

## *Michael (Mike) Spilde*

Masters Degree in Engineering

### **BIO**

Spilde is a member of the SLIME team and a research scientist at the University of New Mexico. Caving has been a part of Spilde's life for 37 years. He grew-up caving in South Dakota.

Now, Spilde enjoys caving, but does not do it for sport—only for science! As a SLIME team member, Spilde is interested in researching the interaction of minerals and microbes. He likes the environment that caves give to research because it is unique. "It (cave) is important because it is such an unusual environment. It's a laboratory where we can study processes that are happening in other parts of the Earth or even other parts of the Solar System. If we go to Mars and look for life we can probably find it at the sub-surface. Caves give us a way to understand how life can arise and exist with no apparent energy," said Spilde. Also, he better understands the sensitivity of caves and their importance.

Like many other cavers, Spilde is concerned about the fragile environments of caves. He reminds that one should cave responsibly—touch things that have been touched, walk where someone else has walked, and watch your head!

Lechuguilla Cave is Spilde's favorite. However, Lechuguilla is probably one of the hardest caves to explore. This cave is a vertical cave and the only way in is by repelling. Once in of the cave, beautiful, colorful mineral deposits surround you. Spilde feels that the isolated experience of being in a cave is calming.

## Q&A

Q: What kind of research do you conduct in caves?

A: I am interested in geomicrobiology—the interaction of microbes and minerals.

Q: Do you enjoy caving?

A: Yes I do. I've done caving for a long time—37 years.

Q: How did you get started?

A: I started in high school because my friend and I were looking for something to do, trying to stay out of trouble.

Q: What conservation considerations are considered in the caves?

A: Everything, from how to where you walk and not leaving anything behind. We, scientists, are taking samples, but your average caver should not be taking anything with them. Caves are very sensitive environments. We all try to promote conservation. I don't think that the average person really has any appreciation of how sensitive the cave is. I don't think a lot of the cavers do either. Now, from a microbiology perspective, I understand how sensitive caves are much more than when I was younger.

Q: Do you have a favorite cave?

A: Lechuguilla.

Q: Do you mind the heights?

A: No. That's something that I didn't do in South Dakota. The caves there were pretty flat lined.

Q: What is interesting about how caves look?

A: Caves are such a beautiful, different world than life on the surface. It is timeless, ageless environment. The things that you look at have been there for 7 million years, for example. Humans have never disturbed them until you come in. It's different from anything else in the world, not just the beauty of it all but to think that it [cave] has maybe never had air movement. It is a very unique environment. It gives us an idea of what is on the surface, but can't be studied on the surface because they're not being preserved.

Q: Have you come in contact with any of the little critters?

A: They tend to live at the front of the caves, by the entrance. You come in contact with them and sometimes you don't realize it. We almost always

see crickets and things. You're always in contact with things whether you realize it or not—the seen and unseen.

Q: Why is it important for you to go back to the caves?

A: It is important because it is such an unusual environment. It's a laboratory where we can study processes that are happening in other parts of the Earth or even other parts of the Solar System. If we go to Mars and look for life we can probably find it at the sub-surface. Caves give us a way to understand how life can arise and exist with no apparent energy.

Q: Which cave would you take kids to?

A: Spider Cave because it is a small cave and it's not terribly rigorous. It's good to take kids and people who don't have a lot of experience. You can see a lot of unique things. While inside, you stay on the path. You keep your gear and yourself inside of the path. You try not to touch things. If you have to balance yourself, put your hand on a place where someone else has touched. You look for places where other people have impacted the cave and keep your impact in the same area. Keep the damage in the same area. Don't poke at things. Don't scrape things off the wall. Be careful where you put your feet, hands, and head (helmet).

Q: Is Spider Cave cold or hot?

A: Spider is a warm cave. You can wear shorts and a t-shirt and be comfortable unless you stop moving. You may want to take a sweatshirt.

Q: Do you take food?

A: Yes if we're going to be there for a long time. We tell people to take a pack to eat over. We avoid dropping crumbs because they become a large source of energy that changes the environment.

Q: Have you ever been afraid while inside the caves?

A: I think a certain amount of fear is healthy. If you get too complacent you're going to get hurt. Of course, if you have too much fear that can be bad too.

Q: Do you enjoy doing research in the caves?

A: I enjoy doing the research in the caves. I really relish the ability of the environments there.

Q: Do you enjoy the darkness?

A: Yes. It is quite a sensory experience especially when you're camping in the caves because you're so deprived of sensory input especially after everyone turns off their light.

Q: What is cool about being in a cave?

A: You rely entirely on yourself in a cave. You have to get yourself from point A to point B and do so safely without falling off a cliff or running into a rock. I think it's a pretty cool experience. It's a different experience—a TV is feeding you information, a computer is feeding you information—in a cave it's entirely up to you to gather the information that you need to find your way around and move around the cave.