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Addressing climate change is the innovation opportunity of the 21st Century

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Recent reports from the Intergovernmental Panel on Climate Change provide a clarion call for humanity. The impacts of human driven climate change are all around us – floods and droughts and forest fires and rising sea levels and species extinctions and changing weather patterns and the wild winter weather we experienced in New Hampshire this year. And as we passed through our spring equinox, we have yet another reminder of ongoing climate weirdness. On March 20th it was 70°F above normal at the South Pole while it was 50°F above normal at the North Pole.

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While the nations of the world agreed in Glasgow last year to work together to limit global temperature rise to 1.5°C above pre-industrial levels (we have already raised global temperature by more than 1.0°C), we are on track – based on policies in place around the world – to warm the planet by 2.7°C. Limiting global temperature rise to 1.5°C requires transformational change in our energy systems and across society; it requires us to reduce emissions and expand ecosystems and regenerative agriculture that soak up carbon so that we reach net-zero emissions by no later than 2050.

The roadmap for this transition is clear.^[1] We need to quickly transition our energy production away from coal and oil and natural gas to renewable and sustainable energy like wind and solar and small-scale hydroelectric and geothermal and yes – where it makes sense – to biomass. This transition requires we develop utility scale energy storage systems. It also has the added benefit of immediately reducing air pollution that currently results in the premature deaths of millions of people around the world.

We need to expand our efforts to preserve a wide variety of ecosystems (like forests and salt marshes and peatlands and grasslands) from human disturbance and allow them to do what they do best – absorb and store carbon. This has the added benefit of reducing the rapidly rising pace of species extinction. We need to transform our agricultural systems so that agricultural soils soak up more carbon and, in the process, become more productive and more resilient.

And we need to adapt to the local impacts resulting from a global temperature rise of 1.5°C. This transition requires that we first identify our vulnerabilities – at the community level – to heat waves, floods and droughts, forest fires, rising seas, and spreading diseases like Lyme disease. Then we need to develop community plans to build resilience to those vulnerabilities and implement those plans over time. The goal here is not just to bounce back after disasters, but to bounce back better.

If this all sounds exhausting, it is. But with every challenge comes opportunity. And I believe addressing climate change is the innovation opportunity of the 21st Century.

Of course we need to decouple economic growth from carbon emissions. We are already doing this is through innovation in the development and deployment of renewable energy projects. However, innovation in the renewable energy sector is not enough. We need to scale up existing innovative practices in the way we invest in renewable energy and energy efficient buildings and resilient communities. We need innovation in the way we preserve critical ecosystems that make our communities more resilient in the face sea level rise and climate change. We need innovation in our agricultural systems so they provide healthy food and regenerate soils. We need innovation in the way we collaborate to make informed and sometimes difficult decisions to adapt to climate change at the community level. And we need to innovate in the way that we integrate social justice and environmental justice and equity into our response to climate change.

As detailed in a soon to be released climate assessment for New Hampshire (see sidebar), the state has become warmer and wetter with more extreme precipitation events over the past century and the rate of change has increased over the past 50 years. The transformational change required to address the climate crisis means that no one sector or no one region or no one person can make it happen. The time for waiting for others to address this challenge has long passed. Rather, we ALL need to get engaged and embrace innovation to change the institutions where we live, work, play, pray, and learn. In this regard, each and every one of us has an important role to play in the New Hampshire institutions we love. The climate crisis demands this transformational response.

[1] There are several very good resources that provide detailed plans for this transition. A great place to learn more is from Project Drawdown at drawdown.org.



Watch “The New Normals:
the 2022 NH Climate Assessment”

*Co-authors, UNH’s Dr. Mary Stampone and Dr. Cameron Wake discuss the soon
to be released NH Climate Assessment report.*

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