



Sloan Career Cornerstone Center

Profiles of Chemical Engineers



Deborah Rech

**Food Engineer
Thomas J. Lipton Company
Englewood Cliffs, NJ**

Education:

B.S. - Chemical Engineering, Rutgers University

Job Description:

Food engineer working in the soups and side dish area

Advice to Students:

"You need to know how to write. Also, remember-the classes are the hardest part. Once you get through the classes, the job is easy-you have a goal that you're working towards."

Video Transcript:

"A food engineer is a catchall title. It applies to all engineers who work in the process areas. So rather than having a Tea Engineer, or a Noodle Engineer, Pasta, Wishbone, you're a food engineer. Primarily I work in research, so I'm either doing, performing an experiment, or I'm tabulating the results, writing reports, or our area also does scale up, so we'll have plant visits where we'll experiment at the plant or even install new equipment for a plant process."

Interview:

Rech: I'm Deborah Rech. I work at the Lipton Company and I'm a food engineer. I've been there for five years now. I work in the soups and side dish area.

Q: What is a food engineer?

Rech: A food engineer is a catch-all title. It applies to all engineers who work in the process areas. So rather than having a tea engineer, or a noodle engineer, you're a food engineer.

Q: What are some of your daily job responsibilities?

Rech: I work primarily in research, so I'm either performing an experiment, I'm tabulating the results, or writing reports. Our area also does scale up, so we'll have plant visits where we'll experiment at the plant, or even install new equipment for a plant process.

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Q: What courses did you take in college that help with what you're doing now?

Rech: I had a core chemical engineering background. I didn't know specifically what area I wanted to work in, so I didn't specialize in any particular area.

Q: Who are some of the people you interact with on a day-to-day basis?

Rech: We have other chemical engineers in the group. We also have mechanical engineers. Basically, we have people who are either very machine conscious, or are concerned about the product itself.

Q: What do you do in an R&D lab?

Rech: You're primarily making different variations of whatever item you're working on. Different formulations of salad dressing, or if you're making pasta or noodles, you'll have different amounts of egg, or you'll be making spinach pasta or some other vegetable item. So it's different formulations that you have to make, and you run them in the pilot plant, or benchtop. There's no real analytical equipment in the meals area. Moisture analysis is very important, viscosities are important -these are basic analytical tests for the food industry.

Q: How do you come up with these formulations?

Rech: It depends on what you're working on. You can create something from scratch. Generally, you will go through recipe books to find a flavor profile that you want. We also use market research where you'll take a name screen or you'll list several different varieties of food items-chicken and broccoli or stir fry-and you'll present them to consumers. Whichever ones are most popular will be selected. Then you'll formulate a different bunch of things to try to come up with a taste profile that everybody likes, and you pick one.

Q: What else do chemical engineers do in the food industry?

Rech: It's extremely varied, and it's much more intense than it might sound like. You're not baking chocolate chip cookies by the batch-they're on an industrial scale. Starch technology is very important. Emulsification technology is very important. When you're making a salad dressing that sits on the shelf, you don't want it to separate. So that's very important. You use spray-drying equipment to make instant tea. Pneumatically conveying food is difficult. Sugar tends to become cubes. So there are lots of places where your chemical engineering background comes into play.

Q: What were some of the things that you did, while in college, that helped you get to where you are today?

Rech: Most of my summer work was done in the pharmaceutical industry. And that was very, very helpful, because you had to write reports, and you had to have your notebook organized, witnessed, and signed. You finally got to see, not just the technical aspect of your job, but how you interact with all the other people who need your work. That was very important; so summer work was very helpful. The pharmaceutical industry and food industry are called clean industries. So a lot of the equipment is very much the same.

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Q: If you were hiring another chemical engineer to work with you, what would you look for in that person?

Rech: You'd need somebody who's organized, someone who writes well, and someone who is very willing to work under any circumstance at any time. You have to be flexible.

Q: What aspects of your job do you most enjoy and what do you least enjoy?

Rech: I travel about 15 percent of the time, generally to the same plant. They're very easy to work with. When you go to the plant, you're actually accomplishing something. A lot of R&D work is: you try it, it doesn't work, you try it, someone will decide that this isn't the right time for this product. When you actually go to the plant, real things are happening. It's an actual product that consumers are going to use. It's very satisfying when you go to the store and there's a product that you worked on and you know somebody will pick it up and bring it home. That's a very nice feeling.

Q: Do you have a mentor currently?

Rech: When I first started, I did have a mentor. He was in the food industry for about 25 years. He had basically seen it, done it, and he was very helpful at providing direction for the experiments. He didn't really list things out: Do this, do that, do this. I would set up my own design and he would emphasize a certain area to work in. So he was very helpful.

Q: How did you find this job?

Rech: I got my job out of the newspaper. I had a few agencies that I was working with, but this position was in the newspaper.

Q: What do you think this company saw in you that made them want to hire you?

Rech: My summer job experience was very important, because it was all with Fortune 500 companies. They liked that. I had to work with different levels of people, so I was very comfortable, whether I was working with a senior engineer or another technician. I was very comfortable in that environment.

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

Rech: I use my computer every day. Whether it's as simple as reading e-mail, or writing my own memos. Secretaries don't do this-you write your own memos, trip reports, plant trial results-all these things are on the computer. I don't work with too many spreadsheets that I've created for my job. Other areas live and die by their spreadsheets. So you may have to do your own ad hoc program.

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

Rech: They should not forget their humanities. They need to know how to write, more now, than ever. You have to say more in less space. You need to be organized. Those are probably the main points. Your technical background will be fine, if you get the degree. But you need to know how to write. Also, remember-the classes are the hardest part. Once you get through the classes, the job is easy-you have a goal that you're working towards. In school, you don't know how it connects. When you're at work, there's a beginning, and a middle, and an end. So this is the hard part, in college.

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