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March for Science - Dayton, Earth Day

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Good Afternoon fellow scientists and friends of science.

I am an Environmental Chemist.
I study what happens to toxic chemicals in the air, water, and soil.
Like many of you here, normally, I speak for the trees.

Today, I speak for Science!

It is a great privilege to speak to you today.
What an amazing gathering of beautiful minds!
People with imagination, who are fascinated by the natural world, from the smallest subatomic particle, to the human body, to the most distant galaxy.
People who are making new things and making new things happen.
People who understand and celebrate the life of the mind, who value learning.
Creative people who are hard-working, smart, and care about this community!
We are here today to honor the contribution of science to our lives.
We are here today to march for the future.
We are here today to be heard!
Let's use our "outdoor" voices.

Let's raise our voices together now!

(chant) I speak for science!

Basic scientific research creates new, fact-based knowledge.
Knowledge is power!
Knowledge is a **well we can draw from** to create new technologies and new products.
The deeper the well, the greater the potential.
Section 8 of the Constitution of the United States of America gives Congress the power to collect taxes to "provide for the common defense and general welfare of the United States" by promoting "the progress of science and useful arts" through patents and copyrights.
This is where new jobs, **good jobs**, get created.
Discovery moves our community forward.

If **our government and our communities** don't invest in basic research, the well of knowledge of the future will be empty.

We have paid for research with our tax dollars.
It is knowledge gained by the people, and for the people.
It is knowledge created for the general welfare of the United States.
It does not belong to any political party.
It is a public good and the benefits must be available to **all**.
A Nation that is unwilling or unable to provide for the welfare of its citizens will fail.
Our nation's greatness was built on public education and publically-funded research
And the Free and Open exchange of Ideas.
These are our shared values.
Our nation's budget is a statement of its shared values.

This is Earth Day

Ohio has quite a legacy when it comes to the environment!
Before Rachel Carson published Silent Spring in 1962, we didn't think much about what happened to chemicals after we were done with them. Out of sight, out of mind.
And many times, especially in 1969, The Cuyahoga River caught fire.
The first Earth Day was celebrated in 1970.
And Cleveland State University students marched to the Cuyahoga River to protest pollution.
In 1970, President Nixon created the Environmental Protection Agency to bring together federal agencies responsible for protection of our air and water.
Innovation and industry brought great jobs and prosperity to our community, but some of these industries left a scar.

Montgomery, Greene, Miami, and Clark counties are home to 10 of the 16 most toxic EPA Superfund sites in Ohio. Most of those responsible are long gone. These are our neighborhoods. We need EPA to direct clean up of these sites. Our community does not have all the resources necessary to set things right.

We can't go back to rivers on fire! We won't go back!
(chant) We won't go back! We won't go back!

Many of you might not know this, but CFCs were invented right here in Dayton in 1928. The intentions were good. They were considered wonder solvents, safe for use in aerosol spray cans (hairspray) and Freon as a refrigerant. But in 1974, Ohio's own Sherwood Rowland, along with Mario Molina, published a paper providing evidence that CFCs were destroying stratospheric ozone. The ozone in the stratosphere is a cloud of molecules that protects life on Earth by absorbing harmful UV rays from space and it protects us from skin cancer. Federally-funded research by many scientists verified that CFCs were harmful to the ozone layer. Nations gathered together to find a solution.

In 1987, The **Montreal Protocol**, an international treaty to phase out CFCs, was signed by 197 nations, including the United States. Ronald Reagan was president. As a result, the ozone layer should be fully restored by the middle of this century. The Montreal Protocol is proof that science can bring nations together to solve big, global problems.

Now we must address **Human Causes of Climate Change**. It is a scientific **fact** that our use of fossil fuels for energy have added gases to our atmosphere that absorb too much heat. Our planet is getting warmer at an alarming rate. Global warming does not have national boundaries. The Paris Treaty is a plan for nations to take action on Climate Change. The consequences of Denial are enormous! All the while, Scientists have been hard at work discovering and developing new forms of energy. And citizens are adopting new technologies that **draw** from the well of those new discoveries. This is where the new jobs will come from. This is the future!

Are there any Dr. Seuss fans out there? Do you remember the story of the Whos in Who-ville who were in danger. No one but Horton could hear the Whos. They needed the voice of every last Who in Who-ville to break through.

Lets join our voices together to break through! Every voice counts!
(chant) We Are Here We Are Here We Are Here!

Going forward, how can we be heard?

1. Scientists must be able to explain our work in plain language in a few sentences.
2. We can use social media and write local newspaper editors to dispel myths and explain the science related to an issue we care about.
3. We can attend government meetings to ensure local, state, and federal policy decisions are based on sound science.
4. We can call our elected officials at all levels of government to inform them about the science behind important policy decisions.
5. We can run for office and cast votes that are based on sound science.

Yes, we are busy, but if we all do one thing, together our achievements will be great.