

# Seven Steps to a Successful Postdoctoral Experience

The postdoctoral experience is first and foremost a period of apprenticeship for the purpose of gaining scientific, technical, and other professional skills that advance your professional career. During the course of postdoctoral training you must establish your potential for establishing a successful, independent research program, which is essential for positions in either academic or applied research. You are a highly educated, highly skilled and intelligent adult – you are responsible for guiding the course of your own career. TRSI provides the resources (counseling, training, library databases, internet, mentors and colleagues) for you to become aware of career opportunities and expectations. Open good channels of communication with your mentor and make connections with your colleagues and other faculty to enhance your postdoctoral experience.

The following describes the path to an ideally successful postdoctoral experience. Aim high and have high expectations for yourself.

## 1 Decide where you are going.

The following are best considered before and in choosing your postdoctoral position, but its never too late!

Develop clear training and career objectives. If you don't know where you want to go, you cannot possibly map out a course to get yourself there. Ask and answer the following questions: what do you hope to accomplish, what skills need improvement, what new skills must you acquire, and most importantly, where do you want to be in 3 or 4 years? Discuss these goals with your advisor (preferably before you take the position, but most definitely very early on) to ensure compatibility with the opportunities available in your postdoctoral position.

## 2 To accomplish your long-term goals, set short-term objectives.

Specific objectives will vary depending on our career goals. For example, if your goal is an academic position you'll want to tackle an exciting, challenging, high-impact problem that will provide you with opportunities for discovery and independence. It's a time to gamble, because without risks the rewards are less. However, it's prudent to have a less risky, back-up project or component. You will need to become an expert in your area of research and to develop independent ideas and an independent project. Inter- or intra-lab collaborations can be very effective and learning collaborative skills will be invaluable as science becomes more complex. You will need to be an effective communicator both orally and in writing. You will need to publish manuscripts that together tell a compelling story and you will need well-developed ideas for a future research project. This won't happen overnight. Expect several months of down-time and struggling as you establish new techniques and familiarize yourself with new research areas. By the end of your postdoc, you will need to define the problem you wish to tackle as an independent scientist and what approaches you plan to take. You'll need to consult with your mentor about overlap and your independence.

All of the skills listed above for academic track are also assets for applied sciences, with the exception that you need not decide on a specific research problem to take with you. If your goal is a position in biotech or pharma, you might also want to diversify your technical skills, and familiarize yourself with therapeutic areas of research. Inter- or intra- lab collaborations can lead to more publications and establish your ability to work effectively with others. Network and keep in touch with the biotech community. Know what's going on in your areas of interest.

To be competitive you must have finished something as a postdoc: completed work is measured by published papers. You should make yourself visible at meetings, even seminars. Talk to visiting seminar speakers. Get yourself known! For many positions, you will need 3 or 4 letters of recommendation. If you don't get out and talk to other scientists, go to seminars, ask good questions, make yourself known, then no one will be able to write a strong, meaningful recommendation. Other faculty members that know you and your work will be valuable assets if communication breaks down with your advisor.

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### 3 Choose the right project (to match your goals, interests and research skills).

Discuss your objectives with your advisor. Make sure you are working together towards the same goal. Pick a project that matches those expectations. If it's a tough one, make sure you are passionate about finding the answer – plan to be frustrated, but persevere! Read extensively, especially at the beginning. Talk with your colleagues, your advisors, anyone who will listen. This is the time in your career to take risks and to explore new scientific possibilities. Opening a new door is a better start to an independent career than jumping into a developed area, even if there are many well-defined, short-term problems available to tackle. You may want to be part of a team and/or to work on a clinically relevant problem. Think about the future as you plan the present.

Write a fellowship application. Seeking funding/support will ALWAYS be part of your job (in academia or industry). Learn how to write a proposal and establish your ability to obtain independent funding. Formalizing a proposal, with the help of your advisor is the best way to get involved intellectually with your project. You can check out funding opportunities at [www.grantsnet.org](http://www.grantsnet.org) and at databases in the TSRI library.

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### 4 Work hard, but most importantly work effectively.

The postdoc is a critical time of your career. You are working for your future. Productivity is proportional to time spent at the bench, but it is also dependent on how EFFICIENTLY and EFFECTIVELY you work. Have you planned effectively; have you thought things through; are your approaches valid, or the best ones; are you taking the straightest path to your career/training objectives? If not, you are wasting time. Don't get stuck in an experimental rut. Talk about technical difficulties, hurdles with your advisor and colleagues. There is usually a creative alternative. Keep your experimental wheels running: don't lose momentum.

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### 5 Set short-term, clear objectives with your advisor.

Monitor your own progress towards your goals. Keep in touch with your advisor on these. Think in terms of manuscript-size chunks. Papers are the only tangible, quantifiable product of our profession. Look for opportunities for "short stories" amongst the "scientific epic" you are working on; or if you are a baseball fan, think in terms of base hits and not home-runs! Papers grow out of successful experiments. Successful experiments provide new insight. You need to know the background of a research area and identify missing information that you can fill in. This requires reading, planning (be realistic, and do this with your advisor), and then doing!

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### 6 Broaden your knowledge and experience base.

You are in training. Go to seminars. Read the literature. Learn about different things. Keep expanding your knowledge base. A good one-hour seminar can be worth 8 hours in the library (or on the internet!). New ideas often come from unexpected places.

Learn to communicate effectively, both written and oral. Write and put together the first drafts of your own papers. Take your group meetings seriously and put together an organized presentation. Take advantage of opportunities to give short seminars in local meetings, present posters (or better yet, short talks) at major national meetings. There are travel grants to do this. If you have something to present, contact the meeting organizers. Communicate with your advisor and with other scientific colleagues. Network!

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### 7 Keep your eye on your future.

Postdoctoral training is not a permanent job, it is an investment in your future. Postdoctoral training should, on average, be accomplished within 4 years for Biologists, 1-3 years for Chemists. Keep yourself in a position to meet this time frame by thinking and planning ahead. Be realistic and open about your career expectations, discuss these with your advisor and other colleagues. In preparing for the job market, actively take advantage of TSRI resources, advice from your mentor, discussions with your peers.