From climate researcher to senior policy advisor

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By: Rose Filley

On Capitol Hill, the day-to-day business of government works because of smart, hardworking people with a passion for public service—people like Purdue alumnus, Dr. Aaron Goldner. Back in 2013 you could find Goldner at one of West Lafayette's coffee houses, chugging through lines of code. His graduate research focused on understanding what forcings (e.g., carbon dioxide, the Antarctic Ice Sheet, the El Niño Southern Oscillation) were critical in altering past climates and whether the scale of these forcing could be quantified to better predict future climate change. After earning his PhD from Purdue's Department of Earth, Atmospheric and Planetary Sciences that summer, Goldner headed to Washington, DC as an AGU-AAAS Congressional Science Fellow working in the Senate and at the Department of Energy, and he's been there ever since. He is currently senior advisor on energy and transportation policy in the Office of Senator Sheldon Whitehouse. PCCRC's Rose Filley caught up with Goldner to talk about his work on the Hill.

Thanks so much for being here, Aaron. So, what does a senior policy advisor for the Senate do? What does your day-to-day look like?

The day-to-day is similar between the House and the Senate. You have a set of areas that you focus on and I cover Senator Whitehouses' energy, infrastructure, science and technology portfolios. So, I make sure I am up to speed on all the political ins and outs of those issues, and that the Senator has updated information on all of his pieces of legislation along with any specific requests or ideas that we're working on. It's a broad mix of diving deep into detailed memos, proposing new ideas, but also providing concise talking points that he can use to describe to other policymakers his ideas. A typical day is full of short meetings, long meetings, hearings and other events.

We know that if we hope to stabilize the climate and prevent the most catastrophic effects of climate change, we have to reduce global greenhouse gas emissions to net-zero by 2050. The transportation sector is the 2nd largest emitter globally, in the US it is the largest. What do you see as the biggest hurdles and biggest opportunities for Congressional action to decarbonize this sector?

We are still waiting for two senate races to play out in Georgia, which will ultimately decide the makeup of the Senate, so to some extent, legislative levers are still to be determined. Regardless, the next Congress will need to reauthorize the formulas and grant programs for our roads, bridges, and highway systems so there's an opportunity to work on an improved transportation infrastructure bill, building on the good movement in the current Congress. There are lots of conversations underway about how the new administration, through executive orders and actions, can start to lay some additional guidance for us to think about how to tackle carbon emissions. I would be remiss if I didn't say that we still have a long way

to go in developing a true framework that actually gets us to that 1.5 or 2 degree target—that still requires strong legislation through incentives and other mechanisms that would look to decarbonize both the transportation and power sectors. We will have to wait and see whether this Congress will actually put a price on carbon or find other ways to incentivize clean energy production. Those types of policies are going to be needed and we must work to find bipartisan support for them.

You mention the need to decarbonize the power sector. What are some of the promising policy and technological solutions you see coming online?

The technology space has been the most promising area in the last couple of years in Congress. There have been bipartisan signals that to address climate change we need negative emissions technologies and there's broad support for tech like direct air carbon capture – technologies that directly pull carbon out of the atmosphere. Other important technologies include ways to produce low-carbon versions of essential building materials like steel and cement. Policy can help create a more competitive environment for these new technologies through multiple mechanisms, much like it did for solar and wind and now the latest analysis by EIA shows that solar and wind are the cheapest forms of energy in our markets. Additional areas to help draw down emissions include building out our electric vehicle infrastructure and creating incentives for farmers to adopt practices that sequester carbon.

Former US Treasury Secretary Henry Paulson has called climate change "the most certain and formidable economic challenge that the world faces," and he issued an urgent call for the public and private sectors to work together on investments to decarbonize the economy. What are some of the ways that the federal government can mobilize the private sector?

A lot of the leadership a new administration can provide is in laying the groundwork for the federal government to be a model in "green" procurement, and in helping create public-private partnerships focused on solutions. The US also needs to show the world that it will be a leader on climate, and that is happening now. The appointment of John Kerry as Special Envoy for Climate and our reengagement in the Paris Agreement gets us off to a good start. The first day of a Biden Administration will be important and it can send a strong signal to the private sector and the business community that addressing climate change will be a priority again. Paulson is not alone in seeing the risks of climate change for the financial sector. Dire warnings are coming from the Bank of England and other big financial institutions who are talking about carbon assets bubble crashes. The mortgage and home insurance associations in areas that are vulnerable to sea level rise are warning of uninhabitable areas and large real estate losses. I think hearing the concerns from these groups will lead to a little more momentum as the government takes back a leading role in climate change action.

The US and China are the world's two largest emitters, together making up > 40% of global GHG emissions (China surpassed us in 2015 and roaring ahead). How important is it for the US to work with China, and the rest of the world for that matter, to address climate change?

The US is the only country who left the Paris Agreement—rejoining sends a signal to everyone else that we are back in the room and plan to take bigger steps. We need all countries stacking together our emissions reductions to address climate change and all of the world's leaders have to be on board. Most of them see the writing on the wall. China is investing more in research, development, and deployment than most countries combined. I think we should see that as a sign to stay competitive–other countries will leave us in the dust if we don't push forward with these advances.

We know voluntary emissions targets of the Paris Agreement are not enough (nor were they intended to be)—do you think that there is a role for other multilateral platforms to play in improving global cooperation, raising the level of ambition, and sending the right signals?

I think we need to do all of it. And there is good news on this front. The UK just released their Ten Point Plan for a Green Industrial Revolution. It outlines how they are going to raise ambition for their net zero emissions goals by 2050, while creating new jobs. Now that President-Elect Biden is here, there are a lot of countries reaching out with their climate goals and interested in talking ahead of the COP26 in Glasgow, so there's already a lot of momentum and bilateral opportunities. There are also lots of other conversations happening behind the scenes that will help make COP26 successful. I think we need to use everything at our disposal to encourage cooperation and raise ambition, including through all the international programs within our federal agencies at the Department of Energy, the State Department, and the Environmental Protection Agency as we build up our climate programs again.

So, while science continues to refine our understanding of the climate system and advance our understanding of the impacts of climate change, policy continues to lag behind. What role do you see research universities playing at the science-policy interface going forward?

I think this is a question of more where schools see themselves. I think an exciting part about research universities is that they are producing cutting-edge science while they are also some of the most trusted home-state researchers that lawmakers listen to. So, the role for the university is to lead with the science, but also figure out ways to make sure your lawmakers know what exciting science is happening in their own back yards—there are climate research centers in universities across nearly all the states now. I also feel there is a broader need for and interest in use-inspired research, especially among younger generation scientists who are looking to get smore engaged and finding ways to have their research connect directly with their community and with policy makers. Some schools have established an office in WDC and are on the Hill sharing their findings and ideas, but also trying to figure out what legislators need. Figure out where your university fits in and engage in that way. There is still a lack of science that's being pushed around the halls of Congress—some of the world's best science is being produced at public universities and there's no reason why that shouldn't be relayed to your state's senators.

A final question for you, Aaron—what do you read for inspiration and insights?

During the pandemic there's been more time to read books, but one thing that I've done which has helped me get a pulse on broader happenings is that I got hard copy subscriptions to a bunch of newspapers. So, each Sunday I sit and go through the different sections, a lot of which, when you read digitally, you skip over like the Life Style section or the news in

Media. But with a print copy, I go through and read all these different sections and am inspired by new ideas and have a broader sense of what people are thinking and what they are reading, listening to and watching. That's been the big thing — old-school reading hard copies of newspapers.

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