Announcer ([00:03](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=3.29)):

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

Emily Yeap ([00:10](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=10.14)):

What comes to mind when you see articles like “Safest Cities in America” or “10 Most Dangerous Cities in the U.S?” Do you question their accuracy? I’m Emily Yeap.

Recently, SafeWise released its “[The 50 Safest College Towns in America for 2022](https://www.safewise.com/blog/safest-college-towns-america/#:~:text=each%20have%204.-,The%20most%20dangerous%20college%20town%20in%20America,highest%20rate%20on%20our%20list.)” report. It lists the safest and most dangerous college towns in America. Springfield, Missouri, was ranked as the no. 4 most dangerous college towns in 2022.

Missouri State University data analytics expert [Dr. Todd Daniel](https://search.missouristate.edu/people/todddaniel) reviewed the report. An instructor in the [Department of Information Technology and Cybersecurity](https://itc.missouristate.edu/) at MSU, Daniel joins me today to explain why the report is problematic and how we can look at crime data more critically.

Dr. Todd Daniel ([00:56](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=56.18)):

Before I came to the interview, I walked to my favorite Green Mermaid coffee shop and got myself some coffee with cream. And as I was walking back across campus, I was reflecting on what was wrong with the research design in this particular article. Fundamentally, the problem was they're treating crime like creamer in coffee. When I get cream in coffee, it is perfectly randomized so that every drink is just like every other sip of coffee. But crime doesn't work like that. Crime is not randomized in an area. Crime is like spaghetti and meatballs. You see the spaghetti pretty randomly distributed on the plate, but there will be clusters of meatballs, one here, one there, third one over there. The meatballs are not randomly distributed. So if we take a map of Springfield and overlay it with 10 by 10 grids and start plotting where crime reports are coming from in the city, what you're gonna see is clusters, just like those meatballs on the spaghetti, where there is more crime in one area and less crime in other areas.

So if we're going to look at crime statistics and compare them on the MSU campus, one of the things we're gonna ask is how many of those high crime areas overlap with the MSU campus? And the answer is very few. We do not have as much crime on campus as you might be led to believe just by reading an article like this.

Emily Yeap ([02:19](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=139.44)):

Another issue with the report is how crimes were weighted.

Dr. Todd Daniel ([02:23](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=143.6)):

So if you look at the way that they weighted these crimes, they're treating everything equally. Now, the article led with sexual assault on campus. So if we're going to understand the safety of a campus, let's just dispense with homicide and the more serious crimes that are not occurring, and just go back to what is most important for this article. Let's give the highest weight to crimes like sexual assault and then other crimes that are less severe will get lesser weights. Then we can create a weighting schema that is comparable between college campuses. The way that this weighting scheme works for this article is to give equal weight to all crimes.

The methodology is flawed, the data selection is flawed, the analysis is flawed. This is like a turducken of bad statistical analysis.

Emily Yeap ([03:15](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=195.94)):

You don't have to be a data expert to understand these types of reports.

Dr. Todd Daniel ([03:20](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=200.98)):

All we have to do is just look at what is contained in the report. I see that the safest cities are places like Bristol, Rhode Island, and Durham, New Hampshire. But the most dangerous cities are Monroe, Louisiana, Alexandria, Louisiana, Memphis, Tennessee. And then number four is Springfield, Missouri.

But when you look at how this research is comparing violent crime and property crime, you realize that the types of violent crime that are occurring in some of these other cities are not the same as the type of violent crime that we have in Springfield. So for instance, one of the things that people worry about is being dead. If you're going to be the victim of homicide, that's a really strong motivator against your being in whatever town. And yet the homicide rates, although any one being far too high, are comparable across these cities.

You cannot compare between cities when we create a grouping called “violent crime” because some cities may have more homicides, while other cities may have more domestic violence, and yet all of those get lumped into a giant category. The best way to treat those categories is just comparing within a city. We can take Springfield crime statistics and compare those across the years because those are being measured in the same way. But if we try to compare Springfield crime to St. Louis crime, the types of violent crime that occur in various places are much different from each other.

If you are a parent thinking about sending your child to Missouri State and you're worried that they are gonna be in a dangerous place, these statistics don't bear that out.

Emily Yeap ([05:09](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=309.43)):

That was data analytics expert Dr. Todd Daniel from Missouri State. I'm Emily Yeap for the Missouri State Journal.

Announcer ([05:17](https://www.temi.com/editor/t/28V79hQpU4nB9hEaCIgcpC_m_6j1WcQ84J1ZXvToO1_XQ6W5RkbiosIBfCTbgDeHXkPcPudR1Sj2KTLRacEOuFmIH9M?loadFrom=DocumentDeeplink&ts=317.14)):

For more information, contact the Office of Strategic Communication at 417-836-6397. The Missouri State Journal is available online@ksmu.org.