

Yale Climate Connections

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Article

Michael Mann, Warren Washington - the Yin and Yang of climate science - share 2019 Tyler prize

The two scientists have led careers that are in many respects opposites, but that are ultimately complementary.



2019 Tyler Prize winners Warren M. Washington, PhD, (left) and Michael E. Mann, PhD. (Photo credit: Joshua Yospy)

Yin and Yang¹ are not, you've no doubt guessed, the actual names of the two winners of the prestigious 2019 \$200,000 Tyler Prize for Environmental Achievement. That distinction falls to Penn State atmospheric scientist Michael E. Mann, PhD, and National Center for Atmospheric Research (NCAR) distinguished scholar Warren M. Washington, PhD.

[This prize is known to some as the 'Nobel' of environmental protection. Click To Tweet](#)

Two of the leading pillars of the climate change science community, they are so well known among the climate cognoscente that the use of just their first names, Mike and Warren, usually is sufficient to identify them. But “Yin and Yang” fits them well as equal winners of an award that describes itself as environmental protection’s Nobel Prize.

At the most fundamental levels, Mann and Washington – who will share the \$200,000 prize equally – in many ways might appear to be polar opposites from each other. In keeping, let us use first names throughout here:

- Let's begin with the easy and most clearly visible one: As their many science colleagues know, Warren is strictly bow-tie and usually a suit. Can't possibly picture Mike in a bow tie? Neither can those most familiar with him ... crew neck and sports jacket all the way.
- Warren, now 82, is one of the estimable "elder statesman" of the climate science community, senior by just shy of three decades to Mike, 53.
- Warren is one of the first developers of groundbreaking atmospheric computer models, and much of his work has involved examining the climate of our future. Mike first made a name for himself focusing on reconstructions of Earth's climate back prior to human records. He is among those who pioneered use of "climate proxy data" – ice cores, tree rings, lake sediments – to estimate global temperatures 1,000 years in the past. Having largely moved away from his early focus on paleoclimate, Mann's focus over the past decade generally involves using climate models to understand physical processes (e.g. linkages between climate change & extreme weather events). Models Warren has specialized in developing, Mike is using to better understand the data they make accessible.
- A worldwide leader in climate modeling, Warren is often referred to as "the father" of climate modeling. (He would want all to understand that his early co-developer colleague at NCAR and therefore the veritable "mother" of that modeling is Akira Kasahara, also then with NCAR.) That makes Mike "the father" of the iconic 1999 "hockey stick" graph. That is the chart that made him Public Enemy #1 in the eyes of fossil fuel interests and those steadfastly rejecting much of the established climate science evidence.
- Warren, ever the statesman, has advised six U.S. presidents on climate change issues: Carter, Reagan, Bush Sr., Clinton, Bush Jr., and Obama, and Obama awarded him the National Medal of Science in 2010. No slouch, Mike testifies often on Capitol Hill, and he has advised experts and celebrities including former Vice President Al Gore, actor and climate activist Leonardo DiCaprio, and public broadcasting's "Science Guy" Bill Nye.
- Warren is known for being reserved, quiet, soft-spoken, often seeming beyond reproach, and sometimes perhaps flying under the proverbial radar. Mike, not so. A recent glowing profile of him in a [Penn State publication](#), headlined "A happy warrior," opens with the line that Mike "keeps fighting." "Edgy, but right" is how former NOAA Administrator Jane Lubchenco described him in the official Tyler Prize press package: "one of the 'go-to' scientists" when the U.S media call. "He does not suffer fools lightly, and routinely calls them out in a very public manner." ("Vilified" is the term the Tyler Prize used in announcing Mike's selection for the 2019 prize.)

But to complete the "Yin and Yang" comparison, the two also share much in common.

- Each is known to be an ardent defender of sound science, and each takes great pride in their convictions that climate models, never perfect, have been quite verifiable with their simulations of the 20th Century.
- Each has been the subject of intense abuse and personal attacks – including even death threats – from fossil fuel interests, lobbyists, and ideological critics of their climate science research. (Warren acknowledges that Mike has been the target of far more of those barbs than he ... or probably any other climate scientist.)
- Each claims a Penn State University affiliation of some sort, Warren for having earned his PhD in meteorology there, Mike as a current faculty member.

Mike Mann

A frequent public speaker and active blogger and user of social media, Mann, the Tyler Prize media package points out, has "endured blistering legal and political attacks," to which he has consistently responded publicly and loudly and "doubled-down on his efforts to make climate change science accessible to the public."

He "did not choose the easy way out" when attacked, but instead, and characteristically, persistently fought back, making him "a hero," as author and science historian Naomi Oreskes of Harvard and others view him.

“Never passive,” as the Tyler Prize puts it, Mann in 2013 was ranked by Bloomberg News’ “Bloomberg Markets” magazine “among the top 50 most influential people in the world.” Through four books, numerous op-ed columns, and more than 200 peer-reviewed publications, and the RealClimate.org website, of which he is co-founder, Mann has carried his climate message forward in ways few others have. Exhibit #1: The Madhouse Effect, a climate change book he co-authored with Pulitzer Prize winning Washington Post editorial cartoonist Tom Toles.

Mann is the 2017 winner of the Stephen H. Schneider award for outstanding climate science communication, from [Climate One](http://ClimateOne) in San Francisco; the 2018 winner of the American Association for the Advancement of Science (AAAS) award for public engagement with science; and the 2018 American Geophysical Union’s climate communication prize.

Asked as part of the Tyler Prize why he is so persistent in his climate change communications, Mann replied that “the stakes are too great ... the greatest challenge we face as a civilization. And I can’t allow personal attacks against me to cow me into submission.”

Asked by Yale Climate Connections to describe the “best and worst” personal experiences he has had in his communications work, Mann replied, while being flight-delayed at Dulles International Airport because of snow, with comments appended to this piece (see sidebar at the end of this article).

Warren Washington

Washington is the co-author with NASA Goddard climatologist Claire L. Parkinson of *An Introduction to Three-Dimensional Climate Modeling*, a standard reference in the field. He has published more than 150 peer-reviewed journal articles and wrote the book *Odyssey in Climate Modeling, Global Warming, and Advising Five Presidents*. (Now six.)

Washington in 2010 was awarded the National Medal of Sciences by President Obama, the highest science honor the U.S. government makes. He is one of only three atmospheric scientists to win that award. (The other two are Lonnie Thompson of Ohio State University and Wallace Broecker of Columbia University’s Lamont Doherty Earth Observatory.) A member of the National Academy of Engineering, Washington has held numerous high-ranking appointments to federal advisory boards and committees, and he served as a member, and later as the chair, of the National Science Foundation’s National Science Board.

The second African-American ever to earn a doctorate in meteorology,² Washington takes particular pride in his extensive work mentoring minorities and diverse groups of youths to enter the field of atmospheric sciences. He points proudly to the efforts of the American Meteorological Society and its annual “The Color of Weather” sessions held as part of AMS’s annual meetings.

“I think it is more healthy for society when we have a good representation of everybody who comes from different backgrounds and cultures,” he says. He recalls personally being advised by a student advisor, presumably because of Washington’s race, that he would be smart to avoid physics and “go into another curriculum.” He persisted.

The first African-American AMS President, he recalls when “there were very few Hispanics, Native Americans, and African-Americans” in the organization. “Now we have more than 100 members from under-represented groups.” He is dedicated to, and active in, mentoring young people, and in particular African-Americans and other minorities, and encouraging them to become scientists.

Washington now points to “serious climate impacts that are already happening,” and he says many of the choices facing contemporary society “will be painful ones. In a Q&A prepared for the Tyler Prize, he cautioned that under the “business as usual” approach to addressing carbon dioxide emissions in the atmosphere, “we are not doing enough” and face “the biggest and worst effects from climate change over the next 50 or 60 or 70 years.” Pointing to adverse effects not foreseen just 20 or 40 years ago, he said “We need to take very large societal steps to cut back on the use of fossil fuels.”

Along with his active membership in a wide range of professional scientific societies – AMS, AGU, AAAS and the American Academy of Arts and Sciences – Warren is Vice President of the American Philosophical Society, where he says he enjoys organizing and attending a wide range of expert presenters' thoughtful discussions on climate change and other major issues of great national interest.

Among important roles Washington sees for climate modeling in coming decades is its role in international efforts to inform policy makers on which countries are, and which are not, "telling the truth" about their efforts to reduce greenhouse gas emissions.

Michael Mann – In His Own Words

The Best of Times

Well, there are many mini-stories of the same sort. I'm traveling, and a stranger approaches me and says something akin to "You're Michael Mann, the scientist, right? I just want to thank you for what you're doing."

This happens more often than you might think. I once had a flight attendant approach me shortly after I had boarded a flight and asked me if I'm Michael Mann. I thought I'd done something wrong.

He said, "the pilot wanted to let you know he's a big fan" and the pilot came back to talk to me, turns out he follows the climate issue very closely, was even familiar with the climate blogs. Relayed a story to me about how he's convinced he's seeing more free air turbulence over the course of his several decades-long career. Often, I'll get e-mails and letters thanking me for what I'm doing. One of these makes up for 1,000 thoughtless hate mails/e-mails/internet comments.

The Worst of Times

There are several candidates. Most of them correspond to the e-mail hack known as "climategate".

But one stands out. It was in the heat of the contrived scandal, shortly after Thanksgiving. Penn State University's state budget was being held back as ransom by Republicans in the Pennsylvania state legislature who were doing the bidding of a right-wing fossil fuel industry front group. They were putting extreme pressure on Penn State, attempting to coerce it into taking punitive actions against me (e.g. firing me) over manufactured allegations of data manipulation etc. based on the misrepresentation of stolen e-mails. The university had already initiated an investigation of me.

There were radio ads attacking me, and they even hired people to picket a public lecture I gave in Pittsburgh, dressed up as chickens, and handing out t-shirts and miniature hockey sticks that said "Mann-made warming" on them.

Around that time, shortly before the Christmas holiday break, I got a call one afternoon from the Vice President for Research at Penn State. She told me that I needed to come see her as soon as possible and to bring my computer with me. I was absolutely convinced I was going to be fired from my job, based on false allegations and innuendo manufactured by climate change deniers. It was a low point – perhaps the worst moment of my life.

As it turns out, I was not to be fired. Or reprimanded. They just needed to get a hold of my laptop so that they could make a forensic copy of the hard disk contents, i.e. to make sure they had all my e-mails and documents for the purpose of the investigation.

Years later, of course, after the better part of a dozen investigations by the U.S. and the U.K. [and the university], I and all of the other climate scientists who were targeted in the "climategate" affair were completely vindicated. Indeed, the only indiscretion that was ever found was the criminal theft of the e-mails in the first place.

¹... used to describe how apparently opposite or contrary forces are actually complementary, interconnected and interdependent in the natural world, and how they give rise to each other as they interrelate to one another."

²For interesting information on the first African-American to do so (hint, hint: think Tuskegee Airmen weathercaster – click [here](#)).

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