

Q&A

Beyond the bench: A conversation with Judy Van de Water

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Before she thought about becoming a scientist, **Judy Van de Water** wanted to be a professional equestrian. But in high school, her trainer told her she had to go to college before choosing a career. Sure enough, an immunology internship shifted Van de Water's sights away from the stables, but she still enjoys spending time with horses, including Hank, her red roan quarter horse.

As an immunologist, Van de Water focuses on the maternal immune system's effect on autism and trains new scientists. She sat down with *Spectrum* to talk about her work and life outside of the lab: why she loves HGTV, why Outlook is the superior email server, and how — Van de Water says she loves 'how' questions the most — she finds time in her busy schedule to paint.

This interview has been edited for length and clarity.

Spectrum: What big question drives your research?

Judy Van de Water: It's the 'how' questions. How do maternal autoantibodies change the way neurons develop? That is a big part of what we are doing now, using cultured cells and animal models. How do they get into the cells and find their target? That is a huge question in immunology because there is pushback on whether they are intracellular. People say, "Well, they can't find their target if they're outside the cell." But we now have some evidence that says there are times when cells let antibodies into them. How do we block that from happening?

There is always that next big question. I can retire, but I don't. I have too many questions that I have to answer.

S: Whose work do you admire?

JV: My autoimmunity idol was **Dr. Noel Rose**. I still use his work when I teach — it is timeless and elegant, showing how inflammation drives loss of self-tolerance and the production of autoantibodies. And he was a delightful person, besides that. He wanted to continue being a mentor and teaching.

Mentorship is important to me, too. I try to keep my lab small because I want to be able to really interact with everyone. I want to teach them to be the next generation of scientists.

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

JV: My days are anything but typical. I am building a company to commercialize our autoantibody tests, so I am trying to fold that into my workday. My husband and I are also conservators right now for a young person who has autism who is writing a comic. We are working with an artist, who also has autism, to illustrate it. Working with those two on Zoom has been amazing — I have ended up being the go-between, so that's been my art lately.

S: How many meetings do you have a day?

JV: Today was a quiet day — I had only one meeting. When COVID-19 started and Zoom became a possibility, I noticed that people started booking meetings back to back to back. I was like, we need a break in there somewhere! I do my own scheduling, so I can make sure not to back-to-back schedule myself. There are some days when you can't help it, but it is hard to ever have a mental reset if you are always going from one thing to the next.

S: When and where are you most productive?

JV: Sometimes it's first thing in my pajamas — if I've been thinking about something, I will go get it down before starting my day. The other time I am most productive is at the end of the day. That's when I'm like, "OK, I'm going home in, like, two hours. Focus," so that I can go home feeling that I've accomplished something.

S: Are there any TV shows you like?

JV: I am a complete HGTV junkie — it is so different from what I do. It's creative and functional at the same time and a great way to escape. My late husband and I built the house that my current husband and I live in now. So, I've been there and done that. Literally done it. It is so much easier when you can watch it in an hour.

S: Tell us your favorite research conference and a story from it.

JV: The Mid-Winter Brain Conference in Tahiti. It was invitation-only and was a mix between a think tank and a conference. I remember presenting my work on our maternal autoantibody mouse model that mimics maternal autoantibody-related autism. As I am giving my talk to a room of people — including two Nobel laureates — I look out the window, and there is my husband trying to get up on a paddleboard and failing. There is this woman going by doing a headstand on her board, and he is looking at her and he is just so frustrated. And I'm trying not to laugh as I'm presenting because I am watching him out this window.

S: What are you reading right now?

JV: I'm a mystery fanatic. I love to read mystery books; Janet Evanovich is one of my favorite authors. I know a lot of scientists who like to read mysteries.

S: What do you drink while you're working?

JV: I'm a tea drinker, and I have a collection of them here, depending on what I need. My favorite caffeine is English breakfast tea. My favorite non-caffeine is a chocolate tea. I am blanking on the name of it, but it tastes like I am eating sugar when I'm not.

S: How many unread emails are in your inbox?

JV: Not too many. The one thing I like about Outlook is they have a 'focus' folder and an 'other' folder. I'm good about my focus folder — I try to deal with things when I see them. Then there is the other folder. I am less diligent about that one — there are thousands of unread messages in that one, I'm sure.

S: Does your lab have a mascot?

JV: My husband. We usually have a Thanksgiving at our house for everybody, especially people from out of state. So, my entire lab knows my husband. When he shows up, he just has to go out and say "hi" to everybody in my office.

S: I know you enjoy painting. With all the other things you do, how do you find time to paint?

JV: Painting is something you do when you feel it. I do a lot more in the winter when I'm inside or when I need a present for somebody. But I feel like painting for me is like reading or my HGTV — it's a creative kind of way for me to reset. I was an art minor in school here at Davis — I've done it since high school. I like dealing with feelings and visual subjects in addition to hard data.

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