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Q & A with Brenda Ekwurzel, PhD '98

Brenda Ekwurzel wrote her PhD thesis on Arctic Ocean isotope geochemistry. As a postdoc at Lawrence Livermore National Laboratory in California, she conducted noble gas hydrology research. She then joined the faculty at the University of Arizona, with appointments in both the Geosciences Department and the Department of Hydrology and Water Resources. Ekwurzel is currently a staff climate scientist with the Union of Concerned Scientists (UCS).

Herman Farrer

Editor: You held a faculty appointment at the University of Arizona, and you have conducted high-level research. What brought you to Washington to work in policy?

I reached a personal tipping point—I was appalled by the huge gap in understanding between the published science on climate change and public discourse in the U.S. I made the personal calculation that the consequences accruing with each year of inaction warranted my shift into the public arena. I was typical of many scientists who, after writing grant proposals, managing research groups, mentoring students, reviewing papers, and serving on panels, find little time for outreach despite having benefited for years from public tax dollars that funded their careers.

So in 2004 I dramatically changed that time allotment. I took a job as a staff scientist with the UCS in their Washington DC office.

Editor: Nowadays, one often hears the words "climate" and "economy" linked together in public discourse. David Owen recently wrote in *The New Yorker* that "the world's principal source of man-made greenhouse gases has always been prosperity.... [S]huttered factories don't spew carbon dioxide." Is a period of economic crisis the right time to tackle carbon emissions? Or will success in one area preclude success in another?

Well, recessions aren't a strategy for reducing emissions. There's this false choice between the economy and the environment that a lot of us have in our heads. We're now realizing as a country that the oppositional relationship between the economy and the environment is just not true. Many of the solutions to climate change are things that benefit the economy, like fuel-efficient cars that save people money on gas, or people in the Rust Belt going to work building wind turbines.

And a lot of companies like Dow Chemical are reducing emissions and saving money. One program to clean up their emissions costs $50 million and is yielding $2 billion in annual savings. That's helping Dow's bottom line during this recession.

Part of what we have to realize is that continuing down the same path that relies on conventional coal and oil to drive our economy isn't a viable economic or environmental option—those sources are limited, they're hurting our planet, and we need to think long term about how we get to a cleaner economy.

Given the high cost of inaction—adapting to public health threats, sea level rise in coastal cities, etc.—how can we not address global warming now?

Editor: In 2007 you warned (presciently) that ignoring global warming is "as irresponsible as not making payments on a high-interest credit card." This spring, *New York Times* columnist Thomas Friedman wrote, "[I]t's now obvious the reason we're experiencing a simultaneous meltdown in the financial system and the climate system is because we have been mispricing risk in both arenas." Have we learned any important behavioral lessons from this year's economic crisis?

If as a nation we had grown our research, development, and deployment of climate-friendly energy options from the moment we had our wake up call during the "energy crisis" of the early 1970s, the U.S. would likely be closer to decoupling economic growth from the kind of energy that

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harms our climate and consumer budgets. Perhaps now after the recent severe worldwide financial downturn, people may be more aware of risky decisions that can cause personal as well as global harm that may play out in the future, long after the risky behavior has occurred.

Editor: You've expressed optimism that many of the solutions to climate change will have profound benefits for public health and energy security. Can you explain?

The economic and health benefits of reducing our reliance on fossil fuel energy are often overlooked when discussing the cost of deploying solutions to climate change. Take a look at coal. It's dirty. When we burn it, we put particle matter, mercury, and other toxic emissions into the air. My colleagues have calculated that we could avoid using 11 billion tons of coal over the next two decades with smart policies in place. That could save approximately 280,000 lives and avoid 444,000 pollution-related heart attacks.

The national security benefits of weaning our country off of oil are implicit when the U.S. currently imports around 6 million barrels of petroleum products a day from OPEC countries. The Department of Defense is actively looking for fuel alternatives as a majority of their budget is devoted to fuel purchase, transport, and the cost of personnel deployed to escort, protect, and maintain the fuel supply lines.

Editor: Do you get the sense that the Obama administration will make an effective ally in the coming years?

Obama administration officials repeatedly refer to the connection between energy, economy, and climate. That's important, because this isn't just about climate change—it's about our economy and our health and our position in the world.

Editor: If given the chance, what specific policies would you advise Obama to propose?

I would recommend the implementation of a swift and deep declining cap on emissions and new standards to improve energy efficiency in all economic sectors. We need cost-effective solutions to meet our growing energy demands that will simultaneously prevent the worst consequences of climate change. This will require investing in the National Science Foundation and other federal agencies. Examples include NOAA tracking the most vulnerable U.S. locations to improve local planning and preparedness, or the Department of Energy investing in large-scale energy demonstration projects.

Editor: You testified to the Committee on Ways and Means in February of this year. What kind of feedback did you receive from members of Congress?

It was an honor to testify before Congress. The Ways and Means members were preparing climate legislation and wanted to learn more about the science. These members of Congress are typically dealing with finance and tax issues, so a lot of their interest focused on how science informs the question of a carbon tax vs. a cap on emissions. I testified that UCS would prefer a cap, because a tax wouldn't guarantee a given level of emission reductions.

Editor: What is the UCS's strategy in communicating the science of climate change? *New York Times* science writer Andrew Revkin suggested in a February 2009 article that "hyperbole is an ever-present temptation on all sides of the [global warming] debate." How do you convey concern without sacrificing the integrity of the research?

Historically, groups that oppose climate action routinely cherry pick the science and fund campaigns to confuse the public. So it's not a temptation for them, it's really business as usual. Thankfully, that's become a less tenable position, and those front groups have lost a lot of credibility in recent years.

That said, UCS always wants to bring the best science to bear, so we pay special attention to how we talk about research. UCS has a policy of asking scientists to review our statements to ensure that our efforts to make their research more accessible has not affected its accuracy. This builds trust with congressional staff, who repeatedly return with requests for further evidence.

With the sort of climate science findings that are coming through, there's really no reason to exaggerate.

Editor: Scientists often lament the fact that the nuances in their work are ignored in public discussions. Are nuances simply too difficult to turn into sound bites?

I think what UCS does effectively (and what a lot of scientists are learning to do, too) is to communicate about science in a way that will help people understand the significant points. Metaphors such as "carbon dioxide builds up in the atmosphere like bad credit card debt" are ways to put a picture in people's heads that lets them grasp the concepts and math that scientists are dealing with.

UCS offers a lot of advice on how to communicate with reporters in its book *A Scientist's Guide to Talking with the Media.* Reporters have to communicate with the general public. It's the scientist's job to translate scientific nuance to the reporter. We tell scientists and other experts to distill what they're trying to convey to its essence. You can communicate simply without being simplistic and without abandoning your scientific credibility.

Editor: Have you found your current position rewarding?

To my surprise, I did not abandon what I loved most about my academic life—sharing research discoveries with students and colleagues. Now I share this information with a larger group.

I enjoy the challenge of providing just enough context so the public will grasp cutting-edge research, thereby advancing our collective understanding. It is my hope that whatever decisions policymakers, business leaders, and citizens make, the process will involve more consideration of the scientific evidence.

"This isn't just about climate change—it's about our economy and our health and our position in the world."