RUTGERS

iJOBS Career Panel Series — Interdisciplinary Job Opportunities for Biomedical Scientists

Advice on how to prepare for careers in pharmaceutical management careers with a biology PhD

Different phases of drug development and career options:
1) Discovery – Does the compound have efficacy? Target identification, validation, lead identification (high throughput screening), chemistry, lead optimization, in vivo and in vitro efficacy, pharmacokinetics, ADME, toxicity. Mostly bench research similar to academia.
2) Development - Must be performed under Good Laboratory Practices (GLP). Additional compound characterization, bioactivity, bioavailability. Pharmaceutical development including formulation, device, analytical, delivery and packaging development. Product stability and safety. Pharmacokinetics and drug disposition in animal models. Preclinical toxicology testing and Investigative New Drug (IND) application.
3) Clinical trials Phases I-IV - Clinical trial managers, operations leaders, clinical scientists, pharmacovigilence and outcomes research specialists, medical affairs specialists.

In addition to researchers and project managers for discovery and development, they also need people in regulatory affairs who are familiar with regulation and policies of health authorizes (including FDA and EMA), drug safety and epidemiology, medical writers, biostatisticians and programmers, data management, patent attorney, marketing and commercialization strategy and execution, etc.

Things to consider about careers in pharma:

Internships are great ways to gain exposure and experiences, and are offered at most companies. Consider applying for right after you defend your thesis so you can get experience or if you PI agrees, you can do one during your PhD.
(e.g. http://bms.com/careers/university_recruitment/internships_co-ops/pages/graduates_undergraduates.aspx)

Postdoc is not necessary for industrial positions but it can be helpful to learn about another area of research. Consider doing a postdoc in a pharmaceutical company (e.g. Regeneron www.regeneron.com/scienceeducation_professional). You may get hired permanently by the company.

Also consider mid to smaller size companies after your postdoc doing bench research even if that is not your long-term goal. If you are at a smaller biotech company, you can learn all different aspects of drug discovery/development which will make you more marketable for bigger companies. At big pharma you can find

internal postings within the company so you can learn about the different job options and then move to a new position internally.

Another option is working for a Contract Research Organization (CRO). They hire scientists who have basic (non-clinical) skills and you can learn a lot of other aspects of drug design there.
Major CRO's for nonclinical work (some do clinical as well):
--Charles River Labs (CRL)
--Covance
--MPI Research
--Quintiles
--WIL Research
--Sierra Biomedical
--Octagon
For a comprehensive list go to: http://www.pharmafacts.com/listing-of-cros

The Food and Drug Administration is also a good way to start and if you work there for a few years you will have great experience to then apply for other jobs. NOTE: to work for the FDA you must be an American citizen and if a male you must have registered for the Selective Service ~~draft~~ before you turned 26.

People with regulatory affairs or statistics backgrounds are in high demand.
You can read about regulatory affairs online, clinical trial management and pharmacovigilance and safety or take a certification course in medical writing to increase your understanding of the requirements.

You can also apply for a graduate or post-doc fellowship from a pharma company. The link listed here is primarily for diversity students. http://umsi.uncf.org/

General advice:

Find a mentor and a sponsor. A mentor is someone who you can confide in. A sponsor is a more senior person who can help you get the next job or promotion. Many companies have formal mentoring programs.

Make sure you have excellent communication skills including written and oral skills. Consider taking a special writing and presentation class.

Consider getting a Project Management Professional (PMP) Certification to learn about general business skills.

Resumes:
The goal is to make your resume stand out amongst all the others.
They do not need to be just one page, up to 2 pages is fine.
Bullet point your skillset at the top and make the list very targeted and tailored to the job description.

After skills list education, employment, awards, languages and references.
Edit very carefully.

Network:
Learn to network with the most influential people wherever possible. Do not sit with your friends at the conference lunch tables, rather to use the opportunity to reach out for networking. Be bold and approach those who can help you get your resume to the appropriate hiring managers.
Successful individuals love to mentor others so don't be afraid of them.

Collaborate:
Collaboration and working with a group is an important skill in pharma management. Get practice doing that in other settings so you can demonstrate your ability in this area.

Leadership:
Show your leadership skills by organizing activities on or off campus with various groups such as:
Graduate Student Association
Sino-American Pharmaceutical Professionals Association (SAPA) Association for Women in Science (awis.org)
There are many more…

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