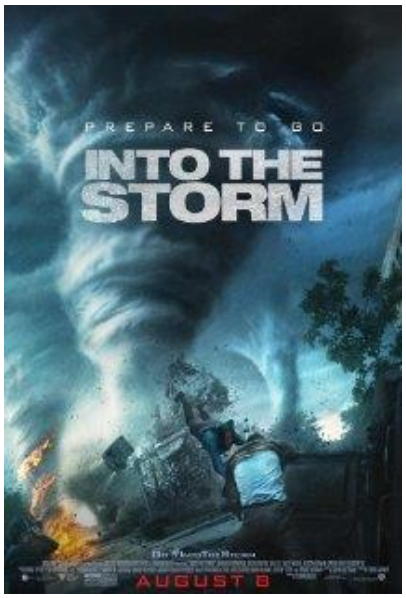
INTO THE STORM

Enjoy the film… But learn the Science!!!



Into the Storm is a 2014 disaster film directed by Steven Quale about a huge outbreak of tornadoes striking Silverton, Oklahoma. You might recognize lead actor Richard Armitage (*The Hobbit*) or Sarah Wayne Callies (TV's *The Walking Dead*). We follow a group of documentary filmmakers traveling in an armored tank looking to shoot footage inside a tornado.

The film crew's heavy-duty storm-chasing vehicle resembles the **TIV2**, the real-life tornado-intercepting vehicle filmmaker Sean Casey drives—right down to the hydraulic spikes that can shoot into the ground and anchor the car in the midst of powerful winds.

One of the more seemingly insane moments in the film is a fiery twister, but these "firenadoes" actually do occur in real life. They usually form over wildfires or other massive fires; the heat from the flames and turbulent wind can combine into a twisting column of air that feeds the fire. Most fire tornadoes are about 1 to 3 feet wide and 50 to 100 feet tall, but some may reach up to a thousand feet high!

The show-stopping twister at the end of the film might seem like overkill, but tornadoes really can get monstrous like that. The largest tornado in recorded history was an EF-5 twister that tore through El Reno, Oklahoma, in May 2013, with a path 2.6 miles wide, generating winds of up to 295 miles per hour, claiming the lives of four storm chasers.

Into the Storm's lead scientist touches on the issue of climate change and tornadoes, noting that with storms like Hurricane Katrina and Hurricane Sandy, what might've formerly seemed like a once-in-a-lifetime storm now occurs about every year. One study from Florida State University scientists shows that since the 1950s, the number of days with large outbreaks of tornadoes in the U.S. has been increasing. How does climate change factor into all this? The FSU scientists hypothesize that a warmer atmosphere may drive more densely packed clusters of tornadoes because it holds more water vapor.

But *Into the Storm* has some silly science as well. Our main characters get outrageously close to giant twisters and somehow manage to escape being hit by the massive amounts of debris that would be flying around at fatal speeds. Also 99.9 % of storms travel west to east, but in the movie the storms were moving northeast to southwest.

Many weather experts are more worried about the film's outrageous human behavior than any egregious scientific errors. "*Thanks to its fawning over the worst of storm chaser culture… the movie is almost a perfect example in every way of what* **not** *to do when a tornado hits."*

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YOUR TASK:

1. What did they get right?
    - Find AND EXPLAIN 7-10 science accuracies throughout the film.
2. What did they get wrong?
    - Find AND EXPLAIN 3-5 science falsehoods throughout the film.
3. What is one of the most concerning things about this film?