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# Is Our Future Too Hot to Handle?

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# Matriculation Convocation 2019: Is Our Future Too Hot to Handle

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Our weather is starting to cool down now, but fire has been on my mind and in the news this summer. Over the past two months the world has become aware of the significant increase in fires that threaten the Amazon. The Brazilian National Institute for Space Research as of August 23rd tracked close to 73,000 fires in that country since the beginning of this year. More than half occurred in the Amazon. The equivalent of one and a half soccer fields of rainforest have been consumed every minute of every day this year, an 80% increase from last year. Many tie these events to both the pressure for additional grazing land for cattle which provides critical livelihood for local inhabitants, and the now implicit support of this land usage by a new federal government in Brazil.

According to the World Wildlife Fund, the Amazon spans eight countries and covers 40% of South America – an area that is nearly two-thirds as large as the United States. This forest absorbs carbon dioxide through photosynthesis and produces about 20% of the earth's oxygen. Many refer to the Amazon as "the planet's lungs". An overwhelming majority of scientists believe the Amazon fires will have a devastating impact on the Earth's ability to produce oxygen and to generate rain – including the precipitation essential for farms here, in the Midwest. These fires also impact biodiversity. The Amazon is home to large numbers of mammals, birds, amphibians and reptiles, most of them unique to the region. A new plant or animal species is discovered there every two days.

Other parts of the world are also burning. Hotter, drier weather has created fire conditions from Alaska and the Arctic to the Canary Islands and California. According to the National Oceanic and Atmospheric Administration the global temperature for the month of July was the highest since recording began in 1880.

In addition to the environmental impact of these fires, the spectacular pictures brought to mind the scholarship of Lawrence Professor of History and Latin American Studies, Jake Frederick. He teaches us that fire through history has represented domestication, conflict,

and consumption. But these fires which consume many parts of the world fall into a different category he suggests, fire as foe.

July in Appleton was hotter than usual, but we felt the impact of the climate crisis more directly this past winter when a polar vortex descended in late January. It brought temperatures lower than 40 below, which established new records throughout Wisconsin and the Midwest. The Governor declared a state of emergency. Schools were closed and basic services like the US Postal Service ceased.

Some of us, expecting the planet to be warming not cooling, did not immediately connect our arctic weather with the climate crisis. But some climatologists now believe that warming air in the Arctic forced colder conditions south into the Upper Midwest.

The inconveniences we experienced last winter, missed classes and practices, frozen pipes and ears – paled in comparison to the challenges that face people in other places. The citizens of island countries in the Pacific, for example, directly confront the problem of rising oceans, because their island homes crest only 3 to 4 feet above sea level. As the ocean rises, some countries have begun to try to raise land levels or to plan for total and permanent evacuation of their island homes.

Weather related events have displaced an average of 24 million people every year since 2008. The World Bank estimates that another 143 million people will be displaced by 2050 in just three regions: sub-Saharan Africa, South Asia, and Latin America. According to estimates from Swiss Re, an insurance company, natural disasters caused 165 billion dollars of economic losses worldwide in 2018.

These losses and displacements illustrate the impact of a global climate crisis. Increased frequency of destructive storms, rising water levels due to melting ice caps, and changing weather patterns now affect millions of people every year. Twenty years ago, I worked in West Harlem with Peggy Shepard, executive director of WE ACT for Environmental Justice and recipient of a Lawrence honorary degree in 2018. She taught me that the impact of the climate crisis hits low income populations the hardest. According to a study by the World Bank, 100 million people could be forced into extreme poverty by 2020 as their home environments deteriorate due to climate induced changes in weather patterns.

As an institution that prepares students to be citizens of this nation and others around the world, we have developed many initiatives that offer insight into this central global challenge. Our Environmental Studies program provides excellent opportunities to learn about environmental systems from economic, policy, cultural, biological, chemical, and geoscience perspectives. Thanks to a grant from the Margret A. Cargill Foundation, and leadership by both special assistant to the president, Professor Jeff Clark, and our sustainability coordinator Kelsey McCormick, we are turning the Appleton and Door County campuses into living laboratories. Within these communities we have opportunity to learn about the choices we make through daily habits that affect the environment. They also lead the University's effort to conserve resources and lessen our environmental impact on our surrounding communities. We have hosted numerous speakers who work on this central issue – including our own David Gerard, the John R. Kimberly Distinguished Professor in the American Economic System, who gave a convocation in 2015 that helped us understand the economics of climate change.

But our efforts and those of colleges across the country to clarify the most important challenge the human race will face over the next decade are easier said than done. Researchers help us to understand the forces that work against our best efforts. Riley Dunlap and Aaron McCright among others have shown that political and economic forces have worked to discredit climate science. In an article entitled "The Politicization of Climate Change and Polarization in the American Public's View of Global Warming," they detail the effect of those forces on our awareness of this problem. Using the Gallup Organization's annual environmental poll for a ten year period, Dunlap and McCright also clarify the impact of both political beliefs and college education on people's views on climate change.

Dunlap and McCright found that 82% of college graduates who identified as liberals or Democrats believed that climate change existed, and that human activity is a contributing factor to climate change. 62% of liberals or Democrats without a college degree had the same view. Among those with a college degree who identified as conservative or

Republican, 43% believed that climate change existed. 42% of conservatives or Republicans without a college degree had the same view.

There are at least two remarkable aspects of this data. First, political beliefs significantly influence one's view of the climate crisis. Second, and maybe even more important for us, a college education has little impact on students' understanding of climate science if they identify as conservative or Republican. I am concerned the Lawrence community may follow both of these patterns, in which political belief supersedes scientific facts.

But even those who agree that a climate crisis is real approach the issue now with an incapacitating fatigue. In Falter: Has the Human Game Begun to Play Itself Out?, Bill McKibben stated "*Climate change* has become such a familiar term that we tend to read past it – it's part of our mental furniture, like *urban sprawl* or *gun violence*."
To correct this attitude the American Meteorological Society now suggests using the phrase "climate crisis." Even though extreme weather has become common place, they ask that descriptions include the unusual nature of events. For example, there are locations in the US that now, repeatedly, experience what was once considered a flood that should happen only every 500 years. They ask meteorologists to describe such events so that all of us will understand what should be extraordinary has now become ordinary. But no amount of improved communication seems to weaken the feeling that this crisis is inevitable. That nothing we do can change the course of this unfolding natural disaster. This attitude prevents important interventions.

Dunlap and McCright finished their study in 2011, but the division between those who do and those who do not accept the urgency of the climate crisis has persisted. A survey completed by the Yale program on Climate Change Communications in 2018 continued to find stark differences in people's views according to their political affiliation. They found that 52% of Republicans and 91% of Democrats believe that global warming is happening. It appears that our deeply divided social environment continues to extend to views on the climate crisis. In a recent Wall Street Journal opinion piece Jim Mattis, President Trump's first Secretary of Defense, described our situation this way: "We are dividing into hostile

tribes cheering against each other, fueled by emotion and mutual disdain that jeopardizes our future, instead of rediscovering our common ground and finding solutions."
This adversarial approach that ignores the need for policy to protect our environment is a relatively new phenomenon. For generations, leaders of the United States held a more common view of environmental issues. When asked who the "greenest" president of the United States was, leaders of twelve national environmental organizations such as Greenpeace, The Nature Conservancy, and the Sierra Club chose Teddy Roosevelt, Richard Nixon, Jimmy Carter, and Barack Obama as the top four presidents, in that order. Two Republicans, and two Democrats. Conservation was central to Teddy Roosevelt's vision for America's future. He preserved land and natural beauty at the Grand Canyon, Yosemite and hundreds of other locations across the country. Richard Nixon founded the Environmental Protection Agency, banned DDT, and created the regulatory infrastructure that continues to this day. But this public consensus is disappearing.

The lack of consensus brought Frank Bruni to suggest in an opinion piece in the New York Times that "Dogs Will Fix Our Broken Democracy." His recent experience as a dog owner made him realize that dogs provide the impetus to interact outside of one's prescribed group. People are no longer conservatives or progressives. Instead, they are "Bandit's" owner or pet sitting "Daisy." As a new dog owner myself, I agree with Bruni that owning a dog widens your social circles immensely and scooping up poop is a great social leveler. But I do not believe that requiring every Lawrentian to own a dog is the right solution for our community.

So, if dog ownership will not energize every Lawrentian to engage more deeply with the climate crisis – then what should we do to more fully embrace our central role in fostering an educated citizenry? We need to continue to believe in the power of the role we play. As one of our founding fathers, James Madison said, "Knowledge will forever govern ignorance; and a people who mean to be their own governors must arm themselves with the power which knowledge gives."

I believe we must first acknowledge the challenge to reach ALL members of our community. Will Happer's year-long term as science advisor to President Trump brought home to me the importance of acknowledging this challenge. Will was a colleague during my time at Princeton. A well regarded physicist whose research focuses on optics, Will rejects the scientific consensus on climate change. During my time at Princeton I spoke with climate scientists there, some of them international leaders in their fields, about how to engage Will on this topic. Their response was: he is a physicist, not a climate scientist; no one will take him seriously. Well, he set our country's carbon policy for the last year.

It is crucial that we engage with those who dismiss the findings of 97% of climate scientists who now confirm that a climate crisis has begun, and that human activity is a root cause. We need to continue to broaden the learning opportunities we offer and to avoid partisan framing of the climate crisis if we aim to reach all of our students, faculty and staff. Thanks to the interdisciplinary nature of the Environmental Studies program we offer a wide array of learning opportunities for students to consider how human activity impacts the natural world. But I think that other avenues of exploration are also available to us.

Direct and sustained experience of the natural world can open our minds to how human activity impacts the environment. Experiences can sensitize us to the deep and far reaching effect that the climate crisis will have. My year as a farmer during a break between high school and college changed my views and established conservation as central to my personal values. Living directly in the cycle of a dairy farm significantly influenced the way I thought about the natural world.

I am sure each of you have your own connections to nature. Could we find additional ways to encourage all of us to explore the rich natural resources of Northeastern Wisconsin and Door County? Could this be a way to reach students who might otherwise avoid enrolling in an Environmental Studies course or joining an environmental organization? Are there ways we can more closely tie the prodigious natural world that surrounds us into our curriculum?

Science continues to be a central avenue to help us understand the climate crisis and to recognize the ways our own human activity impacts the natural world. According to our General Education Requirements we believe that every student should "learn to use their understanding of a scientific concept to interpret a natural phenomenon and to draw reasonable conclusions from scientific data." I applaud colleagues working to redesign our introductory science courses with the support of a grant from the Howard Hughes Medical Institute. As we rethink pedagogy, sequence, and content could we also rethink this core graduation requirement to ensure that all of our students will graduate understanding basic scientific facts?

Aside from curricular requirements, could we provide more ways to engage with science on our campus? Rachel Carson's Silent Spring helped an entire generation understand the harmful impacts of pesticides by giving the lay reader access to the science involved. I was very pleased to see The Death and Life of the Great Lakes selected as a community read last year and to have its author Dan Egan join us on campus for a talk. As a non-scientist he allows the reader to understand how human activity is killing the world's largest freshwater system. Timefulness: How Thinking Like a Geologist Can help Save the World, written by our own Marcia Bjornerud, the Walter Schober Professor of Environmental Studies offers a different and important frame within which we can consider the climate crisis.

Can we find new paths to access the ways scientific knowledge unlocks our understanding of the world's present and future?

For many humanists, like me, other avenues to comprehend the climate crisis are also important. The relationship between humans and the natural world has fostered essential values for many cultures and religions. Native American, Hinduism, Christianity, Judaism and many other traditions provide clear direction. For example, when Pope Francis declared a "climate emergency" this past spring he said, "Future generations stand to inherit a greatly spoiled world. Our children and grandchildren should not have to pay the cost of our generation's irresponsibility." Pope Francis echoes many Native American

traditions; for example the Iroquois have a saying, “In our every deliberation, we must consider the impact of our decisions on the next seven generations.”

Hinduism teaches that all living things - human, animal vegetable - are sacred because they are part of God. They must be shown respect.
Can we provide more access to these and other teachings that encourage us to consider the place and responsibility of human beings within the natural world?

Maybe most difficult for those of us who believe the climate crisis is the central challenge facing society today is to approach this crisis with consideration for the skeptics – the members of our community who do not accept climate science. One of the tasks I had when I joined the New York City Department of Sanitation in the 1990s was to write the commercial recycling laws with colleagues. The team comprised members who represented business interests and others who held fervent environmentalist beliefs. Some argued all garbage must be recycled; others believed mandatory recycling would place an undue burden on commercial establishments, especially ones that were family owned. I asked all committee members to tone down the accusatory rhetoric and to consider options that would work for all parties. In the end we agreed to mandate recycling only of material whose beneficial reuse ensured that recycling would be less expensive than disposal. It was hard for me to modify my passionate commitment to this project. But to get all on board I needed to moderate the conversation so all could participate and find the middle ground. For us, now, to engage our entire community, we must provide a learning environment in which we can all participate without criticism or rejection.

I am sure that within this community there are many other ideas that would help us to deepen our learning of the ways human activity impacts the environment. I hope you will commit yourselves, with me, to making sure that this generation of Lawrentians will graduate with the knowledge, the tools, and the energy to provide leadership on the most important challenge that faces all of us in this century.

I look forward to hearing your reactions, disagreements, and responses to my words today. Good luck in this new academic year. Thank you for creating this learning community we call Lawrence. It is a pleasure to have you all back here in Appleton.