

ADVANCING IN INDUSTRY: CHOOSING AMONG MANY PATHS

Researchers who opt for industry will have many career options from bench research to drug development to marketing and business planning. The key to success is being flexible and open to change as well as having a collaborative spirit. **By Laura Bonetta**

Yingez Yigzaw probably never envisioned a career in biotechnology as he was growing up in a rural part of Ethiopia. “The area was so remote the only technology I had experienced was a plane flying overhead,” says Yigzaw, who joined Amgen’s Seattle research facility in 2004, where he is currently a senior scientist in process and product development.

Having completed a Ph.D. at the University of Leuven, Belgium, and a postdoc at the University of Tennessee, what appealed to Yigzaw about working in industry was “to work on cutting-edge scientific innovations that directly apply to saving or improving patients’ lives,” he says. “In academia, the primary objective is to pursue an area of research and have a paper published. At Amgen, we apply that knowledge to solve a problem and determine the best therapeutic agents to treat human disease.”

The desire to apply research to a medical problem is a common refrain among scientists who have joined biotechnology or pharmaceutical companies. But to succeed in industry, that desire has to be coupled with flexibility and a willingness to collaborate and work in teams—skills that are not always promoted in an academic environment.

In addition to providing research careers, industry opens the door to other paths for Ph.D. scientists, such as in regulatory affairs, strategic planning, business development, or marketing. For those who find the right fit, a career in industry can be a very rewarding choice.

EMBRACING COLLABORATION...

The career trajectory for industry researchers typically consists of a series of promotions and recognitions, such as titles, awards, or pay raises, often accompanied by increased responsibilities overseeing increasingly larger research teams. When **Jennifer Leeds** first joined the Novartis Institutes for Biomedical Research in Cambridge, Massachusetts, in early 2003, she was hired as the head of an infectious disease lab. She rose through the ranks to her current job as the head of the antibacterial discovery group within the infectious diseases area, overseeing a team of over 30 biologists working in partnership with medicinal chemists. “I basically started out as the equivalent of a PI for a lab and grew to a section head or department chair,” she says.

Industry does not have a step comparable to tenure that beginning researchers can aspire to. “There isn’t one milestone where you can sit back and finally take a breath; in industry you are constantly evaluating the next career step,” says Leeds. “At the beginning, the challenge is that you have to learn to be an effective project leader and project team member. But then there are new challenges along the entire path.”

From Left: Meena Sachdeva, Jennifer Leeds



Mark Goulet

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Success at Novartis is based on the quality of a scientist’s research, similar to an academic environment, but unlike academia the end goal is to bring a product forward. As a result, priorities in industry are slightly different. “You have to be at the forefront of science, but you also need to be a collaborative and team-oriented person,” says Leeds. “In academia it was historically frowned upon to have too many authors on a paper. In industry the most important thing is to get the best people to work with you on your team. Projects are more likely to succeed if you can capitalize on all the resources that are available to you.”

Another important factor in paving a successful career path in industry is networking with colleagues—and for a global company like Novartis that means plenty of travel. “I often travel to **continued »**

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Annual Postdoc Survey—August 26

Focus on Japan—September 2



“Business development is a good career for someone with a degree in science and an interest or training in business.”
—James Sabry

our campus in Switzerland and spent four months there on a sabbatical. I have traveled to China and Taiwan as a representative of the Novartis Infectious Diseases program. I travel quite a bit to the campus in New Jersey. I also visited the site in Siena, Italy, where Novartis has a vaccine group,” says Leeds.

...AND FLEXIBILITY

A willingness to collaborate and work in teams means that researchers in industry have to share credit for research advances. “You have to pay less attention to personal achievement and more to what is rewarding for the team,” says **Jeffrey Nye**, head of external innovation in the neurosciences at Johnson & Johnson (based at the Titusville, New Jersey, facility).

Nye left a tenured faculty position at Northwestern University Medical School in Chicago for industry because he was “very excited about practical research applications and less interested in the personal glory associated with being first on a publication,” he says. The inability to work as part of a team and share credit is one major reason a researcher may not be successful in industry.

Another difficulty for some Ph.D.s in industry is having to be flexible and adaptable to change. In academia it is not unusual for a researcher to stick to the same line of research for decades, digging deeper and deeper into a particular mechanism or pathway. That generally does not happen in industry. A researcher in industry will have to let go of a project once it progresses from the research phase to clinical development. In addition, a project may be dropped if it is not yielding promising results or if the company’s business focus changes. A researcher may also be pulled to work on a different project to provide their particular expertise.

“You have to be attached to what you are working on, but the overall mission in industry is to bring new therapies to market, so you have to accept if that requires you to work on something else,”

says Nye. “I have not found it difficult to follow business decisions because my interest at heart is to address big medical challenges.”

Flexibility and adaptability are particularly critical in startup companies. In these smaller companies researchers often play many different roles, which can change as the company grows and its mission evolves. “In biotech you have to adapt very easily—that is the fun part of the game,” says **Sharon Shacham**, chief scientific officer of Karyopharm Therapeutics in Natick, Massachusetts. “You will start with one project and as it moves to the clinic, you will need different skills, all of which you have to learn.”

In addition, startups are often fast-moving and unpredictable environments. To be successful, researchers have to be able to deal with the stress. “In a biotech company you typically have one product, or if you are lucky, two or three at most, so everything you do is live or die. You are constantly fighting for the life of your baby, so mentally it is more exhausting,” says Shacham. “In a big pharmaceutical company, if one project does not work you move on to another.”

MULTIPLE PATHS TO FOLLOW

Researchers who opt for a career in industry will find that there are many career paths for them to follow—more than would have been available in an academic environment. The choices range from research to medical development to business and commercial careers. The key is figuring out which path is the best suited to one’s own skills and aspirations.

For those interested in a research career, there are many levels or ranks in industry. Similar to academia, researchers who advance through several levels may consider a more managerial or strategic-planning position at some stage. “I spent most of my time in research with a science role and then moved to a more strategic role in the last couple of years,” says **Mark Goulet** who leads strategic operations for the global discovery and preclinical sciences organization at Merck Research Laboratories. “I was very happy running a chemistry department, but after a point in time I had the right experiences to take on larger things and think more broadly. You have to be ready to step up to be a good fit for what the company needs next.”

Goulet, who has been at Merck for 24 years, says that researchers in industry should expose themselves to different projects within the company and grow their expertise in different directions. “The attitude here is that Merck wants you to develop and take on more, keeping your eyes open for the best way to grow your career,” says Goulet. [continued »](#)

FEATURED PARTICIPANTS

- | | |
|---|---|
| Affymetrix
www.affymetrix.com | Merck Research Laboratories
www.merck.com |
| Amgen
www.amgen.com | Monsanto
www.monsanto.com |
| Genentech
www.gene.com | Northwestern University’s
Medical School
www.feinberg.northwestern.edu |
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REEVALUATING OPTIONS

Industry researchers are often faced with the option of staying in basic research and development or moving into the more clinical side of the business. Nye, who obtained both an M.D. and Ph.D. degree, rose from being a team leader for a discovery group in charge of nine research labs to heading clinical phase III trials for a blockbuster anticonvulsant drug and an Alzheimer's therapy to then becoming chief medical officer and head of early development for a research and early development organization.

Nye then moved to his current position as head of external innovation for neuroscience. "My job now is to recognize great science and to give advice and direction to the company to make investment decisions," he explains.

To be successful in industry, researchers have to demonstrate the ability to lead teams, to be great communicators, and to be trusted by others, in addition to doing great science, says Nye. "In industry we are so reliant on each other that we have to be able to trust one another," he explains.

Networking skills and having good mentors are also key. Most companies have formal mentoring programs in place, but Nye recommends that researchers be proactive at finding their own mentors in different areas of the company.

MOVING TO THE COMMERCIAL SIDE

Some researchers move away from bench research to take on a commercial role in marketing, finance, or business development. "Business development is a good career for someone with a degree in science and an interest or training in business," says **James Sabry**, vice president of partnering business development at the South San Francisco-based company, Genentech. "Going to business school is the fastest way to get a business education. At Genentech two-thirds to three-quarters of people in the business development unit have an MBA."

Sabry himself never attended business school. However, after obtaining his M.D. and Ph.D. degrees he founded and served as chief executive officer (CEO) of a company, and later did a stint as CEO of another. Doing business development in a startup has some advantages for someone who is just starting out in this career path, according to Sabry. "You will have two to three people in the business unit of a company with 30 people, so you will know everything that is going on in the lab and you will see the CEO every day. You will get a very good education if it's a good company," he says.

On the other hand, a startup may not have an established mentorship program as in a larger company like Genentech, so the positions are more risky in terms of career development. "Another disadvantage is that the work in a startup is less varied," adds Sabry. "At Genentech you can work on a wide variety of business deals, whereas at a startup you will more likely focus on just one for a long time."

There are many routes to advancement for Ph.D.s who switch over to a career in business development. "Some people love doing contracts and sealing in deals and stay in those types of jobs; others want to follow more management-style tracks



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—Kevin Cannon

and advance up the ladder in that way," says Sabry.

TAKING INITIATIVE FOR YOUR CAREER

Strategic planning and marketing are additional routes within the business world for researchers to take. Many companies value the scientific knowledge Ph.D. scientists bring to the job. "Customers like to speak to someone who understands the science," says **Andy Last**, chief commercial officer at Affymetrix. "You don't have to be an expert in every pathway or structure, but you need to stay on top of the science and keep current with trends and market drivers. As you progress along the business hierarchy, you will also have to acquire more strategic and leadership skills," added Last, who is responsible for the entire product mix and roadmap for Affymetrix.

Shortly after obtaining his Ph.D., **Kevin Cannon** found a position in product development at Monsanto. After working at several other companies, he has risen through the ranks to vice president of strategic marketing at Affymetrix. He says that some of the questions that a person working in marketing has to tackle—such as identifying unmet needs in a particular market, what the company can offer, and what the value is for a particular technology—are as challenging as doing research. "You have to formulate hypotheses and investigate. If I say in the next five years nanotechnology will take over, I will need to justify why that is, determine unmet needs, and propose what Affymetrix can bring to that new market landscape," he explains.

A typical career trajectory for someone in marketing is to start as a product manager and then move up to senior product manager to the director level and then on to vice president and beyond. Advancement not only depends on doing your work well, "but it's also about flexibility, the willingness to try something new, and being open to change," says Cannon, who heads up the RNA gene expression side of Affymetrix product lines.

But advancement is not guaranteed—people have to carve out their own paths to make sure they end up where they want to be. For example, someone who wants to be given more responsibility or to branch out in a new area should approach his or her manager with the idea. "Most academics are not trained to ask for things," he adds. "But you have to manage your own career; you can't let the system manage it for you. If you are not paying attention you could get lost very quickly."

Of course taking initiative for one's career is a recommendation that applies not only to those embarking on business path but to any career choice. With adequate planning and consideration, Ph.D. scientists can find a rewarding future in industry—one that is perfectly tailored to their skills and aspirations.

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