Speaker 1: The Missouri State Journal, a weekly program keeping you in touch with Missouri State University.

Nicki Donnelson: Unimaginable and devastating. Those are words you might use to describe a sinkhole. I'm Nicki Donnelson. Today on the Missouri State Journal, I have Dr. Doug Gouzie, geology professor at Missouri State University. He starts by explaining why sinkholes are more common in Missouri, than in many other places in the world.

Doug Gouzie: Missouri is known as the Cave State, and so one of the reasons we have a lot of sinkholes is, we just happen to have the same kind of rock underneath us that is easily dissolved. It's softer limestone rock. When people drive by or go float the Buffalo river, they see that bluffer cliff, and it's all over the state. It's about 60% of the rock underneath Missouri is limestone, or very closely related, dissolvable rock. About 20% of the country is that way, but that means only 20% of the country, including Missouri, has this kind of rock. Other big places that have large portions of this, are Florida, where we hear about a lot of sinkholes. Kentucky, where people might remember the Corvette Museum sinkhole, and Tennessee down in Nashville. That's kind of related to where the Corvette museum was also, that's not that far away. So we're really one of the big areas that has this kind of rock, and because it's the way nature gave us a landscape, it's the landscape we get to live with.

Nicki Donnelson: Gouzie studies land formations like sinkholes, and how water forms them. Along with his graduate students, Gouzie spends many hours in caves across Missouri, and on string banks collecting water and sediment. Ultimately he wants to predict the next sinkhole site.

Doug Gouzie: I think a lot of people get very nervous when they see something like the Corvette Museum, or when we had a house in Nixa that fell in about a dozen years ago. And my first comment would be, in Missouri, our numbers and the data suggests that's really the exception rather than the rule. About 95% of the sinkholes we have seem to be what we call gentle gradual. Over time a little bit of soil keeps washing down through a crack in the rock underground, and that gives you sort of a bowl shape or a saucer shape spot in your yard. That's probably the most common thing. The thing that most homeowners would want to do, or even just a residents, would be to not keep water running in that same place if they can. If they can divert their drainage or their gutters and downspouts.

Nicki Donnelson: If you've noticed a depression or bowl shape near your home, Gouzie offer some tips to slow down the progression.

Doug Gouzie: Anywhere in the US we're all used to streams and rivers, and the local creek nearby, or something like that. And in the Ozarks we know that many of those go dry much of the year. Well that's not that there isn't rain and water still, that is that the water is finding a way in underground. And so if you're near someplace where the stream keeps going dry, you might want to look and figure out, am I seeing other things like a small pond that fills up in the spring rains, but goes dry not just from evaporation when the rest of the yard goes dry, but goes dry faster than the rest of the landscape around. If you see those things, just know that your land is bit by bit eroding away and washing under there. If you have a depression in your yard, you probably want to find a way, first to not put anything real valuable in that depression. And secondly, to slow down how it forms, by trying to divert the water away.

Nicki Donnelson: Gouzie reminds us that fantastic caverns wasn't formed in a lifetime, but in a couple million years.

Doug Gouzie: In geologic time, we look and we've used radioactive age dating, that the chemists and the astronomers have given us, and physics people. And we have figured out that by almost every study done, the earth is about four and a half billion years old. That's billion with a B. So things that are almost inconsequential to you and me, the how fast my hair grows, or how fast my fingernails grow, or something like that, are in a human timescale not that significant usually. But if you've ever gone a couple months without a haircut, or gone a couple months and realized, wow, my fingernails are really growing long, then you realize that they do happen.

Doug Gouzie: And over a million years, your hair would grow quite a ways, or your fingernails would be quite crazy looking probably. So that's what we look at in geology is, it's not like you're watching the soil wash away from your yard down into a cave, or it's not even like a cave like fantastic caverns is forming this week underneath your house. It's that something has been going on for hundreds of thousands to millions of years, and opening those things up and carrying the soil away that filled those openings.

Nicki Donnelson: That was Dr. Doug Gouzie. I'm Nicki Donnelson for the Missouri State Journal.

Speaker 1: For more information, contact the office of University Communications at (417) 836-6397. The Missouri State Journal is available online at ksmu.org.