WOMEN WORKING ON MARS: AMANDA STEFFY

Hi, I'm Amanda Steffy, and my job here is to be an engineer on the mechanical wheel wear tiger team, and I've been characterizing the damage on the wheels that are currently on Mars.

So, Curiosity has been seeing some rocks that are a little bit sharper and a little bit more cemented than what was anticipated, and so one of the things that we've been testing here is some of those types of rocks. And so that's really what's been going on very carefully in this three-wheel test track here. So there's a section of small cemented rocks, and then there's a section of flagstone with a different composition of the rocks, and then there's some sandier stuff with some smaller rocks as well, and then they have boards with larger rocks. And so these were put together by people who've been looking a lot at the terrain.

One of the tests that I was more involved with was taking one of the wheels that we had been testing on the Vehicle System Testbed, and running it over this track right here, which you can see is a mixture of flagstones, and then some largish sharper rocks to try and kind of give it the worst it will see and take it to failure.

And this is one of the Vehicle System Testbed wheels, and as you can see, it's very damaged all the way around here. This is *not* what the wheels look like on Mars! What we did with this wheel is took it to failure, driving it with Scarecrow on this track.

In this test, we did want to go all the way to failure, because we want to understand what it looks like when it fails, and then once we know that, then we can take the data that we have and see how we're doing.

In the classroom, failure is often a bad thing, but here in the Mars Yard with our testing, failure is a good thing, and we're trying to get to failure because then we can understand what is going on and make sure that the Mars wheels never really end up like this.

For anyone looking at a career in science and engineering, I would say that enjoying the problem-solving, and enjoying looking at the data and trying to understand a multi-faceted problem, and taking that and feeding that into a decision that happens to be on Mars is something that is very cool. And if you're at all interested in that type of thing, definitely go into science and engineering.