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Faculty Discourse on University Rankings: Links to Neoliberalism and Consequent Practices

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Abstract

Dr. Alan Wanamaker's research is largely focused on documenting and understanding past climates and ecosystems, especially in the high latitudes of the Arctic and North Atlantic region. He is interested in developing new geochemical tools and proxy records for paleoclimatic applications. For his research, he primarily utilizes light stable isotopes in both biogenic and inorganic carbonates. He directs the Stable Isotope Laboratory in the Department of Geological and Atmospheric Sciences at Iowa State University. In this interview, he explains how climate change is a human right issue and what are some ways of communicating climate science to the public.

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Interview with Dr. Alan Wanamaker

Interview conducted by Maaz Gardezi

Dr. Alan Wanamaker's research is largely focused on documenting and understanding past climates and ecosystems, especially in the high latitudes of the Arctic and North Atlantic region. He is interested in developing new geochemical tools and proxy records for paleoclimatic applications. For his research, he primarily utilizes light stable isotopes in both biogenic and inorganic carbonates. He directs the Stable Isotope Laboratory in the Department of Geological and Atmospheric Sciences at Iowa State University.

Q. How is climate change a human right issue?

A. Climate change will disproportionately affect people who do not have resources to combat climate change or adapt to it. Available data suggests that people who presently do not have access to clean water or are food insecure are going to feel the greatest impact of climate change. Think about residents of the small island states. Climate change induced sea-level rise is eating their millennia of history. They have no place to go. Think about the increase in the frequency of heatwaves in Africa and Asia. These are some areas where people have limited access to clean drinking water. The number of deaths associated with heat waves is staggering. Climate change is a human rights issue because it those least responsible for it who are most vulnerable to its impacts. People who live on those island nations or countries in Sub-Saharan Africa have not caused climate change, in any measurable way, compared to say the Industrialized nations. Therefore, it is a governance challenge too.

Q. Do you think it is important for scientists to engage with the public on climate change-related issues? Why or why not?

A. Yes, I feel very strongly about engaging with public on climate change. So ten years ago, maybe, I would have been less confident in my answer. I would have said maybe scientist need to be objective and that we can't put ourselves in this situation for communicating climate science. However, now I've come to the conclusion that I can write all about climate change in peer review journals, I can share results with my peers, at scientific meetings and conferences. But it probably would not have the impact that we need with the general public. As a result, more and more climate scientists are becoming vocal about what we know about the climate

system, how it is changing, doing detection and attribution, which components are changing due to natural causes and those that are changing due to human causes. And I think it is essential now that we get people to start understanding the science and their responsibilities toward protecting the environment. I think if scientists do not engage with the public, we'll be doing a great disservice to the public. It would be like sitting here and watching something really bad happening and not do something. So most of us [climate scientists] have started to engage with citizens, by telling them what we know and what concerns us about climate change.

Q. You recently convened a public seminar series on climate change at the Ames Public Library in Ames, Iowa. Can you tell me what was your motivation for holding this event?

A. I have always been interested in assessing how my research can be beneficial for the community. Fortunately, the National Science Foundation, which is funding one of my research projects, also recognized that the public deserves to get something back from the money that they invest in research. So I proposed to conduct two outreach activities: a public lecture series and a workshop on climate change for high school teachers. I thought that this was one way to begin a dialogue with people from this community so that they can learn about the work being done on climate change at Iowa State University. I also feel that a lot of people have many questions about climate change. Hence, engagement activities with the public could help answering some of their questions too.

Q. How was the response from the public?

A. The response from the audience at the Ames Public Library was generally very supportive. There were many good questions. However, it wasn't without some difficulties. For example, there was an obvious climate denier in the audience. He had been an engineer in the coal mining sector for twenty years. And because he was an engineer, he felt competent and knowledgeable to speak on climate science matters. This person continually interrupted the conversation by saying that higher concentration of carbon dioxide will be beneficial for the planet. I did hear that a lot of people were unhappy with this person taking over the entire forum. Overwhelmingly it was a very positive event. It was nice to see people from all walks of life, such as high school students and elderly interacting in a collegial environment. I think that it was a nice forum for sharing ideas and thoughts.

Q. In a time when 97% of climate scientists agree about human-caused climate change, why do some people still think that a single cold winter or summer disproves global warming?

A. I think that people tend to confuse between weather and climate. A single event is not an indication of climate change—it is the weather. 30+ years of temperature and precipitation is climate. When climate scientists put all these weather events together, they see an emerging pattern. For example, over time, the winter season is getting warmer, the soil is not freezing as it used to before, there are massive extensions in the growing season. Seeing how the weather changes over 20-30 years is climate change. I think that it is important for people to understand the differences between what we know about climate and what we know about weather.

Q. If the scientific information is more readily accessible than ever before, why do conflicts over controversial scientific issues persist?

A. Put plainly, I think that the rise of the internet has given people the ability to come across as experts on topics such as climate change, even when they have not received any formal training in climate science. People can use their keyboard to sound very legitimate and convincing about denying the existence of climate change. Science, on the other hand, requires a formal peer review process for authenticity. I think that some of these people have political reasons for creating misinformation on climate change, but there could be ideological reasons for doing this too. There is a lot of information on the internet, but a lot of bad information. This is why your earlier question (should scientists be involved with the public?) is so important. We have to call out these erroneous statements about contentious issues such as climate change or other issues such as the use and effects of vaccination. I could see how people run into a lot of confusion about some of these issues, because they read contradictory information about climate change on the internet.

Q. How important are people's values in influencing their beliefs about climate change?

A. I think that there are a lot of people who trust scientific establishment and are willing to shift their worldviews. At the same time, there are many people who despite being shown scientific evidence, tend to have a very fixed viewpoint. In science, our (scientists) viewpoint is constantly changing with new information. I think that we need to be better at understanding why people do

not agree with 97% of climate scientists. If the barrier in understanding is as a result of a breakdown in communication, then we need to fix that. But I think this outright rejection of climate science is also from people who are not interested in science as an entity or who pick and choose science they want to believe in. If you don't believe in science as an entity than it is very difficult to convince you about climate change. The other problem is that climate scientists are usually put into this 'we all are liberals or democrats' category. This is ridiculous because I have kids and I want them to inherit a safe planet.

We need to invest our energy and time with the people who are at least willing to be open-minded to scientific information. The vast majority of the people are in that category. As I'm traveling around and talking to friends or friends of friends, people ask me what I do for a living. Then we start talking about what I do and some of them ask me "Is climate change true"? From my own experience, I have learned that usually when you dispassionately talk about what scientists know about climate change and how a climate system works, then people are less skeptical. They realize that we are not being political.

Q. In order to be more successful at science communication, what are some of the things that scientists need to have a better understanding of?

A. We need to be better at understanding our audience. The purpose of the interaction with the public is different from the engagement with other scientists. For example, scientists worry about uncertainty a lot. But uncertainty to the public might mean that we (scientists) don't know what we are talking about. We need to change our language when we are talking to people. I think it is very important for scientists to get help with professional science communication experts. In a similar vein, collaborations with social scientist would be useful to understand the social and behavioral factors that influence people's views about climate change.

Q. What advice would you give to new climate scientists who is passionate about doing climate change-related research?

A. First of all, be good at what you do. Know what you are talking about when you engage with members of the public. Be prepared to talk about things that you're less comfortable talking about. You can't be an expert on everything. I get asked all sort of questions, for example: "how much methane is leaking out of gas pipes?" or "How much methane did Bison produce 10,000 years ago." I don't have the answers to all questions. It is important for the scientist to know that

when they are unsure about something then they should be honest about it with the public. I think a problem with the scientist is that if they feel that they don't know something then they'll lose credibility. Instead, I have found that when you show some vulnerability when engaging with people, it might help you connect with the audience. To sit up there and talk endlessly is a recipe for disaster. Unfortunately, this top-down transfer of knowledge has been the model of science communication. It goes like this: we know everything, we are going to tell you, and you will react. Instead, when communicating with the public a scientist should say: this is what I do for a living, but I'm also a member of the community. The climate scientist should then lay out the details in a dispassionate manner.

But they (climate scientists) have to be careful when they start out. They should first build a good foundation. I think that is why 10 years ago I wasn't comfortable with going out and engaging with the public on climate change issues. You've got to build your foundation so that when you're put on the spot, you're comfortable in replying and giving your honest answer. Everyone does not have to be an expert science communicator. Therefore, build your allies, work with different people, but let your passion guide you in working on a problem that you find most compelling and important.