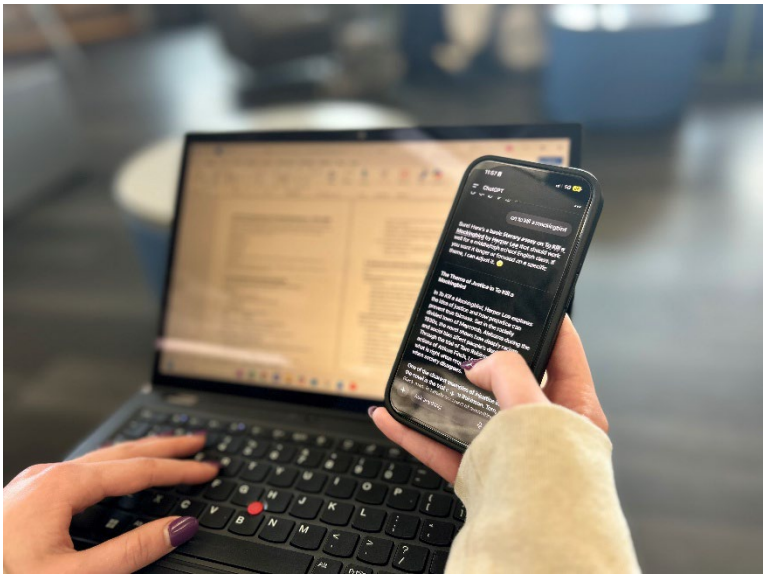
AI's Environmental Effects Are Global but Right Here in Alabama, Too

By Mia Mayo

From assemblies led by Dr. Josh Barnard to AI reels on Instagram or even the much-repeated advice to "ask ChatGPT," we've all been exposed to artificial intelligence in some form or fashion. Likewise, as global warming, loss of natural resources, and pollution threaten to reach disastrous levels, the relationship between AI and the environment has become a popular topic of discussion. In an era of rapid change — political, technological, and environmental — it is important to understand the reality of the world around us: there are *real* impacts of using artificial intelligence that threaten our local communities and the stability of our biosphere.



Data centers are required to power AI. In the United States alone, there are approximately 3,000 data centers that require large amounts of water and fossil fuels. Norman Bashir, Computing and Climate Impact Fellow at MIT Climate and Sustainability Consortium, says, "The demand for new data centers cannot be met in a sustainable way. The pace at which companies are building new data centers means the bulk of the electricity to power them must come from fossil-fuel-based power plants. [And] chilled water is used to cool a data center by absorbing heat from computing equipment. It has been estimated that, for each kilowatt hour of energy a data center consumes, it would need two liters of water for cooling." To comprehend the scale of the energy and water data centers use, let's look at some stats.

According to multiple sources, large data centers can easily require five million gallons of water every day. One data center could require up to five gigawatts of energy: enough to power the state of New Hampshire. Giving ChatGPT a series of prompts — 15 questions, 10 images, and three videos — is the energy equivalent of running a microwave for over three and a half hours. These statistics show how the processes behind AI platforms often result in water loss in local communities, increased carbon emissions and other pollution, and a larger demand for fossil fuels, which can include drilling and mining.

The impact of these data centers is global *and local:* Right now, there is a proposal for a 1600-acre data center in Bessemer, Alabama. Nelson Brooke, a Riverkeeper with the Black Warrior Riverkeepers, has closely followed the plans. Brooke says, "The assumption is that this center will be powered by Miller Power Plant [the nation's largest greenhouse gas emitter] or will

generate its own power, requiring natural gas generators on site and causing air pollution directly in Bessemer." Meaning that, regardless of how the center is powered, which is currently undisclosed to the public, the environmental impact would be significant.

Aside from power generation, just the construction and maintenance of the center would have major impacts on Bessemer. Construction and maintenance will require "1200 megawatts of energy … 18 super-Walmart-sized buildings worth of clear cutting … [and] at least two million gallons of water every day, treated with chemicals that lead to dirty runoff," says Brooke.

Even the location of the proposed data center itself is problematic. It's set to be built near, if not on top of, Little Blue Creek and Valley Creek in Bessemer. Brooke says those are water sources "critical to certain wildlife populations," including the Birmingham darter, an endangered fish species found only in Valley Creek.

"People need to know that this is not a game," says Brooke. "[AI] uses an incredible amount of resources, whether people know it or not. It's hard to fathom how many resources are being gobbled up with one small [AI] search."

While plans for the data center have not yet been realized, it is clear there would be significant impacts. But only select members from Bessemer's city government know the actual plans, and they have signed highly unusual non-disclosure agreements. This means that Bessemer community members and anyone else concerned about the proposal are being left in the dark. Given that ice caps are melting, animals are losing their habitats, coral reefs are vanishing, and communities like Bessemer face major changes while technology continues to advance, that kind of secrecy seems like it could lead to even more problems. It's important to consider where the energy for artificial intelligence comes from, and the interconnected communities around the world that it affects.