



Sloan Career Cornerstone Center

Profiles of Chemical Engineers



Lakisha Powell

**Project Engineer
DuPont Merck Pharmaceutical Company
Garden City, NY**

Education:

B.S. - Chemical Engineering, Massachusetts Institute of Technology

Job Description:

Associate Project Engineer in the Engineering Department

Advice to Students:

"Pay attention in class. Definitely do some type of research, make sure you have a lot of lab skills underneath your belt, and make sure that you do internships."

Video Transcript 1:

"My job is Associate Project Engineer and I work in the Engineering Department. Our Engineering Department, however, is very small. We only have about three people. And mostly what we do is bring in contractors when the work load is higher. So I have a little bit of an opportunity to interview contractors and make sure they're appropriate for what job position we're looking for at the time. Maybe 50 percent of my time is spent in meetings or getting prepared for meetings. The rest of my time is spent in dealing with contractors. Right now we're in construction, and my job right now, or my project is, to make sure that that's managed correctly. So if I'm not in a meeting, I'm downstairs with the construction workers or with our construction manager and making sure that everything is put in the right place or it's up to the standards that we hold."

Video Transcript 2:

"Your race or your gender might initially be a strike against you, as long as you can present yourself well, and you know what you're doing, that impression holds longer in their minds than the next person that might come along. In a way though, it's also a hindrance. At least for me, because I look very young. And the people don't realize. And they're like: Well, how old are you actually? Or, where did you go to school, and everything? And then they're really shocked by what I've actually done versus how I appear."

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Interview:

Powell: My name is Lakisha Powell. I work for DuPont-Merck in Garden City, New York, and we're a pharmaceutical company. I'm an Associate Project Engineer in the Engineering Department. Our Engineering Department, however, is very small. We only have about three people. We bring in contractors when the work load is higher. I have a little bit of an opportunity to interview contractors and make sure they're appropriate for what job position we're looking for at the time.

Q: What does a typical day look like for you?

Powell: Currently, my typical day -- I come in, I get coffee, and make sure everything's all settled. Unfortunately, from my point of view, there are a lot of meetings. I can say from about Monday through Friday, maybe 50 percent of my time is spent in meetings or getting prepared for meetings. The rest of my time is spent dealing with contractors. Right now, we're in construction. We have a \$1.3 million project where we're upgrading our facility on-site, and my job, or my project, is to make sure that that's managed correctly. So if I'm not in a meeting, I'm downstairs with the construction workers or with our construction manager to make sure that everything is put in the right place or it's up to the standards that we hold.

Q: What are some of the aspects of your job that you most enjoy and least enjoy?

Powell: The thing that I least enjoy are the meetings. It doesn't really lend yourself towards an engineer's way of thinking. Engineers usually deal better with themselves, or with others who think like they do. I find that in a lot of meetings that you attend, you never actually accomplish anything-it's just a lot of 'back and forth.' A decision is never really made, and then you hold another meeting to talk about the meeting you just held, and that, actually, is extremely annoying. But what I enjoy is when I can actually deal with people who know what they're doing, or dealing with contractors, because it gives you a different view or perspective of what else is out there in industry. I graduated eighteen months ago, so I'm still in that learning phase where I'm not sure exactly where I want my career to go. So dealing with the contractors and dealing with other people on site, or outside of the company, really helps to broaden your view of what an engineer can do.

Q: What college courses did you take that allow you to be successful in this type of work?

Powell: I can honestly say it wasn't any particular course, it was actually the methodology that they teach you while you're in school of how to approach a problem, think about it logically, and be able to reference what you need. I don't think it's really important to know an equation by heart-or to know anything by heart. Make sure that you keep in contact with people and your professors. I've actually called a professor up because I just couldn't remember something and it was a problem that I had already gone through. It's helpful to go back and talk to somebody who will know how to help you or be able to point you in a better direction. Never be afraid to ask questions. That's what I've learned, and that's what school has really taught me-make sure that it's a continual learning process.

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Q: If you could go back to your sophomore year, are there any things that you would do differently?

Powell: I would definitely pay more attention in class. It's those obscure little details that the professor just glides over that really make a difference. Not only on tests while you're in school, but it's that principle when you're actually working-if you could think about it, it might actually help you solve a problem more quickly, especially if you're in research. Also, I would definitely consider taking more classes outside of my field. In my senior year, I started taking business, and bio-medical classes. It helps to get a broader view of what you can do. Because, at least in chemical engineering, everything that you take in the beginning is very fundamental, very theoretical, and you have no idea how to apply it. It definitely helps to take something earlier on in your academic career so that you can be more focused before you get to your senior year.

Q: Did you participate in any internship, co-op, or mentoring programs?

Powell: While I was in school I was a member of NSBE, which is the National Society of Black Engineers. I was also a member of AIChE and NOBCCChE. Through them I got my summer jobs. It's very important to make sure that you do your summer internships. We have a program where I went to school called UROP, which is the Undergraduate Research Opportunity Program. And that's basically working with a professor during the semester, or during the summer, on individual research topics. It's a good way to be able to apply what you're learning in class, because as you learn it you have really no idea, then when you start actually applying it, it's like: 'Oh, that's exactly how it works, or that's what it really means.' I would highly recommend some type of internship for anyone.

Q: Did you find that being involved with other organizations, like NSBE, helped when you were interviewing for your first job?

Powell: It helps because, through career fairs and attending the meetings, you're exposed to the corporate environment and how to handle yourself. What I find, at least among my friends, is that they're very good at doing a job or dealing with a certain problem, but when it comes to interacting with people, they have a problem. They have a mental block. So a lot of these organizations help you. They present an opportunity for you to be able to go out and get a job, because a lot of times the recruiters will go first to the organizations and say, 'Well I have this posting, do you have anyone that you would recommend?' They also teach you how to deal with people on a professional level.

Q: What are some of the things that you look for in young chemical engineers?

Powell: Grade point average. I hate to say this, but even though it might not truly reflect what you really know, it's a good way for us to be able to gauge if you are a good student or can actually do the work. Unless you present yourself in a way that totally defies what your GPA might be, I definitely look for grade point average. I also look if they've done any research or if they have any type of writing skills. A lot of times you find that an engineer does not know how to present the work that he or she has done. It's very important to be able to make sure that you have some type of writing-were you involved in the writing curriculum at your school or in presenting technical papers-or presentation skills? What else do we look for? If you've done

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any research. If you have any type of other organizations that you deal with, whether it's AIChE, NSBE, NOBCCChE, or the American Chemical Society. That way, you know that the person has some other affiliation that they might actually be able to use to help you bring in other people, and that's a good thing.

Q: What is the pharmaceutical industry like?

Powell: There are two sides to the pharmaceutical industry. There's research and there's actual production-where the things go on the shelf with the prescription drugs. I work on the prescription drugs production side of it. The difference that you find in the manufacturing environment versus the research environment is that we have a thing called CGMPs, which are the Current Good Manufacturing Practices. And then you also have Bulk Manufacturing Practices-which deal specifically with the bulk chemicals. What you find is that it's a whole different ball game when you're in a production environment. I work with narcotics, so I have to deal with quotas-the D.A. might not even grant us enough to be able to produce what we want for the year. The environment is totally different from a research environment. In research, you're very meticulous about making sure that everything's recorded and that you're going step by step. You can take a lot more time, depending on how fast your project is driven. But in manufacturing, not only do you have to do that, but everything is very time oriented because you have to serve your customer in a certain time period. Not only that, but there are standards-your head's covered, your mustache is covered, and you have the proper gowning on. Then you have the safety and it's the rooms-the walls have to be to a certain level, there's a certain sanitation procedure you have to follow. It's a lot more strict than I expected to be.

Q: What are some of the pros and cons of working for a large corporation?

Powell: DuPont-Merck is not an extremely large company compared to its parent companies DuPont and Merck. What you do find different is that, at our site at least, everything is a lot more personal. I could walk into the plant director's office and discuss a problem if it was really bothering me or if it was really important. You have to know your boundaries. But if you're working in a larger corporation, it would be more difficult to be able to move past that and have the interaction. The problem though, even in working in a small company, is that sometimes people just don't communicate as much as possible. I think that's just a corporate environment.

Q: What role does technology play in your day-to-day job responsibilities?

Powell: What I rely on mostly is not anything that's coming out or that's new. Dealing with the bulk chemicals, all of the processes that we do are grandfathered. They're back from the 1940s and '50s. So it's like a 'tried- and-true' method that we deal with. Technology, however, plays a big role in the rest of our site, dealing with the liquid and the solid dosage forms that we manufacturer. We have different handling procedures. We have different containment levels, because some of the new products that are coming on line cannot be handled by human hands.

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Q: What computer skills do you need for this job?

Powell: You definitely need to know how to use a computer, and you need to have basic computing skills. You need to be able to use some type of word processing program. Definitely Excel-become a wizard at Excel. And if you're in any type of corporate environment, become a wizard at Power Point, because you'll be doing lots of presentations. We have a lot of computer-automated programs for the manufacturing environment, so you do not need to actually know how to read code, but understand what you're looking at. So there is a process. If there is a problem that you might not be able to fix, but you can pinpoint it and then refer to somebody or call somebody, they can definitely fix it. With the computer-automated programs with the machines, you can just punch in a number and then it knows exactly what process to follow. And in that way, you need to be comfortable with a computer, but you might not have to actually know exactly what every line of code means.

Q: What opportunities exist in the field of chemical engineering for minority students and women?

Powell: I actually find that in a way it helps and in a way it doesn't-being a black female. It helps if you present yourself in a certain way. To a lot of people, you have to be a little bit better than everybody else-don't get me wrong, it's not easy-but as long as you can present yourself correctly, it helps. First of all, being a female, people might feel a little more comfortable in your presence-and it helps to get across some of the things that you need to get done. As long as you can present yourself well, and you know what you're doing, that impression holds longer in their minds than the next person that might come along. In a way though, it's also a hindrance. At least for me, because I look very young. And people think: 'Well, how old are you actually?' And then they're really shocked by what I've actually done versus how I appear. So it's like the whole package. You have to know how to present yourself and you have to know what you're talking about. You need to make sure that what you're saying is correct. Double check everything before you say it, because if you come out with something wrong, then that's like the one mark they'll hold against you.

Q: What advice would you offer to someone who is interested in chemical engineering?

Powell: Pay attention in class. Definitely do some type of research, make sure you have a lot of lab skills underneath your belt, and make sure that you do internships. It will definitely help you decide what you do not want to do. From my internships, there are some things that I know I'll never want to go into. That's basically the learning process. It might be ten to fifteen years down the road in your career, but as long as you're continually learning and you can say, 'Well I know that I'd never want to go back to that,' then it's a good stepping stone for yourself.

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