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Career Advancement for Young Biopharmaceutical Industry Professionals

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After working in the biopharmaceutical industry as a process development engineer for almost five years, I realized that building a career as a young professional is a combination of education, work experience, industry certifications, and establishing a professional network. In this piece, I have cited resources that young professionals, those with less than ten years of industrial experience, will find useful in exploring career paths, expanding their professional network, and building relationships as they move into various positions during their careers.

Following college, I recognized that we always keep learning new tools and expanding our knowledge base as our time allows. I have worked with several engineers who found online classes helpful in finishing their graduate degrees while holding full-time positions in the manufacturing facility.^[1-3] Several free online short-term classes have been launched by reputable science and engineering universities.^[4-6] Hands-on, 3–7 day biopharmaceutical training programs are offered; some available at regional state universities and community colleges.^[7-10]

Conferences and vendor presentations have also been very helpful in acquainting young research and development engineers/scientists with the latest technologies. Volunteering at such conferences and meetings often waives the registration fee for attendance, and is especially cost-effective if the event is held in your area. Choose your events strategically and you might find yourself visiting with relatives or friends, eliminating the cost of lodging. As a conference volunteer before graduation, I was able to meet the individuals representing each corporation and joined them during meal breaks and social events. I interacted with these professionals in all walks of the biotech strata, from research groups and suppliers to company start-ups. The contacts I made were beneficial to me when deciding where to begin seeking entry level jobs upon graduation.

For those who do not have the time and/or money for local training or volunteering at conferences, I highly recommend that you assess your strengths and identify your career options.^[11-14] If you do not have the opportunity to pursue an advanced degree part-time, look into industry certifications that you can earn in 3–5 years while still working.^[14-16] Industrial experience is surely the best teacher for young professionals who want to evaluate different positions.

In my career, I found myself surrounded by great mentors who assisted in my professional development by sending me to training programs and allowing me to apply what I learned to ongoing projects. These classes, both on-site and off-site, have allowed me to increase my knowledge in biopharmaceutical process development, project management, and biochemical techniques.

Social and professional networking sites are helpful in staying in touch with your school friends, former associates, and supervisors from your previous jobs. Recommendations posted to your site by fellow colleagues and managers are good indicators that you have been meeting responsibilities and goals in your current position.^[17]

Overall, your chosen career path provides a young professional with a network of colleagues who can recommend you through a series of project experiences (be they successful in meeting targeted goals, or sometimes not). You will gain a set of acquired skills through perseverance and a focus on getting things done. Looking back, I realized that building a career has been a balance of increasing my technical competencies and building relationships with people within and outside my employer's organizations. Oftentimes, careers are based around the people we know while delivering a consistently excellent performance within an environment where we feel valued.

Resources for Young Professionals

- [1] North Carolina State University Engineering: <http://engineeringonline.ncsu.edu/>. This online program offers a variety of degree programs in science and engineering.
- [2] Johns Hopkins University Online Biotechnology Program: <http://advanced.jhu.edu/academics/graduate-degree-programs/biotechnology/>. This program prepares professionals for jobs in drug discovery, business and regulatory affairs in the biologics industry.
- [3] Purdue University Distance Learning Program: <https://www.distance.purdue.edu>. This program offers internet-based courses in engineering and business for working professionals.
- [4] Edx: <https://www.edx.org/>. Several reputable universities offer online courses in a wide variety of disciplines.
- [5] Coursera: <https://www.coursera.org/>. A social entrepreneurship company partnering with 33 top universities to offer online courses.
- [6] iTunes University: <http://www.apple.com/education/itunes-u/>. A valuable resource for working adults offering access to free lectures by experienced professionals in their field.
- [7] Golden LEAF Biomanufacturing Training and Education Center at North Carolina State University: <http://www.btec.ncsu.edu/>. This facility offers training in biopharmaceutical process development, bioanalytical techniques, and upstream and downstream processing for skilled professionals in the biopharmaceutical industry.
- [8] Massachusetts Institute of Technology Short Programs: <http://web.mit.edu/professional/short-programs/>. Several programs are offered for biological product development and fundamental courses in biochemical engineering.
- [9] University of California at Berkeley Extension—Professional and Continuing Education for Adults: <http://extension.berkeley.edu/publicViewHome.do?method=load>. Various online courses are offered in pharmaceutical product development.
- [10] University of Wisconsin at Madison Engineering Professional Development: <http://epdonline.engr.wisc.edu/>. A wide range of online and on-campus courses on basic design of experiments, quality by design, and basic process development for chemical engineers are offered in their center.
- [11] Biospace: <http://www.biospace.com/>. Jobs and news on the biotechnology, clinical research, medical device, and pharmaceutical industry, presented according to regions: North America, Asia, Europe.
- [12] Strengths Finder 2.0: <http://www.strengthsfinder.com/home.aspx>. Accompanied by a set of workbooks by the Gallup Organization, this resource helps you discover your strengths in order to deliver consistent, excellent performance.
- [13] Sturman, Gerald. *If You Knew Who You Were, You Could Be Who You Are*. New York: Bierman House, 2010. PMCid:PMC2871391.
- [14] Certified Pharmaceutical Industry Professional (CPIP): <http://www.ispe.org/certified-pharmaceutical-industry-professional/>. The CPIP credential is the first professional certification program for the pharmaceutical industry covering development through manufacturing, facilitated by the ISPE.
- [15] Project Management Institute: <http://www.pmi.org/>. This certification is intended for managers who gained experience in directing, implementing, and monitoring projects.
- [16] Professional Engineer License: <http://ncees.org/licensure/>. A professional engineer (PE) is an engineer certified by a state board of registration to practice engineering.
- [17] LinkedIn: <http://www.linkedin.com>. A professional networking website where resumes can be posted, jobs can be found, and companies can be followed by its members.