



OP-ED

# Why I Got My PhD in Beer

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*Dr. Jennifer Schneiderbanger is one of a small number of people in the world who has completed a doctorate in brewing science. She is now a professor at the Technical University of Munich School of Life Sciences, located in Weihenstephan, which is a part of the Bavarian town of Freising, against the backdrop of the world's oldest brewery Weihenstephan.*

*As told to Barbara Woolsey*

You should probably know something about me: I'm a person that's always asking questions. My nature is very inquisitive and eager to learn. So after graduating secondary school, I knew I wanted to continue with an education in science.

Our family has a small village brewery in Lower Franconia, and that was my starting point into studying brewing science. I didn't even know what a brewery was until age 13, when my mother married the brewery owner. My first memory was the smell of fermentation. I remember it very well. Those first whiffs of the fermenting cellar were completely new for me, and I loved it.

In school, I was always interested in biology. If there wasn't a brewery back at home, I might've gone into medicine. But in the final year of school, I decided to follow in the footsteps of family ties and to formally study brewing science at a university.

In Germany, it's only possible to do so in two places: Berlin and in Freising at Weihenstephan.

Being born and raised in Bavaria, I knew I wanted to stay here. The people are really special, and I appreciate the attitude toward life here (if you've been to Oktoberfest, you'll understand). So, at age 19, I left my little village for Freising.

The bachelor's degree in brewing science was the opposite of what I expected. You learn about countless different disciplines including brewing science, foodstuffs, nutritional science, and bioprocess technology. It was very demanding, but unbelievably interesting.

The degree was nine semesters. The first four were basic studies, like mathematics, physics and biochemistry. Many students left after those first two years because it was too demanding.

After that, the main studies in brewing science began with specializations, such as fluid mechanics, technical mechanics, microbiology and so on. That's when students tend to get on better because they can learn what they're interested in.

Once I had the degree, I went home for about a year-and-a-half and worked at the family brewery. I was 24, still quite young, and decided that just couldn't be it for me. I had the feeling there was something missing. I wanted to continue on the scientific track. I liked working on my thesis so much that I decided I needed to go to the next level: getting the doctorate.

The doctorate has taken quite a long time—I started in 2011 and finished in September 2019. It required a lot of endurance. There were many points of not wanting to continue because things just didn't get easier. Especially when you've got your family asking, "Is this all worth it?"



By Barbara Woolsey

But at the same time, it was also wonderful. Being able to work on specific fields of interest is especially great for an inquisitive person like myself. I always felt like I was in the right place. Now that I'm finished, I'm very happy that I saw it through to the end.

There were 70 of us students taking the bachelor's degree. In the beginning there were eight women, but by the end, I was the only one.

But times are changing, and since I started my bachelor's degree in 2005, I know many women who have also completed it. While doing my doctorate, I tried to support the female students as much as possible. They could see that it is possible to be successful even though some may say, "Only men can do this." That was a big motivation for me.

## “It’s not a man’s domain anymore. You can achieve respect as a woman, and I’m an example of that.”



My thesis was on beer spoilage bacteria. It's a very exciting topic because very few microorganisms can spoil beer—beer protects itself very well by CO<sub>2</sub>, hops and so on. I found it fascinating how these bacteria managed to prevail against the odds. Perhaps like me in brewing—a so-called man's domain.

The plan was to go back to the family brewery after the doctorate. I worked there full-time while finishing my thesis.

However, the doctorate wasn't at all congruent to work in the family brewery. Our small brewery, founded in 1844, only produces around 4000 hectoliters per year. We brew three beer styles and distribute them in a radius of about 30 kilometers. The doctorate was quite theoretical and abstract, while at home, it is more about handling and manpower. Two totally different kinds of work.

It was a difficult decision to leave the family brewery and become a professor at Weihenstephan. It was a purely self-centered decision. I had to think: what exactly do I want out of my life? In the end, I decided that to be at the university, where one is never done answering questions, was exactly the place for me.

As a professor, there's no such thing as a normal day. Every day presents new challenges in research. I enjoy teaching, which has changed during coronavirus as we now record the lessons for students, but research is what I really live for. My area of analysis has expanded to include biotechnology, as well as topics such as beer spoilage bacteria and yeast culture.

I think it's important to be a role model for the female students. A student once asked me, "Is this degree really a good idea for a woman?" I sat with her for an hour and explained how it was for me. Of course, one has these concerns in the beginning, but if you want to do this and are interested in it, you'll make it. It's not a man's domain anymore. You can achieve respect as a woman, and I'm an example of that. This student is now almost finished with her degree.

Brewing science can be chosen as either a bachelor's degree or a masters. There are many opportunities that can come out of these degrees and not necessarily in brewing, such as working for an industry supplier or a yeast bank or food inspection.

The doctorate, however, is quite specialized and few people choose to get it. Before deciding for it, you have to be aware that it's a difficult path.

I wouldn't recommend it to anyone who is more interested in the manual work of brewing, or for those who want to go into the beer industry and earn more. You'll be overqualified for many industry jobs. Only the big breweries hire doctors of brewing, and they may only need one or two, so doctors often find themselves working in sales and distribution. The academic route I've chosen only applies to about 10 percent of students. The rest go into the beer industry.

I still visit our family brewery once a month, and we talk on the phone as much as possible. Of course, they are happy that I'm doing what I love.

Solving new problems and posing new questions—and that's what I would like to continue doing in my future.

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