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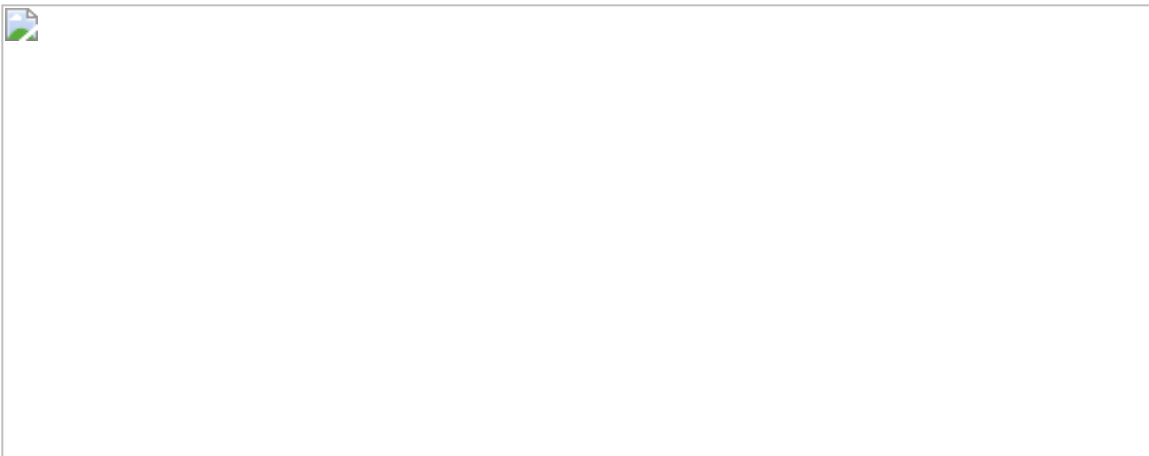
## Penn State Scientists on COP 21 & the Paris Agreement

December 15, 2015 | [0 comments](#)

We reached out to faculty from Penn State who worked on the [Intergovernmental Panel on Climate Change](#) about what they expected and hoped would come from the [COP 21](#) in Paris. Here we include responses from [Dr. Richard Alley](#), Evan Pugh Professor of Geosciences, [Dr. Chris Forest](#), Associate Professor of Climate Dynamics and Associate Director of the Network for [Sustainable Climate Risk Management](#) (SCRiM), and [Dr. Michael E. Mann](#) of Penn State's Earth System Science Center, on their expectations. As follow-up, we also feature an excerpt from Dr. Mann's opinion piece from *The Huffington Post* titled, "[The Power of Paris: Climate Challenge Remains, But Now We're on the Right Path.](#)"

### Dr. Richard Alley

Efficient actions on climate and energy will help the economy as well as the environment, based on extensive, solid scholarship. Delay in moving forward will be costly in many ways. But, history suggests that we should be watching for progress rather than for the complete solution.



Solar cells have dropped so rapidly in price, and spread so rapidly on rooftops and elsewhere, that they are forcing reexamination of long-standing electric-utility business models. But, this "overnight" success took almost two centuries. The first photovoltaic cell was demonstrated by the physicist Edmond Becquerel in 1839,

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the first practical one was introduced by Bell Labs in 1954, excitement soared with the solar-powered Vanguard 1 satellite in 1958, but large-scale solar didn't look especially close to displacing other energy sources for most purposes in 2009 when I started writing a book on energy and the environment.

People have done bigger things than the negotiators in Paris are attempting. Plus, the rapid drop in price of solar and wind energy, and the clear evidence that helping the environment can help the economy, are making the negotiations easier. But, I'm not sure that people have ever sat down internationally and intentionally agreed to do something this big. In some ways, the technical issues of solar cells may be simpler than getting the world to agree on the best way forward. So, remembering how long it took to get to economically competitive solar cells, I suspect it is wise to look to Paris for progress rather than completion.



### Dr. Chris Forest

The United Nations climate chief [Christiana Figueres](#), recently said, “What will make me very happy is that we have a legally binding agreement, that brings all countries on board, that leaves no country behind, protects the most vulnerable, and accelerates all the benefits that acting on climate change can actually bring to everyone.”

To me, this quote summarizes the critical roadblocks that need to be removed in the final week of [COP21](#). The agreement must be binding, inclusive, and equitable. It must also put forth a plan to create sustainability at a global scale. To me, in order to go beyond voluntary actions, an international treaty will need to be able to check off these boxes, at least.

### Dr. Michael Mann



I see COP21 as the beginning of a process, rather than the end of one. I hope that a framework is agreed upon by which participating nations can substantially improve upon the commitments they have already made going into the meeting. These commitments get us roughly half way from where we are (business as usual, i.e. no policy intervention, will likely lead to as much as 5C/9F warming of the globe by the end of the century) to where we need to be, i.e. limiting warming below the “dangerous” 2C level. The most important thing that can come out of the conference is an agreement to improve on these commitments

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substantially by the time of the next conference in five or so years, so that we do get on the path to limiting warming below 2C.

Faculty at Penn State (and elsewhere) can contribute to this effort by making sure that our students are as informed as possible about the underlying climate threat, and the avenues available to us right now to make a difference, whether it be voluntary changes in lifestyle to decrease our carbon footprints, outreach to our friends, family, and colleagues to educate them about the nature of the challenge and the path forward that exists, or efforts to hold our policymakers and institutions accountable for taking a principled stand to act on climate.

Dr. Mann follows up:

On Sunday December 13th, Michael Mann wrote a piece for *The Huffington Post*, "[The Power of Paris: Climate Challenge Remains, But Now We're on the Right Path.](#)" On the day after the Paris Agreement was reached, he writes:

"One cannot understate the importance of the agreement arrived at in Paris. For the first time, world leaders have faced up to the stark warnings that climate scientists have been issuing for years, instead of shrinking away with denial and delay. So while the commitments made in Paris aren't on their own enough to stabilize greenhouse gas concentrations at safe levels, they are enough to begin bending the emissions curve towards a safe climate. Paris is a beginning of a process. It provides a framework for continued progress toward the goal of averting dangerous interference with our climate." He goes on to say the agreement doesn't do enough to avert dangerous climate change, but that its structure and schedule make it more likely that we will and that we can't rest on our laurels. He concludes, "But there is light now at the end of the tunnel and hope that we not only can but indeed already are rising to the challenge."

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