Packaging Yourself for Product Companies

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United States
23 May 2008

Any researcher or graduate student who has ever performed a lab experiment knows that achieving an accurate, reproducible result is often less of a science and more of an art—and certainly much more complex than some scant “methods” sections would lead one to believe. Numerous variables come into play that can influence the outcome of results: accurate measurements, temperatures, timing, and purity of chemicals. The one thing a researcher can depend on, hopefully, is that the products purchased for an experiment such as the kits, buffer solutions, and enzymes do exactly what they are supposed to do and work the same way each time a new batch is opened. The companies that supply bench scientists with these products, listed in the voluminous catalogs lining the shelves of most research labs, hire teams of researchers to develop these products. The jobs at these “product” companies are challenging, but the lofty reward is no less than helping to advance the pursuit of science in labs across the world. Furthermore, at most companies, the doors are wide open these days for the right candidates.

Many Products, Many Jobs

For Ph.D.-level scientists seeking a career outside of academia, a job at a product company can represent a challenging yet highly rewarding career path. While opportunities involving a range of different skill sets are available, in general, companies are seeking research scientists with highly developed technical expertise that possess the ability to think creatively and fix problems, while being able to function as part of a team. Many of the positions involve interacting directly with customers and end users to help resolve problems that may be occurring and to find ways in which products can be improved.

“There’s a large amount of validation to ensure specificity of the antibodies and to make sure that the antibody is actually recognizing the intended target,” says Craig M. Thompson, director of production and molecular assays, with Cell Signaling Technology (CST), located in Danvers, Massachusetts. CST has about 225 employees, and specializes in making antibodies to be used in research applications such as immunohistochemistry and flow cytometry. The company also has a large research group involved in biomarker discovery for cancer. According to Thompson, CST hires Ph.D.s to fill product development and production positions as well as positions in sales, technical writing, and business development.

At Promega, approximately 70 percent of the scientists in its R&D department have advanced degrees (M.S. and Ph.D.), with 40 percent being at the Ph.D. level, says Bob Bulleit, director of...
research and development. Promega, headquartered in Madison, Wisconsin, has nearly a thousand employees worldwide and manufactures over two thousand products, consisting of kits and reagents as well as integrated solutions for life science research and drug discovery, genetic identity, and clinical diagnostics. “Scientists can find opportunities in areas such as manufacturing, quality assurance, technical service, sales, and marketing,” says Bulleit.

Sigma-Aldrich manufactures biochemical and organic chemical products and kits to be used in scientific and genomic research and has approximately 6,800 employees worldwide. According to David Smoller, president of Sigma-Aldrich’s Research Biotech business unit, the company provides many areas for researchers to work in. “There are not only opportunities for scientists in R&D and operations, but also in areas such as marketing, sales, and business development. “We are always looking for talent in all these sectors, and we have openings and candidates for these positions all throughout the year,” he says.

Likewise, at BD Biosciences in San Jose, California, jobs include opportunities for scientists in many different disciplines (biochemistry, molecular biology, cell biology, immunology, chemistry), as well as hardware and software engineering of all descriptions. “In addition to R&D positions, we are always seeking specialists in closely aligned fields such as business development, medical and clinical affairs, regulatory affairs, customer support, intellectual property, and operations,” says David Litman, chief technology officer and worldwide vice president of R&D, BD Biosciences, a segment of BD that employs about 28,000 people in approximately 50 countries throughout the world. BD Biosciences develops and manufactures tools for life science researchers, including fluorescence activated cell sorters and analyzers and cell imaging systems as well as associated antibodies and reagents. “We have many opportunities for people who enjoy research, discovery, and invention of new methods and biomarkers, as well as opportunities for development scientists who enjoy interacting with customers,” Litman says.

**Right Skills for the Job**

Various technical skills learned in graduate school are, of course, important for getting a foot in the door at product companies, but perhaps even more important is the ability to be individually creative and yet able to function as part of a team. “We are looking for people with the right technical skills for the job,” says Thompson with CST, “but the ideal candidates have scientific acumen, so they can quickly analyze a problem, design appropriate experiments, interpret the results, and move on to the next stage. In addition, they are well organized, they communicate effectively, they have good interpersonal skills, and can participate in a team environment,” Thompson says.

Flexibility is also a key characteristic among successful applicants. “My advice to prospective employees is to keep an open mind about the possibility of playing a wide range of roles in a company and to adopt a highly flexible approach as to how the business and their work may change,” says Joanne M. Yeakley, staff manager, scientific research, for Illumina. Headquartered in San Diego, California, Illumina develops microarray technologies used in large-scale analysis of genetic variation and function. “As we grow, we find a need to bring in people with different expertise that can help us enter new markets,” she says. “To support our growth, we have been hiring in all parts of our business, from sales and marketing, to manufacturing, to R&D.”

Litman at BD Biosciences emphasizes that people entering the field should have a commitment to continuous learning and self-improvement as well as the “ability to operate
across disciplines, intellectual open mindedness, and geographic flexibility.” Some companies, for example, Promega, are happy to work with entry-level scientists and have ongoing training programs that provide continuing education such as a Master’s in biotech program, Master’s in operations management, and skill-specific training workshops.

**Rewards of Product Development**

According to those employed in the field, working in product development can be an immensely rewarding undertaking and provides the opportunity to influence scientific research globally in a way that few other jobs can. “There is a great deal of satisfaction that comes from enabling research and breakthrough discoveries around the world,” says Thompson with CST. “We have literally thousands of customers all over using our products to publish in very high quality journals, and we feel like we are able to contribute very broadly to biomedical research.”

The feedback can also be instantly gratifying. Thompson points out that the time from inception of an idea to the release of a product can take about 6–18 months, depending on the type of product. “And with that comes that immediate feedback, in terms of performance in the customer’s hands—how they like it and how well it’s working for them.” Thompson also points out that the sales of a product directly parallel how well a product meets the needs of customers and provide immediate feedback on how well a product is being received.

The work of product development is also, for the most part, quite varied. To keep up with emerging technologies requires innovation and the ability to move at a fast pace. “The work rarely becomes routine,” says Dirk Loeffert, senior director of research North America and senior director for research and development at Qiagen’s Technology Center Modification/Amplification in Hilden, Germany. Qiagen creates sample and assay technologies for use in research, applied testing, and molecular diagnostics and has about 2,600 employees worldwide. “I think the jobs are most interesting when the product developed fulfills the role that has been pictured for it,” Loeffert says. He adds that it is very rewarding when major research studies are conducted with a product that they helped bring from an idea to the marketplace. With diagnostic reagents and tools used in patient management, there is also the feeling that the products that you have worked on can save lives, he adds.

Chuck York, production director at Promega, agrees that working in product development enables the feeling that one is really helping to make a difference for researchers. “Our products help scientists to discover new biology, develop new drugs, diagnose a patient’s disease, and identify crime suspects,” York says. “Our reward is in the knowledge that our own research and product manufacturing has a hand in the scientific achievements of our customers.”

**Understanding Customer Needs**

As might be expected, there are times when products are not as well received by customers and do not function as well as had been hoped. In that case, a researcher at a product company might spend time on the phone collaborating with customers to solve problems. According to Thompson, feedback on performance issues and the ways in which products can be improved typically does come from customer experience.

It is also important when developing products to have a clear understanding of the needs of the customer. “Knowing scientists’ specific needs is the greatest challenge of developing products,” says
Devin Leake, director of research and development for Thermo Fisher Scientific, Dharmacon RNA Technologies. “We spend a lot of time talking with researchers—at their labs, and at conferences—in order to better understand their needs,” he says.

Another challenge is ensuring that products work in a consistent manner. Considering the multiple variable conditions of experiments and the researchers who conduct them, developing a product that works consistently would seem to be a nearly impossible task. “Our products not only must work as we suggest, but they must work the same way every time a researcher picks them up,” says Promega’s York. “That means we must develop and extensively test product concepts so that we best understand how they can fail, and create formulations and protocols so that they do not fail,” he says. “In this way, we best assure a customer’s success with the product.”

Finally, there is the challenge of not only developing products that work but providing those that are desired and that are perceived as being needed by researchers. If products are too advanced or not advanced enough, there is a chance that they will not sell in the marketplace. “Savvy portfolio management and product selection are incredibly important,” says BD’s Litman. “Being too far ahead, or behind the curve, can be equally damaging.”

Good Help Is Hard to Find

In general, many opportunities are available at product companies for talented individuals with the right mix of technical skills, creativity, and people skills. Companies have a vested interested in hiring only the best researchers, since the success of their business depends so heavily on the contributions of these employees. While there is no shortage of applicants for most positions, companies still say it’s hard to find good candidates. Bulleit notes that job openings in R&D at Promega are very competitive. “In R&D, we have as many as a hundred applicants for a job posting. So our challenge is to identify the best candidates that can adapt to our fast-paced, team-oriented research environment,” he says.

CST’s Thompson agrees. “Usually for any position we have open, we’ll have lots of applicants; however, finding the right people is always a challenge, and in that sense we are no different than any other company in science.”

Litman with BD Biosciences points out that for persons with the right qualifications, skills, and characteristics, the industry is robust, and the demand for qualified individuals is significant. “From a career standpoint, the product development industry is a vibrant industry that is growing strongly and has a dynamic mix of startups and global leaders,” he says. “Overall, the prospects for career seekers are very good, and there are great benefits, such as opportunities to grow professionally, move into diverse fields, and even to work in different parts of the world.”

Getting to the Top of the Pile

As with any career path, having a specific plan of action is helpful for attaining a position at a product company. Wandering into an interview thinking that you are the only person being interviewed for a position is, of course, a mistake. You will have a better chance if your resume is highly tailored to the position in question. In addition, consider practicing for the interview with a friend or colleague. Ensure that you can explain how your specific skills can match most aspects of the job description for that position. For those parts of the job description where you do not have proven ability, try to think about how you will address that in the interview or how your other skills might compensate, or perhaps express a desire to learn within the position itself.

Candidates should also work on being able to articulate their research, both with scientists and nonscientists—you may interview with both. You should, of course, be able to describe in detail any products used in your research, especially those that have come from the company where you are applying. You may even try to come up with positive aspects about a company’s
products that you have used or tactfully describe ways in which they might be improved (a discussion to be navigated with care).

An area of great need in the industry is experienced management, says Smoller of Sigma-Aldrich. “In addition to scientific training, commercial and supervisory experience is a true need.” This skill can be developed with business courses taken alongside scientific training as well as by seeking out opportunities to train and lead others. Specific ways in which you have solved problems, either personnel issues or technical/scientific problems, should be highlighted in your resume. Of course, most graduate students and postdocs will have had the experience of directing, training, or managing others, and this can be mentioned in an interview.

If you are seeking a job at a particular company, you will set yourself ahead of other applicants if you go into the interview knowing as much as possible about the company and its products. It can help to carefully read through a company’s website, especially information such as press releases and pages on product development. Consider ordering the company’s catalog if you do not have it. Often on the careers part of the website, the company will state something about its philosophy or working environment and you can develop interview responses that show how you would fit in with the company. On what does the company pride itself? Perhaps it is concerned about environmental issues or donates supplies to high school science labs. Find out about that. Most important, be able to clearly explain why the company needs you and what you can do for the company.

DOI: 10.1126/science.opms.r0800054

**Examples of Jobs at Product Companies with a Ph.D. Required or Preferred**

**Scientist—R&D**—Plan, carry out, and report on research and development activities. Apply laboratory techniques and skills to plan, design, and conduct laboratory experiments in the support of new product development. Identify and solve problems in experimental designs. Collaborate with other departments. Prepare technical summaries and papers.

**Formulations Scientist**—Prepare, document, and deliver quality reagents. Independently develop new formulations and supporting documentation for new reagents. Recommend specifications for new formulations. Perform quality control testing methods for reagent preparations and service support. Develop new testing methods.

**Project Manager**—Track projects and identify potential obstacles and resource bottlenecks and provide possible solutions to senior management to optimize the R&D project portfolio. Facilitate successful R&D project execution through coaching and support of project team leaders and teams. Work with other departmental teams to coordinate activities.

**Marketing Manager**—Work with the management team to develop and implement worldwide marketing strategies and product line planning activities. Drive strategy and execution to deliver on the growth opportunity that certain parts of the business may have to penetrate different market segments.

**Quality Assurance Specialist**—Work with various internal departments to develop, improve and execute processes and support the maintenance, development, and improvement of good manufacturing practice quality systems, including auditing (internal, supplier, and customer), training, process validation, cleaning validation, equipment qualification, environmental monitoring, water monitoring, change control, complaint handling, and documentation control.
FEATURED PARTICIPANTS

Illumina - www.illumina.apply2jobs.com
Cell Signaling Technologies - www.cellsignal.com/about/employment.html
Becton, Dickinson and Company - www.bd.com/careers
Qiagen - www1.qiagen.com/Jobs/?WT.svl=m
Promega - www.promega.com/hr
Invitrogen - www.invitrogen.recruitmax.com/MAPcareerportal/default.cfm
Sigma-Aldrich - sh.webhire.com/Public/310/search.htm

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Biotech and Pharma—June 13
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