year is always critical. Planning beyond that is harder, but ideally, you want to know where you’d like to be by the end of your third or fifth year.”

To stay on track, check in with yourself once a year. Do you like what you’re doing? Can your job lead to something desirable? Where do you want to be in two years?

In 2020, “I hope that I’ll still be producing interesting science and taking risks,” says Roll-Mecak. “If I already knew where I want to be in ten years, I think it would be really boring!” she confides.

For the next five years, Munoz-Sanjuan aspires to continue building his career at his current foundation. “I want to bring new therapies to people with Huntington’s disease, and hope to steer the research in ways that let me achieve that.”

Look at your career as a continuum, not as one stop, he recommends. “If you choose a position now, that doesn’t mean it’s for the rest of your life. It’s always a dynamic process.”

Take the first step in your own dynamic process—get started on your career plan!

Carol Milano is an independent journalist in New York City, covering health care and science.

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Additional Resources

Association for Women in Science - www.awis.org

National Association of Science Writers - www.nasw.org

National Postdoctoral Association - www.nationalpostdoc.org

Science Cafés - www.sciencecafes.org

Science Writers in NYC - www.swiny.org

Sierra Club - www.sierraclub.org

Toastmasters - www.toastmasters.org

Women in Cell Biology - <http://bit.ly/c6fKlw>

Featured Participants

Beth Schachter Consulting - www.bethschachterconsulting.com

Federation of American Societies for Experimental Biology - www.faseb.org

Johns Hopkins Medical School - www.hopkinsmedicine.org

Merck - www.merck.com

Morris Consulting Group - www.morrisconsulting.biz

Mount Sinai Medical School - www.mssm.edu

National Institutes of Health - www.nih.gov

University of California San Francisco - www.ucsf.edu

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