The U.S. and other countries are currently stumbling their way to a sharp reduction in carbon emissions. At this point, the effort has been a mixed success. We definitely seem to be on the path to reducing emissions but having trouble doing so quickly enough. A Trump victory would set back this effort and increase the odds of very destructive impacts from global warming. We could end up with little choice but to pursue some high-risk efforts to reduce warming.

Proposals for geoengineering — reducing warming after carbon emissions are already in the atmosphere — range from being almost literally garden variety to the realm of science fiction. Some forms of geoengineering seem relatively low risk, like trying to increase soil carbon through regenerative atmosphere or replanting tropical forests. Other approaches involve greater risk, like genetic engineering of plants to increase their carbon absorption or changing ocean chemistry to do so. The strategies that seem most risky involve what is called solar radiation management, like adding sulfur dioxide to the atmosphere to reflect more sunlight into space or even launching panels in space to block the sun.

A Berkeley scientist once described geoengineering of this kind as the equivalent of chemotherapy. You may end up needing it, but it would be far better to avoid that need entirely. That about sums up my attitude.

On the positive side, the National Academy of Sciences says solar geoengineering "could reduce surface temperatures and potentially ameliorate some risks posed by climate change (e.g., to avoid crossing critical climate 'tipping points'.)" But this strategy would also present dangers "related to critical atmospheric processes (e.g., loss of stratospheric ozone); important aspects of regional climate (e.g., behavior of the Indian monsoon); or numerous interacting environmental, social, political, and economic factors that can interact in complex, potentially unknowable ways."

The conspiracy theories and paranoia that already surround possible weather interventions, which we saw in full force after the recent Florida hurricanes, makes me even more worried about the risk of political destabilization that could accompany geoengineering. People are already going nuts because of crazy theories about geoengineering. That doesn't give me a lot of confidence in how they'd react if geoengineering became real.

Despite the risks, if we dump enough carbon into the atmosphere, the dangers of climate change could be even greater. A Trump victory would increase the odds that we'll eventually need to "break the glass and pull the red lever." To be

prepared for that possibility, we would also need to do more in the short term to research various forms of geoengineering, their feasibility, and their potential side effects. To return to my scientist friend’s analogy, if you decide you’re going to start smoking a lot more cigarettes, you need to be prepared for the greater likelihood you’ll need chemo.