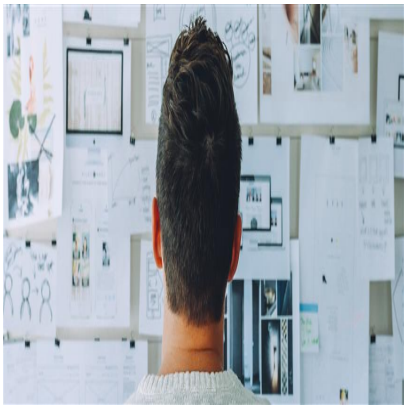

Description

Scientists at the early-career stage often do not tread the same academic path as their predecessors did towards tenure (Sever and Janssen 2017). The number of PhD awards far outweigh the existing positions in academia, resulting in the observed discrepancies (Cyranoski et al. 2011, Health 2012). An overview of scientific career trajectories would, therefore, benefit scientists in their early PhD/postdoctoral training, and even at mid-career. As a scientist, your "art of career design" (Giltner 2017) begins in an unknown territory, mainly with motivation and inspiration. Finding an alternative career in the current academic environment is difficult, although an initial plan can offer a sense of direction.

Creating a Plan for an Alternative Career

Start by designing a career that works for you, instead of limiting yourself to the conventional routine.

- *Assess your strengths* – It may sound simple enough, but knowing yourself is critical in the beginning of your career. If unsure, gather some insight with recommended reading.
- *Define your direction* – Despite uncertainty in academia, set your intention: what do you want to do and where? Be flexible; know it is OK to change career direction.
- *Communicate your story* – Effective science communication can build bridges, speak of your experience early on. Build your resume to have a meaningful flow, construct your career path with the awareness of your role as the architect. Present your well-thought-out plan to hiring managers in/outside academia, or to principal investigators within academia as applicable. Be patient.
- *Build a network* – While you progress along your plan, make fundamental connections broadly in science. Most early career scientists network online via diverse platforms, including Twitter and Community blogs. Build genuine connections with like-minded individuals, keep up with science, share your interests, and learn from others in the field.
- *Do not fear* – Sometimes without a clearly laid out plan, it is easy to fear the big picture. Often it is best to step back and reassess your goal in these times to find logical guidance.

It takes a significant amount of hard work, and grit to survive and advance in multidisciplinary academic research. If you decide to navigate an academic career, seek early mentorship, be strong yet flexible, plan, publish, and work ahead. If you decide to move in a different career trajectory, exciting

opportunities further exist in science.

Science Writing

Science communication through writing/speech is an excellent skill to develop early on in your scientific career. Regardless of the pathway you follow, scientific writing will benefit your role in the field. After early research training, science journalism is an attractive career trajectory. Popular science communicators have science and media qualifications with a passion to cover exciting new developments in science and technology (Pearson 2017). Moreover, the platforms for science communication are also expanding beyond the traditional newspapers to print, online, TV, radio, podcasts, and videos. The field is clearly undergoing rapid change with the growing opportunity to produce quality digital and print content. In addition, if you are a scientist intending to gain writing experience prior to returning to academia, consider freelance science writing gigs. Regardless of the outcome, science communication is an exciting alternative career for scientists, to sustain throughout the stages of their career.

Science in the Industry

Industrial aspects of science and technology are also booming in biotechnology, research and development, as well as in healthcare. Scientists who prefer life outside the lab can pursue work in pharmaceutical companies and research institutes as clinical research associates. For a newly minted PhD graduate, often the role requires initial training. In the United States, the Society for Clinical Research Associates actively offers training, continued education, and certification to potential candidates. A few websites also offer guidance to scientists in their transition from academia to industry.

Furthermore, science writing opportunities exist in pharmaceuticals and industry, mainly in the role of medical writers. Writing about medicine also encompasses a broader audience in media, government, and industry. As with journalism, the role provides several writing platforms, although mostly technical, when writing for medical journals, websites, and newsletters.

Side Hustle with Science

As graduate PhDs or postdoctoral trainees, most scientists will be paid via the host institution and receive an additional stipend. Depending on the research lab funding structure and geographical location, this income may fluctuate, and may/may not be sufficient. If you are undecided on the ultimate career trajectory, part-time work alongside research work may also offer a broader perspective. In addition to extra-cash for a modest income, this role may yield opportunities and skills for professional advancement. If you have reservations about using your leisure time for a part-time job, consult your supervisor first for advice.

Some universities also offer unadvertised tutoring opportunities for graduate students as laboratory demonstrators. In such cases, follow-up with the laboratory heads. Internships for junior scientists combining law, business, and science also exist in some universities. Further opportunities exist with academic journals for graduate students to gain internships. Work related to copyediting, technical checks, and peer review will provide a firsthand experience in academic publishing.

Investing your time in a graduate school project requires focus, motivation, and personal responsibility. Often it may be difficult to stay on track early on as a graduate student receiving PhD training. Sometimes the possibility of procrastination overweighs productivity therefore intentionally avoid the following motivational killers. In this way, you can gain time management skills that allow effective part-time work as well. The work experience you gain during your PhD can assist you to multitask, providing a sense of accomplishment. An all-round PhD experience can confer real-life skills transferable to a long-term career in academia, publishing or industry. Regardless of the scientific career stage, maintaining a consistent skill-set can ensure a sense of direction in and outside academia.

What are some other exciting alternative career options for researchers? Share your thoughts with us in the comments below!

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